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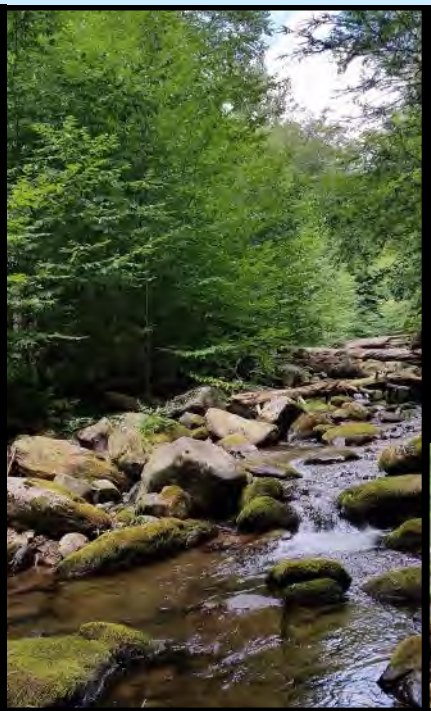


Virginia Water Quality Assessment 305(b)/303(d) Integrated Report 2016

DEQ Virginia Department of Environmental Quality

DCR Virginia Department of Conservation & Recreation

VDH Virginia Department of Health — Protecting You and Your Environment



VIRGINIA

305(b)/303(d)

WATER QUALITY INTEGRATED REPORT

to

CONGRESS and the EPA ADMINISTRATOR

for the

PERIOD

January 1, 2009 to December 31, 2014





Richmond, Virginia

February 2018

ACKNOWLEDGMENTS

This report is prepared by the Virginia Department Environmental Quality (DEQ), with significant contributions from the Department of Conservation and Recreation (DCR) and the Virginia Department of Health (VDH). The information presented here is the result of long-term, extensive collaboration among state environmental and public health staff, federal agencies, inter-state partnership programs, academic institutions, local municipalities, involved citizens, and the private sector. The level of effort required to produce this report cannot be overstated.

DEQ's Water Planning Division has approximately 60 staff dedicated to the monitoring and assessment of the Commonwealth's waters. They work under the esteemed leadership of the agency's director David K. Paylor, the Water Planning Division director, and six regional directors. Monitoring and assessment staff are located in seven offices located across Virginia: Central Office (Richmond), Piedmont Regional Office (Glen Allen), Valley Regional Office (Harrisonburg), Northern Regional Office (Woodbridge), Tidewater Regional Office (Virginia Beach), Blue Ridge Regional Office (Roanoke and Lynchburg), and Southwest Regional Office (Abingdon).

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DEQ appreciates the data provided by its community partners such as Virginia Save Our Streams, the Alliance for the Chesapeake Bay, and StreamWatch. Academic institutions such as Longwood University, Virginia Commonwealth University, the Virginia Institute of Marine Science, and Old Dominion University are also important components of DEQ's non-agency monitoring network.

Lastly, the United States Environmental Protection Agency provides guidance and oversight for this report and the activities required to produce it. Other federal agencies and inter-state programs that work in conjunction with DEQ include the United States Geological Survey, National Park Service, United States Fish and Wildlife Service, the National Oceanic and Atmospheric Administration, and the Federal-Interstate Chesapeake Bay Program.

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EXECUTIVE SUMMARY

Virginia's 2016 Water Quality Assessment Integrated Report (IR) is submitted in compliance with the water quality reporting requirements under Sections 305(b), 303(d), 106, 314 and 319 of the Federal Clean Water Act and the Virginia Water Quality Monitoring, Information and Restoration Act (Section 62.1-44.19:5 C of the Code of Virginia). The 2016 IR provides the results of Virginia's water quality assessments during the time period January 1, 2009 through December 31, 2014, and describes the extensive efforts to monitor, assess, and improve water quality in the waters of the Commonwealth. The information in this report is intended to educate the public about Virginia's water quality conditions and as a tool in planning and management of waters in the Commonwealth.

Overview of Assessment Results

A primary objective of the IR is to determine whether the Commonwealth's waters support their applicable designated uses as mandated by Section 305(b) of the Clean Water Act. There are six designated uses that may be applied to surface waters: aquatic life, fish consumption, shellfishing, recreation, public water supply, and wildlife. Virginia's water quality standards define the water quality needed to support each of these uses by establishing the numeric criteria that physical and chemical data are assessed against. If a waterbody contains more of a pollutant than is allowed by the water quality standards, it will not support one or more of its designated uses. Such waters are considered to have "impaired" quality. An "impairment" refers to an individual parameter or characteristic that exceeds a water quality standard. A water fails to support a designated use when it has one or more impairments.

Between January 2009 and December 2014 DEQ staff visited 4,205 stations located in Virginia's lakes/reservoirs, rivers, and estuaries. At these stations, DEQ collected 120,309 measurements of temperature, 96,240 measurements of pH, and 118,910 measurements of dissolved oxygen. A subset of these water samples were also analyzed for nutrients, suspended solids, bacteria, metals, pesticides, herbicides, and toxic organic compounds. Over 600 different parameters were analyzed. In addition to this large dataset, data collected by over 100 citizen monitoring groups and governmental partners were used by DEQ to assess the status of Virginia's waters. Chapter 3 provides more information about these monitoring programs.

Table A provides a summary of the statewide assessment results for the 2016 IR reporting period. Statewide, 7,116 stream miles, 20,318 acres of lakes/reservoirs, and 315 square miles of estuarine waters meet all designated uses for which they were assessed[1]. This represents measurable progress since the 2014 IR, as indicated in Table A below. The improvements in assessment status are attributed to new data collected to support impairment delists and newly assessed waters that previously had insufficient data to complete an assessment. The total impaired river miles reported in the 2016 IR is 15,282, which represents a slight decrease from the 2014 IR reported mileage of 15,679. While the Commonwealth added 871 newly impaired river miles in the 2016 IR, this was largely offset by new impairment delists. The acres of lakes reported as impaired in the 2016 IR is 93,523, which is a decrease from the 2014 IR reported

[1] The majority of these waters fall within assessment Category 2; fully supporting some Uses but insufficient data to assess all Uses.

value of 94,754. Similarly, the square miles of estuarine waters reported as impaired in the 2016 IR is 2,132, which is a slight decrease from the 2014 IR reported value of 2,136. The decreases in impaired acres of lakes and square miles of estuarine waters is largely attributed to impairment delists.

Table A. Overview of assessment results. Improvements since the 2014 IR, shown as percent change, are in green font.

	Rivers (mi)	Lakes (acres)	Estuaries (sq mi)
Impaired (% total)	15,282 (15%)	93,523 (80%)	2,132 (75%)
Percent change from 2014	***-2.5%***	***-1.3%***	***-0.2%***
Non-Impaired (% total)	7,116 (7%)	20,318 (17%)	315 (11%)
Percent change from 2014	***10.4%***	***4.4%***	***1.6%***
Not Assessed (% total)	78,576 (78%)	3,373 (3%)	400 (14%)
Percent change from 2014	***-0.3%***	*13.6%*[2]	*2.5%*
TOTAL	100,974	117,215	2,848

Prior to the development of the 2014 IR, DEQ adopted the 1:24,000 scale resolution of the National Hydrography Dataset (NHD) in its water quality assessments. The conversion of Virginia's older 1:100K to the higher resolution 1:24K NHD resulted in a significant increase in mapped stream mileage, and, consequently, a higher percentage of waters considered "not assessed" due to the inclusion of previously unmapped waterways—mostly small unnamed tributaries[3]. These waters are counted as "unassessed" until they are monitored and properly characterized by DEQ staff. However, DEQ's freshwater probabilistic monitoring program, described in chapter 4.4, includes coverage of small unnamed tributaries as part of the randomly generated station locations. While much of the data generated by probabilistic monitoring is not formally assessed, the data is used to answer questions about statewide and regional water quality conditions, and to identify problem areas for follow-up monitoring.

The assessment status of the Commonwealth's designated uses is summarized in Chapter 4.2. Many of the Commonwealth's waters contain data indicating a "supporting" status for one or more designated uses. The aquatic life, wildlife, public water supply, and shellfishing designated uses are reported as "supporting" most frequently. The recreation use is impaired in the most number of waters; 49% of assessed rivers/streams (10,926 miles), 1% of assessed

[2] Includes waterbodies that have been previously assessed but do not have data in the current assessment window. Some of these waters will be reviewed during the 2018 assessment period.

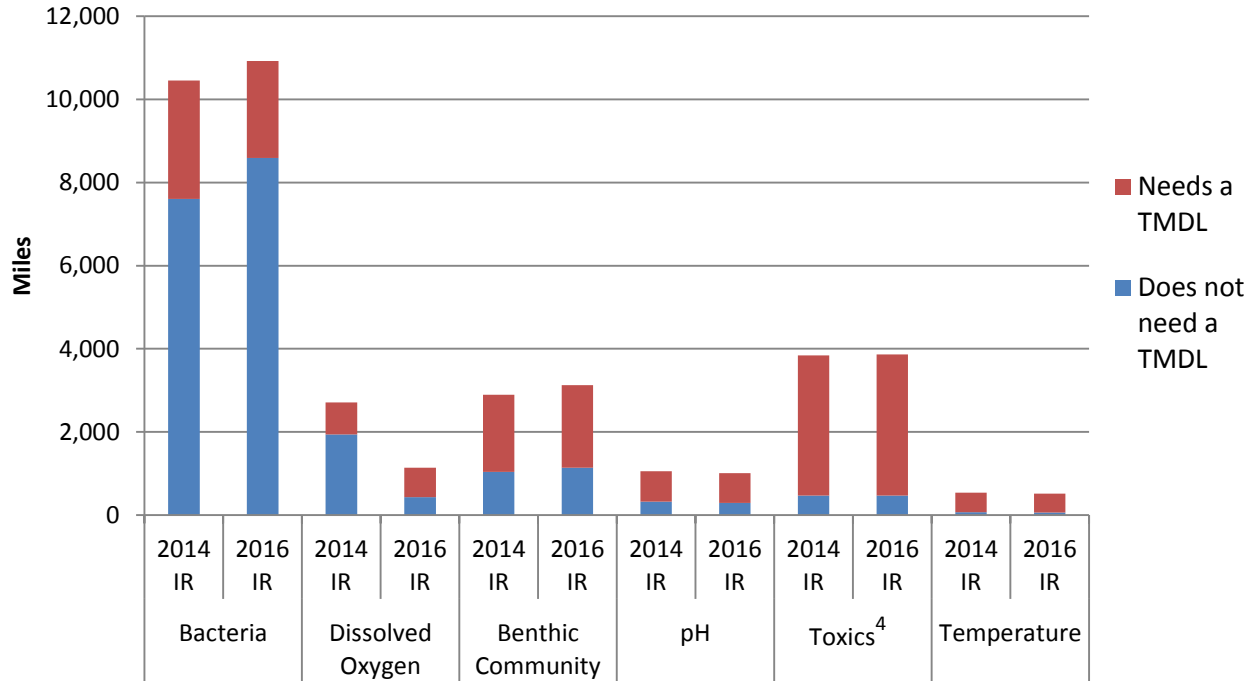
[3] DEQ does not anticipate significant changes to the resolution of its surface water mapping in the foreseeable future; though it is likely statewide stream mileage will decrease slightly as intermittent, ephemeral streams are better distinguished from perennial waters.

lake acres (1,248 acres) and 3.8% of assessed estuarine waters (92 square miles) are impaired for this use. Elevated levels of the indicator bacteria Escherichia coli (E. coli) are the most significant cause for this use impairment, mainly affecting rivers. Agricultural practices, urban runoff, leaking sanitary and storm sewers, failing septic systems, wildlife and domesticated animals are contributors of E. coli. The aquatic life use is also not supported in many rivers; 23% of assessed rivers/streams (5,159 miles), 13.6% of assessed lake acres (15,439 acres) and 86% of assessed estuarine waters (2,110 square miles) are impaired for this use. Low dissolved oxygen concentration (hypoxia) is the most prevalent cause of aquatic life use impairment. Nutrient enrichment, also known as eutrophication, can cause hypoxia by contributing to the formation of oxygen-depleting algae blooms. Low dissolved oxygen is a common impairment of lakes and estuarine waters, including the Chesapeake Bay. Evidence of a degraded biological (benthic) community is another strong indicator that a waterbody does not support the aquatic life use. Finally, the fish consumption designated use is also reported as not supported in many waters of the Commonwealth; 16% of assessed rivers/streams (3,590 miles), 75% of assessed lake acres (85,755 acres) and 84% of assessed estuarine waters (2,049 square miles) are impaired for this use. PCBs and/or Mercury in fish tissue are the most prevalent cause of the fish consumption use impairment.

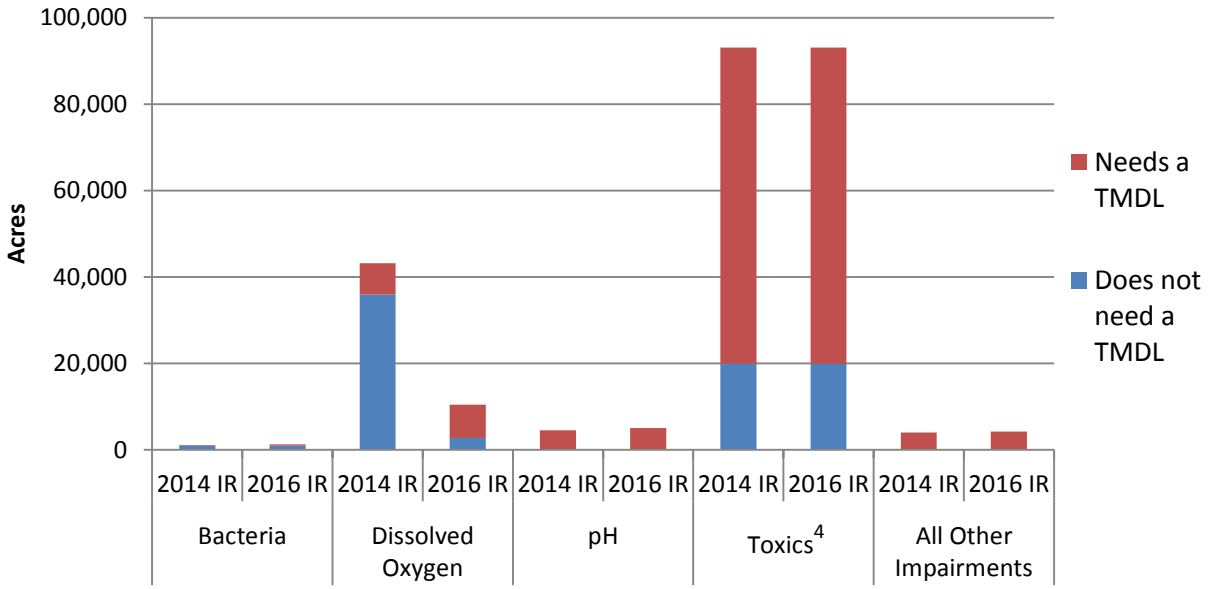
The impairment status of Virginia's rivers, lakes, and estuaries is illustrated in Figure A below. The blue portion of each graph characterizes the size of the waterbody that is impaired but does not need a Total Maximum Daily Load (TMDL) plan because a TMDL is already complete (assessment Category 4A), another form of pollution control plan is in place (assessment Category 4B), the water quality condition is considered natural (assessment Category 4C), or for some other reason the water does not require a TMDL. The red portion of the graph represents the size of the waterbody that is impaired and still requires TMDL development (assessment Category 5). As evident in the figures below, the Commonwealth has made significant progress on completing TMDL plans for many impairments, including bacteria, benthics, and dissolved oxygen, while other impairments, such as toxics in fish tissue, still require a TMDL. DEQ currently has TMDL projects underway to address toxics in fish tissue in the New River and lower James River basins, and is initiating a TMDL study to address toxics in fish tissue in the upper James River. Chapter 7.2 provides more information on the prioritization process for TMDL development through 2022.

Figure A. Summary of impaired waters as reported in the 2014 and 2016 Integrated Reports. Differences between reporting periods reflect both proposed delistings and new impairment listings.

a. Stream miles

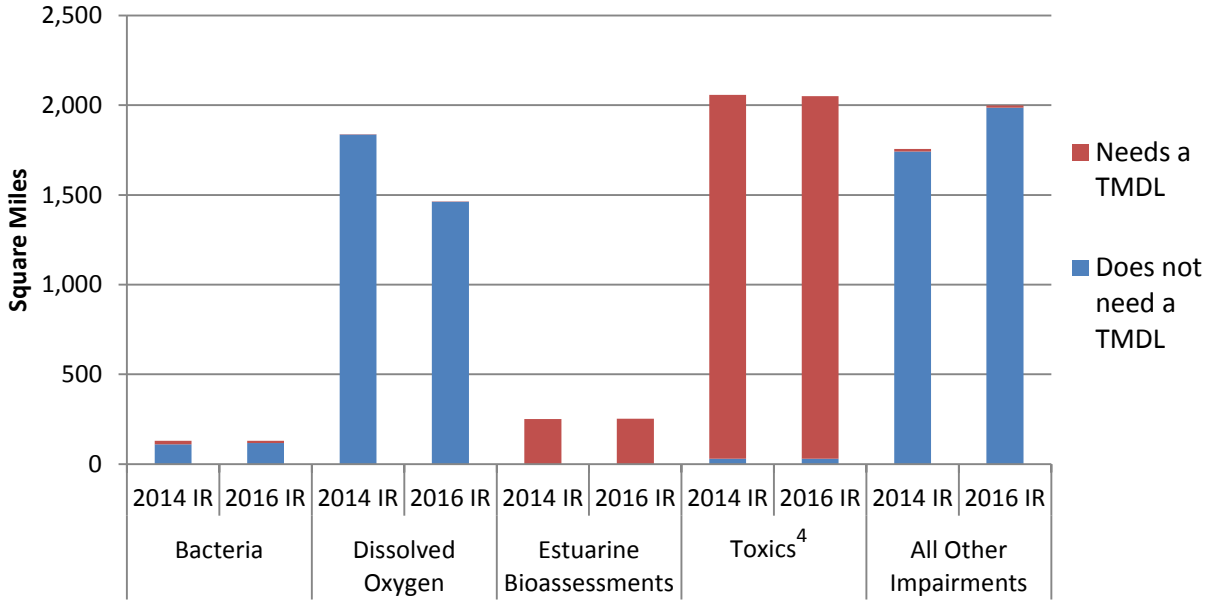


b. Acres of lakes



[4] The overwhelming majority of toxics impairments in rivers, lakes and estuaries are due to exceedences of thresholds for PCBs and Mercury in fish tissue.

c. Square miles of estuarine waters

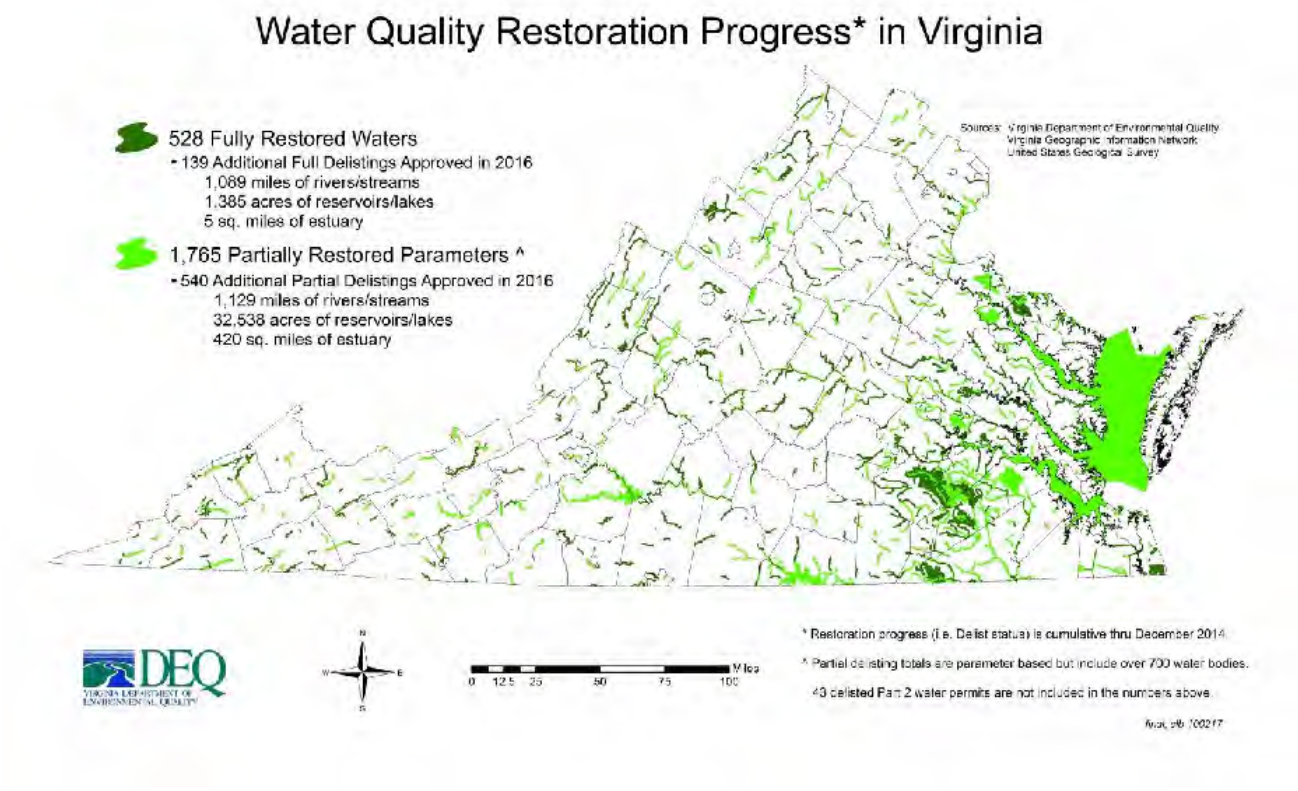


Appendix 1 provides the list of impaired waters, which can be visualized using DEQ's mapping application found here: http://www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx. Detailed assessment results at state-wide and basin-wide scales are found in Chapters 4.2 and 4.3, respectively. Chapter 4.6 provides the assessment results specific to the Chesapeake Bay and its tributaries.

Water Quality Improvements and Total Maximum Daily Loads

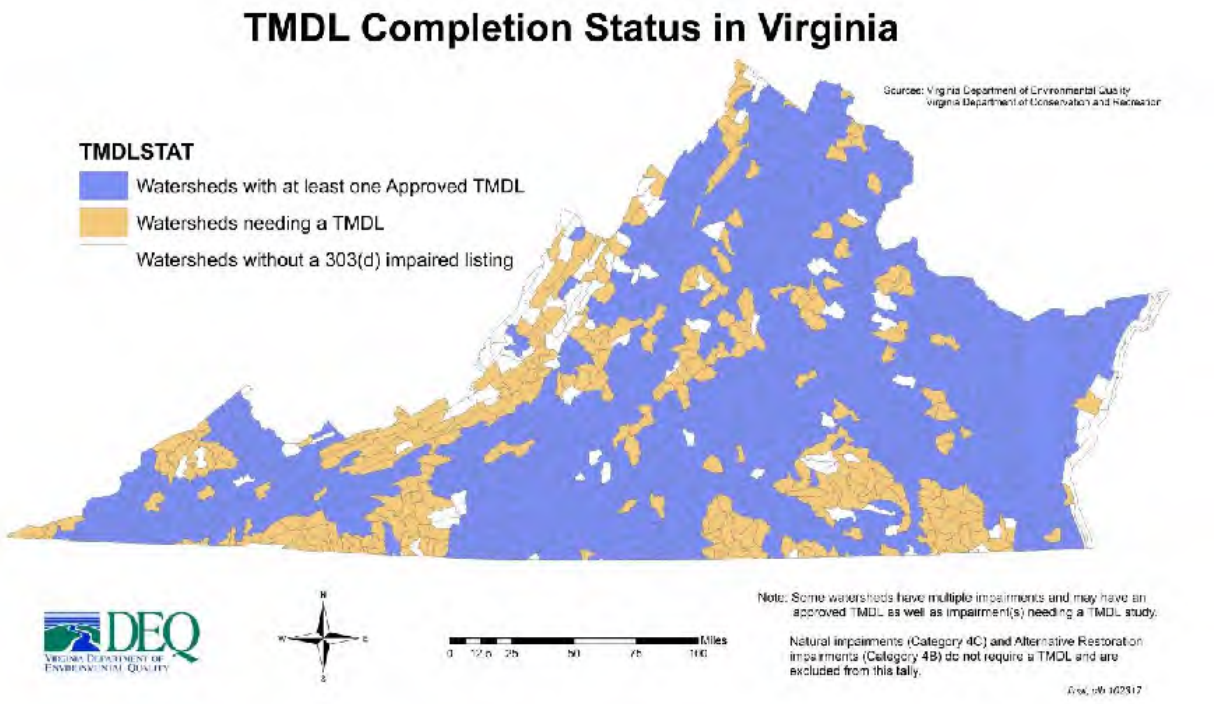
Water quality assessment also identifies those waters that were previously listed as impaired but now currently meet standards. Impairment causes of impaired waters are "delisted" from the 303(d) List of Impaired Waters after justification is provided to EPA, the proposed removal is announced to the public, and the removal is approved by EPA. An impairment can be delisted for a number of reasons. First, if a water quality standard is officially changed through rule-making, waters that previously failed that standard may now meet it. Second, if the assessment methodology for a particular standard has been modified, a water may now meet the standard. Third, a cause can be delisted if new data indicate that water quality standards are currently being attained. This can be the result of successful pollution control efforts, but sometimes the reason for recovery is unknown. For the 2016 assessment, DEQ has delisted 681 causes, tracked by waterbody size (see Figure B). The most common delisted impairment is dissolved oxygen. The decline in dissolved oxygen impairments since the 2014 IR can be partially attributed to improvements in DO concentration observed in lakes and in the tidal waters of the Chesapeake Bay during the 2012-2014 time period. See Appendix 3 for the list of waters with delisted impairments.

Figure B. Distribution of waters with causes that have been removed from the 303(d) List of Impaired Waters. (Full delists are waters in which all known impairments have been removed from the list).



Water quality assessment serves as the first step in the development of Total Maximum Daily Loads (TMDLs). TMDLs can be viewed as a "pollution diet" for a particular water, prescribing the maximum level (or "load") of a pollutant that the water can handle before it violates water quality standards. To date, DEQ has completed 917 TMDLs. Most have been focused on eliminating bacteria impairments. Figure C shows the sub-watersheds where TMDLs have been developed or completed. Chapter 7.1 provides more information regarding DEQ's TMDL program.

Figure C. Sub-watersheds containing TMDLs



Other Water Quality Information

Most of the information in this report pertains to the condition of surface waters (freshwater rivers, lakes/reservoirs, and estuaries). But surface water is only one component of Virginia's water resources. DEQ is charged with characterizing, protecting, and improving all waters. Chapters 6, 7.6, and 7.8 discuss programs focused on the protection of groundwater, coastal waters, and wetlands.

EPA defines threatened waters as those waters that are predicted to exceed water quality standards during the next 305(b) reporting cycle and therefore, considered needing a TMDL. DEQ believes impairment should be confirmed by current monitoring data, using rigorous assessment methodology, before scheduling TMDL development. However, DEQ does identify "at-risk" waters using probabilistic monitoring in freshwater, free-flowing wadeable streams (ProbMon). Chapter 4.4 and Chapter 4.5 provide the latest probabilistic survey results of Virginia's waters.

Modifications to assessment procedures since the 2014 Integrated Report (IR) are detailed in Part II of the Final 2016 Water Quality Assessment Guidance Manual. The most notable change pertains to how waterbodies are prioritized for TMDL development. Chapter 7.2 discusses this new prioritization scheme.

CHAPTER 1 INTRODUCTION

The Virginia Department of Environmental Quality (DEQ) is responsible for protecting and enhancing Virginia's environment and for promoting the health and well-being of the citizens of the Commonwealth. The agency administers state and federal environmental laws and regulations pertinent to air and water quality, water supply, and land protection and revitalization. DEQ's two Water Divisions (Water Permitting and Water Planning) are responsible for carrying out the mandates of the State Water Control Law, as well as meeting Virginia's federal obligations under the Clean Water Act. DEQ administers state laws and regulations to improve and protect Virginia's streams, rivers, bays, wetlands and ground water for aquatic life, human health and other beneficial water uses. Water monitoring programs, the water quality standards program, water quality assessments, Total Maximum Daily Load plans and permitting under the Virginia Pollution Discharge Elimination System (VPDES), the Virginia Water Protection (VWP) and the Virginia Pollution Abatement (VPA) programs are vital instruments DEQ uses to carry out its duties. Please visit DEQ's Water Programs website to learn more about these programs and others.

Objectives and Federal Requirements

Under the Clean Water Act, EPA requires that each state develop a program to monitor the quality of its surface and ground waters and prepare a report every two years describing the status of its water quality. Each state identifies waters of concern as having observed effects and schedules additional monitoring, if appropriate, to determine if designated uses are being met. EPA issues guidelines for states to use during the reporting cycle for national consistency purposes. States are encouraged to use these guidelines to prepare these water quality reports for EPA. EPA compiles the data from the state reports, summarizes them, and transmits the summaries to Congress, including an analysis of water quality nationwide. This 305(b)/303(d) process is the principal means by which the EPA, Congress, and the public evaluate current water quality, the progress made maintaining and restoring water quality, and the extent of remaining work to be done. Many states, including Virginia, rely on the 305(b)/303(d) process for information needed to conduct water quality planning. The 305(b)/303(d) process is an integral part of Virginia's water quality management program, for which requirements are set forth in 40 CFR 130.

Section 305(b) of the Clean Water Act requires each state to submit a biennial report to EPA describing the quality of its navigable waters. The 305(b) report provides DEQ's best overall assessment of water quality conditions and trends in the Commonwealth. The report is intended to be used as a tool in planning and management of waters in Virginia. The report also directs continuous planning and implementation activities in coordination with the State Water Quality Management Plan and the Continuous Planning Process (CPP).

Primary objectives of a 305(b) report are:

1. To educate and inform citizens and public officials about Virginia's overall water quality.

2. To analyze water quality data to determine the extent to which Virginia's waters are supporting the designated uses for all state waters and to compare the results to water quality standards and other appropriate criteria and guidelines.

3. To determine the causes of non-attainment of designated uses in the State's waters.

4. To determine the nature and recognizable extent of point and nonpoint source impacts in accordance with state and federal guidelines.

Section 303(d) of the Clean Water Act and the Environmental Protection Agency's regulation 40 CFR, Section 130.7 (d) requires each state to submit a Total Maximum Daily Load (TMDL) Priority List for impaired waters to EPA on April 1 of even numbered years. This list is provided in Appendix 1a.

In summary, the Integrated Report provides the following information relating to:

- the delineation of water quality assessment units (AUs) based on National Hydrography Dataset (NHD);
- the status of and progress toward achieving comprehensive assessments of all waters;
- the attainment status of designated uses for every AU assessed;
- additional monitoring that may be needed to determine designated use support status and, if necessary, to assist development of TMDLs for each pollutant/AU combination;
- schedules for additional monitoring planned for AUs;
- pollutant/AU combinations still requiring TMDLs; and
- TMDL development schedules reflecting the priority ranking of each pollutant/AU combination.
- "Effluent Limited" Waters.

Assessment Scheme

The 305(b) process assesses six primary designated uses, as appropriate for a particular waterbody, based on water quality standards:

Aquatic Life Use: supports the propagation, growth, and protection of a balanced indigenous population of aquatic life which may be expected to inhabit a waterbody. In Chesapeake Bay waters (mainstem and tributaries), this use is divided into sub-uses that target specific aquatic life assemblages.

Recreation Use: supports swimming, boating, and other recreational activities.

Fish Consumption Use: supports game and marketable fish species that are safe for human health.

Shellfishing Use: supports the propagation and marketability of shellfish (clams, oysters, and mussels).

Public Water Supply Use: supports safe drinking water.

Wildlife Use: supports the propagation, growth, and protection of associated wildlife.

The 2016 EPA Integrated Report Guidance and Assessment Database (ADB V2.3.1) continues to use five categories ("category 4" having three subcategories) in which every assessment unit (AU) should be placed based on designated use attainment. Additionally, Virginia has devised several other sub-categories to supplement the federal categories, enabling a more precise system of tracking and reporting.

Below are the EPA defined categories followed by associated Virginia defined subcategories**:**

***FULLY SUPPORTING* - Waters are supporting one or more designated uses**

- **EPA Category 1 -** Attaining all associated designated uses and no designated use is threatened

  Va. Category 1A - waters are attaining all uses and a TMDL has been developed for one or more uses.

- **EPA Category 2 -** Available data and/or other information indicate that some, but not all of the designated uses are supported.

  Va. Category 2A - waters are supporting all of the uses for which they are monitored.

  Va. Category 2B - waters are of concern to the state but no water quality standard exists for a specific pollutant, or the water exceeds a state screening value or toxicity test.

Va. Category 2C - waters are now attaining the use(s) for which they were originally 303(d) listed and the TMDL is EPA approved but other applicable use(s) were not monitored and assessed.

***INDETERMINATE* - Waters needing additional information**

- **EPA Category 3 -** Insufficient data and/or information to determine whether any designated uses are met.

  Va. Category 3A - no data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.

  Va. Category 3B - some data exist but are insufficient to determine support of designated uses. Such waters will be prioritized for follow-up monitoring, as resources allow.

  Va. Category 3C - data collected by a citizen monitoring or another organization indicating water quality problems may exist but the methodology and/or data quality has not been approved for a determination of support of designated use(s). These waters are considered as having insufficient data with observed effects. Such waters will be prioritized by DEQ for follow-up monitoring.

  Va. Category 3D - data collected by a citizen monitoring or other organization indicating designated use(s) are being attained but the methodology and/or data quality has not been approved for such a determination.

***IMPAIRED* - Waters are impaired or threatened but a TMDL is not required.**

- **EPA Category 4A -** water is impaired or threatened for one or more designated uses but does not require a TMDL. A new TMDL is not necessary to address the newly identified impaired tributaries if TMDL modeling, source identification and reductions cover the entire watershed and the TMDL has been approved by EPA. These waters are primarily related to shellfish and/or recreational bacteria impairments but could include benthic impairments.

- **EPA Category 4B -** water is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements (such as VPDES limits under a compliance schedule) are reasonably expected to result in attainment of water quality standards by the next reporting period or permit cycle.

- **EPA Category 4C -** water is impaired or threatened for one or more designated uses but does not require a TMDL because the impairment is not caused by a pollutant and/or is determined to be caused by natural conditions.

  Va. Category 4D - part(s) of a water quality standard is attained for a pollutant with a TMDL, but the remaining criteria for the standard were not assessed due to insufficient information. (Only to be applied to dissolved oxygen in tidal waters of the Chesapeake Bay).

***IMPAIRED* - Waters are impaired or threatened and require a TMDL**

- **EPA Category 5 - Waters are impaired or threatened and a TMDL is needed.**

  Va. Category 5A - a water quality standard is not attained. The water is impaired or threatened for one or more designated uses (excluding shellfish use) by a pollutant(s) and requires a TMDL (303d list).

  Va. Category 5B - the water quality standard for shellfish use is not attained. One or more

pollutants causing impairment require TMDL development.

Va. Category 5C - the water quality standard is not attained due to "suspected" natural conditions. The water is impaired for one or more designated uses by a pollutant(s) and may require a TMDL (303d list). Water quality standards for these waters may be re-evaluated due to the presence of natural conditions.

Va. Category 5D - the water quality standard is not attained where TMDLs for a pollutant(s) have been developed but one or more pollutants are still causing impairment requiring additional TMDL development.

Va. Category 5E - effluent limited facilities are not expected to meet compliance schedules by next permit cycle or reporting period.

Va. Category 5F - the water quality standard is attained for a pollutant(s) with a TMDL and 303(d) delisting approved but the water remains impaired for additional pollutant(s) requiring TMDL development.

Va. Category 5R - the Water Quality Standard is not attained and the water is impaired, and implementation of an EPA-approved restoration plan is expected to result in attainment. A status update will be provided each 303(d) cycle to evaluate progress.

- **EPA Category 5M** - the water quality standard is not attained for mercury primarily due to atmospheric deposition.

Data Used To Determine Water Quality

There are two basic types of water quality data used in the assessment process. The primary type is "monitored" data approved through the quality assurance/quality control process (QA/QC). The data come from the analysis of chemical, biological, and/or physical samples collected by DEQ or by individuals and organizations that have been approved by DEQ. These data are considered to be of the highest quality. Generally, states compile their lists of impaired waters using only monitored data, which are generated using EPA-accepted sampling and analytical methods. All non-DEQ monitoring data submittals used in an assessment, except chemical data submittals from the U.S. Geological Survey (USGS), must include a sampling and analysis protocol for DEQ review.

The second type of data used in the assessment is considered "evaluated" data. These physical, chemical, and biological data are primarily obtained from sources without an EPA-approved or DEQ-accepted sampling protocol. These data are considered to be of lower quality than monitored data. Normally, these data are not used directly for listing waters as impaired, but may be used to identify observed effects that may trigger additional follow-up monitoring.

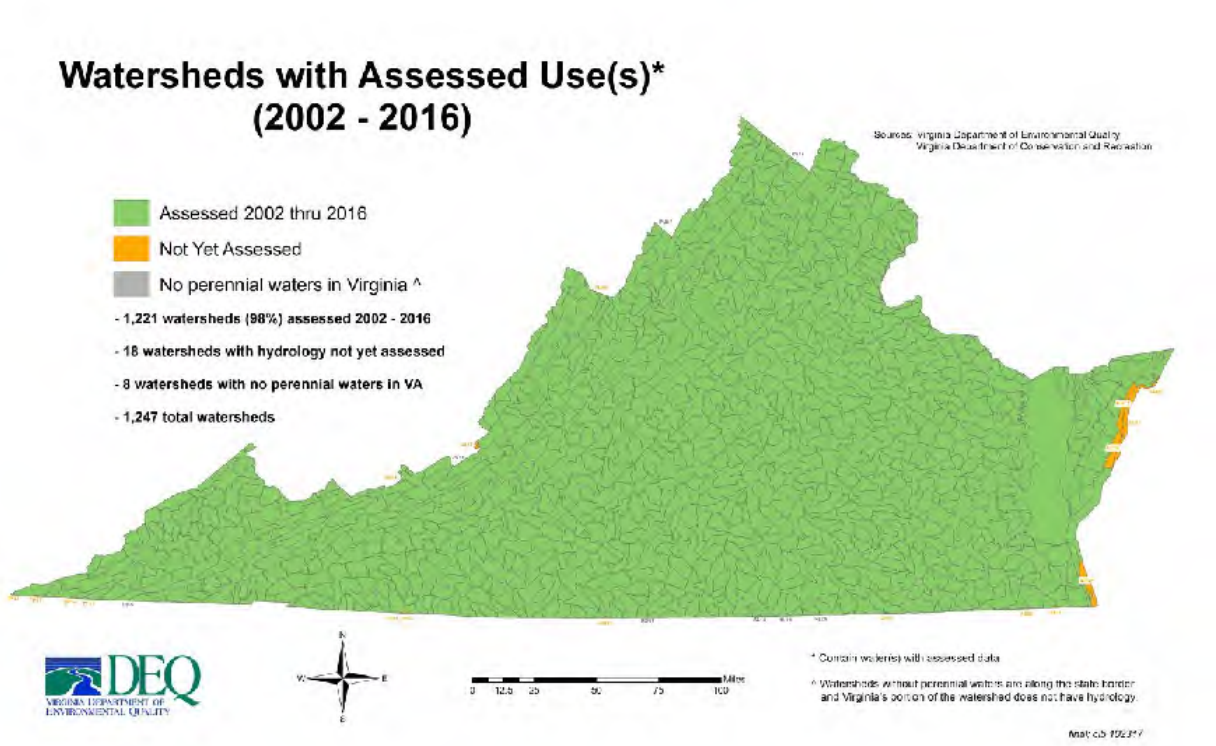
Non-DEQ water quality data continue to be tremendously valuable to the assessment process. The data generated by citizen groups, the private sector, and other governmental agencies extend the reach of DEQ's monitoring network. Quality assurance and quality control (QA/QC) continue to be a concern for regulatory use of "outside" data, and DEQ has made a considerable effort to improve the data quality of outside data providers by reviewing monitoring protocols and holding training events. DEQ's objective is to certify additional non-DEQ QA/QC data, with the consent of contributors, for future designated use determination in the overall statewide water quality assessment.

DEQ welcomes submission of both monitored and evaluated data. Data submittals are accepted continuously. Data should be submitted for review through March 30th of the previous odd-year to be considered for inclusion in the next even-year assessment report. Chapter 3.5 provides more information about DEQ's citizen monitoring program.

On-going Refinement to the Assessment Process

DEQ has again used a six-year assessment data window for the 2016 report. This data window follows a 2006 update to the ambient water monitoring strategy for Virginia, which has incorporated all 1,247 12-digit (6th Order) sub-watersheds into the existing rotating watershed monitoring approach. This approach uses a two-year, semi-monthly monitoring scheme, as described in Chapter 3.1, prior to rotating to another sub-watershed. This approach is designed to cover one-third of these smaller sub-watersheds throughout the state every two years. Thus, after six years, almost every sub-watershed within the state is scheduled to be monitored. This is the third assessment report to fully reflect this updated watershed rotation scheme. Figure 1 shows the spatial coverage of DEQ's ambient water monitoring program since 2002.

Figure 1. Map with sub-watersheds assessed since the 2002 report



CHAPTER 2 STATE BACKGROUND INFORMATION

Population

The Commonwealth of Virginia covers 42,775 square miles and ranks 35th among the states in size. This area is divided into six Department of Environmental Quality (DEQ) regional offices, with two satellite offices. According to the most recent census (2010), the population of the Commonwealth was estimated to be 8,001,024 or 2.5% of the total United States population. It has grown approximately 13% between 2000 and 2010, ranking 12th nationally, and continues to grow. Approximately 72% of all Virginians live in eight metropolitan areas: Northern Virginia, Norfolk-Virginia Beach-Newport News, Richmond-Petersburg, Roanoke, Lynchburg, Charlottesville, Danville and Johnson City-Kingsport-Bristol. Approximately 9% of the population lives in seven smaller urban areas and 19% live in rural areas.

Geography

Virginia is over 400 miles in length along its southern boundary, reaching from the Atlantic Ocean in the east, crossing the eastern continental divide into the Mississippi Basin to the west. Along the way, Virginia crosses five physiographic provinces. The southwestern edge of the state touches upon the margin of the Cumberland Plateau, which is characterized by rugged terrain with formations of sandstone and shale. Virginia's coal mining industry is concentrated in this area. The Valley and Ridge province encompasses the long, parallel ridges of the Appalachian Mountain chain in western Virginia. Erosion-resistant quartzites and sandstones form the ridgetops, while streams have carved valleys into the softer limestones and shales. The narrow Blue Ridge Mountain province is made up of hard greenstone, quartzites, and granites, igneous and metamorphic rocks that originated as ancient lava flows. These mountains are among the oldest on earth. East of the Blue Ridge Mountains lies the rolling Piedmont district of central Virginia. A complex layer of igneous and metamorphic rocks underlies this area. The Triassic Basins, ancient down-faulted basins filled with sedimentary rocks and igneous intrusions are major sub-units of this province. A distinctive fall line, marked by waterfalls and rapids across the major rivers, divides the Piedmont from the Coastal Plain. Virginia's flat Tidewater area consists of deep, unconsolidated deposits of sand, gravel, fossil shells, and clay. The basement formation of granite, exposed at the fall line, is buried under 2,900 feet of sediment at the Atlantic Coast.

Water Resources

A summary of Virginia's water resources is provided in Table 2-1. Virginia has an estimated 100,923 miles of streams and rivers divided into nine major river basins. This estimate represents mileage determined by the United States Geological Survey National Hydrography Dataset (NHD). Annual rainfall averages almost 43 inches. Total combined flow of all freshwater streams in the state is estimated at about 25 billion gallons per day. The 248 publicly owned lakes in the Commonwealth have a combined area of 117,158 acres. Of these lakes, 123 are considered “significant lakes” for monitoring purposes, totaling approximately 113,545 acres. Many hundreds of other smaller, privately owned lakes, reservoirs and ponds, some of significant size, dot the landscape.

Other important water features of Virginia include approximately 236,900 acres of tidal and coastal wetlands, 808,000 acres of freshwater wetlands, 120 miles of Atlantic Ocean coastline, and approximately 2,308 square miles of Chesapeake Bay estuarine waters. Virginia's highly indented shoreline, including the Chesapeake Bay and its sub-estuaries, is conservatively estimated to be 3,315 miles long.

Table 2-1 Virginia Water Resources Atlas

State Population (2006 census) – 7,642,884
(2010 census) – 8,001,024

State Surface Area – 42,775 square miles

Major River Basins

Potomac/Shenandoah	Tennessee/Big Sandy
James	Chesapeake Bay/Small Coastal
York	Rappahannock
Roanoke/Yadkin	New
Chowan/Dismal Swamp	

Total Non-Tidal River/Stream Miles - 100,923

Miles of Border River (Potomac) - 180

Publicly-Owned Significant Lakes and Reservoirs - 123

Significant Lake/Reservoir Acres - 117,158

Total Acres of Palustrine Wetlands - 1,075,443
Total Acres of Riverine Wetlands - 380
Total Acres of Lacustrine Wetlands - 193
Total Acres of Estuarine Wetlands - 190,996
Total Acres of Isolated Wetlands - ≈ 250,000

Estuary Square Miles (excluding small coastal areas) - 2,308

Atlantic Ocean Coastal Miles – 120

Total Coastal Shoreline Miles Including Chesapeake Bay and Tidal Tributaries to a Width of 110 Feet - 3,315

Statewide Average Annual Rainfall - 42.8 inches

Average Freshwater
Discharge of All Rivers – Approximately 25 billion gallons per day

Land Use

Virginia's landscape is dominated by forests, which cover approximately 57% of the state's total area (Table 2-2). However, according to USDA's *Virginia's Forests, 2007*, forested area has declined by less than 1% since 2001. Most (60%) of the loss can be attributed to expanding urban land use, 30% to agriculture, and the rest to other land uses. Water quality is greatly impacted by land use. Specifically, high quality waters are most commonly associated with forested areas. Forested ecosystems act as natural filters, absorbing nutrients and other pollutants that would otherwise be washed into nearby waterbodies. Water quality can be protected in developed areas by creating vegetated buffer zones and maintaining sewer infrastructure.

Table 2-2 Virginia Statewide Land Use Summary

Commercial Forests	23,818 mi^2	97%
Reserved/Unproductive Forests	752 mi^2	3%
Total Forested Land[1]	**24,570 mi^2**	**57%**
Harvested Cropland	4091 mi^2	32%
Pasture and Grazing	231 mi^2	2%
Other	6,249 mi^2	66%
Total Agricultural Land[2]	**12,973 mi^2**	**30%**
Other (Including Urban)	**2,261 mi^2**	**5%**
Total Land Area	39,493 mi^2	92%
Inland Waters	**3,282 mi^2**	**8%**
TOTAL AREA	**42,775 mi^2**	**100%**

[1] Source: 2007 8th Forest Inventory of Virginia, US Department of Agriculture
[2] Source: 2012 Census of Agriculture, US Department of Agriculture

CHAPTER 3 SURFACE WATER MONITORING PROGRAMS

At the core of assessing the quality of the Commonwealth's waters are the data generated from the collection and analysis of ambient surface water samples. DEQ has a long history of water quality monitoring, beginning with the first sample collected in June 1941. Over the years, the focus of monitoring has been guided by various regulatory and assessment needs. With the development and implementation of the Water Quality Monitoring Strategy in 2000, the ambient monitoring program entered a new era of statewide multilayered network monitoring that is designed to produce representative data that supports the evaluation, restoration, and protection of the quality of the Commonwealth's waters for the purposes of fishing, swimming, boating, drinking, and the propagation and growth of a balanced, healthy community of indigenous aquatic organisms. The Water Quality Monitoring Strategy was updated in 2004, 2007, and 2013 and has been formally approved by the United States Environmental Protection Agency (USEPA). [1]

To achieve this goal and satisfy scientific, legislative and aesthetic requirements related to the quality of the Commonwealth's aquatic resources, DEQ has established a series of specific objectives to identify and define the diverse functions of the Water Quality Monitoring Program:

1. Assessment and Remediation Objectives:

(**a**) Status Quo Characterizations and Assessments:

(1) Provide accurate, representative data for water quality characterization and assessment of all surface waters within the state.

(2) Establish consistent statewide siting, parameter selection and monitoring techniques, to ensure data reliability and the comparability of data.

(3) Assure that the frequency of sampling and the total number of observations collected are sufficient to provide adequate data for scientific, statistically based and defensible assessment procedures.

(4) Assure that, whenever possible, flow rates are determined simultaneously with the collection of water quality data.

(5) Monitor, according to a plan and schedule, all substances discharged into state waters that are subject to water quality standards or are otherwise necessary to determine water quality conditions.

(6) Continually evaluate the overall success of the Commonwealth's water quality management efforts.

(**b**) Impaired Waters / Remediation:

(7) Provide data to define the cause, severity and geographic extension of impaired waters:

(8) Provide adequate data for TMDL model development and validation.

(9) Provide adequate data, by means of follow-up monitoring, to evaluate the implementation of TMDL's and other best management practices.

(**c**) Variability, Trend Assessments and Forecasts:

(10) Provide adequate data and analytical procedures for short, medium, and long-term statistical evaluation of water quality variation and trends within identifiable, geographically defined waterbodies.

2. Permit Objectives:

(11) Provide data for the calculation of permit limits for the issuance, re-issuance and/or

[1] Millennium 2000 Water Quality Monitoring Strategy, Virginia Department of Environmental Quality, October 2004.

modification of effluent discharge permits.

(12) When water quality problems are suspected, provide data to detect and document water quality impairments and/or to evaluate permit adequacy, whether permitted dischargers are in compliance with permit limits or not.

3. Efficiency Objectives:

(13) Improve the efficiency of the Monitoring Program by minimizing resource requirements and the duplication of efforts while maximizing the use of integrated data collected by state and federal agencies, public utilities, private enterprises and citizens groups for statewide water quality assessments.

(14) Increase the use of biological monitoring (e.g., benthic macroinvertebrates, fish, and/or aquatic vegetation assemblages), as well as fish tissue and sediment monitoring for specific assessments of water quality.

(15) Investigate, identify and characterize additional avenues of actual or potential water quality impairment, including ground water contribution and aerial deposition.

(16) Guarantee adequate Quality Assurance/Quality Control (QA/QC) procedures to provide precise, accurate and representative water quality data for all assessment purposes.

4. Research Objectives:

(17) Provide data to validate special stream designations and/or specific water quality criteria.

(18) Evaluate new methodologies for sampling, analyzing and assessing water quality.

(19) Provide data for other research objectives.

As a result of the implementation of the new strategy, a monitoring network of multiple programs and special studies was identified and developed to include the following programs:

WATERSHED (AW) DEQ's ambient watershed network of stations represents the largest single section of the monitoring program. Detailed information on the purpose and objectives of these stations and their selection can be found in Section III.B. of the Monitoring Strategy.

ESTUARINE PROBABILISTIC MONITORING (C2) The estuarine probabilistic monitoring program covers the tidal estuarine waters of the Chesapeake Bay, coastal Delmarva and the Back Bay / North Landing River drainages. It is designed to characterize the Commonwealth's estuarine waters. This program is also integrated into National Coastal Assessment Surveys on a rotating basis once every five years.

CHESAPEAKE BAY (CB) Chesapeake Bay Program identified in section III.E.1 of the strategy. The design of this program is through the Federal-Interstate Chesapeake Bay Program and encompasses a multi-state water quality characterization effort, http://www.deq.virginia.gov/Programs/Water/ChesapeakeBay.aspx.

CITIZEN MONITORING (CM) These stations are monitored due to specific requests from the public, usually as a result of local concerns. Notification occurs in the fourth quarter of the calendar year with sampling scheduled to begin in the next monitoring year, http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/CitizenMonitoring.aspx.

FACILITY INSPECTION (FI) Facility inspections are not specifically identified in the water quality monitoring strategy but are integral to determining compliance with discharge limits. Specific sample locations are not included in the monitoring plan but only estimated numbers of samples for the purpose of calculating annual budgets.

FRESHWATER PROBABILISTIC (FP) The freshwater probabilistic monitoring program covers the non-tidal free-flowing waters of the state. The program is designed to answer the question of what is the overall water quality of the Commonwealth for free-flowing streams: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/ProbabilisticMonitoring.aspx.

FISH TISSUE (FT) Fish tissue and sediment monitoring program conducted by central office staff, http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/FishTissueMonitoring.aspx.

MERCURY (HG) Mercury Special Study Program paid for by the responsible parties.

INCIDENT RESPONSE (IR) Incident response samples are the same as PC but are non-petroleum in origin.

POLLUTION COMPLAINTS (PC) Pollution complaints are special samples collected generally as a result of a petroleum spill.

REGIONAL BIOLOGICAL (RB) Biological monitoring program which focuses on the analysis of the benthic macroinvertebrate community as a tool to detect water quality conditions. The methodology follows the USEPA Rapid Bioassessment Protocol II. For additional information visit the biological program website at http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/BiologicalMonitoring.aspx.

RESERVOIR MONITORING (RL) Reservoir monitoring which is described in the Lake Monitoring Guidance available at http://www.deq.virginia.gov/Portals/0/DEQ/Water/Guidance/092005.pdf.

SPECIAL STUDIES (SS) Special studies are identified by individual project plans and are generally specialized intensive targeted monitoring efforts designed to answer specific hypothesis related to water quality conditions.

TMDL (TM) TMDL monitoring stations are those stations associated with the development of a TMDL and subsequent implementation plan for segments listed on the 303(d) list, http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL.aspx.

TREND (TR) Trend stations are those long term stations sited for permanent monitoring for the purpose of detecting water quality trends for a wide variety of environmentally important water quality parameters.

OBSERVED EFFECTS (OE) Those stations with insufficient data for assessing and usually are those stations with small data sets during an assessment cycle that indicate a potential problem. These stations are considered carryover stations and will be sampled until sufficient data is available to determine the water quality conditions.

Data Summary

Between January 2009 and December 2014 DEQ staff collected multiple samples at 4,205 stations. From these stations, the number of independent observations for the common field measurements was 120,309 for temperature, 96,240 for pH, and 118,910 for dissolved oxygen. These samples were analyzed for a variety of chemical constituents including nutrients, bacteria, metals, pesticides, herbicides and toxic organic compounds; over 600 different parameters were sampled.

The number of stations representing a particular type of stream segment, the types of samples collected, the parameters analyzed, and the sampling frequency all vary depending on site conditions and program emphasis. A detailed report of sample locations, matrices, parameters, and frequency is available in the Annual Monitoring Plans at

http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring.aspx.

Each basin summary, found in Chapter 4.3 of this report, lists the ambient water quality monitoring (AWQM) and biological (benthic) monitoring summary data within the basin. Summaries of the sampling data collected at each station during the reporting period are provided as an Appendix supplement to this report and can be found on the DEQ water webpage http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs.aspx.

Contact: For further information on the Ambient Monitoring Program contact:

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(804) 698-4449
roger.stewart@deq.virginia.gov

CHAPTER 3.1 FRESHWATER BIOLOGICAL MONITORING PROGRAM

Virginia's freshwater biological monitoring program began in the 1970s to fulfill requirements of the Federal 106 Grant agreement. DEQ uses benthic macroinvertebrate communities to assess the ecological health of wadeable freshwater streams and rivers. Benthic macroinvertebrates are animals without backbones that live in or on sediment or other substrates and can be seen by the unaided eye. Benthics include crustaceans, mollusks, and immature forms of aquatic insects such as caddisfly, stonefly or mayfly nymphs.

Biological monitoring, using benthic macroinvertebrates, is an invaluable tool for evaluating the temporally integrated, overall effects of the water and sediment quality in streams and rivers. Benthic macroinvertebrate communities integrate water quality and the effects of different pollution stressors through time, providing a holistic measure of their aggregate impact. Because of their sedentary nature, macroinvertebrates are good indicators of localized conditions. Most species have a complex life cycle of approximately one year or more, and thus integrate the effects of fluctuations in water quality over time which conventional water quality surveys may miss. In essence, benthic macroinvertebrates are considered to be virtual "living recorders" of water quality conditions over time. The structure and functioning of macroinvertebrate communities are extremely sensitive. These communities may exhibit responses to water quality pollutants for which specific criteria or standards have not been defined, chemical analyses are not normally performed, or tolerance is below chemical detection limits.

DEQ's biological monitoring program examines over 150 stations annually. Reasons for bioassessments can include targeted monitoring, probabilistic monitoring, tracking local pollution events, follow-up on waters of concern identified through volunteer citizen monitoring and TMDL monitoring. Data from the biological monitoring program are used for periodic review and assessment of state waters as required by Section 305(b) of the Clean Water Act. Biological monitoring is one tool used for assessing the aquatic life designated use of state waters established in 9 VAC 25-260-10 A. that states in part, "All state waters, including wetlands, are designated for the following uses: …the propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them…"

DEQ uses two bioassessment indices to assess the biotic integrity in non-tidal freshwater streams and rivers in Virginia. In the Coastal Plain, which is characterized by low gradient streams east of the fall line, the Virginia Coastal Plain Macroinvertebrate Index (VCPMI) methodology is used. This multimetric index was developed in 1997 by the Mid-Atlantic Coastal Streams (MACS) workgroup. The VCPMI is a multimetric bioassessment index which was calibrated for low gradient Coastal Plain streams which

exhibit different benthic macroinvertebrate communities from non-coastal stream communities.

For non-coastal streams, assessment of the benthic macroinvertebrate community is based on the Virginia Stream Condition Index (VSCI). The VSCI was developed for Virginia freshwater non-coastal streams by USEPA's contractor Tetra Tech, Inc. Using historical data collected in Virginia at reference and stressed streams from 1994-1998, Tetra Tech compared the historical data against additional data collected from 1999-2002. The VSCI is based upon recent advances in bioassessment methods contained in "*Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers, Second Edition*" (Barbour et al. 1999). The VSCI, a multimetric calculation of benthic integrity converted into a single numerical score, resulted in a single reference condition for the entire non-coastal portion of the Commonwealth against which all future benthic samples will be compared. The development of this index is considered a significant step in the advancement of the biomonitoring program to address a wide range of monitoring and assessment needs. Based on recommendations from public comment and the Academic Advisory Committee, the VSCI was validated using a spatially diverse (ecoregionally and stream size) data set free of pseudoreplication. These probabilistic data sets have allowed DEQ to narrow data gaps and test the VSCI against many classification variables and confirm with certainty, the VSCI is a good assessment tool for Virginia streams.

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CHAPTER 3.2 ESTUARINE/COASTAL PROBABILISTIC MONITORING PROGRAM

Virginia's estuarine probabilistic monitoring module was initiated in the summer of 2000 with a five-year grant (CR-828544-01 – period 2000-2004) from EPA's "National Coastal Assessment (NCA) Program", formerly known as the "Coastal 2000 Initiative". This original, five-year effort was defined under the terms of a proposal titled "Monitoring the US Atlantic Coast: Assessing Virginia's Estuaries and Tidal Tributaries to the Chesapeake Bay and the Atlantic Ocean", submitted to the US-EPA in the spring of 2000. Specific field methodologies and Quality Assurance requirements of the Coastal 2000 / National Coastal Assessment Program are described in the EPA documents "National Coastal Assessment Field Operations Manual" (EPA 620/R-01/003) and "National Coastal Assessment Quality Assurance Project Plan 2001-2004" (EPA/620/R-01/002).

Purpose

The original goals of the National Coastal Assessment (Coastal 2000) Program were to:

- Assess the ecological condition of estuarine resources,
- Determine reference conditions for ecological responses/stressors, and
- Build infrastructure in EPA Regions and participating states.

Additional, more specific federal objectives were to:

- Assess the health or condition of the estuarine waters of the United States and track changes in that condition through time,
- Assess the health or condition of the estuarine waters of the various coastal states and track changes in that condition through time,
- Utilize the approach to identify reference conditions for estuarine waters in the United States, and

- Utilize existing state monitoring programs as appropriate

The geographic extent of the Estuarine/Coastal ProbMon Program is restricted to the eastern-most regions of the state. It is coordinated through the DEQ Central Office in Richmond and is carried out primarily by the Piedmont (PRO - Glen Allen) and Tidewater (TRO - Virginia Beach) Regional Offices. A few of the estuarine probabilistic sites (usually 1 or 2 sites annually) fall within the geographic jurisdiction of the Northern Regional Office (NRO) in Woodbridge.

At the state level, DEQ defined its agency goals and objectives relative to its comprehensive statewide Water Quality Monitoring (WQM) Program. Each participating DEQ region needs to complete its assigned probabilistic stations in order for DEQ to reach defensible conclusions about overall estuarine water quality from a statewide perspective.

Monitoring Design

The sampling strata for tidal tributaries have been geographically defined, by estuary size and drainage location, and a set of 50 randomly selected sampling sites are selected each year. In the past these were provided annually by the EPA/ORD Gulf Ecology Division (GED) Laboratory in Gulf Breeze, Florida (2000-2004), or the Atlantic Ecology Division (AED) Laboratory in Narragansett, Rhode Island (2005-2007) upon request. Since 2007 DEQ has performed its own site selection for the state sampling design using software provided by EPA/ORD/AED.

The two principal sampling strata in the state design consist of (1) small tidal tributaries to the Chesapeake Bay and its major tributaries and (2) tidal tributaries and embayments of the Atlantic coast and Back Bay/North Landing River (which discharge into Pamlico/Albemarle Sounds, North Carolina). The major tidal tributaries to the Chesapeake Bay (the Potomac, Rappahannock, York and James Rivers), as well as the Bay mainstem, are effectively characterized by the probabilistic monitoring of Virginia's Chesapeake Bay Program. Periodically (2000, 2005-06, and 2010), these larger waters were also included in the national survey sampling design for the purpose of integration into the standardized National Coastal Assessment (NCA) Program.

In the first year of sampling, 35 sites were selected in Virginia's portion of the Chesapeake Bay mainstem and the tidal portions of its major tributaries (Rappahannock River, York River, James River, & Elizabeth River - the tidal portions of the Potomac River mainstem are entirely in the state of Maryland). To better characterize smaller estuarine subdivisions, DEQ has in subsequent years (2001-2004) emphasized, and will continue to emphasize, minor tidal tributaries to the Chesapeake Bay, the Atlantic Ocean, and to Pamlico/Albemarle Sound by sampling at 50 sites annually. Virginia's participation in the interstate Chesapeake Bay Program already provides adequate probabilistic monitoring for the characterizations of the Chesapeake Bay mainstem and its major tidal tributaries (e.g., lower Potomac, James, York, and Rappahannock Rivers). The "weighting" of the current sampling design guarantees that each year approximately 70% of the sites (~35 stations) are selected in the Chesapeake Bay drainage and approximately 30% (~15 sites) are selected in coastal drainages. This assures that approximately 90 sites will be available to characterize the coastal estuary resource class by the end of each six-year period.

Core and Supplemental Water Quality Indicators

From 2001 through 2006, with the resources provided by EPA NCA/Coastal 2000 Grants, estuarine probabilistic stations were sampled for the complete suite of parameters described in the National Coastal Assessment QAPP cited above, as well as additional parameters utilized by the Chesapeake Bay Program. The total suite of water column parameters includes profiles of temperature, pH, DO, salinity and Photosynthetically Active Radiation (PAR), as well as samples for chlorophyll, nutrients and suspended solids measurements at near-surface, mid-depth and near-bottom. In addition, homogenized sediment samples are collected for local (DCLS) analyses of particle size and total organic carbon (TOC), as well as for metals and organic contaminant analyses and toxicity testing at EPA-contracted laboratories. A separate, 0.04 m^2 sediment sample is collected and sieved in the field for later identification of macroinvertebrate benthic infauna species to complete the "Sediment Quality Triad" (SQT) for "weight-of-evidence" ecological

evaluations and assessments. In the past, EPA Grant funds also provided for the contracting of the Fisheries Science Laboratory at the Virginia Institute of Marine Science (VIMS) for fish trawls. These trawls were used to collect fish community-structure data, epibenthic organisms, incidental fish for pathological examinations, and targeted fish species for the analyses of metals and organic contaminants in whole fish tissues. Due to resource limitations, fish sampling is only included when additional funds are available for national surveys. Beginning in the summer of 2003, DEQ started supplementing the NCA core indicators with additional sampling for bacteria (fecal coliform, *E. coli*, and enterococci) and when resources permitted for dissolved and total trace metals.

Sample handling and shipping varies with the type of sample and its final destination for analysis. All samples are collected from boats anchored at the monitoring sites and are appropriately labeled and stored on wet ice at 4° C during transport to the responsible DEQ Regional Office. Samples to be analyzed at the Virginia State laboratory (DCLS) are maintained on ice and shipped daily to Richmond by overnight courier service. Such samples are received and processed within 24 hours of collection. Analyses are completed within the holding time specified in the pertinent QAPPs and EPA analytical method descriptions, after which the resultant data is entered into the DCLS LIMS system. Analytical results are subsequently transmitted to and permanently stored in the DEQ CEDS 2000 database on a daily basis. Turnaround time from sample arrival at DCLS to receipt of analytical data varies from 48 hours to 21 days, depending upon sample type.

Sediment samples that are analyzed chemically and toxicologically by other contracted laboratories are held under refrigeration at DEQ Regional Offices and are shipped to Richmond by courier on a weekly basis. Sediment toxicity samples are united and shipped weekly via overnight air to the contracted laboratory. Sediment chemistry samples are frozen and accumulated prior to shipping to the contracted laboratory. Typically, the sediment chemistry samples are delivered in two batches, one at the midpoint and one at the end of the sampling season. Benthic infauna samples are preserved in (10%) buffered formalin as soon as they are collected and are maintained at DEQ Regional Offices until the end of the field season (late September). They are then united at the DEQ Central Office and shipped to the Benthic Ecology Laboratory at Old Dominion University (ODU). Sediment chemistry and toxicity results are generally received by the end of the calendar year. The separation, identification and enumeration of benthic taxa require more time, and results from benthic analyses performed at ODU are normally available the following spring.

When included in the program, data related to fish community structure, epibenthic invertebrates, and habitat collected by VIMS trawl sampling are immediately entered into their onboard SAS database during the process of collection. Target fish species selected for chemical tissue analyses are individually labeled and wrapped and maintained on ice during transport to the laboratory. Once there, they are frozen and maintained until the end of the field season (October). They are shipped overnight, on dry ice, to EPA/GED for storage and later transshipment. Fish pathology specimens are maintained in Dietrich's solution until the end of the field season and are subsequently shipped to EPA/GED. Fish community, epibenthic macroinvertebrate and habitat data are united into a final report which VIMS sends to DEQ soon after the end of the field season in October or early November. Turnaround time for fish tissue chemical data and fish pathology data from EPA-contracted laboratories is currently at least two years.

Frequency/Duration

As is typical of probabilistic survey programs, monitoring sites are sampled only once and new sites are randomly selected each year. Under the conditions defined by the NCA QAPP, sampling occurs during the summer months from 1 July through 30 September. This period also coincides with the sampling "window" defined for the use of the Chesapeake Bay Program's "Benthic Index of Biological Integrity" (B-IBI), which is utilized to evaluate the ecological health of the benthic community.

DEQ's Estuarine Probabilistic Monitoring Program was proposed and developed as a major component of the agency's Ambient Water Quality Monitoring Program and is fully implemented at this time. The resources formerly provided by the initial EPA Coastal 2000 Grant facilitated the implementation of the program in 2000 and terminated at the end of September 2004. A transitional National Coastal Assessment Grant provided funding at a reduced level during the 2005-2006 interim. Beginning in 2007, DEQ has continued the Estuarine ProbMon Program with a slightly reduced suite of parameters using supplemental probabilistic

monitoring funds from federal §106 grants, complimented by Chesapeake Bay and general fund resources.

Quality Assurance Measures

DEQ's field and laboratory activities adhere to QA/QC protocols specified in the National Coastal Assessment Field Operations Manual (EPA 620/R-01/003) and the National Coastal Assessment Quality Assurance Project Plan 2001-2004 (EPA/620/R-01/002), except where specific variations have been authorized by the Regional NCA QA Officer. Authorized departures include the use of submerged pumps and hoses for the collection of subsurface water samples and vacuum field-filtration of nutrient and chlorophyll samples. Both of these procedures are specifically described in the corresponding sections of the contemporary QAPP and SOPs for Virginia's Chesapeake Bay Monitoring Program.

DEQ requires that a minimum of 10% QA samples (field duplicates, field blanks, etc.) be collected at estuarine ProbMon field sites for all locally analyzed parameters. At present, one or two QA sites from among the 50 sites sampled are randomly selected annually for each of the three DEQ Regional Offices.

Data Management

Both samples and the resultant data collected within the Estuarine Probabilistic Monitoring Program follow diverse pathways. Standard procedures for the preservation, transportation and delivery of samples to the Virginia Division of Consolidated Laboratory Services (DCLS) and of sample shipment to other contracted laboratories were described above.

The data flow and data management for water and sediment samples analyzed by DCLS follow pathways and turnaround times as described for the WQM Program in general. Analytical results are quality assured by DCLS and stored in their LIMS database. Results that are complete and certified there are subsequently shipped electronically to the DEQ FTP site for upload into the CEDS 2000 database on a daily basis.

Currently, all data from locally (DCLS) analyzed samples reside in DEQ's CEDS database. All analytical results receive a QA review at DCLS, prior to shipment to the DEQ database, and another QA review by programmed algorithms (data range screenings, etc.) within the CEDS database. Data that are 'flagged' by the automated screening procedures undergo an additional evaluation by DEQ's QA Officer. Whatever questions arise concerning the location, date and time of samples arriving at DCLS, or about the accuracy of DCLS data transmitted to the CEDS database are resolved immediately via e-mail and voice communication between laboratory personnel and monitoring personnel at the DEQ Central or appropriate Regional Office.

Looking to the Future

The National Coastal Assessment Program (Coastal 2000 Initiative) was instituted by EPA's Office of Research and Development (ORD) as an experimental program in 2000. The original five-year program was so successful and so well accepted by the participating coastal states that it was transferred to EPA's Office of Water (OW) as a permanent component of its national water quality monitoring strategy. An interim two-year grant supported the program (at a reduced level) during the 2005-2006 transition. Since then, the program has received partial support via the normal § 106 federal grant process.

Beginning in the summer of 2005, portions of the national design were coordinated with and integrated into the Chesapeake Bay Program's (CBP) probabilistic benthic monitoring program. Probabilistically-collected sediment-related parameters (sediment chemistry, sediment toxicity and benthic community structure – the 'Sediment Quality Triad' or SQT) from the minor tidal tributaries will supplement CBP efforts in the major tidal tributaries and mainstem of Chesapeake Bay. Use of the SQT facilitates the characterization and aquatic life use assessment of these minor tidal tributaries, where sample sizes are generally insufficient to apply the formal statistical assessment method utilized for the Benthic Index of Biological Integrity (B-IBI) in larger Chesapeake Bay assessment units (segments).

EPA carries out national probabilistic surveys on various aquatic resource classes on a five-year rotational

basis. The last National Coastal Survey was performed in 2010. The most up-to-date NCA data can be found here: http://www.epa.gov/emap/nca/html/data/index.html.

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CHAPTER 3.3 ESTUARINE BENTHIC MACROINVERTEBRATE MONITORING PROGRAM

Benthic organisms are important secondary producers, providing key linkages between primary producers (phytoplankton) and higher trophic levels (crabs, bottom feeding fish and water birds). Benthic invertebrates are among the most important components of estuarine ecosystems and may represent the largest standing stock of organic carbon in the Chesapeake Bay. Some benthic organisms, such as hard clams and soft-shell clams, are economically important. Others, such as polychaete worms and shrimp-like crustaceans, contribute significantly to the diets of economically important blue crabs and bottom-feeding juvenile and adult fish such as spot, croaker, striped bass, and white perch.

The objectives of the Chesapeake Bay Estuarine Benthic Macroinvertebrate Monitoring Program are:

1. To characterize the health of regional areas of the lower Chesapeake Bay as indicated by the structure of the benthic community.

2. To conduct trend analyses on long-term data, at fixed- point stations, to relate temporal trends in the benthic communities to changes in water and/or sediment quality. The trend analyses will be updated annually as new data are available.

3. To warn of environmental degradation by producing an historical data base that will allow annual evaluations of biotic impacts by comparing trends in status within probability-based strata and trends at fixed-point stations to changes in water and/or sediment quality.

21 fixed-point stations are sampled one time per year (September) and there is one probabilistic summer sampling per year.

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CHAPTER 3.4 BEACH MONITORING PROGRAM - VIRGINIA DEPARTMENT OF HEALTH

Introduction

The "Beaches Environmental Assessment and Coastal Health (BEACH) Act" of 2000 amended Section 303 of the Federal Water Pollution Control Act (33 U.S.C. 1313) by specifying monitoring and reporting requirements for pathogens and pathogen indicators in coastal recreational waters for the purpose of protecting public health and welfare. One requirement of this Act was the publication of a list of "discrete coastal recreation waters adjacent to beaches or similar points of access that are used by the public." The resultant "National List of Beaches" [http://water.epa.gov/type/oceb/beaches/list_index.cfm] was originally published by the U.S. EPA in 2004, and most recently in 2010. A current list of the beaches monitored in Virginia is available and cited below. The requirements of the BEACH Act apply only to states and tribes that have coastal recreational waters, defined by the Clean Water Act (Section 303(c) as the "…Great Lakes and marine and estuarine coastal waters that are designated by a state or tribe for use for swimming, bathing, surfing, or similar water contact activities…"

Virginia's BEACH Monitoring Program [http://www.vdh.virginia.gov/environmental-epidemiology/beach-monitoring/] was initiated in 2002 by the Division of Environmental Epidemiology (DEE) of the Virginia Department of Health (VDH). In addition to the immediate reporting and public notification requirements relative to swimming advisories, results obtained by the VDH are communicated to DEQ for inclusion in the agency's biennial 305(b)/303(d) Water Quality Assessment Reports. The specific 305(b) assessment methodologies for using (1) swimming advisories and/or (2) the enterococci concentration data from the BEACH Monitoring Program were discussed by VDH and DEQ. The final decision on appropriate methodologies is incorporated into the 2016 Assessment Guidance Manual for the Integrated 305(b)/303(d) Report.

The BEACH Monitoring Program in Virginia is designed to provide seasonal monitoring of coastal and Chesapeake Bay beaches within the Commonwealth. A public bathing beach is defined by the Code of Virginia (1980, c.428, section 10-217, 10.1-705) as "a sandy beach located on a tidal shoreline suitable for bathing in a county, city or town and open to indefinite public use." Based on these characteristics, 47 public beaches were identified prior to December of 2003, by which time their locations were communicated to EPA for the National List of Beaches. As of July 2004, these beaches were being monitored by the BEACH Program VDH Beach Monitoring. Currently, 46 beaches in Virginia are monitored by the BEACH Program. The rationale for identifying and enumerating individual beaches is discussed below, in the section on 'siting.' The localities participating in this program include the cities of Virginia Beach, Norfolk, Hampton, and Newport News, as well as the counties of Mathews, York, King George, Gloucester, Northampton, and Accomack.

Purpose

The purpose of the program is to monitor fecal contamination of coastal beaches in an effort to reduce the risk of swimmers contracting disease or infection. Weekly monitoring is conducted to determine if levels of fecal indicator bacteria (enterococci) meet Virginia's Water Quality Standards as described in Section 9 VAC 25-260 of the Virginia Administrative Code. The Standards are provisions of state law which consist of designated uses for the waters of the Commonwealth to protect public health or welfare, enhance the quality of water, and serve the purposes of the State Water Control Law and the Federal Clean Water Act.

Monitoring Design and Station Siting

The number of sampling stations at a beach is based on EPA guidance available at the following website: http://www.epa.gov/waterscience/beaches/grants/guidance/index.html. The rationale for siting and enumerating individual beaches is based on beach size and whether (1) it is small and is treated as a single entity for swimming advisories, or (2) if it is more extensive and individual sections may be placed

under advisory independently. In summary, the current list of responsible health districts and beaches includes:

Rappahannock Health District (Fairview Beach) - 1 beach
Peninsula Health District (Newport News, York) - 5 beaches
Hampton City Department of Health - 3 beaches
Norfolk Department of Public Health - 10 beaches
Virginia Beach - 22 beaches
Three Rivers Health District (Gloucester, Mathews) - 2 beaches
Eastern Shore Health District (Accomack, Northampton) - 3 beaches

Total = 46 beaches

Samples are taken in the middle of a typical bathing area. If the beach is short, samples are taken at a point corresponding to each lifeguard chair or one sample for every 500 meters of beach. Sample results from several sites at the same beach may be united into a single arithmetic average for comparison with the Water Quality Standard and evaluation for swimming advisories, see below. If the beach is long (more than 5 miles) samples are spread out along the entire beach (e.g., Virginia Beach, which is 24 miles long, has 22 sampling stations spaced at least one mile apart). Locations of sites are identified by coordinates of latitude and longitude and remain uniform from year to year in order to maintain a permanent, long-term database on beach water quality.

The most updated information relative to the BEACH Monitoring Program, including maps of sampling sites, historical results, and swimming advisories, may be found on the VDH BEACH Monitoring website. [http://www.vdh.virginia.gov/environmental-epidemiology/beach-monitoring/]. Beach monitoring and notification results are exported from the Beach Monitoring and Notification (BMAN) database weekly during the season and posted to the website Monitoring And Advisory Data By Year. Data for prior years may also be reviewed on this page.

Frequency

Beaches are sampled for fecal indicator bacteria on a weekly basis from mid-May through September. When the Water Quality Standard at a specific beach is exceeded, or when the results of bacterial analysis are inconclusive, follow-up sampling is repeated as soon as possible.

Sampling

As per EPA guidance, samples are collected 0.3 meters below the surface in water knee-deep water. VDH's 2012 Quality Assurance Project Plan provides general guidelines for sampling procedures. Samples are placed on ice and are delivered to the laboratory for processing within six hours of collection.

Samples are collected on the regular monitoring day, rain or shine, unless conditions are dangerous to sampling staff. If a decision is made not to sample because a violation of the standard is expected (e.g., heavy storm drain overflow), the beach is posted with a swimming advisory. Samples are collected and transported in the same way at all sites. All samples are grab samples, using sterile bottles that are supplied by the laboratory performing analysis.

When continued exceedances of the water quality standard occur at monitoring locations, samples may be collected for microbial source tracking analysis by the Hampton Roads Sanitation District (HRSD). The results of this analysis provide an indication of the source of fecal pollution. Varying sources of fecal pollution have shown to provide different levels of health risk to water users. Also, some sources of fecal pollution can be remediated.

Duration

Beach monitoring sites are considered permanent, fixed sites of the VDH BEACH Monitoring Program. Sampling will continue as long as funding is available. As mentioned above, the sampling is conducted from mid-May through the September swimming season.

Core and Supplemental Water Quality Indicators

The fecal indicator organism used for estuarine and marine beaches are bacteria of the genus Enterococcus. Laboratory analysis of enterococci in beach water samples is conducted using EPA approved methods. Additional measurements of air and water temperature, turbidity, dissolved oxygen, pH and salinity are also taken at beach sites during each visit.

Quality Assurance

VDH's Quality Assurance Project Plan was updated and approved by EPA in November 2012. Sampling methods are based on sections 9060 and 9060B of Standard Methods for the Examination of Water and Wastewater (APHA 2012). Standard procedures for laboratory analyses of water samples for enterococci are produced by the laboratories performing the service and are also included in the Quality Assurance Project Plan.

Annual training is provided for all field personnel and their supervisors. Training consists of sample collection and handling, data management, results interpretation, operation and calibration of equipment, and current program issues, updates, and quality assurance objectives.

Data Management

VDH receives weekly results from laboratories by email, fax, and/or conventional mail. Timely data submission is emphasized so that the VDH BEACH Monitoring website can be updated as soon as results are available. Timely data submission is mostly critical when exceedances of the Water Quality Standard occur and swimming advisories need to be issued. Upon receipt of results, VDH local health district staff enters laboratory results into a VDH database. When results are entered, swimming advisories are posted on VDH's Beach Advisory Map and Twitter (@VDHBeach) for public notification.

Data are periodically sent to EPA, via CDX for STORET, in an XML schema utilizing formats specified in EPA's Beach Monitoring Data User Guide.

Data Analysis/Assessment

Swimming Advisories: VDH compares beach water sample results with Virginia's Water Quality Standard for enterococci. The results from several simultaneously collected samples at the same beach may be united into a single arithmetic average for comparison with the Standard, and for subsequent evaluation for issuing swimming advisories. The Single Sample Maximum for enterococci is 104 colony forming units (cfu)/100ml. Samples above this level are in violation of the Virginia Water Quality Standards. One sample exceedance of the Single Sample Maximum standard is sufficient to issue a swimming advisory.

If there is a violation of the Standard, the beach is posted with a swimming advisory sign and procedures for contacting the locality where the beach is located are followed. A press release is issued to notify the public, and a follow-up water sample is collected and delivered to the lab as soon as possible. Procedures for this process are documented in the VDH's Quality Assurance Project Plan.

305(b)/303(d) Assessment and Reporting: The specific 305(b) assessment methodologies for using (1) swimming advisories and/or (2) the enterococci concentration data from the BEACH Monitoring Program was discussed by VDH and DEQ. As previously stated, the final decision on appropriate methodologies is incorporated into the DEQ Assessment Guidance Manual for the 2016 Integrated 305(b)/303(d) Report.

Reporting

If sample results exceed the Water Quality Standard, the beach is posted with a swimming advisory sign, the public is notified through press releases to local newspapers, and an advisory is posted on the VDH Beach Advisory Map [http://www.vdh.virginia.gov/environmental-epidemiology/beach-monitoring/swimming-advisories-and-monitored-beaches-map/] and on the @VDHBeach Twitter page.

Sample results and public notification data are submitted to EPA annually as required. Data collected by the BEACH Monitoring Program are available to DEQ for use in the agency's biennial Integrated 305(b)/303(d) Report via STORET (EPA database).

Programmatic Evaluation

VDH participates in biweekly conference calls and annual meetings with EPA to review the BEACH Monitoring Program in Virginia. The program is grant funded, and reviews of the yearly proposals, progress reports, and database submissions are mechanisms for programmatic evaluation by EPA. Within VDH, there is routine communication between the Division of Environmental Epidemiology and the participating health districts, and weekly reviews of data from each participating health district are performed by VDH's BEACH Coordinator and/or support staff.

General Support and Infrastructure Planning

The BEACH Monitoring Program is a federally funded program. Yearly budgets are prepared in advance to meet proposal submission deadlines established by EPA. Future changes in methodologies will depend upon EPA recommendations, and expansion of the current program may occur in response to the opening of new public beaches or their identification by local health districts.

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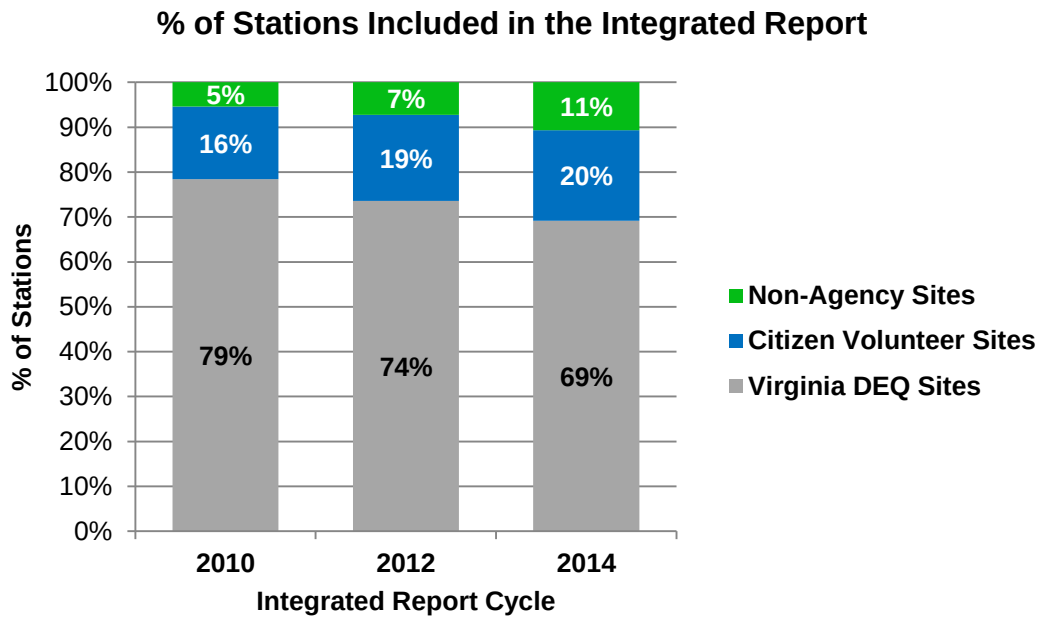
CHAPTER 3.5 CITIZEN AND NON-AGENCY WATER QUALITY MONITORING PROGRAM

Citizen water quality monitoring has been a stewardship activity in Virginia for many years. As both the volume and quality of water monitoring data collected by entities other than the Virginia Department of Environmental Quality (DEQ) has increased, so has the desire by many of these 'non-agency' organizations for DEQ to use submitted data for more than background information in Virginia's water quality assessments. Since 1999, the agency has encouraged citizen water quality monitoring by providing technical and, whenever possible, financial support. In addition to support for citizen monitoring, the agency has been actively attempting to expand our partnerships with an increasing number of other water quality monitoring programs that operate independently of DEQ. It is important to note that while efforts are being made to utilize more non-DEQ monitoring data in assessing the quality of Virginia's surface water resources, this type of data cannot be used as evidence in any enforcement action, per a limitation in Virginia Code (§ 62.1-44.19:11).

Starting with the 2004 water quality assessment report, DEQ began using chemical monitoring data collected by citizen groups and other non-agency sources provided such data met DEQ Quality Assurance and Quality Control (QA/QC) protocols for determination of attainment of Water Quality Standards. This QA/QC process confirms whether citizen organizations and other non-agency data sources are using the same or similar sampling and testing methods that DEQ uses, ensuring that comparable data are used in any applications that include data from these sources.

In August 2004 DEQ created the Water Quality Data Liaison staff position. The purpose of the position is to provide guidance and technical support to citizen monitoring organizations, facilitate communication among citizen and non-agency water monitoring organizations, promote establishing new monitoring groups, and increase the amount and improve the quality of data shared with DEQ.

Since the 2004 water quality assessment report the amount of water quality data submitted to the agency has increased. This can be seen in the table below. The table compares the number of non-DEQ monitored sites to what the agency monitors during the previous three assessment cycles.



Quality Assurance

Currently, DEQ has contacts with over 200 citizen and other monitoring organizations. During this assessment cycle, the agency received data from over 75 organizations. The vast majority of data used in this report was collected under documented protocols, standard operating procedures, and QA/QC methods as approved or recognized by DEQ for water quality assessment. Data collected using unconfirmed protocols or where sampling occurred on waters not publically accessible such as on privately owned lakes were not used in this assessment. However such data may be useful to DEQ, and other agencies, to help prioritize future monitoring and restoration work. Additional information on how submitted data was assessed is available in the 2016 Water Quality Assessment Guidance Manual: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments.aspx

In order to assist citizen water quality monitoring groups with developing their monitoring programs, the agency developed the *Virginia Citizen Water Quality Monitoring Methods Manual*. The manual provides additional guidance on acceptable QA/QC procedures and protocols. A copy of this manual is available on the DEQ website: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/CitizenMonitoring/Guidance.aspx. In addition the agency has developed additional materials for popular methods such as the Coliscan Easygel protocol and example quality assurance project plans.

As outlined in the *Virginia Citizen Water Quality Monitoring Methods Manual*, DEQ has three levels to determine the quality of citizen and other non-agency water monitoring data. These levels increase in rank from Level I to Level III based on increasing levels of DEQ approved QA/QC protocols. Definitions of each level and how groups can achieve each of them are outlined below.

Level I - **Not approved by DEQ for assessment**. There is no Quality Assurance Project Plan (QAPP) or Standard Operational Procedures (SOP) on file. Monitoring and/or laboratory analysis does not follow DEQ sampling methods or quality assurance protocols or monitor for parameters that do not have a Virginia Water Quality Standard (http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityStandards.aspx).

- Data used by DEQ to identify sites that may require DEQ to perform follow-up monitoring.
- Data used for educational or outreach purposes.
- Data can notify DEQ of significant pollution events for rapid agency response.

Level II - **Partially approved by DEQ**. May be using a monitoring method similar to DEQ protocols but not fully approved by DEQ due to difference in sampling or testing methodology. The monitoring group may have a DEQ approved QAPP and/or SOP on file.

- All uses as stated in Level I
- Used for 305(b) assessment to identify possible waters with observed effects or waters that appear to be healthy but will need DEQ monitoring data to confirm status (Category 3C or 3D).

Level III - **Approved by DEQ.** Group follows DEQ testing protocols and quality assurance. Field sampling and laboratory testing protocols are approved by DEQ or DEQ approved accrediting authority. Group possesses a DEQ approved QAPP and SOP with no deviation from DEQ approved standardized methods (EPA methods, Standard Methods, etc.). Finally, the group must provide calibration and quality

control associated information to DEQ when submitting data. This information must meet the specific criteria stated in the QAPP.

- All uses as stated in Level II

- DEQ views this level of data as if DEQ had collected and analyzed the sample. Data that meets Level III criteria will be used in the 305(b) water quality assessment and for 303(d) listing/delisting of impaired waters.

Citizen Monitoring

Citizens of the Commonwealth monitor streams, lakes, and estuaries for a variety of parameters depending upon the goals of their own programs. Common ambient measures include many of the following physical and chemical parameters: water temperature, pH, dissolved oxygen, nutrients (various forms of nitrogen and phosphorus), or suspended solids in the water column. Biological parameters measured by citizen monitors often include benthic macroinvertebrates, *E. coli* bacteria, or chlorophyll *a*. Many of these parameters are routinely monitored by DEQ.

The Virginia Save Our Streams Program of the Virginia Division of the Izaak Walton League of America (VA SOS) took the lead in working with DEQ and the Department of Conservation and Recreation (DCR) to develop a statewide citizen monitoring program. This started with three separate letters of agreement signed by each agency in 1998 and was furthered by a three-way agreement signed in 1999. The latest version of the agreement, signed in November 2015, includes the Alliance for the Chesapeake Bay, Virginia Citizens for Water Quality and the Virginia Water Monitoring Council in addition to the original signatories from 1999.

Citizen monitoring efforts in Virginia received an additional boost in 1999 when the Virginia General Assembly approved a budget amendment to create the Citizen Water Quality Monitoring Grant Program in order to provide general funds, when available, for citizen monitoring activities. Since 1999, the Citizen Monitoring Grant Program has provided funding to over 100 different organizations. The financial support provided by the Commonwealth via this grant program has led to an increase in the quality and quantity of citizen-collected data submitted to DEQ and has proved an effective way for DEQ to encourage citizen volunteer groups to generate DEQ-approved water quality data. The grant requires recipients to submit Quality Assurance Project Plans (QAPP) and to follow DEQ approved procedures. In return, the grant recipient receives a grant award to help cover many of the costs associated with their monitoring programs.

In 2002, the Virginia General Assembly passed legislation that established the Virginia Citizen Water Quality Monitoring Program in the Code of Virginia ((§62.1-44.19:11). This legislation was later amended in 2007 under House Bill 1859 to establish a goal for DEQ to encourage citizen volunteers to monitor 3,000 stream miles by 2010. This goal was met during the 2010 305(b)/303(d) Integrated Report where 3,499 stream and for the 2014 report, 3,642 miles were monitored by volunteers.

For the 2016 assessment report, DEQ received citizen monitoring data from 1,902 sites. None of these sites met Level I requirements for all submitted parameters, 719 sites met Level II, and 916 sites met Level III for at least one water quality parameter. Of these 1,902 Level II and III stations, 128 had either missing sample site coordinates or were located in non-assessable locations such as at permitted wastewater outfalls. This assessment cycle marks the highest ever number of total number of citizen stations sampled and Level III citizen volunteer stations included in a Virginia 305(b)/303(d) Integrated Report.

Summary of Citizen Data Submissions: For the 2016 305(b)/303(d) Integrated Water Quality Assessment Report, the following citizen monitoring organizations submitted water quality data to DEQ:

Alliance for the Chesapeake Bay	Goose Creek Association	Phi Theta Kappa
Blackwater Riverkeeper	Historic Green Springs Inc.	Poquoson Citizens for the Environment
Chesapeake Beach Civic League	Hoffler Creek Wildlife Refuge	Prince William SWCD
Chesterfield WaterTrends	Isle of Wight Ruritan Club	Randolph Macon College
Chickahominy Swamp Rats	James River Association	RappFLOW
Clean Virginia Waterways	John Marshall SWCD	Rippon Middle School
Coast Guard Auxiliary Flotilla 33	Lake Anna Civic Association	Riverine Chapter VMN
Cowpasture River Preservation Association	Lake Gaston Association	Roanoke Valley Trout Unlimited
Cubitt Creek Monitors	Lake Monticello Owners Association	Smith Mountain Lake Association
Dividing Creek Association	Leesville Lake Association	Southeast CARE Coalition
Fairview Beach Residents Association	Lewis Ginter Botanical Gardens	Southern Appalachian Mountain Stewards
Four Creeks Monitors	Loudoun Watershed Watch	Southside SWCD
Fredericksburg Area Monitors for the Environment	McClure Restoration Project	Stream Watch
Friends of Norfolk Environment	Nansemond River Preservation Alliance	Thomas Jefferson SWCD
Friends of the NF Shenandoah River	New River Conservancy	Upper Tennessee River Roundtable
Friends of the Russell Fork	Northern Neck SWCD	Virginia Aquarium and Marine Science Center
Friends of the Shenandoah River	Pebble Creek Property Owners Association	VA Save Our Streams
George Mason High School	Peninsula Chapter Virginia Master Naturalists	

The Alliance for the Chesapeake Bay submitted ambient (chemical and physical) data collected by the following affiliate organizations:

City of Richmond	James River Chapter Virginia Master Naturalists	Reedy Creek Coalition
Friends of the Rappahannock Chemical Monitoring Program	Lynchburg Area Volunteers	Riverine Chapter Virginia Master Naturalists
Green Aquia	Northern Neck Chapter Virginia Master Naturalists	

The Friends of the Shenandoah River submitted ambient (chemical and physical) data collected by the following affiliate organizations:

Augusta River Monitors	Friends of the North Fork Shenandoah River	Opequon Watershed Inc.
Friends of Page Valley	Friends of the Shenandoah River	Warren County Water Monitoring Group

The VA SOS program is the largest citizen and benthic macroinvertebrate monitoring program in Virginia. The VA SOS Modified Rocky Bottom Method protocol determines the benthic community health in higher gradient streams with riffles typical to those found in the western part of Virginia. DEQ and VA SOS consider the data submitted to be Level II because it provides general information on the overall health of

a benthic community.

In response to requests from citizens located in the eastern part of Virginia, VA SOS also developed a protocol for low gradient, freshwater, non-tidal streams. At the time of this report, DEQ has not approved the low gradient freshwater streams for QA Level II or III.

The Virginia Save Our Streams Program of the Virginia Division of the Izaak Walton League of America submitted benthic macroinvertebrate data collected by the following affiliate organizations:

Albemarle County	Friends of the Rockfish Watershed	Pedlar River Institute
Amelia County Landfill	Goose Creek Association	Pound River Watershed Coalition
Blackwater SOS	Grundy High School	Prince William SWCD
Bluestone Watershed Committee	Roanoke Valley Governor's School	Radford University Green Team
Buchanan Citizens Action Group	Headwaters Association	RappFLOW
Buckingham Citizen Action League	Holston River Water Quality Monitors	Reston Association
Clinch Coalition	Hungry Mother State Park	Rivanna Conservation Society
Clinch Valley SWCD	Independence High School	Riverine Chapter of the Virginia Master Naturalists
Cowpasture River Preservation Association	John Marshall SWCD	Roanoke Valley Monitors
Culpeper SWCD	Kittrell Stream Team	Shenandoah Valley SWCD
Dan River Basin Association	Lake Anna Civic Association	Shenandoah University
Douthat State Park	Lord Botetourt High School	Smith Mountain Lake Association
Elliott Creek Watershed Protection Council	Loudoun Watershed Watch	Southwest Virginia Community College
Emory and Henry College	Loudoun Wildlife Conservancy	StreamWatch
Environmental Education Center	Maury River Middle School	Upper James River Roundtable
Environmentally Concerned Citizens Organization	Maury River Monitors	Upper Rappahannock Watershed Stream Monitoring Program
Ferrum College Dream Stream Team	Mountain Stream Stewards	Upper Tennessee Roundtable
Franklin County Master Naturalists	Middle River Monitors	Virginia Run Home Owners Association
Friends of Accotink creek	New River SWCD	Virginia's Explore Park
Friends of the Middle River	North Cross School	Virginia Tech
Friends of the North Fork of the Shenandoah River	Northern Virginia SWCD	Virginia Master Naturalists
Friends of the North River	North Virginia Chapter of Trout Unlimited	Walker Creek Watershed Group
Friends of the Rappahannock River	Oakbrook Stewards of Creation	Warren County Chapter of the Izaak Walton League
Friends of Page Valley	Patrick County Monitors	Washington and Lee University
Friends of the Pedlar River	Patrick County SWCD	

Below is an alphabetical summary of the water quality data contributions by citizen monitoring organizations that DEQ included in this report. Additional information is available in a table at the end of this summary and in Appendix D.

The **Alliance for the Chesapeake Bay** (ACB) coordinates with affiliate organizations primarily in the eastern half of Virginia. ACB volunteers monitor a conventional suite of ambient parameters including dissolved oxygen, temperature, pH, salinity, and water clarity. Trained volunteers monitored at 81 stations and collected 2,123 samples during the six-year data window for this report. Most dissolved

oxygen, pH, and temperature data met DEQ quality assurance criteria to assess water quality conditions. Of the submitted data, 7 sample sites composed of 49 sample events were not included in this assessment report due to having an unknown station location.

The **Blackwater/Nottoway Riverkeeper Program** (BNRP) is an organization that helps educate and promote environmental stewardship in the Blackwater and Nottoway Rivers. As part of this education and stewardship effort, the BNRP conducts routine monitoring for temperature, pH, dissolved oxygen, nutrients, and *E. coli* at 12 stations in several counties in southeastern Virginia. DEQ has received data from 220 sampling events for the 2016 305(b)/303(d) Integrated Report. DEQ will use this data in the assessment to determine if follow-up monitoring is needed.

The **Chesapeake Beach Civic League** conducts routine monitoring for temperature, pH, *E. coli*, and nutrients. The volunteers monitor at 14 locations covering 286 sampling events on 5 privately owned lakes. Because the lakes are not publically accessible, the data is not included in the 305(b)/303(d) assessment report. However, DEQ has been working with the volunteers to provide an informal assessment of water quality conditions at each of the monitored lakes. This information is being used to help educate homeowners on sustainable land use practices.

Chesterfield WaterTrends is a volunteer water monitoring program coordinated by Chesterfield County Department of Environmental Engineering. Chesterfield WaterTrends maintains 57 water monitoring stations in the James River watershed and collects temperature, pH, dissolved oxygen, *E. coli* bacteria, and turbidity data. DEQ has received 1,802 sample results for the 2016 305(b)/303(d) Integrated Report. DEQ will use this data in the assessment to determine if follow-up monitoring is needed.

Chickahominy Swamp Rats is a small organization founded in response to a number of bacteria impaired waters in the Chickahominy River watershed. In 2013, the organization monitored 22 locations to gauge *E. coli* levels using the Coliscan Easygel method. The results were submitted to determine if DEQ follow-up sampling is necessary.

Clean Virginia Waterways, in partnership with Longwood University, collected 788 *E. coli* samples from 21 stations along the Appomattox River as part of the Appomattox River Water Quality Monitoring Program. Upon review of sampling and laboratory procedures, DEQ will directly assess monitored waters using the *E. coli* results.

Coast Guard Auxiliary Flotilla 33, a volunteer branch of the United States Coast Guard, conducts routine monitoring for depth, temperature, pH, dissolved oxygen, and conductivity. The group monitored 7 stations in the Chesapeake Bay during the 2016 305(b)/303(d) Integrated Report time period. DEQ will use this data to assess monitored waters.

The **Cowpasture River Preservation Association** provided data to DEQ from 20 stations during this assessment cycle. The agency determined that submitted dissolved oxygen, pH, temperature and *E. coli data* are suitable to determine if follow up sampling is needed and to gauge TMDL implementation progress. Nutrient and conductivity readings were not assessed due to lack of water quality standards and the type of monitoring equipment used.

The **Cubitt Creek Monitors** collected 70 samples for temperature and *E. coli* at 10 stations in Cubitt Creek. Submitted data will be used to determine the need for additional follow-up monitoring by DEQ.

The **Dividing Creek Association** (DCA) is an active monitoring and stewardship organization located on Dividing Creek near Kilmarnock, Virginia. For the 2016 IR, DCA submitted 1261 samples from 50 stations. By following DEQ recognized protocols, DEQ will utilize temperature, dissolved oxygen, and pH data for assessing the health of Dividing Creek.

Fairview Beach Residents Association collects *E. coli* samples using the Coliscan Easygel method. DEQ received data from 69 stations. The bacteria results will be used to determine additional monitoring locations by DEQ and help with TMDL implementation efforts.

Four Creeks Monitors collects dissolved oxygen, pH, and water temperature data using DEQ approved protocols. *E. coli* samples are collected using the Coliscan Easygel method and are used to determine if follow up sampling is needed and to track TMDL implementation progress. DEQ received data from 16 stations for inclusion in the 2016 IR.

Fredericksburg Area Monitoring for the Environment (FAME) was founded in 2014 by the Tri-County City Soil and Water Conservation District. The volunteers monitor 8 sites for *E. coli* using the Coliscan Easygel method. DEQ will use the FAME results to determine if follow up sampling is required and to track local TMDL implementation progress.

Friends of Norfolk Environment collected Enterococcus samples at 11 stations during 2010. Old Dominion University performed the analysis and the data will be used by DEQ to assess recreation related water quality standards at the monitoring locations.

Friends of the North Fork of the Shenandoah River (FNSR) are an affiliated group with the Friends of Shenandoah River. Along with the routine monitoring done under the larger Friends of Shenandoah River and Virginia Save Our Streams programs, FNSR collected 98 nutrient, *E. coli* and field parameter samples at 8 stations. Of the submitted data, 2 sample sites composed of 16 data points were not included in this assessment report due to being located within VPDES permitted mixing zones.

Friends of Russell Fork monitored 19 stations and collected 324 *E. coli* and temperature readings. The data will help DEQ determine the need for additional monitoring by DEQ in the waterbodies sampled by this group.

The **Friends of the Shenandoah River** (FOSR) monitors ambient water quality for dissolved oxygen, pH, temperature, ammonia, nitrate, and orthophosphate in the Shenandoah River subbasin. From 2009 to 2014, FOSR collected 12,050 data points from 224 stations. Of the submitted data, 79 sample sites composed of 1135 data points were not included in this assessment report due to missing site coordinates or location within VPDES permitted mixing zones. DEQ is assessing FOSR data for ammonia, dissolved oxygen, *E. coli* bacteria, pH, and temperature in sampled waterbodies. The parameter nitrate is only assessed in waters designated for drinking water in this report as nitrate only has a drinking water quality standard.

George Mason High School students collected *E. coli* samples using the Coliscan Easygel method at four stations. From the start of the monitoring in February 2009 to December 2014, the students collected 112 samples. The data will help DEQ in identifying areas for future agency sampling.

The **Goose Creek Association** (GCA) collected 221 water chemistry and *E. coli* samples at 34 stations over the course of this reporting period. GCA volunteers also collected benthic macroinvertebrate data using Virginia Save Our Streams protocols and submitted results to DEQ. DEQ will use the dissolved oxygen, pH and *E. coli* data to determine if follow-up monitoring is needed. Temperature data will be assessed to indicate if the sampling stations are showing water quality attainment or impairment.

The **Historic Green Springs, Inc.** conducted monitoring in the York River Basin for temperature, pH, nutrients, and total suspended solids. Trained volunteers monitored 7 stations in this basin during the data window for this assessment. Temperature and dissolved oxygen data meeting QA/QC requirements were used to assess water quality. Total suspended solids, nutrient, and pH data was used to determine the need for follow-up monitoring.

Hoffler Creek Wildlife Foundation volunteers collected 72 dissolved oxygen, pH, and temperature samples at one site during 2009 to 2012. Data is being used to determine the need for future follow up sampling by DEQ.

The **Isle of Wight Ruritan Club** has been conducting water quality sampling at three stations. From February 2009 to December 2014, volunteers monitored on 169 occasions at 13 stations for temperature and dissolved oxygen to assess water quality. The additional parameters monitoring including pH and *E.*

coli bacteria will be used by the agency to identity need to do follow up monitoring.

James River Association (JRA) established the James River Watch program in 2013. JRA volunteers collect weekly *E. coli* samples using the Coliscan Easygel method between Labor Day and Memorial Day to gauge recreational impacts at locations not frequently monitored by other organizations. In addition volunteers collect temperature and turbidity readings while sampling. JRA volunteers sampled at 10 locations collecting a total of 141 data points. Temperature data will be used by DEQ to assess the monitored waters, and *E. coli* results will be used to determine if follow-up sampling is required. Turbidity is not assessed due to a lack of a Virginia water quality standard.

The **John Marshall Soil and Water Conservation District** (JMSWCD) conducted 1,762 sampling events at 35 sites in Fauquier County. JMSWCD volunteers collected samples to test for *E. coli* using Coliscan and sampled for temperature, dissolved oxygen, pH, and nutrients. The purpose of monitoring was to track TMDL implementation efforts and identify sites that would benefit from BMP installation. DEQ used the Coliscan results to determine the need for follow-up monitoring.

The **Lake Anna Civic Association** collected samples on Lake Anna and its tributaries using a conventional suite of ambient parameters including dissolved oxygen, temperature, pH, *E. coli*, total phosphorus, and water clarity. Trained volunteers monitored 45 stations in this basin during the data window for this report. Of the submitted data, data from 5 stations were not assessed as they are located in VPDES permitted mixing zones. DEQ is assessing the remaining data for chlorophyll a, dissolved oxygen, pH, temperature, total phosphorous, and *E. coli* for this report.

The **Lake Gaston Association** began *E. coli* sampling using the Coliscan Easygel method in 2013. Volunteers monitored 2 locations on the Virginia side of Lake Gaston. Results will be used to determine if follow-up sampling is necessary.

The **Lake Monticello Owners Association** monitors 15 stations around Lake Monticello, a privately owned lake in the Rivanna subbasin. From May 2009 to October 2014, the volunteers collected pH, dissolved oxygen, temperature, conductivity, nutrients, *E. coli* bacteria, and water clarity data during 68 sample events. Because the monitoring is on a lake that is not considered a publicly accessible waterbody, DEQ did not assess the data as part of this 305(b)/303(d) report. However, DEQ has conducted a review of the results and is working with the association to provide guidance to modify their monitoring program and provide an informal water quality assessment of lake conditions.

The **Leesville Lake Association** (LLA) volunteers are committed to monitor and promote the environmental needs of Leesville Lake located just downstream of Smith Mountain Lake. LLA volunteers, in partnership with Liberty University, have monitored 11 stations. DEQ will assess the temperature, dissolved oxygen, *E. coli*, and pH data. In addition, DEQ will use provided *E. coli* data via the Coliscan Easygel method to determine if follow-up bacteria monitoring is necessary.

Lewis Ginter Botanical Garden established a water monitoring program in 2013 to gauge water quality as it enters and leaves the property. Monitors sampled for dissolved oxygen, temperature, and pH using electronic probes and met DEQ protocols for direct assessment. The volunteers and staff also monitored for *E. coli* using Coliscan Easygel and that data will be used to determine if follow-up sampling is required by DEQ. Finally volunteers sampled for nitrate and orthophosphate using a Hach spectrophotometer. That data was not assessed because there is no existing water quality standard. 5 sites that were sampled 80 times were not assessed because the sampling locations were in privately owned ponds.

Loudoun Watershed Watch collects *E. coli* samples using the Coliscan Easygel method and benthic macroinvertebrate results using the Virginia Save Our Stream method in the Potomac watershed. DEQ received data from 13 stations. Data will be used to determine additional monitoring locations by DEQ and help with TMDL implementation efforts.

The **McClure River Restoration Project** (MRRP) is conducting an intensive *E. coli* monitoring program in the McClure River watershed. DEQ has received data from 24 stations during the assessment cycle.

Based on reviewing sampling and laboratory protocols, DEQ will use the data to assess water quality.

Nansemond River Preservation Alliance conducts routine monitoring for temperature, dissolved oxygen, salinity, water clarity, and *E. coli* at 9 stations in the James River. DEQ has received data from 244 sampling events and will use the results to assess water quality for temperature and dissolved oxygen. Water clarity and salinity will not be assessed due to a lack of an associated water quality standard.

The **National Committee for the New River** (NCNR) began monitoring at 35 locations in the New River watershed in May of 2008. Volunteers sampled for temperature, dissolved oxygen, pH, *E. coli* bacteria, and water clarity. DEQ will use the temperature, and dissolved oxygen to assess water quality at these locations. The *E. coli* and pH results will be used to determine if follow-up monitoring is necessary due to the volunteers using the Coliscan Easygel method and field pH test kits.

The **Northern Neck Soil and Water Conservation District** uses Coliscan Easygel to detect *E. coli* at several waterbodies that have a bacteria TMDL to help identify potential sources. Monitoring began in December 2012 with 4 samples collected at 4 locations.

The **Pebble Creek Property Owners Association** collected temperature and *E. coli* samples at 4 stations in the James River. DEQ received 26 data points and will use the information to determine if follow-up monitoring is needed.

The **Peninsula Chapter Virginia Master Naturalists** monitored at 4 locations 51 times during the assessment cycle. Volunteers sampled for *E. coli* using Coliscan Easygel, water temperature, salinity and water clarity. Temperature data met DEQ quality assurance standards to be used to assess monitored waters. *E. coli* will be used to determine if follow-up sampling is required. Salinity and water clarity data were not assessed due to a lack of water quality standards for Virginia waters.

The **Phi Theta Kappa Chapter of the Blue Ridge Community College** collected pH, *E. coli*, and temperature data from two stations in 2010. Results from the 24 sample events will be used to determine the need for additional agency monitoring.

Poquoson Citizens for the Environment (PCE) has been conducting temperature, pH, and *E. coli* sampling at 26 stations since January 2009. This sampling program sampled 346 times and submitted results to DEQ. Based on the protocols used by PCE, DEQ will use the pH and temperature data to assess water quality. The *E. coli* data was collected using the Coliscan Easygel method and will therefore be used to determine if follow up monitoring is necessary.

The **Prince William Soil and Water Conservation District** collected 251 *E. coli* samples at 17 locations using the Coliscan Easygel method. The data is being used by DEQ to determine if follow-up monitoring is necessary.

Randolph Macon College located in Ashland, Virginia, has used Coliscan test kits to monitor nearby Mechumps Run. Students collected 41 *E. coli* samples at 10 sites in an effort to assist DEQ in finding areas of high *E. coli* concentrations and to track TMDL implementation efforts. Based on training and technical assistance provided by DEQ, the agency is using the data to determine if follow-up monitoring is needed.

The **Rappahannock Friends and Lovers of Our Watershed** (RappFLOW) performed 24 sample events at 12 stations and collected data for temperature and *E. coli* bacteria from April to June 2009. Upon review of calibration logs and other quality assurance materials, DEQ used the data in this assessment to determine if follow-up monitoring is needed.

Rippon Middle School collected *E. coli* samples using the Coliscan Easygel method in the Potomac/Shenandoah River. DEQ received data from 6 stations. Data will be used to determine additional monitoring locations by DEQ and help with TMDL implementation efforts.

The **Riverine Chapter of the Virginia Master Naturalists** began monitoring in March 2009. Volunteers collected 104 samples for dissolved oxygen, *E. coli*, pH, and temperature at six stations. Submitted data will be used by DEQ to determine the need for future agency sampling.

Roanoke Valley Trout Unlimited collects temperature and *E. coli* samples using the Coliscan Easygel method in the Roanoke River. DEQ received data from 10 stations. Temperature data will be used for assessment. The *E. coli* results will be used to determine the need for additional agency sampling.

The **Smith Mountain Lake Association** (SMLA) and Ferrum College have partnered for many years to monitor water quality in and around Smith Mountain Lake. Currently the organization has Level III status for temperature, dissolved oxygen, pH, *E. coli* bacteria, total phosphorous and chlorophyll a. The DEQ received 2151 data points from 162 sites. DEQ will use the submitted data to assess water quality conditions at the lake.

The **Southeast CARE Coalition** is comprised of volunteers living in Newport News. Monitors collect *E. coli* using the Coliscan method along with temperature, salinity, and water clarity. Volunteers sampled at 15 locations 117 times during this assessment cycle. DEQ will use water temperature and *E. coli* data to determine if follow-up sampling is necessary. Salinity and water clarity data were not assessed because Virginia does not have a water quality standard for these parameters.

The **Southern Appalachian Mountain Stewards** collected 305 samples at 227 locations in southwestern Virginia. Volunteers monitored for water temperature, conductivity, selenium (at 5 locations) in order to identify potential impacts of nearby coal mining operations. While the data for temperature and selenium meet Level III quality assurance criteria, the data have limited use to assess monitored waters due to only receiving one or two data points at each location.

Southside Soil and Water Conservation District located in Charlotte and Lunenburg Counties collected 762 *E. coli* samples at 21 locations using the Coliscan Easygel method. Data provided to DEQ was used to determine if follow-up monitoring is necessary under the Category 3C/3D portion of the assessment report.

StreamWatch submitted benthic macroinvertebrate data. Volunteers collected 508 samples at 121 stations located around the Rivanna subbasin. Based on a validation study performed between the StreamWatch enhanced benthic monitoring program and DEQ benthic metrics, it was determined that StreamWatch data is of equal quality to DEQ benthic monitoring protocol. DEQ will use the submitted benthic data to assess water quality.

Thomas Jefferson Soil and Water Conservation District volunteers collected 395 *E. coli* samples at 26 sites using the Coliscan Easygel method. Data provided to DEQ was used to determine if follow up monitoring is necessary under the Category 3C/3D portion of the assessment report.

The **Upper Tennessee River Roundtable** (UTRR), collected *E. coli* samples using Coliscan at several creeks located around Wise, Virginia. This project was supported through DEQ in an effort to determine potential sources and areas for restoration efforts as part of the Three Creeks TMDL IP. Volunteers collected 60 samples at four stations. Based on the training and technical assistance provided by DEQ, the agency is incorporating the data into this report to determine if follow-up monitoring is needed.

The **Virginia Aquarium and Marine Science Center** volunteers sampled at seven locations 347 times during this assessment report. Monitors sampled for common field parameters including dissolved oxygen, pH, and temperature. In addition the on-site laboratory provided analysis for *E. coli* and the inorganic forms of nitrogen. The field parameters meet DEQ criteria to directly assess monitored waters. The *E. coli* results may also be assessed but only for waters where the Virginia water quality standard specifies the parameter is appropriate for assessment.

The **Virginia Save Our Streams Program** (VA SOS) is a part of the Virginia Division of the Izaak Walton

League of America who coordinates with a number of affiliate organizations across Virginia. Trained VA SOS volunteers collecting benthic macroinvertebrate samples using the VA SOS Modified Rocky Bottom Method and submitted data from 297 stations. DEQ will use SOS data to determine if follow-up monitoring is needed.

Table 3.5-1 Citizen Monitoring Data Considered for Assessment Level II and III

Citizen Monitoring Organization	Atlantic Coast		Chesapeake Bay		Chowan		James		New		Potomac/ Shenandoah		Rappahannock		Roanoke		Tennessee		Yadkin		York		Unknown VPDES		Total	
	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event
Alliance for the Chesapeake Bay			6	251			27	439			19	256	16	1069							6	59	7	49	81	2123
Blackwater Riverkeeper					12	220																			12	220
Chesapeake Beach Civic League																							14	286	14	286
Chesterfield WaterTrends							57	1802																	57	1802
Chickahominy Swamp Rats							22	145																	22	145
Clean Virginia Waterways							21	788																	21	788
Coast Guard Auxiliary Flotilla 33			7	14																					7	14
Cowpasture River Association							20	505																	20	505
Cubitt Creek Monitors											10	70													10	70
Dividing Creek Association			50	1261																					50	1261
Fairview Beach Residents Association											69	171													69	171
Four Creeks Monitors			16	258																					16	258
Fredericksburg Area Monitors for the Environment													8	30											8	30
Friends of Norfolk Environment							11	132																	11	132
Friends of the NF Shenandoah River											6	82											2	16	8	98
Friends of the Russell Fork																	19	324							19	324
Friends of the Shenandoah River											145	10915											79	1135	224	12050
George Mason High School											4	112													4	112
Goose Creek Association											34	221													34	221
Historic Green Springs Inc.																					7	44			7	44
Hoffler Creek Wildlife Refuge							1	72																	1	72
Isle of Wight Ruritan Club					5	59	8	110																	13	169
James River Association							10	141																	10	141
John Marshall SWCD													35	1762											35	1762
Lake Anna Civic Association																					45	743	5	120	50	863
Lake Gaston Association															2	8									2	8
Lake Monticello Owners Association																							15	68	15	68
Leesville Lake Association															11	366									11	366
Lewis Ginter Botanical Gardens							4	79															5	80	9	159
Loudoun Watershed Watch											13	93													13	93
McClure Restoration Project																	24	640							24	640

Citizen Monitoring Organization	Atlantic Coast		Chesapeake Bay		Chowan		James		New		Potomac/ Shenandoah		Rappahannock		Roanoke		Tennessee		Yadkin		York		Unknown VPDES		Total	
	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event
Nansemond River Preservation Alliance							9	244																	9	244
New River Conservancy									35	416															35	416
Northern Neck SWCD													4	4											4	4
Pebble Creek Property Owners Association							4	26																	4	26
Peninsula Chapter Virginia Master Naturalists							4	51																	4	51
Phi Theta Kappa											2	24													2	24
Poquoson Citizens for the Environment			26	346																					26	346
Prince William SWCD											17	251													17	251
Randolph Macon College																					10	41			10	41
RappFLOW													12	24											12	24
Rippon Middle School											6	21													6	21
Riverine Chapter VMN							6	104																	6	104
Roanoke Valley Trout Unlimited															10	30									10	30
Smith Mountain Lake Association															162	2151									162	2151
Southeast CARE Coalition			1	8			14	109																	15	117
Southern Appalachian Mountain Stewards																	226	291					1	14	227	305
Southside SWCD															21	762									21	762
StreamWatch							120	507					1	1											121	508
Thomas Jefferson SWCD							26	395																	26	395
Upper Tennessee Roundtable																	4	60							4	60
VA Aquarium	7	347																							7	347
VA Save Our Streams							37	141	4	10	159	888	17	80	77	504	3	14							297	1637
Grand Total Stations / Samples	7	347	106	2138	17	279	401	5790	39	426	484	13104	93	2970	283	3821	276	1329	0	0	68	887	128	1768	1902	32859

Other Non-Agency Water Quality Monitoring:

By broadening the scope of our data solicitation beyond citizen monitoring, DEQ is receiving water quality data from an expanding pool of government, private industry, and other non-citizen volunteer based monitoring organizations. The guidelines for accepting these datasets are the same as with citizen monitoring data. Each organization must show documented sample collection and testing protocols and pass routine inspections and laboratory audits by the agency. Depending on the degree of compliance with the vetting of the sampling methods and test procedures, the data can either be used directly for assessment or provide locations to establish future DEQ sampling sites.

Prior to the 2004 assessment report, DEQ received water quality monitoring data from the United States Geological Survey (USGS). The data collected by the USGS follows strict adherence to EPA sampling methods and analytical procedures that are fully approved by DEQ. In addition, the United States Forest Service (USFS) routinely submits benthic macroinvertebrate data. The benthic data collected by the USFS follow standard benthic macroinvertebrate monitoring protocols that are similar to DEQ benthic monitoring methods.

Since the 2004 report, additional agencies have begun submitting water quality data for assessment. Most of the data submitted for the 2016 assessment report comes from various federal, state, and local government agencies and select academic institutions.

For the 2016 assessment report, DEQ received data from 19 non-agency organizations which monitored at 1,055 sample sites. Zero sites met Level I requirements, 31 met Level II and 1,024 met Level III for at least one water quality parameter. Of these 1,055 Level II and III stations, 4 sites had either missing sample site coordinates or were located near non representative locations such as at permitted wastewater outfalls. This is a new record in the number of non-agency sample sites included in a Virginia 305(b)/303(d) integrated report.

The following private and government organizations submitted water quality data to DEQ:

Appalachian Electric Power	Maryland Department of the Environment	Pocahontas State Park
Appalachian Technical Services	National Park Service: Assateague Island National Seashore	Tennessee Department of Environment and Conservation
City of Norfolk Department of Utilities	National Park Service: Mid-Atlantic Monitoring Network	Tennessee Valley Authority
City of Suffolk	National Park Service: Northeast Coastal & Barrier Network	United States Forestry Service
Cumberland Resources Corporation	North Carolina Department of Natural Resources	United States Geological Survey
Department of Conservation and Recreation Beach Program	Occoquan Watershed Monitoring Laboratory	Virginia Department of Health Beach Program
James City County Stormwater Division	Page County	Virginia Trout Stream Sensitivity Survey

Below is an alphabetical summary of the water quality data from non-agency organizations that DEQ included in this report. Additional information is available in a table at the end of this summary and in Appendix D.

Appalachian Electric Power monitored ten stations in the Smith Mountain Lake as part of a study on levels of dissolved copper present in the water column resulting from algae control measures. AEP staff collected 20 samples at 10 locations from January 2009 to September 2009. DEQ will use this data to determine if copper levels are within acceptable aquatic life use criteria.

Appalachian Technical Services (ATS) is a private consultant firm hired to conduct benthic macroinvertebrate sampling in streams that receive discharges from coal mining operations. In 2011 ATS staff sampled at 155 stations in the Big Sandy and Tennessee Rivers collecting benthic macroinvertebrate samples on 266 occasions. Upon review of sample collection and identification protocols, DEQ will use the submitted data to assess aquatic life use at the sampled locations.

The **City of Norfolk Department of Utilities** monitored 18 stations in public drinking water reservoirs for temperature, pH, dissolved oxygen, conductivity and nutrients. DEQ received 841 sample events worth of water quality data and will assess for temperature, pH, dissolved oxygen, and nutrients.

The **City of Suffolk** monitored 18 stations along the lower Nansemond River for temperature, pH, *E. coli, Enterococcus,* TSS, salinity, and nutrients. DEQ received 672 sample events worth of data and will assess water quality conditions for temperature, pH, bacteria, and nutrients.

The **Cumberland Resources Corporation** collected 44 samples at 2 locations in the Big Sandy River as part of a study of impacts of coal mine discharges to local streams. These samples were to test levels of chloride and will be assessed to determine impacts to aquatic life use.

The **Department of Conservation and Recreation (DCR)** performs monthly fecal bacteria sampling at beaches located in state parks. During this assessment cycle, DCR staff collected 378 *E. coli* samples at 15 locations in the York, James, Roanoke, New and Tennessee Rivers. DEQ will assess the data to determine if bacteria levels impact recreational water quality standards.

The **James City County Stormwater Division** collected *E. coli* samples using the Coliscan Easygel method. From April 2009 to March 2010, county staff collected 140 samples at 12 locations to identify areas of high *E. coli* populations. The results were submitted to DEQ to help with TMDL IP underway in the area to identify locations that could benefit from the installation of BMP's. DEQ included submitted data in this report to determine if follow-up monitoring is necessary.

The **Maryland Department of the Environment** collected and tested 29 Enterococcus samples at one location in partnership with the National Park Service Assateague Island National Seashore. DEQ will use the data to assess recreational use conditions at the site.

The **North Carolina Department of Natural Resources** conducted monitoring at two locations at 35 occasions to monitor dissolved oxygen, pH, temperature, conductivity, fecal coliform bacteria, chlorophyll a, and nutrients. DEQ will assess temperature, dissolved oxygen, and pH. Fecal coliform, conductivity, chlorophyll a, and nutrients will not be assessed due to Virginia not having quality standards for these parameters in freshwater riverine systems.

The **National Park Service Assateague Island National Seashore** participates in a multistate monitoring program in waters surrounding Assateague Island on Virginia's Eastern Shore. Park staff collected 88 samples at 7 sites located in Virginia to test for nutrient levels, algae concentration, and field parameters. DEQ will use the nutrient and field parameter data to assess water quality conditions.

The **National Park Service Mid-Atlantic Monitoring Network** is a regional program linking the various National Parks in order to conduct environmental sampling using standardized methodologies. In Virginia, the Appomattox Courthouse National Historical Park, Booker T. Washington National Monument, Fredericksburg and Spotsylvania National Military Park, Petersburg National Battlefield Park, and Richmond National Battlefield Park have participated in this program. From June 2009 to December 2014, the parks monitored 60 stations composed of 2,138 sample events. The parks sampled for dissolved oxygen, pH, temperature, and conductivity. After reviewing the protocols, DEQ will assess water quality conditions for dissolved oxygen, pH, and temperature.

The **National Park Service Northeast Coastal & Barrier Network** monitored the Potomac, James and York Rivers for temperature, dissolved oxygen, conductivity, salinity, chlorophyll a, and water clarity. DEQ received 164 samples at 84 sites. After reviewing methodologies, DEQ will assess water quality using

temperature and dissolved oxygen. Chlorophyll a and water clarity readings are not used in assessment due to the lack of numerical water quality standards in the sampled waterbodies.

The **Occoquan Watershed Monitoring Laboratory** monitors field parameters and total phosphorous at 15 sites along the Occoquan Reservoir. Trained field and laboratory staff conducted 1,640 sample events during the six year assessment window. Based on review of field and laboratory protocols, DEQ will include the results to assess water quality at the reservoir.

Page County Department of Environmental Services conducted an intensive *E. coli* monitoring program in the Hawksbill Run watershed using Coliscan Easygel. This project was supported through DEQ to determine potential bacteria sources and areas to establish restoration projects as part of the Hawksbill Run TMDL IP. Page County staff sampled at 19 stations in Hawksbill Run collecting 181samples from January 2009 through February 2010. DEQ included submitted data in this report to determine if follow-up monitoring is needed.

The **Pocahontas State Park** staff monitored a site at Bear Creek and Twin Lakes State Parks for dissolved oxygen, temperature, pH, total phosphorous, and water clarity. DEQ assessed the submitted 83 samples worth of data to determine if follow up sampling by DEQ is needed.

The **Tennessee Department of Environment and Conservation (TDEC) Division of Water Resources** collected two samples at one location in southeastern Virginia. The TDEC staff collected temperature, pH, dissolved oxygen, and *E. coli.* The data will be included in assessment.

The **Tennessee Valley Authority** (TVA) conducted one site worth of monitoring in Virginia. The monitoring consisted of collecting 14 samples for *E. coli,* temperature, dissolved oxygen, pH, and nutrients at three sites. DEQ will use the nutrient and *E. coli* results to assess water quality. Dissolved Oxygen, pH, and temperature will be used to determine the need for follow up sampling by DEQ due to questions on the frequency and procedures used to calibrate TVA field equipment.

The **United States Forest Service** (USFS) conducts an intensive benthic macroinvertebrate study in and around the national forests in Virginia. The USFS monitored at 82 stations and collected 168 benthic macroinvertebrate samples from March 2009 to April 2014. Upon review of sampling protocols, DEQ will use the benthic macroinvertebrate data for assessing water quality.

The **United States Geological Survey** (USGS) submitted water quality data for 30 stations located in the eastern and central portions of Virginia. USGS staff collected and submitted data from 794 sample events from January 2009 to December 2014. The stations monitored many ambient water quality parameters from dissolved oxygen and pH to dissolved metals. In addition, USGS conducted continuous monitoring of dissolved oxygen, pH, and temperature at 11 stations composed of 750,685 readings during the six year window. The USGS follows standard protocols for sampling and analysis of results. USGS monitoring data identified as having a Virginia Water Quality Standard were used by DEQ to assess water quality.

The **Virginia Department of Health** (VDH) collects *E. coli* and fecal Enterococcus bacteria samples from public beaches located in the eastern half of Virginia from May to October each year. For this assessment report, VDH staff collected 5,312 bacteria samples from 47 public beaches and submitted the results to DEQ. Due to VDH using the same sampling methods and laboratory procedures used by DEQ, VDH results were used by DEQ to assess water quality.

The **Virginia Trout Stream Sensitivity Survey** is managed the University of Virginia Department of Environmental Sciences and conducts a majority of water quality testing of waterbodies that support native brook trout and with an emphasis of testing on public lands such as national parks and forests. The program collected 469 sites worth of data over 2,766 sampling events. Monitoring included water temperature, pH, conductivity, hardness and ions such as chloride. This data will be used by DEQ to determine follow up sampling is needed.

The **Wolf Creek Water Reclamation Facility** submitted water quality data collected upstream of their facility to DEQ. From January 2009 through December 2014 the staff collected 52 samples from one sample site located upstream of their facility. Submitted data included stream flow, temperature, dissolved oxygen, pH, Biochemical Oxygen Demand, nutrients, and *E. coli* bacteria. DEQ will assess water quality for temperature, pH, nutrients, and *E. coli*.

Table 3.5-2 Non-Agency Data Submitted: Level II and Level III

Non-Citizen Monitoring Organization	Atlantic Coast		Chesapeake Bay		Chowan		James		New		Potomac / Shenandoah		Rappahannock		Roanoke		Tennessee		Yadkin		York		Unknown VPDES		Total	
	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event	Site	Event
Appalachian Electric Power															10	20									10	20
Appalachian Technical Services																	155	266							155	266
City of Norfolk Department of Utilities							16	745													2	96			18	841
City of Suffolk							18	672																	18	672
Cumberland Resources Corporation																	2	44							2	44
Department of Conservation and Recreation							6	176	1	26					2	45	5	106			1	25			15	378
James City County Stormwater Division							12	140																	12	140
Maryland Department of the Environment	1	29																							1	29
North Carolina Department of Natural Resources					1	20									1	15									2	35
National Park Service: Assateague Island National Seashore	7	88																							7	88
National Park Service: Mid-Atlantic Monitoring Network					5	105	15	601			15	400	5	259	5	253	2	20			13	500			60	2138
National Park Service: Northeast Coastal & Barrier Network							33	52			46	104									5	8			84	164
Occoquan Watershed Monitoring Laboratory											15	1640													15	1640
Page County											19	181													19	181
Pocahontas State Park							6	83																	6	83
Tennessee Department of Environment and Conservation																	1	2							1	2
Tennessee Valley Authority																	1	14							1	14
United States Forestry Service							44	95	8	15	17	40					9	13					4	5	82	168
United States Geological Survey											27	767					1	27							30	794
Virginia Department of Health Beach Program	16	1727	19	2227			9	1035			1	117									2	206			47	5312
Virginia Trout Stream Sensitivity Survey							178	559	76	238	103	1050	36	726	23	23	51	168	2	2					469	2766
Wolf Creek Water Reclamation Facility																	1	52							1	52
Grand Total Stations / Samples	24	1844	19	2227	6	125	337	4158	85	279	245	4299	41	985	41	356	228	712	2	2	23	835	4	5	1055	15827

Current Efforts to Support Citizen and Non-Agency Surface Water Quality Monitoring

DEQ is committed to expanding the use of non-agency surface water quality monitoring data in future assessment reports. This is primarily due to an increasing need for additional water quality data and the growth in the sophistication in water quality monitoring by sources outside of DEQ. During the past couple of years, DEQ continued to develop new content and resources to increase the amount and quality of non-agency data available.

In response to citizen concerns raised about algae growth impacting recreation use in the Shenandoah River, DEQ has committed to developing a quantifiable, repeatable field estimation method for evaluating potential impacts of algal growth in Virginia's free flowing waters. Virginia is currently testing field methods and will develop a plan for the use of citizen monitoring data in assisting with recreational use attainment determinations.

Due to the popularity of the Coliscan Easygel method by volunteer groups, the agency developed a comprehensive guide to correctly identify *E. coli* colonies using this method. The guide is available to monitoring groups by going to www.deq.state.va.us/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/CitizenMonitoring/Guidance.aspx.

Currently, DEQ is developing a series of training videos covering popular water quality monitoring methods such as Coliscan Easygel and dissolved oxygen sampling. The goal of these videos is to provide introductory or refresher training that volunteer groups can refer to. In addition, these videos will supplement material found in the popular *Virginia Citizen Volunteer Water Quality Monitoring Program Methods Manual* available on the DEQ citizen monitoring page at www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/CitizenMonitoring.aspx

Through these new and continuing efforts, DEQ is able to utilize data that was previously unavailable or unknown to the agency. DEQ values the contributions of non-agency monitoring staff and citizen volunteers and will continue to support their monitoring efforts however possible. With assistance from these organizations, DEQ is increasing monitoring coverage in Virginia.

Additional information about DEQ's continued support of volunteer and non-agency monitoring is available at:
www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/CitizenMonitoring.aspx

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CHAPTER 4 SURFACE WATER QUALITY ASSESSMENT

Virginia's waters are well-known and beloved features of the state. The New River in the southwestern region of the state is considered, despite its name, to be the oldest river in North America. The famous folk song *Oh Shenandoah* refers to the Shenandoah River that runs through northwestern Virginia. The largest river in the state—the James—is considered "America's Founding River", carrying the early Jamestown settlers. Virginia Beach is a favorite destination during the summer. The Chesapeake Bay, the largest estuary in the United States, continues to delight visitors with its natural beauty, recreational opportunities, history, and seafood. Virginia's surface waters are very important to the state's welfare, and for this reason it is crucial to characterize this resource with as much accuracy as possible.

The following chapter begins by describing how DEQ accomplishes this. Results of the 2016 assessment, broken down by region, are then provided and discussed. This chapter ends an overall "snapshot" of statewide water quality captured by DEQ's freshwater probabilistic monitoring.

CHAPTER 4.1 ASSESSMENT METHODOLOGY

Revisions to the assessment guidance manual have improved assessment methodologies, quality, and consistency. Additionally, the assessment guidance manual provides the public an opportunity to review and comment on the assessment criteria and methodologies used by DEQ to determine designated use attainment. The 2016 draft manual was public-noticed in June 2016, and DEQ received public comments on the updated draft manual through July 2016. DEQ released the final 2016 Assessment Guidance Manual in September 2016.

"Ten Percent Rule"

State and federal law requires DEQ to produce a biennial report on the condition of its waters to Virginia's citizens and the EPA. The waters are evaluated in terms of whether the appropriate designated uses are met. These primary uses are: 1) wildlife, 2) aquatic life, 3) fish consumption, 4) shellfish harvest, 5) recreation (primary and secondary contact recreation) and 6) public water supply use. There are additional sub-uses associated with the Chesapeake Bay. DEQ employs the "Percent Method" to assess conventional pollutant impacts in waters for two uses: aquatic life use and recreation use.

Previous national guidance recommended that states use an assessment method based on assumptions about the kind and frequency of data needed to support an assessment. The objective of assessment is to determine whether waters are fully supporting or impaired for the designated uses of an assessment unit (AU). A 10.5% exceedence threshold is used for determining full support or impairment for conventional parameters (i.e., dissolved oxygen, pH, and temperature). An exceedance rate that is greater than 10.5% with at least 2 exceedences is considered impaired. This percentage rule is governed by the fact that sampling is associated with unknown equipment and human error, as well as an acknowledgment that designated uses are not impacted by infrequent, short-term exceedences of water quality standards.

In recent years, DEQ has been encouraged to spread its monitoring efforts over more of the state's waters. To achieve this goal with a fixed monitoring budget, the average collection frequency changed from monthly to bimonthly (every two months). This monitoring frequency has been applied to a rotating watershed scheme with approximately 1/3 of the watersheds being monitored bimonthly for a 2-year cycle with all watersheds being monitored within 6 years. The benefit from this change is that more streams and more stream miles can be assessed. The disadvantage is that the data collected from each station are fewer (12 samples/2 years). The data set has become wide geographically but more shallow in frequency. Additional monitoring program review and possible update stems from the need for additional monitoring data for Total Maximum Daily Load (TMDL) development and implementation monitoring.

Rubric Used to Assess Support of Designated Uses

Virginia bases its water quality assessment on the ability of the waters to support the associated designated uses. Designated use support is based on the waters meeting the criteria for each use as defined in the numeric and/or narrative water quality standards. The following is a general description of the criteria used to determine the quality of the waters relating to each of the designated uses. A summary is found in Table 4.1-1. Additional information related to the degree of use support can be found at the water quality standards website: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityStandards.aspx

1. Not Assessed

Waters with no data for any uses or a single sample (conventional/bacteria parameters only) (Category 3A).

2. Insufficient Information

Waters that have a single exceedance in a small dataset (2-9 samples for conventional/bacteria parameters) are considered insufficient data (Category 3B). Additionally, waters will be classified as insufficient data (Category 3B) where professional judgment is not sufficient to determine if a designated use is met. Waters where the data are not QA/QC approved but the data review indicates potential degradation are categorized as insufficient data but having observed effects (Category 3C). Waters where the data are not QA/QC approved but the assessment results indicate acceptable water quality will be considered insufficient data with no observed effects (Category 3D). Waters that were previously categorized as fully supporting a designated use (Category 2) will default to Category 3 after two assessment cycles of no new data.

3. Fully Supporting

The following is a description of the types of data and the acceptable criteria used to assess waters as fully supporting designated uses. These waters would be placed in Category 2A or 2C unless all designated uses are fully supporting, upon which the water would be placed in Category 1.

Conventional/Bacteria Parameters:

Waters that are fully supporting their designated uses can have up to 10.5% exceedences of water quality criteria for the parameters fecal coliform, *E.coli* or enterococci bacteria (recreation use), and the conventional parameters dissolved oxygen, temperature, nutrients and pH (aquatic life use) without negatively affecting designated uses. Natural variables can cause exceedences of these criteria in the 0-10.5% range and still fully support both aquatic life and recreation designated uses. All data assessed as fully supporting must be QA/QC approved.

Numerical criteria for DO, pH and Temperature (9 VAC 25-260-50) do not apply at < 7Q10 flow. 7Q10 is the lowest flow averaged (arithmetic mean) over a period of seven consecutive days that can be statistically expected to occur once every 10 climatic years (a climatic year begins April 1 and ends March 31). Data for these parameters that are from flow conditions below 7Q10 will not be used in the Integrated Report.

Toxic Pollutants:

For toxic pollutant assessment in free-flowing streams, waters where there are two or more samples and no exceedences of aquatic life criteria within a running 3-year period, using grab samples or SPMD data, are considered fully supporting for aquatic life and wildlife use. For public water supply and human health-related criteria in other surface waters, two or more samples and no exceedences during the reporting period, using grab samples or SPMD data, are considered fully supporting for PWS and/or fish consumption use. Additional information on the details of using this approach can be found in Appendix F of the 2016 Assessment Guidance Manual.

For toxic pollutant assessment in estuarine waters, where there are several types of toxic data available, a "weight of evidence" approach is used. Additional information on the details of using this approach can be found in Appendix G of the 2016 Assessment Guidance Manual.

Fish Tissue/Sediment Contamination
Waters with two or more samples, with no exceedences of the fish or fish tissue screening values found in Appendix E-1 or E-2 or sediment screening values (SVs) found in Appendix F of the 2016 Assessment Guidance Manual, are considered fully supporting.

Biological Evaluation:
For free-flowing stream biological community assessment, data for the overall assessment period are rated as not impaired where no biological assemblage (e.g. macro-invertebrates) has been modified beyond the natural range of reference conditions based on the Virginia Stream Condition Index (VSCI) or the Virginia Coastal Plain Macroinvertebrate Index (VCPMI) methodology.

Fish Advisories:
Waters where the VDH has not issued any fish advisories or prohibitions are assessed as fully supporting the fish consumption use.

Shellfish Advisories:
Those growing areas are considered fully supporting for the shellfish consumption use where no restriction or prohibition (condemnation) on shellfish harvesting is imposed as indicated by the Department of Shellfish Sanitation (DSS) summary dated January 2015.

Beach Closures/Advisories:
Beach waters are assessed as fully supporting the recreation use when no VDH beach closures were issued and/or geometric mean exceedences occurred, based on QA/QC approved sampling data, during the assessment period.

Public Water Supply Source Closures:
If no VDH public water supply source closures were issued based on sampling data during the assessment period, waters are rated as fully supporting the public water supply use.

4. Fully Supporting but Having an Observed Effect

The following is a description of the types of data and the acceptable criteria used to assess waters as fully supporting but having an observed effect for a designated use(s). It is the intent of the agency to focus additional monitoring resources on the waters that are identified as having an observed effect, based on initial monitoring data analysis. These waters would be placed in the federal Category 2 and the Virginia sub-category 2B.

Conventional Screening Parameters:
Free-flowing waters with 1 or more exceedences for sediment and/or toxicity test are considered fully supporting but having an observed effect for aquatic life use if (Category 2B) if other aquatic life criteria are met. This designation is deemed appropriate because the causative agent(s) of toxicity of an environmental sample is rarely known.

Toxic Pollutants:
For toxic pollutant assessment in free-flowing streams, a single exceedence of aquatic life criteria (in a sample of at least two) within a 3-year period, using grab samples or SPMD data, is considered fully supporting but having an observed effect for aquatic life and wildlife. For public water supply use or human health criteria in other surface waters, a single exceedence (in a sample size of at least two) is considered fully supporting but having an observed effect for PWS and fish consumption use.

For toxic pollutant assessment in estuarine waters, where there are several types of toxic data available, a "weight of evidence" approach is used. If no additional toxic data is available, the water would be assessed the same as the free-flowing waters.

Fish Tissue/Sediment Contamination:
Waters with a single exceedence of a water quality standards-based tissue value or tissue screening value found in Appendix E-1 or E-2 from one or more fish tissue or SPMD samples, or an exceedence of a screening value for sediment found in Appendix F of the 2016 Assessment Guidance Manual, are fully supporting but having an observed effect for fish consumption and aquatic life, respectively.

Biological Evaluation:
VSCI or CPMI assessment scores below the impairment threshold but the biologist's best professional judgment has determined a lack of confidence in the biological survey due to natural conditions is considered fully supporting with observed effects. If impairment was discovered from the last two samples, a documented justification for not assessing as impaired is expected. Another biological assessment should be scheduled to make a final aquatic life use determination for waters assessed as fully supporting but having an observed effect for aquatic life use.

Fish Advisories:
A VDH fish consumption advisory, where a general advisory has been issued but fish consumption is not limited, are considered fully supporting but having an observed effect. This would include the kepone advisory for the tidal James River.

Shellfish Advisories:
Those growing areas, as indicated by the DSS summary dated January 2015, that have been classified as conditionally approved (seasonal condemnations) are considered fully supporting but having an observed effect.

Beach Closures/Advisories:
One short term (less than one week in duration) beach closure and/or two short term (less than one week in duration) swimming advisories due to bacteria contamination that, based on QA/QC approved data within the 6-year assessment cycle, have a low probability that the pollution will recur (based on best professional judgment) are considered fully supporting with observed effects. Best professional judgment decisions will be based on scientific data indicating the source of the pollution causing the closure/advisory is transient and there are no plans to implement pollution reduction measures or other controls, or documentation shows that mitigation has occurred and the two most recent years of water quality data, subsequent to the mitigation, show an improvement that fully supports the designated use.

Public Water Supply Source Closure:
One short term VDH public water supply source closure during the 6-year assessment cycle with a low probability that the pollution will recur is considered fully supporting but having an observed effect. The source of the pollution is generally transient and there are no VDH plans to implement pollution reduction measures or other controls.

Other Criteria for Waters having Observed Effects
Waters for which "evaluated" data, trend analysis for parameters with no water quality standards but with screening criteria, or other water quality indicators appear to indicate an apparent effect on designated use(s) or a potential for water quality problems are considered to have "observed effects". Waters can be designated as having observed effects where there is a possible loss of a designated use documented by ancillary data such as fish kills with unknown causes and/or pollution potential documented by non-QA/QC approved non-agency studies or reports. These waters are considered insufficient data with observed effects (Category 3C). For monitoring purposes, waters with observed effects should be considered in the next regional monitoring plan for additional or continued monitoring during the next reporting period as resources allow.

5. **Pollutant Caused Impaired or Threatened Waters Not Needing a TMDL**

Impaired or threatened waters not needing a TMDL are listed in the federal Category 4. These are waters that are impaired but an EPA-approved TMDL has been developed and approved by EPA (Category 4A), waters where other pollutant control requirements are reasonably expected to result in attainment of designated use(s) (Category 4B) and waters that are naturally impaired (Category 4C).

6. Pollutant Caused Impaired or Threatened Waters Needing a TMDL

Those waters impaired or threatened by pollutant(s) and needing a TMDL are included in the 303(d) list. These waters are placed in the federal Category 5 (needing a TMDL) and the Virginia sub-categories of 5A, 5B, 5D and possibly 5C and 5E. The following is a description of the types of QA/QC-approved data and the acceptable criteria used to assess waters as impaired or threatened for the designated uses.

Conventional Parameters:

Waters with long-term or chronic pollutant-related problems based on the assessment of monitored data are considered impaired and needing a TMDL. For conventional parameters, at least two exceedences of water quality standards and exceedences >10.5% are considered impaired and needing a TMDL. Additionally, waters with one or more exceedences of a monthly geometric mean analysis are considered impaired. Geometric mean analysis is normally associated with the BEACH monitoring program conducted by VDH but also could be associated with a designed, multiple sample per month, bacteria special study.

Toxic Pollutants:

Virginia will declare waters impaired for aquatic life use and included in Category 5A if 1) an acute criterion is exceeded two or more times within a three-year period based on either grab samples or samples collected with a 30-day semi-permeable membrane device (SPMD) or if 2) a chronic criterion is exceeded two or more times within a three-year period based on either multiple grab samples collected within two separate four-day periods or multiple samples collected with a 30-day semi-permeable membrane device (SPMD). For public water supply or human health criteria in other surface waters, two or more exceedences of the same criteria within the reporting period using grab samples or SPMD data are considered impaired and needing a TMDL for PWS or fish consumption use.

For toxic pollutant assessment in estuarine waters, where there are several types of toxic data available, a “weight of evidence” approach is used.

Fish Tissue Contamination:

Waters exceeding the same toxic human health criteria-based tissue value (TV), listed in Appendix E-1 of the 2016 Assessment Guidance Manual, two or more times are impaired for fish consumption. For example, the following situations would qualify as impaired under these guidelines :1) two or more tissue samples from different fish species exceeding the same TV during one sampling event; or 2) two or more samples of the same or different species exceeding the same TV from different sampling events within the assessment period.

Biological Data:

For free-flowing waters where the biological community VSCI or CPMI survey data are confirmed to be moderately or severely impaired, are considered impaired and needing a TMDL. Based on professional judgment and/or other supplemental data, a second survey may be required to confirm moderate impairment and pollutant related causes. In this case, the initial assessment would be considered fully supporting but having an observed effect and follow-up monitoring scheduled.

Fish Advisories:

Virginia Department of Health (VDH) fish consumption prohibitions and/or advisories, where fish consumption is specifically limited, are considered evidence of non-attainment of the designated use and are therefore considered impaired and needing a TMDL.

Shellfish Advisories:

Those growing areas, as indicated by the DSS summary dated January 2015 that have been classified as prohibited or restricted (condemnations) based on bacteria data are considered impaired and needing a TMDL. Restricted areas that have been administratively condemned due solely to the presence of a VPDES permitted outfall or administrative closure where no data is available will not be assessed as the shellfish use has been administratively removed.

Beach Closures/Advisories:
One or more geometric mean exceedences, one or more beach closures of one week or more duration, or two or more swimming advisories of one week or more duration due to bacteria contamination, and, based on QA/QC approved data within the assessment cycle, there is a medium to high probability that the closure/advisory will recur (based on best professional judgment) are considered evidence of impaired recreation use and a TMDL is needed.

Public Water Supply Source Closure:
One or more VDH public water supply source closures within the assessment cycle with a medium to high probability that the pollution will recur indicate non-attainment and a TMDL is needed. There are plans to implement pollution reduction measures or controls.

Chesapeake Bay Aquatic Life
See Chapter 4.5 of this report, or Section 6.4 of the 2016 Assessment Guidance Manual.

Table 4.1-1 Summary of the designated use assessment methodology

Designated Use	Parameter/Data Type	Fully Supporting	Observed Effects (either as supporting or with insufficient data)	Impaired
Aquatic Life **Wildlife (toxics only)**	Conventional[1]	• n ≥ 2, exceedence rate ≤ 10.5% for field parameters • Median lacustrine TP[2] below criterion • 90th percentile lacustrine chlorophyll a below criterion	• Evaluated[3] data with an exceedence rate > 10.5% • Single exceedence in small dataset (n <10)	• n ≥ 2, exceedence rate > 10.5% for field parameters • Two exceedences in small dataset • Median lacustrine TP above criterion • 90th percentile lacustrine chlorophyll a above criterion
	Biological	Benthic index scores ≥ impairment threshold	• Evaluated[3] data suggest degraded community • Benthic index score conflicts with biologist's best professional judgment	Benthic index score < impairment threshold
	Toxics	n ≥ 2, no exceedences	• Single water column grab or SPMD[4] sample exceedence of acute aquatic life use criteria • Single water column grab or SPMD sample exceedence of chronic aquatic life use criteria in a 3-year period • Single sediment toxicity test or screening value exceedence (aquatic life only)	Two or more grab or SPMD exceedences of the same acute aquatic life criteria in a 3-year period Two or more exceedances of the same chronic criteria within a 3-year period based on multiple grab samples within two separate four-day periods, or two or more separate 30-day SPMD deployments.

Designated Use	Parameter/Data Type	Fully Supporting	Observed Effects (either as supporting or with insufficient data)	Impaired
Recreation	Bacteria	• No geometric mean exceedence • n ≥ 2, exceedence rate ≤ 10.5%	• Evaluated[3] data with exceedence rate > 10.5% • Single exceedence in small dataset (n <10)	• One or more geometric mean exceedences • n ≥ 2, exceedence rate > 10.5% • Two exceedences in small dataset
	VDH notice	No swimming advisory	A single short-term (< 1 week) VDH closure/advisory with low probability of recurrence, based on bacteria data	One or more closure(s) and/or two or more advisories > 1 week duration with medium or high probability of recurrence, based on bacteria data
Shellfishing	VDH notice	Approved shellfish harvest waters	Area classified as "conditionally approved"	Areas classified as "restricted" or "prohibited"—excluding VPDES[5] outfalls and administrations closures where no data are available
Fish Consumption	Toxics	No exceedences of fish tissue criteria	• Single exceedence of a human health criterion using grab sample or SPMD data • Single exceedence of a tissue value or tissue screening value	• Two or more exceedences of a human health criterion using grab sample or SPMD data • Two or more exceedences of a tissue value
	VDH notice	No advisories	A VDH advisory which does not limit consumption is in effect	A VDH advisory or restriction limiting or prohibiting consumption
Public Water Supply	Toxics	n ≥ 2, no exceedences	A single exceedence of human health criteria using grab or SPMD data	Two or more exceedences of the same human health criteria using grab samples or SPMD data
	VDH notice	No closures	A single VDH closure with low probability of recurrence	One or more closure with medium or high probability of recurrence

[1]Refer to 2016 Assessment Guidance Manual for assessment methodology specific to continuous monitoring data and Chesapeake Bay criteria.
[2]TP = total phosphorus concentration. Along with lacustrine chlorophyll a, *only data from the most recent two years are aggregated.*
[3]Evaluated data are any Level II data submitted to DEQ. See Chapter 3.5 for more information.
[4]SPMD = semi-permeable membrane device (an instrument that passively samples ambient toxics over some length of time)
[5]VPDES=Virginia Pollution Discharge Elimination System

EPA ASSESSMENT CATEGORIES and VIRGINIA SUBCATEGORIES

FULLY SUPPORTING - Waters are supporting one or more designated uses

- **EPA Category 1 -** Attaining all associated designated uses and no designated use is threatened

  Va Category 1A - waters are attaining all uses and a TMDL has been developed for one or more uses.

- **EPA Category 2 –** Available data and/or other information indicate that some, but not all of the designated uses are supported.

  Va. Category 2A - waters are supporting all of the uses for which they are monitored.

Va. Category 2B - waters are of concern to the state but no water quality standard exists for a specific pollutant, or the water exceeds a state screening value or toxicity test.

Va. Category 2C - waters are now attaining the use(s) for which they were originally 303(d) listed and the TMDL is EPA approved but other applicable use(s) were not monitored and assessed.

INDETERMINATE - Waters needing additional information

- **EPA Category 3 -** Insufficient data and/or information to determine whether any designated uses are met.

Va. Category 3A - no data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.

Va. Category 3B - some data exists but it is insufficient to determine support of any designated uses. Such waters will be prioritized for follow up monitoring.

Va. Category 3C- data collected by a citizen monitoring or other organization indicate water quality problems may exist but the methodology and/or data quality has not been approved for a determination of support of designated use(s). These waters are considered as having insufficient data with observed effects. Such waters will be prioritized by DEQ for follow up monitoring.

Va. Category 3D - data collected by a citizen monitoring or other organization indicate designated use(s) are being attained but the methodology and/or data quality has not been approved for such a determination.

IMPAIRED - Waters are impaired or threatened but a TMDL is not required

- **EPA Category 4A -** water is impaired or threatened for one or more designated uses but does not require a TMDL because the TMDL for specific pollutant(s) is complete and US EPA approved.

- **EPA Category 4B -** water is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements (such as VPDES limits under a compliance schedule) are reasonably expected to result in attainment of the water quality standard by the next reporting period or permit cycle.

- **EPA Category 4C -** water is impaired or threatened for one or more designated uses but does not require a TMDL because the impairment is not caused by a pollutant and/or is determined to be caused by natural conditions.

Va. Category 4D - part(s) of a water quality standard is attained for a pollutant with a TMDL, but the remaining criteria for the standard were not assessed due to insufficient information. (Only to be applied to dissolved oxygen in tidal waters of the Chesapeake Bay).

IMPAIRED - Waters are impaired or threatened and require a TMDL

- **EPA Category 5 - Waters are impaired or threatened and a TMDL is needed.**

Va. Category 5A - a water quality standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list).

Va. Category 5B - the water quality standard for shellfish use is not attained. One or more pollutants causing impairment require TMDL development.

Va. Category 5C - the water quality standard is not attained due to "suspected" natural conditions. The water is impaired for one or more designated uses by a pollutant(s) and may require a TMDL (303d list). Water quality standards for these waters may be re-evaluated due to the presence of natural conditions.

Va. Category 5D - a water quality standard is not attained where TMDLs for a pollutant(s) have been developed, but one or more pollutants are still causing impairment requiring additional TMDL development.

Va. Category 5E - effluent-limited waters receiving discharges from facilities not expected to meet compliance schedules by next permit cycle or reporting period.

Va. Category 5F - the water quality standard is attained for a pollutant(s) with a TMDL and 303(d) delisting approved, but the water remains impaired for additional pollutant(s) requiring TMDL development.

Va. Category 5R - the Water Quality Standard is not attained and the water is impaired, and implementation of an EPA-approved restoration plan is expected to result in attainment. A status update will be provided each 303(d) cycle to evaluate progress.

- **EPA Category 5M** - waters impaired due to atmospheric mercury.

CHAPTER 4.2 WATER QUALITY ASSESSMENT SUMMARY

The overall water quality for Virginia is assessed based on whether the condition of the waterbody being assessed allows citizens to safely enjoy its designated uses as described in Virginia's water quality standards. Table 4.2-1 briefly describes the primary designated uses and the parameters used in this assessment to demonstrate their attainment. Several additional aquatic life sub-uses have been adopted for the Chesapeake Bay and the tidal tributaries. Additional information about the Bay sub-uses can be found in Chapter 4.6.

Table 4.2-1 Designated use descriptions and indicators

DESIGNATED USE	USE DESCRIPTION/INDICATORS
Aquatic Life Use, Chesapeake Bay sub-uses	Description: The propagation, growth, and protection of a balanced indigenous population of aquatic life that may be expected to inhabit a waterbody
	Indicators: Dissolved oxygen, pH, temperature, chlorophyll a, nutrients, water column and sediment toxics, toxicity tests, benthics, submerged aquatic vegetation
Fish Consumption Use	Description: Game and marketable fish species that are safe for human health
	Indicators: VDH notices, fish tissue toxics, water column toxics
Shellfishing Use	Description: Marketable shellfish (clams, oysters, mussels) that are safe for human health
	Indicators: VDH notices
Recreation (Swimming) Use	Description: Swimming, boating, and other recreational activities
	Indicators: VDH notices, bacteria
Public Water Supply Use	Description: Drinking water safe for human health
	Indicators: VDH notices, water column toxics
Wildlife Use	Description: The propagation, growth, and protection of associated wildlife
	Indicators: Water column toxics

The six-year assessment begins with an analysis of all quality assurance/quality control (QA/QC) approved data from DEQ ambient water quality, biological, sediment and fish tissue monitoring, special studies and/or other non-DEQ water quality data, including citizen monitoring data. Non-agency monitoring data is evaluated for use in the assessment using a process outlined in Part VI, Section 6.3.1 of the 2016 Assessment Guidance Manual. The results of these comprehensive data analyses are compared to both numeric and narrative criteria related to the designated uses established by Virginia's water quality standards, which are provisions of state and/or federal regulations. A description of the assessment methodology can be found in Chapter 4.1, as well as the 2016 Assessment Guidance Manual.

Statewide summaries of the river miles, estuarine square miles, and lake/reservoir acres within and bordering Virginia are presented in Tables 4.2-2 through 4.2-4. The overall assessment of each waterbody was determined by examining the support of up to six designated uses (see Figure 4.2-1), as appropriate, for each assessed waterbody. The assessment of a specific use depends on the types of data that are available. Additionally, not all uses may exist in a given water. For instance, the public water supply use only applies to the waters designated in Virginia's water quality standards. The shellfishing use only exists in estuarine waters.

Additional geographical re-indexing and use of the National Hydrologic Database (NHD) has altered the actual number of stream miles within the state from previous reports. The stream mile delineation guidance has provided basic guidelines to the regional assessment staff for associating the mileage assessed, relative to a specific sampling station. This is especially important where there are no easily identifiable changes in watershed characteristics. In some cases, the stream miles associated with a sampling station have been conservatively reduced or in other cases, slightly expanded from previous assessment reports. In many cases, additional monitoring stations have been added in the watershed and may increase the size of some impaired segments depending on the additional data collected and assessed. The stream mile delineations found in this report are only reflective of the 2016 assessment period but follow closely with the monitoring efforts reported in previous reports.

A total of 100,974 miles of rivers, 2,848 square miles of estuarine waters, and 117,215 acres of reservoir/lakes was determined to be available for assessment this cycle. This increase reflects the on-going refinement to DEQ's Geographic Information System (GIS) tools.

Table 4.2-2 Assessment Results for Rivers

Degree of Use Support	**Water Type**	**Total Miles** ***(Rounded to the Nearest Whole Number)***	**(%) Total**
Fully Support All Designated Uses **(EPA Category 1)**	River (mi.)	**34**	0.0%
Virginia Subcategory 1A		20	
Fully Support Some Uses but Insufficient Data to Assess All Uses **(EPA Category 2)**	River (mi.)	**7,082**	7%
Virginia Subcategory 2A		4,514	
Virginia Subcategory 2B		2,365	
Virginia Subcategory 2C		203	
Insufficient Data to Determine if any Uses are Being Met **(EPA Category 3)**	River (mi.)	**78,576**[1]	77.8%
Virginia Subcategory 3A		76,223	
Virginia Subcategory 3B		542	
Virginia Subcategory 3C		541	
Virginia Subcategory 3D		1,270	
Waters are Impaired or Threatened but do not need a TMDL **(EPA Category 4)***	River (mi.)	**6,924**	6.9%
EPA Subcategory 4A		6,695	
EPA Subcategory 4B		0	
EPA Subcategory 4C		228	
Waters are Impaired or Threatened and need a TMDL **(EPA Category 5)***	River (mi.)	**8,358**	8.3%

1 The conversion to the higher resolution (1:24,000) National Hydrography Dataset (NHD) resulted in a significant increase in stream mileage, and, consequently, a higher percentage of waters considered "not assessed" due to the inclusion of previously unmapped waterways—mostly small unnamed tributaries. DEQ's freshwater probabilistic monitoring program, described in chapter 4.4, includes coverage of small unnamed tributaries as part of the randomly generated station locations. Prob Mon data is used to answer questions about statewide and regional water quality conditions, and to identify problem areas for follow-up monitoring.

Degree of Use Support	Water Type	Total Miles *(Rounded to the Nearest Whole Number)*	(%) Total
Virginia Subcategory 5A		5,459	
Virginia Subcategory 5B		0	
Virginia Subcategory 5C		406	
Virginia Subcategory 5D		2,410	
Virginia Subcategory 5E		0	
Virginia Subcategory 5F		84	
Total Size	River (mi.)	**100,974**	100%

* Assessment Unit VAS-Q08R_PLR01A08 – Poplar Creek (3.03 miles) is incorrectly counted as Category 4A in the table. The aquatic life use benthic impairment could not be nested into an existing TMDL due to the lack of supporting water quality data and should remain as Category 5A. The overall Category for the Assessment Unit should be 5D.

Table 4.2-3 Assessment Results for Lakes/Reservoirs

Degree of Use Support	Water Type	Total Acres *(Rounded to the Nearest Whole Number)*	(%) Total
Fully Support All Designated Uses **(EPA Category 1)**	Lakes (acres)	**12**	0.0%
Virginia Subcategory 1A		0	
Fully Support Some Uses but Insufficient Data to Assess All Uses **(EPA Category 2)**	Lakes (acres)	**20,306**	17.3%
Virginia Subcategory 2A		6,949	
Virginia Subcategory 2B		13,357	
Virginia Subcategory 2C		0	
Insufficient Data to Determine if any Uses are Being Met **(EPA Category 3)**	Lakes (acres)	**3,373**	2.9%
Virginia Subcategory 3A		3,131	
Virginia Subcategory 3B		233	
Virginia Subcategory 3C		9	
Virginia Subcategory 3D		0	
Waters are Impaired or Threatened but do not need a TMDL **(EPA Category 4)**	Lakes (acres)	**13,622**	11.6%
EPA Subcategory 4A		13,224	
EPA Subcategory 4B		0	
EPA Subcategory 4C		398	
Waters are Impaired or Threatened and need a TMDL **(EPA Category 5)**	Lakes (acres)	**79,901**	68.2%
Virginia Subcategory 5A		72,043	
Virginia Subcategory 5B		0	
Virginia Subcategory 5C		632	
Virginia Subcategory 5D		7,139	
Virginia Subcategory 5E		0	

Degree of Use Support	Water Type	Total Acres *(Rounded to the Nearest Whole Number)*	(%) Total
Virginia Subcategory 5F		88	
Total Size	Lakes (acres)	**117,215**	100%

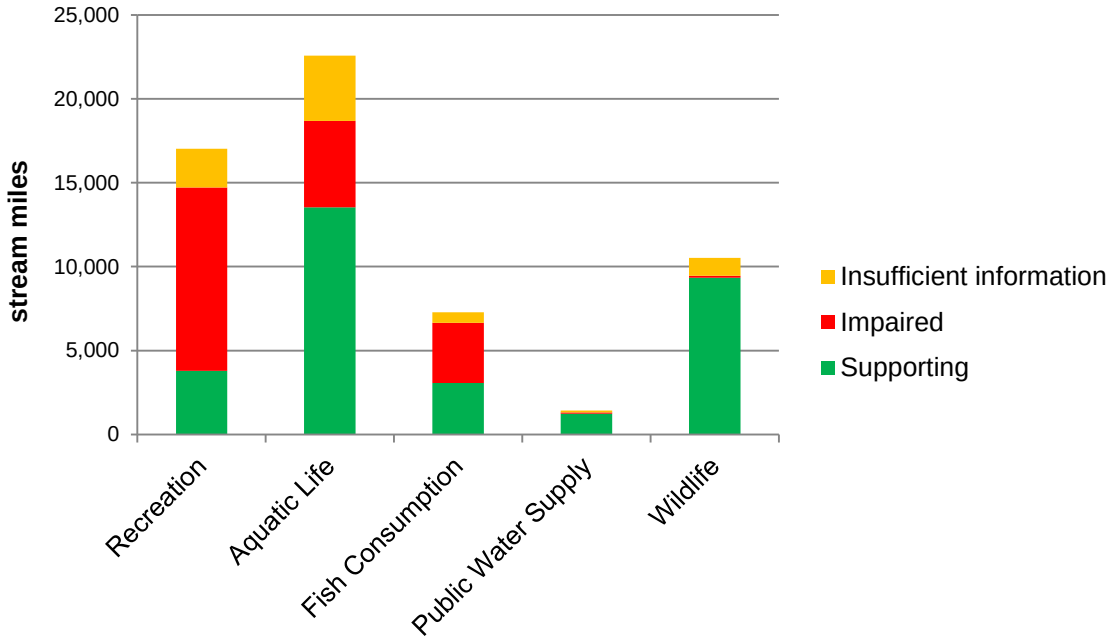
Table 4.2-4 Assessment Results for Estuarine Waters

Degree of Use Support	Water Type	Total Square Miles *(Rounded to the Nearest Whole Number)*	(%) Total
Fully Support All Designated Uses **(EPA Category 1)**	Estuary (sq. mi.)	0	0%
Virginia Subcategory 1A		0	
Fully Support Some Uses but Insufficient Data to Assess All Uses **(EPA Category 2)**	Estuary (sq. mi.)	**315**	11%
Virginia Subcategory 2A		262	
Virginia Subcategory 2B		48	
Virginia Subcategory 2C		5	
Insufficient Data to Determine if any Uses are Being Met **(EPA Category 3)**	Estuary (sq. mi.)	**400**	14%
Virginia Subcategory 3A		1	
Virginia Subcategory 3B		399	
Virginia Subcategory 3C		0	
Virginia Subcategory 3D		0	
Waters are Impaired or Threatened but do not need a TMDL **(EPA Category 4)**	Estuary (sq. mi.)	**86**	3%
EPA Subcategory 4A		86	
EPA Subcategory 4B		0	
EPA Subcategory 4C		0	
Waters are Impaired or Threatened and need a TMDL **(EPA Category 5)**	Estuary (sq. mi.)	**2,046**	72%
Virginia Subcategory 5A		41	
Virginia Subcategory 5B		0	
Virginia Subcategory 5C		0	
Virginia Subcategory 5D		1,967	
Virginia Subcategory 5E		0	
Virginia Subcategory 5F		37	
Total Size	Estuary (sq. mi.)	**2,848**	100%

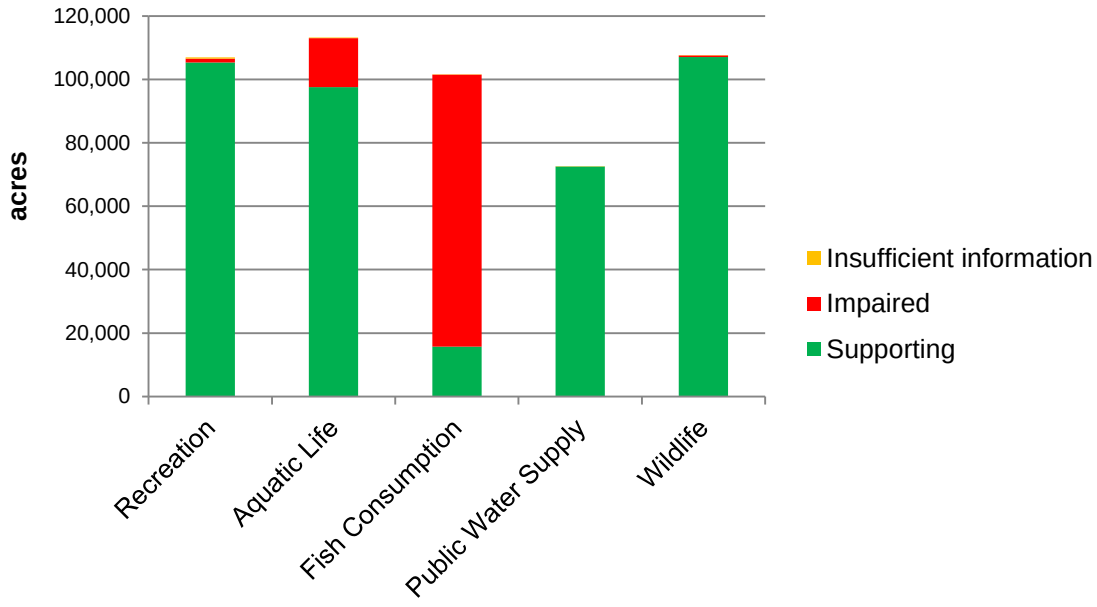
Figure 4.2-1 Designated use support summary. (Note: Waters that have some data, but not enough to determine use support, are classified as having "Insufficient information")

Size: ***All Sizes Rounded to the Nearest Whole Number***
Rivers - 100,974 miles
Lakes - 117,215 acres
Estuaries - 2,848 sq. miles

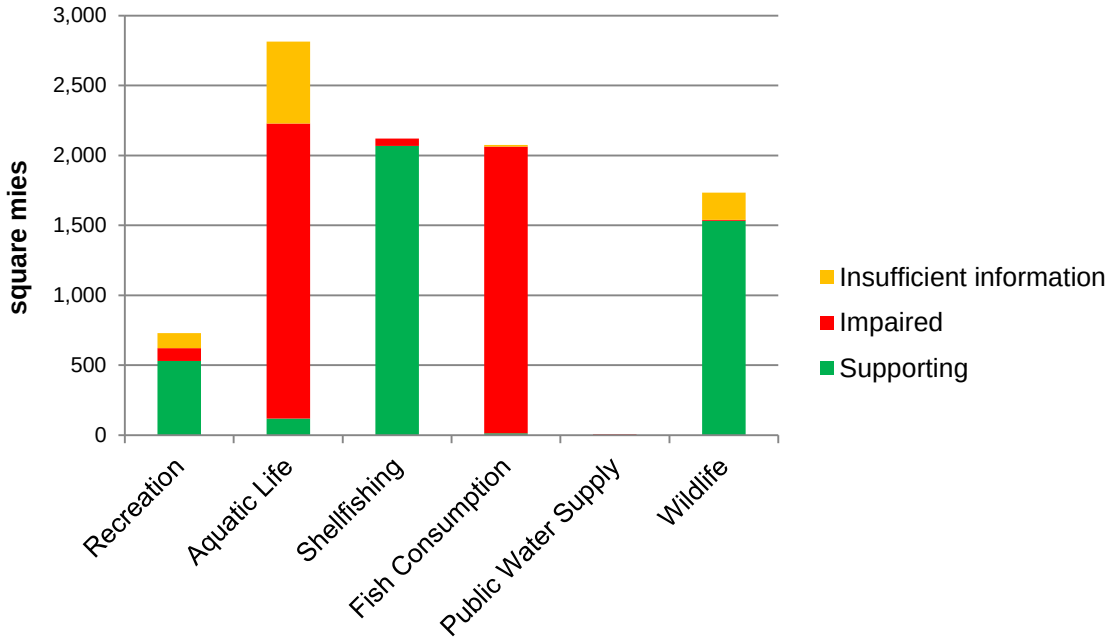
a) Rivers Assessment (78,576 miles were not assessed)



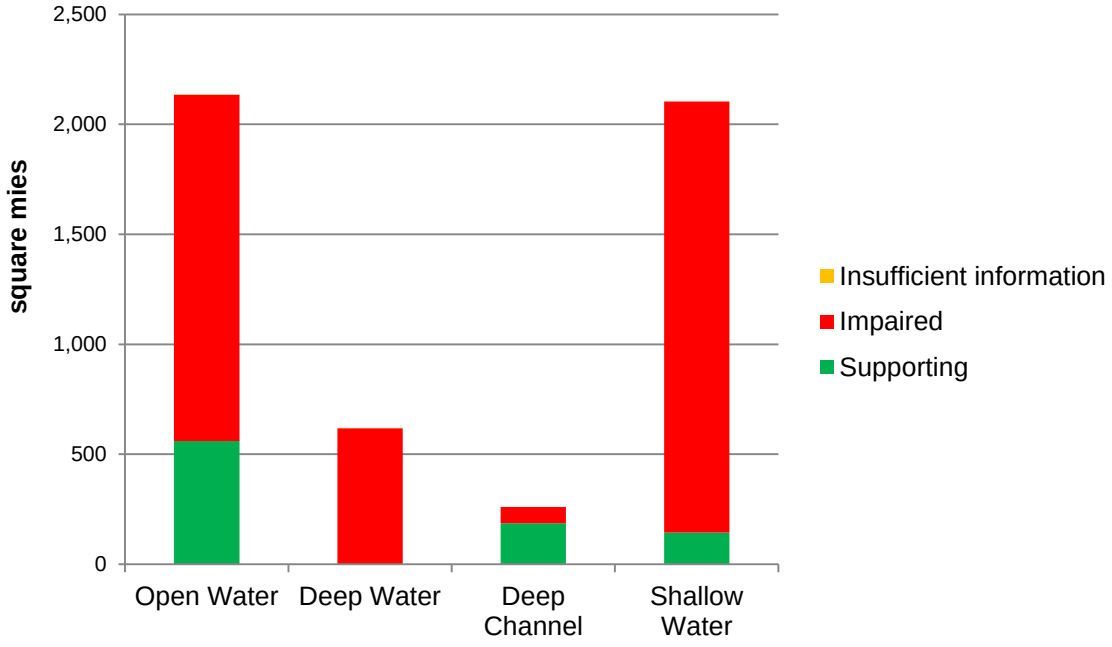
b) Lakes Assessment (3,373 acres were not assessed)



c) Estuaries assessment (400 sq miles were not assessed)



d) Assessment of Chesapeake Bay-specific designated uses (Migratory fish spawning and nursery use was not assessed.



Results

Figure 4.2-2 and Table 4.2-5 lists the major causes and sources of impairment for those waters not attaining full support for at least one designated use. Impairment causes and/or sources can be a "major impact", defined as that which causes a significant impairment to the waterbody, or moderate and minor impacts individually or in combination. Normally a major impact would be from a sole source with a large pollutant(s) contribution. Moderate and/or minor impacts have a slight to moderate effect on the waters and may be from a single moderate contributor or a combination of several minor contributors. It is important to note that moderate and minor impacts can, under certain conditions, work in conjunction to cause a major impact. Assessors take into consideration such factors as land use and co-occurring impairments when determining likely sources of pollution for a particular water.

One major cause of impairment of the aquatic life use is low dissolved oxygen concentration. All aquatic life depends on oxygen, and when it is depleted to the point where aquatic life is no longer sustainable, a water is said to be hypoxic. Hypoxia can result from natural processes, such as in slow-moving swamp waters that have large amounts of decaying plant material. It can also naturally occur in lakes/reservoirs when the water column becomes thermally stratified. However, chronic hypoxia often occurs for anthropogenic reasons. Nutrient pollution can cause hypoxia by promoting the growth of algae blooms. Excessive algae produce floating mats on the water surface which keep light from reaching rooted vegetation, therefore limiting its growth. Moreover, as algae die and settle to the bottom, decay processes reduce oxygen levels and create unfavorable conditions for other aquatic organisms. Fish kills often result from hypoxic conditions. Stormwater runoff, which often carries lawn/agricultural fertilizers and nutrient-rich animal wastes, is a major contributor of nitrogen and phosphorus pollution.

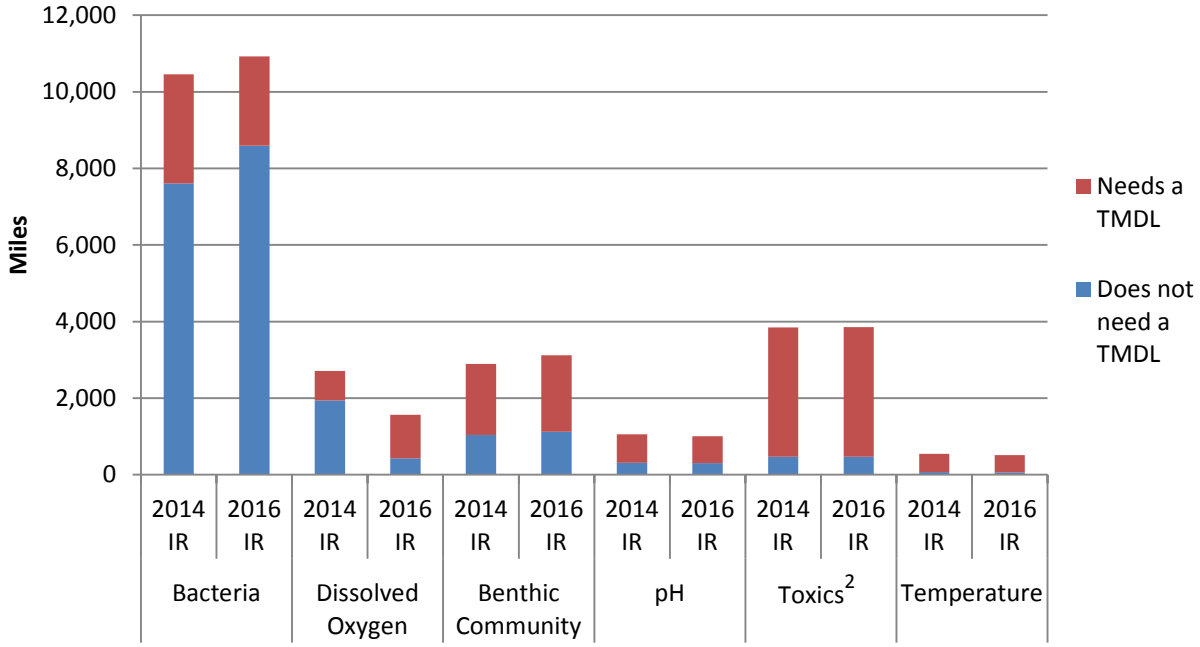
The major cause of impairment of the recreation and shellfishing uses is excessive bacteria. *Escherichia coli* (*E. coli*) is the pathogenic indicator used in freshwater, while enterococci is used in estuarine/coastal waters. These bacteria are associated with the fecal matter of warm-blooded animals. Bacteria and other microorganisms are found naturally in water, but can become harmful to human health in high concentrations. Exposure to water-borne pathogens can cause various gastrointestinal, skin, neurological, and other serious diseases. Stormwater runoff often carries domestic and livestock animal wastes, and it is a major source of impairment. Inadequate sewerage and combined sewer overflows are other major sources.

Mercury and polychlorinated biphenyls (PCBs) are the major causes of impairment of the fish consumption and public water supply uses. Mercury, specifically in the form of methylmercury, causes damage to the human central nervous system and brain. The metal can be found naturally, but its appearance in the environment is often due to anthropogenic reasons. Mercury commonly enters water through atmospheric deposition. Air particles can travel vast distances, so locating a single source is not possible in most cases. Some anthropogenic sources of atmospheric mercury are coal combustion, waste incineration, and metal processing. PCBs are another common cause of impairment. While the toxicity of individual PCBs depends on the specific form (or congener), this class of organic compounds contains endocrine disruptors, neurotoxins, and carcinogens. Like methylmercury, PCBs accumulate in fish tissues. The production of PCBs, used mainly as coolants and insulating fluids, was banned in the US in the late 1970s. However, PCBs are still quite ubiquitous, frequently appearing as "legacy contaminants" in soils close to where dischargers once used PCBs in industrial processes. These soils can then enter nearby water sources through stormwater runoff.

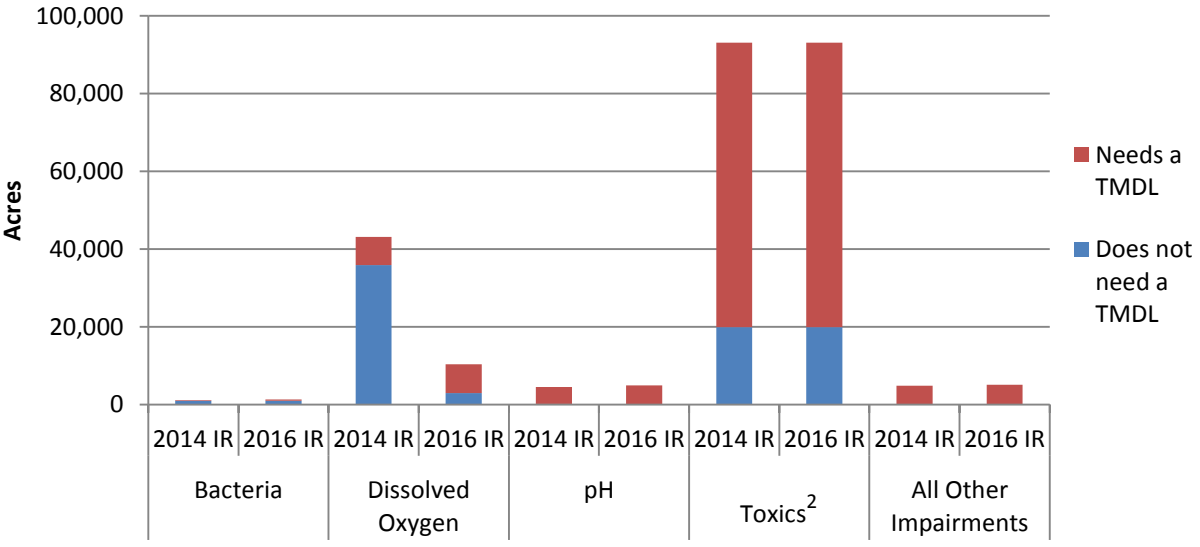
As evident in Figure 4.2-2, below, the Commonwealth has made significant progress on completing TMDL plans for many impairments, including bacteria, benthics, and dissolved oxygen, while other impairments, such as toxics in fish tissue, still require a TMDL. DEQ currently has TMDL projects underway to address toxics in fish tissue in the New River and lower James River basins, and is initiating a TMDL study to address toxics in fish tissue in the upper James River. Chapter 7.2 provides more information on the prioritization process for TMDL development through 2022.

Figure 4.2-2. Summary of impaired waters as reported in the 2014 and 2016 Integrated Reports. Differences between reporting periods reflect both proposed delistings and new impairment listings. Blue shading indicates the size of the waterbody that does not require a TMDL because one has been developed, other pollution controls are in place or the condition in considered natural (category 4). Red shading indicates that a TMDL is required (category 5).

a. Stream miles.



b. Acres of lakes.



[2] The overwhelming majority of toxics impairments in rivers, lakes and estuaries are due to exceedences of thresholds for PCBs and Mercury in fish tissue.

c. Square miles of estuarine waters.

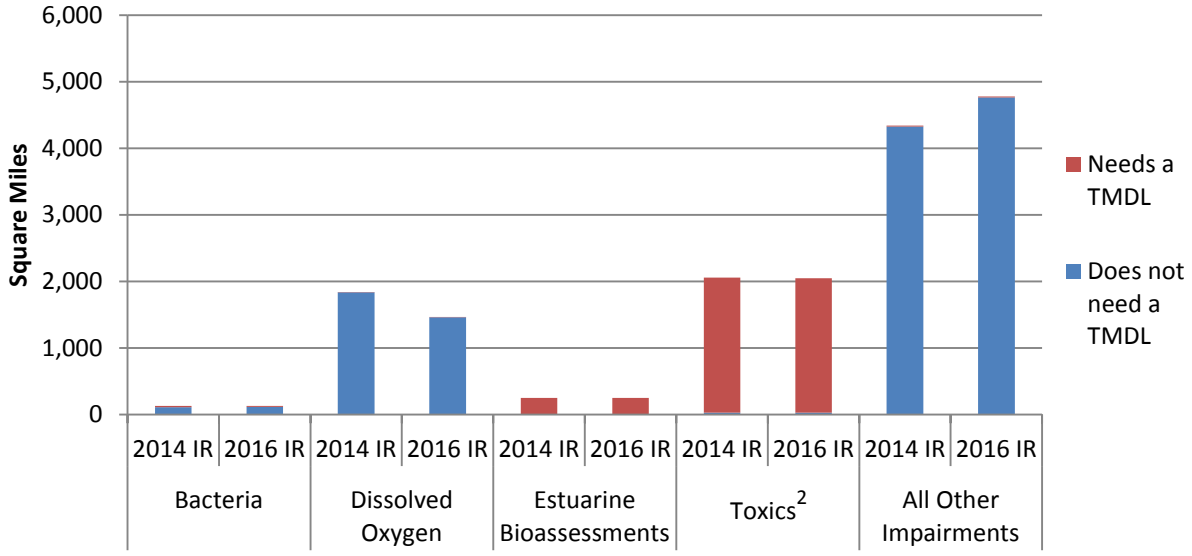


Table 4.2-5 Suspected sources of designated use impairment, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

Rivers		***Lakes***		***Estuaries***	
Source Unknown	39%	**Source Unknown**	96%	**Source Unknown**	96%
Wildlife other than Waterfowl	39%	**Natural Conditions**	5%	**Industrial Point Source Discharge**	95%
Livestock Grazing or Feeding Operations	29%	**Atmospheric Deposition (Toxics)**	3%	**Internal Nutrient Recycling**	89%
Non-Point Sources	27%	**Wildlife other than Waterfowl**	1%	**Loss of Riparian Habitat**	89%
Unspecified Domestic Waste	20%	**Dam or Impoundment**	1%	**Atmospheric Deposition (Nitrogen)**	89%
Wastes from Pets	19%	**Urbanized High Density Areas**	1%	**Sources Outside State Borders**	89%

CHAPTER 4.3 INDIVIDUAL RIVER BASIN DESCRIPTION AND ASSESSMENTS

Potomac and Shenandoah River Basin

The Potomac-Shenandoah River basin, as its name implies, is made up of the Shenandoah River sub-basin and the Potomac River sub-basin. It occupies the northern portion of Virginia and covers 5,681 square miles or 13% of the Commonwealth's total area.

In Virginia, the Potomac-Shenandoah basin is defined by both hydrologic and political boundaries. The James River and Rappahannock River basins bound the basin to the south. The West Virginia and Maryland State lines and the District of Columbia bound the northern and western perimeter of the basin.

The headwaters of the Shenandoah River sub-basin begin in Augusta County and flow in a northeasterly direction for approximately 100 miles to the West Virginia state line. The basin averages 30 miles in width and covers 3,384 square miles.

The topography of the Shenandoah River sub-basin is characterized by rolling hills and valleys bordered by the Appalachian Mountains to the west and the Blue Ridge Mountains to the east. The Massanutten Mountain Range divides the Shenandoah River into the North and South Forks. Tributaries of the Shenandoah River exhibit steep profiles as they drain the surrounding mountain ridge. The mainstem of the Shenandoah exhibits a moderately sloping profile with occasional riffles and pools. Approximately 45% of the land is forested due to the large amount of federally-owned land and the steep topography. Farmland and pasture account for 39% of the land area, while 16% is urban.

The Potomac River sub-basin headwaters begin in Highland County. The drainage area is 323 square miles for the headwaters. The river then flows in a northeasterly direction through West Virginia and Maryland before joining the Shenandoah at Harper's Ferry, West Virginia. The Potomac River continues as the border between Maryland and Virginia. These waters flow approximately 200 miles in a southeasterly direction along Loudoun and Fairfax counties to its confluence with the Chesapeake Bay in Northumberland County. Approximately 2,298 of the 14,700 square miles of the Potomac River sub-basin drainage area lie in Virginia. The rest covers four states and the District of Columbia.

Gently sloping hills and valleys from Harpers Ferry to approximately 45 miles downriver characterize the topography of the upper Piedmont region of the Potomac River sub-basin. In the central Piedmont area, the profile is rather flat until it nears the fall line at Great Falls, where the stream elevation rapidly descends from over 200 feet to sea level. Tributaries in the central Piedmont exhibit moderate and near constant profiles. Their flat slope largely characterizes streams in the Coastal Plain area. Approximately 40% of the Potomac River basin is forested, 33% is farmland and pasture and an estimated 27% is urban.

The 2010 population for the Potomac-Shenandoah River basin was approximately 3,141,200. The majority of the population resides in urban Virginia surrounding Washington, D.C. All or part of the following jurisdictions lie within the basin: Counties – Arlington, Augusta, Clarke, Fairfax, Fauquier, Frederick, Highland, King George, Loudoun, Northumberland, Page, Prince William, Rockingham, Shenandoah, Stafford, Warren, and Westmoreland; Cities – Alexandria, Fairfax, Falls Church, Harrisonburg, Manassas, Manassas Park, Staunton, Waynesboro, and Winchester.

The Potomac-Shenandoah River basin is divided into eight USGS hydrologic units as follows: HUC 02070001- South Branch Potomac; HUC 02070004 - Conococheague-Opequon; HUC 02070005 - South Fork Shenandoah; HUC 02070006 - North Fork Shenandoah; HUC 02070007 - Shenandoah; HUC 02070008 - Middle Potomac-Catoctin; HUC 02070010 - Middle Potomac-Anacostia-Occoquan; HUC 02070011 - Lower Potomac. The eight hydrologic units are further divided into 92 waterbodies or watersheds and 181 6th order sub-watersheds.

Public Concerns over Excessive Algae in the Shenandoah River

During the public comment periods for the 2012 and 2014 Integrated Reports, DEQ received comments from citizens regarding the presence of algae in the Shenandoah River and concern that the algae in the river impaired the recreation designated use. In response to citizen comments, additional photographic evidence, and recent information provided by citizen groups, DEQ determined that there was uncertainty about the attainment status of the recreation designated use for 7 assessment units (5 stream segments) in the Shenandoah River basin. These waters (listed in Table 4.3-a) comprise a total of 25 stream miles and were classified in the 2014 Assessment Database as Category 3C for the recreation use, which indicates an observed effect, but insufficient data to determine whether or not the recreation use is supported. These segments have been prioritized for follow-up monitoring in 2016 and 2017 by DEQ to develop and test field methods for estimating the percent coverage of river bottom by filamentous algae that are scientifically based, defensible and reproducible. DEQ made additional commitments for future activities, including decisions on thresholds for percent coverage that constitute a "nuisance" condition and impairment under the general narrative water quality standard, and inclusion of such thresholds in DEQ's guidance for the 2018 Assessment Report.

In May 2016, DEQ began developing a scientifically valid field method for evaluating algae cover that can be applied consistently throughout the state, with an initial study area focused on the Shenandoah River. The 2016 field season extended through early November. To meet the demanding field schedule, DEQ hired two employees who were solely dedicated to algae monitoring. DEQ's monitoring staff visited each of the five sites weekly, as conditions permitted. During 2016, DEQ tested three lateral transect methods to estimate percent cover by filamentous algae at evenly spaced increments along the wetted channel width. Of the three methods tested, staff found that the Quadrat method results showed greatest agreement among field staff. DEQ found that the lateral transects provided good estimates of algal percent cover, but given the potential for bias and error, staff began reviewing analytical methods to more objectively and consistently determine numeric algae densities. Based on methods in place in Montana[1], DEQ staff began collecting chlorophyll-a (the green pigment in algae that coverts light to energy) and Ash Free Dry Mass (a weight measurement) data to estimate algal densities on the substrate of the rivers. 15 data points were collected in the 2016 field season.

What is the Quadrat Method?

For the Quadrat method, monitoring staff use a view scope to compare percent coverage of algae within a square frame to a visual percent cover chart. Several measurements are taken along the width of the channel. The individual values are averaged to generate a single estimate of percent cover by filamentous algae for the site.



The results of the 2016 monitoring season were made available on the agency's Shenandoah River Algae website[2], and presented to the public during a public information webinar in December 2016 and at the Environment Virginia Conference in April 2017. In general, the results from the 2016 monitoring season indicate that more data is needed before decisions on recreation use impacts can be made. Many of the South Fork Shenandoah segments showed little to no algae throughout the 2016 growing season. The North Fork segments did have filamentous algae present during periods of prolonged low flow, but the algae was ephemeral and dependent on multiple variables including precipitation, river flows, and sunlight. Consequently, the 7 Assessment Units remain in Category 3C in the 2016 IR.

[1] http://deq.mt.gov/Portals/112/Water/WQPB/QAProgram/Documents/PDF/SOPs/WQPBWQM-011v6_FNL.pdf

[2] http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/ShenandoahAlgae.aspx

During the 2017 growing season, DEQ staff conducted algal monitoring weekly from June through October. Monitoring focused on the collection of transect data and analytical data, as conditions allowed. Additional goals include:

- further developing the Monitoring Plan to define sample intervals;
- proposing impairment thresholds and assessment methods based on 2016 and 2017 data results;
- holding a public webinar to present updated findings and recommendations to the public;
- incorporating decisions on impairment thresholds and assessment method as well as information on monitoring results in 2018 Integrated Report;
- working with local citizen monitoring groups to determine meaningful and discrete ways in which they can assist with this effort.

DEQ will continue to consider recommendations from the Interstate Commission on the Potomac River Basin, the Academic Advisory Committee, and the Mid-Atlantic jurisdictions that comprise EPA Region III (PA, WV, MD, VA, DE and DC).

Table 4.3-a. Assessment units in the Shenandoah River that have been classified as having an indeterminate recreation use status, with algae identified as a potential cause of impairment.

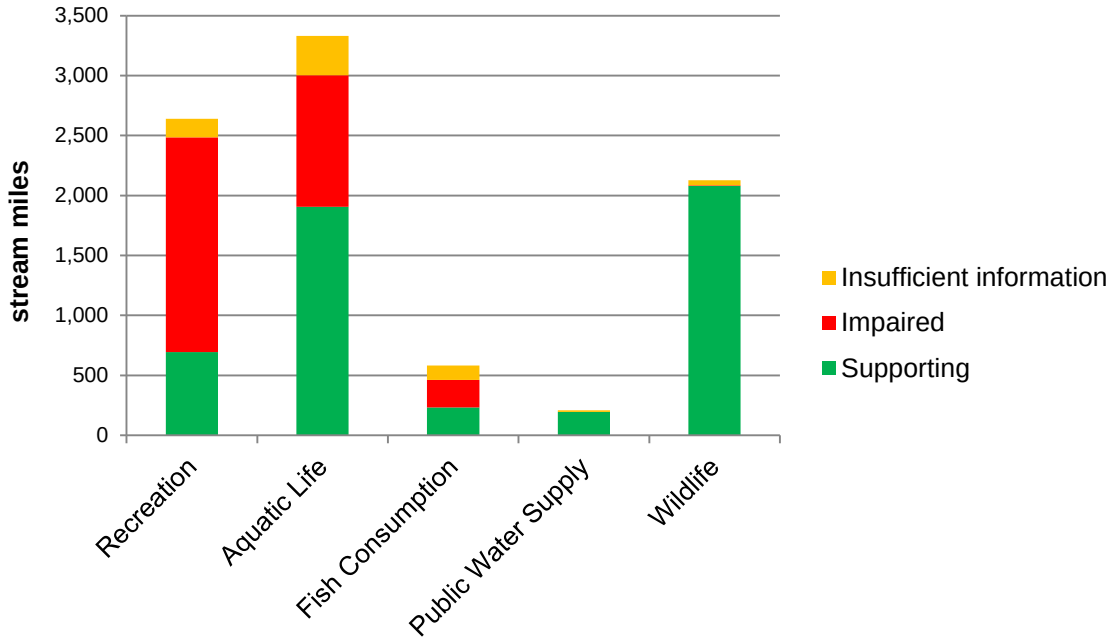
Assessment Unit ID	Stream Name	Location Description	Length (mi)
VAV-B40R_SSF01B14	South Fork Shenandoah River	South Fork Shenandoah River from the Bentonville Landing Bridge downstream to the Andy Guest State Park STP outfall.	2.2
VAV-B40R_SSF03A14	South Fork Shenandoah River	South Fork Shenandoah River from the Foster's Landing Rapids downstream to Seekford's Ford.	5.4
VAV-B37R_SSF02B14	South Fork Shenandoah River	South Fork Shenandoah River from Naked Creek downstream to the Shenandoah STP outfall.	2.0
VAV-B35R_SSF01A00	South Fork Shenandoah River	South Fork Shenandoah River from its confluence with Dry Run downstream to its confluence with Naked Creek.	3.6
VAV-B51R_NFS05A00	North Fork Shenandoah River	North Fork Shenandoah River from the Strasburg Public Water Intake downstream to the 5 mile upper limit of the PWS designation for the Winchester Public Water Intake.	1.6
VAV-B51R_NFS06A00	North Fork Shenandoah River	North Fork Shenandoah River from the 5 mile upper limit of the PWS designation for the Strasburg Public Water Intake downstream to the Strasburg Public Water Intake.	5.9
VAV-B45R_NFS02A00	North Fork Shenandoah River	North Fork Shenandoah River from its confluence with Fort Run downstream to its confluence with Plains Mill Spring Run.	4.5

Basin assessment information is included in the following figures and tables.

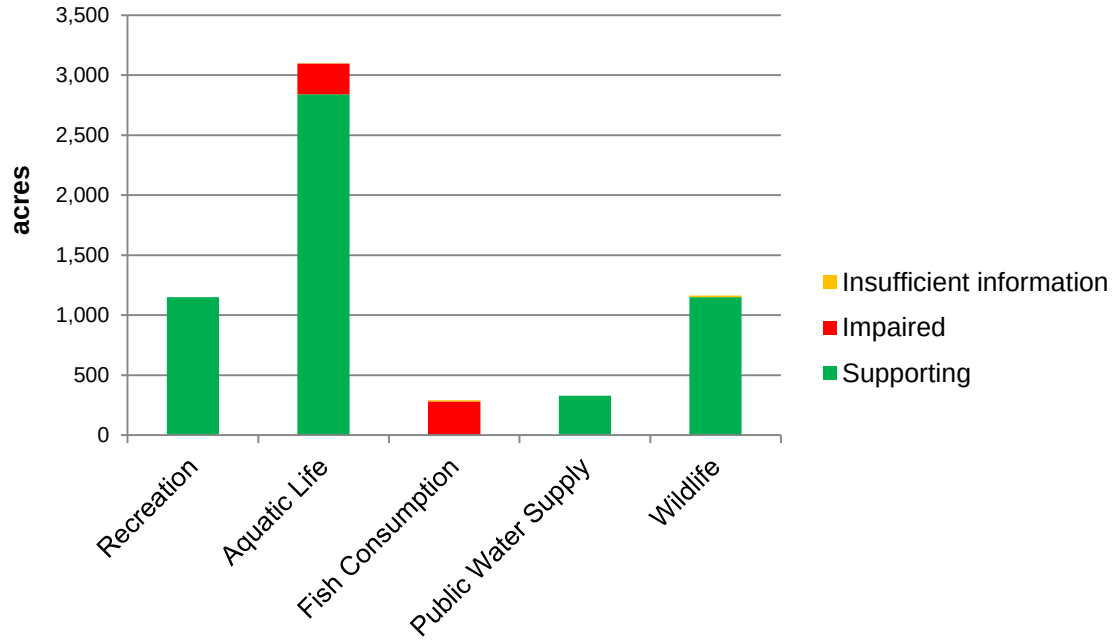
Figure 4.3-1 Designated Use support summary for Potomac-Shenandoah River basin. (Note: Waters that have some data, but not enough to determine use support, are classified as having "Insufficient information".)

Basin Size: *All Sizes Rounded to Nearest Whole Number*
Rivers - 13,232 miles
Lakes - 4,241 acres
Estuaries - 59 sq. miles

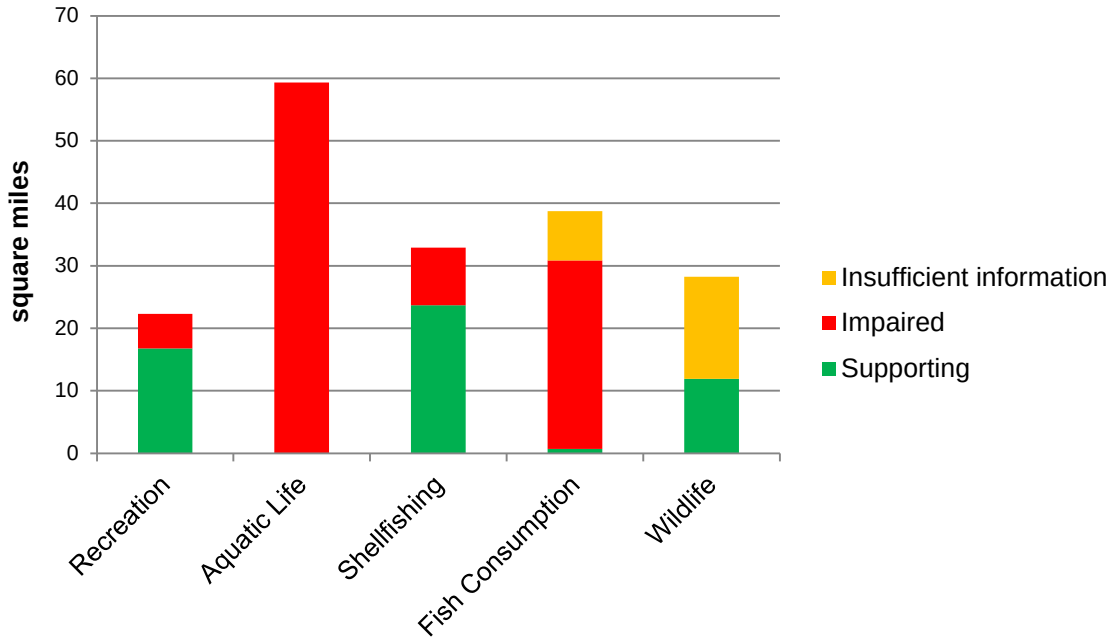
a) Rivers Assessment (10,175 miles were not assessed)



b) Lakes Assessment (926 acres were not assessed)



c) Estuaries assessment



d) Assessment of Chesapeake Bay-specific designated uses (Migratory fish spawning and nursery use was not assessed.)

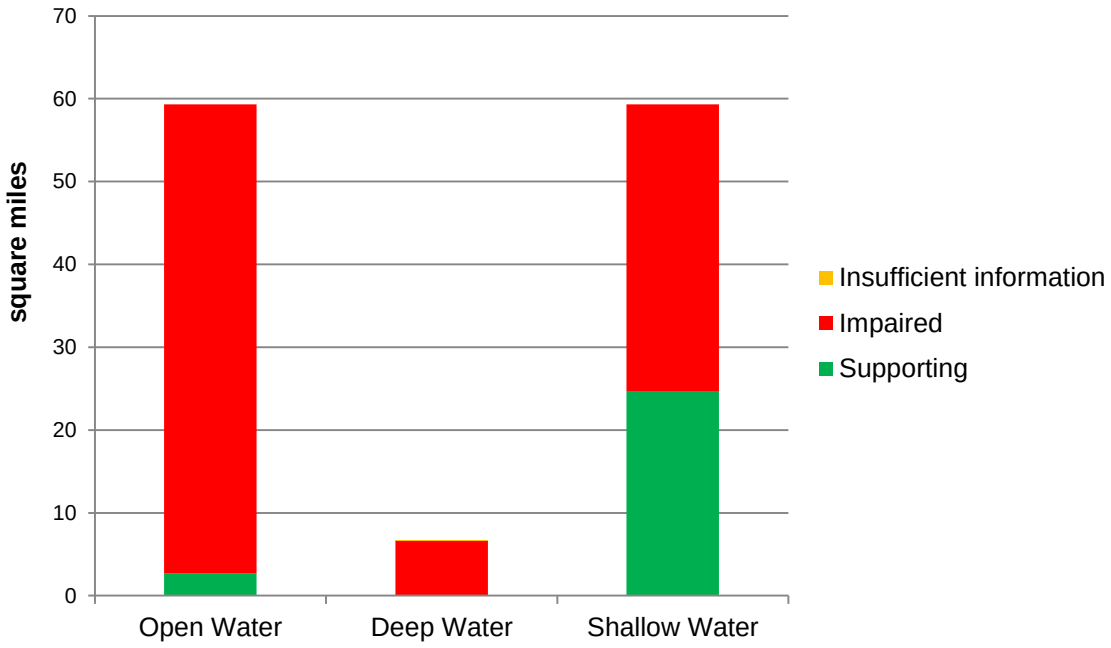


Table 4.3-1 Significant causes of designated use impairment in the Potomac-Shenandoah River basin, by waterbody type, ranked by percentage of impaired water size. (Note: Waters can have multiple pollutants.)

Rivers		*Lakes*		*Estuaries*	
Bacteria	79%	**PCBs in Fish Tissue**	52%	**Dissolved Oxygen**	98%
Impaired Benthics	32%	**Mercury in Fish Tissue**	33%	**Impaired Aquatic Plants**	58%
pH	13%	**Temperature**	29%	**PCBs in Fish Tissue**	51%
Dissolved Oxygen	7%	**Dissolved Oxygen**	17%	**Bacteria**	19%
Mercury in Fish Tissue	7%	**pH**	2%	**pH**	3%
PCBs in Fish Tissue	6%	**--**	--	**Impaired Benthics**	2%

Table 4.3-2 Suspected sources of designated use impairment in the Potomac-Shenandoah River basin, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

Rivers		*Lakes*		*Estuaries*	
Wildlife other than Waterfowl	60%	**Source Unknown**	81%	**Sources Outside State Borders**	100%
Non-Point Sources	51%	**Atmospheric Deposition (Toxics)**	19%	**Agriculture**	100%
Agriculture	34%	**Combined Sewer Overflows**	19%	**Atmospheric Deposition (Nitrogen)**	100%
Source Unknown	24%	**Contaminated Sediments**	19%	**Industrial or Municipal Point Source Discharges**	100%
Grazing in Riparian or Shoreline Zones	18%	**Upstream Source**	19%	**Internal Nutrient Recycling**	100%
Livestock Grazing or Feeding Operations	16%	**Natural Conditions**	17%	**Loss of Riparian Habitat**	100%

James River Basin

The James River Basin occupies the central portion of Virginia and covers 10,265 square miles or approximately 24% of the Commonwealth's total land area. It is Virginia's largest river basin and is made up of the Upper, Middle, and Lower James River sub-basins as well as the Appomattox River sub-basin.

The James River basin is defined by both hydrologic and political boundaries. The Potomac-Shenandoah River basin, the Rappahannock River basin and the York River basins bound the basin to the north. The southern boundary is made up of the New River basin, the Roanoke River basin and the Chowan River basin. Its headwaters originate along the Virginia/West Virginia state line.

The James River basin begins in the Alleghany Mountains and flows in a southeasterly direction to Hampton Roads where it enters the Chesapeake Bay. The James is formed by the confluence of the Jackson and Cowpasture Rivers and flows 242 miles to the Fall Line at Richmond and another 106 miles to the Chesapeake Bay.

The topography of the James River basin varies throughout the four physiographic provinces that it spans. The Valley and Ridge Province extends from the Appalachian Plateau in West Virginia to the Blue Ridge Province. The Blue Ridge Province, a remnant of a former highland, differs from the Valley and Ridge Province. It is a province of rugged terrain with steep slopes and narrow ridges in the north and broad moderate slopes in the south. The Piedmont Province extends to the Fall Line and has scattered hills and small mountains, gradually turning into gently rolling slopes and lower elevation in the eastern portion of the province. The Fall Zone separates the Coastal Plain Province from the Piedmont. The Fall Zone is a three-mile stretch of river running through Richmond where the river descends 84 feet as it flows from the resistant rocks of the Piedmont to the softer sediments of the Coastal Plain.

Over 65% of the James River basin is forested, with 19% in cropland and pasture. Approximately 12% is considered urban. The 2010 population for the James River basin was approximately 2,892,000. This population is concentrated in two metropolitan areas: Tidewater, with over one million people, and the Greater Richmond – Petersburg area with over 650,000. Two smaller population centers are the Lynchburg and Charlottesville areas, each with over 100,000 people. All or portions of the following 38 counties and 17 cities lie within the basin: counties - Albemarle, Alleghany, Amelia, Amherst, Appomattox, Augusta, Bath, Bedford, Botetourt, Buckingham, Campbell, Charles City, Chesterfield, Craig, Cumberland, Dinwiddie, Fluvanna, Giles, Goochland, Greene, Hanover, Henrico, Highland, Isle of Wight, James City, Louisa, Montgomery, Nelson, New Kent, Nottoway, Orange, Powhatan, Prince Edward, Prince George, Roanoke, Rockbridge, Surry, and York; cities - Buena Vista, Charlottesville, Chesapeake, Colonial Heights, Covington, Hampton, Hopewell, Lexington, Lynchburg, Newport News, Norfolk, Petersburg, Portsmouth, Richmond, Suffolk, Williamsburg, and Virginia Beach.

Average annual precipitation is 42.5 inches. Average annual snowfall amount ranges from over 30 inches in the mountains to less than 10 inches along the coast.

Major tributaries to the James River are Jackson River, Cowpasture River, Craig Creek, Maury River, Tye River, Rockfish River, Slate River, Rivanna River, Willis River, Appomattox River, Chickahominy River, Pagan River, Nansemond River, and the Elizabeth River.

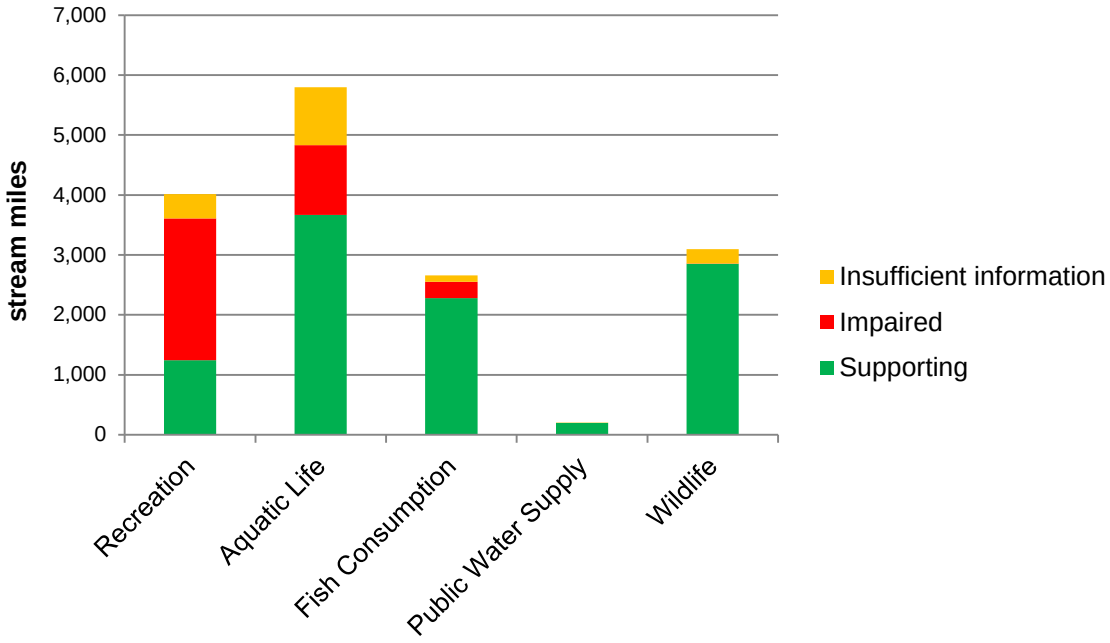
The James River Basin is divided into eight USGS hydrologic units as follows: HUC 02080201 –Upper James, HUC 02080202 – Maury, HUC 02080203 – Upper Middle James, HUC 02080204 – Rivanna, HUC 02080205 – Lower Middle James, HUC 02080206 – Lower James, HUC 02080207 – Appomattox, and HUC 02080208 – the Elizabeth. The eight hydrologic units are further divided into 109 waterbodies or watersheds and 298 6th order sub-watersheds.

Basin assessment information is presented in the following tables and figures.

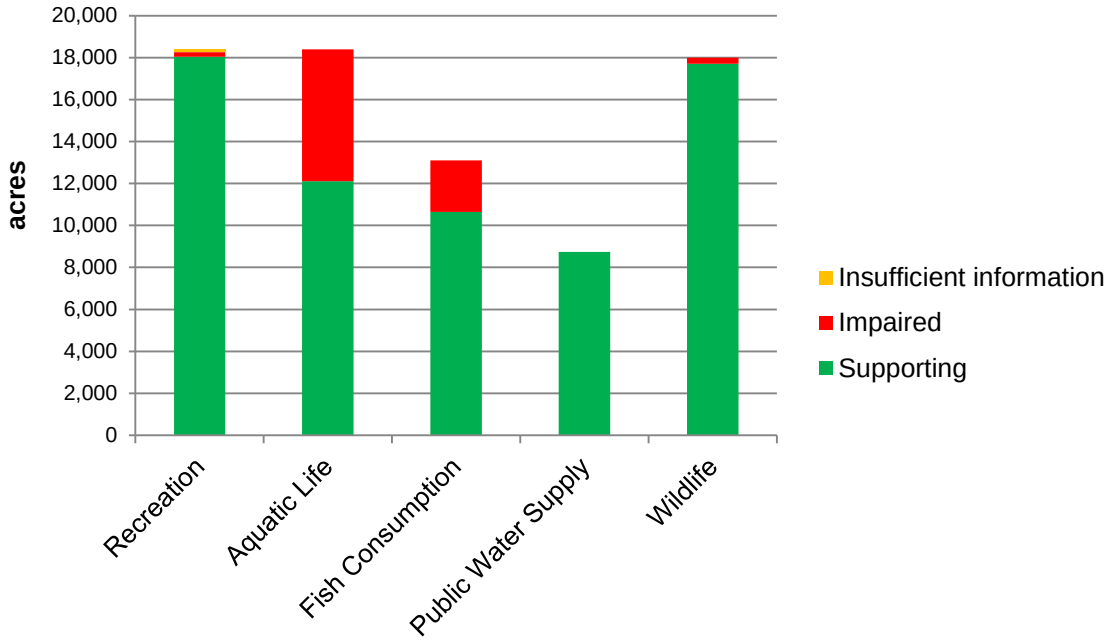
Figure 4.3-2 Designated Use support summary for the James River basin.

Basin Size: *All Sizes Rounded to Nearest Whole Number*
Rivers - 26,054 miles
Lakes - 18,542 acres
Estuaries - 265 sq. miles

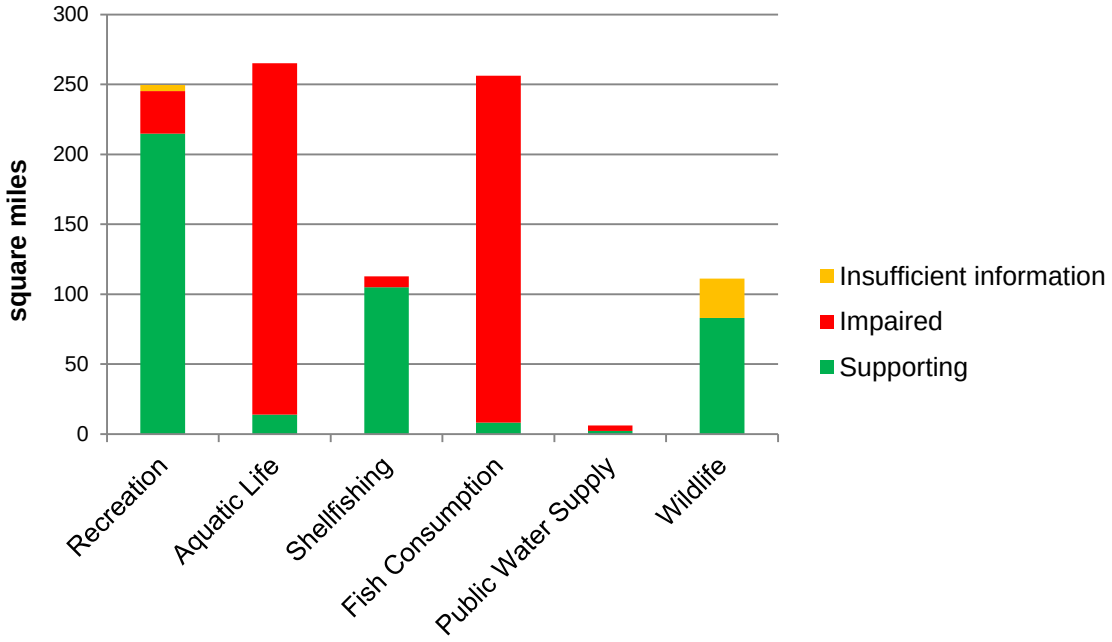
a) Rivers Assessment (19,501 miles were not assessed)



b) Lakes Assessment (53 acres were not assessed)



c) Estuaries assessment



d) Assessment of Chesapeake Bay-specific designated uses (Migratory fish spawning and nursery use was not assessed).

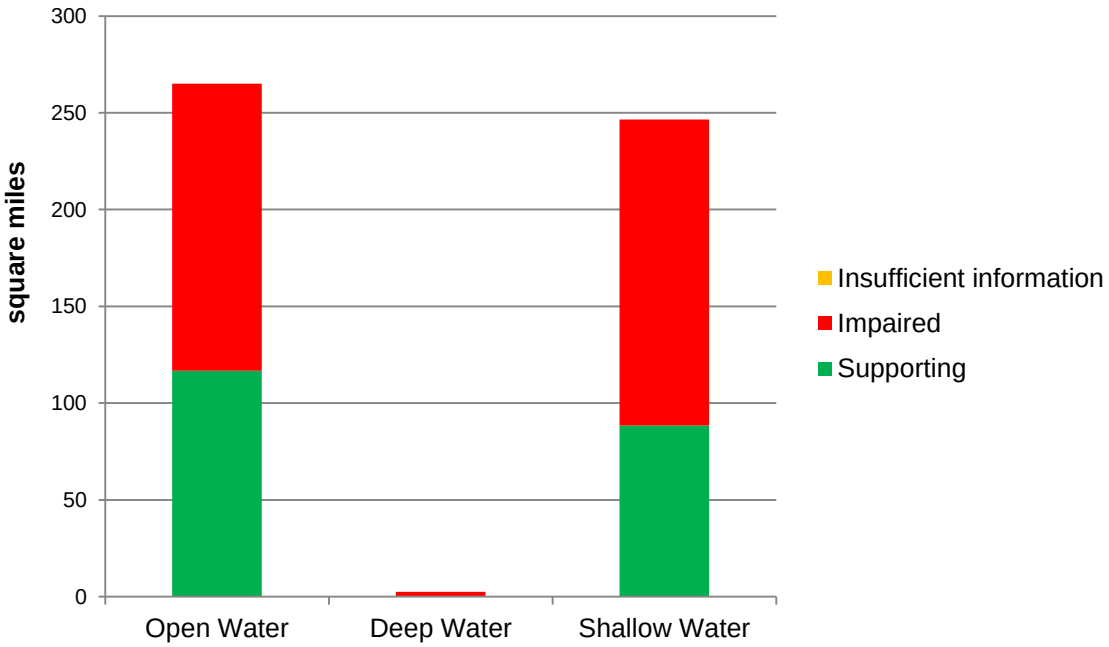


Table 4.3-3 Significant causes of designated use impairment in the James River basin, by waterbody type, ranked by percentage of impaired water size. (Note: Waters can have multiple pollutants.)

Rivers		***Lakes***		***Estuaries***	
Bacteria	76%	**Dissolved Oxygen**	81%	**PCBs in Fish Tissue**	94%
Impaired Benthics	22%	**Mercury in Fish Tissue**	33%	**Impaired Aquatic Plants**	60%
Dissolved Oxygen	10%	**Total Phosphorous**	26%	**Chlorophyll a**	59%
PCBs in Fish Tissue	8%	**pH**	15%	**Impaired Benthics**	36%
pH	8%	**Copper**	4%	**Bacteria**	13%
Temperature	3%	**PCB in Fish Tissue**	4%	**Dissolved Oxygen**	7%

Table 4.3-4 Suspected sources of designated use impairment in the James River Basin, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

Rivers		***Lakes***		***Estuaries***	
Non-Point Sources	**56%**	**Source Unknown**	94%	**Source Unknown**	98%
Wildlife other than Waterfowl	**41%**	**Natural Conditions**	19%	**Industrial or Municipal Point Source Discharges**	69%
Source Unknown	**24%**	**Atmospheric Deposition (Toxics)**	15%	**Non-Point Sources**	60%
Unspecified Domestic Waste	**23%**	**Dam or Impoundments**	8%	**Agriculture**	22%
Livestock Grazing or Feeding Operations	**23%**	**Non-Point Sources**	4%	**Atmospheric Deposition (Nitrogen)**	22%
Wastes from Pets	**22%**	**Urbanized High Density Areas**	4%	**Loss of Riparian Habitat**	22%

Rappahannock River Basin

The Rappahannock River basin is located in the northeastern portion of Virginia and covers 2,712 square miles or approximately 6% of the Commonwealth's total area.

The Rappahannock River basin is bordered by the Potomac-Shenandoah basin to the north and the York River basin and Chesapeake/Atlantic Coastal basin to the south and east. The headwaters lie in Fauquier and Rappahannock counties and flow in a southeasterly direction to its confluence with the Chesapeake Bay between Lancaster and Middlesex counties. The Rappahannock River basin is 184 miles in length and varies in width from 20 to 50 miles. The Rappahannock River basin's major tributaries are the Hazel River, Thornton River, Mountain Run, Rapidan River, Robinson River, Cat Point Creek, and the Corrotoman River.

The topography of the Rappahannock River basin changes from steep slopes to flat land as it flows from the Blue Ridge Mountains to the Chesapeake Bay. About 51% of the basin land is forested, while pasture and cropland make up another 36%. Only about 6% of the land area is considered urban.

Most of the Rappahannock River basin lies in the eastern Piedmont and Coastal Plain areas of the Commonwealth while its headwaters, located on the eastern slopes of the Blue Ridge, are considered to be in the northwestern Piedmont section.

The 2010 population of the Rappahannock River basin was approximately 483,770. The basin is mostly rural in character with no large population centers. However, the basin has seen increasing urban pressure from the influence of metropolitan Washington in the Fredericksburg and Fauquier areas of the basin. All or portions of the following 17 counties and one city lie within the basin: Albemarle, Caroline, Culpeper, Essex, Fauquier, Greene, King George, Lancaster, Madison, Middlesex, Northumberland, Orange, Rappahannock, Richmond, Spotsylvania, Stafford, and Westmoreland; City - Fredericksburg.

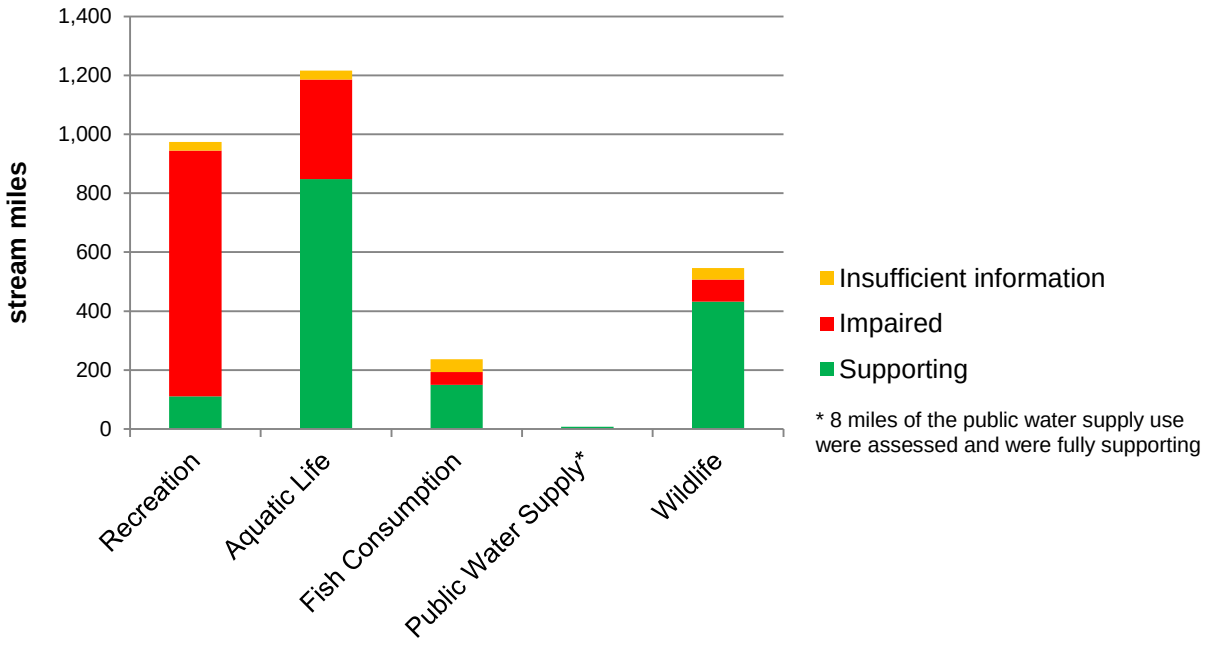
The Rappahannock River Basin is divided into two USGS hydrologic units as follows: HUC 02080103 – Rapidan – Upper Rappahannock; and HUC 02080104 – Lower Rappahannock. The two hydrologic units are further divided into 26 waterbodies or watersheds and 74 6th order sub-watersheds.

Basin assessment information is presented in the following figures and tables.

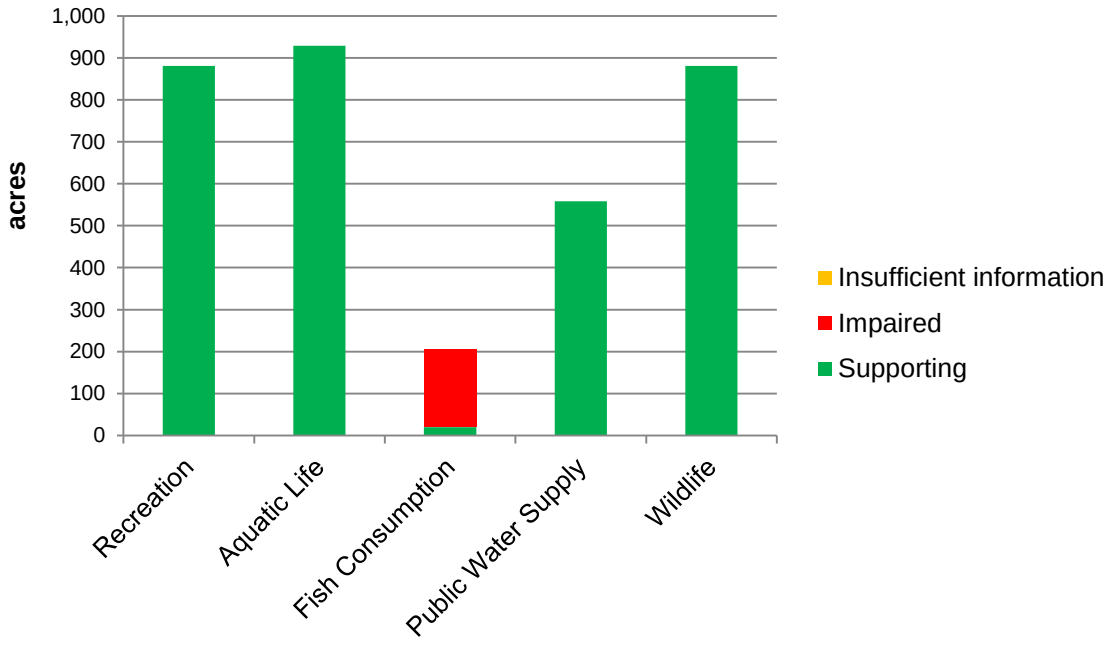
Figure 4.3-3 Designated use support summary for the Rappahannock River basin. (Note: Waters that have some data, but not enough to determine use support, are classified as having "Insufficient information".)

Basin Size: *All Sizes Rounded to Nearest Whole Number*
Rivers - 6,488 miles
Lakes - 948 acres
Estuaries - 155 sq. miles

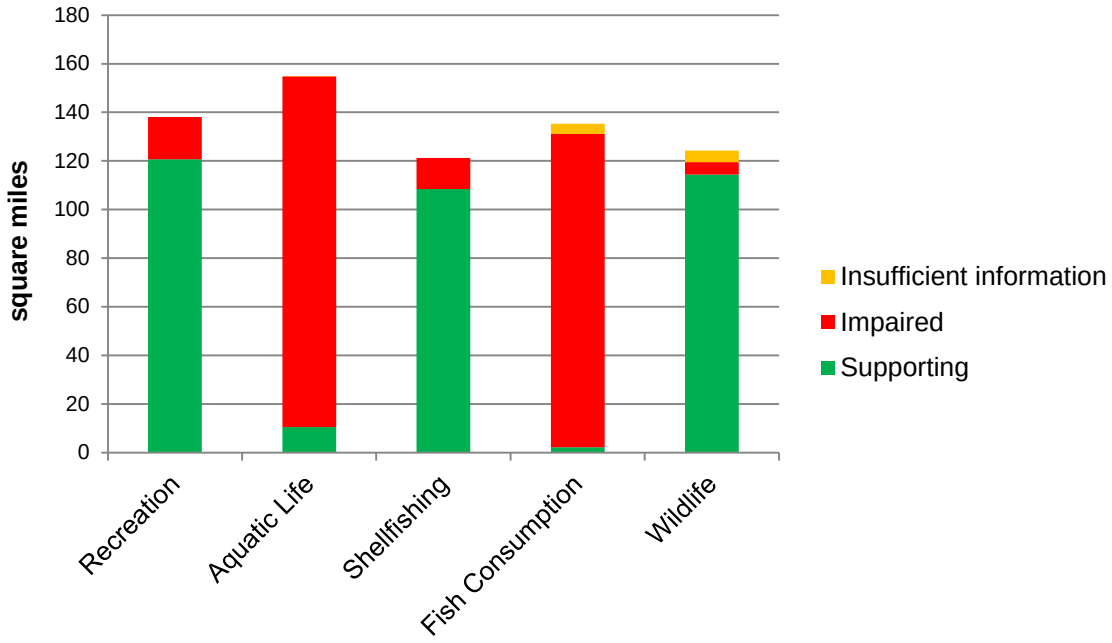
a) Rivers Assessment (5,290 miles were not assessed)



b) Lakes Assessment



c) Estuaries assessment



d) Assessment of Chesapeake Bay-specific designated uses (Migratory fish spawning and nursery use was not assessed).

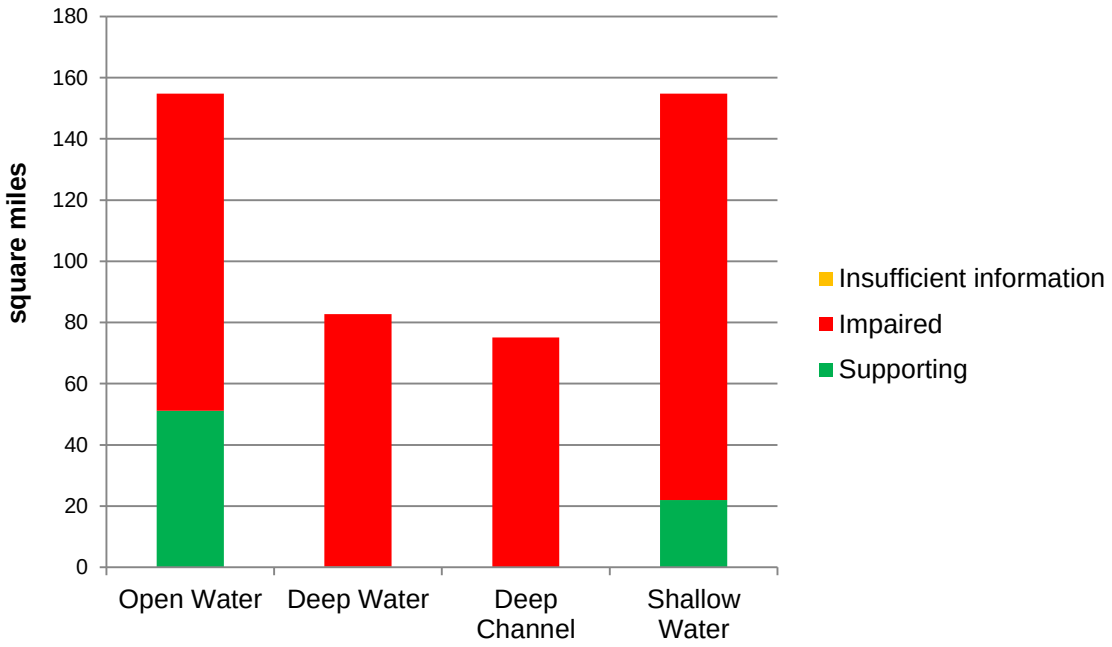


Table 4.3-5 Significant causes of designated use impairment in the Rappahannock River basin, by waterbody type, ranked by percentage of impaired water size. (Note: Waters can have multiple pollutants.)

Rivers		*Lakes*		*Estuaries*	
Bacteria	83%	**Mercury in Fish Tissue**	100%	**Impaired Aquatic Plants**	87%
pH	13%	**--**	--	**PCB in Fish Tissue**	84%
Impaired Benthics	10%	**--**	--	**Impaired Benthics**	81%
Dissolved Oxygen	10%	**--**	--	**Dissolved Oxygen**	68%
Mirex	7%	**--**	--	**Bacteria**	18%
PCBs in Fish Tissue	3%	**--**	--	**Chloride**	3%

Table 4.3-6 Suspected sources of designated use impairment in the Rappahannock River basin, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

Rivers		*Lakes*		*Estuaries*	
Livestock Grazing or Feeding Operations	47%	**Source Unknown**	100%	**Source Unknown**	90%
Waterfowl	47%	**Atmospheric Deposition (Toxics)**	26%	**Municipal or Industrial Point Source Discharges**	88%
Wildlife other than Waterfowl	47%	**--**	--	**Agriculture**	87%
Waste from Pets	44%	**--**	--	**Internal Nutrient Recycling**	87%
Non-Point Sources	30%	**--**	--	**Loss of Riparian Habitat**	87%
On-site Septic Treatment Systems	30%	**--**	--	**Clean Sediments**	87%

Roanoke River Basin

The Roanoke River basin covers 6,393 square miles or approximately 15% of the Commonwealth's total area. In addition to the Roanoke itself, the basin also contains the Yadkin River sub-basin.

The Virginia portion of the Roanoke River basin is defined by both hydrologic and political boundaries. The basin is bound by the James River basin on the north, to the east by the Chowan River basin, and to the west by the New River basin. The southern boundary of the basin is the Virginia/North Carolina state line.

The topography of the Roanoke River basin ranges from steep slopes and valleys in the Valley and Ridge Province to gently sloping terrain east of the mountains in the Piedmont Province.

The Roanoke River basin headwaters begin in the mountainous terrain of eastern Montgomery County and flow in a southeasterly direction to the Virginia/North Carolina state line. The Roanoke basin passes through three physiographic provinces- the Valley and Ridge Province to the northwest, and the Blue Ridge and Piedmont Provinces to the southeast.

The Roanoke watershed is large enough to accommodate two major reservoirs, Smith Mountain and Leesville Lakes to the north and Kerr Reservoir and Lake Gaston located at the junction of the Roanoke River and the North Carolina state line. These reservoirs range in size from the 33,300 acre Kerr Reservoir to the 2,600-acre Leesville Lake. These impoundments are used for both recreation and hydroelectricity. Major tributaries in the northern section of the basin are the Little Otter and Big Otter Rivers along with the Blackwater and Pigg Rivers. Major tributaries in the southern portion include the Dan River, Smith River, and Banister River. Over 62% of the Roanoke River Basin is forested, while nearly 25% is in cropland and pasture. Approximately 10% is considered urban.

The 2010 population for the Roanoke River Basin was approximately 943,200. All or portions of the following 17 counties and 4 cities lie within the basin: counties – Appomattox, Bedford, Botetourt, Brunswick, Campbell, Carroll, Charlotte, Floyd, Franklin, Grayson, Halifax, Henry, Mecklenburg, Montgomery, Patrick, Pittsylvania, and Roanoke; cities – Danville, Martinsville, Roanoke, and Salem.

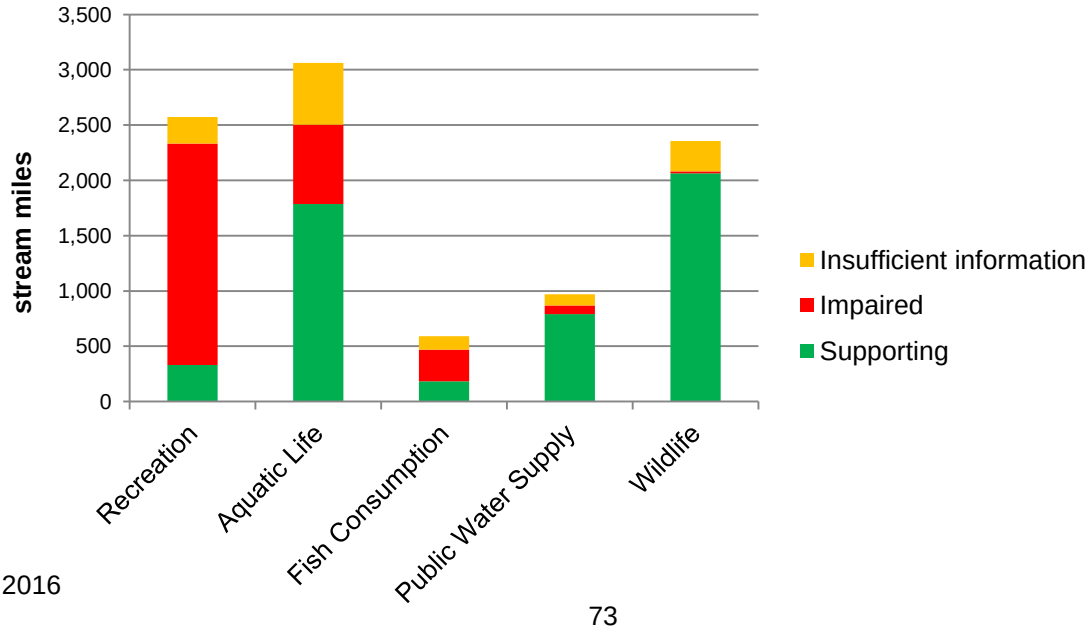
The Roanoke River basin is divided into seven USGS hydrologic units as follows: HUC 03010101 – Upper Roanoke; HUC 03010102 – Middle Roanoke; HUC 03010103 – Upper Dan; HUC 03010104 – Lower Dan; HUC 03010105 – Banister; HUC 03010106 – Roanoke Rapids and HUC 03040101 – Upper Yadkin. The seven hydrologic units are further divided into 87 waterbodies or watersheds and 202 6th order sub-watersheds.

Basin assessment information is presented in the following figures and tables.

Figure 4.3-4 Designated use support summary for the Roanoke River basin. (Note: Waters that have some data, but not enough to determine use support, are classified as having "Insufficient information".)

Basin Size: *All Sizes Rounded to Nearest Whole Number*
Rivers - 17,274 miles
Lakes - 66,784 acres
Estuaries - 0 sq. miles

a) Rivers Assessment (14,622 miles were not assessed)



b) Lakes Assessment (1,353 acres were not assessed)

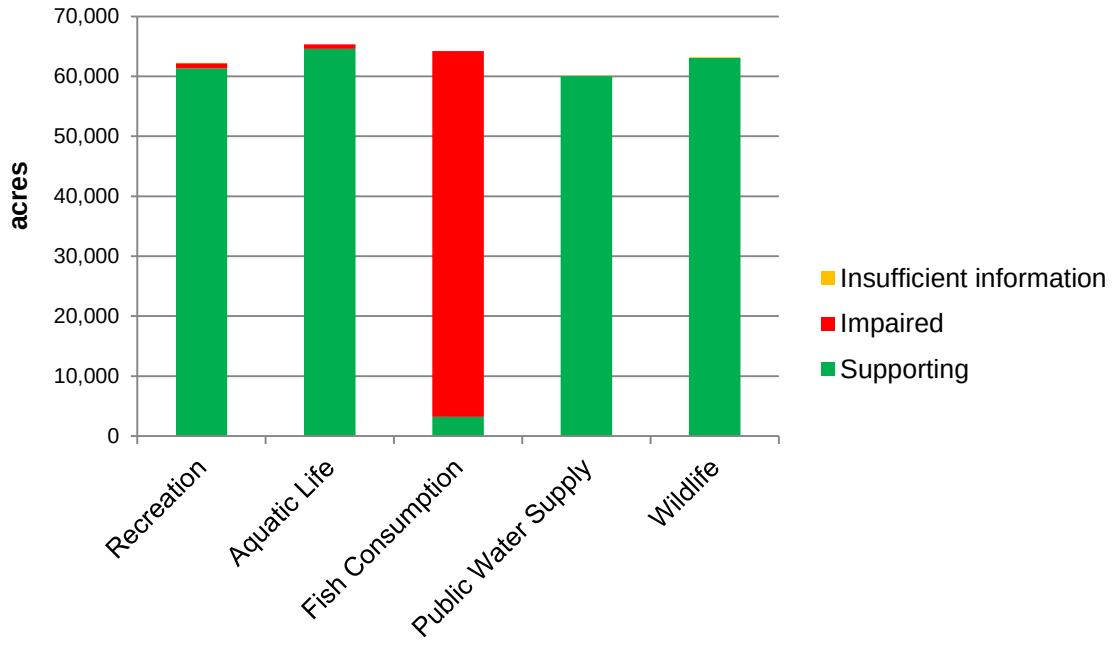


Table 4.3-7 Significant causes of designated use impairment in the Roanoke River basin, by waterbody type, ranked by percentage of impaired water size. (Note: Waters can have multiple pollutants.)

Rivers		***Lakes***	
Bacteria	90%	**PCBs in Fish Tissue**	93%
Impaired Benthics	25%	**Mercury in Fish Tissue**	71%
Mercury in Fish Tissue	11%	**Bacteria**	1%
PCBs in Fish Tissue	11%	**Dissolved Oxygen**	1%
Temperature	6%	**Chlorophyll a**	<1%
Dissolved Oxygen	3%	**pH**	<1%

Table 4.3-8 Suspected sources of designated use impairment in the Roanoke River basin, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

Rivers		***Lakes***	
Wildlife other than Waterfowl	86%	**Source Unknown**	99%
Livestock Grazing or Feeding Operations	82%	**Wildlife other than Waterfowl**	1%
Unspecified Domestic Waste	82%	**Unspecified Domestic Waste**	1%
Waste from Pets	49%	**Livestock Grazing or Feeding Operations**	1%
On-Site Septic Treatment Systems	34%	**On-site Septic Treatment Systems**	1%
Source Unknown	30%	**Natural Conditions**	<1%

Chowan River-Dismal Swamp Basin

The Chowan River and Dismal Swamp basin is located in the southeastern portion of Virginia and covers 4,220 square miles or approximately 10% of the Commonwealth's total area.

The basin extends eastward from Charlotte County to the Chesapeake Bay. The Chowan River-Dismal Swamp basin in Virginia is defined by both hydrologic and political boundaries - the James River basin to the north, the Chesapeake/Atlantic and Small Coastal River basins to the east, the Roanoke River basin to the west and the Virginia/North Carolina State line to the south. The basin is approximately 145 miles in length and varies from 10 to 50 miles in width. The Chowan River-Dismal Swamp basin flows through the Piedmont and Coastal Plain Physiological Provinces. The Chowan portion flows 130 miles from west to east, crossing both the Piedmont and Coastal Plain, while the Dismal Swamp lies entirely within the Coastal Plain. The Piedmont portion is characterized by rolling hills, steeper slopes and somewhat more pronounced stream valleys. The Coastal Plain, in contrast, is nearly flat with a descending series of terraces.

The Chowan River-Dismal Swamp basin is mostly rural with approximately 64% of its land covered by forest. Cropland and pasture make up another 28%, while only about 6% is classified as urban.

The 2010 population for the Chowan River-Dismal Swamp basin was approximately 597,900. All or portions of the following 13 counties and 6 cities lie within the basin: counties – Brunswick, Charlotte, Dinwiddie, Greensville, Isle of Wight, Lunenburg, Mecklenburg, Nottoway, Prince Edward, Prince George, Southampton, Surry, and Sussex; Cities – Chesapeake, Emporia, Franklin, Petersburg, Suffolk, and Virginia Beach.

Major tributaries of the Chowan River are the Meherrin, the Nottoway and the Blackwater. The Nottoway and the Blackwater join at the Virginia/North Carolina state line to form the Chowan River. The Dismal Swamp portion is mostly flat with many swamp and marshland areas.

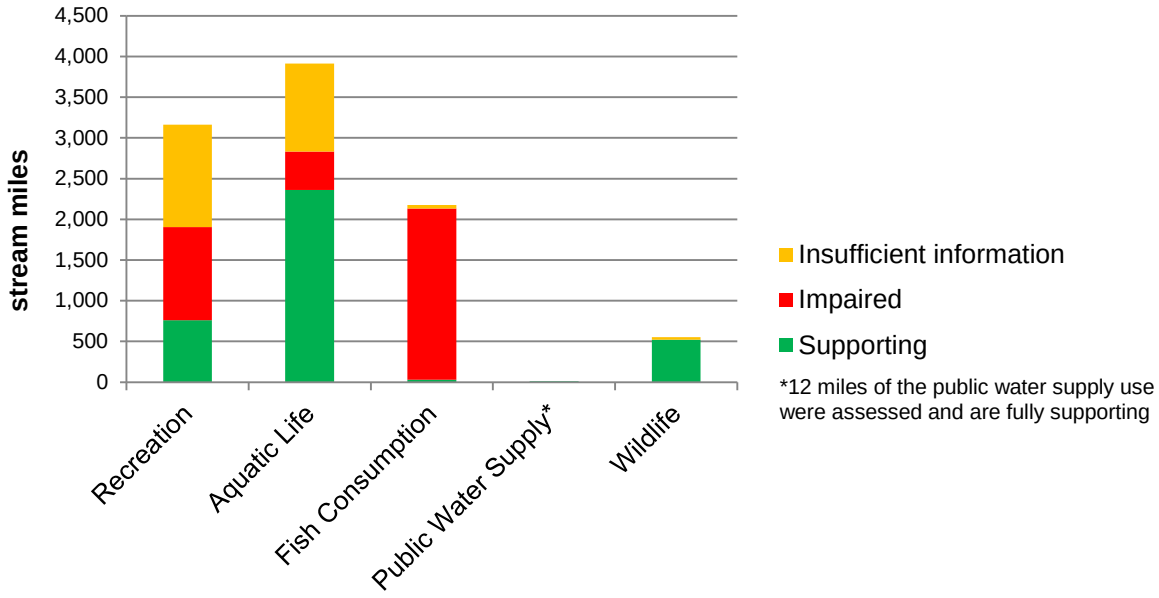
The Chowan River-Dismal Swamp basin is divided into five USGS hydrologic units as follows: HUC 03010201 – Nottoway; HUC 03010202 – Blackwater; HUC 03010203 – Chowan; HUC 03010204 – Meherrin; and HUC 03010205 – Albemarle Sound. The five hydrologic units are further divided into 42 waterbodies or watersheds and 127 6th order sub-watersheds.

Basin assessment information is presented in the following figures and tables.

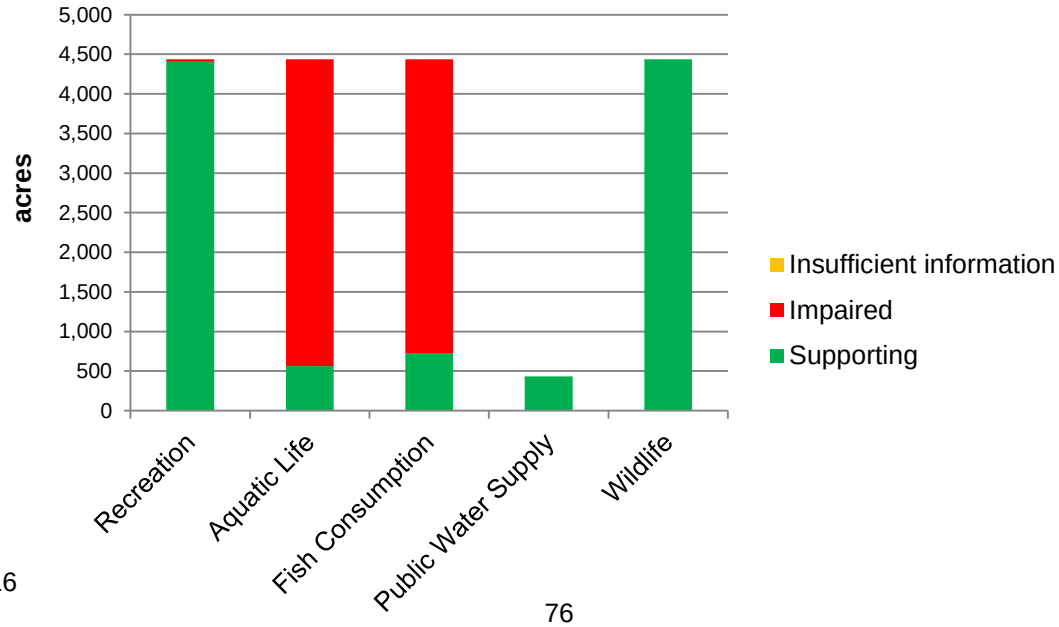
Figure 4.3-5 Designated use support summary for the Chowan River-Dismal Swamp basin. (Note: Waters that have some data, but not enough to determine use support, are classified as having "Insufficient information".)

Basin Size: *All Sizes Rounded to Nearest Whole Number*
Rivers - 10,932 miles
Lakes - 4,699 acres
Estuaries - 39 sq. miles

a) Rivers Assessment (6,702 miles were not assessed)



b) Lakes Assessment (263 acres were not assessed)



c) Estuaries assessment

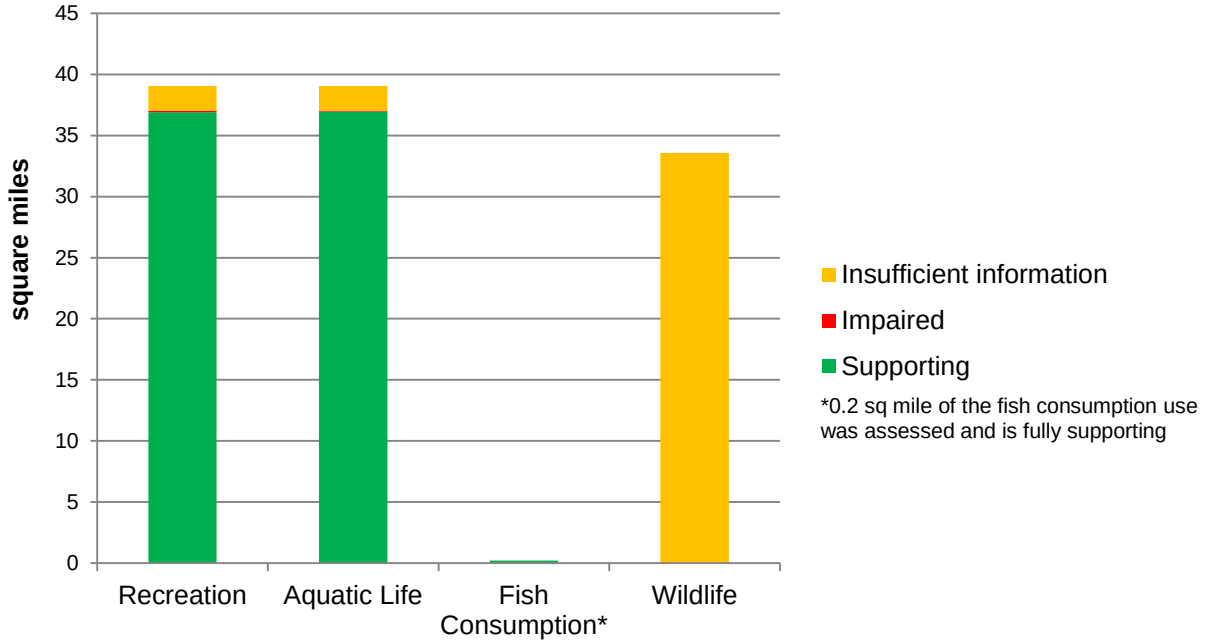


Table 4.3-9 Significant causes of designated use impairment in the Chowan River-Dismal Swamp basin, by waterbody type, ranked by percentage of impaired water size. (Note: Waters can have multiple pollutants.)

Rivers		***Lakes***		***Estuaries***	
Mercury in Fish Tissue	69%	**Mercury in Fish Tissue**	89%	**Bacteria**	100%
Bacteria	38%	**pH**	80%	**Dissolved Oxygen**	62%
Dissolved Oxygen	9%	**Total Phosphorus**	8%	**pH**	11%
Impaired Benthics	7%	**Dissolved Oxygen**	7%	**--**	--
pH	3%	**Chlorophyll a**	4%	**--**	--
PCBs in Fish Tissue	1%	**Bacteria**	1%	**--**	--

Table 4.3-10 Suspected sources of designated use impairment in the Chowan River-Dismal Swamp basin, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

Rivers		***Lakes***		***Estuaries***	
Source Unknown	87%	**Source Unknown**	100%	**Source Unknown**	78%
Atmospheric Deposition (Toxics)	30%	**Agriculture**	4%	**Natural Conditions**	33%

Rivers		*Lakes*		*Estuaries*	
Non-Point Sources	19%	**Natural Conditions**	3%	**Crop Production**	22%
Wildlife other than Waterfowl	11%	**--**	--	**Livestock Grazing or Feeding Operations**	22%
Municipal Point Source Discharges	9%	**--**	--	**On-site Septic Treatment Systems**	22%
Agriculture	6%	**--**	--	**Waterfowl or Wildlife**	22%

Tennessee-Big Sandy River Basin

The segment of the Tennessee and Big Sandy River basin which lies in Virginia is made up of the Holston, Clinch-Powell, and Big Sandy River sub-basins. These sub-basins are located in the extreme southwest portion of Virginia and cover 4,132 square miles or approximately 10% of the Commonwealth's total land area.

The Virginia portion of the Tennessee-Big Sandy River basin is defined by both hydrologic and political boundaries. The West Virginia state line lies to the north, Kentucky to the west, and Tennessee to the south. The New River basin makes up the eastern boundary.

While numerous southwestern Virginia streams feed the Tennessee and Big Sandy Rivers, neither river forms within the Commonwealth itself. The Big Sandy sub-basin contains the Levisa and Tug Forks that flows northward into Kentucky forming the Big Sandy River. The southwestward flowing Holston, Clinch, and Powell tributaries form the Tennessee River in Tennessee. Both of the major river sub-basins eventually empty into the Gulf of Mexico via the Ohio and Mississippi Rivers.

The Tennessee-Big Sandy River basin spans three physiographic provinces: Appalachian Plateau, Valley and Ridge, and the Blue Ridge. The Big Sandy portion of the basin lies within the Appalachian Plateau. This province is characterized as rugged, with mountainous terrain and steep valleys. Parallel valleys and ridges running in a northeast to southwest direction characterize the Tennessee portion, lying in the Valley and Ridge Province. A small portion of the basin, located in the Blue Ridge Province, is more like a plateau with no single, prominent ridge that characterizes the province to the southeast.

Within Virginia, approximately 48% of the Tennessee River basin is forested, while cropland and pasture make up another 39.7%. The Big Sandy portion of the basin is approximately 86% forest, with only about 5% in cropland and pasture. Urban areas make up only a small percentage of the total land area.

The 2010 population for the Tennessee-Big Sandy River Basin was approximately 458,700. All or parts of the following jurisdictions lie within the basin: counties – Bland, Buchanan, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, and Wythe; Cities – Bristol and Norton.

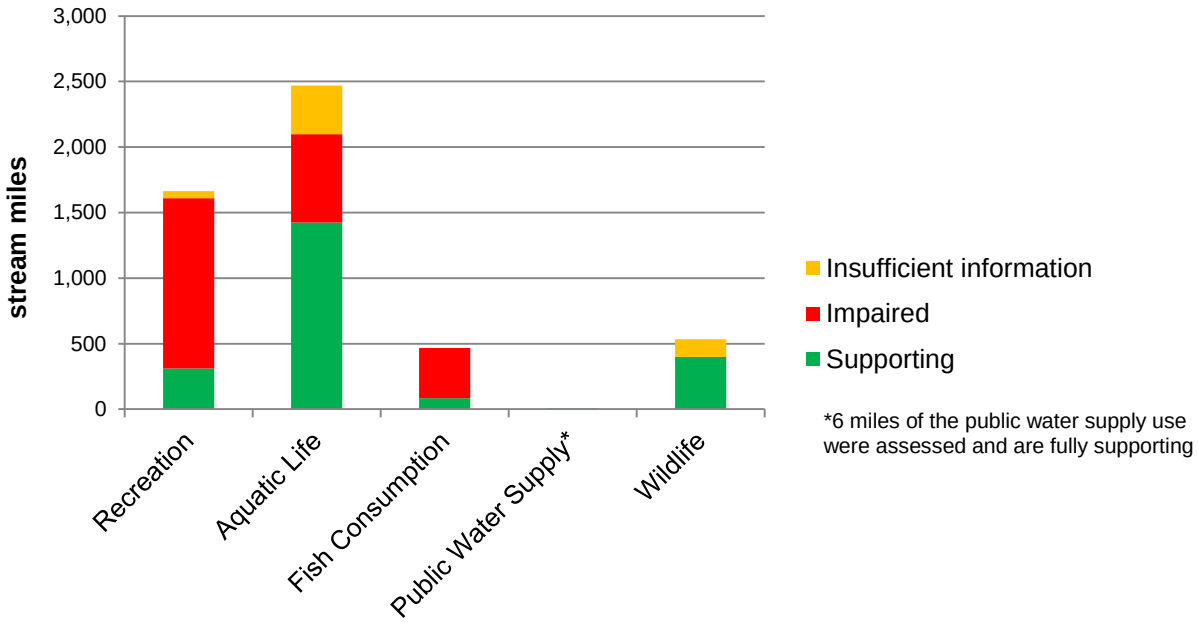
The Tennessee-Big Sandy River basin is divided into six USGS hydrologic units as follows: HUC 05070201 – Tug Fork; HUC 05070202 – Upper Levisa; HUC 06010101 – North Fork Holston; HUC 06010102 - South and Middle Fork Holston; HUC 06010205 – Upper Clinch; and HUC 06010206 – Powell River. The six hydrologic units are further divided into 56 waterbodies or watersheds and 135 6th order sub-watersheds.

Basin assessment information is presented in the following figures and tables.

Figure 4.3-6 Designated use support summary for the Tennessee-Big Sandy River basin. (Note: Waters that have some data, but not enough to determine use support, are classified as having "Insufficient information".)

Basin Size: *All Sizes Rounded to Nearest Whole Number*
Rivers - 10,664 miles
Lakes - 3,857 acres
Estuaries - 0 sq. miles

a) Rivers Assessment (8,301 miles were not assessed)



b) Lakes Assessment

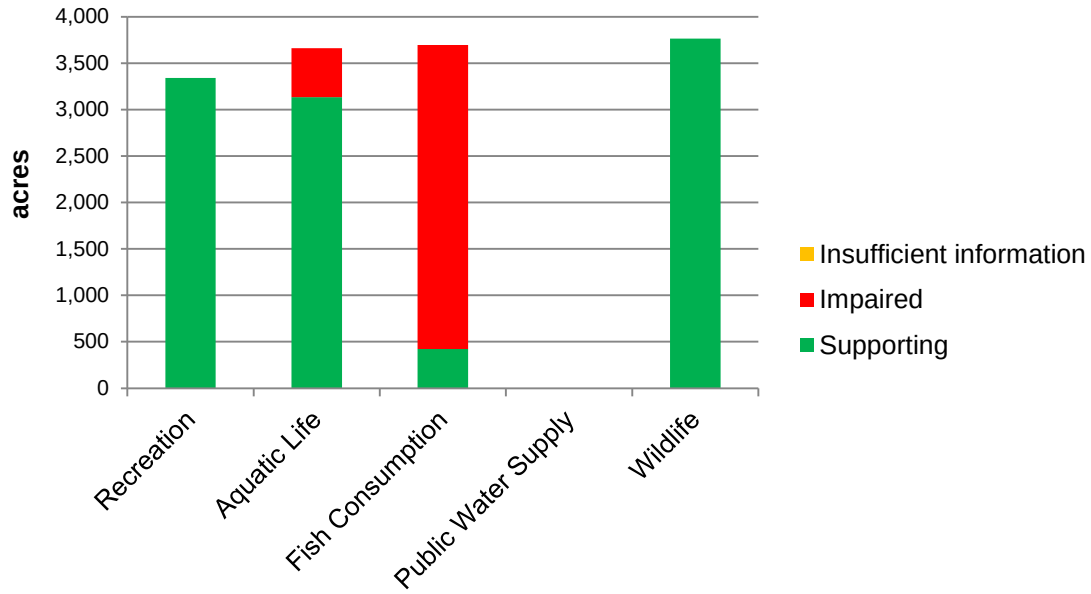


Table 4.3-11 Significant causes of designated use impairment in the Tennessee-Big Sandy River basin, by waterbody type, ranked by percentage of impaired water size. (Note: Waters can have multiple pollutants.)

Rivers		***Lakes***	
Bacteria	71%	**Mercury in Fish Tissue**	89%
Impaired Benthics	34%	**PCBs in Fish Tissue**	46%
PCBs in Fish Tissue	17%	**pH**	13%
Sedimentation/ Siltation	7%	**Temperature**	11%
Mercury in Fish Tissue	5%	**--**	--
Temperature	4%	**--**	--

Table 4.3-12 Suspected sources of designated use impairment in the Tennessee-Big Sandy River basin, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

Rivers		***Lakes***	
Unrestricted Cattle Access	43%	**Source Unknown**	49%
Rural Residential Areas	43%	**Atmospheric Deposition (Toxics)**	42%
Source Unknown	22%	**Natural Conditions**	14%
Coal Mining	16%	**--**	--
Sewage Discharges in Unsewered Areas	15%	**--**	--
Surface Mining	10%	**--**	--

Chesapeake Bay/Atlantic Ocean and Small Coastal Basins

The Chesapeake Bay/Atlantic Ocean and small coastal basins are located in the eastern part of Virginia and covers 3,592 square miles or approximately 8% of the Commonwealth's total land area. The combined basins encompass the small bays, river inlets, islands and shoreline immediately surrounding the Chesapeake Bay and the southern portion of the Delmarva Peninsula. These basins also include the Chesapeake Bay itself.

The Chesapeake Bay/Atlantic Ocean and small coastal basins are defined by both hydrologic and political boundaries. The Potomac River, the Rappahannock River, the York River, the James River, and the Chowan River-Dismal Swamp basins border the small coastal basins to its west. The Eastern Shore portion is bordered on the west by the Chesapeake Bay, on the north by Maryland, and on the east by the Atlantic Ocean.

The topography of the Chesapeake Bay/Atlantic Ocean and small coastal basins vary little. The basins lie within the Coastal Plain Physiographic Province where elevations average no more than a few feet above sea level. More significant elevation occurs along the central spine of the Eastern Shore portion, which forms a plateau about 45 feet above sea level. Much of these basins consist of marshland. About 30% of the Chesapeake Bay/Atlantic Ocean and small coastal basins are forested, while nearly 22% is in cropland and pasture. Approximately 24% is considered urban.

The 2010 population for the Chesapeake Bay/Atlantic Ocean and small coastal basins was approximately 741,800. All or portions of the following jurisdictions lie within these basins: Counties – Accomack, Essex, Gloucester, King and Queen, Lancaster, Matthews, Middlesex, Northampton, Northumberland, and York; Cities – Hampton, Newport News, Norfolk, Poquoson, and Virginia Beach.

Tributaries in the Chesapeake Bay/coastal basins drain into the Chesapeake Bay or the Atlantic Ocean. Major tributaries flowing into the Chesapeake Bay from the western shore are the Great Wicomico River, Piankatank River, Fleets Bay, Mobjack Bay including the East, North, Ware, and Severn Rivers, Poquoson River, Back River and Lynnhaven River. Tributaries in the Eastern Shore portion that drain into the Bay are Pocomoke River, Onancock, Pungoteague, Occohannock, and Nassawadox Creeks. Machipongo River, Assawoman Creek, Parker Creek, Folly Creek, and Finney Creek drain east directly into the Atlantic Ocean.

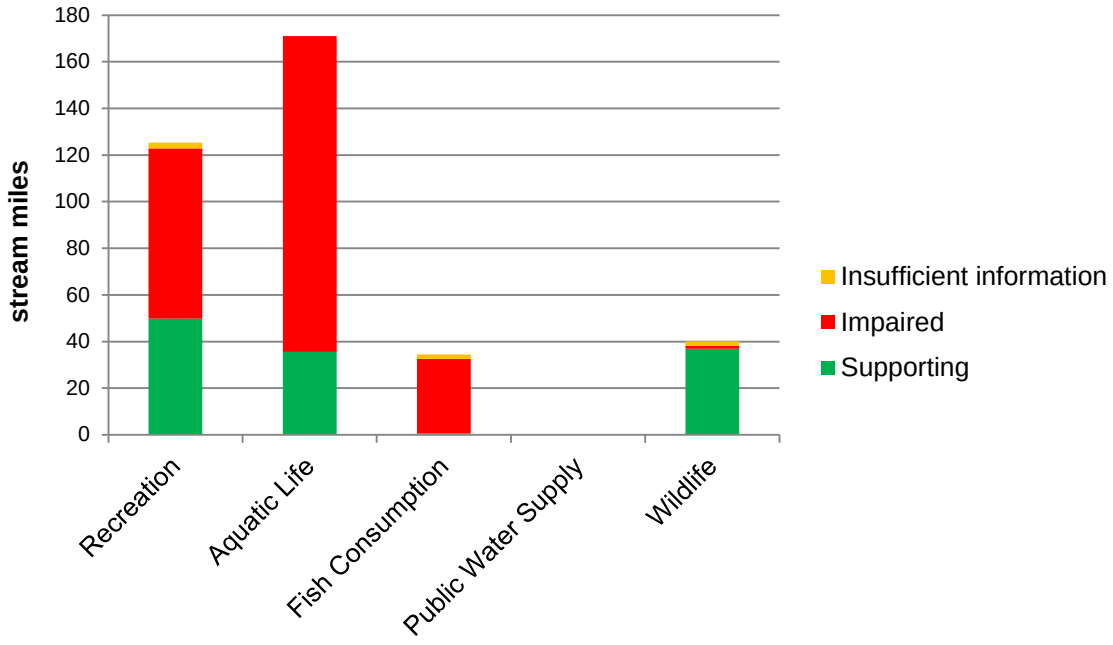
The Chesapeake Bay/Atlantic Ocean and small coastal basins are divided into seven USGS hydrologic units as follows: HUC 02060009 – Pocomoke; HUC 02060010 – Chincoteague; HUC 02080101 – Lower Chesapeake Bay; HUC 02080102 – Great Wicomico-Piankatank; HUC 02080108 – Lower Lynnhaven-Poquoson; HUC 02080109 – Western Lower Delmarva; and HUC 02080110 – Tangier. The seven hydrologic units are further divided into 24 waterbodies or watersheds and 73 6th order sub-watersheds.

Basin assessment information is presented in the following figures and tables.

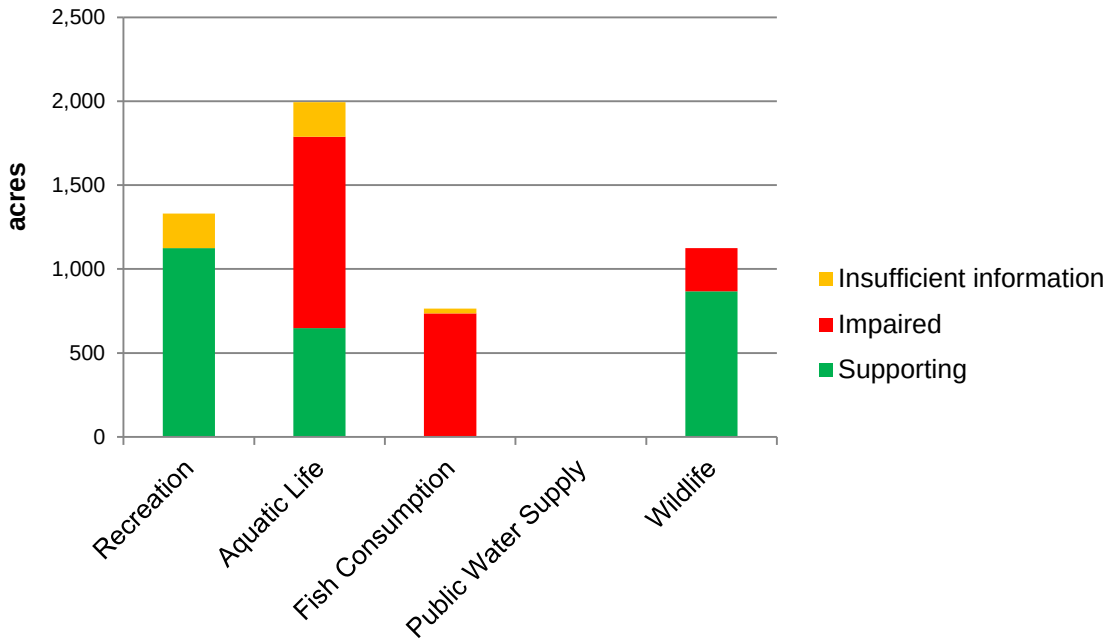
Figure 4.3-7 Designated use support summary for the Chesapeake Bay/Atlantic Ocean and small coastal basins. (Note: Waters that have some data, but not enough to determine use support, are classified as having "Insufficient information".)

Basin Size: *All Sizes Rounded to Nearest Whole Number*
Rivers - 1,880 miles
Lakes - 2,150 acres
Estuaries - 2,247 sq. miles

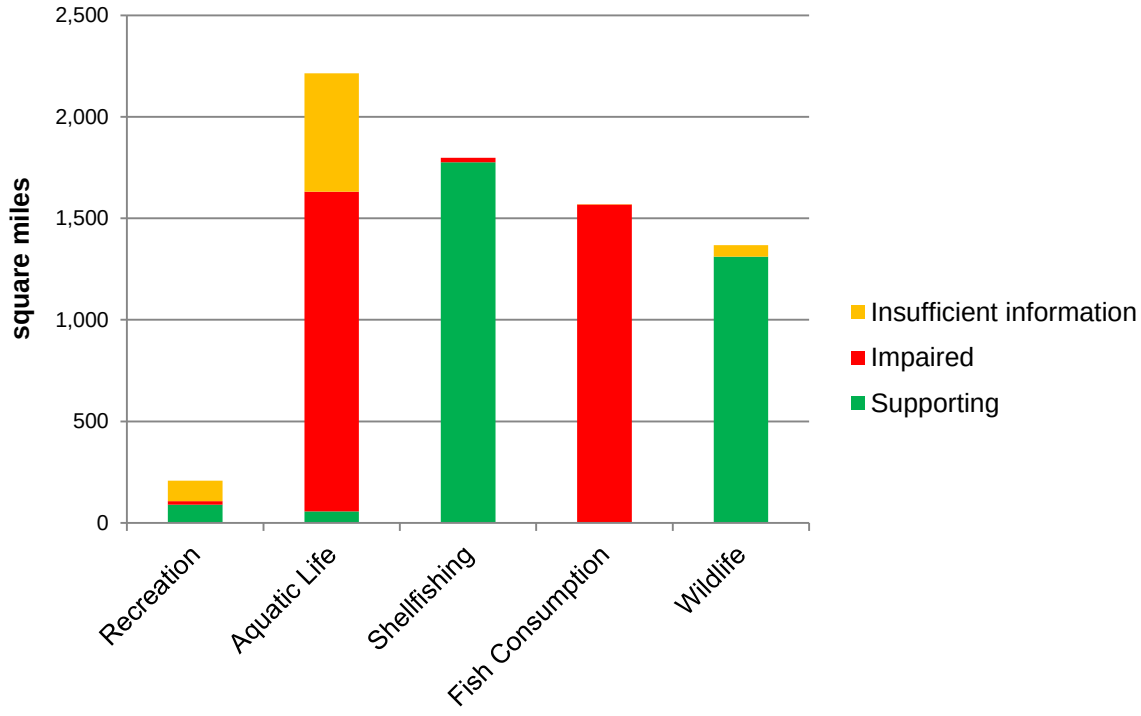
a) Rivers Assessment (1,709 miles were not assessed)



b) Lakes Assessment (308 acres were not assessed)



c) Estuaries assessment (398 square miles were not assessed)



d) Assessment of Chesapeake Bay-specific designated uses (Migratory fish spawning and nursery use was not assessed).

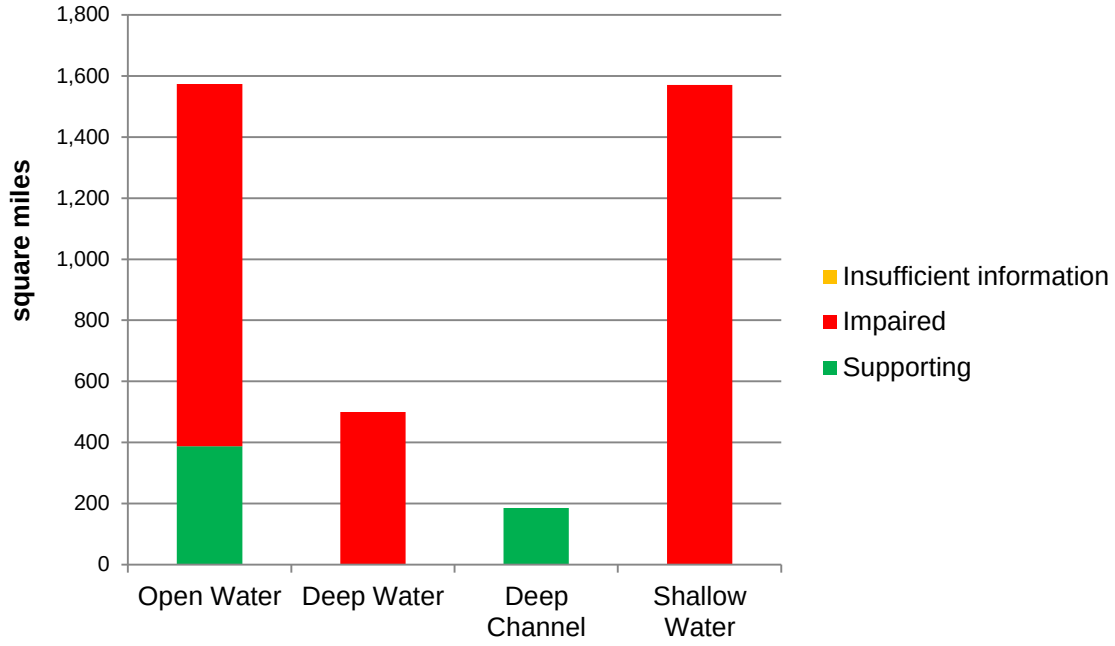


Table 4.3-13 Significant causes of designated use impairment in the Chesapeake Bay/Atlantic Ocean and small coastal basins, by waterbody type, ranked by percentage of impaired water size. (Note: Waters can have multiple pollutants.)

Rivers		*Lakes*		*Estuaries*	
Dissolved Oxygen	66%	**Dissolved Oxygen**	79%	**Impaired Aquatic Plants**	100%
Bacteria	50%	**Chlorophyll a**	73%	**PCBs in Fish Tissue**	99%
pH	38%	**Total Phosphorus**	73%	**Dissolved Oxygen**	76%
Impaired Benthics	25%	**PCBs in Fish Tissue**	62%	**Impaired Benthics**	2%
Mercury in Fish Tissue	22%	**Mercury in Fish Tissue**	45%	**Bacteria**	2%
Copper	1%	**Copper**	22%	**Mercury in Fish Tissue**	<1%

Table 4.3-14 Suspected sources of designated use impairment in the Chesapeake Bay/Atlantic Ocean and small coastal basins, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

Rivers		*Lakes*		*Estuaries*	
Source Unknown	65%	**Source Unknown**	100%	**Source Unknown**	100%
Natural Conditions	58%	**Residential Districts**	40%	**Loss of Riparian Habitat**	100%
Non-Point Sources	27%	**Urbanized High Density Areas**	22%	**Atmospheric Deposition (Nitrogen)**	100%
Atmospheric Deposition (Toxics)	22%	**--**	--	**Internal Nutrient Recycling**	100%
Urbanized High Density Areas	1%	**--**	--	**Industrial Point Source Discharges**	100%
Seafood Processing Operations	1%	**--**	--	**Sources Outside State Borders**	100%

York River Basin

The York River basin lies in the central and eastern section of Virginia and covers 2,674 square miles or 6% of the Commonwealth's total area. It is defined by hydrologic boundaries. The basin is bound by the Rappahannock River basin to the north, the James River basin to the south and west and the Chesapeake Bay/Atlantic Ocean and small coastal basins to the east.

The headwaters of the York River begin in Orange County and flow in a southeasterly direction for approximately 220 miles to its mouth at the Chesapeake Bay. The basin's width varies from five miles at the mouth to 40 miles at its headwaters.

The basin is comprised of the York River and its two major tributaries, the Pamunkey and the Mattaponi Rivers. The York River itself is only about 30 miles in length. The Pamunkey River's major tributaries are the North and South Anna Rivers and the Little River, while the major Mattaponi tributaries are the Matta, Po, and Ni Rivers.

Lying in the Piedmont and Coastal Plain physiographic provinces, the basin's topography is characterized by slightly rolling hills at the headwaters or extreme western portion, to gently sloping hills and flat farmland near its mouth. Tributaries in the central Piedmont exhibit moderate and near constant profiles. Their flat slope largely characterizes streams in the Coastal Plain. Approximately 65% of the land area is forest. Farmland and pasture account for approximately 20% of the land area. Approximately 10% of the river basin land area is urban.

The 2010 population for the York River basin was approximately 435,400. The majority of the population is rural and is evenly distributed throughout the basin. The only major city that falls within this basin is a portion of Williamsburg. All or portions of the following thirteen counties lie within the basin: Albemarle, Caroline, Fluvanna, Gloucester, Goochland, Hanover, James City, King and Queen, King William, Louisa, New Kent, Orange, Spotsylvania, and York.

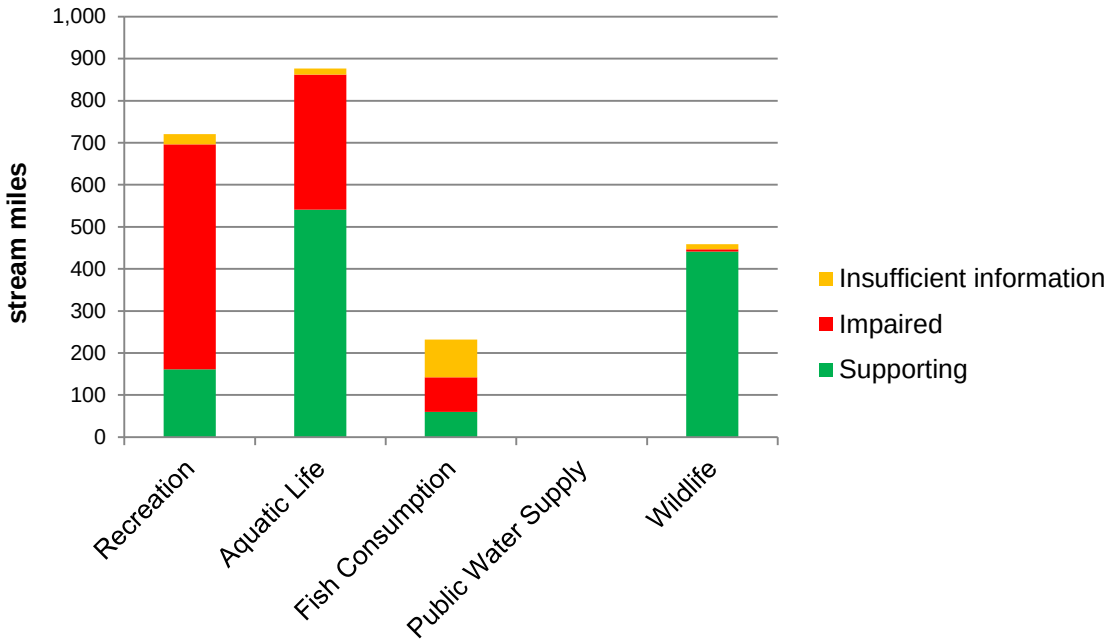
The York River basin is divided into three USGS hydrologic units as follows: HUC 02080105 – Mattaponi; HUC 02080106 - Pamunkey and HUC 02080107 - York. The three hydrologic units are further divided into 27 waterbodies or watersheds and 69 6th order sub-watersheds.

Basin assessment information is presented in the following figures and tables.

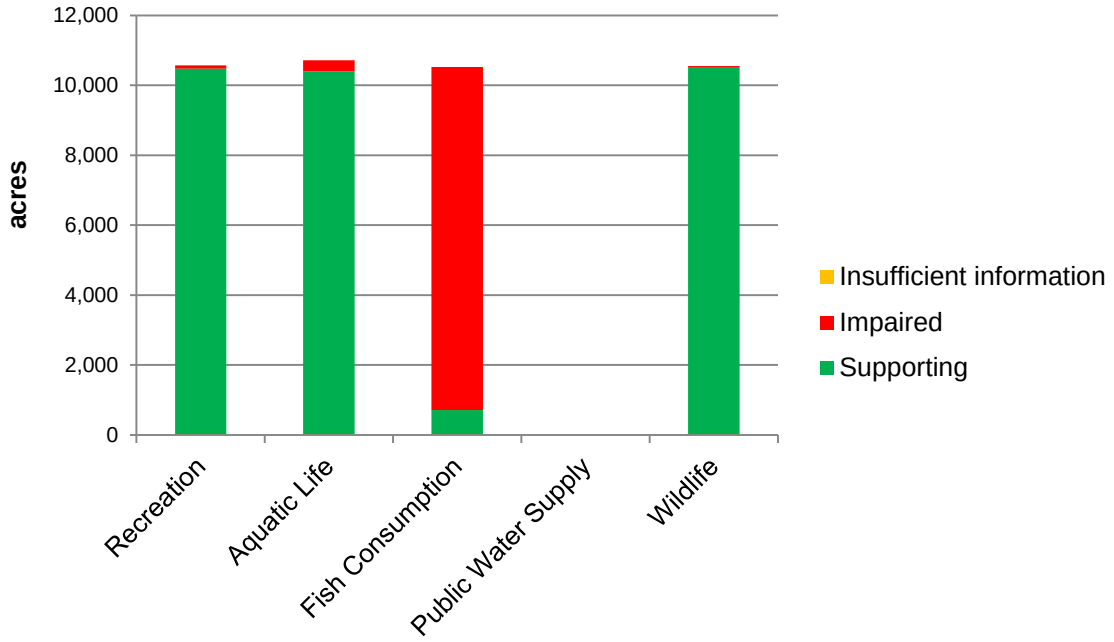
Figure 4.3-8 Designated use support summary for the York River basin. (Note: Waters that have some data, but not enough to determine use support, are classified as having "Insufficient information".)

Basin Size: *All Sizes Rounded to Nearest Whole Number*
Rivers - 6,703 miles
Lakes - 11,330 acres
Estuaries – 82 sq. miles

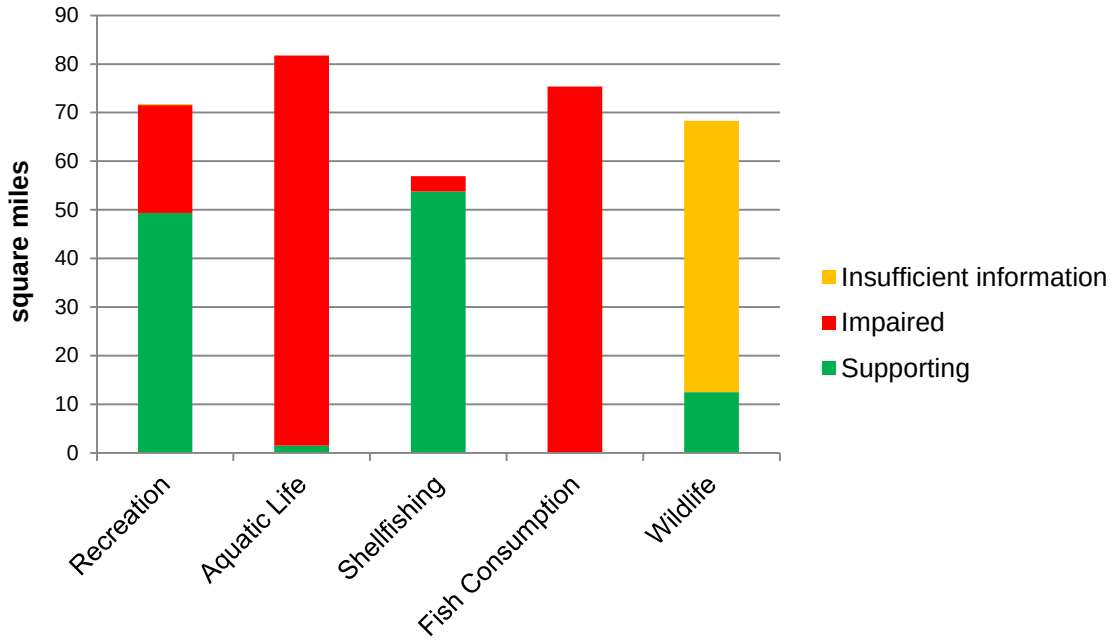
a) Rivers Assessment (5,828 miles were not assessed)



b) Lakes Assessment (436 acres were not assessed)



c) Estuaries assessment



d) Assessment of Chesapeake Bay-specific designated uses (Migratory fish spawning and nursery use was not assessed).

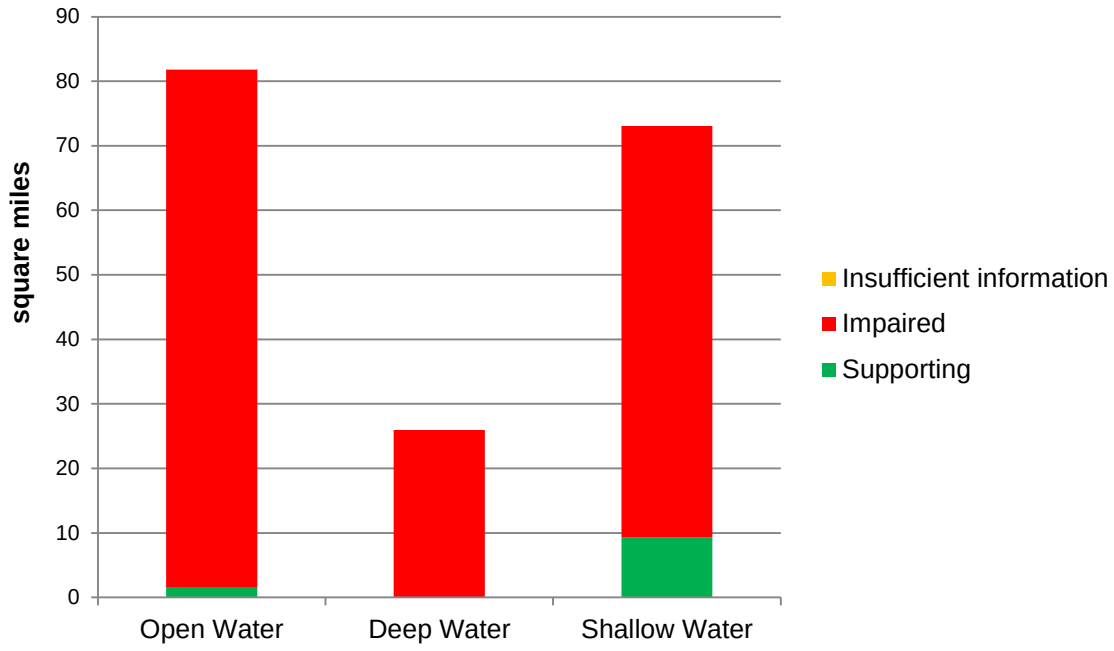


Table 4.3-15 Significant causes of designated use impairment in the York River basin, by waterbody type, ranked by percentage of impaired water size. (Note: Waters can have multiple pollutants.)

Rivers		***Lakes***		***Estuaries***	
Bacteria	80%	**PCBs in Fish Tissue**	95%	**Dissolved Oxygen**	100%
pH	21%	**Mercury in Fish Tissue**	22%	**PCBs in Fish Tissue**	94%
Dissolved Oxygen	21%	**PCBs in Water Column**	12%	**Impaired Aquatic Plants**	79%
Impaired Benthics	12%	**Dissolved Oxygen**	3%	**Bacteria**	30%
PCBs in Fish Tissue	9%	**PAHs (Benzo(a)pyrene, Benzo[b,k]fluoranthene)**	1%	**Mercury in Fish Tissue**	22%
Mercury in Fish Tissue	7%	**Bacteria**	1%	**Impaired Benthics**	7%

Table 4.3-16 Suspected sources of designated use impairment in the York River basin, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

Rivers		***Lakes***		***Estuaries***	
Grazing in Riparian or Shoreline Zones	38%	**Source Unknown**	100%	**Industrial or Municipal Point Source Discharges**	100%

Rivers		*Lakes*		*Estuaries*	
Sewage Discharges in Unsewered Areas	38%	**Changes in Ordinary Stratification and Bottom Water Hypoxia/Anoxia**	3%	**Sources Outside State Borders**	100%
Waterfowl	38%	**Inactive Abandoned Mine Lands**	<1%	**Agriculture**	100%
Wildlife Other than Waterfowl	38%	**--**	--	**Atmospheric Deposition (Nitrogen)**	100%
Livestock Grazing or Feeding Operations	38%	**--**	--	**Internal Nutrient Recycling**	100%
Runoff from Forest/Grassland/ Parkland	38%	**--**	--	**Loss of Riparian Habitat**	100%

New River Basin

The New River basin is located in southwest Virginia and covers 3,068 square miles or approximately 7% of the Commonwealth's total land area. The New River flows from its headwaters in Watauga County, North Carolina in a northeasterly direction to Radford, Virginia, and then in a northwesterly direction to Glen Lyn, where it exits into West Virginia. There it flows to the confluence of the Gauley River forming the Kanawha River, a tributary to the Ohio River.

The New River basin in Virginia is defined by both hydrologic and political boundaries. It is bordered by the James River basin and Roanoke River basin to the east, and the Tennessee and Big Sandy River basin to the west. The southern boundary of the Virginia portion is the North Carolina state line and its northwest boundary is the West Virginia state line.

The New River basin runs 115 miles in length from Blowing Rock, North Carolina to Bluestone Dam near Hinton, West Virginia with a maximum basin width of 70 miles near Rural Retreat, Virginia. The Virginia portion of the New River basin is 87 miles in length.

The topography of the New River basin is generally rugged; the upper reaches of its tributaries are extremely steep. High mountains, narrow valleys and steep ravines characterize the basin. There are ten tributaries in the Upper New River basin each having more than 100 square miles in drainage area and many others with forty or more square miles.

The New River basin is the least densely populated of the Commonwealth's major river basins. The higher elevations of the basin have steep slopes and are thickly forested, while the mount bases are mostly used for agriculture. Approximately 59% of its land is forested. Cropland and pasture make up another 35%, with approximately 3% considered urban.

The 2010 population for the New River basin was approximately 412,900. All or portions of the following jurisdictions lie within the basin: Counties - Bland, Carroll, Craig, Floyd, Giles, Grayson, Montgomery, Pulaski, Smyth, Tazewell, Wythe; Cities - Galax and Radford.

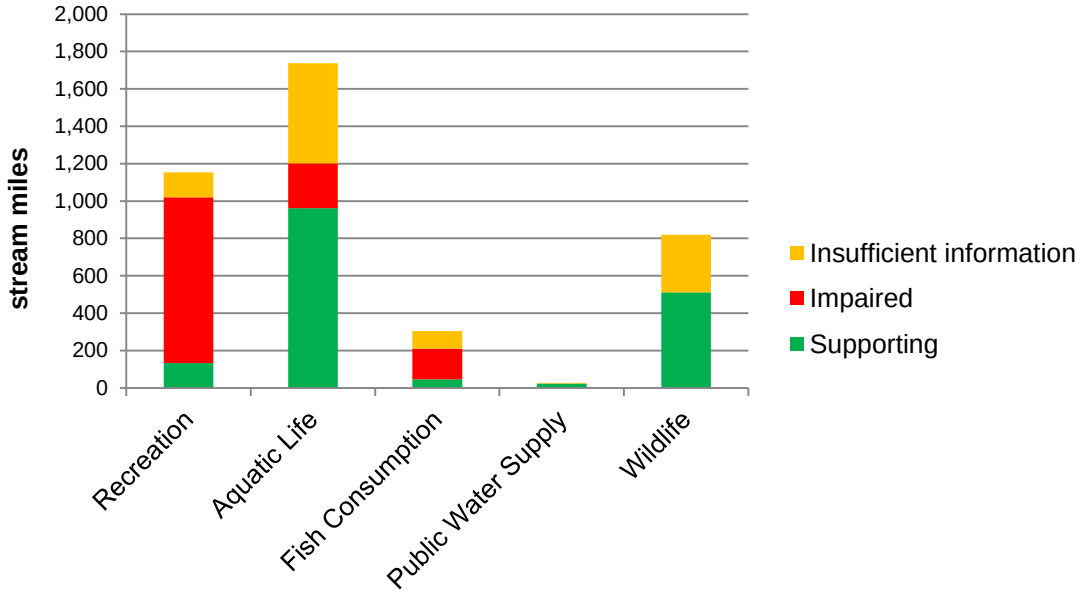
The New River basin is divided into two USGS hydrologic units as follows: HUC 05050001 – Upper New; and HUC 05050002 – Middle New. The two hydrologic units are further divided into 38 waterbodies or watersheds and 88 6th order watersheds.

Basin assessment information is presented in the following figures and tables.

Figure 4.3-9 Designated use support summary for the New River basin. (Note: Waters that have some data, but not enough to determine use support, are classified as having "Insufficient information")

Basin Size: *All Sizes Rounded to Nearest Whole Number*
Rivers - 7,747 miles
Lakes - 4,661 acres
Estuaries - 0 sq. miles

a) Rivers Assessment (6,449 miles were not assessed)



b) Lakes Assessment (34 acres were not assessed)

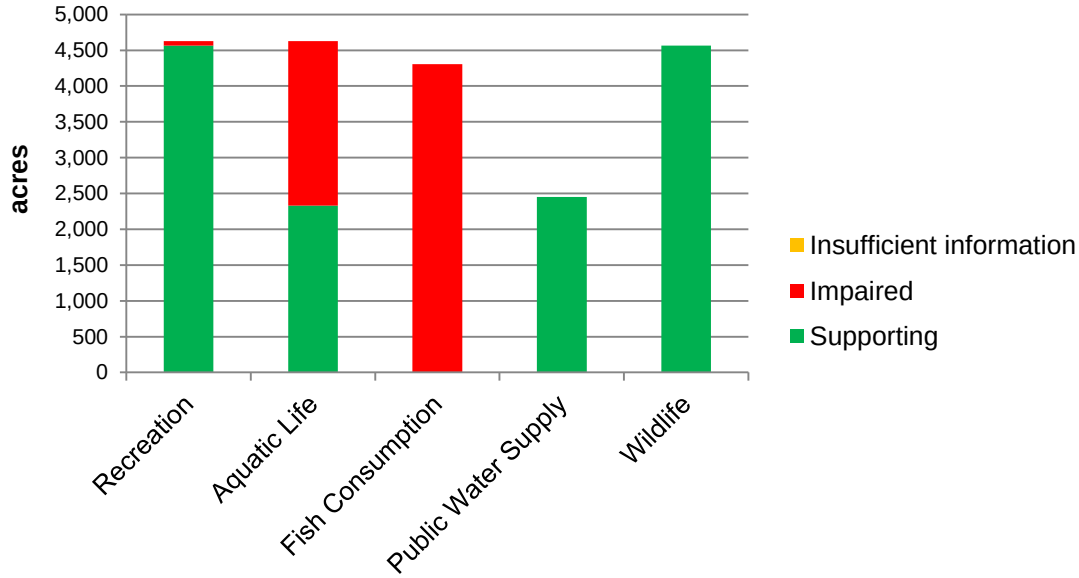


Table 4.3-17 Significant causes of designated use impairment in the New River basin, by waterbody type, ranked by percentage of impaired water size. (Note: Waters can have multiple pollutants.)

Rivers		***Lakes***	
Bacteria	88%	**PCBs in Fish Tissue**	99%
Impaired Benthics	13%	**Dissolved Oxygen**	53%
PCBs in Fish Tissue	12%	**Bacteria**	1%
Temperature	11%	**--**	**--**
Mercury in Fish Tissue	3%	**--**	--
Sedimentation/Siltation	2%	**--**	--

Table 4.3-18 Suspected sources of designated use impairment in the New River basin, by water body type, ranked by percentage of impaired water size. (Note: Waters can have multiple sources of pollution.)

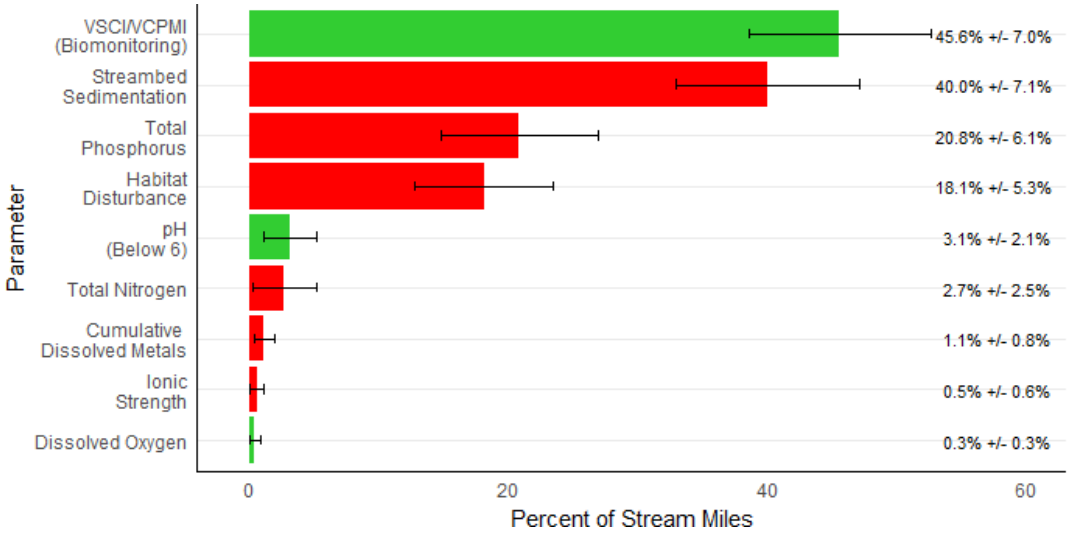
Rivers		***Lakes***	
Livestock Grazing or Feeding Operations	54%	**Source Unknown**	99%
Source Unknown	36%	**Natural Conditions**	53%
Unspecified Domestic Waste	32%	**Livestock Grazing or Feeding Operations**	1%
Unrestricted Cattle Access	31%	**On-site Septic Treatment Systems**	1%
On-site Septic Treatment Systems	30%	**Unspecified Domestic Waste**	1%
Wildlife other than Waterfowl	29%	**Wildlife other than Waterfowl**	1%

CHAPTER 4.4 FRESHWATER PROBABILISTIC MONITORING RESULTS

Executive Summary

Probabilistic monitoring is designed to answer questions about statewide and regional water quality conditions. The DEQ Probabilistic Monitoring Program, or ProbMon, has evaluated nearly 1000 wadeable sites statewide since the program began in 2001 and sampled 646 stations (Figure 4.4-3). Over 250 sites were sampled during the 2016 assessment period (Figure 4.4-2). Although the majority of water quality parameters meet applicable water quality criteria, the biological condition of Virginia streams are rated as degraded in approximately 46% of stream miles (Figure 4.4-1). Biological condition is assessed based on the ecological health of aquatic macroinvertebrates. Degraded aquatic macroinvertebrate communities are believed to be caused in part by stressors such as streambed sedimentation, habitat disturbance, and nutrients. The most frequently occurring water quality problems are presented in Figure 4.4-1. ProbMon is a cost-effective way to evaluate Virginia streams and rivers, test new sampling methods, and support other DEQ water quality management activities like water quality standards development and Total Maximum Daily Load (TMDL) studies.

Figure 4.4-1. Percentage of stream miles with water quality parameters exceeding criteria/screening values. Red bars indicate a parameter with no water quality standard and green bars indicate a parameter with water quality standard or screening value. Data represents 2009 - 2014 Integrated Report sampling window.



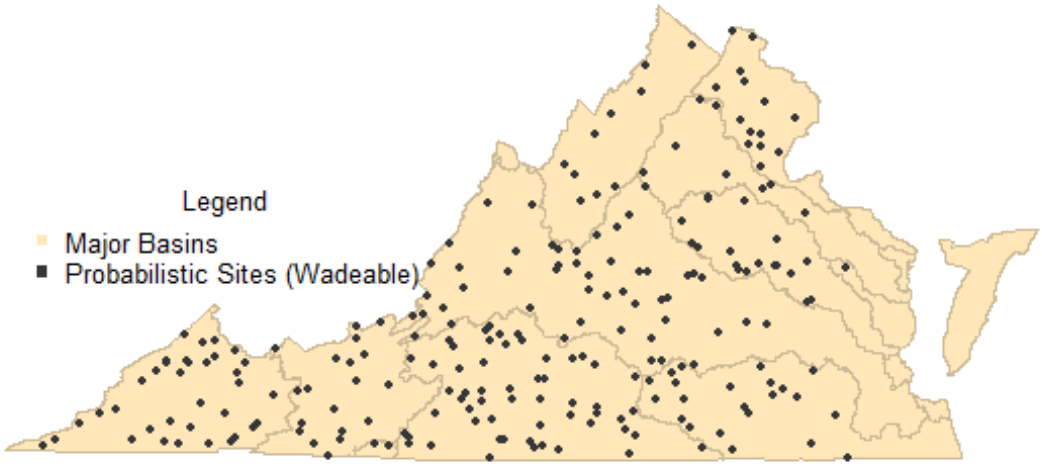
Introduction

Probabilistic monitoring is designed to answer basic questions like: “What are the primary water quality problems in Virginia? How widespread are these problems, and what pollutants cause the greatest environmental stress to Virginia’s water resources?” The Virginia General Assembly, citizens, environmental stakeholders, and the United States Environmental Protection Agency (USEPA) have encouraged the Virginia Department of Environmental Quality (DEQ) to answer these questions and to establish baseline water quality conditions for Virginia’s streams and rivers. ProbMon is one component of DEQ’s Water Quality Monitoring Strategy. Typically water quality monitoring stations are located at bridges, boat ramps or other public access points. These monitoring stations are known as targeted monitoring sites. Targeted monitoring has great utility for identifying impaired waters, supporting TMDL and Implementation Plan modeling efforts, monitoring water quality trends over time, tracking local pollution events, and monitoring regulatory compliance of pollution sources. However, it is not appropriate to extrapolate results from targeted stations to un-sampled watersheds over large geographic areas. Data

to address water quality questions from large geographic areas are best obtained from statistically designed studies with randomly chosen sample locations.

In Virginia, ProbMon sites are randomly selected using USEPA's probability survey design program (Stevens 1997; USEPA 2006). DEQ samples 50 to 60 random stations per year throughout Virginia for a variety of chemical, biological, and habitat parameters. From January 1st, 2009 until December 31st, 2014 DEQ evaluated 398 sites and sampled 254 stations (Figure 4.4-2). From 2001 to 2014, 646 sites have been sampled (Figure 4.4-3). In some cases, stations were evaluated, but not sampled for a variety of reasons including: the stream was not perennial, it was saltwater influenced, or the landowner denied access.

Figure 4.4-2. Virginia probabilistic monitoring locations from 2009-2014 (n=254).



Estimates of percent river miles not meeting water quality criteria or established screening values are reported with 95% confidence intervals. The sampling frame provided by USEPA for Virginia streams and rivers includes 49,100 miles. It is important to note that the total amount of assessed river miles may vary to some extent by parameter. This number varies based on whether a monitoring tool was appropriate for the sampling location. For example, DEQ biological monitoring tools are not validated for streams without a defined channel, thus streams dominated by wetlands cannot be assessed (approximately 5,000 miles). The actual number of target stream miles (perennial, flowing freshwater) is much less because several thousands of stream miles are not perennial (e.g. the stream was dry when DEQ visited) or were found to be saltwater influenced. There is an estimated 1,200 miles of non-wadeable streams (also referred to as boatable sites), which must be sampled using large river habitat and biological sampling methods. Non-wadeable and wadeable watersheds and sample sites sampled since 2001 are presented in Figure 4.4-4. Large river data collection, using a non-wadeable (boatable) methodology, is underway and the results will be included in future integrated report chapters. The ProbMon chapter provides estimates for all perennial, non-tidal, wadeable stream and river miles which equates to approximately 41,500 miles.

Figure 4.4-3. Virginia probabilistic monitoring wadeable locations from 2001-2014 (n=646).

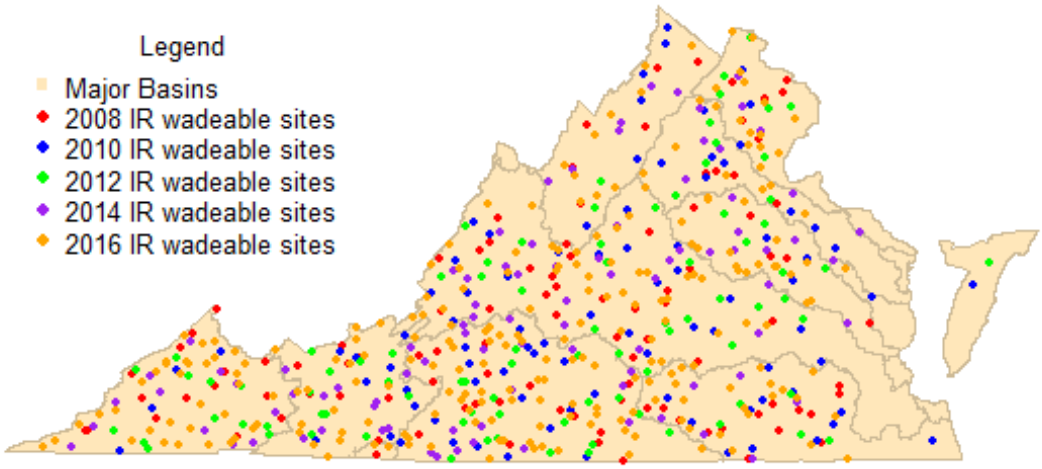
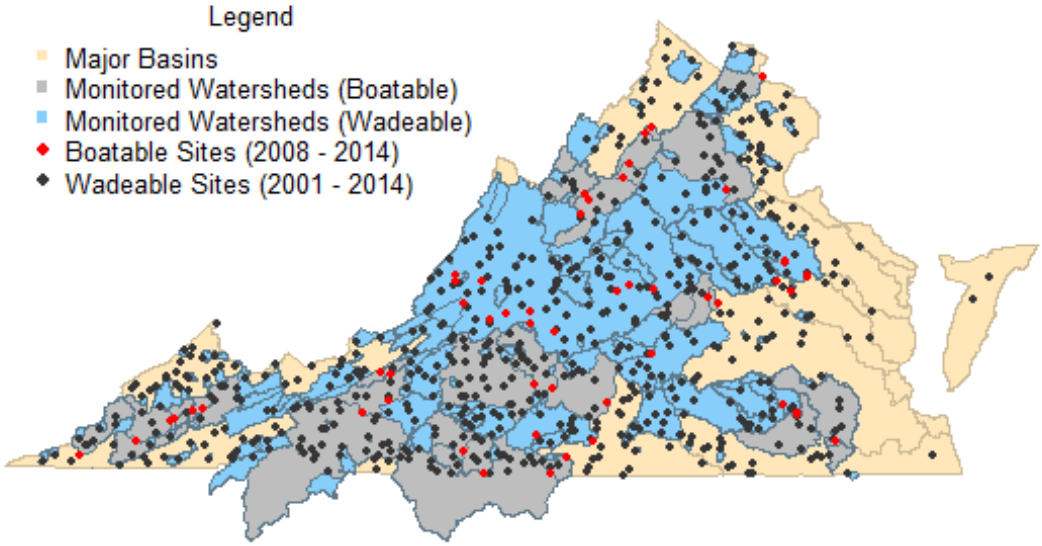


Figure 4.4-4. Virginia probabilistic monitoring wadeable and boatable watersheds and sample sites from 2001-2014 (n=715).



Parameters with Water Quality Standards or Screening Values

Dissolved oxygen, pH, temperature, metals (dissolved and sediment), organic chemicals, and bacteria have applicable water quality criteria or screening values. Water quality standards are regulatory thresholds developed to protect water quality conditions in support of swimming, fishing, and aquatic life designated uses. Screening values are non-regulatory thresholds used to interpret select water quality parameters. Overall results are summarized in Figure 4.4-1 and individual parameter results are discussed below.

Dissolved Oxygen

Dissolved oxygen (DO) is one of the most important measures of water quality for aquatic organisms. Adequate DO is a fundamental physiological requirement for aquatic life. In streams, the DO concentration may be altered by photosynthesis, respiration, nutrient input, re-aeration, and temperature,

all of which have seasonal and daily cycles. This natural variability is reflected in the stream classification component of Virginia's Water Quality Standards (9 VAC 25-260, Commonwealth of Virginia 2011). For example, a mountain stream that supports native trout is expected to have higher DO than a low-gradient, warm water stream. Although expectations for DO concentration vary, all waters (excluding swamps) in Virginia are required to have a DO concentration of 4 mg/L or above. DO standards can be determined on a case-by-case basis if DO deviates due to natural conditions as in swamps and other wetlands (Commonwealth of Virginia 2011). Pollution plays an important role in dissolved oxygen concentration. Human and animal wastes released into streams provide nutrients which cause excessive growth of algae and aquatic plants. As microbes break down organic matter, their respiration can deplete the available DO and the aquatic biota may become stressed and die due to low DO concentration.

ProbMon results indicate that DO conditions for the majority of Virginia's streams and rivers are above the minimum value of 4 mg/L (Table 4.4-1). Most stations with values below 4 mg/L are located in coastal ecoregions where the DO is naturally lower due to swamp conditions. These sites with low DO need to be reviewed as candidates for site specific DO standards. ProbMon results suggest that the majority of mountainous zone waters, stockable trout waters, and natural trout waters are meeting DO standards.

Table 4.4-1. Dissolved oxygen results (2009 - 2014, n=254) compared to Virginia's Water Quality Standard.

Parameter	Below Standard (4 mg/L)
Dissolved Oxygen	0.3% (+/- 0.3%)

pH

Another primary parameter used to evaluate water quality is pH. pH measures the concentration of hydrogen ions in water or the amount of acidity present. Since the pH scale is logarithmic to base 10, a decline in pH by one unit indicates a tenfold decrease in hydrogen ions. At pH 7, a solution is neutral whereas pH values below 7 indicate acidic conditions and values above 7 indicate basic conditions.

Stream pH depends on local geology, ecology, and anthropogenic influences. If a stream has poor buffering capacity as is the case for a stream flowing over granite or shale, it may be naturally acidic. In the case where inorganic acids such as sulfuric or nitric acid are introduced via rain, the low buffering capacity can be rapidly exhausted and the pH declines. The resulting low pH may be detrimental to aquatic biota unaccustomed to low pH. pH values harmful to aquatic life are below 6 or above 9. This range is reflected in Virginia's Water Quality Standards, where most waters must fall within a pH range of between 6 and 9. Natural pH values of 5 or below occur in swamp waters and should not be considered harmful to the native fauna common to those ecosystems. pH standards can be determined on a case-by-case basis if pH deviates due to natural conditions as in swamps and other wetlands (Commonwealth of Virginia 2011).

ProbMon results show that 3.1% of wadeable Virginia streams and rivers are estimated to have pH below 6 (Table 4.4-2). All stations with deviations in pH occurred at sites located in the coastal ecoregion where swamp waters are common, which indicates the need to continue revising site specific water quality standards. DEQ collects additional parameters, including Acid Neutralizing Capacity (ANC) and sulfate data at ProbMon stations to estimate the percent of streams impacted by acid rain and acid mine drainage. High sulfate values in low pH streams are indicative of acid mine drainage whereas streams with low ANC values are susceptible to episodic acidification from acid rain runoff (USEPA 2000). However, based on ProbMon data collected during the 2016 assessment period, DEQ estimates that no pH values are below 6 in the mountain ecoregions.

Table 4.4-2. pH results (2009 - 2014, n=254) compared to Virginia's Water Quality Standard.

Parameter	Below Standard (pH 6)	Above Standard (pH 9)
pH	3.1% (+/- 2.1%)	0% (+/- 0%)

Temperature

Temperature affects water quality by potentially imposing a heat burden on aquatic life and by limiting the level of dissolved oxygen in water. Temperature in streams varies in relation to seasonal and daily changes. Sunlight is the primary source of temperature change. Stream temperature is also influenced by the temperature of the stream bed, groundwater inputs, and air in contact with the water surface. Temperature is inversely related to bank vegetation cover as less cover results in more exposure to the sun and higher temperature. Also, runoff from impervious surfaces in urban areas may increase water temperature. Finally, effluent that is discharged to a waterbody tends to have higher temperature than the receiving stream and may elevate instream water temperature.

Stream temperature has a significant effect on aquatic organisms. It can directly influence the types of organisms found in an aquatic system as well as their growth, behavior, metabolism, reproduction and feeding habits. Virginia's temperature standards reflect the upper limit for the support of different forms of aquatic life (Commonwealth of Virginia 2011). Standards for temperature vary, notably in cold water fisheries, but as a general rule, all waters in Virginia are required to have a temperature at or below 31 or 32 degrees Celsius.

Overall, DEQ estimates that temperature violations will be rare in Virginia's wadeable streams (Table 4.4-3) during the spring and fall. However, it is important to note that ProbMon temperature data is seldom collected during the most stressful hydrologic and weather conditions. In order to properly estimate temperature problems, temperature data must be collected continuously. Continuous temperature collection began in 2016 at probabilistic trend sites.

Table 4.4-3. Temperature results (2009 - 2014, n=254) compared to Virginia's Water Quality Standard.

Parameter	Above Standard (31/32 degrees Celsius)
Temperature	0.0% (+/- 0.0%)

Dissolved Metals

Heavy metals have been identified as an important influence on benthic community structure in streams (Clements et al. 2000). Some taxa appear to be relatively tolerant to metals while other taxa are intolerant of heavy metals. Metals are most biologically available and toxic when dissolved in water. Toxicity of many metals is dependent on water hardness making it necessary to calculate site specific water quality criteria from hardness values. Table 4.4-4 lists the Virginia Water Quality Criteria for metals assuming a hardness (expressed as $CaCO_3$) of 100 mg/L for most dissolved metals. The table also summarizes the number of sites that had detectable analytical results and the number of criterion exceedences based on site specific hardness values.

No samples were measured above their respective chronic or acute sample criteria during the 2016 Integrated Report sample window (2009 - 2014). Results are shown in Table 4.4-4.

Table 4.4-4. Dissolved metals results (2009 - 2014, n=251) compared to Virginia's Water Quality Standards. ppb[1] = parts per billion.

Metal	DEQ Acute Criteria (ppb[1])	DEQ Chronic Criteria (ppb[1])	# Above Criteria	% of Miles Above Criteria
Arsenic	340	150	0	0% (+/- 0%)
Cadmium	3.9 $CaCO_3$=100	1.1 $CaCO_3$=100	0	0% (+/- 0%)
Chromium	570 $CaCO_3$=100	74 $CaCO_3$=100	0	0% (+/- 0%)
Copper	13 $CaCO_3$=100	9 $CaCO_3$=100	0	0% (+/- 0%)
Lead	120 $CaCO_3$=100	14 $CaCO_3$=100	0	0% (+/- 0%)
Mercury	1.4	0.77	0	0% (+/- 0%)
Nickel	180 $CaCO_3$=100	20 $CaCO_3$=100	0	0% (+/- 0%)
Selenium	20	5	0	0% (+/- 0%)
Silver	3.4 $CaCO_3$=100	NA	0	0% (+/- 0%)
Zinc	120 $CaCO_3$=100	120 $CaCO_3$=100	0	0% (+/- 0%)

Sediment Metals

DEQ collected 492 sediment metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) samples from 2001 through 2012 and reported results in the 2008, 2010, 2012, and 2014 Integrated Reports. Sediment metals concentrations were below Probable Effects Concentrations (PECs) and affected a low percentage of stream miles. Due to the low prevalence of metals above PECs in Virginia's wadeable streams and high sampling costs, DEQ has suspended sediment metals sampling. Consequently DEQ will not report on sediment in the 2016 assessment cycle. Integrated Report chapters from previous assessment cycles contain estimates of sediment metals in sediment.

These chapters can be accessed at:
http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/ProbabilisticMonitoring.aspx#reports.

Organic Chemicals in Sediment

In 2001 and 2002, DEQ collected organic chemicals, organic pesticides, polychlorinated biphenyls, semi-volatile constituents, and herbicides in sediment but the data were not analyzed at a low enough detection limit to provide useful information. DEQ collected 209 organic chemical samples (total PCB, total PAH, heptachlor, chlordane, dieldrin, lindane, endrin, DDT, DDD, DDE, Total DDT, anthracene, chysene, fluoranthene, naphthalene, phenanthrene, pyrene, benzoanthracene, benzo-a-pyrene) in sediment samples from 2003 through 2006 and reported results in the 2008 and 2010 Integrated Reports Probabilistic Monitoring chapters. A low percentage of wadeable stream miles had concentrations above PECs. DEQ has suspended sampling for organic chemicals across all monitoring programs due to low concentrations and high sampling costs, and will not report on organic chemicals during this assessment cycle. Integrated report chapters from previous assessment cycles contain estimates of organic chemicals in sediment.

These chapters can be found online at:
http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/ProbabilisticMonitoring.aspx#reports.

Bacteria

Escherichia coli (E. coli) bacteria are found in the intestines and fecal matter of warm-blooded animals. High counts of E. coli bacteria in a stream indicate that there is an elevated risk of illness from

pathogenic organisms. According to Virginia's Water Quality Standard for E. coli, a stream should not exceed a geometric mean (for two or more samples taken within a calendar month) of 126 colony forming units (cfu) per 100mL of water or an instantaneous maximum of 235 cfu/100mL (Commonwealth of Virginia 2011).

DEQ bacterial impairment listing is determined based on a temporal data set where bimonthly bacteria samples are collected from a single site over two years. Bacteria are only sampled once at each ProbMon site. Site specific bacteria problems are best characterized by repeated samples over several months as is the approach in DEQ's ambient monitoring program. For this reason, bacteria results from the freshwater ProbMon program and ambient monitoring program are not comparable and as such the results are not presented.

Beginning in 2013, DEQ sampled bacteria monthly at probabilistic monitoring sites that met certain criteria. Monthly sampling efforts will allow DEQ to make temporally accurate bacteria estimates, which will be considered for inclusion in future reports.

Biological Monitoring

Biological monitoring, or biomonitoring, of streams and rivers is an integral component of DEQ's water quality monitoring program. Biomonitoring allows DEQ to assess the overall ecological condition of streams and rivers by evaluating stream condition with respect to suitability for support of aquatic communities. In Virginia, benthic macroinvertebrate communities are used as indicators of ecological condition and to address the question of whether a waterbody supports the aquatic life designated use.

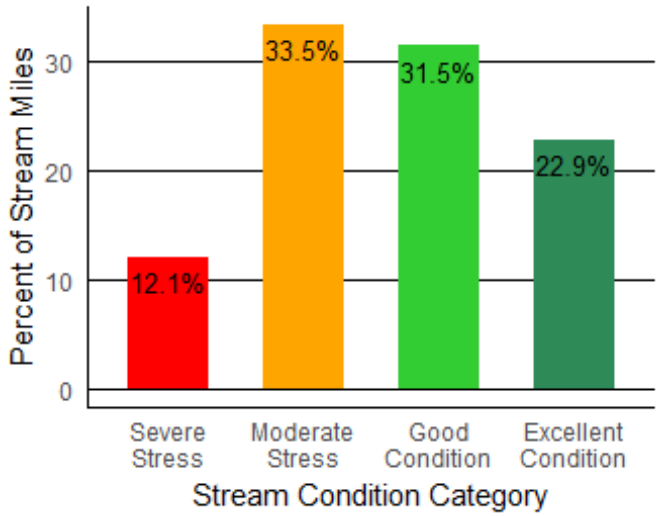
DEQ uses multimetric macroinvertebrate indices, specifically the Virginia Stream Condition Index (VSCI) and the Virginia Coastal Plain Macroinvertebrate Index (VCPMI), to assess the aquatic life use status of wadeable streams and rivers. The VSCI and the VCPMI are applied to biomonitoring data collected in freshwater non-coastal areas and freshwater coastal areas, respectively. These indices utilize several biological metrics that are regionally calibrated to the appropriate reference condition (DEQa 2006; DEQ 2013). Results are calculated into a single value, or score, that is sensitive to a wide range of stressors.

Table 4.4-5. VSCI/CPMI (2009 - 2014, n=254) Scores compared to Virginia's Assessment thresholds.

Parameter	Below Standard
VSCI/VCPMI	45.6% (+/- 7.0%)

VSCI and VCPMI scores were scaled for comparability in all analyses. Based on VSCI and VCPMI ProbMon results, VADEQ estimates that 45.6% of Virginia streams and rivers do not meet the aquatic life use standard (Table 4.4-5). An estimate of statewide biological health by condition category is shown in Figure 4.4-5. VSCI scores less than 42 are considered severely ecologically stressed, scores between 42 and 60 are moderately stressed, while sites above 60 to 72 are thought to have good ecological conditionals and sites with VSCI scores above 72 are considered to have excellent water quality and habitat conditions (DEQ, 2006a). It is important to remember that biological indicators represent long-term water quality conditions and respond to all sources of stress.

Figure 4.4-5. Biological stream condition index based on VSCI/VCPMI Scores (2009 - 2014, n = 254).



Parameters without Water Quality Standards

Stressors that increase the risk to benthic macroinvertebrate communities and do not have specific water quality standards include streambed sedimentation, habitat degradation, nutrients, ionic strength, and water column cumulative metals. Thresholds for the aforementioned stressors are presented in Tables 4.4-6 and 4.4-7 and are derived from literature values. The 'optimal' classification represents water quality conditions that are not associated with degraded aquatic communities. Stressors classified as 'suboptimal' increase the likelihood of finding an impacted aquatic community. The condition class between optimal and suboptimal is termed 'fair' as the stress to the aquatic community is less certain.

Table 4.4-6. Thresholds of condition classes for biological indicators.

Response Parameters	Optimal	Suboptimal	Classification Reference
Virginia Stream Condition Index	> 60	<50	(DEQ 2006a)
Virginia Coastal Plain Macoinvertebrate Index	> 40	<30	(DEQ 2013)

Table 4.4-7. Thresholds of condition classes for stressor indicators[1].

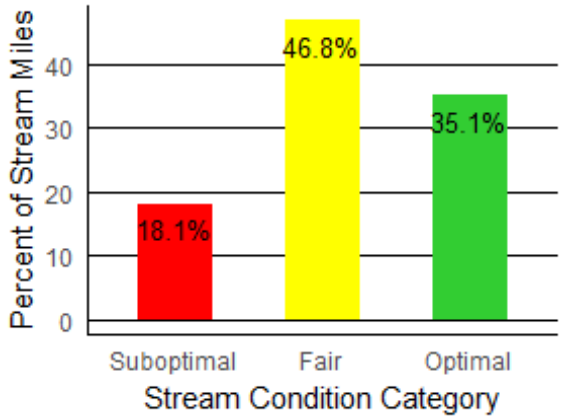
Stressor Parameters	Optimal	Suboptimal	Classification Reference
Total Nitrogen (mg/L)	< 1	> 2	(DEQ 2006a)
Total Phosphorus (mg/L)	< 0.02	> 0.05	(DEQ 2006a)
Habitat Degradation (unitless)	> 150	< 120	(USEPA 1999)
Streambed Sedimentation (unitless)	> -0.5	< -1.0	(Kaufmann 1999)
Ionic Strength (TDS mg/L)	< 100	> 350	(DEQ 2006b)
Cumulative Dissolved Metals (unitless)	< 1	> 2	(Clements 2000)

[1] The relative risk screening values presented in Tables 4.4-8 do not represent water quality criteria nor are they intended for establishing TMDL endpoints. The values represent an increase in the probability of stress to benthic communities.

Habitat Disturbance

Habitat is defined as the area or environment where an organism resides. It encompasses its surroundings, both living and non-living. Fish, aquatic insects, and plants require certain types of habitat to thrive, so in-stream and riparian (stream bank) habitat is evaluated when a biomonitoring sample is collected. Because different organisms have diverse habitat requirements, a variety of available habitat types in a stream or river will support a diverse aquatic community. Habitat is scored by evaluating ten habitat parameters and adding them together (total scores range from 0 to 200). Habitat scores above 150 indicate habitat conditions favorable for supporting a healthy aquatic community and are considered optimal. Scores lower than 120 are considered suboptimal and scores between 120 and 150 are fair (EPA 1999). As indicated in Figure 4.4-6, DEQ estimates that slightly over 35% of stream and river miles have available habitat that is considered optimal.

Figure 4.4-6. Estimate of Habitat Condition in Virginia Streams and Rivers. Data presented is from 2009 - 2014 (n = 254).

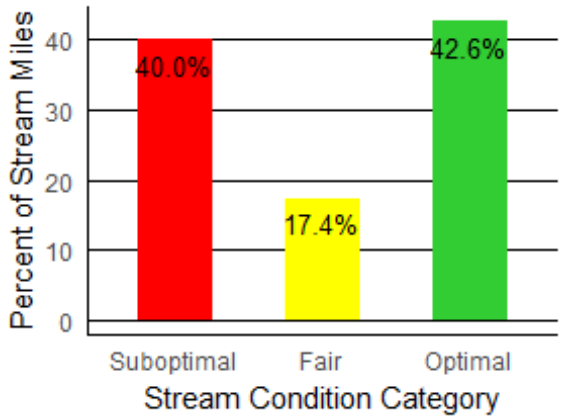


Streambed Sedimentation

Excessive sedimentation is a component of habitat and is one of the most pronounced impacts to benthic communities. Excess sediment fills interstitial spaces in the stream substrates used by aquatic organisms, disturbs refuge areas, and can potentially smother the organisms. Until recently, tools for quantifying sedimentation impacts in streams have been inadequate. Methods existed for describing dominant instream particle size, but it was difficult to differentiate between natural conditions and man-made problems. Virginia has a variety of stream types; many are naturally sand/silt bed streams, so simply measuring the size of the sediment particles cannot differentiate natural and human-influenced sediment load.

DEQ uses the relative bed stability (RBS) method for predicting the expected substrate size distribution for streams (Kaufmann 1999). RBS incorporates stream channel shape, slope, flow, and sediment supply. The method calculates a 'stream power' based on channel measurements to predict the expected sediment size distribution. The ratio of the observed sediment to the expected sediment is a measure of the RBS. A stream with a log RBS of less than -1 is carrying excess sediment while streams above -0.5 have a normal sediment load (Kaufmann 1999 and USEPA 2000). Nearly 40% of Virginia's stream and river miles are estimated to have suboptimal sedimentation values (Figure 4.4-7).

Figure 4.4-7. Estimate of streambed sedimentation conditions in Virginia streams and rivers as defined by LRBS measures. Data presented is from 2009 - 2014 (n = 231).



Nutrients

Nutrients are substances assimilated by living organisms that promote growth. Nitrogen and phosphorus are the two most important nutrients in Virginia streams and rivers. Excess nutrients can stimulate in-stream plant and algal growth. Characteristics of nutrient enriched streams may include low dissolved oxygen, frequent fish kills, shifts in aquatic communities, and blooms of nuisance algae. Nutrients may come from fertilized lawns and cropland, failing septic systems, municipal and industrial discharges, and/or livestock manure.

Total phosphorus above 0.05 mg/L and total nitrogen above 2 mg/L is considered suboptimal (Table 4.4-7) and can result in undesirable algae growth and shifts in aquatic communities (DEQ 2006a). DEQ estimates that nearly 44% and over 83% of stream and river miles are classified as optimal for total phosphorus and total nitrogen, respectively (Figures 4.4-8 and 4.4-9).

Figure 4.4-8. Estimate of Total Phosphorus Conditions in Virginia Streams and Rivers. Data presented is from 2009 - 2014.

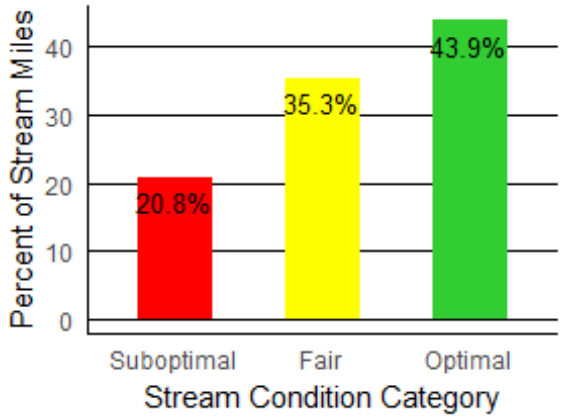
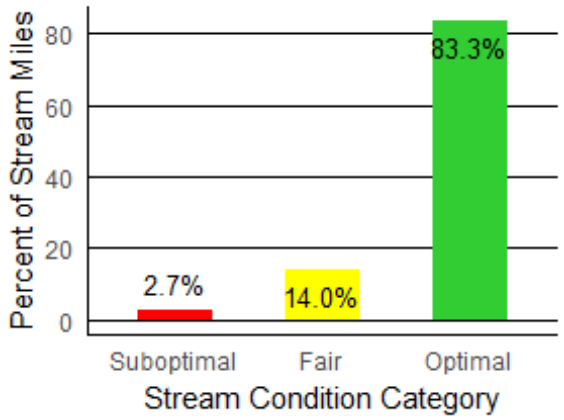


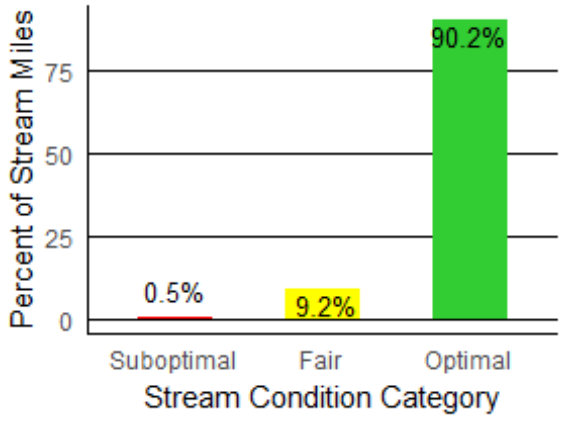
Figure 4.4-9. Estimate of Total Nitrogen Conditions in Virginia Streams and Rivers. Data presented is from 2009 - 2014.



Ionic Strength (Total Dissolved Solids)

Ionic strength varies with natural geology, but increases significantly in response to anthropogenic activities such as surface mining, road salts, or other industrial discharges. DEQ uses total dissolved solids (TDS) to measure ionic strength. Ionic strength is a measure of dissolved ions, dissolved metals, minerals, and organic matter in the water column. Water quality studies have consistently demonstrated that high levels of TDS in the water column impact aquatic life (DEQ 2006b). TDS levels above 350 mg/L increase the likelihood of having a degraded aquatic community and are considered suboptimal (Table 4.4-7). Results are shown in Figure 4.4-10; DEQ estimates that about 0.5% of Virginia streams have TDS levels in the suboptimal range.

Figure 4.4-10. Estimate of Ionic Strength Conditions in Virginia Streams and Rivers. Data presented is from 2009 - 2014.

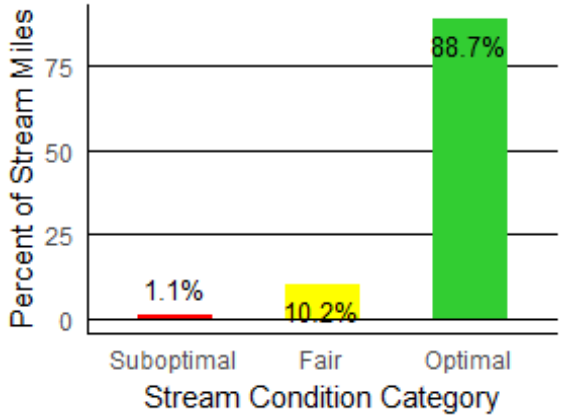


Cumulative Dissolved Metals (Cumulative Criterion Unit Metals Index)

Heavy metals such as mercury, chromium, cadmium, arsenic and lead in streams and rivers can be harmful to aquatic insects at low concentrations. The metals tend to accumulate in the gills and muscles of aquatic organisms. Dissolved metals have been identified as important predictors of stream health. Toxicity of many metals is dependent on water hardness, making it necessary to calculate site specific water quality criteria from hardness values.

In the context of water quality criteria, dissolved metals are typically treated independently (as discussed in Section 4.4.3); however there is strong evidence that metals have a cumulative effect (Clements 2000). Cumulative Criterion Units (CCU) account for this additive effect by standardizing each dissolved metal's concentration. The metals are summed together and the result is the CCU Metals Index score. When the CCU Metals Index is above 2, the cumulative effect is considered likely to harm aquatic life (Clements 2000). DEQ estimates that around 1% of river miles in Virginia have Cumulative Criterion Units that are considered suboptimal (Figure 4.4-11; Table 4.4-7).

Figure 4.4-11. Estimate of Cumulative Criterion Unit Metals Index in Virginia Streams and Rivers. Data presented is from 2009 - 2014.



Stressor Extent and Relative Risks

One of the advantages of probabilistic datasets is the ability to calculate the stressor extent (Figure 4.4-12, Figure 4.4-14), and relative risks (Figure 4.4-13) that different environmental stressors have on the ecological health of rivers and streams across large regions. Since the stations are selected at random, DEQ can estimate water quality parameter values over the entire state with known confidence. USEPA and other states have employed stressor extent and relative risk concepts extensively in their reports (ODEQ 2007; USEPA 2006; Van Sickle 2006; Van Sickle 2008).

Stressor extent shows how prevalent a stressor is in Virginia streams. Calculation of relative risk requires classification of water quality responses (e.g. the benthic macroinvertebrate indices – Table 4.4-6) and the water quality stressors (Table 4.4-7) into optimal and suboptimal categories. DEQ classified biological response parameters based on the aquatic life use standard. The stressor indicators in Table 4.4-7 were classified using screening values from peer reviewed literature studies. It is important to remember that the stressor screening values are not equivalent to water quality standards in the Commonwealth of Virginia. This data-intensive statistical technique requires the entire probabilistic monitoring dataset (2001 - 2014).

Relative risk is a term borrowed from the medical field and applied here to communicate the severity of impact a stressor has on the aquatic environment. For example, it has been shown that an individual with total cholesterol above 240 mg/dl is at greater risk for heart disease than an individual whose cholesterol is below 200 mg/dl. When an individual has a cholesterol level above 240, their relative risk of having heart disease is higher than an individual with cholesterol level below 200.

The relative risks for aquatic stressors can be interpreted in a similar manner to the heart disease example. Figure 4.4-13 illustrates that the relative risk to the biological community due to habitat disturbance is 4.8; thus, the biological community is 4.8 times more likely to be considered suboptimal when habitat disturbance scores (USEPA 1999) are below 120. Relative risk values larger than 1 indicate an elevated risk to the biological community; consequently, only water quality stressors with a relative risk

greater than 1 are reported in this chapter. Sediment metals and pH were also evaluated for increased risk to the biological community, but did not show significant relative risk to the biological community.

Figure 4.4-12. Stressor extent for major benthic macroinvertebrate stressors in Virginia streams. The horizontal lines associated with the parameters illustrate the confidence intervals. Stressor extent shows the frequency of the stressor in all Virginia streams from data collected for the 2016 Integrated Report (2009 - 2014).

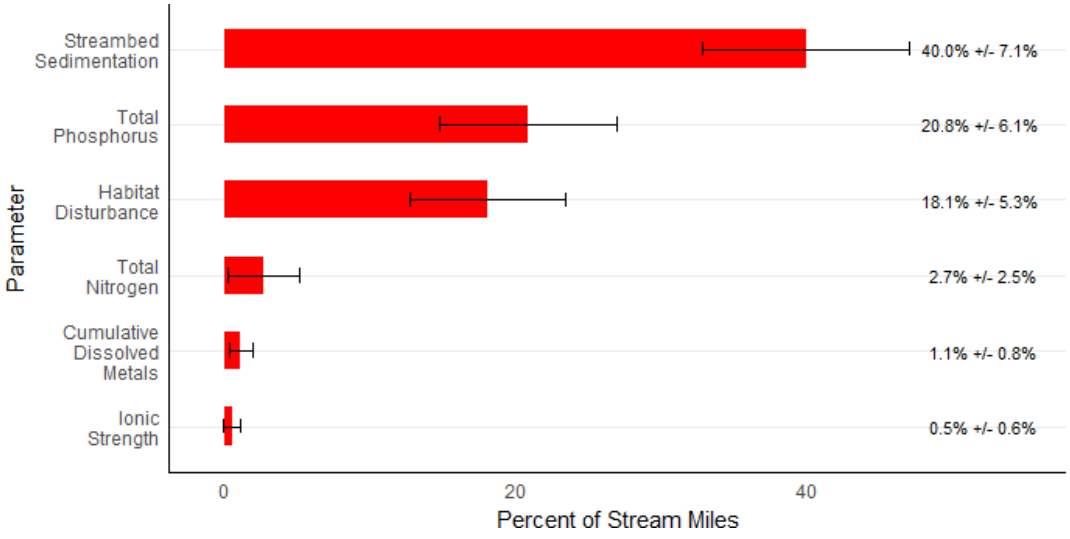
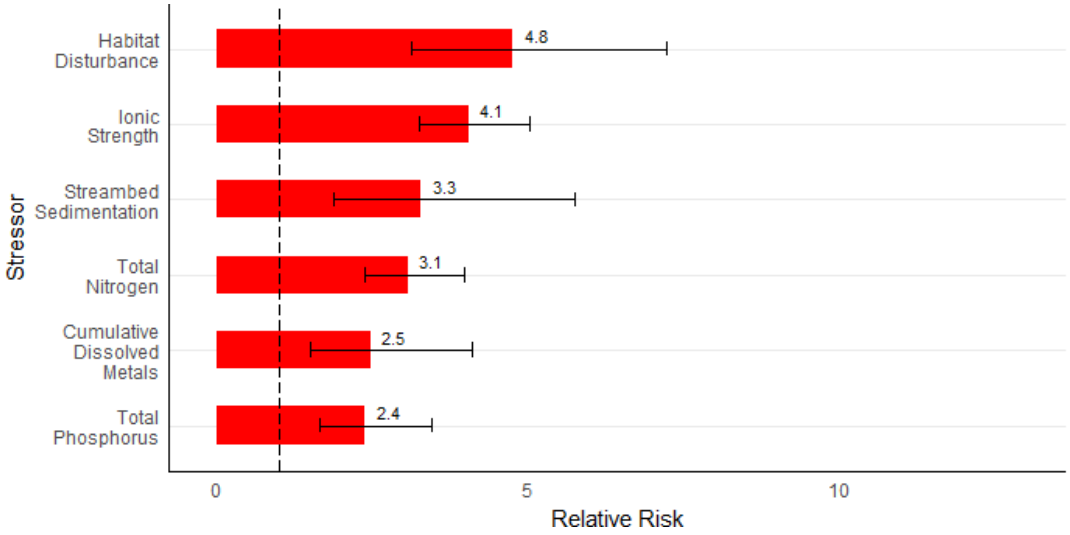


Figure 4.4-13. Relative Risk for major benthic macroinvertebrate stressors in all Virginia streams. The horizontal lines associated with the parameters illustrate the confidence intervals. The vertical dashed line at 1 indicates significance; thus, all relative risk estimates and confidence intervals that exceed the dashed vertical are significant. Relative risk shows the number of times more likely a benthic macroinvertebrate community is to be scored in the suboptimal range if the parameter shown on the y-axis is degraded.



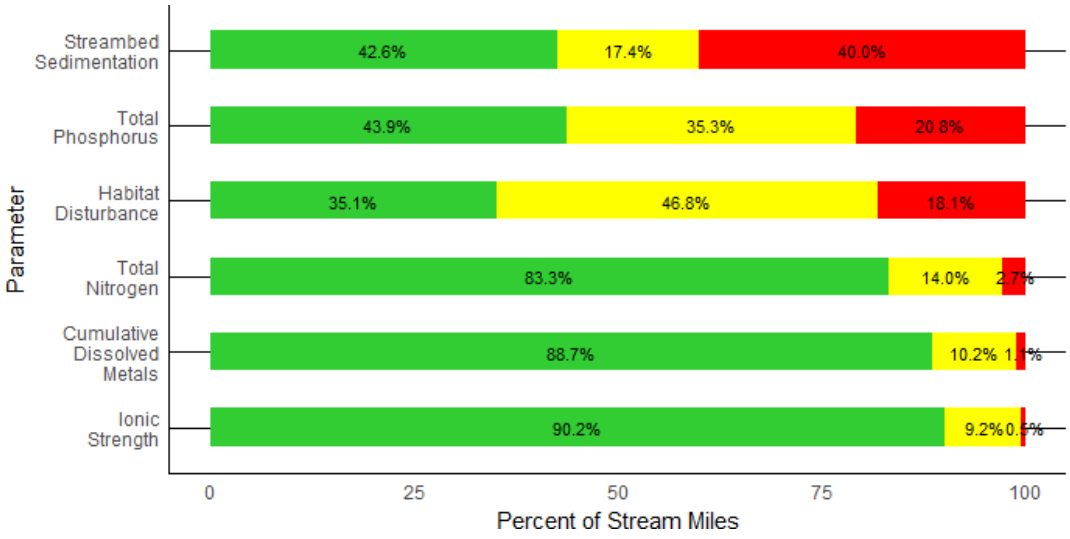
The most common stressor across Virginia is streambed sedimentation. ProbMon data estimates streambed sedimentation is considered suboptimal in almost 40% of Virginia streams. When streambed sedimentation levels are suboptimal, relative risk analysis predicts they are 3.3 times more likely to have suboptimal benthic community than streams with optimal sedimentation levels. Nearly 18% of Virginia

streams have suboptimal habitat disturbance scores; suboptimal habitat disturbance scores increase the relative risk of a suboptimal aquatic community by a factor of 4.8.

The two major nutrients found in Virginia streams are nitrogen and phosphorus; their relative risks are 2.4 and 3.1, respectively. Suboptimal phosphorus conditions occur in many more streams (20.8%) than elevated nitrogen (2.7%). Ionic strength (as measured by total dissolved solids) has a relative risk of 4.1 which is one of the highest relative risks in the analyses. However, suboptimal ionic strength conditions were only found in 0.5% of Virginia streams. Dissolved metal concentrations that may cause adverse biological condition were found in 1.1% of Virginia streams; however, elevated dissolved metal concentrations increase the relative risk of having a suboptimal benthic macroinvertebrate community by 2.5.

Stressor extent presented in Figure 4.4-12 only focuses on the percent of stream miles deemed suboptimal by each of the major stressors to Virginia streams. Figure 4.4-14 encompasses the entire stream population for each stressor to relate a more complete narrative surrounding stressor extents in Virginia. Streambed sedimentation has the highest extent of stress in Virginia and nearly the same percent of stream miles in the optimal and suboptimal categories. As we have explored through previous visualization tools, streambed sedimentation, total phosphorus, and habitat disturbance are fairly widespread stressors statewide. Total nitrogen, water column metals, and ionic strength are fairly rare in Virginia with the majority of stream miles in the optimum category of their respective parameter.

Figure 4.4-14. Stressor extent for major benthic macroinvertebrate stressors in all Virginia streams (2009 - 2014) showing all condition classes (optimal, fair, and suboptimal). Optimal condition estimates are shown in green, fair condition estimates are yellow, and suboptimal conditions are shown in red.



Uses of Probabilistic Data

In addition to estimating the condition of all streams and rivers compared to established water quality criteria/screening values and identifying the major stressors to aquatic organisms, freshwater ProbMon data has many ancillary applications within water quality management programs. Examples of these uses are discussed below.

ProbMon data is used in describing both the natural and baseline conditions of Virginia streams. In addition, ProbMon has helped identify minimally disturbed streams and understand their natural variability. This information is integral for DEQ to develop more regionally specific water quality expectations and in turn define reference conditions and select appropriate reference sites. ProbMon has

also provided statistically defensible descriptions of stream conditions as of the beginning of this century. DEQ will find this baseline tremendously valuable for comparison in future assessments.

ProbMon data is currently being used by an internal DEQ workgroup tasked with improving the stressor analysis process in benthic macroinvertebrate TMDLs. Stressor analysis is the process whereby candidate causes of stress (or stressors) to benthic macroinvertebrate communities are evaluated. The purpose of the workgroup is to develop data collection recommendations and scientifically defensible screening values for categorizing potential stressors. ProbMon data is especially useful in describing statewide in-stream conditions for those parameters that do not currently have water quality standards. Understanding existing conditions for those parameters without water quality standards provides perspective on parameter data and a way to evaluate potential stressors. Relative Bed Stability and metals in water column CCU are examples of new tools that are applicable to benthic macroinvertebrate TMDL stressor analysis. Relative Bed Stability is currently being utilized to evaluate sedimentation as a candidate stressor. ProbMon data is being used to create stressor specific metrics to help TMDL staff identify stressor signals from impaired reaches and collect the appropriate water chemistry information.

The collocation of biological, chemical, habitat and landuse data at ProbMon sites also allows for the examination of multiple stressors such as dissolved metal CCUs. DEQ plans to explore the effects of multiple stressors in future reports. This information should aid TMDL development and provide insight into how biological communities and stressor parameters interact.

ProbMon data is also being used as a test platform for new monitoring approaches such as periphyton and fish community data collection. The collection methodology was designed and tested in tandem with the USEPA's National Aquatic Resource Survey (NARS). Until DEQ participated in the NARS sampling, habitat and biology data collection methodologies were not refined for large rivers. Now DEQ is collecting complete ProbMon data sets for large rivers and plans to report on the condition of this valuable freshwater resource. Because ProbMon provides biological, chemical, physical habitat, and land use information at each site, the data set is indispensable for developing and improving biomonitoring tools.

The ProbMon dataset provided crucial data needed to fill in gaps during the development of the VSCI and the validation of both the VSCI and Coastal Plain Macroinvertebrate Index (CPMI) (Maxted 2000). Following the validation, VSCI assessment results were included in the 2008 Integrated Report. DEQ used ProbMon data to validate the CPMI. Specifically, ProbMon data was utilized to identify new reference sites in the coastal plain, check ecoregion best standard values, and select potential metrics that would help the CPMI detect benthic macroinvertebrate community stresses created by human activity. The effort resulted in a new, robust tool for evaluating benthic macroinvertebrate communities in the coastal plain regions of the Commonwealth called the Virginia Coastal Plain Macroinvertebrate Index (VCPMI, DEQ 2013). The technical VCPMI document is online at: http://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityMonitoring/ProbabilisticMonitoring/vcpmi.pdf. ProbMon also aided in improving the biomonitoring program by identifying over 100 new biological references sites, doubling the number of reference sites in the Virginia reference site database.

ProbMon sites are the platform for building a genus-level macroinvertebrate database which may ultimately be used in developing a more robust multimetric assessment tool. ProbMon data may also be used to create a biological condition gradient for Virginia stream and rivers. The biological condition gradient is a descriptive model that illustrates how increasing stress alters ecological attributes (Davies and Jackson 2006). A biological condition gradient defines expected conditions, like benthic macroinvertebrate community structure, for streams by stream order and ecoregion. The biological condition gradient may help DEQ protect high-quality streams and provide stepwise interim goals for tracking water quality improvement.

The potential use of probabilistic data to support water quality permitting decisions is currently being evaluated and a workgroup has been formed to explore this possibility.

An important future application of ProbMon data is change analysis (Kincaid 2016). DEQ adjusted the experimental design of ProbMon by adding randomly selected sentinel sites in order to accelerate its

ability to detect changes in population estimates. By revisiting a relatively small number of these randomly located sites each year, DEQ will be able to detect statewide and regional chemical, habitat, and biological changes. Perhaps the most important question a monitoring program addresses is: are management initiatives effective? The ability of ProbMon to detect shifts in population estimates is critical to the goal of assessing the effectiveness of water quality management programs on a statistically rigorous statewide scale.

Conclusion

DEQ analyzed 14 water quality parameters with established water quality criteria and/or screening values and 6 parameters without water quality criteria. Most of the parameters that have water quality criteria meet applicable standards. The majority of water quality standard exceedences are attributed to legacy pollutants or natural conditions. The results presented in the ProbMon chapter reflect the success of DEQ's management of water quality parameters with water quality criteria.

Only biological monitoring results were found to be below screening thresholds in a relatively high percentage of streams. Benthic macroinvertebrate communities were degraded in 43.9% of the wadeable streams and rivers in Virginia; a percentage that could be considered widespread. Benthic macroinvertebrate communities are indicators of water quality problems because they respond to a variety of water quality stressors including parameters that have water quality standards (e.g. dissolved oxygen levels) and parameters that do not have criteria (e.g. such as nutrients and sedimentation). The following six stressors increase the risk to aquatic organisms and do not currently have water quality standards: streambed sedimentation, habitat disturbance, total phosphorus, total nitrogen, total dissolved solids, and cumulative metals in water column. These parameters are discussed in Section 4.4.5. While these six major stressors do not currently have water quality standards, most are being addressed through a variety of strategies such as permits, TMDLs, nutrient management plans and best management practices. As the ProbMon program evolves and DEQ expands on the uses of ProbMon data, enhancement of the strategies for understanding, evaluating and restoring the Commonwealth's streams and rivers will continue.

Presentations, posters, reports, and handouts about ProbMon are available for viewing and download at the following website:
http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/ProbabilisticMonitoring.aspx.

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CHAPTER 4.5 ESTUARINE PROBABILISTIC MONITORING RESULTS

Introduction

Each year, DEQ's Estuarine Probabilistic Monitoring Program[1] collects samples at 50 estuarine sites, randomly selected by computer from designated non-oceanic tidal waters. Designated waters include the narrow upper tidal reaches (transitional and tidal freshwaters), tidal tributaries and embayments of the James, York, Rappahannock and Potomac Rivers. Tidal tributaries and embayments of Coastal Delmarva and the Back Bay – North Landing River region are also included.[2] In the state design, the only preference applied in the process of selection is the requirement that 70% (N = 35) of the annual sites be from inland tidal waters of the Chesapeake Bay and North Landing River watersheds, and 30% (N = 15) of the sites be from the coastal Delmarva peninsula and Back Bay. At five-year intervals (2010, 2015, 2020, etc.) DEQ's Estuarine ProbMon Program is integrated with the National Aquatic Resources Survey (NARS) / National Coastal Condition Assessment (NCCA) Program, the design of which may include a varying number of sites within the Chesapeake, James, York and Rappahannock mainstems. The number of Virginia estuarine sites selected for NARS surveys varies from cycle to cycle, but is usually between 20 and 25. During NCCA years, DEQ complements the national design with enough stations from the state design to complete a total of 50 sites, although the exact 70% / 30% division between inland and coastal tidal waters may not be maintained.

The six-year assessment window (2009 – 2014) encompassed by the 2016 Integrated Report (IR or Report) includes 273 sets of estuarine samples collected from 273 sites. The sliding, six-year assessment windows included in sequential Reports result in considerable overlap in the monitoring data included. Approximately 67% of the data included in each IR were also assessed and included in the previous Report. Consequently, most of the following sections have changed little from those in the 2014 IR.

The geographic distribution and salinities of the 273 probabilistic estuarine sites visited during the six-year period are illustrated in the map of Figure 4.5-1. The salinities classified here represent the near-bottom salinities at the time of sampling, associated with the contemporary benthic community samples collected at the same sites. The color-coded symbols on the map indicate the salinity zone of each site, as summarized in Table 4.5-1 below. The percentages and confidence intervals listed in the table represent the percentages among the 273 sites with measured salinity values, and are not representative of Virginia's estuarine waters as a whole. If the area of the entire Chesapeake Bay mainstem and the lower tidal portions of the James, York, and Rappahannock Rivers were to be included in the Commonwealth's sampling design, the tidal freshwater and oligohaline percentages would be much reduced, and the saltwater percentage would be much greater. All 50 euhaline sites (salinity > 30.0‰) were located adjacent to oceanic waters along the Delmarva coast.

[1] A more detailed description of probabilistic monitoring can be found on the DEQ Webpages at: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/ProbabilisticMonitoring.aspx

[2] The Chesapeake Bay mainstem and the broad tidal tributary mainstems of the lower James, York and Rappahannock Rivers are excluded from the state designation because they are sufficiently characterized by the Chesapeake Bay Tidal Water Quality Monitoring and Assessment Program.

Table 4.5-1 Numbers and Proportions of Estuarine ProbMon Sites Occurring in Various Salinity Zones.

Salinity Class	Salinity Range (ppt)	Stations	Percentage	
TF - Tidal Freshwater	< 0.5 ‰	30	10.99 ± 3.73%	Fresh and Transitional 64 (23.44 ± 5.05%)
OH - Oligohaline - Transitional	0.5 - 5.0 ‰	34	12.45 ± 3.43%	
MH - Mesohaline	> 5.0 - 18.0 ‰	85	31.14 ± 5.52%	Saltwater 209 (76.56 ± 5.05%)
PH - Polyhaline	>18.0 - 30.0 ‰	74	27.11 ± 5.30%	
UH - Euhaline	> 30.0 ‰	50	18.32 ± 4.61%	

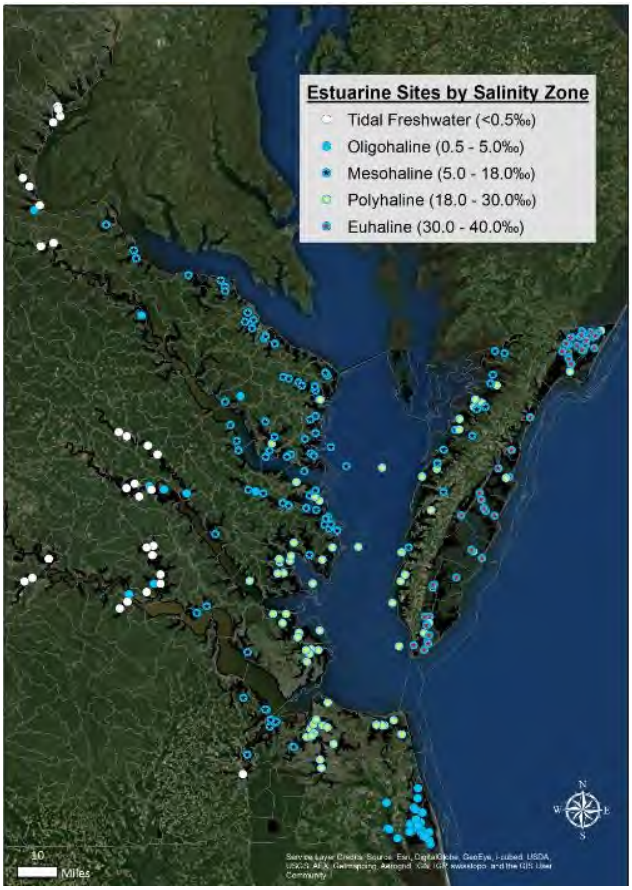


Figure 4.5-1 Geographic distribution of the 273 Estuarine ProbMon Sites Sampled in Tidal Virginia Waters between 2009 and 2014, with their Respective Salinity Zones.

Parameters Measured and Results

DEQ's Estuarine ProbMon Program adheres closely to the same selection of water quality and sediment quality parameters as identified in the national (NCCA) program. Water Quality, Sediment Quality and Benthic data are collected at each of the probmon sites. It's important to note that the water quality parameters (*e.g.*, nutrients, bacteria, dissolved metals, DO, temperature, pH, *etc*.) that are measured at probabilistic sites are considered to be isolated instantaneous observations and are insufficient for assessment purposes because the intensity and duration of such stressors are unknown. However, sediment chemistry, sediment toxicity, and benthic community wellbeing results are used to conduct Weight-of-Evidence assessments at each individual site for Aquatic Life Use (ALU). All three of these measures are considered to be temporally integrative, providing an assessment of environmental conditions experienced by the benthic community during the period prior to the time of sampling. The results of water quality, sediment quality and benthic data are summarized below.

Water Quality

The NCCA Program has traditionally[3] used five parameters to characterize estuarine water quality: near-surface (1) dissolved inorganic Nitrogen (mg/L DIN), (2) dissolved inorganic Phosphorus (mg/L DIP), and (3) chlorophyll-a (µg/L Chl-a), plus (4) water clarity, expressed as the percent of available PAR reaching a specified 1.0 meter depth, and (5) near-bottom dissolved Oxygen (mg/L DO). A classification ("Good", "Fair", or "Poor") based on each of these parameters was subsequently integrated into an overall Water Quality Index (WQI) characterization for the site. The observed values of several of these same parameters are also included for consideration in site-specific weight-of-evidence assessments for the aquatic life designated use (ALU) to be discussed later in this chapter.

On a national scale, the threshold concentrations of these five parameters, differentiating among "Good", "Fair", and "Poor" water quality classes, vary regionally. The final thresholds that were applied for evaluation of individual sites in the 2015 NCCA Report V are summarized in Table 4.5-2a, below. Guidelines for characterizing restricted regions or areas based on their distributions of individual site scores are summarized in Table 4.5-2b. The following discussion of water quality in Virginia's estuaries is based primarily on these thresholds, except where specifically indicated otherwise.

Table 4.5-2a National Coastal Condition Report Water Quality Indicators and Site Specific Thresholds for the Northeast Coastal Region (USEPA 2016)**.**

Estuarine Water Quality Thresholds				
	Region	Good	Fair	Poor
Surface Concentrations of Dissolved Inorganic Nitrogen (DIN) in Estuaries	Northeast Region	< 0.1 mg/L	0.1 - 0.5 mg/L	> 0.5 mg/L
Surface Concentrations of Dissolved Inorganic Phosphorus (DIP) in Estuaries	Northeast Region	< 0.01 mg/L	0.01 - 0.05 mg/L	> 0.05 mg/L
Surface Concentrations of Chlorophyll a in Estuaries	Northeast Region	< 5.0 µg/L	5.0 - 20.0 µg/L	> 20 µg/L
Water Clarity (percent of photosynthetically active radiation [PAR] available at a depth of 1.0 meters) in Estuaries	Waters with naturally high turbidity	> 10%	5 - 10%	< 5%
	Waters with normal turbidity	> 20%	10 - 20%	< 10%
	Waters that support SAV	> 40%	20 - 40%	< 20%
Bottom Water Concentrations of Dissolved Oxygen in Estuaries	All Regions	> 5.0 mg/L	2.0 - 5.0 mg/L	< 2.0 mg/L

[3] NCC Reports I - V, USEPA, 2001, 2004, 2008, 2012, 2015

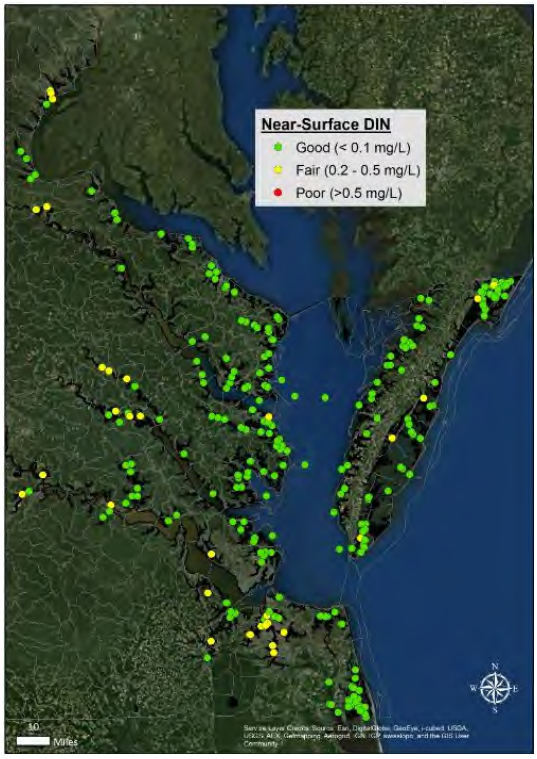
Table 4.5-2b Guidelines for Characterizing Regions Based on the Distributions of Individual Site Scores. (USEPA 2016)

Regional Rating	Cutpoints
Good	Less than ten percent of the coastal area is in "Poor" Condition, and more than 50 percent of the coastal area is in "Good" condition.
Fair	Ten to 20 percent of the coastal area is in "Poor" condition, or 50 percent or less of the coastal area is in "Good condition.
Poor	More than 20 percent of the coastal area is in "Poor" condition.

Near-Surface Dissolved Inorganic Nitrogen (DIN): Concentrations of near-surface dissolved inorganic Nitrogen were measured in samples from 273 sites. DIN was calculated as the sum of the concentrations of dissolved nitrate (NO_3^-), dissolved nitrite (NO_2^-) and dissolved ammonium (NH_4^+) ions. Among the 273 samples, 240 (87.91 ± 3.88%) were classified as "Good" for DIN, 33 (12.09 ± 3.88%) were classified as "Fair", and zero were classified as "Poor".

The map presented in Figure 4.5-2 illustrates the geographic distribution of the 273 sites evaluated, classified, and color coded by their near-surface dissolved inorganic nitrogen concentrations. Virginia's estuaries would earn an overall rating of "Good" because the proportion of Good site characterizations was well above 50% and there were no sites characterized as Poor.

DIN Class	Range	Stations	Percentage
Good	< 0.1 mg/L	240	87.91 ± 3.88%
Fair	0.1 - 0.5 mg/L	33	12.09 ± 3.88%
Poor	> 0.5 mg/L	0	0.00%
Missing	N/A	0	0.00%
	Total	273	100.00%



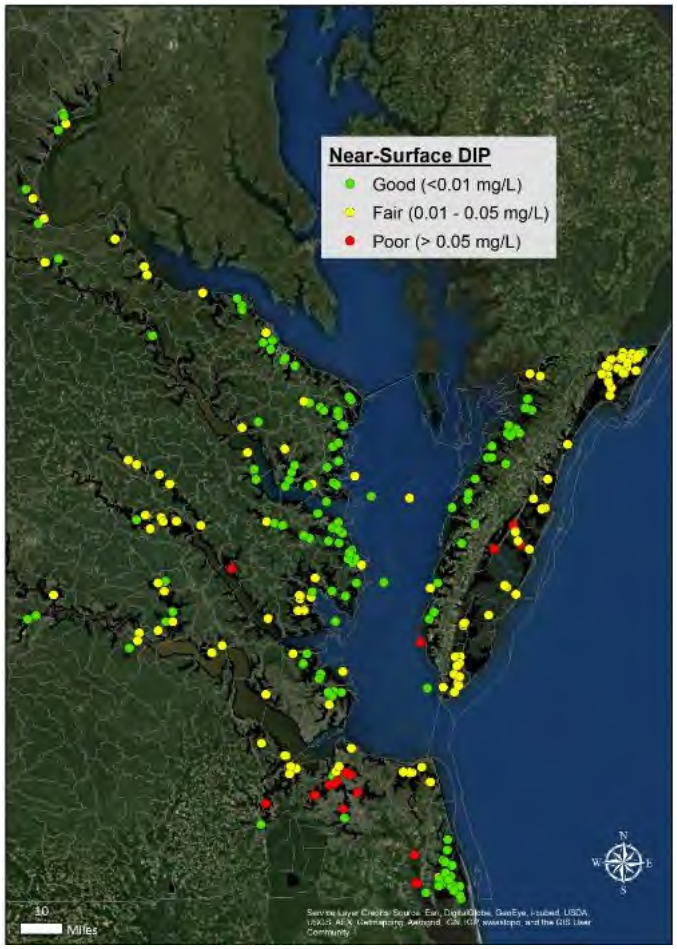
Dissolved Inorganic Nitrogen (DIN) mg/L	
N	273
Maximum	0.347
99th %tile	0.344
90th %tile	0.119
75th %tile	0.034
UL 95% Median	0.018
Median	**0.016**
LL 95% Median	0.014
25th %tile	0.008
10th %tile	0.004
5th %tile	0.002
1st %tile	0.001
Minimum	0.000
Average	**0.042**
Std. Dev.	0.070
Std. Err.	0.004

Figure 4.5-2 Geographic and Statistical Distributions and Characterizations of Dissolved Inorganic Nitrogen (DIN) Samples Collected at 273 Estuarine Sites from 2009 – 2014.
Final 2016

Near-Surface Dissolved Inorganic Phosphorus (DIP): Near-surface dissolved inorganic Phosphorus (also known as phosphate - PO_4^{-3}, orthophosphate, or soluble reactive phosphorus - SRP) concentrations were also measured in samples from 273 sites. The geographic and statistical distributions of DIP characterizations are illustrated in the map and graphs of Figure 4.5-3. One hundred thirty-two (48.35 ± 5.95%) of the 273 samples were classified as "Good," 122 (44.69 ± 5.92%) were classified as "Fair", and 19 (6.95 ± 3.03%) were classified as "Poor."

Virginia's estuaries earn an overall "Fair" classification for DIP in regional waters, since less than 10% of sites scored "Poor" and 48.35% of the sites scored "Good". The threshold for a "Good" regional rating is 50%. The Elizabeth River system would be scored as "Poor" on a more limited regional basis.

DIP Class	Range	Stations	Percentage
Good	< 0.01 mg/L	132	48.35 ± 5.95%
Fair	0.01 - 0.05 mg/L	122	44.69 ± 5.92%
Poor	> 0.05 mg/L	19	6.96 ± 3.06%
Missing	N/A	0	0.00 ± 0.00%
	Total	273	100.00%



Dissolved Inorganic Phosphorus (DIP) mg/L	
N	273
Maximum	0.157
99th %tile	0.108
90th %tile	0.043
75th %tile	0.025
UL 95% Median	0.013
Median	**0.011**
LL 95% Median	0.009
25th %tile	0.004
10th %tile	0.002
5th %tile	0.001
1st %tile	0.000
Minimum	0.000
Average	**0.018**
Std. Dev.	0.023
Std. Err.	0.001

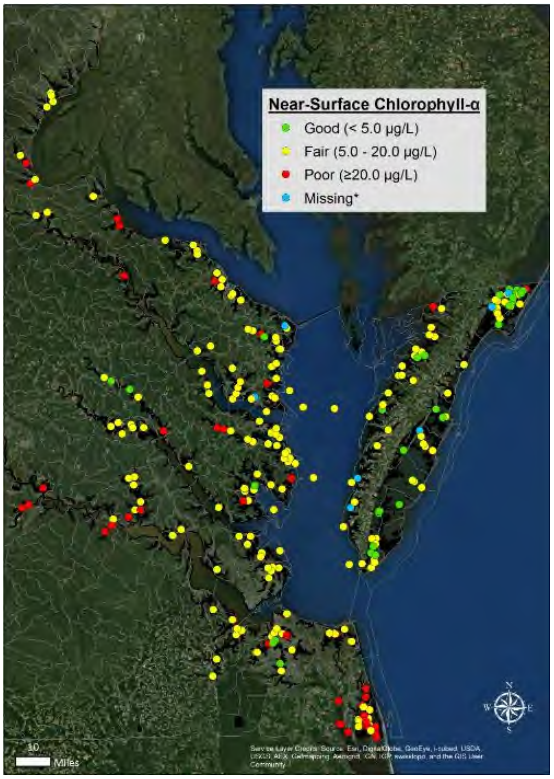
Figure 4.5-3 Geographic and Statistical Distributions and Characterizations of 273 Probabilistic Sites based upon Near-Surface Dissolved Inorganic Phosphorus (DIP) Concentrations (2009 – 2014).

Near-surface Chlorophyll-a: Chlorophyll-a (Chl-a) is used as an indirect measure of the quantity of phytoplankton (algae) in the water column. High values of chlorophyll-a, characteristic of excessive numbers of phytoplankton, are generally interpreted to result from nutrient enrichment or eutrophication of the associated water body.

Near-surface chlorophyll-a concentrations were analyzed from 266 of 273 samples from probabilistic estuarine sites (completeness = 97.44%). The missing seven samples (2.56 ± 1.88%) were mostly lost in the laboratory when their glass extraction tubes broke during centrifugation. On occasion, field-filtered Chl-a samples were rejected by the laboratory if they appeared to be contaminated (*e.g.*, if water had leaked into the filter container). Of the total 273 samples collected, 34 (12.45 ± 3.93%) were characterized as "Good" (< 5.0 µg/L Chl-a) using the chlorophyll-a thresholds in Table 4.5-2a, 191 sites (69.96 ± 5.46%) were classified as "Fair" and 41 (15.02 ± 4.26%) were classified as "Poor" (>20.0 µg/L Chl-a). The geographic, numerical, and statistical distributions of sites by chlorophyll-a class and the corresponding class thresholds are summarized in the map and tables of Figure 4.5-4.

Based on the NCCA thresholds for regional characterizations, Virginia's estuarine waters would receive an overall score of "Fair" for chlorophyll-a (less than 20% of sites score "Poor" and less than 50% score "Good"). The Chesapeake Bay mainstem and coastal Delmarva waters would also receive localized ratings of "Fair". Locally restricted tidal fresh and oligohaline waters of minor tributaries would be characterized as "Poor".

Chlorophyll Class	Range	Stations	Percentage
Good	< 5.0 µg/L	34	12.45 ± 3.93%
Fair	5.0 - 20.0 µg/L	191	69.96 ± 5.46%
Poor	≥ 20.0 µg/L	41	15.02 ± 4.26%
Missing	N/A	7	2.56 ± 1.88%
	Total	273	100.00%



Chlorophyll a (µg/L)	
N	266
Maximum	81.100
99th %tile	54.120
90th %tile	23.700
75th %tile	15.875
UL 95% Median	11.713
Median	**10.850**
LL 95% Median	9.987
25th %tile	6.908
10th %tile	4.735
5th %tile	3.883
1st %tile	1.500
Minimum	1.210
Average	**13.375**
Std. Dev.	10.557
Std. Err.	0.647

Figure 4.5-4 Geographic & Statistical Distributions and Characterizations of 273 Probabilistic Estuarine Sites Based upon Near-Surface Chlorophyll-a Values – µg/L (2009 – 2014).
Final 2016

Water Clarity: Water clarity is considered an important element of water quality, but its inclusion in an integrated Water Quality Index (WQI) is somewhat complex. Part of this complexity stems from assigning thresholds to a very broad classification of coastal waters. Coastal waters are categorized as follows: (1) coastal waters with naturally high turbidity (Alabama, Louisiana, Mississippi, South Carolina, Georgia, and Delaware Bay), (2) coastal waters with normal turbidity (most of the United States), and (3) coastal waters that support SAV beds or have active programs for SAV restoration (Laguna Madre; the Big Bend region of Florida; the region from Tampa Bay to Florida Bay; the Indian River Lagoon; portions of Chesapeake Bay; Hawaii; American Samoa; Guam; Puerto Rico; and the U.S. Virgin Islands) (USEPA, 2012). The rationale for classifying such broad geographic areas into a uniform or homogeneous expectation of water clarity is open to question. Clearly, the expectation of water clarity and the presence or absence of SAV would not be the same for local areas with disparate depths, exposure to high wave activity, with strong tidal currents, areas of varying bottom substrates, or in estuaries fed by tannin-stained blackwater streams. Shallower waters, more subject to wind and wave action and the re-suspension of bottom sediment, would be expected to have higher turbidities (lower clarity) than deeper nearby waters.

Water clarity is also a function of the density of phytoplankton in the water column, and in this sense is a redundant characteristic that may be highly and inversely correlated with chlorophyll and nutrient concentrations in the water column. Its accurate measurement is also susceptible to variations in ambient light conditions – diffused light on cloudy or overcast days versus direct sunlight, and the angle of incident light at the water's surface. In addition, water clarity is extremely difficult to measure accurately at shallow sites.

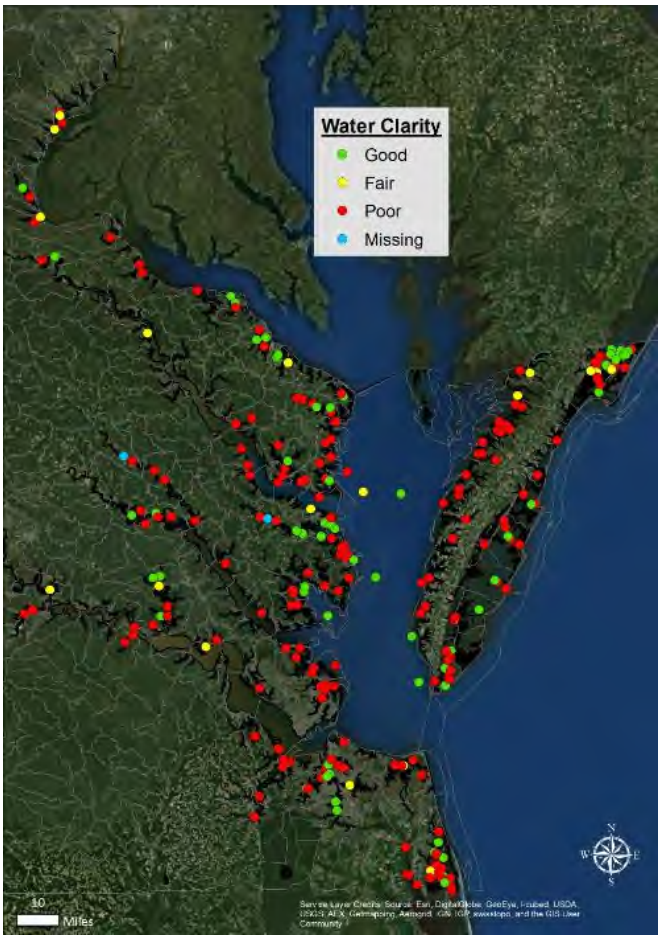
EPA's Chesapeake Bay Program (CBP) has defined SAV zones for numerous segments within the Bay watershed as that portion of the segment extending from the shoreline out to a depth contour (isobath) of 2.0 meters, relative to mean low water (MLW) level, excluding certain segments where SAV was not expected to grow (Kemp et al., 2000). Water quality criteria (e.g., water clarity) related to SAV growth and survival are only applied within these defined areas and during defined seasons. "For several SAV species (notably Myriophyllum spicatum and Hydrilla verticillata), maximum depth penetration might be greater than two meters, but it was felt that this would be an exception…" (Kemp et al., 2000). Criteria for excluding certain areas from the maps were based primarily on known historical SAV distributions, and on habitat areas exposed to high wave energy and/or that have undergone physical modifications that prevented them from supporting SAV growth. Ironically, the same shallow water areas that potentially support SAV are the most susceptible to shoreline erosion and to the re-suspension of sediment by wave action. The presence of SAV in such shallow areas improves water clarity (and consequently water quality) by buffering wave action, thus enhancing the precipitation of suspended material, and reducing shoreline erosion and the re-suspension of previously deposited sediment. SAV and water clarity consequently interact with a positive feedback mechanism – the presence of SAV improves water clarity, improved water clarity enhances the growth of SAV, etc.

The water clarity criteria established by the CBP for areas of SAV within Virginia's Chesapeake Bay watershed are published in Virginia's Water Quality Standards 9VAC25-260-185. In the following characterization, the scientifically derived CBP light availability (clarity) habitat types have been extended geographically, equated with local habitat types, and integrated with NCCA criteria where appropriate. This provided the application of similar criteria to define potential SAV areas in estuarine waters of coastal Delmarva and to the oligohaline waters of the Back Bay / North Landing River region (tributaries to Currituck Sound, NC) as were applied within the Chesapeake Bay watershed. Within the Bay watershed, sites that were within the designated SAV areas and had a depth equal to or less than 2.0 meters at the time of sampling were evaluated using the CBP criteria for defined SAV areas. Elsewhere, sites with depths less than or equal to 2.0 meters were considered potential SAV areas and were evaluated with the NCCA SAV criteria, unless they were impacted by strong wave action or strong tidal currents. Such determinations were made using map reconnaissance, comments from site field sheets, and the evaluation of substrate structure. Sandy substrates with very low fine particle concentrations (*e.g.*, ≥ 95% sand) were considered to be characteristic of such impacted sites. Sites with deeper waters (>2.0 m) were evaluated as areas of normal turbidity, although why coastal Delmarva waters of Virginia should be

considered less turbid (normal) than coastal South Carolina and Georgia waters (naturally high) is a valid and unanswered question.

The geographic distribution and characterization of the 273 sites, based on the integrated, mixed water clarity criteria described above, are illustrated in the map of Figure 4.5-5. The statistical distribution of "Percent PAR @ 1.0 m depth" in the table of Figure 4.5-5 is not classified or color-coded because thresholds for characterizations ("Good", "Fair", "Poor") vary with location, salinity, depth, etc. The majority of the highest water clarity sites occur in the Chesapeake Bay mainstem and its larger embayments.

Virginia's estuarine waters received an overall score of "Poor" for water clarity because more than 20% of the individual sites were scored as "Poor". This score may be worse than warranted, because many sites that were individually scored as "Poor" actually fell within CBP SAV segments that, based on several years of ambient monitoring, were evaluated as meeting SAV growth goals for DEQ's 2014 Integrated Report (DEQ-WQA. 2014). This was especially evident in the upper tidal Potomac River, the Rappahannock, Mattaponi and Pamunkey Rivers, and tributaries to the lower tidal James River (refer to Figure 4.5-5). An additional factor is that DEQ's state probabilistic design targets smaller tributaries and embayments (generally shallower waters) where sediment laden storm runoff waters are more prevalent and re-suspension of existing sediment is more common, and the program normally excludes the open bay and lower, broader major tidal tributary mainstems where water clarity would generally be better.



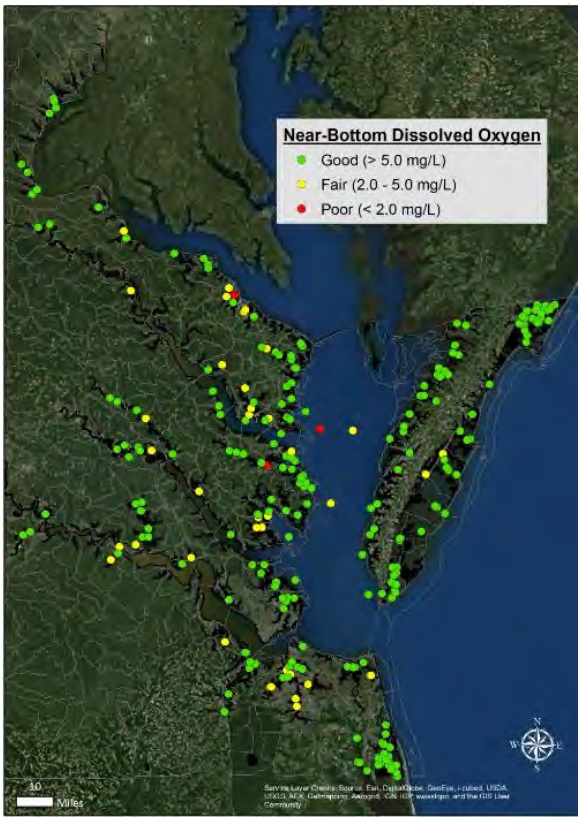
Water Clarity % Transmission @ Application Depth	
N	270
Maximum	57.57%
99th %tile	50.30%
90th %tile	28.17%
75th %tile	18.53%
UL 95% Median	10.39%
Median	**8.87%**
LL 95% Median	7.36%
25th %tile	2.67%
10th %tile	0.56%
5th %tile	0.19%
1st %tile	0.0014%
Minimum	0.0000%
Average	**12.01%**
Std. Dev.	11.57%
Std. Err.	0.70%

Figure 4.5-5 Geographic and Statistical Distributions of 273 Probabilistic Sites based on Water Clarity.

Near-Bottom Dissolved Oxygen: Dissolved Oxygen (DO) profiles from near-surface (0.5 m) to near-bottom (0.5 m above sediment) were recorded during all 275 site visits. Near-bottom DO concentrations are summarized here as one element in the NCCA Water Quality Index (WQI) for site characterizations. They are also utilized in the Weight-of-Evidence (WOE) site assessment for Aquatic Life Designated Use (ALU), to be described later in this chapter. Of the 273 bottom DO measures evaluated here, 232 (84.98 ± 1.88%) were classified as "Good" based on NCCA criteria. An additional 38 sites (13.92 ± 4.12%) were classified as "Fair" and only 3 sites (1.10 ± 1.24%) were classified as "Poor."

The geographic and statistical distributions of bottom DO measurements, evaluated by the NCCA criteria, are summarized in the map and table of Figure 4.5-6. There is no indication that any strong regional or local influence depressed bottom dissolved oxygen concentrations within the estuarine area sampled under the Virginia state survey design. Virginia's estuarine waters would earn an overall score of "Good" under the most protective Virginia standard of 4.0 mg/L, under the less protective CBP DO standard of 3.2 mg/L, or under the least protective NCCA criterion (2.0 mg/L), since under all three the proportion of "Poor" sites was less than 10% of the total and considerably more than 50% of the sites were in "Good" condition.

Bottom Dissolved Oxygen Class	Range (NCCA Criteria)	Stations	Percentage
Good	> 5.0 mg/L	232	84.98 ± 4.26%
Fair	2.0 - 5.0 mg/L	38	13.92 ± 4.12%
Poor	< 2.0 mg/L	3	1.10 ± 1.24%
Missing	N/A	0	0.00%
	Total	273	100.00%



Dissolved Oxygen (DO) at the bottom - mg/L	
N	273
Maximum	10.780
99th %tile	9.143
90th %tile	7.900
75th %tile	7.200
UL 95% Median	6.432
Median	**6.270**
LL 95% Median	6.108
25th %tile	5.500
10th %tile	4.468
5th %tile	3.760
1st %tile	2.071
Minimum	0.800
Average	**6.249**
Std. Dev.	1.433
Std. Err.	0.087

Figure 4.5-6 Geographic Distribution and Classification of 273 Probabilistic Estuarine Sites Based upon Near-Bottom Dissolved Oxygen Concentrations (2009 - 2014).

Water Quality Index (WQI): The five water quality metrics discussed above are integrated into a general Water Quality Index (WQI) for site characteizations. Discussions early in 2013, related to the Fifth NCCA Report ("Progress Update – National Webinar – National Coastal Condition Assessment." U.S. Environmental Protection Agency - 14 January 2013), raised the question of whether or not the water clarity metric should be included in this index, not only because of the difficulty in establishing appropriate local criteria, but also because water clarity is such an ephemeral characteristic of the local water bodies (*i.e.*, varies from hour to hour, minute to minute). For this reason, calculations of the Water Quality Index in the current chapter have been carried out both including and excluding the Water Clarity metric. Table 4.5-3 summarizes the criteria used for both indices.

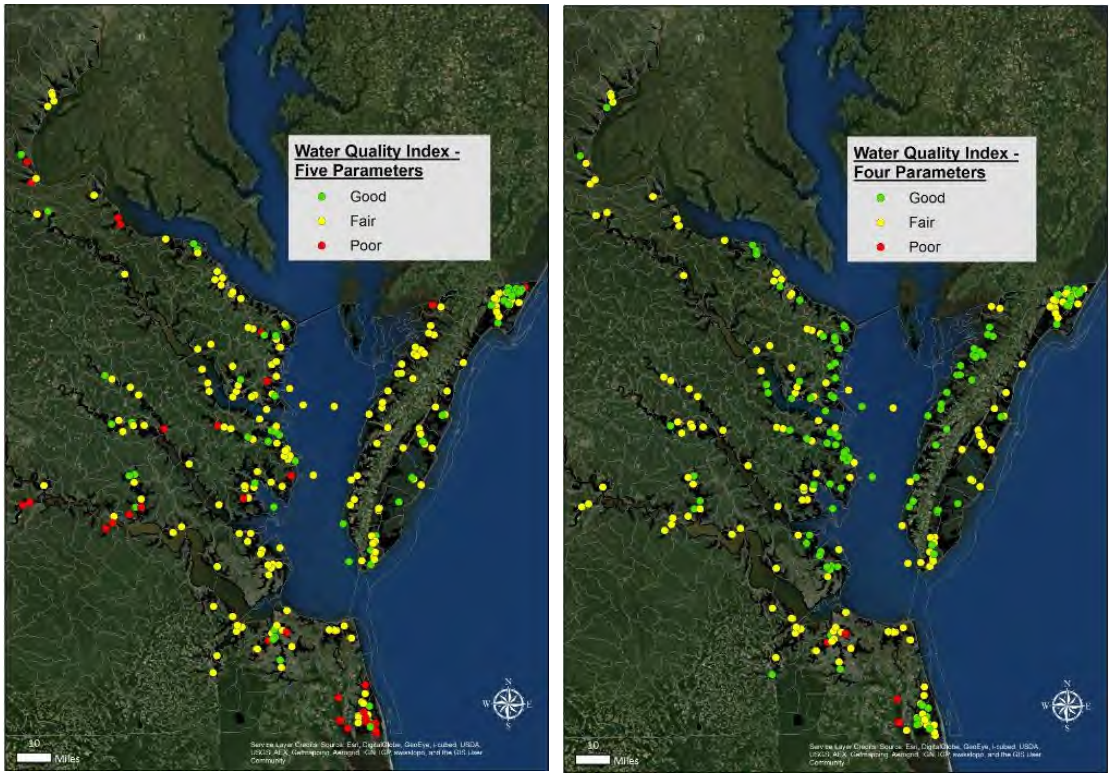
Table 4.5-3 Criteria for Characterizing the Site-specific Integrated Water Quality Index (WQI) based on Five (WQI_5) or Four (WQI_4) Water Quality Parameters. The four parameter WQI used for the Great Lakes in NCCA Report V (USEPA 2015) employed the same thresholds as the five parameter estuarine WQI.

Rating	Thresholds
Good	A maximum of one indictor is rated fair, and no indicators are rated poor
Fair	One of the indicators is rated poor, or two or more are rated fair
Poor	Two or more of the indicators are rated as poor
Missing	Two component indicators are missing, and the available indicators do not suggest a fair or poor rating

The tables in Figure 4.5-7 summarize site-specific WQI characterizations including the integrated, mixed criteria water clarity metric (A – WQI_5) and excluding the water clarity metric (B – WQI_4). It is evident from comparison of the two tables that the the contribution of the water clarity metric has an overwhelming influence on individual site characterizations. Removal of the single water clarity metric increased the number of "Good" characterizations for sites from 57 (20.88 ± 4.84%) to 113 (41.39 ± 5.87%) and decreased the number of "Fair" characterizations from 182 (66.67 ± 5.62%) to 155 (56.78 ± 5.90%). The number of "Poor" characterizations was reduced from 34 (12.45 ± 3.93%) to 5 (1.83 ± 1.60%), but was insufficient to change Virginia's "Fair" regional characterization based on the WQI because the proportion of sites characterized as "Good" was less than 50% under both five-metric and four-metric indices. Refer to Table 4.5-2b for scoring cutpoints of WQI regional characterizations.

Five Parameter Water Quality Index (WQI_5)	Stations	Percentage
Good	57	20.88 ± 4.84%
Fair	182	66.67 ± 5.62%
Poor	34	12.45 ± 3.93%
Missing	0	0.00 ± 0.00%
Total	273	100.00%

Four Parameter Water Quality Index (WQI_4)	Stations	Percentage
Good	113	41.39 ± 5.87%
Fair	155	56.78 ± 5.90%
Poor	5	1.83 ± 1.60%
Missing	0	0.00 ± 0.00%
Total	273	100.00%



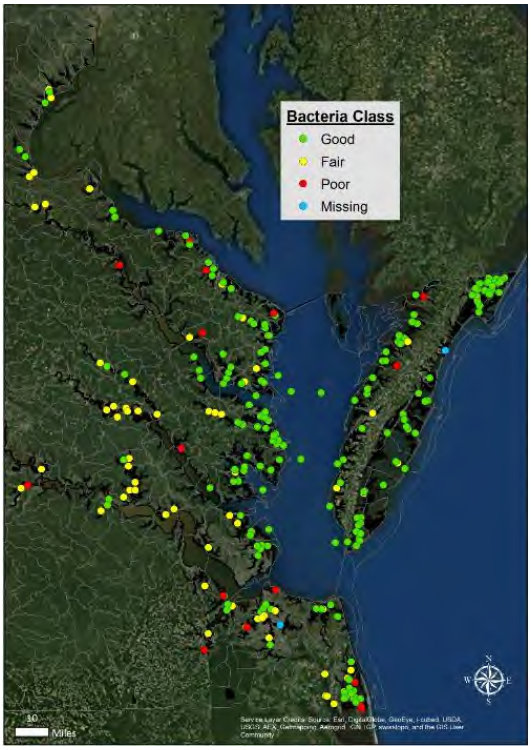
A – With Clarity **B – Without Clarity**

Figure 4.5-7 Geographic Distribution and Characterizations of 273 Probabilistic Estuarine Sites based on the Water Quality Index (WQI), A - Calculated with five metrics, including the Integrated, Mixed Criteria Water Clarity Metric and B - with four metrics, excluding the Integrated, Mixed Criteria Water Clarity Metric.

Other Water Quality Measures: In DEQ's state design Estuarine Probabilistic Monitoring Program the agency added on several water column parameters that have not traditionally been required for NCCA surveys. The first of these consisted of near-surface bacterial monitoring and the second (2008 – 2011) consisted of the near-surface sampling and subsequent analysis of trace metals (both dissolved and total). The results from these efforts are discussed in the following sections.

Bacteria: Virginia Code specifies instantaneous maximum Water Quality Standards for primary contact recreational use of freshwater (including tidal fresh) of 235 cfu/dL of *E. coli* and for transitional and saltwater of 104 cfu/dL of enterococci. For scoring individual sites on the basis of bacterial contamination, the salinity at the time of sampling was used to classify the site salinity zone, and then the measured concentration of the appropriate bacterial group was evaluated (*E. coli* in tidal fresh and enterococci in oligohaline, mesohaline, polyhaline and euhaline). If the appropriate bacterial group was below detection limits the site was characterized as "Good". If the appropriate bacterial group was at or in excess of the corresponding instantaneous maximum standard concentration, the site was characterized as "Poor". If the appropriate bacterial concentration was measurable (*i.e.*, above zero) and was below the corresponding standard the site was characterized as "Fair".

The majority of the 273 sites (190 = 69.60 ± 5.48%) were characterized as "Good", and only 16 (5.86 ± 2.80%) were characterized as "Poor" for bacterial contamination. The geographic distribution and characterizations of the sites are illustrated in the map of Figure 4.5-8[4].



Bacteria	Range (cfu/dL) Fresh / Salt	Stations	Percentage
Good	0 / 0	190	69.60 ± 5.48%
Fair	1 - 235 / 1 - 104	65	23.81 ± 5.07%
Poor	> 235 / > 104	16	5.86 ± 2.80%
Missing	N/A	2	0.73 ± 1.02%
	Total	273	100.00%

Figure 4.5-8 Geographic Distributions and Characterizations of 273 Probabilistic Estuarine Sites based on Bacterial Contamination (2009 – 2014).

[4] No statistical summaries are presented for bacteria, because the bacterial counts constitute a discontinuous variable with varying intervals between values. Also, the integrated results are from two different groups of bacteria in different habitats, each with different water quality standards and threshold criteria.

EPA's National Coastal Condition Assessment Reports (U.S. EPA 2001, 2004a, 2008, 2012) do not provide criteria for site characterizations based on bacterial contamination, nor are thresholds available for regional characterizations. Best professional judgment would suggest that because almost 70% of the samples contained no detectable bacteria of interest ("Good"), and bacterial water quality standards were exceeded in less than 10% of the samples ("Poor"), the overall condition of Virginia's estuarine waters based on bacterial contamination was "Good".

Dissolved Trace Metals in the Water Column: Between 2008 and 2011, DEQ's Estuarine Probabilistic Monitoring (ProbMon) Program collected clean dissolved and total trace metals samples from near surface waters (0.3 m depth) at 182 probabilistic estuarine sites. Results from the entire 2008 – 2011 period were reported in the 2014 IR and no additional clean dissolved metals samples were collected in 2013 or 2014. Please refer to the 2014 Report for a complete discussion of the clean dissolved metals results and the justification for discontinuing this monitoring effort. The clean dissolved metals results are included in the summary table of site attributes and stressor prevalence at the end of this chapter.

Sediment Quality

Integrated Sediment Chemistry Index: Prior to the 2010 survey, the NCCA Program had considered three sediment characteristics important in the evaluation of sediment quality: (1) sediment chemical contamination, (2) sediment toxicity, and (3) sediment total organic carbon (TOC) content. Each of these characteristics had been evaluated separately in earlier NCCA Reports, and the three evaluations were subsequently integrated into a single Sediment Quality Index (SQI). Sediment TOC was removed from the SQI for the 2010 NCCA Survey (USEPA 2015) and the previously applied characterization of sediment chemical contamination was replaced with two new measures, the mean Effects Range Median Quotient (mERM-Q)[5] and the Logistic Regression Model (LRM)[6] (including the concept of utilizing the maximum probability (P_{max}) of acute toxic effects among the sediment contaminant analytes to characterize the ecological condition of a site). EPA used the P_{max} value in conjunction with the mERM-Q to characterize individual sites in relation to their ecological condition. In order to be classified as "Good" a site was required to have a mean ERM Quotient less than 0.1 and a Logistic Regression Model P_{max} < 0.5. The NCCA threshold criteria for characterizing sediment chemical contaminants and toxicity are summarized in Table 4.5-4, and the general criteria are summarized in Table 4.5-5, below. In summary, if both indicators (mERM-Q and P_{max}) are rated "Good" or if the mERM-Q is rated as "Good" and P_{max} is rated "Fair", the site is characterized as "Good" for sediment chemistry.

Table 4.5-4 NCCA 2010 Guidelines for Characterizing Sediment Contamination by Site.

NCCA Site Characterization Guidelines for Estuarine Sediment Contaminantion			
	Good	**Fair**	**Poor**
Sediment Contaminants	**mean ERM-Q < 0.1 and LRM $P_{max} \leq 0.5$**	**mean ERM-Q > 0.1 and < 0.5 or LRM P_{max} > 0.5 but < 0.75**	**mean ERM-Q $\geq$ 0.5 or LRM $P_{max} \geq .75$**
Sediment Toxicity: Test results	**Not significantly less than control (p > 0.05) and control-corrected survivorship ≥ 80%**	**Significantly < control (p < 0.05) and contol-corrected survival ≥ 80% or not significantly less than control (p > 0.0) and control-corrected survival > 80%**	**Significantly less than control (p < 0.05) and control-corrected survival < 80%**

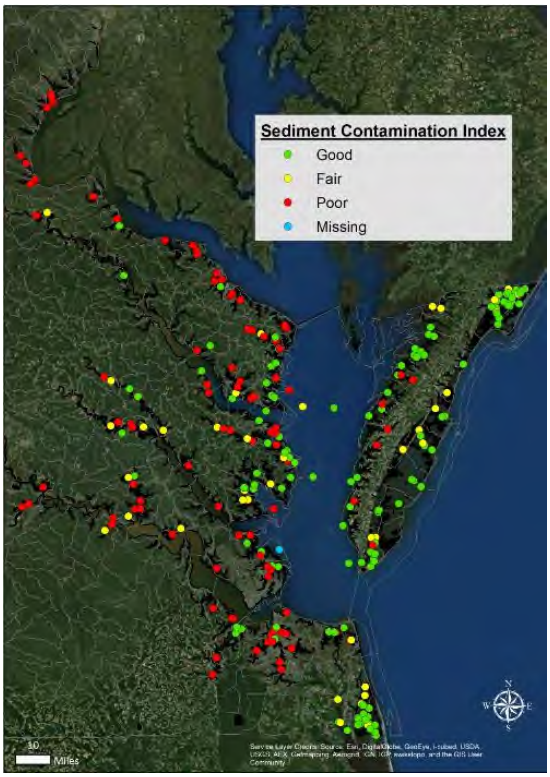
[5] The mean Effects Range Median (ERM) Quotient (mERM-Q) is described by Hyland et al. (1999, 2003).

[6] The Logistic Regression Model was included in the 2010 Technical Report (USEPA 2016) and also described in earlier publications (LRM - Field et al., 1999; Field et al., 2002).

Table 4.5-5 Site Characterization Guidelines for the Integrated Sediment Chemistry Index based on the mERM-Q and LRM P_{max} Indicators.

Sediment Chemical Contamination Class	Site characterization Guidelines for the Integrated (mERM-Q and LRM P_{avg}) Sediment Chemistry Index (SCI)
Good	If both indicators are rated as Good or only P_{avg} is rated as "Fair"
Fair	If both indicators are rated as "Fair" or mERM-Q is "Fair" and P_{avg} is "Good"
Poor	If either indicator is rated as "Poor"
Missing	If both indicators are missing

The geographic distribution and characterization of sites by the Integrated SCI are summarized in Figure 4.5-9.



Sediment Chemical Contamination Class	Stations	Percentage
Good	131	47.99 ± 5.95%
Fair	42	15.38 ± 4.30%
Poor	99	36.26 ± 5.73%
Missing	1	0.37 ± 0.72%
Total	273	100.00%

Figure 4.5-9 Sediment Chemical Contamination Index (SCI) Integrating the Results from the mERM-Q and the LRM P_{max} Characterizations. No color-coded percentile distribution is possible because the index is derived from the characterization classes ("Good", "Fair", "Poor") of the two individual chemical contamination indices (mERM-Q and LRM P_{max}).

Equilibrium Partitioning Sediment Benchmark (ESB) for PAH Mixtures: The U.S. EPA has published several procedures for the derivation of contaminant equilibrium partitioning sediment benchmarks (ESBs) for the protection of benthic organisms. Such benchmarks consider the potential cumulative (additive and/or synergistic) effects of multiple related contaminants (e.g., various metals or various PAHs, etc.) within the same sediment sample. DEQ uses the ESB for PAH mixtures as an additional line of

information in its weight-of-evidence assessments for aquatic life use, but it is not included in the Integrated Sediment Chemistry Index discussed above.[7]

This study includes 23 of the 34 PAH analytes. EPA's publication cited above provides correction factors to estimate the reliability of predicting a contaminant equilibrium partitioning sediment benchmark score for the total suite (34 analytes, ESP34) based on the results from these 23 analytes (ESB23). Multiplying the total score derived from summing the 23 analytes by a correction factor of 1.64 provides an estimate of the expected median score for the ESP34 among the N = 2001 reference samples initially used to derive the original ESB relationship. A Microsoft Excel ® spreadsheet that carries out these calculations automatically for individual site assessments based on the Sediment Quality Triad is provided in DEQ's Weight-of-Evidence workbooks. The Weight-of-Evidence assessment procedure and the associated Excel workbooks are described in DEQ's 2014 Assessment Guidance Manual (DEQ-WMA 2014).

When the ESB_{23} to ESB_{34} correction factor was applied to the results from the 272 estuarine sediment samples in this study, estimated ESB_{34} scores varied from 0.000 to 4.474. Two hundred sixty-eight (98.17 ± 1.60%) of the samples had expected ESB_{34} scores < 1.000, indicating that undesirable effects from dissolved PAHs would not be expected to impact the benthos. Sites with estimated ESB_{34} scores < 1.000 were consequently characterized as being of "Low" risk to benthic communities ("Good"). Sites with estimated ESB_{34} scores greater than 1.000 and less than or equal to 2.000 (N = 3; 1.10 ± 1.24%) were characterized as being of "Medium" risk to benthic communities ("Fair"), because a marginal rather than a severe impact would be expected. Estimated ESB_{34} scores greater than 2.000 and less than or equal to 5.000 (N = 1; 0.37 ± 0.72%) were characterized as being of "High" risk to benthic communities ("Poor"), and no sites had ESB_{34} scores exceeding 5.000, which would be characterized as being of "Very High" risk to benthic communities ("Very Poor"). The ranges of estimated ESB_{34} (adjusted ESB_{23}) scores, the resultant characterizations, and the numeric distribution of the results are summarized in Figure 4.5-12, below. The single "Poor" site was in the Elizabeth River, Southern Branch (ESB_{34} = 4.47). The three "Fair" sites were in Stoakes Creek (south of Gwynn Island – ESB_{34} = 1.78), White House Cove (Poquoson - ESB_{34} = 1.63) and the lower Appomattox River (just above Hopewell – ESB_{34} = 1.00).

As previously indicated, the ESB_{34} provides an estimated benthic risk factor from dissolved PAHs in the interstitial water. It is useful in inferring a possible cause and pathway for benthic impairment at a site, but a high ESB_{34} score does not necessarily mean that PAHs are an unimportant contaminant. PAHs bound to TOC in organic detritus may be ingested by benthic organisms and consequently result in degradation much more severe than would be indicated by the ESB_{34} itself.

The Role and Distribution of Individual Analytes in Sediment Contamination: Individual metals contribute to both the mean ERM Quotient and to the P_{max} statistic of the Logistic Regression Model. Individual PAHs contribute sporadically, although total PAHs seldom approach the Effects Range Median value for this composite group of analytes. Only three metals were observed to exceed their ERM values among the 272 sediment chemistry samples evaluated for this report: Zinc (Zn - 4 exceedances), Cadmium (Cd - 2 exceedances), and Nickel (Ni - 1 exceedance). Various individual PAHs induced high probabilities of toxic effects on benthos, but total PAHs never approached their Effects Range Median threshold, which is relatively high (ERM = 44,792 µg/Kg). Total PAHs did, however exceed their ERL value (ERL = 4,022 µg/Kg) on six occasions. For the purpose of this report, total PAHs are the simple sum of all 23 PAHs analyzed in each sample Both ERL and ERM exceedances by selected metals and total PAHs are summarized in Table 4.5-6.

[7] The procedure for calculating the ESB for PAH mixtures was described in detail in DEQ's 2014 Integrated Report (DEQ WQA, 2014). Unfortunately, following release of the 2014 IR, an error was discovered in the formula calculating the fraction of Total Organic Carbon (TOC) in the sediment and the fraction of TOC, which chemically sequesters PAHs from the water, was greatly underestimated. Consequently the calculated risk factor to benthos from dissolved PAHs in the interstitial water within the sediment was greatly overestimated in the 2014 IR. This error has now been corrected and the results presented in the current IR are more representative than those reported in 2014.

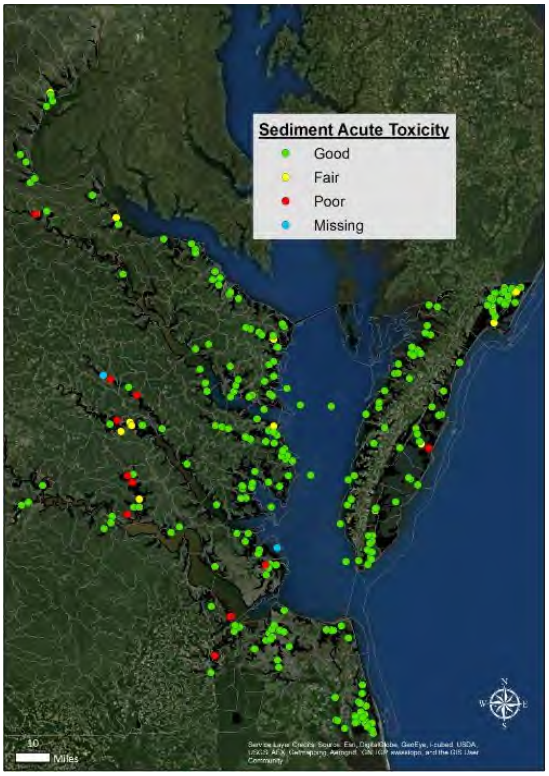
Table 4.5-6 Number of Effects Range Low (ERL) and Effects Range Median (ERM) Exceedances Observed for Selected Metals and Total PAHs.

	Number of Exceedances among 272 samples	
Analyte	**ERL**	**ERM**
Arsenic (As)	85	0
Cadmium (Cd)	46	2
Chromium (Cr)	2	0
Copper (Cu)	41	0
Lead (Pb)	17	0
Mercury (Hg)	19	0
Nickel (Ni)	77	1
Zinc (Zn)	36	4
Total PAHs	6	0

An addendum to this IR chapter, which includes maps of the geographic distributions and summaries of the statistical distributions of selected metals and total PAHs, is available from DEQ upon request. Contact donald.smith@deq.virginia.gov or (804) 698-4429 to request an electronic copy via email.

Sediment Toxicity: Sediment toxicity (SedTox) has been included as one element of sediment quality since the inception of the Coastal 2000 Initiative. In National Coastal Condition Reports I – IV (USEPA, 2001, 2004, 2008, 2012) EPA classified the results of SedTox tests as either "Good" (C-CS ≥ 80%) or "Poor" (C-CS < 80%), with no intermediate class of "Fair" defined. Mortality greater than 20% (C-CS < 80%) was considered to be biologically or ecologically meaningful, without comparisons with controls to evaluate the statistical significance of differences. Beginning with NCCA Report V (USEPA 2015), and in DEQ's 2014 IR and the current Report, an additional intermediate class of "Fair" has been defined for those sites with transitional results where C-CS ≥ 80% but a one tailed statistical test revealed a significantly ($p \leq 0.05$) lower survivorship than controls, or where C-CS was < 80% but statistically significance difference from controls could not be verified ($p > 0.05$).

The characterizations and geographic distributions of the sites using these criteria are summarized in Figure 4.5-10, below. Applying the current criteria, 244 results from 273 sites (89.38 ± 3.67%) were characterized as "Good" for sediment toxicity, 15 sites (5.49 ± 2.72%) were characterized as "Fair", and 12 results (4.40 ± 2.44%) were characterized as "Poor." Two sites were characterized as "Missing" for sediment toxicity results (0.72 ± 1.02% - completeness = 99.28%). No sample was collected at one site because of densely compacted sand substrate, and the results from the second site, 8-MPN028.78 in tidal freshwaters of the Mattaponi River, were discarded because of an excessive bloom of iron-fixing bacteria that killed most of the test organisms. The toxicity of chemical contaminants could not be verified.



Sediment Acute Toxicity Class	Stations	Percentage
Good	244	89.38 ± 3.67%
Fair	15	5.49 ± 2.72%
Poor	12	4.40 ± 2.44%
Missing	2	0.73 ± 1.02%
Total	273	100.00%

Figure 4.5-10 Geographic Distribution and Characterization of 273 Estuarine Probabilistic Sites Based upon Acute Sediment Toxicity (2009 – 2014).

Following the current criteria, Virginia's estuarine waters as a whole would have less than 5% of the sites in "Poor" condition (4.40 ± 2.44%) and almost 90% (89.38 ± 3.67%) in "Good" condition. This would support the choice of a "Good" characterization for the estuarine area as a whole based on sediment toxicity.

It is interesting to note that, as is often the case, we have not observed significant acute mortality in sediment from many of the sites where we have measured significant chemical contamination. This is especially notable in the Elizabeth River system, where sediment contamination by many metals (Zn, Ni, Cu, Cd, and As) and organic compounds (primarily by PAHs and PCBs) is widespread. This may be an indication that the chemical contaminants are in a form not readily available to the benthic community (or toxicity test organism), or that the available concentrations are so low that only chronic effects would be evident. In contrast, significant toxicity is often observed during tests of sediment in which chemical analyses have not revealed a probable cause of the toxicity observed. In the environment, complex mixtures of contaminants of various classes (trace metals, pesticides, PAHs, etc.) even at relatively low concentrations, as well as other unmeasured factors, often have unpredictable and at times severe effects.

Sediment Quality Index (SQI): Once both sediment quality indicators (sediment chemistry and sediment toxicity) were scored for a site, NCCA Report V (USEPA, 2015) calculated an integrated Sediment Quality Index (SQI) to characterize overall sediment quality at the site. Guidelines for determining the SQI are described in Table 4.5-7, below. In the SQI determinations that follow, the Integrated Sediment Chemistry Index (SCI) and Sediment Toxicity were used to characterize sediment contamination. The resultant characterizations and their geographic distribution are summarized in Figure 4.5-11, below.

Based on the NCCA guidelines in Table 4.5-8, below, Virginia's region-wide estuarine sediments would be characterized as "Poor" because the percentage of sites with "Poor" sediment was more than 15%.

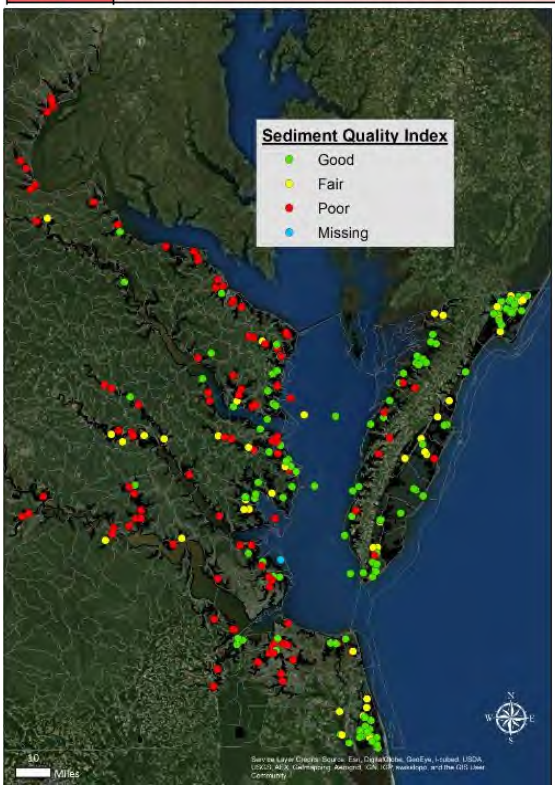
Ecologically, the most representative index of sediment "quality" is the condition of the benthic community that resides in it. Benthic community status is discussed below, and will later be integrated into an overall site score for a characterization of statewide estuarine condition.

Table 4.5-7 Scoring Guidelines for Characterizing Individual Sites using the Sediment Quality Index (SQI). *(Taken from USEPA, 2015) The two indices used in this case were the Integrated Sediment Chemistry Index (SCI) and sediment Toxicity.*

Sediment Quality Index Guidelines		
Good	**Fair**	**Poor**
Both indicators are rated good.	At least one indicator is rated fair and none are rated poor.	At least one indicator is rated poor.

Table 4.5-8 Scoring Guidelines for Characterizing Regions based on the Sediment Quality Index (SQI). (Taken from U.S. EPA, 2012)

Rating	Cutpoints
Good	Less than 5% of the coastal area is in poor condition, and more than 50% of the coastal area is in good condition.
Fair	5% to 15% of the coastal area is in poor condition, or 50% or less of the coastal area is in good condition.
Poor	More than 15% of the coastal area is in poor condition.



Sediment Quality Index	Stations	Percentage
Good	123	45.05 ± 5.93%
Fair	45	16.48 ± 4.42%
Poor	104	38.10 ± 5.79%
Missing	1	0.37 ± 0.72%
Total	273	100.00%

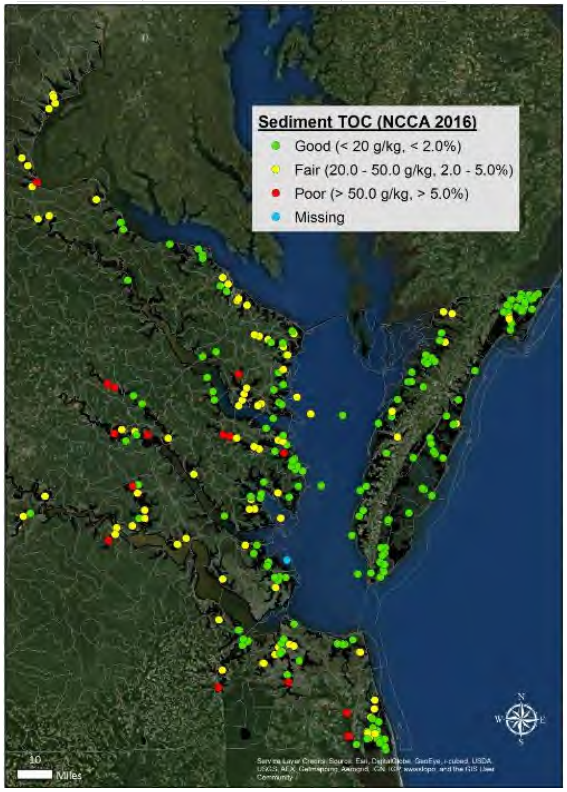
Figure 4.5-11 The Geographic Distribution and Characterizations of 273 Probabilistic Estuarine Sites based on the Sediment Quality Index – SQI (2009 – 2014). The Sediment Quality Index is derived from site characterizations by the Sediment Chemical Contamination Index and Sediment Toxicity.

Sediment Total Organic Carbon (TOC): The NCCA Program has traditionally included total organic carbon (TOC) as one element of its Sediment Quality Index (SQI) for an integrated characterization of sediment. TOC, as both a component of and a degradation product from vegetal and animal detritus, is a natural constituent of freshwater and estuarine bottom deposits. TOC in the sediment may chemically bind both organic and inorganic pollutants and reduce their availability in dissolved form to benthic organisms. Changes in temperature and water chemistry (e.g., pH and dissolved oxygen), however, may result in the release of previously bound contaminants. TOC also provides food for many benthic organisms, in which case bound toxic contaminants would also be ingested. Excessive concentrations of TOC in local sediment deposits, regardless of degree of contamination, may alter the composition of benthic communities, and promote the dominance of pollution-tolerant species. High concentrations of TOC may also indicate local foci of sediment deposition where available pollutants may accumulate. Because of the difficulty in interpreting these potentially contradictory effects of TOC in the sediment, it was removed as a component indicator of the SQI for the fifth NCCA Report. It is still utilized in conjunction with percent fine particles (silt/clay) in the sediment to interpret other sediment quality results.

The TOC ranges utilized for characterizations here come from two sources: (1) NCCA Report IV (U.S. EPA, 2012) and (2) Hyland et al, 2005. Under the NCCA classification, 171 sites (62.64 ± 5.76%) were characterized as “Good” (TOC < 2.0%), 85 sites (31.14 ± 5.52%) were characterized as “Fair” (TOC 2.0% – 5.0%), and only 16 sites (5.86 ± 2.80%) were characterized as “Poor” (TOC > 5.0%) for sediment TOC composition. A single site lacked a sediment TOC sample because the substrate was too compacted to sample successfully. Following the guidelines provided in NCCA Report IV, Virginia’s estuarine waters would earn a “Good” overall rating based on sediment TOC, because the percentage of estuarine sites with a “Poor” characterization is well below 10% and “Good” characterizations exceeded 50%. Characterizations following the criteria of Hyland et al. (2005) resulted in 121 “Good” sites (44.32 ± 5.92%), 92 “Fair” sites (33.70 ± 5.63%), and 59 “Poor” sites (21.61 ± 4.90%). An overall rating based on these results would characterize Virginia’s estuarine waters as “Poor” because more than 20% of the sites were in this category.

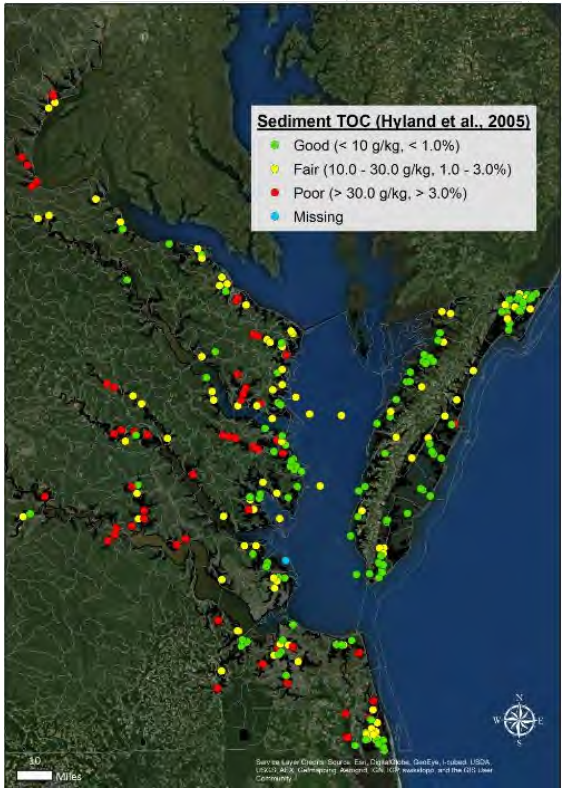
The geographical and statistical distributions of sites based on their sediment TOC characterizations are summarized in Figure 4.5-12. The sites with the highest sediment TOC concentrations were found in low gradient, coastal plain streams such as the North Landing River (17.7% TOC), the Chickahominy River (12.9% TOC), Upper Chippokes Creek (9.5% TOC), and the Piankatank River (8.8% TOC), while those with the lowest TOC concentrations (< 0.02% TOC) were generally from channels and inlets of coastal Delmarva.

Sediment TOC (NCCA 2010)	Range	Stations	Percentage
Good	< 20 g/Kg (< 2.0%)	171	62.64 ± 5.76%
Fair	20.0 - 50.0 g/Kg (2.0 - 5.0%)	85	31.14 ± 5.52%
Poor	> 50.0 g/Kg (> 5.0%)	16	5.86 ± 2.80%
Missing	N/A	1	0.37 ± 0.72%
	Total	273	100.00%



	Sediment TOC (%)	
	NCCA	Hyland
N	272	272
Maximum	23.10	23.10
99th %tile	10.51	10.51
90th %tile	3.99	3.99
75th %tile	2.70	2.70
UL 95% Median	1.49	1.49
Median	**1.26**	**1.26**
LL 95% Median	1.03	1.03
25th %tile	0.28	0.28
10th %tile	0.15	0.15
5th %tile	0.07	0.07
1st %tile	0.03	0.03
Minimum	0.00	0.00
Average	**1.90**	**1.90**
Std. Dev.	2.45	2.45
Std. Err.	0.15	0.15

Sediment TOC (Hyland et al., 2003)	Range	Stations	Percentage
Good	< 10 g/Kg (< 1.0%)	121	44.32 ± 5.92%
Fair	10.0 - 30.0 g/Kg (1.0 - 3.0%)	92	33.70 ± 5.63%
Poor	> 30.0 g/Kg (> 3.0%)	59	21.61 ± 4.90%
Missing	N/A	1	0.37 ± 0.72%
	Total	273	100.00%



A – NCCA (2016) **B – Hyland et al. (2005)**

Figure 4.5-12 Geographic Distribution and Characterizations of 273 Probabilistic Estuarine Sites based on Sediment Total Organic Carbon (TOC) Concentrations: A – with criteria from NCCA Report V (2016) and B - Calculated with criteria of Hyland et al. (2005).

Benthic Community

Benthic Quality Index: A benthic index, also commonly referred to as a Benthic Index of Biological Integrity or B-IBI, is a scientific tool used to identify, classify, and interpret the structure and function of benthic communities, often in relation to environmental stressors such as water pollution. Such indices are generally derived from the results of local or regional benthic surveys, and are consequently geographically restricted in their application. There are three commonly applied regional benthic indices that are appropriate for use in Virginia's estuarine waters, the Chesapeake Bay Program B-IBI (CBP B-IBI - Weisberg et al., 1997), the Mid-Atlantic B-IBI (MAIA B-IBI - Llansó et al., 2002a, 2002b) and the EMAP Index of Estuarine Condition for the Virginian Biogeographic Province (EMAP VP-IEC – Paul et al., 2001).

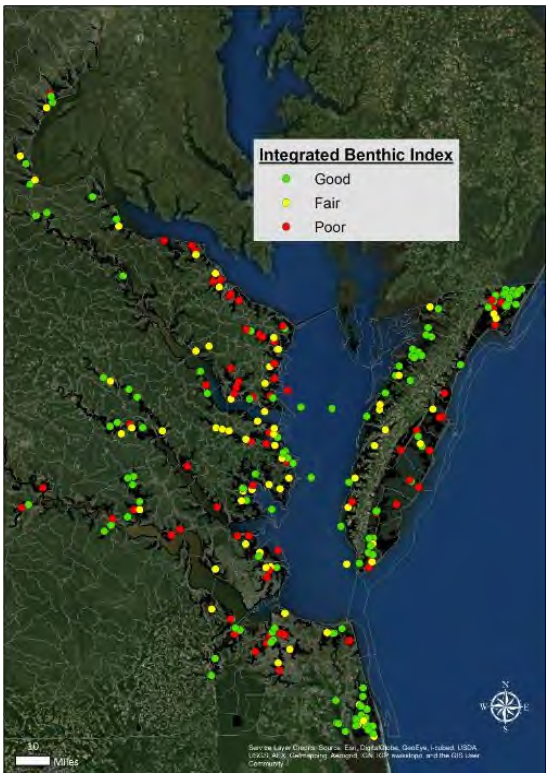
The CBP B-IBI was developed specifically for estuarine waters of the Chesapeake Bay watershed and it is the most appropriate for use in those waters. The MAIA B-IBI was developed for waters of the Mid-Atlantic Region, which includes the estuarine waters of the Delaware Bay and Chesapeake Bay watersheds, the coastal bays of the Delmarva Peninsula, and the Albemarle-Pamlico estuarine system of southeastern Virginia and northeastern North Carolina. It is the only one of the three indices that is appropriate in all of Virginia's estuarine waters. The EMAP VP-IEC was developed for the Virginian Biogeographic Province, which extends from Cape Cod to the mouth of Chesapeake Bay, but excludes the southeastern Virginia coastal area. All three indices were calculated for the benthic data from each site in this study, but most weight was given to the interpretation of CBP B-IBI within the Chesapeake watershed, and to the interpretation of the MAIA B-IBI in coastal waters of Delmarva and the Back Bay/North Landing River portion of the Pamlico Sound system.

The structures, similarities and dissimilarities, scoring and site characterizations using all three benthic indices were discussed in detail in DEQ's 2014 IR. All three benthic indices were calculated for benthic samples from each of the sites characterized herein. During testing and calibrating the Pavg statistic of the Linear Regression Model, described earlier in this report, it was noted that the EMAP-IEC was as capable of discriminating between lightly and severely contaminated sediments as were either of the multimetric B-IBIs mentioned above (Smith, 2016). Consequently, all three indices were integrated into a single average benthic class. Each site was first scored as "Good", "Fair", or "Poor" by each of the benthic indices. The results for each index are summarized in Table 4.5-9. If all three indices agreed in their characterizations, the common characterization was assigned to the integrated index: all three "Good" – 100 sites = 36.63% ± 5.74%, all three poor – 52 sites = 19.05% ± 4.68%. No sites were characterized as "Fair" by all three indices. The sites where all three indices did not agree were evaluated using best professional judgement. Within the Chesapeake Bay watershed the CBP B-IBI was given higher weight, elsewhere the MAIA B-IBI was given higher weight, but the overall evaluation of the site considered all three indices. If the MAIA and EMAP indices agreed in giving a Chesapeake Bay site a "Poor" rating while the CBP index indicated "Good", a "Fair" characterization was assigned. Likewise, if the CBP and EMAP indices agreed in contradicting the MAIA rating for a coastal Delmarva site, an intermediate characterization was assigned.

Table 4.5-9 Site Characterizations of 273 Probabilistic Estuarine Sites (2009 – 2014) by the Three Independent Benthic Indices utilized in the Present Report: The Chesapeake Bay Program (CBP) B-IBI, The Mid-Atlantic (MAIA) B-IBI, and the national Environmental Monitoring and Assessment Program (EMAP) Index of Estuarine Condition for the Virginian Biogeographic Province (VP-IEC).

► Benthic Index ►	CBP B-IBI		MAI B-IBI		EMAP IEC	
▼ Class ▼	Count	Percentage	Count	Percentage	Count	Percentage
Good	127	46.52 ± 5.94%	196	71.79 ± 5.36%	159	58.24 ± 5.88%
Fair	28	10.26 ± 3.61%	2	0.73 ± 1.02%	14	5.13 ± 2.63%
Poor	118	43.22 ± 5.90%	75	27.47 ± 5.32%	100	36.63 ± 5.74%
Missing	0	0.00%	0	0.00%	0	0.00%
Total	273	100.00%	273	100.00%	273	100.00%

The final geographic and statistical distributions for integrated benthic characterizations are summarized in Figure 4.5-13. Following the NCCA guidelines in Table 4.5-2b, Virginia's estuarine waters would be given an overall rating of "Poor" for benthos, since more than 20% of the individual sites were characterized as "Poor", even though nearly 50% of the sites were characterized as "Good".



Integrated Benthic Class	Stations	Percentage
Good	128	46.89 ± 5.95%
Fair	71	26.01 ± 5.23%
Poor	74	27.11 ± 5.30%
Missing	0	0.00%
Total	273	100.00%

Figure 4.5-13 Geographic Distribution and Characterizations of 273 Probabilistic Estuarine Sites based on the Integrated Benthic Index (2009 – 2014).

Weight-of-Evidence (WOE) Assessment

Weight-of-Evidence assessments of each individual site for Aquatic Life Use (ALU) were carried out based primarily upon the Sediment Quality Triad (SQT) of sediment chemistry, sediment toxicity, and benthic community wellbeing. All three of these measures are considered to be temporally integrative, providing an assessment of environmental conditions experienced by the benthic community during the period prior to the time of sampling. The other water quality parameters (*e.g.*, nutrients, bacteria, dissolved metals, DO, temperature, pH, *etc*.) that are measured at probabilistic sites are considered to be isolated instantaneous observations and are insufficient for assessment purposes because the intensity and duration of such stressors are unknown. The evaluation and interpretation of the SQT is carried out with the use of an analytical matrix (Chapman et al., 1986, 1987) that is described in DEQ's Water Quality Assessment Guidance Manual for the 2016 305(b)/303(d) Integrated Water Quality Report (DEQ-WQA, 2016).

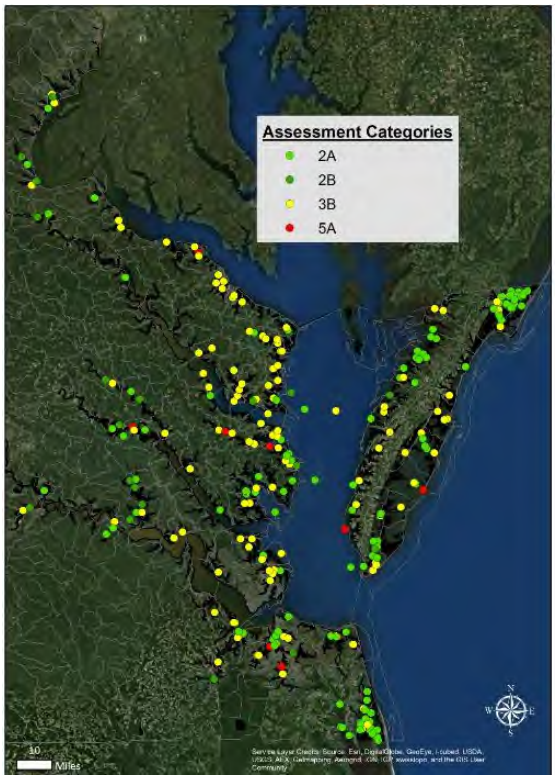
The criteria used in this WOE assessment and the Microsoft Excel® workbooks used for the process are also described in the Water Quality Assessment Guidance Manual (*Ibid*.). The site characterizations that are integrated into the WOE assessments have been discussed individually earlier in this report. They include counts of ERM and ERL exceedances (criteria from previous NCCA Reports), the Mean ERM Quotient, the Logistic Regression Model, the Equilibrium Partitioning Sediment Benchmark for PAH

mixtures (ESB_{PAHs} or ESB_{34}), the results of sediment toxicity tests, and taxonomic richness, diversity, and evenness along with the evaluation of benthic community health and function using benthic indices (B-IBIs).

If elevated chemical contamination and/or sediment acute toxicity is observed in conjunction with a degraded or severely degraded benthic community, an assessment of "5A – Impaired" (by toxics) is assigned. If a degraded or severely degraded benthic community is observed without chemical or toxicological corroboration, an assessment of "3B - observed effects with insufficient information" is assigned, even though ancillary information may suggest a possible cause other than toxics. A "3B" assessment is also assigned if sediment contamination exceeds sediment quality guidelines specified in the Guidance Manual, but benthic scores are still acceptable. Statistically and ecologically significant sediment toxicity, without chemical corroboration or benthic degradation, is assigned assessment category "2B - waters are of concern to the state but no Water Quality Standard exists for a specific pollutant, or the water exceeds a state screening value. If no benthic degradation, sediment chemical contamination, or sediment toxicity are observed, an assessment category of "2A" is assigned "- waters are attaining all of the uses for which they are monitored (based on the data in the WOE workbook) and there is insufficient data to document the attainment of all [other] uses." Assessments of "2A" or "2B" are characterized as "Good", assessments of "3B" are characterized as "Fair", and assessments of "5A" are characterized as "Poor." Because the assessment category of "5A – Impaired" for ALU is only assigned in cases where benthic degradation is corroborated by sediment chemical contamination and/or sediment acute toxicity, the proportion of sites in this category is less than that observed for many other individual parameters or indices.

Weight-of-Evidence assessments categorized 142 sites (52.01 ± 5.95%) as "Good" (2A or 2B), 122 sites (44.69 ± 5.92%) as "Fair" (3B), and 9 sites (3.30 ± 2.13%) were assessed as "Poor" (5A – Impaired for ALU by toxics). It must be kept in mind that the low number of 5A – Impaired sites (3.30 ± 2.13%) in comparison with the number of degraded or severely degraded benthic community sites (44.7 ± 5.9%) results from the fact that the WOE assessment is specifically directed at toxics. If benthic degradation by toxics was not substantiated within the sediment quality triad, the WOE assessment was a Category 3B – "Observed effects", with insufficient data to assign a cause, and the site was prioritized for follow-up monitoring. The NCCA Reports provide no thresholds for evaluating weight-of-evidence assessments with the sediment quality triad. The fact that the results contained fewer than 20% "Poor" characterizations and the percentage of "Good" characterizations did not significantly exceed 50% (95% Confidence Interval extends downward to 46.06%) Virginia's estuaries should probably be characterized as "Fair" on the whole for toxics-induced ALU impairment (based on regional thresholds defined in Table 4.5-2b),

The geographic distribution of these results is illustrated in the map of Figure 4.5-14.



Assessment Class	Stations	Percentage	
2A	120	43.96 ± 5.91%	52.01 ± 5.95%
2B	22	8.06 ± 3.24%	
3B	122	44.69 ± 5.92%	
5A	9	3.30 ± 2.13%	
Total	273	100.00%	

Figure 4.5-14 Weight-of-Evidence Assessment Results from 273 Probabilistic Estuarine Sites Sampled between 1 January 2009 and 31 December 2014.

Conclusion

DEQ's estuarine probabilistic monitoring program sampled 273 estuarine sites during the 2009-2014 assessment period. The vast majority of the sites fell within the minor tidal tributaries and embayments of the Chesapeake Bay watershed or in the estuarine waters of coastal Delmarva and the Back Bay / North Landing River region of southeastern Virginia. These sites are categorized using thresholds developed by EPA's National Coastal Condition Assessment Program. On the basis of the four water quality parameters sampled at each site, 41% sites were rated as "good", 57% were rated as "fair", and 2% were rated as "poor". On the basis of sediment chemistry and acute toxicity, 45% of sites were rated as "good", 17% were rated as "fair", and 38% were rated as "poor". Sediment contamination was identified as the second most prevalent stressor. Most of the sites (73%) had benthic communities that were classified as "good" or "fair" according to the Integrated Benthic Index. Hopefully, as the National Coastal Condition Assessment Program continues to refine its thresholds to reflect improvements in scientific understanding, DEQ will be able to improve its ability to detect, identify the source(s) of, and remediate problems in the Commonwealth's estuarine waters.

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CHAPTER 4.6 CHESAPEAKE BAY ASSESSMENT

(Note: The Federal-Interstate Chesapeake Bay Program, which is responsible for developing water quality standards and assessment protocols for Bay waters, is described in more detail in Chapter 7.7.)

Assessment of Aquatic Life Use in Chesapeake Bay and Its Tidal Tributaries

Summary

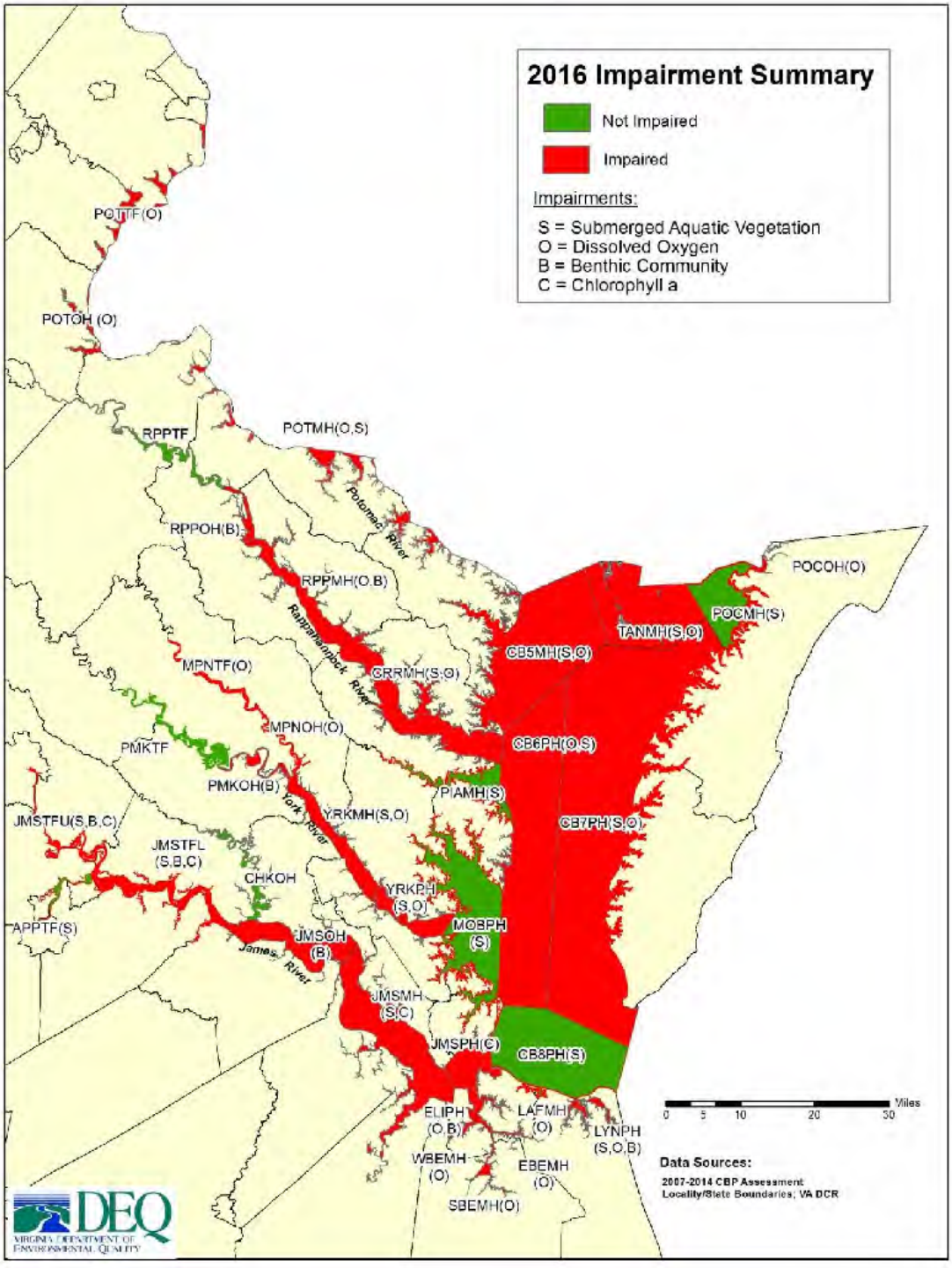
The 2016 assessment reveals promising findings for aquatic life use attainment in Virginia's Chesapeake Bay waters. While hypoxia continues to be problematic in both shallow and deeper areas, particularly during the summer months, the number of tributary segments failing assessed dissolved oxygen (DO) criteria during summer months was lower relative to the number reported in the 2014 assessment. For the first time since the adoption of the Bay DO standards, no evidence of chronic hypoxia was found in the James River and Rappahannock River segments for the Open Water sub-use, and the Deep Channel sub-use is met in mainstem segment CB5MH. Chlorophyll standards were fully attained in the oligohaline portion of the James for the first time, though they were not met in the rest of the estuary. Additionally, approximately 47% of the total state-wide submerged aquatic vegetation (SAV) acres goal was attained, up from 46% reported in the 2014 assessment. It is anticipated that progress in Bay aquatic life use attainment will continue to as the Bay Total Maximum Daily Load (TMDL) and Virginia's Watershed Implementation Plan are implemented.

Figure 4.6-1 summarizes the current aquatic life use status for the Bay-specific criteria detailed in 9AVAC25-260-185 (note it does not reflect other impairments such as pH, fish tissue contaminants, or other aquatic life criteria).

The tidal fresh segments of the Mattaponi (MPNTF) and Pamunkey (PMKTF) meet all assessed Bay criteria. However, these areas remain classified as impaired in the Assessment Database (ADB) because short-term criteria established for dissolved oxygen (7-day mean, 1-day mean, and instantaneous minimum) have not been assessed. There are some data available to assess these criteria, but the Chesapeake Bay Program has not yet developed the appropriate assessment protocols. Segments which were over-listed by the EPA in 1999 for dissolved oxygen and currently meet all assessed criteria are assumed to be impaired until all dissolved oxygen criteria for all appropriate designated uses are assessed and determined to be meeting.

The following sections describe in further detail 1) aquatic life sub-uses and criteria, 2) 2016 aquatic life use assessment results and 3) future assessment refinements.

Figure 4.6-1 Impairment status of the Bay aquatic life use.



Chesapeake Bay and Tidal Tributaries Aquatic Life Uses and Criteria

The Chesapeake Bay aquatic life sub-uses described below reflect the different aquatic living resource communities living in the different areas of the Bay. Impairment of any of these sub-categories of aquatic life use is also considered an impairment of the overall aquatic life use. The overall aquatic life use also exists as a distinct designated use (i.e. distinct from the sub-uses) and is assessed with other protocols including benthic Indices of Biological Integrity (IBI), ammonia criteria, and toxicity bioassays.

Designated Uses

Migratory Fish Spawning and Nursery (MSN) Designated Use

This use exists in waters in the Chesapeake Bay and its tidal tributaries that protect the survival, growth and propagation of the early life stages of a balanced, indigenous population of anadromous, semi-anadromous, catadromous and tidal-fresh resident fish species inhabiting spawning and nursery grounds. Figure 4.6-2 illustrates this designated use and detailed geographic descriptions are in *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability 2004 Addendum Chesapeake Bay Program Office, Annapolis, Maryland*. The designated use extends from the beginning of tidal waters to the downriver end of spawning and nursery habitats, as determined through a composite of all targeted anadromous and semi-anadromous fish species' spawning and nursery habitats. The designated use extends horizontally from the shoreline of the body of water to the adjacent shoreline, and extends down through the water column to the bottom water-sediment interface. This use applies February 1 through May 31 and exists concurrently with the open-water use.

Shallow-Water Submerged Aquatic Vegetation (SWSAV) Designated Use

This use exists in waters in the Chesapeake Bay and its tidal tributaries that support the survival, growth and propagation of submerged aquatic vegetation (rooted, underwater bay grasses). Figure 4.6-2 illustrates this designated use and detailed geographic descriptions are in *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability 2004 Addendum Chesapeake Bay Program Office, Annapolis, Maryland*. This use applies April 1 through October 31 in tidal-fresh, oligohaline and mesohaline Chesapeake Bay Program segments, and March 1 through November 30 in polyhaline Chesapeake Bay Program segments and exists concurrently with the open-water use.

Open-Water (OW) Aquatic Life Designated Use

This use exists in waters in the Chesapeake Bay and its tidal tributaries that protect the survival, growth and propagation of a balanced, indigenous population of aquatic life inhabiting open water habitats. Figure 4.6-2 illustrates this designated use and detailed geographic descriptions are in *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability 2004 Addendum Chesapeake Bay Program Office, Annapolis, Maryland*. This designated use applies year-round but the vertical boundaries change seasonally. October 1 - May 31: the open-water aquatic life use extends horizontally from the shoreline at mean low water, to the adjacent shoreline, and extending through the water column to the bottom water-sediment interface. June 1 - September 30: if a pycnocline (i.e. a physical inhibition of mixing due to a rapid change of density in the water column with depth) is present, the open-water sub-use extends down into the water column only as far as the upper boundary of the pycnocline; otherwise, it extends to the water-sediment interface. This designated use is concurrent with the migratory fish spawning and nursery and Shallow-Water submerged aquatic vegetation uses in areas where these uses apply.

Deep-Water (DW) Aquatic Life Designated Use

This use exists in waters in the Chesapeake Bay and its tidal tributaries that protect the survival and growth of a balanced, indigenous population of aquatic life inhabiting deep-water habitats. Figure 4.6-2 illustrates this designated use and detailed geographic descriptions are in *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability 2004 Addendum Chesapeake Bay Program Office, Annapolis, Maryland.* This designated use applies to the tidally influenced waters located between the upper and lower boundaries of the pycnocline where, in combination with bottom bathymetry and water circulation patterns, a pycnocline is present and presents a barrier to oxygen replenishment of deeper waters. In some areas, the deep-water sub-use extends from the upper boundary of the pycnocline down to the bottom water-sediment interface. This use applies June 1 through September 30.

Deep-Channel (DC) Seasonal Refuge Designated Use

This use exists in waters in the Chesapeake Bay and its tidal tributaries that protect the survival of a balanced, indigenous population of benthic infauna and epifauna inhabiting deep-channel habitats. Figure 4.6-2 illustrates this designated use and detailed geographic descriptions are in *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability 2004 Addendum Chesapeake Bay Program Office, Annapolis, Maryland.* This designated use applies to the tidally influenced waters at depths greater than the lower boundary of the pycnocline in areas where, in combination with bottom bathymetry and water circulation patterns, the pycnocline presents a barrier to oxygen replenishment of deeper waters. This use applies June 1 through September 30.

Applicable Criteria

Dissolved oxygen criteria protecting the described uses are shown in Table 4.6-1. The methodology for assessing monitoring data against these criteria involves spatial interpolation of fixed site monitoring results to create a 3-D picture of oxygen conditions in thousands of individual grid cells throughout the Bay. Each individual grid cell is then assessed against the criteria. In this way, the volume of water in attainment is calculated for each data collection cruise, allowing for an assessment of criteria on a spatial scale. To account for natural fluctuations over seasons and years, the individual monthly spatial assessments of a three-year time period are aggregated, allowing for an estimate of the frequency of violations. (Note that this contrasts with the six-year time period used in the assessment of DO for non-Bay waters.) The frequency and spatial extent of violations are combined to create a cumulative frequency diagram (CFD) curve, which is examined against an established reference curve.

The dissolved oxygen assessment is based on stations monitored by DEQ, Old Dominion University, Virginia Institute of Marine Science, municipalities, and citizens groups. Details of the assessment procedure can be found in guidance manuals from EPA and DEQ (*Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity, and Chlorophyll a for the Chesapeake Bay and Its tidal Tributaries, EPA 903-R-03-002, April 2003* ; *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity, and Chlorophyll a for the Chesapeake Bay and Its tidal Tributaries, 2004 Addendum, EPA 904-R-04-005 October 2004*; *Water Quality Assessment Guidance Manual for Y2008: 305(B)/303(D) Integrated Water Quality Report, April, 2007*; and *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity, and Chlorophyll a for the Chesapeake Bay and Its tidal Tributaries, 2007 Addendum, EPA 903-R-07-003 July 2007*).

Criteria specific to the Shallow-Water submerged aquatic vegetation use (SWSAV) are shown in Table 4.6-2. The criterion of “SAV Acres” was assessed in every segment. The criterion for “Water Clarity Acres” was assessed where data were available (Rappahannock, York and James River systems). The SAV Acres criterion is met by having aquatic vegetation present as measured by annual aerial photography. The Water Clarity Acres criterion is met by having sufficient water clarity present to support the potential for aquatic vegetation to grow (i.e. regardless of whether the submerged aquatic vegetation is actually present). This criterion was created because the water may be clear enough to support

submerged aquatic vegetation, but it may take several years for the areas to re-populate with grasses. A detailed description of the assessment methodology can found in *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity, and Chlorophyll a for the Chesapeake Bay and Its tidal Tributaries, 2018 Technical Support for Criteria Assessment Protocols Addendum, EPA 903-R-08-001 September 2008.*

The chlorophyll *a* criteria assessed are shown in Table 4.6-3. There are separate criteria applicable to each segment and season, and a spatial-temporal assessment is conducted using a cumulative frequency diagram (see *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity, and Chlorophyll a for the Chesapeake Bay and Its tidal Tributaries, 2018 Technical Support for Criteria Assessment Protocols Addendum, EPA 903-R-08-001, EPA 903-R-08-001 September 2008*). If either one of the criteria (i.e. spring or summer season) is found to be failing, then the segment is assessed as failing the chlorophyll *a* standard.

Spatial Assessment Units

A general overview of the CBP segmentation scheme that is used for assessment of designated uses is shown in Figure 4.6-3. Not every designated use exists in each segment or necessarily throughout the full extent of the segments in which they exist. Details of where each designated use occurs within each of these CBP segments can be found in *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability, 2004 Addendum*, *October 2004, EPA 903-R-04-006* and *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity, and Chlorophyll a for the Chesapeake Bay and Its tidal Tributaries, 2010 Technical Support for Criteria Assessment Protocols Addendum, EPA 903-R-10-002 May 2010*.

Figure 4.6-2 Conceptualized illustration of location of the five Chesapeake Bay tidal water designated use zones.

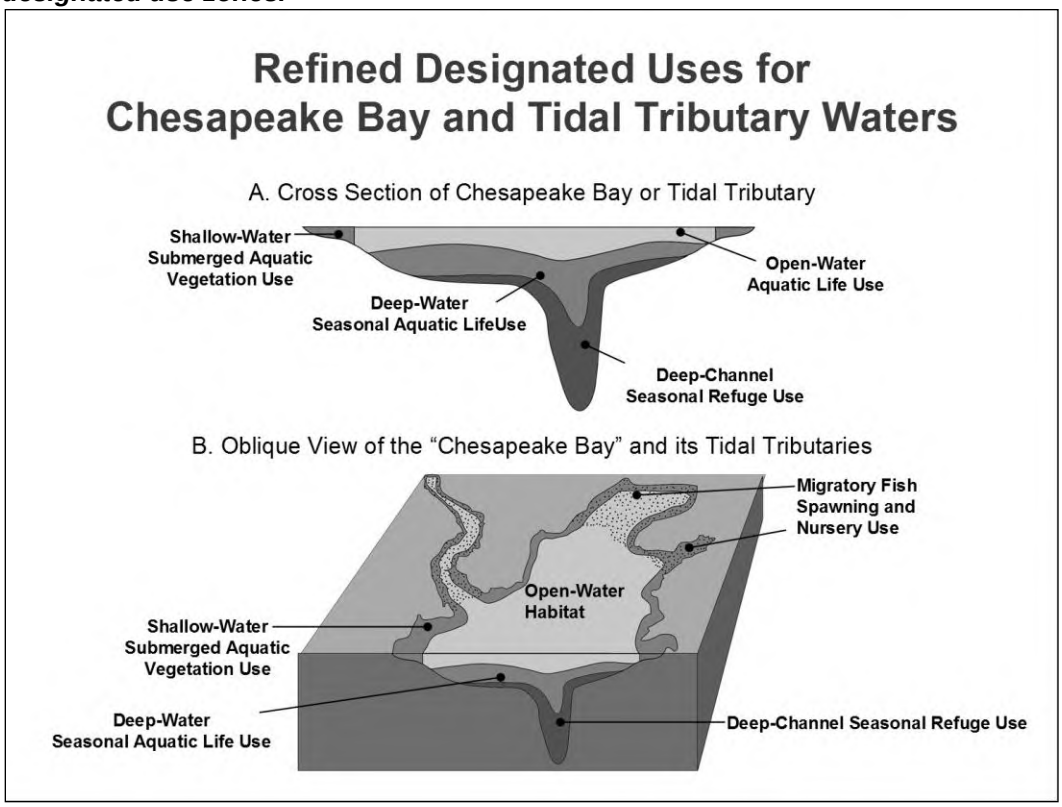


Table 4.6-1 Chesapeake Bay dissolved oxygen criteria

Designated Use	Criteria Concentration/Duration	Protection Provided	Temporal Application
Migratory fish spawning and nursery use	7-day mean $\geq$ 6 mg liter^{-1} (tidal habitats with 0-0.5 ppt salinity)	Survival/growth of larval/juvenile tidal-fresh resident fish; protective of threatened/endangered species.	February 1 - May 31
	Instantaneous minimum $\geq$ 5 mg liter^{-1}	Survival and growth of larval/juvenile migratory fish; protective of threatened/endangered species.	
	Open-water fish and shellfish designated use criteria apply		June 1 - January 31
Shallow-Water bay grass use	Open-water fish and shellfish designated use criteria apply		Year-round
Open-water fish and shellfish use[1]	30-day mean $\geq$ 5.5 mg liter^{-1} (tidal habitats with 0-0.5 ppt salinity)	Growth of tidal-fresh juvenile and adult fish; protective of threatened/endangered species.	Year-round
	30-day mean $\geq$ 5 mg liter^{-1} (tidal habitats with >0.5 ppt salinity)	Growth of larval, juvenile and adult fish and shellfish; protective of threatened/endangered species.	
	7-day mean $\geq$ 4 mg liter^{-1}	Survival of open-water fish larvae.	
	Instantaneous minimum $\geq$ 3.2 mg liter^{-1}	Survival of threatened/endangered sturgeon species.[2]	
Deep-water seasonal fish and shellfish use	30-day mean $\geq$ 3 mg liter^{-1}	Survival and recruitment of bay anchovy eggs and larvae.	June 1 - September 30
	1-day mean $\geq$ 2.3 mg liter^{-1}	Survival of open-water juvenile and adult fish.	
	Instantaneous minimum $\geq$ 1.7 mg liter^{-1}	Survival of bay anchovy eggs and larvae.	
	Open-water fish and shellfish designated-use criteria apply		October 1 - May 31
Deep-channel seasonal refuge use	Instantaneous minimum $\geq$ 1 mg liter^{-1}	Survival of bottom-dwelling worms and clams.	June 1 - September 30
	Open-water fish and shellfish designated use criteria apply		October 1 - May 31

[1] Special criteria for the Mattaponi and Pamunkey rivers are 30 day mean > 4.0 mg/l ;Instantaneous minimum > 3.2 mg/l at temperatures < 29°C; Instantaneous minimum > 4.3 mg/l at temperatures > 29°C.

[2] At temperatures considered stressful to shortnose sturgeon (> 29°C), dissolved oxygen concentrations above an instantaneous minimum of 4.3 mg liter^{-1} will protect survival of this listed sturgeon species.

Table 4.6-2 Summary of Chesapeake Bay water clarity criteria for application to Shallow-Water SAV designated use habitats. Chesapeake Bay program segments are shown in Figure 4.6-2.

Chesapeake Bay Program Segment	SAV Acres[1]	Percent light-through-water[2]	Water Clarity Acres[1]	Temporal Application
CB5MH	7,633	22%	14,514	April 1 - October 31
CB6PH	1,267	22%	3,168	March 1 - November 30
CB7PH	15,107	22%	34,085	March 1 - November 30
CB8PH	11	22%	28	March 1 - November 30
POTTF	2,093	13%	5,233	April 1 - October 31
POTOH	1,503	13%	3,758	April 1 - October 31
POTMH	4,250	22%	10,625	April 1 - October 31
RPPTF	66	13%	165	April 1 - October 31
RPPOH	4	13	10	April 1 - October 31
RPPMH	1700	22%	5000	April 1 - October 31
CRRMH	768	22%	1,920	April 1 - October 31
PIAMH	3,479	22%	8,014	April 1 - October 31
MPNTF	85	13%	213	April 1 - October 31
MPNOH	-	-	-	-
PMKTF	187	13%	468	April 1 - October 31
PMKOH	-	-	-	-
YRKMH	239	22%	598	April 1 - October 31
YRKPH	2,793	22%	6,982	March 1 - November 30
MOBPH	15,901	22%	33,990	March 1 - November 30
JMSTF2	200	13%	500	April 1 - October 31
JMSTF1	1000	13%	2500	April 1 - October 31
APPTF	379	13%	948	April 1 - October 31
JMSOH	15	13%	38	April 1 - October 31
CHKOH	535	13%	1,338	April 1 - October 31
JMSMH	200	22%	500	April 1 - October 31
JMSPH	300	22%	750	March 1 - November 30
LYNPH	107	22%	268	March 1 - November 30
POCOH	-	-	-	-
POCMH	4,066	22%	9,368	April 1 - October 31
TANMH	13,579	22%	22,064	April 1 - October 31

1 = The assessment period for SAV and water clarity acres is the single best year in the most recent three consecutive years. When three consecutive years of data are not available, a minimum of three years within a six-year data assessment window is used.

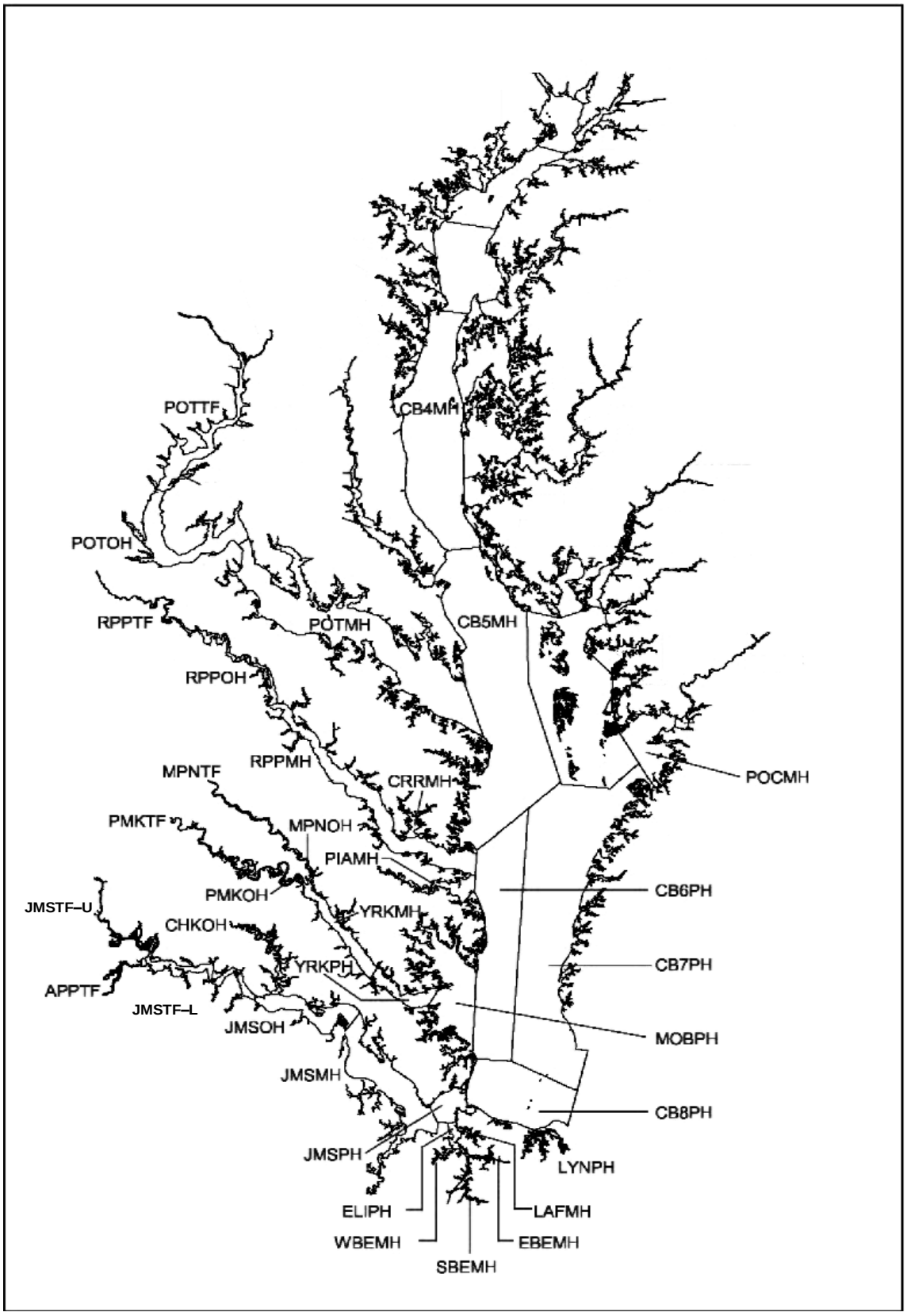
2 = Percent Light through Water = $100e^{(-KdZ)}$ where K_d is water column light attenuation coefficient and can be measured directly or converted from a measured secchi depth where K_d = 1.45/secchi depth. Z = depth at location of measurement of K_d.

Table 4.6-3 Chlorophyll a criteria for application to open-water designated use habitats in the James River.

Designated Use	Chlorophyll *a* (ug/l)	Chesapeake Bay Program Segment (1)	Temporal Application
Open-Water	10	JMSTFU (James Tidal Fresh Upper)	March 1 - May 31
	15	JMSTFL (James Tidal Fresh Lower)	
	15	JMSOH (James Oligohaline)	
	12	JMSMH (James Mesohaline)	
	12	JMSPH (James Polyhaline)	
	15	JMSTFU (James Tidal Fresh Upper)	July 1 - September 30
	23	JMSTFL (James Tidal Fresh Lower)	
	22	JMSOH (James Oligohaline)	
	10	JMSMH (James Mesohaline)	
	10	JMSPH (James Polyhaline)	

1) See Figure 4.6-3 for locations of these segments.

Figure 4.6-3 Chesapeake Bay dissolved oxygen and water clarity assessment segmentation.



Aquatic Life Assessment Results

Open-Water Designated Assessment

Figure 4.6-4 shows attainment of the 30-day mean criterion for dissolved oxygen (DO) in the Open-Water designated use. Overall summer exceedence rates in impaired segments are not substantially different for this reporting period compared to the last one, but more segments met the criteria during both summer and rest-of-the-year months during the 2012-2014 period than the 2010-2012 period. Segments that currently meet the 30-day mean criterion and failed it previously: the lower tidal fresh and oligohaline segments of the James (JMSTFL and JMSOH), the oligohaline segment of the Pamunkey (PMKOH), Mobjack Bay (MOBPH), and all segments of the Rappahannock River (RPPTF, RPPOH, and RPPMH). Only the oligohaline portion of the Potomac embayments (POTOH) and mainstem segment CB5MH met the 30-Day mean criteria for the last reporting period while failing it for the current one. Attainment of the assessed criteria is achieved in about 22% of the mainstem Bay (i.e. Mobjack Bay, segment CB8PH, and the mesohaline portion of Pocomoke Sound (POCMH)).

The highest DO violation rates occurred in the Southern and Eastern branches of the Elizabeth River—summertime exceedence rates of 44.3% and 40.9%, respectively. Hypoxia during the non-summer months was found in the Lynnhaven River (LYNPH) and both segments of the York River (YRKMH and YRKPH).

Figure 4.6-5 shows an evaluation of chlorophyll-*a* in the James River. All segments failed to meet both spring *and* summer chlorophyll-*a* criteria, except for the oligohaline segment (which attained both).

Deep-Water Aquatic Life Designated Use Assessment

Figure 4.6-5 shows attainment of the 30-day mean criterion for dissolved oxygen in the Deep-Water aquatic life designated use. Much of the designated use was attained--a major departure from what has been observed in the past. Exceedence rates ranged from 0.33% in mainstem segment (CB5MH) to 4.3% in the Southern Branch of the Elizabeth (SBEMH).

Deep-Channel Designated Use Assessment

Figure 4.6-6 shows attainment status of the instantaneous criterion for dissolved oxygen (see inset box). This use exists only in relatively small areas of the Rappahannock mesohaline segment (RPPMH), mainstem Bay segment CB5PH, and the Potomac mesohaline embayments (POTMH). For this assessment, there were only enough data available to assess the first two segments. **For the first time since the Bay criteria were adopted, the Deep Channel sub-use is fully attained in segment CB5MH**.

Shallow-Water Designated Use Assessment

Figure 4.6-7 shows an evaluation of the Shallow-Water submerged aquatic vegetation (SWSAV) designated use. This designated use is attained if there are sufficient acres of submerged aquatic vegetation mapped by annual aerial surveys or if the water is sufficiently clear (i.e. has sufficient "water clarity" acres) so that SAV regrowth is possible. This is because lack of SAV growth may have non-pollutant causes such as insufficient propagule availability, herbivory by turtles and waterfowl, or habitat disruption by cow-nosed rays.

Full attainment of the SWSAV use is present in areas of each of the major estuaries (James, York, Rappahannock and Potomac), but the majority of segments continue to fail SAV acreage goals. As found in previous reporting periods, only nine segments met their respective goals: the Chickahominy (CHKOH), the middle and lower James (JMSOH and JMSPH, respectively), tidal fresh portions of the Mattaponi and Pamunkey (MPNTF and PMKTF), and tidal fresh and oligohaline portions of the Rappahannock and Potomac embayments (RPPTF, RPPOH, POTTF, and POTOH).

The Bay tributaries historically have had relatively little SAV habitat in comparison to the mainstem Bay, where the largest shortfall of vegetation occurs. The open Bay areas with larger shoals had a combined percentage shortfall of 57% (32,0170 acres) for segments CB5MH, TANMH, POCMH, CB7PH, and MOBPH. Forty-six percent (47%) of the overall sum of segment-specific SAV acreage goals was achieved. This means 41,434 acres of SAV needs to be restored before the SWSAV designated use will be met throughout the Bay and tributaries. Alternatively, sufficient water clarity must be present to potentially support this many acres of submerged aquatic vegetation.

Figure 4.6-4 Attainment of the Open-Water designated use (dissolved oxygen criteria).

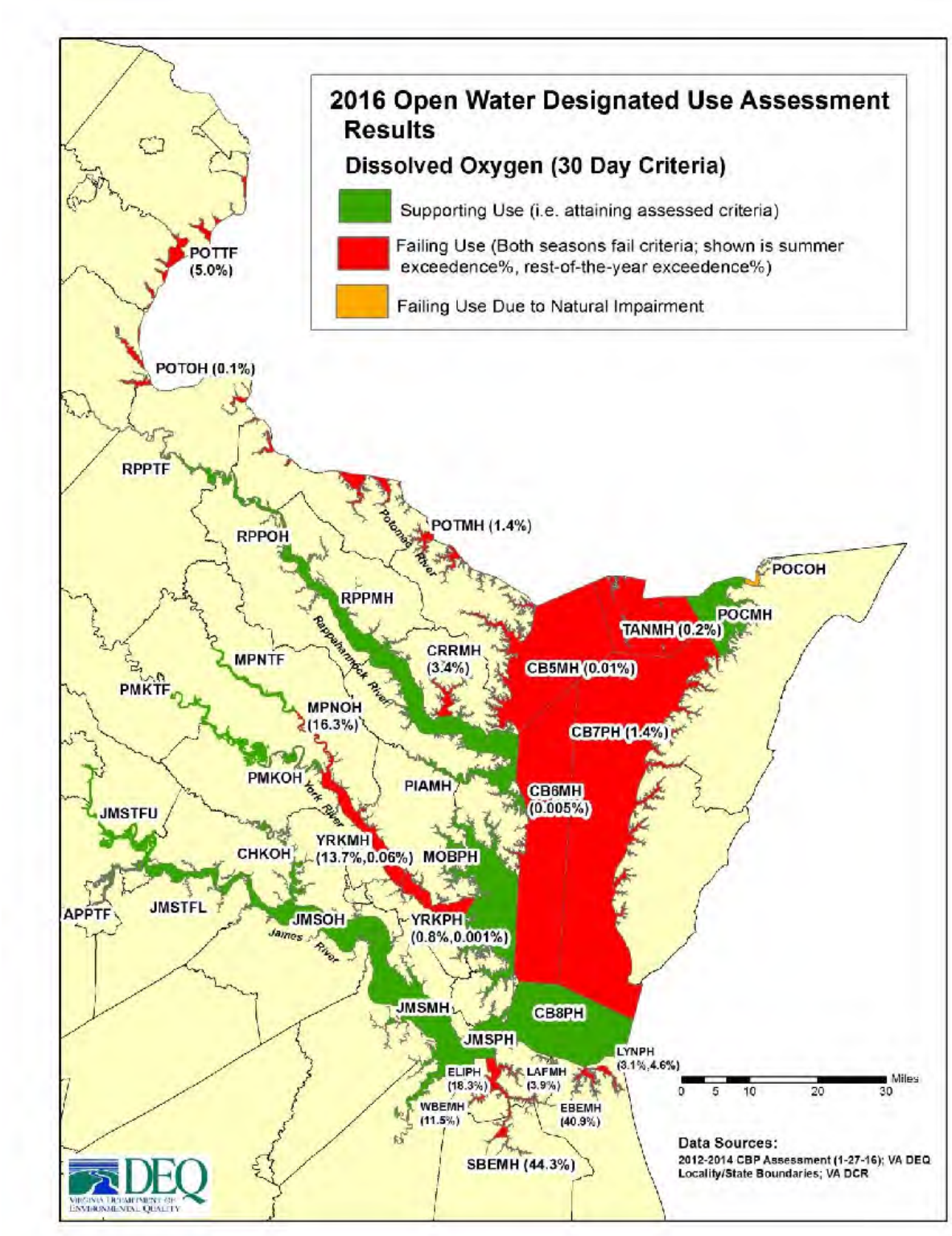


Figure 4.6-5 Attainment of the Open-Water designated use (chlorophyll criteria). The chlorophyll criteria only apply to the James River segments.

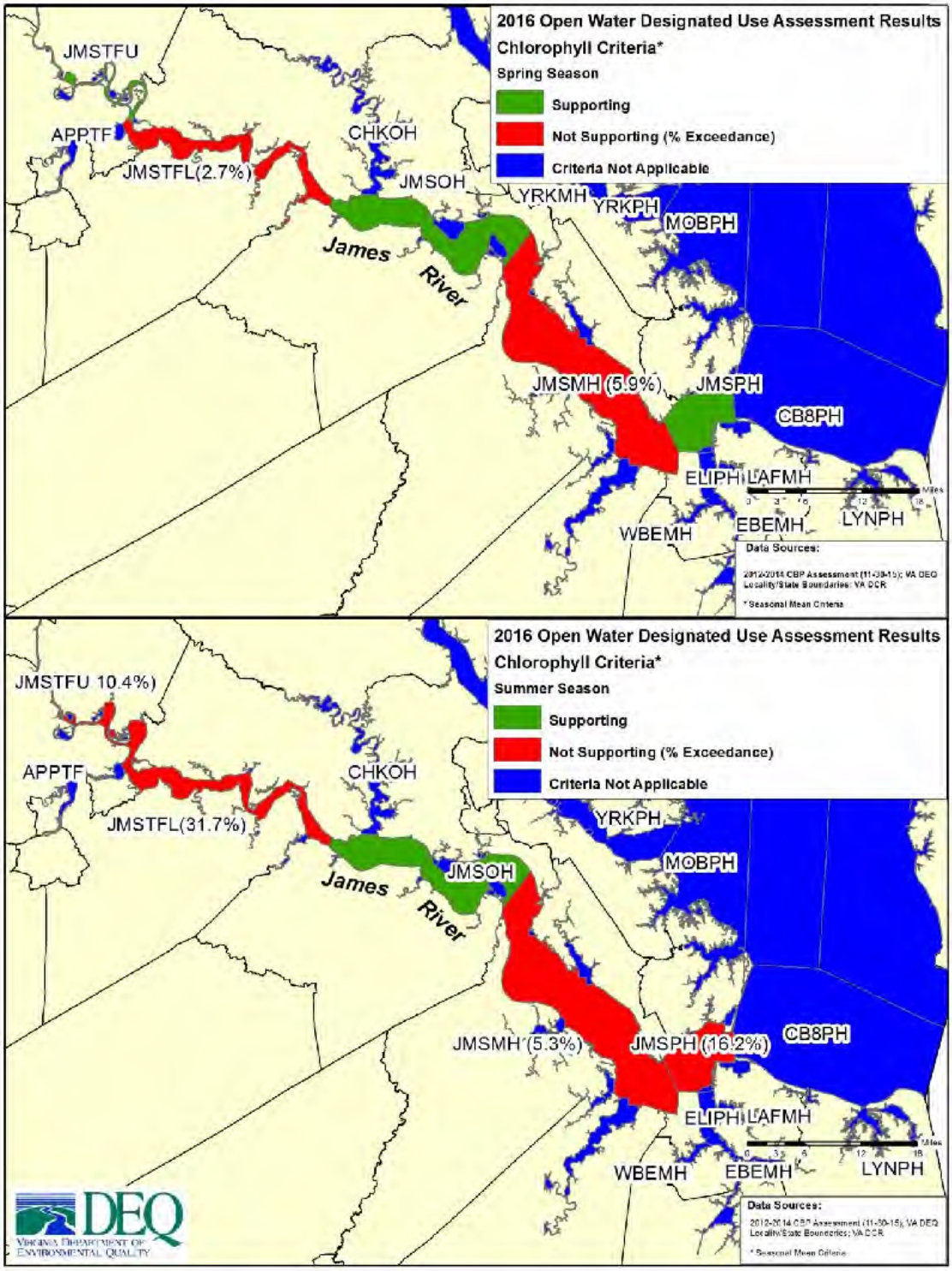


Figure 4.6-6 Attainment of the Deep-Water and Deep-Channel designated use (dissolved oxygen criteria).

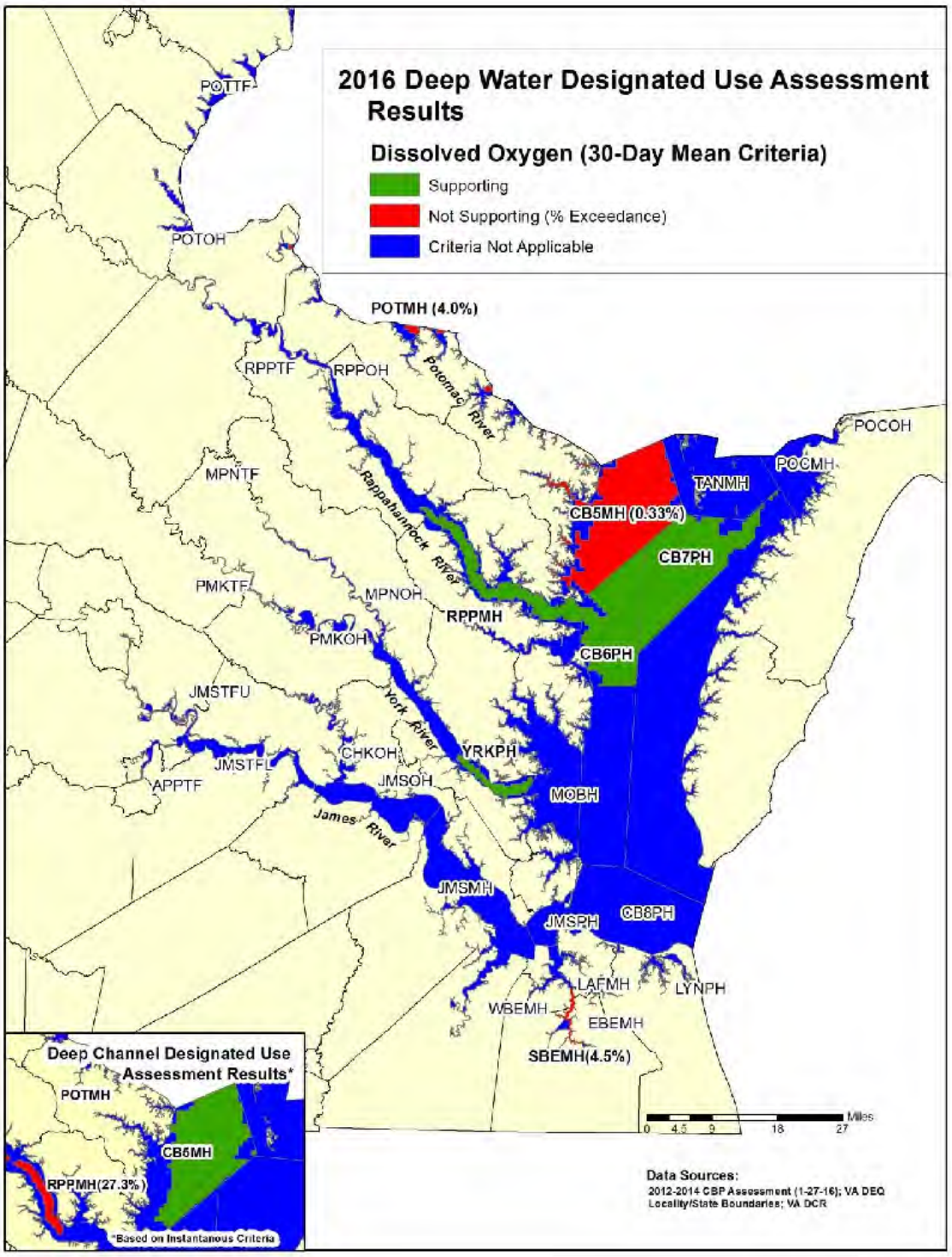
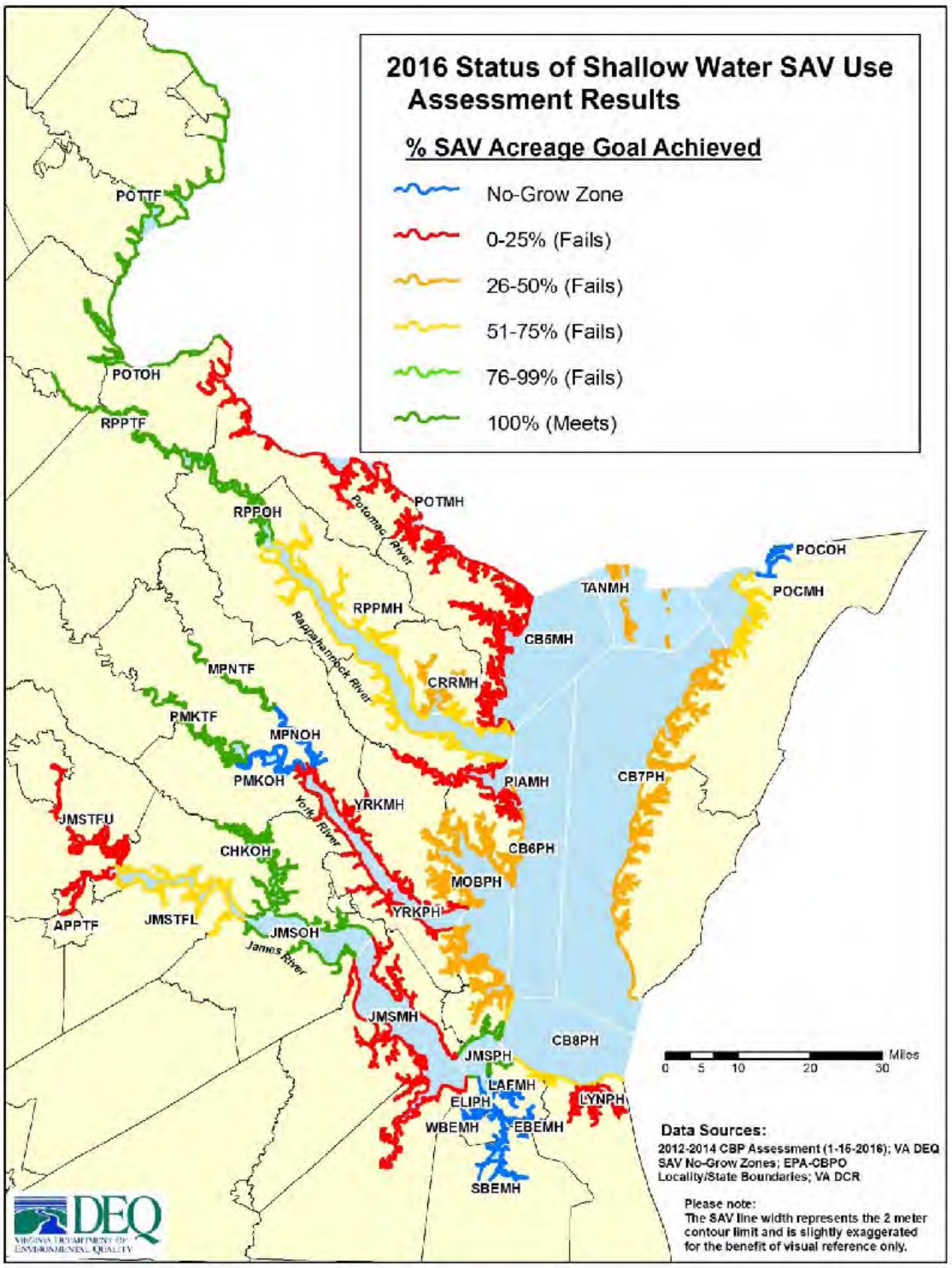


Figure 4.6-7 Attainment of the Shallow-Water SAV designated use (SAV acres and water clarity acres criteria).



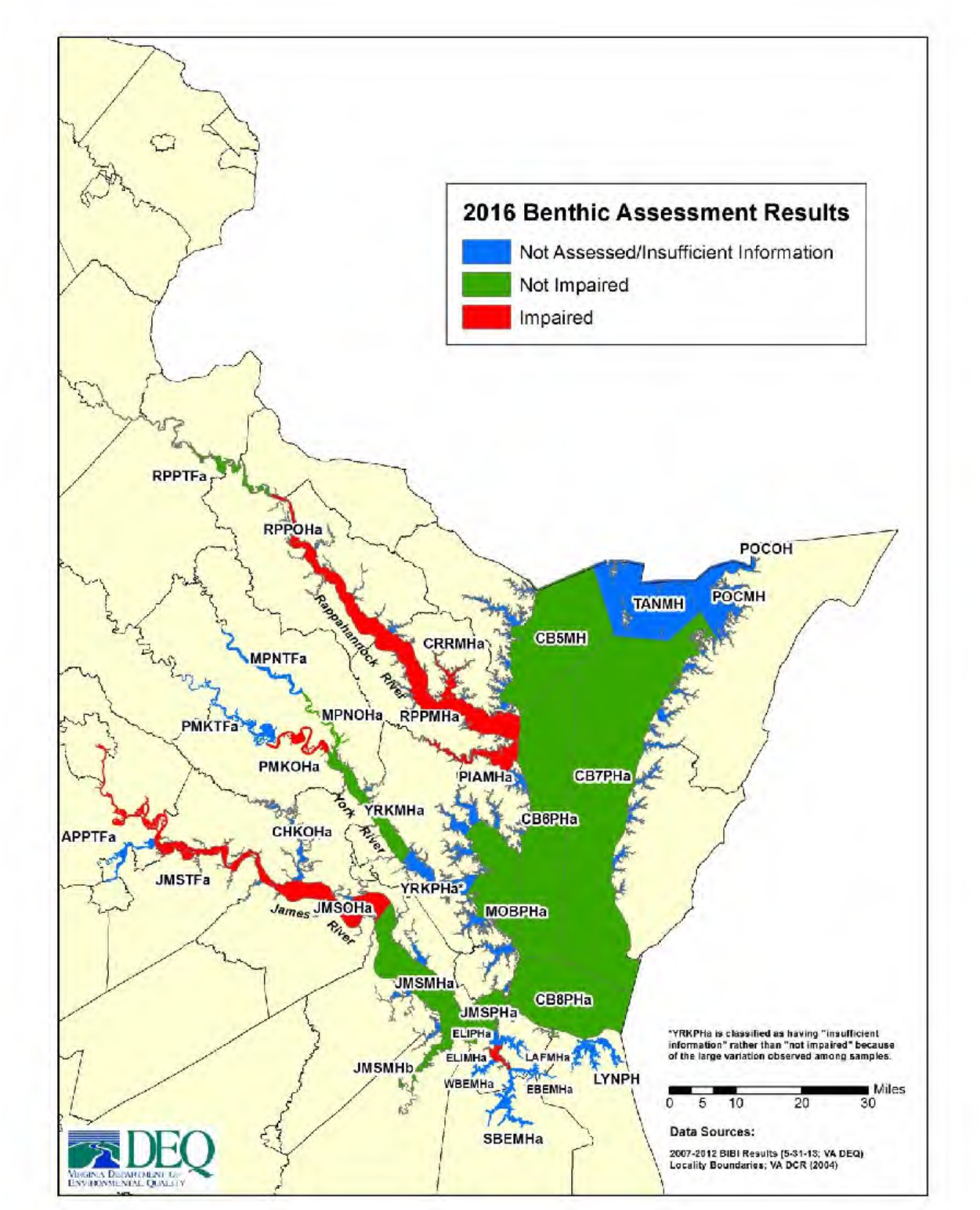
Estuarine Benthic Bioassessment

Support status of the general aquatic life use as indicated by benthic community health throughout Chesapeake Bay and its tidal tributaries was performed in cooperation with EPA Region III, EPA Chesapeake Bay Program, Maryland Department of the Environment, Maryland Department of Natural Resources, and the Virginia Department of Environmental Quality. Technical details of the assessment procedure were previously described in 2006 *303(D) Assessment Methods For Chesapeake Bay Benthos, Final Report Submitted to Virginia Department of Environmental Quality, Roberto J. Llansó, Jon H. Vølstad, Versar Inc., Daniel M. Dauer, Michael F. Lane, Old Dominion University, September 2005*.

Due to lack of technical support for data analysis at the EPA Chesapeake Bay Program Office, the 2016 bioassessment could not be performed. The following results are based on the 2014 reporting period (2007 – 2012).

Figure 4.6-8 shows a map of the benthic assessment results. Approximately 241 square miles of the estuarine aquatic life use is impaired. This represents 13% of the total assessed Bay waters, which is down from 77% reported in 2012. The large difference can be attributed to the assessment of mainstem segment CB7PH, which had previously shown a degraded benthic community and currently does not.

Figure 4.6-8 Estuarine Benthic Biological Assessment.



Chesapeake Bay and Tributaries Aquatic Life Use and Sub-use Impairment Listing

The Integrated Report listing methodology addresses the goals of maintaining continuity with previous methodologies, accurately reflecting the assessment results of new uses and criteria and—more importantly--protecting and restoring aquatic life. The listing methodology for the new aquatic life use sub-categories was developed by a Water Quality Criteria Assessment Workgroup involving EPA Region III, EPA Chesapeake Bay Program, Maryland Department of the Environment, Maryland Department of Natural Resources, and the Virginia Department of Environmental Quality. The workgroup's efforts will continue through future modifications as necessary to assure Bay-wide consistency. The main rules for designated use attainment categorization are:

- Aquatic life use is listed as impaired and having a TMDL (i.e. category 4A) if any aquatic life sub-use (i.e. SWSAV, MSN, OW, DW, DC) is not supported.

- Waters previously listed as impaired by EPA in 1999 for aquatic life use because of low dissolved oxygen but currently meeting assessed criteria will remain in category 4D[1] until all applicable criteria are assessed. All applicable dissolved oxygen criteria must be assessed and attained in order for a DO-related sub-use (i.e. MSN, OW, DW, DC) to be fully supported for these waters. For additional information on un-assessed criteria, see the section on Future Assessment Refinements (page 187).

- The Shallow-Water submerged aquatic vegetation (SWSAV) use is fully supporting if any of the criteria for this use is met. For example, if sufficient water clarity is present (i.e. "Water Clarity Acres" criterion is met), then the SWSAV designated use is supported regardless of the presence or absence of sufficient submerged aquatic vegetation (i.e. "SAV Acres" criterion is not met). This is because there can be many non-pollutant causes for the lack of SAV acres such as lack of propagule availability, herbivory by turtles, waterfowl, etc. or habitat disruption by cow-nosed rays.

[1] A waterbody is assessed as category 4D when a part(s) of a water quality standard is attained for a pollutant with a TMDL, but the remaining criteria for the standard were not assessed due to insufficient information. This only to be applies to dissolved oxygen in tidal waters of the Chesapeake Bay.

Aquatic Life Use Assessment Database Summary for Chesapeake Bay Waters

Figure 4.6-9 presents aquatic life designated use and sub-use support for the Chesapeake Bay and its tidal tributaries as summarized from the Assessment Database. The Deep Water Aquatic Life Use subcategory (DW), Deep Channel Aquatic Life Use subcategory (DC), Shallow Water Aquatic Life Use subcategory (SWSAV), and Aquatic Life Use sizes in this chapter are different than what is presented elsewhere in this chapter. This is due to the complex spatial nature of the Bay uses and limitations of the Assessment Database (ADB). A few of the confounding issues and differences between results in this chapter and area summarizations in other chapters created from ADB are listed below.

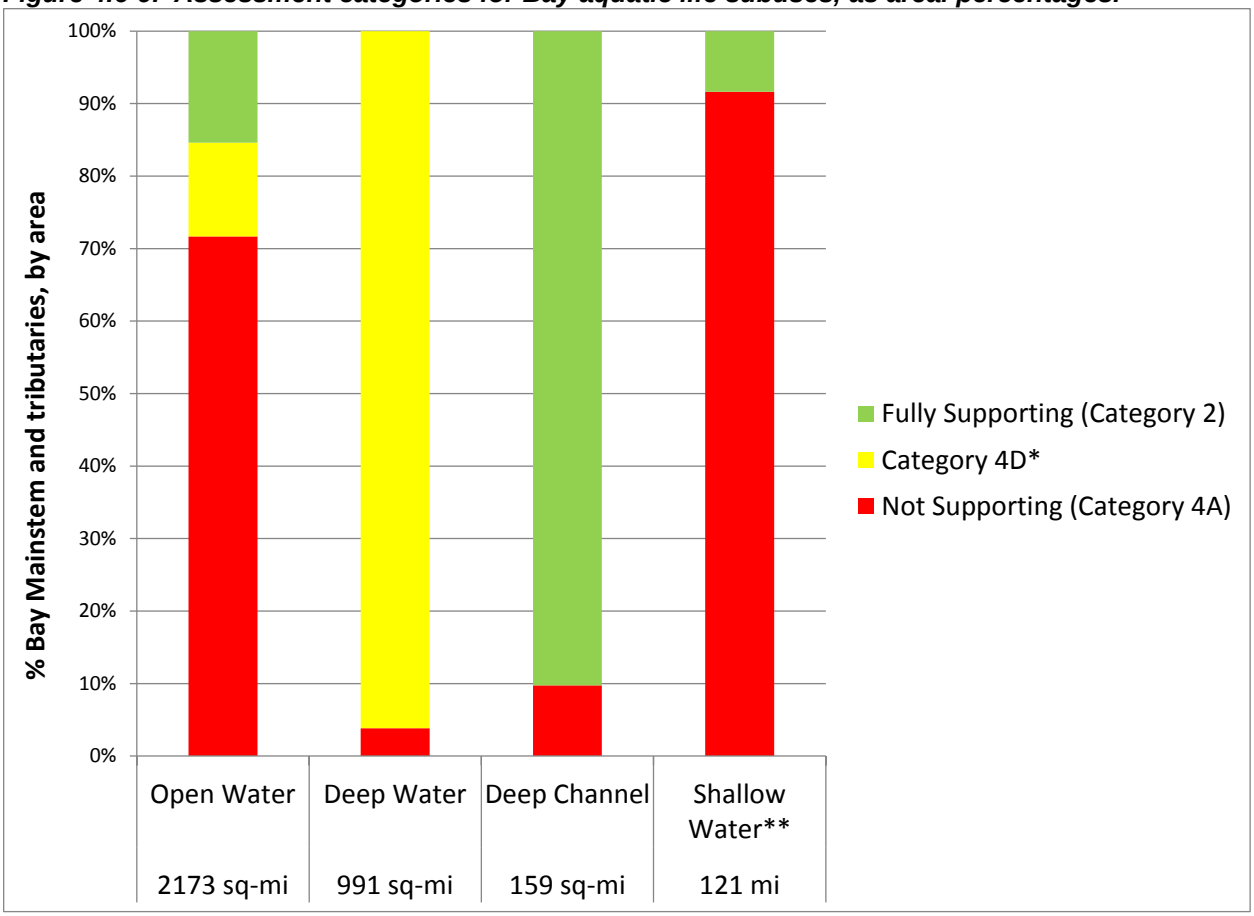
- The area of DW and DC is inaccurate in ADB. Area of DW and DC reported in this chapter vary in square mileage size within assessment units and between reporting periods due to the naturally varying depth of pycnoclines. However, DW and DC area in ADB can only be reported as existing throughout the complete assessment unit.

- The area of SWSAV use is inaccurate in ADB. The SWSAV designated use exists only within the area defined by the SAV acres criteria. For example, CBP Segment CB5PH has an SAV acres criterion of 7,633 acres (see Table 4.6-2) therefore the area of SWSAV designated use for this segment is 7,633 acres (i.e. 11.9 square miles). However, within ADB the size of SWSAV use within this segment can only be reported as the complete area of the assessment unit (i.e. 215 square miles). The figures reported in this chapter are therefore more accurate.

- Related to the above, the area of impairment for aquatic life use within ADB is often incorrect. For example, segment CB8PH failed the SWSAV use, so the segment also fails the aquatic life use. The area of SWSAV use within this segment is only 11 acres (0.02 square miles), making the accurate area of aquatic life use impairment only 0.02 square miles. However, within ADB the area of aquatic life use can only be reported as the complete area of the assessment unit (48.4 square miles). The figures for impairment area reported in this chapter are more accurate than what appears in ADB.

- This chapter reports only the aquatic life use and sub-use impairments due to dissolved oxygen, water clarity, chlorophyll, and benthic community assessments. Some waters have met all the assessed criteria for these parameters, but may be impaired in ADB for aquatic life due to other parameters (e.g. pH, chloride, bacteria, toxics, etc.). Aquatic life use impairments due to these other parameters are not reported in this chapter.

Figure 4.6-9. Assessment categories for Bay aquatic life subuses, as areal percentages.



* Category 4D applies to waters that meet assessed DO criteria, but which are required to meet all applicable DO criteria before they can be assessed as fully supporting (category 2).

** 47% of the total SAV acreage goal (121 sq-mi) was attained. However, only segments that have met their respective goals are assessed as fully supporting (category 2). The sum of their goals represents 8% of the total SAV acreage goal.

Future Assessment Refinements

This is the sixth report to present assessment of the designated uses in the Chesapeake Bay and its tidal tributaries. Much progress has been made in developing realistic and appropriate designated uses, associated criteria, and assessment protocols for the Chesapeake Bay and its tidal tributaries. Continued refinement for future assessments is summarized below. To ensure consistency throughout the multi-State Chesapeake Bay system, most of these issues will be resolved through the Water Quality Criteria Assessment Workgroup involving EPA Region III, EPA Chesapeake Bay Program, Maryland Department of the Environment, Maryland Department of Natural Resources and the Virginia Department of Environmental Quality.

Assessment of currently un-assessed designated uses and criteria

Of the five aquatic life sub-uses, this chapter reports only on conditions for the Open-Water, Deep- Water, Deep-Channel, and Shallow-Water submerged aquatic vegetation sub-uses. It is anticipated that future reports will assess the remaining aquatic life sub-use of "Migratory and Spawning Fish". Also, only a limited suite of dissolved oxygen criteria for each sub-use were assessed, these being 30-Day average for dissolved oxygen in Open- and Deep-Water uses and the instantaneous minimum for the Deep-Channel use. Many other dissolved oxygen criteria were not assessed (e.g. 7-day, 1-day, and instantaneous minimum criteria). These limitations on assessments of designated uses and criteria are due to the lack of EPA-approved assessment protocols.

Refinements to assessment protocols

While DEQ believes the protocols performed for this assessment are valid, the following issues may be examined in more detail for future assessments:

a. Refinements in spatial interpolation tools.

Part of the assessment protocol involves spatial interpolation of data to create a 3-dimensional depiction of oxygen conditions throughout a waterbody segment. The software used for performing this step in this assessment may be refined and updated to enhance interpolation for future assessments.

b. Refinements in statistical determination of attainment.

Data are assessed after interpolation for criteria exceedences using a reference curve to determine waterbody attainment. The assessment was based on either EPA-published reference curves or used a default 10% reference curve if a published one was not available for a specific aquatic life sub-category (e.g. deep water). It is possible that new reference curves developed by EPA could be adopted into Virginia water quality standards and used in future assessments. Also, there may be future efforts to explicitly incorporate statistical measures of uncertainty into the reference curve attainment process.

Table 4.6-4 shows a summary of the most recent long-trend analysis performed by the Dauer lab at ODU (report available by request). This analysis indicates that nutrient concentrations in the mainstem and many of the tributaries segments are generally improving, while water clarity (as measured by secchi depth) shows a degrading trend overall. Where a significant trend was detected for total suspended solids, it was usually in the "improving" direction. Few discernible trends were detectable in chlorophyll *a,* benthic community integrity, and dissolved oxygen concentrations.

Table 4.6-4 Trend Analysis Results by Bay Segment (1985-2015)

Segment	sTN	bTN	sTP	bTP	sTSS	bTSS	Secchi	Bottom DO	Benthic	Chlorophyll a
APPTF	▼ [1]	▼ [1]	▼ [1]	▼ [1]	▼					
CB5MH					▼	▼				
CB6PH	▼	▼	▼	▼	▼ [2]	▼ [2]	▼			
CB7PH	▼	▼	▼	▼	▼ [2]	▼ [2]	▼			
CB8PH			▼	▼		▼	▼	▲		
CHK0H			▼ [1]	▼		▲	▼			▼
CRRMH		▼ [1]		▼ [1]			▼			
EBEMH	▼	▼	▼	▼	▼	▼	▲		▼	
ELIPH	▼ [1]	▼ [1]	▼ [1]	▼ [1]			▼			
JMSMH		▲	▲	▼ [2]		▲				
JMSOH			▼ [1]						▲	▼
JMSPH	▼ [1]	▼ [1]	▼ [1]	▼ [1]		▼	▼	▲		▲
JMSTF1-UPPER	▼	▼	▼	▼						▼
JMSTF2-LOWER	▼ [1]	▼ [1]	▼ [1]	▼ [1]			▼			
LAFMH	▼		▼		▲	▲				
MOBPH	▼	▼	▼	▼	▼ [2]	▼ [2]	▼	▲		
MPN0H										
MPNTF							▼			▼
PIAMH	▼	▼	▼	▼	▼ [2]	▼ [2]	▼	▲		
PMK0H					▼					
PMKTF		▼			▲		▼	▲		
POCMH	▼	▼	▼	▼	▼ [2]	▼ [2]	▼	▲		
RPPMH		▼ [1]		▼ [1]			▼		▼	▲
RPPOH							▼			▲
RPPTF	▼ [1]	▼ [1]	▼ [1]	▼ [1]	▼			▼		
SBEMH	▼	▼	▼	▼	▼	▼	▲		▲	
WBEMH	▼	▼	▼	▼	▼	▼	▲			▼
YRKMH			▲			▲				▲
YRKPH					▲	▲	▼		▲	

s = Surface b = Bottom TN = total nitrogen TP = Total Phosphorus TSS = Total Suspended Solids DO = Dissolved Oxygen

[1] Trend statistically significant (P<0.01) from method change in 1995 to present.

[2] Trend statistically significant (P<0.01) from method change in 1996 to present.

▲ degrading increasing ▼ degrading decreasing

▲ Improving increasing ▼ Improving decreasing

CHAPTER 5 NONPOINT SOURCE ASSESSMENT, PRIORITIZATION, AND ACTIVITIES

This section of the Virginia Water Quality Assessment 305(b) Report includes an assessment of nonpoint source (NPS) pollution potential at the 6th level (12-digit) hydrologic units of the National Watershed Boundary Dataset (NWBD) (hereafter referred to as either hydrologic units, or just units). It also includes indicators for prioritizing NPS corrective actions at the hydrologic unit level and a summary of NPS reduction activities currently underway. It has been prepared by the Virginia Department of Conservation and Recreation (VADCR) and the Virginia Department of Environmental Quality (VADEQ) to provide a comparative evaluation of the state's waters, on a hydrologic unit basis. This comparative evaluation can be used to target limited resources and funds for NPS pollution protection activities to where they are most needed. The key results of the assessment include quantification of nutrient and sediment loads and a ranking of hydrologic units as high, medium or low based on those loads. The ranking is presented in a series of maps and tables for each major source sector such as; agriculture, forestry, and urban, with an additional series of maps representing the overall or combined ranking.

The 2016 NPS Assessment and Prioritization study summarizes existing sources of information, as referenced, and data provided by the following organizations: VADCR, VADEQ, Virginia Department of Forestry (VDOF), U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS), local Soil and Water Conservation Districts (SWCDs), the Department of Biological Systems Engineering (BSE) at Virginia Tech (VT), the Virginia Department of Health (VDH), the Virginia Department of Game and Inland Fisheries (VDGIF), the Virginia Department of Mines, Minerals, and Energy (VDMME), the Center for Environmental Studies (CES) at Virginia Commonwealth University (VCU), the US Environmental Protection Agency (EPA), the Chesapeake Bay Program (CBP), the U.S. Geological Survey (USGS), the Multi-Resolution Land Characteristics Consortium (MRLC), Conservation Technology Information Center (CTIC), the US Department of Interior – Census Bureau, the American Community Survey, and the Climate Forecast System Re-analysis (CFSR).

There are four major components to the 2016 NPS Assessment and Prioritization study - potential pollutant loadings, water quality impairments, measures of biological health, and NPS reduction activities. The main focus of this chapter is the determination of potential loadings of total nitrogen (TN), total phosphorus (TP), and total sediment (TS), hereafter referred to as NPS pollutants, by hydrologic unit and agricultural, urban, and forest generalized land use classes. The evaluation of hydrologic units by aquatic species' health represents water quality measures not necessarily related to the potential NPS pollutant loads. In order to prioritize clean-up and protection activities, hydrologic units of prime importance for the protection of public surface water supplies were also determined. Details of these components follow.

NPS POLLUTION LOADINGS

The NPS Assessment estimation of pollutant loadings is based on a calculation of the estimated edge of stream (EOS) loadings of nitrogen, phosphorus, and sediment per hydrologic unit using the Generalized Watershed Loading Functions (GWLF) model.

The estimation of loads of NPS pollutants as a basis for assessing water quality by hydrologic unit is consistent with Virginia's participation as a partner with the EPA's CBP in the calculations of NPS pollutant loads using the Chesapeake Bay Watershed Model (CBWM). Although Virginia uses CBWM results (particularly in CBP related activities), they have only been obtainable for that portion of Virginia that is in the Chesapeake Bay Watershed (James, York, Rappahannock, Potomac, and Bay Coastal basins). Other state programs can benefit from having measures similar to the CBWM loads but for the non-Bay portion of the state. As has been done since 2002, Virginia has produced statewide NPS pollutant load results similar to those of the CBWM by using the GWLF model[1].

[1] GWLF was chosen because it was configured for continuous simulation and could produce EOS loads based on land-based loadings, fate, and the transport of pollutants as does the CBWM. Both models also simulate seasonal variations, include both surface and subsurface components, and can represent both dissolved and particulate forms of pollutants. The GWLF model used in the 2016 assessment is an update of the model developed for the 2014 and previous assessments.

NPS pollutant load estimations were performed by taking into consideration the relevant best management practice (BMP) installations in Virginia over the previous sixteen year period (1998-2014) by VADCR, VADEQ, VDOF, USDA-NRCS, local stormwater management agencies, and private nutrient management plan writers. Table 5-1 lists the generalized land use classifications and details the contributing specific land uses utilized for this assessment.

Table 5-1 Descriptions of Nonpoint Source Assessment Generalized Land Uses

Nonpoint Source Assessment Land Classifications	Source Data Descriptions
Forest	Pine, Hardwood, Mixed Harvested/Disturbed Forest
Agriculture	Crop: Conventional Tillage, Conservation Tillage, Bare Soil, Hay Livestock: Unimproved Pasture, Pasture Cattle-Grazed, Pasture Poultry Litter Applied, Pasture/Forest/Field Manure Applied
Urban	Impervious (Pavement, Sidewalks, Roof Area, Compacted Areas, High Density Residential) Pervious (Grassland, Low to Medium Density Residential, Industrial, Bare Soil)

As would be anticipated, there are loading estimation changes between the 2014 and 2016 assessment calculations. These changes are the result of updated and improved data along with model recalibration and corrections made to the model code.

For consistency with previous NPS assessment reports and maps and with the manner in which this data is used, the ranking of hydrologic units for the NPS pollutant unit area load (UAL) components for the 2016 NPS Assessment has maintained the division of UALs into previously used categories - the highest 20% of the values for each component are classified as high, the next 30% are classified as medium, and the remaining 50% are classified as low. This ranking methodology applies to the NPS pollutant loads only. These range definitions are not absolute, since units with equal or very similar loading values were not divided into different classes.

Table 5-2 reports the final statewide loadings by pollutant and the amount of land in Virginia by general land use class. Loading values in this table reflect the loads after the reductions are applied from active BMPs installed over the previous sixteen years. More information regarding model development, land use classification details, and methodology for estimating pollutant loading per land use and per pollutant, is provided in the final section of this chapter.

Table 5-2 2016 Statewide NPS Pollutant Loads – Post BMP Reduction

	Units	Agricultural Class	Urban Class	Forestry Class	Other (Barren, Extractive, Channel Erosion, Septic)
Total VA Land Area #	Acres	5,722,303	2,528,960	16,714,994	
%of VA Land	%	22.83	10.09	66.69	0.39
Total Nitrogen	10^6 Kg/year	10.70	5.42	7.77	
%of all NPS N ^	%	33.92	17.20	24.63	24.25
Total Phosphorus	10^6 Kg/year	1.09	0.51	0.51	
% of all NPS P ^	%	49.13	22.98	23.04	4.85

Total Sediment	10^6 Kg/year	1,278.27	0.12	1,134.9	
% of all NPS S ^	%	41.96	4.04	37.26	16.74

Value does not include acres of non-forested wetlands and barren land (see Table 5-7).
^ Includes loads from barren, channel erosion, and extraction.

Agricultural NPS Pollution Loads

Agriculture is a large and diverse industry in Virginia and accounted for almost 23% of Virginia's land use in the year being assessed. While this percentage is significantly lower than the national average and continues to decline in Virginia, agricultural activities remain the most significant source of nonpoint source pollution in the state. As shown in Table 5-2 and as the current and all past assessment model results suggest, agricultural land in Virginia contributes NPS pollutant loads in greater proportion to the area they comprise than do the other land use classes.

Nonpoint source pollutants from agriculture originate from several different sources with different associated impacts. Deposition to agricultural lands in the form of fertilizers and animal manures affect water quality when they reach groundwater reserves, are directly deposited to streams, or are washed into surface waters during rain events in either a dissolved state or with eroding soils. These pollutants include pathogens as well as nutrients. Farming practices can contribute to or retard runoff and can certainly affect the amount of soil lost from fields which can potentially end up in water features.

This assessment estimated the nutrient and sediment loads from agricultural areas but not pathogen loadings. Factors in this assessment which affect the amount of nutrient loads reaching water from agricultural lands include the soil erodability, types of agricultural practices, types and numbers of farm animals, land cover, stream density, rainfall, seasonal variations in plant growth and nutrient applications, existence and type of agricultural BMPs, soil saturation, and slope.

The ranked UALs by hydrologic unit of nitrogen, phosphorus, and sediment from agricultural land uses are displayed in Figures 5-1, 5-2, and 5-3 respectively. The rankings are also listed in Table 5-3

There are a few factors that are specific to changes in loadings, and thus ranks, of the agricultural NPS pollutants between the current and past assessment products. Perhaps the most significant factor is that the model itself was recalibrated with new data, parameters, and procedures. Otherwise, the updating of the land use is usually the primary contributor to changing loads. Additional factors are noted below.

Urban NPS Pollution Loads

Around 10% of the land in Virginia was considered urban for the year being assessed. Urbanized land produces NPS pollutants as the result of precipitation washing nutrients, sediment, and other substances from the impervious surfaces found in these areas. The sources of these surface contaminants include: air and rain deposition of atmospheric pollution; littered and dirty streets; traffic by-products such as petroleum residues, exhaust products, heavy metals and tar residuals from the roads; chemicals applied for fertilization, control of ice, rodents and other pests; and sediment from construction sites. Improper industrial, commercial and domestic hook-ups to storm sewers also contribute various pollutants to waterways, as do inadequate and/or improperly maintained sewage disposal systems both for municipalities and individual homes.

This assessment estimated only the nutrient and sediment loads from urban areas and no other urban NPS pollutants as described above. Factors that affect the amount of surface and channel erosion loads reaching water from urban lands include the degree of imperviousness of the urban land use, impervious area NPS pollutant build-up rates, stream density, rainfall, septic system use, direct discharges, soil saturation, and slope.

The main factors to changes in loadings, and thus ranks, of the urban NPS pollutants between the current and past assessment products are the same as for agricultural loads. These were updated land use, as well as updated model data, parameters, and procedures. Also of relevance septic loads were excluded from the reported urban load, as they had been in the past. This is because septic loadings are not

exclusive to the urban environment and so they were simulated as an individual loading source in this assessment.

The ranked UALs by hydrologic unit of nitrogen, phosphorus, and sediment from urban land uses (as described in Table 5-2) are displayed in Figures 5-4, 5-5, and 5-6 respectively. The rankings are also listed in Table 5-3. Urban load measures are based on pollution potential and do not compensate for many of the urban runoff control measures that may be in place in some areas. Such reduction measures are primarily installed by the private sector.

Forestry NPS Pollution Loads

Almost 67% of Virginia's land area was forested in the year being assessed. Forestland in general produces lower NPS pollutant loads[2] per unit area than other land uses. Certain forest disturbing activities such as tree harvesting, site preparation, and reforesting, however, do make a load contribution. As Table 5-2 shows, these activities contribute more to the sediment load than they do to other NPS pollutants.

Forestland can be harvested as part of a land use change such as residential development, clearing for agricultural fields, or surface mining. Due to the similar spectral signatures in classified land cover imagery of these land activities, as well as those of non-temporary land covers such as bare rock and beaches, it can be difficult to discern them from one another without other associated data. Fortunately, the VDOF tracks forest harvesting activities to facilitate the proper management of Virginia's forest resources relative to water quality.

Whereas agricultural activities operate on a yearly or seasonal cycle on agricultural lands, a single cycle of forest harvesting, site preparation and reforestation occurs over many years. Due to temporal and spatial overlap in silvicultural cycles, measurement of these forest disturbing activities in this assessment is more of a snapshot than a trend. As such, the ranking of hydrologic units for forest based loads varies more between NPS Assessments for forest harvesting units than do the loads of other land use classes when model code and parameters are kept constant.

Factors in this assessment that affect the amount of loads reaching water from forestlands include soil erodability, existence of disturbed forestlands, stream density, rainfall, existence and effectiveness of forest (silviculture) BMPs, soil saturation, and slope.

The ranked UALs by hydrologic unit of nitrogen, phosphorus, and sediment from forestland uses are displayed in Figures 5-7, 5-8, and 5-9 respectively. The rankings are also listed in Table 5-3.

The factors most responsible for the changes in loadings, and thus ranks, of the forest NPS pollutant loads in this assessment are the same as for agriculture and urban uses. Additional factors include updated forest harvesting information from VDOF, and improved accounting of silviculture BMPs effectiveness.

NPS Pollution Loads of Other Land Uses

Extraction and non-urban barren lands have not been lumped into any of the output land use classes with regard to reporting loads or unit area loads (see Table 5-2). Therefore, they do not influence the ranking of units for any of the specific land use load classes. Likewise, loads from the non-sewered population and channel erosion are not reported in any specific land use class load.

Using resource extraction spatial data from the VDMME helped isolate true extraction activities from reforesting sites, urbanization, or other land disturbing activities. The spatial distribution of extraction land use was used in conjunction with county level recordings of extraction activity.

[2]Airborne nutrient pollution is accounted for as part of the load of the land use it falls upon. The majority of the airborne nutrient load falls on forestland in Virginia and is therefore associated more with forestland than with other uses.

Approximately 4.85% of the phosphorous, 24.25% of the nitrogen, and 16.75% of the sediment load in the 2016 NPS Assessment was associated with loads from the non-sewered population, channel erosion, barren, and extractive land uses. The largest contributor of this group is the nitrogen load from failing septic systems and straight pipes (untreated). The most significant extraction use loads occurred in the Big Sandy basin. In general, barren land only contributed minor loads.

Total Loads by NPS Pollutant

Calculated total nitrogen, total phosphorus, and total sediment unit area loads from all land uses combined, including the other uses noted above, are displayed in Figures 5-10, 5-11, and 5-12, respectively and listed in Table 5-3. Total nitrogen is composed of septic nitrogen, groundwater nitrogen, dissolved nitrogen from various land uses, wash-off of nitrogen from impervious surfaces, and sediment-attached nitrogen. Total phosphorus is composed of septic phosphorus, groundwater phosphorus, dissolved phosphorus from various land uses, wash off of phosphorus from impervious surfaces, and sediment attached phosphorus. Total sediment is the sediment yield from all land uses and instream erosion.

The summing of NPS pollutant loads by land use into total NPS pollutant loads in this NPS assessment is simply the addition of values with equivalent units (kg/ha/yr of nitrogen or phosphorus, Mg/ha/yr of sediment). Accordingly, the relative weight of the estimated NPS pollutants coming from one land use versus another is directly comparable. This comparison shows that NPS pollutants from agricultural lands dominate the total NPS pollutant loads although barren lands can be heavy contributors where they occur in some concentration.

IMPAIRED WATERS

In accordance with US EPA Clean Water Act (CWA) guidance and protocol, the VADEQ assembled a list of the water quality limited riverine, lacustrine, and estuarine waters of Virginia in 2014 (303d report). That list and associated assessment geodatabase of water quality limited waters are the basis for the impaired waters portion of the 2016 NPS Assessment. Similar to the rankings of estimated pollutant loads, the impaired waters ranking presents a series of maps depicting, by hydrologic unit, the relative proportion of waters that appear to be impaired due to nonpoint source pollution.

Among the many defined attributes in the impaired waters assessment geodatabase are the names of the impaired waters, the beginning and ending spatial limits of the impaired portions, impairment causes, and impairment sources. Following is a brief overview of the generation of this prioritization ranking list and the evaluation of NPS impacted waters, a subset of this assessment geodatabase. Included first, were all the waters identified by VADEQ staff as having NPS related sources. Additionally, this ranking included those impaired waters which did not list any point source related causes or listed sources as unknown, provided visual inspection of high resolution imagery of the surrounding watershed(s) could corroborate that the source was likely NPS (i.e. urban or natural)[3]. Excluded from the ranking list are those waters listed as impaired for toxics or occurring in primarily estuarine influenced areas.

Waters in the impaired waters layer that are suspected of being impaired due to nonpoint sources were divided by the hydrologic unit boundaries into segments to allow for the summation of impaired water lengths or areas by these units. The same process was performed on all waters in the state and determined the total available miles of riverine, acres of lacustrine, and square miles of estuarine waters per hydrologic unit that occur for comparison against the impaired portions.

Whereas the 2016 NPS Assessment focuses on nutrients and sediment, most of the NPS impaired waters from the 2014 303(d) report are listed due to the existence of pathogens. Total Maximum Daily Load (TMDL) studies have shown that pet wastes can have a role in high pathogen counts in some urban streams. Concentrations of wildlife can have a similar effect in various land use / land cover settings.

[3] This included all fecal causes of unknown sources since approximately 90% of non-urban fecal problems are surmised to be due to agricultural or natural animal loadings. Similarly, because about 85% of benthic impairments are believed to be sediment related, and because VADEQ personnel are more likely to know and document point sources of benthic impairments, all benthic impairments of unknown sources are considered to be NPS related. Impairments with nutrient sources were also included.

Likewise, human wastes, arising from the existence of straight pipe disposal, failing septic systems, or malfunctioning water treatment plants and their permitted collection system infrastructure, can all contribute to the impairment of waters due to high levels of pathogens. Based on TMDL studies completed to date, a significant number of the waters impaired due to the existence of pathogens are believed to be impaired because of farm animal wastes.

The number of farm animals by type and by unit is part of the nutrient load calculation, since most farm animal wastes are recycled back to the ground by the animals or in a more controlled mode by farmers who want to fertilize fields and/or remove wastes from confined animal sites. The controlled dispersal of wastes is a goal of nutrient management planning and a practice that DCR cost-shares with farmers to implement. The fencing off of stream banks and construction of alternative water sources are two such practices, in this case designed to keep livestock out of and away from streams so as to avoid sediment loading from eroded stream banks and also avoid direct deposition of manure and its associated pathogen load.

The following rankings of hydrologic units by water regime consider only non-shellfish NPS-associated impairments.

Riverine Impairments

Summed lengths of NPS impaired riverine water features in 2014 as miles per hydrologic unit were compared to the total miles of riverine systems available per unit at the same scale[4] to determine the percentage of the total available riverine water miles per unit that were NPS impaired. The ranking of this value is based on the value itself and not on a pre-set distribution of the range of calculated percentage values. The rankings of units for impaired riverine waters are displayed in Figure 5-13 and listed in Table 5-3.

Estuarine Impairments

Most of the impaired main-stem estuarine water bodies in Virginia have listed impairment causes that are not considered to be due to practices occurring in the immediate units that they flow through. There may be, in fact, very little land associated with some of these units. Estuarine waters are also tidal and may show pollution effects from multiple areas, even if they are not main-stem estuarine water bodies. For these reasons the estuarine waters are not being used to rank the hydrologic units in which they pass through in this assessment. Although there are NPS impaired estuarine waters it is difficult to associate them with specific upland NPS pollutant sources.

Lacustrine Impairments

Summed areas of impaired lacustrine waters in 2014 as acres per hydrologic unit were compared to the total acres of lacustrine waters available per unit to determine the percentage of lake waters in a unit that were impaired. Although the land area of these units can be a source of NPS pollutants, so too can the incoming streams.

The ranking of this value is based on the value itself and not on a pre-set distribution of the range of calculated percentage values. The vast majority of the hydrologic units in Virginia contained no impaired lake or reservoir waters in 2014. However, most of the remaining units had very high percentages of impaired lacustrine waters. This distribution is in part due to the decreased unit sizes of the 6th level NWBD units but also due to the call regarding their impairment source. The rankings of hydrologic units for impaired lacustrine waters are displayed in Figure 5-14 and listed in Table 5-3.

BIOLOGICAL HEALTH

Additional components for evaluating the effects of nonpoint source pollution include the VDH public surface water sources and their protection zones and an evaluation of the health of aquatic species

[4] In 2014 the scale was 1:24,000, augmented by the inclusion of smaller streams designated as impaired.

in the state's waters conducted by the Center for Environmental Studies at VCU. These components provide an additional means to prioritize water quality protection - the protection of the sources of public drinking water and of natural aquatic communities respectively.

Public Source Water Protection

As part of their Source Water Area Protection (SWAP) Program, the VDH determined the area upstream of public surface water intakes that must be investigated for threats to water quality. The most immediate area of their concern is referred to as the Zone 1 for each intake. Zone 1 areas extend out to a five mile radius upstream from a water supply intake or five miles around a lake containing an intake, without crossing watershed boundaries except those upstream. The population served by an intake, provided by VDH, and the portion of a hydrologic unit that is within a Zone 1 area has been used by VADCR to calculate the concentration of persons served per unit by these public surface water supplies. The concentration values serve as a measure of the importance of high water quality by hydrologic unit for public drinking water supply protection.

Concentration values are the summation by hydrologic unit of all Zone 1 areas or combinations of Zone 1 areas in that unit times one one-thousandth of the effective population each serves. In cases where a municipality owned several intakes, the single recording of population served was divided amongst each intake to create an effective population served. In cases of overlapping intake reaches the effective population of each reach was summed for the portion of overlap.

The categorized values and rankings for indicating concentration by unit are displayed in Figure 5-15 and listed in Table 5-3. Unlike the NPS loading variables in this assessment, where high ranked units represent units of concern, the high ranking public source water units are just units with a greater need for water quality protection. A significant amount of their area lies immediately upstream from surface water intakes that are used extensively for public drinking use by many people.

The vast majority of hydrologic units contained no Zone 1 protection zones or portions of Zone 1 protection zones. Of those with some Zone 1 content, the majority had low levels (< 10) of the calculated measure for concentrations of people served within a watershed. Of the remaining units, a few had significantly higher value measures (> 100) and were therefore classified as having a "Very High" need for source water protection. The rest were divided amongst a moderate category (10-30) and a high category (30-100).

Aquatic Species Measures

The presence or absence of certain aquatic species can serve as an indication of the overall quality of a particular waterway. They can also indicate where the most biological damage can occur from water quality degradation. Accordingly, the NPS Assessment and Prioritization study provides a ranking of hydrologic units for stream-dependent living resources (including fish, mollusks, and crayfish) using a multi-metric index calculated by the CES at VCU as part of their Interactive Stream Assessment Resource (INSTAR).

These indexes (referred to as the mIBI - a modified version of the Index of Biological Integrity) are calculated by the CES using databases originally developed by VADCR, the VDGIF, and VCU[5]. More than 162,000 database records from over 2000 aquatic collections have been gathered since INSTAR's Inception. As a result it is possible to calculate a mIBI value for more than 93% of the 6th level units of the NWBD. An equally beneficial result from having more records available for any unit is the decreased likelihood of a false prioritization indication based on minimal information.

By associating a hydrologic unit code with each of the stream segments for which aquatic species information was available in the various databases, metric scores by unit were developed for each of six metrics. These metrics are as follows:

[5] More information about the mIBI and the other components of INSTAR can be found at http://gis.vcu.edu/instar/.

Metric 1 Number of Intolerant Species: refers to the total number of unique water quality intolerant species found in a unit.

Metric 2 Native Species Richness: refers to the number of indigenous (local) species present in a unit.

Metric 3 Number of Rare, Threatened and Endangered Species: refers to the number of species that are considered rare, threatened or endangered due to their low population levels that are present in a unit.

Metric 4 Number of Non-indigenous Species: refers to the number of non-native species present in a unit. These are introduced species that would not normally be found in this particular location.

Metric 5 Number of Critical Species: refers to the number of species found in a unit that are considered critical because of some important role that they play, such as being a food source or a major recreational fishery.

Metric 6 Number of Tolerant Species: refers to the number of species found in a unit that are tolerant to degraded stream conditions and can survive even in these sub-optimal conditions.

A score of 0 – 5 was assigned by the CES for each metric based on the metric's values. In general, high metric values were assigned high metric scores - indicative of high stream health. A score of zero was given if insufficient data were available. Of the 1251 hydrologic units, 86 (7%) were assigned a zero for this reason. Metrics 4 and 6 were reversed in the scoring, since a low value for either of these metrics would indicate high stream health. Therefore a high metric score was given for low metric values for these two metrics. Lower values are more desirable in metrics 4 and 6 because a high number of non-native species and/or a high number of species that are tolerant to stream degradation are less desirable characteristics for a stream.

Scores for each metric for each unit were totaled to give an overall total mIBI score per hydrologic unit. These summed scores per hydrologic unit were then tiered relative to the summed scores of the other units in the same basin by assigning a category value of High (score of 5), Medium (score of 3), or Low (score of 1) on per metric per basin basis. The resulting total mIBI scores are used to place each hydrologic unit into ranked categories reflecting biotic integrity and resource importance.

Since there were six metrics and a maximum score of 5 could be obtained for each metric, the overall maximum score a unit could receive was 30 (6 x 5). Fewer than 8% of the units (100) are considered to have very high biodiversity, with total mIBI scores of 20 or more. Another 198 units have total mIBI scores of at least 18. At the other end of the spectrum, 24% of the units (301) with sufficient data have total metric scores of 12 or less – indicative of low biodiversity. These units most probably contain waters with some degree of degradation.

The categorization of the mIBI scores by hydrologic unit is displayed in Figure 5-16, and listed in Table 5-3. In this figure and table, high mIBI scores equate to areas of high biotic integrity. Whereas, low mIBI ranked units represent units of concern in regard to low water quality based on aquatic species measures, high ranked units represent areas of importance for the protection of the state's streams with exceptional biodiversity. There has been very little change in total mIBI scores over the past few years.

While the maintenance or enhancement of water quality for the protection of all native aquatic life is the preferred goal, these aquatic species priorities should help direct NPS pollution mitigation efforts and other water quality improvement projects toward hydrologic units with the most important aquatic resources.

COLLECTIVE USE OF RANKINGS

The twelve rankings assigned to hydrologic units for NPS pollutants by land use class, the two rankings for impaired waters occurrence, and the two rankings of units for biological health can be used in various combinations to evaluate statewide conditions and prioritize NPS reduction activities. Which measures are included in each prioritization process, and how one weighs in comparison to another, depends on the activity to be prioritized. For instance, VADCR uses the agricultural NPS pollution

rankings as variables in the targeting of agricultural best management practices (see Agricultural Cost Share Program below).

There are several considerations to keep in mind when constructing prioritization processes using these rankings. Perhaps the most important is that some factors are measures potentially being produced at the hydrologic unit of interest, such as the NPS pollutant loadings. Other measures reflect existing conditions at the unit of interest, such as aquatic species health, and may in part be due to activities occurring in upstream units. The source water concentration values directly account for the upstream effect by virtue of their being based on a designated upstream zone.

Another consideration is the possible incorrect inference of cause and effect. Waters in a hydrologic unit may be impaired due to nonpoint sources but the cause of these waters being listed as impaired is not necessarily related to the nitrogen, phosphorus, and sediment that are potentially being loaded to them in either the unit of concern or upstream of it. Likewise point source loadings can be the reason for the streams in a unit to collectively produce a low mIBI score and aquatic species rank.

In the 2016 NPS Assessment and Prioritization some units have been flagged for conditions that can be determined by comparing the rankings of measures in this report. The flags have been entered into Table 5-3. The conditions are:

Exceptional aquatic biodiversity.
1> Units (11) with mIBI scores of 24 or greater.

High aquatic biodiversity with high potential NPS pollutant loads.
2> Units (12) with mIBI scores of 18 or greater and all high ranked total NPS pollutant loads.

High public water supply protection need with high potential NPS pollutant loads.
3> Units (8) with source water concentration values greater than 30 and any high ranked total NPS pollutant load.

High public water supply protection need with NPS impaired surface water at intake.
4> Units (35) with NPS impaired waters immediately upstream of the source water intake.

Excessive agricultural loadings.
5> Units (11) with potential agricultural nutrient loads (either N or P) greater than four times the standard deviation from the mean agricultural nutrient load.
6> Units (7) with potential agricultural sediment load greater than four times the standard deviation from the mean agricultural sediment load.

NPS REDUCTION ACTIVITIES

Efforts to reduce NPS pollution in Virginia have been undertaken by government agencies - federal, state, regional, and local, as well as by citizen action. In many cases the activities are cooperatively performed and funded. Descriptions of the cooperative NPS reduction activities can be found at the NPS Management Plan website and document. Most of these efforts target particular watersheds. Among them and elaborated upon at this site are TMDL studies and Implementation Plans, Nutrient Management, Agricultural Cost Share incentive programs for BMP installations, and incentives for the set aside of agricultural land.

Total Maximum Daily Loads

TMDLs, described elsewhere in this 305(b) report, are developed for waters that have been determined to be impaired and are so listed in Virginia's EPA approved 2014 303(d) report. Streams are not listed as impaired however due to high concentrations of nitrogen, phosphorus, or sediment, but rather because they cannot support, or can only partially support, one or more of the five designated uses. This is because water quality standards do not exist for concentrations of these pollutants for free-flowing waters. Nevertheless, certain impairment causes are primarily due to nonpoint source pollutants

(see Impaired Waters in this chapter) and VADEQ staff has often determined that there are nonpoint sources for these impairments. This section of the NPS Assessment provides an analysis and presents a map characterizing TMDLs, by hydrologic unit, where NPS sources appear to be dominant.

For TMDLs currently being developed, the hydrologic unites were divided between those with and those without a predominant nonpoint source. Most of the water quality impairments in Virginia are due to nonpoint source pollution. Consequently, most of the TMDLs that are being undertaken have a nonpoint source component. These studies are focused on identifying the sources of the impairment causes, quantifying the loadings of these sources to the water, and determining the load reduction needed to meet the use criteria. The development of an Implementation Plan is expected following the completion of a TMDL study for a particular watershed. Implementation of the plan's course of action then follows.

The number of TMDL implementation projects underway or completed is continually increasing. Table 5-4a lists the NPS TMDL Study Reports (excluding estuarine, shellfish, and those developed for toxic pollutants), and Table 5-4b lists the NPS TMDL Implementations Plans as of December 31, 2016, by their status, which is a temporal condition. At that time, there were 74 completed, NPS dominated TMDL Implementation Plans covering 894 unique impaired waters. These plans represented 4,842 impaired segment miles and 1,477 impaired reservoir acres (ID305b Assessment Units, from Virginia's 2014 Integrated Report), which may be addressing more than one pollutant for a water segment. In addition, there were 223 NPS dominated TMDL studies that have been approved by the EPA covering 745 hydrologic units with impaired segments. The number of TMDL Study Reports completed cannot be directly compared to Implementation Plans completed, as the geographic area and impaired waters included may vary. Implementation Plans may be developed for only a portion of a TMDL Study or include areas from multiple adjacent studies with similar land uses, and addressed by similar reduction strategies.

Whereas, streams or water bodies are listed as impaired, it is the watershed of those impaired stream segments and water bodies that are the focus of nonpoint source pollutant reduction activities. The hydrologic units listed in Tables 5-4a and 5-4b are those in which some portion of the unit contains the listed impaired stream segment. Sometimes the entire area of the listed hydrologic unit is the watershed of the impaired stream segment, but often only a portion of that unit must be studied for a TMDL. Figure 5-17, shows the true TMDL study areas and thus gives a better indication of the geographic extent of where the work is being performed. One difficulty in geographically representing the extent of multiple TMDL areas is that they often overlap – the watershed of a TMDL for a headwaters stream becomes part of the watershed of a TMDL for a larger water feature downstream, perhaps with a different pollutant/stressor. In Figure 5-17, the latest EPA approved TMDL work is displayed by impairment type and Figure 5-18 likewise shows the true TMDL Implementation Plan areas, which also include geographic overlap.

Agricultural Cost Share Program

The Virginia Agricultural Cost Share Program (VACS) offers incentives to farmers and agricultural landowners to encourage the installation and use of a number of approved techniques (BMPs) for reducing agricultural related nonpoint source runoff. While the program aims to address nonpoint source pollutants statewide, specific hydrologic units are targeted based on the agricultural loads estimated from the NPS Assessment (see Agricultural NPS Pollution Loads) and other factors. Soil and Water Conservation Districts further target the practices to individual needs within their district within these load priority areas.

Funding support for the implementation of these practices has been borne by the state and the federal government since the program's inception in 1985. The number of installations per year has varied widely over the years, correlating with the variation of funds available to the program. At this time the primary funding source is the Virginia Natural Resources Commitment Fund, a sub-fund of the Water Quality Improvement Fund (WQIF) established by the Commonwealth's Water Quality Improvement Act (WQIA). Other state and federal funds may be used however, such as Chesapeake Bay Implementation Grants.

Table 5-5 contains a summation of the installation or practice of several of the more common NPS BMPs

initiated in the 2014 and 2015 program years of the VACS (July 2013 – June 2015). Other NPS BMPs in this period addressed the use of conservation tillage, nutrient management planning, terracing, sinkhole protection, wetland restoration and conversion, irrigation water recycling, strip cropping, and the capping of abandoned wells. Still other NPS BMPs addressed the installation of water table control structures, runoff impoundments, agricultural chemical and fertilizer handling facilities, composter facilities, water diverters, animal waste and mortality facilities, and the installation, repair, and pump-outs of septic tanks.

Additional information on agricultural best management practices and the cost-share program can be found at http://www.dcr.virginia.gov/soil_and_water/costshar.shtml. Other efforts to reduce NPS pollutants include local and state stormwater controls, BMP installations by the USDA, and silviculture BMP installations by the VDOF. These and other efforts reduce estimated initial loads as calculated in the NPS pollution loadings of this assessment.

Table 5-5 NPS BMP Installations and Metrics, Program Years 2014 & 2015 (July 1, 2013 through June 30, 2015)

Basin	Acres of Riparian & Wildlife Buffer	Miles of Fencing**	Acres of Erosion Stabilization	Acres of Grazing Land Managed	Acres of Cover Crop	Acres of Sod Filters and Waterways
Potomac *	7,064	89	552	1,017	1,378	18
Shenandoah	9,478	56	1,254	701	12,281	1,993
Rappahannock	6,833	115	1,438	2,727	10,286	21
York	1,570	31	318	657	5,834	7
James	11,327	164	1,231	3,090	18,742	11
Bay Coastal	619	3	64	20	13,085	10
Ocean Coastal	388				8,329	
Albemarle Sound	1,224				2,766	
Chowan	8,671	12	176	167	2,633	747
Roanoke	5,862	190	541	2,850	2,234	677
Yadkin	54	3	4	14	84	1,003
New	3,538	41	393	738	3,832	
Clinch/Powell	2,727	38	107	1,254	201	2
Holston	3,576	25	6,178	822	2,309	1
Big Sandy		8	33	211		
TOTAL	62,931	775	12,289	14,268	83,994	4490

*excludes the Shenandoah

** fencing may be for stream exclusion and/or grazing management

Conservation Reserve Enhancement Program

The USDA's Conservation Reserve Program (CRP) provides incentives for the removal of agricultural land from production to protect environmentally sensitive land alongside rivers and streams. The Virginia Conservation Reserve Enhancement Program (CREP) augments CRP by providing for state enhanced cost-share and rental payments for conservation practices focused on the restoration of riparian buffers and wetlands. The Virginia CREP also funds the purchase of conservation easements on the restored riparian buffers.

Most, but not all areas of the state qualify for CREP assistance. Maps showing where CREP assistance is available can be found at http://www.dcr.virginia.gov/soil-and-water/crep-areas. The metrics reported in Table 5-5 include the impact of CREP practices during this period. The USDA's CRP increases the reported results. Information about CRP can be found at https://www.fsa.usda.gov/programs-and-services/conservation-programs/index.

Nutrient Management

The Virginia Nutrient Management Program which is administered by Code of Virginia §10.1-104.2 is designed to detail the most efficient use of fertilizers and manures on farms and urban lands in the Commonwealth. Plans are customized to fit a particular operation. The potential productivity of each field is considered along with an inventory of available nutrients from the soil, crop residues, manures, and commercial fertilizers. Nutrient management plans are flexible, based upon crop responses to nutrients, and focus on efficiently using those nutrients.

In Virginia, nutrient management plans are created by nutrient management specialists employed by VADCR. These specialists offer hands-on assistance with soil and tissue sampling, the use of soil surveys, equipment calibrations, and interpreting results to improve farmer efficiency. VADCR has 14 staff specialists who assist farmers, mostly of animal operations, in developing and implementing nutrient management plans.

There is also a private sector involvement in nutrient management activities. Statewide, there are currently 474 certified agricultural nutrient management plan writers, who record the majority of the acreage being managed each year. In addition, Virginia has an Urban Certification program with 174 certified urban plan writers. These plans are written for urban lands consisting of state owned lands, golf courses, businesses, and other urban areas. For the period ending in 2014 there are now over 905,000 acres statewide with a current nutrient management plan. Table 5-6 contains an accounting of the active plans in 2014.

Table 5-6 Acres Placed Under a Nutrient Management Plan As of 6/30/2014

Basin	Crop Acres	Hay Acres	Pasture Acres	Specialty Crop Acres	Turf & Landscape Acres
Albemarle Sound	23940	7		50	
Atlantic Coastal	25936			1420	
Big Sandy		155	299		
Chowan	87179	5714	3841	854	978
New	7552	5831	7519	157	22
Roanoke	26003	29084	8000	206	87
Clinch/Powell	1128	2617	5164		
Holston	3899	4710	7891		
Yadkin	97	24	7	243	
Non-Bay Total	175735	48143	32720	2930	1086
Bay Coastal	75975	474	251	1942	311
James	72415	34115	14881	1309	3181

Potomac **	49878	16060	6618	67	3191
Shenandoah	46639	38746	31959	121	101
Rappahannock	121020	15948	3325	466	127
York	94967	6787	2409	68	1264
Bay Total	460895	112130	59442	3973	8174
Grand Total	636630	160273	92162	6903	9261

** excludes the Shenandoah

Additional information on the Commonwealth's nutrient management program can be found at http://www.dcr.virginia.gov/soil_and_water/nutmgt.shtml.

Model Development and Estimation of Pollutant Loadings

The GWLF NPSA2016 model was calibrated for use in Virginia's NPS Assessment by the VT BSE prior to the 2016 assessment model runs. Since 10 years had elapsed without major changes to the modeling procedures, the modeling procedures were updated along with traditional model input data updates. The same database structure from the 2002 and 2006 calibrated models was used to evaluate a multiple-year period with output categories based on agricultural, urban, and forest land uses. Explicit 2016 version revisions to GWLF modeling, calculations, and approach include:

1. Model code corrections to the daily erosivity equations
2. A correction to the KLSCP (K – erodibility factor, LS – slope length factor, C – cover and management factor, P – support practice factor) calculation in a pre-model data processing spreadsheet (reducing sediment and attached nutrient loads by a factor of 5.8)
3. A unit conversion correction to the 'Soil Test' total P Concentration (reducing current soil P values to approximately 20% of previous ones)
4. Use of CFSR rainfall, which generates time-series at the centroid of each VAHU6 watershed
5. Updated model simulation period from 1985-2003 climate data to 1995-2014 climate data
6. Inclusion of a channel erosion component (reported as part of total load only) based on daily flow, channel depth, perennial stream length, and other hydrologic unit characteristics for which data had not previously been available
7. Improved representation of area-based parameters for hydrologic units along the state's boundary, referred to as 'fringe' watersheds, through inclusion of their out-of-state drainage areas
8. Septic loads were removed from the urban load category and are only reported in the total loads and rankings
9. Parameter algorithms or values were revised for LS-factor (topographic), manure nutrients, and C-factors (cover management), to reflect updates from the literature and from expert panel analysis for the Phase 6 Chesapeake Bay watershed model

Model input data updates for the simulation period included:

1. Land uses from information compiled from the MRLC National Land Cover Database (NLCD), USDA-NASS cropland data layer, Ag census, VADCR, VDMME, VDOF, and CTIC
2. Farm animal numbers and corresponding manure generated
3. Version 5 of the 6th level hydrologic unit system for Virginia
4. Average soil K factors (soil erodibility) (with inclusions) by updated land uses by updated hydrologic units
5. Soil Phosphorus (P) content from more recent and more resolute Virginia Tech Soil Testing Lab results
6. BMP generalized pass through factors from information provided by localities, VADCR, and NRCS

Hydrologic calibration was performed using the observed conditions at 113 monitoring sites across Virginia as assembled by the CBP Office primarily from the USGS and the VADEQ for the CBWM. Calibration watersheds were created that corresponded to these monitoring station points and were as consistent as possible with existing NWBD unit boundaries. There are portions of Virginia that are

downstream of these monitoring sites, however, that could not be calibrated in this manner. To calibrate the model for these portions of the state, the BSE defined six physiographic regions covering Virginia. Regions were comprised of aggregated 6th level NWBD units that were adjusted to coincide with the aforementioned calibration points. A limited set of parameter values were then modified by region during the calibration process of the upstream calibration watersheds until flows simulated by the GWLF model output were sufficiently similar to the observed data. Final parameter values per region were then assigned to the downstream portion of each region. The GWLF assessment runs used and produced data for the 6th level hydrologic units (1237 units) in Virginia; 11 other units that are all water and three small units added to the hydrologic unit system after model calibration were not modeled. GWLF assessment runs in 2016 used a land use / land cover data set developed by VADCR from a number of sources[6] to represent 2012 conditions. The 2012 conditions were simulated to align with dates of the latest land cover data and agricultural census (2012) data available when the 2016 NPS Assessment occurred.

Table 5-7 lists the land use classification system used in the GWLF assessment runs and the equivalent generalized model output land use classes. Spatially attributed BMP and nutrient management plan effects are measured as both land use changes[7] to the aforementioned 2012 land use/land cover data set and as fractional reductions to the loadings by modeled land use.

Table 5-7 Land Use Classification

Original Class	Derived Class	Modeled Class	NPS Assessment
Pine Forest Hardwood Forest Mixed Forest		Forest	Forest
Forest Harvest		Disturbed Forest	
Crop Bare Soil (Portion)	Conventional Tillage Conservation Tillage Hay Unimproved Pasture Pasture Cattle-Grazed Pasture Poultry Litter Manure Acres	Conventional Tillage Conservation Tillage Hay Unimproved Pasture Pasture Cattle-Grazed Pasture Poultry Litter Manure Acres	Agriculture
Pavement Rooftop		Impervious Urban	Urban
Residential/Industrial Grassland Bare Soil (Portion)		Pervious Urban	
Natural Barren Extraction		Barren	
Open Water Salt Marsh		Not Modeled	

Output from the GWLF assessment runs are in the form of average annual loads (L) of each NPS

[6] The base spatial layer for the 2012 land use / land cover data set was the 2011 NLCD. Agricultural uses were modified using the USDA 2012 Census of Agriculture and the 2012 USDA NASS, as well as tillage practice surveys by VADCR (2015) and the National Crop Residue Management Survey (2007) from the CTIC. Barren classes were modified using data from the VDMME. Disturbed forest was determined with the help of VDOF timber harvesting data. Additional classes were based on processes developed for VADCR by The Academy of Natural Sciences of Philadelphia (1997) using data from Virginia's confined animal databases.

[7] It was not necessary to change the land use to represent land use change NPS BMPs in this assessment because they were already captured in the source data.

pollutant (p: TN, TP, and TS) per modeled land use[8] per unit. From this, two forms of unit area loads were calculated – per hectare (h) of general output land use class (l: agriculture, urban, and forest) per hydrologic unit (w) load (luUAL) and per hectare of total modeled land (a) per hydrologic unit (w) load (UAL).

The luUAL value is preferable to the load values themselves when comparing the loading impacts of the individual output land use classes between hydrologic units. They are normalized in that the size of the hydrologic unit does not impact this value. This measure can isolate high loading rates of the general land use classes. It is calculated as:

$$luUAL(plw) = L(plw) / h(lw)$$

While the above calculation is useful it does not necessarily identify those hydrologic units in which NPS reduction activities should be focused[9]. Therefore, the UAL was used for ranking hydrologic units in this assessment report but significant luUAL values were used in flagging units in need of attention. The UAL per output land use class per pollutant for each hydrologic unit is calculated as follows:

$$UAL(plw) = L(plw) / h(aw)$$

The output loadings provide a statewide equivalent of the types of results that Virginia has been able to obtain from the CBWM for the Chesapeake Bay drainage area of the Commonwealth over the last twenty seven years. Table 5-2 reports the final statewide loadings by pollutant by general land use class and the amount of land in Virginia by general land use class. Loading values in this table reflect the loads after the reductions are applied from active BMPs installed over the previous sixteen years

[8] Not all possible land uses were modeled (see Table 5-7). The area of a particular unit as used in these calculations would not include the hectares of non-modeled land uses occurring in that unit.

[9] For instance, units with high loading rates for agricultural land may have only a small amount of this land use and therefore small total loads of pollutants from agricultural uses. Furthermore, any action (if possible) in any year could encompass all reasonable reduction activities, thus making this hydrologic unit less worthy of further attention.

CHAPTER 6 GROUNDWATER PROTECTION PROGRAMS/ASSESSMENT

Groundwater programs in Virginia strive to maintain existing high quality water through adopted statutes, regulations, and policies. Advancing groundwater protection efforts is the goal of many programs in numerous state agencies. The 2010 USGS Water Use report (https://pubs.usgs.gov/circ/1405/) estimated that approximately 1.65 million Virginians depend on groundwater for their domestic supply. Approximately 3 out of every 10 Virginians use groundwater from public water supplies, private wells, or springs for their daily water supply. While Virginia's groundwater is generally of good quality, both the quality and quantity can vary across the five physiographic provinces found in the state. Reliance on groundwater is also highly variable across the state, depending on a variety of geographic, geologic, and socioeconomic factors.

General groundwater quality information by physiographic province:

Cumberland Plateau
Geology: Sedimentary rock yielding groundwater of varying quality
Pollution Potential: Moderate

Valley & Ridge
Geology: Sedimentary rocks including limestone, dolomite, and shale
Pollution Potential: High in limestone areas where groundwater moves rapidly
Management Efforts: documentation and some monitoring of quantity and quality of springs, some limited ambient groundwater quality sampling

Blue Ridge
Geology: Sedimentary, igneous, and metamorphic rock; well yields are low
Pollution Potential: High, because of rapid movement of water in fractures, joints, and bedding planes
Management Efforts: documentation and some monitoring of quantity and quality of springs, some limited ambient groundwater quality sampling

Piedmont
Geology: Diverse geology with a wide range of groundwater quality and availability
Pollution Potential: Low to moderate

Coastal Plain
Geology: Unconsolidated sand, clay, marl, and shell strata; groundwater is abundant and use is high
Pollution Potential: High, due to geology and population density
Management Efforts: monitoring of water quality parameters by permittees, limited documentation and monitoring of quantity and quality of springs, some ambient groundwater quality sampling, chloride monitoring strategy

The organizational objective of DEQ's Groundwater Characterization Program (GWCP) is to protect Virginia's environment and promote the health and well-being of its citizens by collecting, evaluating, and interpreting technical information necessary to manage groundwater resources of the Commonwealth. The Commonwealth is divided into three regions to include the Coastal Plain, Piedmont-Blue Ridge, and Valley-Plateau. Each region has a staff geologist assigned to it. Staff assures that necessary information is available to support resource management decisions, water supply planning activities, groundwater availability, drought monitoring, and support the expansion or creation of groundwater management areas. Staff in this program also has responsibility for monitoring and maintaining the 225 wells in the State Observation Well Network. Staff are active participants in outreach and educational opportunities in order to increase public awareness of the wide range of issues affecting Virginia's water resources.

Initial efforts include cooperation with other state and federal agencies involved with groundwater related activities to compile historical water well construction, withdrawal, and water quality data into a GIS database as well as develop procedures to automate the acquisition of new data. Long range goals include expansion of the State Observation Network west of the fall line and publication of regional groundwater resources reports.

The following paragraphs briefly describe groundwater protection activities in the Commonwealth. Information provided in Tables 6-1, 6-2, 6-3, 6-4 and 6-5 is presented for the Commonwealth as a whole.

Regional Groundwater Reports

State Water Control Board (SWCB) geologists compiled 18 groundwater resources reports to document the availability, utilization rates, and water quality of groundwater resources within selected counties and political sub-regions of Virginia. These reports continue to be the only readily available source of information pertaining to the occurrence, movement, and availability of groundwater for a large number of the areas initially investigated. Although the majority of these historical reports are out of print, the reports are available electronically:
http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/GroundwaterCharacterization/ReportsPublications.aspx

Current descriptions of the regional groundwater conditions in the Shenandoah Valley and Blue Ridge Geologic Province have been documented in two recently authored reports by Groundwater Characterization staff. Groundwater Resources of the Blue Ridge Province, Virginia (VDEQ OWS Technical Bulletin 12-01) and Water Use in the Shenandoah Valley, Virginia 1982-2010 (VDEQ OWS Technical Bulletin 12-02) are available electronically:
http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/GroundwaterCharacterization/ReportsPublications.aspx.

Database Integration

DEQ's Office of Water Supply has taken significant steps since the last Integrated Report (IR) to integrate its legacy databases into a common, geo-referenced content management system. To date, water withdrawal reporting, water withdrawal permit data, private well registration and well construction data, and local water supply planning data, have been migrated to this new system. Full integration is anticipated by the end of 2018. The databases described below are relevant legacy data sets that have been migrated.

Statewide Well Construction Database

One of DEQ's goals is to merge the various sources of historical and new well information into one statewide database that can be used for regional analysis of groundwater aquifer systems. Major challenges to this goal include managing data duplication and disparities among multiple data sets and quantifying location accuracy. Efforts to sort and merge this data were completed in 2010: http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/GroundwaterCharacterization/WellDatabase.aspx. Since 2010, the database has grown from about 35,000 wells to nearly 57,000 wells. Additional wells have originated from a number of data sources including digitized data from water well drillers, the VDH VENIS and SDWIS databases, county specific well databases, and project specific data collected and entered into the database. Despite this database being the largest of its kind in Virginia, it is representative of a fraction of the millions of wells that have been drilled throughout the State. Most wells in Virginia have been and continue to be documented by a paper well completion report, unavailable electronically. The hydrologic conditions encountered by the driller will likely never be incorporated into a georeferenced database that could be utilized to better understand local hydrogeologic conditions. For this reason, DEQ continues to encourage the development of a streamlined process for accurately reporting the location and construction details of newly completed wells in a digital format.

In 2015, the General Assembly amended the Ground Water Management Act of 1992 to require that all new private wells constructed in a Groundwater Management Area must be registered with DEQ. This requirement became effective on July 1, 2016. A number of improvements have occurred with this legislation. DEQ and VDH have worked together on a common set of well construction information to be collected from well drillers and have linked their database tools. DEQ also established an on-line well registration program that allows well drillers to enter the agreed upon information into the on-line database. In addition to these new wells in the Coastal Plain some well drillers are also entering their legacy well construction data and data for wells from outside the GWMA.

Statewide Legacy Geochemical Database

Staff compiled a master database of legacy ambient water quality data of waters from wells and springs throughout the Commonwealth in 2010. In 2014 the database was revised to describe additional geochemical and field collected parameters and to accept recently acquired ground water sampling data from ambient groundwater monitoring efforts. Ambient water quality data comprising this database includes major ion geochemistry, trace elements, nutrients, radiologicals, and field parameters. Nearly 17,000 samples taken from approximately 8,500 geo-referenced wells and springs are currently in the data set. When combined with location data, ambient water quality samples from wells and springs provide valuable information about the background concentrations of naturally occurring ionic constituents and field parameters of groundwater flow systems. In addition to their value in describing the geochemical conditions within natural groundwater flow systems it is anticipated that these data will be used by municipalities, consultants, and state and federal agencies for a wide variety of applications such as determining the extent and magnitude of elevated ionic concentrations (above background levels) due to groundwater contamination from anthropogenic sources, for predicting chemical and biological interactions due to the contamination of groundwater, and for optimizing well placement to insure high quality drinking water for private residences and municipalities.

Statewide Legacy Spring Database

Since the last IR, staff created a statewide spring database that it continues to maintain and add data. See: http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/GroundwaterCharacterization/SpringDatabase.aspx. This database is the most comprehensive of its kind in Virginia. The database contains basic information necessary to understand regional water resources in such complex terrains as the carbonate aquifers of western Virginia. These data have value to other programs in DEQ such as Pollution Response and Petroleum Storage Tanks that deal with subsurface contaminant transport and has recently been integrated into the development of certain TMDL studies in the Shenandoah Valley. Working agreements, standardized forms and definitions have been developed by staff that have been used by field personnel in sister agencies such as DCR and DMMR in order to increase the rate of compilation of new springs into this central database containing spring locations, morphology, discharge, and basic geo-chemistry. There are currently nearly 3,000 spring visit entries (which could include quantification of spring discharge and measurement of basic water quality parameters), and 330 water quality samples for the 925 springs in the database.

State Observation Well (SOW) Program

The DEQ collects data on groundwater levels at 225 wells and the USGS collects data on groundwater levels at 142 wells in the USGS/DEQ Groundwater Level Monitoring Network. One hundred thirty one of the wells in the DEQ/USGS observation well network have been converted to real time monitoring with levels measurements stored once every 15 minutes and uploaded hourly to the USGS server using satellite telemetry technology. Data from the wells in the DEQ/USGS observation well network are published in the Annual Water Data Report: http://wdr.water.usgs.gov/. Currently, DEQ/USGS water level data are available on a USGS interactive map browser at

http://groundwaterwatch.usgs.gov/statemap.asp?sc=51&sa=VA. This network of wells provides real-time groundwater level data from multiple locations throughout the state. These data are becoming an increasingly important metric for regional water supply planning efforts and drought monitoring forecasts. The information provided by these wells is important for monitoring drought conditions, determining when groundwater recharge actually occurs, and monitoring the effects of groundwater withdrawal. Additionally, the groundwater level data collected cooperatively by DEQ and USGS contributes to the calibration of several groundwater flow models developed for management of the resource including the VAHydro-GW (coastal Plain aquifer system), VAHydro-GWES (Eastern Shore), and several small regional scale models built in the western part of the state.

Since 2010, 21 wells have been added to the state observation well network. All additions during this time have occurred in the Coastal Plain for the purpose of monitoring hydraulic heads in the multi-aquifer Coastal Plain groundwater system. In 2015, unused groundwater wells in Scott (Tennessee-Big Sandy River Basin) and Powhatan counties (James River Basin) were investigated with a borehole camera and geophysical logging system to determine their suitability for incorporation into the statewide groundwater level monitoring network. These wells have been flagged for incorporation into the state observation well network in the hard rock portions of Virginia and will be brought into the network as time and resources permit.

Geochemical Sampling Program Development

In 2013, staff developed an ambient groundwater quality monitoring strategy document to serve as a plan for characterizing groundwater geochemical conditions throughout the Commonwealth. The document describes the extent of currently available groundwater chemistry data, provides a rationale and methodology for a scientifically defensible distribution of sampling resources, and provides a cost analysis for the full implementation of the sampling strategy. Additionally, an annual implementation plan was developed detailing the portions of the sampling strategy in each geologic terrain that will be accomplished with respect to that fiscal year's budgetary considerations. The Virginia Ambient Groundwater Monitoring Strategy and the FY14 Ambient Groundwater Quality Monitoring Implementation Plan were finalized in November of 2013 after review and input from a variety of federal, state and private organizations and institutions. The strategy and FY2014 implementation plans can be viewed at http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/GroundwaterCharacterization/ReportsPublications.aspx.

Development of the strategy included testing and modification of sampling equipment and methodology in order to attain the highest sampling quality control possible in the range of geologic, hydrologic, and well construction conditions encountered throughout the state. Groundwater samples were obtained at selected wells and springs in Virginia during the 2013 calendar year and continue to be collected in accordance with the finalized 2014 implementation plan. A fiscal year implementation plan is available annually that details sampling activities for the period. In 2018, a compilation and analysis of groundwater sampling performed by staff in calendar years 2013 - 2016 will be made available to the public. This staff member is funded through the use of EPA section 106 funding.

EPA/DEQ/USGS Cooperative Studies

DEQ continues to cooperate with the USGS on a continuous effort to update and revise the hydrogeologic framework to better manage the groundwater resources of the Virginia Coastal Plain. Since the last IR, two significant hydrogeology studies have been completed and published. The first effort characterizes the hydrology and heterogeneous morphology of the Potomac aquifer sediments. The study concludes the regional behavior of these sediments as one aquifer rather than as three distinct sub-units. A USGS publication entitled, "Sediment Distribution and Hydrologic Conditions of the Potomac Aquifer in Virginia and Parts of Maryland and North Carolina" was published in 2013. https://pubs.usgs.gov/sir/2013/5116/. A second effort characterizes the hydrogeology of the Piney Point aquifer was initiated in 2013 to facilitate sound management of the Virginia Coastal Plain groundwater resource. Improved information on the Piney Point aquifer in the Virginia Coastal Plain is needed to

effectively plan for a sustainable water supply. Wells in the Piney Point aquifer in rural areas widely yield from 10 to 50 gallons per minute, whereas larger residential and municipal wells in developed urban and suburban areas yield as much as 400 gallons per minute. Two State Observation Wells and a core hole were completed in York County in 2015 to provide detailed hydrogeologic information on the productive limestone part of the Piney Point aquifer, and to help in assessing its geographic and hydrologic limitations as a water supply. A USGS publication entitled, "Hydrogeologic Framework and Hydrologic Conditions of the Piney Point Aquifer in Virginia" was published in 2017. https://pubs.er.usgs.gov/publication/sir20175041.

A third significant effort is a follow-up to the 2010 USGS publication "Groundwater-Quality Data and Regional Trends in the Virginia Coastal Plain, 1906–2007." A USGS publication entitled, "A conceptual framework and monitoring strategy for movement of saltwater in the coastal plain aquifer system of Virginia" was published in 2015. https://pubs.er.usgs.gov/publication/sir20155117 . This study provided a comprehensive review of chloride data in order to develop a conceptual monitoring strategy for tracking the movement of saltwater in the Coastal Plain aquifer system. The analysis is based on spatial relations between the saltwater-transition zone and 612 groundwater-production wells that were regulated during 2013 by DEQ. The vertical position and lateral distance and direction of the bottom of each production well's screened interval was calculated relative to previously published groundwater chloride iso-concentration surfaces. Spatial analysis identified 81 production wells completed in the Yorktown-Eastover and Potomac aquifers that are positioned in closest proximity to the 250-milligrams-per-liter chloride surface, and from which chloride concentrations are most likely to increase above the U.S. Environmental Protection Agency's 250-milligrams-per-liter secondary maximum-contaminant level. Monitoring potential withdrawal-induced movement of saltwater in the Virginia Coastal Plain aquifer system is needed to detect increases in chloride concentration before groundwater-production wells become contaminated.

All of the above studies were funded through the use of EPA section 106 funding.

Groundwater Withdrawal Permitting Program

The Virginia General Assembly enacted the Ground Water Act of 1992 (Act) and repealed the Ground Water Act of 1973. The Act establishes criteria for the creation of groundwater management areas and requires entities that withdraw more than 300,000 gallons of groundwater in any month to obtain a permit. Between 2009-2013, growing concerns over the impacts of increased water use by new or expanding withdrawals, overlapping cones of depression, and declining water levels in the Coastal Plain aquifers compelled the Board to consider expanding the Eastern Virginia GWMA to include all of the Coastal Plain east of I-95 in order to ensure comprehensive management of the aquifer system. Modifications to the Groundwater Withdrawal Regulations accompanied the expansion, effective January 1, 2014, codified the criteria for the declaration of GWMAs and for the issuance of groundwater withdrawal permits to withdrawers of groundwater in excess of 300,000 gallons per month in a declared GWMA. Over 100 existing user permit applications were received during 2014 as a result of the Eastern Virginia GWMA expansion. Through 2016, 53 Existing User Groundwater Permits were issued. Of those 82 facilities, 34 elected to prepare and submit a Water Conservation and Management Plan, which exceeds the current requirements of the permitting process.

In addition to the expansion of the EVGWMA, the Virginia Coastal Plain Groundwater Initiative was developed in 2014, in response to ongoing and long-term decline of groundwater levels, head loss, and growing concerns about associated land subsidence and salt water intrusion in the Coastal Plain aquifer system. In order to achieve the goal of protecting the aquifer system and providing for current and future water needs for the Commonwealth, DEQ began negotiating with the largest 14 groundwater users about potential reductions in water withdrawals, which, if implemented could begin stabilizing the groundwater level declines in the aquifer. Combined, these users represent approximately 87% of all groundwater withdrawals within the GWMA. The Initiative has resulted in 12 permits issued and 2 draft permits being developed and put on public notice. The combined result of these negotiated permits is a 52% reduction in Potomac Aquifer withdrawals and allocations. This represents a reduction in total permitted volume

allocated from the Potomac Aquifer nearly 70 MGD. DEQ continues to work on issuing concluding the issuance process for the final 2 facilities.

In 2015, the Virginia General Assembly enacted a bill creating the Eastern Virginia Groundwater Management Advisory Committee. This committee was charged with advising DEQ, the Governor, and the General Assembly on steps that could be taken to maintain the long term availability and productivity of the Coastal Plain aquifer system. The Committee's report will be submitted in November 2017.

Storage Tank Compliance Program

The Registration Program tracks ownership and technical information for some 80,000 active and closed Underground Storage Tanks (USTs) and some 16,000 active and closed Aboveground Storage Tanks (ASTs) in the Commonwealth. As of 2016 there are some 5,900 active UST facilities and some 4,000 active AST facilities in the state. Each year the program receives over 2,000 registrations that report new tanks, tank closures, and amendments to existing tank information, such as changes of ownership. DEQ and the public use the registration information to determine the identity of persons responsible for pollution prevention measures and cleanup of releases.

The AST Compliance Program regulates AST facilities of 25,000 gallons or greater that store oil. Nearly 1.4 billion gallons of oil are stored in the active regulated AST facilities across the Commonwealth. Through facility inspections, the program seeks to ensure that Virginia's AST facilities have measures in place to prevent releases and to respond quickly and effectively if releases occur.

The UST Compliance Program regulates USTs larger than 110 gallons that contain regulated substances, which include most petroleum products. Over 169 million gallons of regulated substances are stored in the 18,000 active USTs across the Commonwealth. Through tank inspections, the program seeks to ensure that USTs in the Commonwealth have measures in place to prevent releases and to have immediate notice of actual releases.

On August 8, 2005, President Bush signed H.R. 6, the Domenici-Barton Energy Policy Act of 2005. In Title 15 of the Act are amendments to Subtitle I of the Solid Waste Disposal Act addressing the regulation of underground storage tanks (primarily petroleum). Based upon EPA guidelines, DEQ revised its regulations on September 15, 2010 to incorporate UST secondary containment, delivery prohibition and operator training requirements. In 2015 EPA updated the federal UST regulation and DEQ is currently updating the DEQ regulation 9VAC25-580 accordingly to be effective in late 2017.

The existing State Water Control Law (§62.1-44.34:9(2) & (8)) requires DEQ to carry out its powers and duties with regard to underground storage tanks in accordance with applicable federal laws and regulations.

Storage Tank Remediation Program

The Remediation Program directs the investigation and cleanup of petroleum-contaminated sites managed by responsible parties. The DEQ ensures that appropriate emergency response, initial abatement measures, site investigation and site remediation are performed by the responsible party. The DEQ also authorizes activities eligible for reimbursement from the Virginia Petroleum Storage Tank Fund.

The DEQ will conduct investigation and cleanup of high-priority petroleum contaminated sites in instances where the responsible party is unknown or financially unable to undertake the required work. Through a number of contractors, the DEQ conducts emergency response, initial abatement measures, site investigation and site remediation.

The DEQ also provides immediate, interim, and permanent relief to individuals whose drinking water wells have been rendered unusable by petroleum contamination. Through a DEQ contractor, carbon filtration units (CFUs) are installed and maintained on contaminated wells until a permanent solution is

implemented. Permanent solutions typically include extension of an existing public water supply or installation of a new well free from petroleum contamination.

More than 9,200 site cleanups were completed from January 2009 through December 2014. Average cleanup time and average cleanup costs per site are among the lowest in the nation. From the inception of the program through December 2014 DEQ has overseen over 35,000 cleanups.

Office of Financial Responsibility and Waste Programs

The DEQ's Office of Financial Responsibility and Waste Programs implements the requirements for groundwater monitoring and corrective action as originally defined under Subtitle D of the Resource Conservation and Recovery Act (RCRA). Funding for the program comes from the Commonwealth's General Revenue augmented by permit fees. All groundwater data are collected by the solid waste facilities and their consultants and reviewed by DEQ staff for adherence to regulatory requirements under 9 VSWMR 20-81-250 and 260.

Information provided in Table 6-4 Solid Waste Landfill Corrective Action category was derived for the sites in Virginia's Solid Waste Corrective Action universe, as reported through December 2016. More than 100 sites have been identified as having the potential for impacts on human health and the environment by exceeding one or more of their groundwater protection standards. In cases where groundwater monitoring detects exceedences above groundwater protection standards (such as EPA's Maximum Contaminant Levels for drinking water), facilities are required to implement clean-up measures under a process called groundwater Corrective Action. As shown in Table 6-4, the number of sites which have implemented groundwater Corrective Action across the Commonwealth is 59. To date, two landfill sites have met their groundwater clean-up goals and have been allowed to terminate corrective action.

Office of Remediation Programs

Included in Table 6-4 are groundwater contamination statistics from the DEQ's Office of Remediation Programs (ORP). ORP consists of the Federal Facilities Restoration Program, Superfund Program, Voluntary Remediation Program, Site Assessment Program, and the Brownfields Program. The Federal Facilities Restoration (FFR) Program includes 44 Army, Navy, Marine Corps, Air Force, Defense Logistics Agency, Federal Aviation Administration, and NASA installations and 12 Formerly Used Defense Sites (FUDs). Currently 12 Federal Facilities and 1 FUDs site are listed on the National Priority List (NPL). The mission is to clean up contaminated sites at military installations through a partnering team process. The Department of Defense, NASA, and the EPA support the program. To date, three Federal Facilities have achieved the basewide construction completion milestone – all remedies are in place and functioning as intended. The Superfund Program, funded with both Federal and State dollars, carries out investigation and cleanup activities required by law or legal agreements at 23 NPL sites. Four of these sites have now been cleaned up and delisted. The Voluntary Remediation Program (VRP) provides a mechanism for eligible participants to voluntarily clean up properties not mandated for remediation under existing environmental laws. This program serves as a mechanism for cleanup of brownfields sites. There are over 122 sites undergoing active remediation and over 312 sites which have completed cleanup and reached closure. A combination of program enrollment fees (user fees) and EPA grant funding supports the Voluntary Remediation Program. The Site Assessment Program (SAP), supported by EPA, is designed to assess potential CERCLA sites for inclusion on the NPL. The DEQ's Brownfields Program, also supported by a combination of state funds and EPA grant funding, provides incentives to owners and/or developers of potential brownfield sites to promote the redevelopment and reuse of these underutilized properties. The Brownfields program has assisted with the redevelopment and reuse of over 120 sites in Virginia in the last three years. None of these five programs currently collect groundwater quality data; however, they do receive and review data collected by outside sources.

Hazardous Waste Groundwater Activities

Throughout the reporting period from Jan 1, 2009 – Dec 31, 2014, the DEQ implemented the requirements for groundwater monitoring and corrective action as specified by the Resource Conservation and Recovery Act (RCRA). Funding for the program activities comes from an EPA grant covering hazardous waste management activities such as permitting, closure and corrective action, as well as compliance and enforcement. The grant does not cover data collection, with the exception of quality control samples. All groundwater data are collected by the hazardous waste facilities and their consultants, and are reviewed by DEQ staff for adherence to regulatory requirements.

Under RCRA, groundwater quality is evaluated at both permitted and un-permitted facilities that have land-based units for the treatment, storage and disposal of hazardous waste. Permitted sites have to meet strict operational requirements to eliminate or minimize the risk of impacts on human health and the environment. Permits include contingency requirements mandating clean-up in case of a release of hazardous waste from a regulated unit or as identified during the site-wide RCRA Corrective Action process. Un-permitted sites are sites where operation has ceased and the facility is in the process of removing and/or decontaminating contaminated media (closure), sites where a permit is about to be issued, or sites where RCRA Corrective Action is being undertaken under an Order or agreement with EPA or DEQ. The information in the RCRA Corrective Action category in Table 6-4 has been combined into one reporting metric including both permitted and un-permitted sites.

Information provided in the Table 6-4 RCRA Corrective Action category was derived for all the sites in Virginia's 2020 Corrective Action universe, as identified by EPA. These sites, currently numbering 121, have been previously identified as exhibiting or having the potential for impacts on human health and the environment. The number of future additions to the Corrective Action universe is expected to be small.

Most facilities have more than one waste management unit, and all units need to be evaluated for potential impacts and undergo remediation if necessary. All sites are currently in various stages of evaluation, site clean-up, or have met performance standards. To date, groundwater impacts were identified at 55 sites. For an additional 64 sites, it was determined that groundwater has not been impacted or performance standards have been met through the cleanup process. For the remaining 2 sites, additional investigation will be required.

At the 55 sites where groundwater monitoring has detected exceedances above applicable groundwater protection standards (such as EPA's Maximum Contaminant Levels for drinking water), facilities are required to implement clean-up measures. Corrective action plans for interim and/or final measures to remediate impacted groundwater have been developed for 48 sites. More detailed information for each site as well as an interactive map of Virginia facilities in the RCRA Corrective Action program can be found on DEQ's web site at http://deq.virginia.gov/Programs/LandProtectionRevitalization/RemediationProgram/RCRACorrectiveAction.aspx or on EPA's Corrective Action page at https://www.epa.gov/hwcorrectiveactionsites/corrective-action-programs-around-nation.

Source Water and Wellhead Protection Efforts

The Commonwealth and its localities work together to manage and protect water resources to meet long-term human and environmental needs. Protecting the quality of drinking water sources by preventing and reducing contamination is one of the best approaches to ensuring drinking water supply sustainability. The Virginia Department of Environmental Quality (DEQ) and the Virginia Department of Health-Office of Drinking Water (VDH-ODW) have a long history of cooperating on programs to develop and implement source water protection in the Commonwealth. In 2013, VDH-ODW worked with a firm to create a customized reporting tool into ArcGIS which organizes and manages source water data, which allows effective collaboration with waterworks to improve Source Water Assessment data. To further the agencies goal of source water protection, a number of programs are available to assist in these

efforts. The Source Water Protection Plan Development and Implementation Assistance is available for community waterworks that serve less than 50,000 people and process water directly from a drinking water supply source. DEQ is a partner with VDH-ODW in procuring contractors to develop these plans. VDH-ODW offers direct technical assistance to waterworks not already working with one of the source water protection contractors in the form of GIS maps and reports, source water protection plan templates, and other resources. Since 2005, VDH-ODW has been collaborating with DEQ to offer Wellhead Protection Implementation Project Grants for local wellhead protection implementation projects. This funding is available to localities or service authorities who own or operate a community waterworks, process drinking water directly from a groundwater supply source, have a protection strategy in place, and have an active source water protection committee. Additional information can be found at http://www.vdh.virginia.gov/drinking-water/source-water-programs/.

Table 6-1 Public Water Supply Systems and Population Served from Virginia's Source Water Assessment and Protection Reporting (June 1, 2017)

Total Number of Public Water Supply (PWS) systems	2,757
Total Number of GW-Dependent PWS Systems	2,432
Total Number of Community Water Supply Systems	1,119
Total Number of GW-Dependent Community Water Supply Systems	805
Total Population Relying on Community Water Supply Systems	6,970,183
Total Population Relying on GW-Dependent Community Water Supply Systems	496,411
Total Number of GW-Dependent Non-Transient Non-Community PWS Systems	514
Total Number of GW-Dependent Transient Non-Community PWS Systems	1,113

Pesticide Collection Program

Virginia's Pesticide Collection Program assists agricultural producers, licensed pesticide dealers, pest control firms, golf courses and homeowners with the proper disposal of unwanted pesticides. The program is an effort by the Virginia Department of Agriculture and Consumer Services (VDACS), with participation from Virginia Cooperative Extension and the Division of Consolidated Laboratory Services.

Since its inception, Virginia's Pesticide Collection Program has collected and destroyed more than one million pounds of pesticides. To administer the Pesticide Collection Program, Virginia is divided into five regions. Each year, a pesticide collection program is conducted in a different region. Once all five regions have been served, the program will start another cycle. The Pesticide Collection Program requires participants to transport their unwanted agricultural and commercial pesticides to a central collection site where the hazardous waste disposal contractor will package the pesticides for eventual disposal. If a participant cannot safely transport unwanted pesticides, the program may make arrangements to containerize the pesticides for transport. Available at no cost to eligible participants, the program is supported by pesticide fees collected by VDACS. No general fund tax dollars are used to implement the program. VDACS is unable to provide funding for the Pesticide Collection Program in 2017 therefore this program has been suspended for one year. Additional information may be found at http://www.vdacs.virginia.gov/pesticide-collection.shtml.

Plastic Pesticide Container Recycling Program

Virginia's Plastic Pesticide Container Recycling Program is a free service that provides a convenient and environmentally friendly way to dispose of properly rinsed plastic pesticide containers. The program

is a cooperative effort among the Virginia Department of Agriculture and Consumer Services, Virginia Cooperative Extension and local governments. The program is administered under national guidelines developed by the Ag Container Recycling Council. Since its inception in 1993, this program has recycled close to 1.5 million pounds of plastic pesticide containers. Containers are granulated by a contractor with assistance from VDACS and local personnel. Granulated chips are transported to recycling facilities and fabricated into items such as pallets, fence posts, field drain tiles and parking stops.

The Plastic Pesticide Container Recycling Program addresses a challenge for agricultural producers and custom applicators. Typically, pesticide applicators dispose of their empty, clean plastic pesticide containers by hauling them to the local sanitary landfill. Recycling is an environmentally responsible alternative for the disposal of properly rinsed plastic pesticide containers. Granulated chips are transported to recycling facilities and fabricated into items such as pallets, fence posts, field drain tiles and parking stops thus keeping them out of landfills and reducing the potential for contamination from improperly rinsed containers which have either been landfilled or disposed of improperly.

To participate in the Program, a locality must make application to VDACS and agree to collect, inspect and store the properly rinsed containers until granulation. VDACS provides per locality reimbursement costs annually to participating localities to offset the cost of the program. This program is funded through OPS program fees. Additional information may be found at http://www.vdacs.virginia.gov/pesticide-container-recycling.shtml.

Groundwater Protection Programs - Conclusion

Groundwater programs in Virginia strive to maintain the existing high water quality. Groundwater protection activities in the Commonwealth are as varied as the funding sources that support them. The following tables provide additional information.

Table 6- 2 Primary Sources of Groundwater Contamination

Contaminant Source	Ten Highest-Priority Sources(√)	Factors Considered in Selecting a Contaminant Source	Contaminants
Agricultural Activities			
Agricultural chemical facilities			
Animal feedlots			
Drainage wells			
Fertilizer applications	√	State GW Protection Strategy	(E)
Irrigation practices			
Pesticide applications	√	State GW Protection Strategy	(A,B)
Storage and Treatment Activities			
Land application	√	State GW Protection Strategy	(E)
Material stockpiles			
Storage tank (above ground)			
Storage tank (underground)	√	State GW Protection Strategy	(D)
Surface impoundments	√	State GW Protection Strategy	(E)
Waste piles			
Disposal Activities			
Landfills	√	State GW Protection Strategy	(M) 40 CFR-App IX
Septic systems	√	State GW Protection Strategy	(J)
Hazardous waste generators			
Hazardous waste sites			
Industrial facilities			
Material transfer operations			
Other Activities			
Mining and mine drainage	√	State GW Protection Strategy	(M) Acid Leachate
Pipeline and sewer lines			
Salt water intrusion	√	State GW Protection Strategy	(G)
Urban runoff	√	State GW Protection Strategy	(M) NPS pollutants such as fertilizers & heavy metals

A-Inorganic Pesticides
B-Organic Pesticides
C-Halogenated Solvents
D-Petroleum Compounds
E-Nitrite
F-Fluoride
G-Salinity/Brine
H-Metals
I-Radionuclides
J-Bacteria
K-Protozoa
L-Viruses
M-Other

Table 6-3 Summary of State Groundwater Protection Programs

Programs or Activities	Check (√)	Implementation Status	Responsible State Agency
Active SARA Title III Program	√	fully-estab.	DEQ
Ambient groundwater monitoring system	√	Initiated program	DEQ
Aquifer vulnerability assessment			
Aquifer mapping			
Aquifer characterization	√	cont. efforts	DEQ
Comprehensive data management system	√	cont. efforts	DEQ
EPA-endorsed Core Comprehensive State Groundwater Protection Program (CSGWPP)			
Groundwater discharge permits (VPA)	√	fully-estab.	DEQ
Groundwater Best Management Practices			
Groundwater legislation (Quantity)	√	fully-estab.	DEQ
Groundwater classification			
Groundwater quality standards	√	fully-estab.	DEQ
Interagency coordination for groundwater protection initiatives	√	fully-estab.	DEQ/VDH/VDACS
Nonpoint source controls	√	cont. efforts	DCR/DEQ
Pesticide State Management Plan (Generic)	√	fully estab.	VDACS
Pollution Prevention Program			
Resource Conservation and Recovery Act (RCRA) Primacy	√	fully-estab.	DEQ
Source Water Assessment Program	√	fully-estab.	VDH
State Superfund			EPA primacy
State RCRA Program incorporating more stringent requirements than RCRA Primacy			
State septic system regulations	√	fully-estab.	VDH
Underground storage tank installation requirements	√	fully-estab.	DEQ
Underground Storage Tank Remediation Fund	√	fully-estab.	DEQ
Underground Storage Tank Permit Program	√	fully-estab.	DEQ
Underground Injection Control Program			EPA primacy
Well abandonment regulations	√	fully-estab.	VDH
Well installation regulations	√	fully estab.	VDH/DEQ

Table 6-4 Groundwater Contamination Summary

Aquifer Description Commonwealth of Virginia

Data Reporting Period January 1, 2009 - December 31, 2014

Source Type	Present in reporting area	Number of sites in area	Number of sites that are listed and/or have confirmed releases	Number with confirmed groundwater contamination	Contaminants	Number of site investigations (optional)	Number of sites that have been stabilized or have had the source removed (optional)	Number of sites with corrective action plans (optional)	Number of Sites with active remediation (optional)	Number of sites with cleanup completed (optional)
NPL		23	23	16	(A), (B), others	23	17	20	20	4
CERCLIS (non-NPL)		200+	< 150	< 80	PAHs, VOCs SVOCs, metals					
Voluntary Remediation		711	711	650+	(A) & (B), others		350+			312
Federal Facilities Restoration(NPL)		13	13	13	(A), (B), others	13	13	13		
Federal Facilities Restoration (nonNPL)		31	18	18	(A), (B), others	18	18	18		
Leaking UST & AST as of Dec 2014		37,078	37,078		petroleum hydrocarbons				1,396	35,684
RCRA Corrective Action	PERMITTED (includes state and federal permits) and UNPERMITTED (closing, permit to be issued, or remediating under alternate mechanism	121	121	55	(A), (B), others	121		48		64
Solid Waste Landfills	Permitted and unpermitted (monitoring under enforcement action)	201 (total) 193 permitted 8 unpermitted	Not Applicable	84	VOCs, SOCs, metals	24	Not Applicable	60		6
State Sites										
Nonpoint Sources										
Other (specify)										

Source Type Abbreviations

NPL - National Priority List (DEQ staff: K.Doran)

CERCLIS (non-NPL) - Comprehensive Environmental Response, Compensation, & Liability Information System (DEQ staff: D.Harris)

Voluntary Remediation (DEQ staff: M. Anderson)

Federal Facilities (DEQ staff: K.Doran)

UST & AST- Underground Storage Tanks & Above ground Storage Tanks (DEQ staff: B.Lamp)

RCRA - Resource Conservation & Recovery Act (DEQ staff: B. Fisher)

Solid Waste Landfills (DEQ staff: L. Beckwith)

Contaminant Type

(A) listed and characteristic hazardous waste

(B) metals, halogenated organics, POL, PCB, Pesticides

Table 6-5 Aquifer Monitoring Data

Hydrogeologic Setting [1] Commonwealth of Virginia

Spatial Description (optional) [2] NA

Map Available (optional) [3] NA

Data Reporting Period [4] January 1, 2009 - December 31, 2014

Monitoring Data Type	Total No. of Wells Used in the Assessment [5]	Parameter Groups	Number of Wells								
			No detection of parameters above MDLs or background levels		Nitrate concentrations range from background levels to less than or equal to 5 mg/l No detection of parameters other than nitrate above MDLs or background levels and/or located in areas that are sensitive or vulnerable		Nitrate ranges from greater than 5 to less than or equal to 10 mg/l Other parameters are detected at concentrations exceeding the MDL but are less than or equal to the MCLs [10]	Parameters are detected at concentrations exceeding the MCLs [11]	Number of wells removed from service [12]	Number of wells requiring special treatment [13]	Background parameters exceed MCLs [14]
			ND [6]	Number of wells in sensitive or vulnerable areas (optional) [7]	Nitrate ≤5mg/l VOC, SOC, and other parameters not detected [8]	Number of wells in sensitive or vulnerable areas (optional) [9]					
Finished Water Quality Data from Public Water Supply Wells	3,473	VOC	7,178								
		SOC [15]	3,754								
		NO_3	8,742		669						
		Other [16]									

These numbers are provided by the Virginia Department of Health, Office of Drinking Water (J.Vivas). Data is given for wells associated with mixed systems (surface and groundwater) and groundwater based systems. SOC data is limited due to waiver programs and no detections in systems that were monitored. VOC and SOC data may be incomplete due to optional data entry requirements in VDH field offices. MCL exceedence information required additional work that VDH staff limitations prevented. Software modernization efforts underway at EPA may make providing this information in future reports an easier task.

Column 5: Total number of wells (3,473) is a subset of sample results for VOC, SOC, and NO. There may be multiple sample results for a single well.
Column 6: No detections for NO3 analysis (8,742) is a combined total of sample results for contaminants 1038 and 1040.

CHAPTER 7 WATER QUALITY PROGRAMS

"The objective of the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands."–US EPA

This chapter provides an overview of DEQ's on-going commitment to the protection of water quality.

CHAPTER 7.1 WATER POLLUTION CONTROL

Virginia Pollutant Discharge Elimination System (VPDES)

The Commonwealth of Virginia has operated a successful state discharge permit program since 1946. The Federal Water Pollution Control Act (the Clean Water Act) was amended in 1972 to require a uniform permit program nationwide, allowing all states to uniformly control industrial and municipal wastewater discharges. Some states elected to have the federal government manage their permit program. Virginia requested delegation of authority from EPA to administer its own permit program in conformance with NPDES regulations. In April 1975, Virginia received the authority to administer the NPDES program as the VPDES permit program. The VPDES Permit Regulation, 9 VAC 25-31, establishes the procedures and requirements for this Program.

VPDES permits establish limits on the quantity and/or concentration of pollutants allowed in the discharge. The VPDES permits implement the applicable requirements of federal effluent guidelines, as well as the Virginia Water Quality Standards. Effluent limits are written to ensure that the most appropriate of these regulations is applied to the discharge. The permittee must monitor the quality of the effluent and report the results to DEQ. The permit also requires the facility to be properly operated and maintained.

Permits may also contain additional requirements detailed as "Special Conditions" in the permit. Examples of these special conditions are:

1. Pretreatment programs for publicly owned treatment works (POTW's) – requirements for the POTW to have the ability to control the discharges from contributing industries.

2. Stormwater pollution prevention plans.

3. Toxics Management Program – this program requires the permittee to perform aquatic toxicity testing on the discharged effluent to determine reasonable potential for toxicity.

4. Land Application of Sewage Sludge.

DEQ is also utilizing the concept of general permits to streamline the permitting process and conserve resources of both the permittee and DEQ.

<u>Individual Permits</u>

- *Municipal Facilities*

There are 574 Municipal discharges currently permitted in Virginia. The term municipal generally refers to facilities that treat predominantly domestic sewage and such facilities may be either publicly or privately owned. There are 475 "minor" municipal dischargers ranging in size from > 1,000 gallons per day and < 1 million gallons per day (mgd), and there are 99 "major" municipal discharges, ranging in size

from one to 75 mgd and treating about 95 percent of all the sewage in Virginia.

- Industrial Facilities

There are 300 industrial dischargers currently permitted in Virginia. The industrial category of discharge generally refers to the discharge of wastewaters generated by industrial activities such as factories, power plants, and other industrial activities. Of these, 40 are major facilities. Industrial facilities are assigned major and minor status through an agreement between EPA and DEQ.

General Permits

General permits are written for a general class of discharge with similar effluent characteristics. Virginia was granted general permit authority from EPA in May 1991. General permits have streamlined the VPDES permit process, and reduced the paperwork, time and expense of obtaining a permit and allow staff resources to be concentrated on individual permits. General permits are promulgated as regulations and usually require application for coverage through the submittal of a Registration Statement. The following DEQ-administered VPDES general permits are available in Virginia:

- Petroleum Contaminated Sites, Groundwater Remediation, and Hydrostatic Tests (VAG83)
- Stormwater Discharges Associated With Industrial Activity (VAR05)
- Non-Metallic Mineral Mining (VAG84)
- Domestic Sewage Discharges <= 1,000 GPD (VAG40)
- Noncontact Cooling Water Discharges (VAG25)
- Seafood Processing Facilities (VAG52)
- Vehicle Wash and Laundry Facilities (VAG75)
- Concrete Product Facilities (VAG11)
- Watershed Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed (VAN00)
- Pesticide Discharges (VAG87)
- Potable Water Treatment Plants (VAG64)
- Stormwater Discharges From Small Municipal Separate Storm Sewer Systems (MS4s) (VAR040)
- Stormwater Discharges From Construction Activities (VAR10)

The DEQ also administers Virginia Pollution Abatement (VPA) general permits for Concentrated Animal Feeding Operations and Poultry Waste Management.

There are more than 4898 dischargers in Virginia registered for coverage under the general permits (GPs) mentioned above, not including the Pesticide GP and the Construction GP. There are 2,764 active Construction GPs. The majority of the construction GP coverage is administered by localities under the Virginia Stormwater Management Program. Additionally, the Pesticide Discharges general permit does not require a discharger to register in order to be covered under the permit. Any operator that applies pesticides under one of the five pesticide use patterns (Mosquito and Other Flying Insect Pest Control; Weed and Algae Pest Control; Animal Pest Control; Forest Canopy Pest Control. and Intrusive Vegetation Pest Control) in, over or near surface waters in Virginia is automatically covered under the general permit.

Fees for Permits and Certificates

The 1992 General Assembly enacted Section 62.1-44.15:6 of Article 2.1 of the Code of Virginia, which established a fee assessment and collection system for permits and certificates. In response to this action, the SWCB adopted a water permit fee regulation, 9 VAC 25-20, which established fee schedules for permits and certificates. The assessment of fees allows DEQ to recover a portion of the cost of processing applications for permits or certificates which DEQ has the authority to issue. In 2002 the General Assembly amended and reenacted Section 62.1-44.15:6 of the Code of Virginia. These amendments increased the existing permit fees, and were intended to make the water permit program

"self-funding". The water permit fee regulation was modified to incorporate the amendments to the law, and the modification became effective on July 1, 2002. In 2004, the General Assembly again amended and reenacted Section 62.1-44.15:6 of the Code of Virginia, and made the increased fees permanent. The water permit fee regulation was modified again to incorporate the new amendments, and the changes became effective on July 1, 2004. The major change to the law and regulation was for VPDES and VPA individual permits. The reapplication fee was eliminated for these permits and replaced with an Annual Permit Maintenance Fee, which is to be paid by October 1st of each year. In 2010 the State Water Control Board adopted amendments to the Permit Maintenance Fees section of the Fee Regulation to address budget changes made by the 2010 General Assembly. The new permit maintenance fee schedule was effective August 18, 2010 and allows for an annual adjustment of the permit maintenance fees based on changes to the Consumer Price Index.

Fees have been established for VPDES, Virginia Pollution Abatement (VPA), Virginia Water Protection (VWP), Corrective Action Plan (CAP), Surface and Ground Water Withdrawals, and General Permits. Agricultural operations are exempt from payment of permit fees. Fees for VPDES permits range from $500 for a general permit to $24,000 for a VPDES “Industrial Major” permit. There are also fees for modifications and waivers.

Fees for VPDES permits for MS4s (both individual and general permits) and for registration under the VSMP Construction GP are found in the VSMP Regulation, 9 VAC 25-870.

Toxics Management Program

Requirements for toxics monitoring are written into VPDES permits as special conditions. These monitoring requirements are developed by the DEQ Toxics Management Program (TMP), which originated in the early 1980’s. The aim of the program is to involve all industrial and municipal VPDES permit holders that potentially discharge toxic pollutants into a systematic program of biological testing. This testing is designed to identify wastewater discharges that are toxic to aquatic life.

The need for a TMP is determined at the time of permit issuance, reissuance, or modification, using information provided by the permittee as part of the VPDES permit application, as well as additional data generated by the DEQ or other sources. Generally TMP special conditions include quarterly acute, or acute and chronic toxicity testing using vertebrate and invertebrate species. The duration of testing may be based on a time period with a regular frequency (e.g., quarterly testing for one year), an event prior to discharge, or until a certain number of tests have been performed. Once the TMP data have been generated for a particular outfall, they are evaluated for reasonable potential for toxicity. If the data do not show reasonable potential, the permittee may continue biological testing at a much-reduced frequency. However, if the data show reasonable potential, a Whole Effluent Toxicity (WET) limit is developed and put into the permit with a compliance schedule.

Pretreatment Program

Virginia’s Industrial Pretreatment Program controls industrial discharges to Publicly Owned Treatment Works (POTWs). These municipal sewage treatment plants are usually not designed to treat toxic industrial wastes. Such wastes may interfere with the plant’s biological treatment processes, pass through untreated into receiving waters or contaminate POTW sludge to the extent that lawful disposal is precluded. POTWs with industrial contributors should develop a Pretreatment Program and become the Control Authority. EPA delegated oversight and regulation of the POTW pretreatment programs to the DEQ on April 14, 1989.

These municipal sewage treatment plants are usually not designed to treat toxic industrial wastes. Such wastes may interfere with the plant’s biological treatment processes, pass through untreated into receiving waters or contaminate POTW sludge to the extent that lawful disposal is precluded. POTWs with industrial contributors should develop a Pretreatment Program and become the Control Authority. EPA delegated oversight and regulation of the POTW pretreatment programs to the DEQ on April 14,

1989.

Standards imposed on industrial users include general standards, prohibitive discharge standards, categorical standards, and local limits developed by POTWs. General standards are narrative prohibitions against pass-through and interference and are applicable to all industrial users. Prohibitive discharge standards are also applicable to all industrial users and include limitations on parameters such as pH and temperature, measured in industrial discharges. Categorical standards are federal technology-based standards developed for certain categories of industries discharging to POTWs. In addition, POTWs are required to develop local limits for substances that have the potential to cause interference with treatment or pass through in toxic amounts to receiving waters.

Pretreatment facilities are controlled through municipal ordinances and are required to self-monitor and report biennially to the municipality which reports to DEQ.

The Virginia Compliance Auditing System

The DEQ monitors the performance of municipal and industrial dischargers through a computerized compliance auditing system. Under the VPDES permit program, major facilities are required to submit monthly plant performance reports based upon self-monitoring of the parameters listed in the discharge permit. Minor facilities report on an individually assigned frequency. These discharge-monitoring reports (DMRs) indicate the quality of plant effluent and whether any bypasses have occurred. Data from DMRs are entered by the regional offices into DEQ's Comprehensive Environmental Data System (CEDS), which compares all parameters to permit limits or other permit conditions, or other orders to detect any violations.

When a permit or other enforceable violation is observed through CEDS, the system assesses weighting points according to the severity and frequency of the violation(s). In addition to the automatic detection of effluent violations through CEDS, compliance schedules, as well as other required due dates both in permits and enforcement actions, are also tracked through CEDS. Weighting points are also assigned for single event violations reported to DEQ by permittees, the public or other sources. All weighting point values are assessed and tallied for the previous six reporting periods. When accumulated values exceed specified limits, or any time a violation is observed which is determined to cause environmental harm, enforcement action may be initiated. Additional enforcement activity may result from problems discovered during on-site inspections.

The accumulated records of weighting point values are used as a tool to aid objective focus when determining appropriate enforcement activity. The program also ensures that permittees are fully aware of problems as they develop and have an opportunity to improve treatment in order to maintain compliance.

Virginia Pollution Abatement Permits

A Virginia Pollution Abatement (VPA) Permit may be issued by the DEQ whenever an owner handles wastes or wastewater in a manner that does not involve discharging to a sewage treatment facility or to state waters pursuant to a valid VPDES permit. The Virginia Pollution Abatement Permit Regulation (9 VAC 25-32) was adopted in 1996. Pollution abatement facilities approved through the VPA permit program may include pits, ponds, and lagoons for waste storage, treatment, or recycling. Permits are also required for on-site facilities, such as land treatment systems. The basis for approval for such systems includes assurance that waste or wastewater will not discharge directly into state surface waters except under prescribed extreme rainfall conditions, and for protection of ground water quality.

To address and gauge compliance with the state’s groundwater standards, whenever pits, ponds, lagoons, and/or land treatment is part of a proposed or VPA-permitted facility, a ground water monitoring program may be required as part of, or prior to, receiving approval for a VPA permit. Land application is a no-discharge alternative to conventional discharging systems. Land treatment is frequently a cost-effective alternative to direct discharge to surface waters, and can be a technically sound means of waste

or wastewater utilization.

Concentrated Confined Animal Feeding Operations

The DEQ animal waste program regulates farms under both the Virginia Pollution Abatement (VPA) Permit Regulation (9VAC25-32) and the Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation (9VAC25-31). An animal feeding operation (AFO) is a lot or facility where animals are stabled or confined for a total of 45 days or more in any 12-month period, and where crops or vegetative growth is not maintained in the normal growing season over the lot or facility. AFOs that confine more than 300 animal units of livestock and handle liquid manure are required to obtain coverage under either a VPA general or individual permit. The VPA Regulation and General Permit for AFOs and Animal Waste Management governs the management of animal waste by the farm and by those who receive the manure from the permitted farm. Poultry operations that confine more than 20,000 chickens or 11,000 turkeys must register for coverage under the VPA General Permit for Poultry Waste Management. The VPA Regulation and General Permit for Poultry Waste Management governs the management of poultry waste at confined poultry feeding operations and poultry waste utilized or stored by those who receive the poultry waste from the permitted farm including poultry waste brokers. Concentrated Animal Feeding Operations (CAFOs) are AFOs that meet a specific number and type of confined animals, certain CAFOs may be required to obtain a VPDES CAFO individual permit. Of the 1047 farms covered by a DEQ permit, there are 127 farms covered under the AFO general permit, 911 farms covered under the poultry waste general permit, eight farms covered by the VPDES CAFO individual permit and 1 farm covered by the VPA AFO individual permit.

VPDES Compliance Inspection Program

The DEQ Virginia Pollutant Discharge Elimination System (VPDES) Permit program, the Pretreatment program, the Virginia Pollution Abatement (VPA) Permit program, and the VPDES and VPA general permit program rely primarily on the concept of permittee self-monitoring and reporting for compliance determinations. To insure proper operation and maintenance of facilities and confirm self-monitoring information is representative and accurate, the DEQ conducts facility inspections as the principal form of regulatory compliance surveillance. The DEQ utilizes a risk-based protocol to identify facilities needing increased or decreased inspection frequency and/or complexity while using staff resources most effectively to accomplish inspection goals.

Inspection Program Objectives

The objectives of the inspection program are:

- to assure that facilities are in compliance with statutes, regulations, and permit requirements, thereby protecting the quality of state waters
- to improve facility performance by providing advice and assistance,
- to support permit development,
- to maintain a regulatory presence,
- to support administrative, civil, and criminal enforcement actions,
- to support development and implementation of the pretreatment program.

Each inspection of a wastewater treatment facility will not accomplish every objective but most inspections are useful in accomplishing several of the above objectives. Therefore, inspection frequencies are scheduled to provide maximum coverage of facilities within available DEQ resources. See Table 7.1-1. Additionally, inspections can be a scheduled or unscheduled activity in response to public complaints or requests from outside DEQ.

Table 7.1-1 Inspection frequency by facility type

INSPECTION FREQUENCY			
Inspection Type	**Annually**	**Biennially**	**5 Years**
VPDES Municipal Major (≥1.0 MGD)		**X**	
VPDES Municipal Minor (≥0.04 & ≤1.0 MGD)		**X**	
VPDES Municipal Small (≥0.001 & ≤0.04 MGD)			**X**
VPDES Industrial Major (DEQ/EPA Majors list)		**X**	
VPDES Industrial Minor (not a Major or Small)		**X**	
VPDES Industrial Small [2]			**X**
VPDES General			**X**
VPDES Sampling [3]			**X**
VPG (AFO)	**X**		
VPA (High Priority) [4]	**X**		
VPA (Low Priority)[5]			**X**
Commercial Laboratory (Major)[6]	**X**		
Commercial Laboratory (Minor)[7]		**X**	

1 Includes multiple home and non-residential domestic wastewater facilities covered by General Permit.

2 Small is an industrial facility with low environmental impact potential such as discharges of non-contact cooling water, sand and gravel operations, car washes, etc.

3 Sampling inspections are conducted subject to the availability of effluent.

4 High priority is assigned to facilities with high environmental impact potential or high public concern and includes animal feeding operations, wood preserving operations, sludge disposal activities, and other facilities so classified by the Regional Offices. An inspection of sludge disposal permitted facilities includes, as a minimum, an inspection of the storage facilities and at least one land application site per permitted facility per year.

5 Low Priority is a VPA facility with low environmental impact potential.

6 Major Commercial Laboratories are those who serve ten or more minor VPDES/VPA permittees and/or 1 major facility.

7 Minor Commercial Laboratory designation is assigned to all other facilities not considered as high priority.

Water Quality Planning and TMDLs

DEQ uses Water Quality Management Plans (WQMPs), required by section 303(e) of the Clean Water Act, as the link between the water quality assessment required for this report and water quality based controls. These plans recommend control measures for the water quality problems identified and characterized in the 305(b) report. Control measures recommended in the plans are implemented through the VPDES permit system for point sources and through the application of Best Management Practices (BMPs) for nonpoint sources. WQMPs establish the strategy for returning impaired waters to meet water quality standards and for preventing the degradation of high quality waters.

Section 303(d) of the 1972 Clean Water Act requires the states to identify waters not in compliance with water quality standards, establish priorities, develop a biennial list of the impaired waters, and develop Total Maximum Daily Loads (TMDLs) for the waters on the 303(d) list. In July 1992, EPA promulgated regulations, 40 CFR 130.7, for 303(d) of the CWA. TMDLs were to be implemented through existing pollution reduction regulations and voluntary strategies.

The State Water Control Law, Chapter 3.1, Article 1 of the Code of Virginia, authorizes the State Water Control Board to control and plan for the reduction of pollutants impacting the chemical and biological quality of the state's waters that result in the degradation of designated uses.

In 1997, the Virginia General Assembly enacted the Water Quality Monitoring, Information, and Restoration Act, §62.1-44.19:4 through 19:8 of the Code of Virginia. This statute directs DEQ to develop a list of impaired waters and develop TMDLs for these waters. Also, the state statute directs DEQ to develop implementation plans for the TMDLs.

TMDL Development and Implementation Plan Development

In 1998, the American Canoe Association and the American Littoral Society filed a complaint against EPA for failure to comply with the provisions of §303(d) of the CWA in Virginia. In 1999, EPA signed a Consent Decree (CD) with the plaintiffs. The Consent Decree contained a TMDL development schedule through year 2010. This schedule required a TMDL to be developed on the approximately 475 impaired waters and the approximately 225 condemned or restricted shellfish waters identified in Virginia's 1998 303(d) list. Many of these impaired waters were impaired by more than one pollutant.

Since completing the requirements of the 1999 CD, Virginia continued to develop approximately 50 TMDLs per year in accordance with a TMDL Development pace agreement with EPA. As of 2016, Virginia developed a list of priority waters for TMDL or TMDL alternative development. All waters on this priority list are intended to be addressed by a TMDL or TMDL alternative by 2022. For more information on the prioritization process, please see Chapter 7.2 of this report. Virginia currently develops TMDLs using a "watershed approach" when possible. The watershed approach to TMDL development allows watersheds with similar characteristics to be combined under a single TMDL equation or report resulting in cost and time efficiencies. Watersheds are prioritized for TMDL development based on risk, public interest, available monitoring, regional input, and available funding. TMDL development schedules are developed about every two years, and posted on Virginia's TMDL website: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLDevelopment.aspx.

A TMDL Report is a special study to determine the amount of a pollutant that the impaired water can assimilate and still meet water quality standards. Additionally, the TMDL report will identify all sources of pollution contributing to the violation of water quality standards and calculate the pollutant amount entering the stream from each source and calculate acceptable pollutant loads needed for attainment of Water Quality Standards.

Once a TMDL is developed, the study report is submitted to the State Water Control Board and the

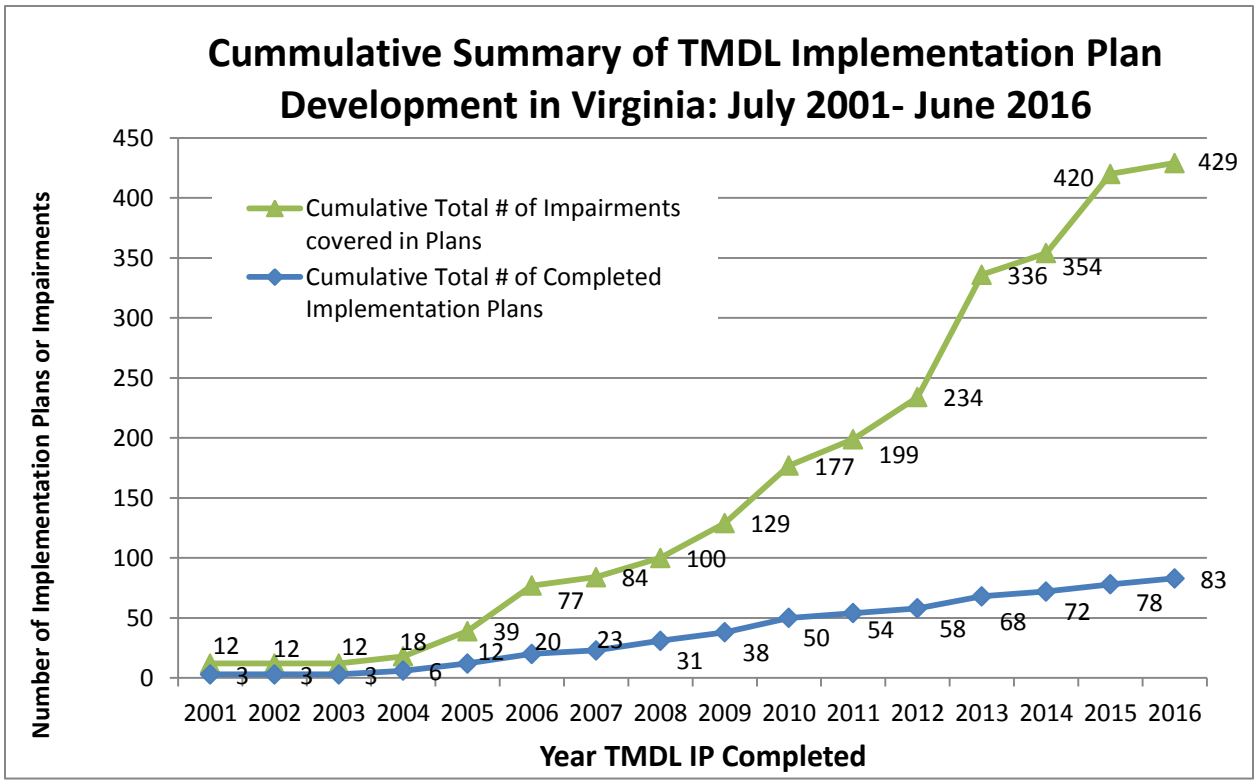
USEPA for approval. Virginia law (1997 Water Quality Monitoring, Information, and Restoration Act, §62.1- 44.19:4 through 19:8 of the Code of Virginia), or WQMIRA, requires the development of a TMDL implementation plan after a TMDL is developed and approved. There is not a mandated schedule for implementation plan development; however, local or state agencies, as well as community watershed groups partner with DEQ in developing TMDL implementation plans. The implementation plan describes the measures that should be taken to reduce pollution levels in the stream and includes a schedule of actions, costs, and monitoring. During its 2013 Legislative Session, the General Assembly passed Chapters 756 (HB2048) and 793 (SB1279) of the 2013 Virginia Acts of Assembly which designated, effective July 1, 2013, the Virginia Department of Environmental Quality as the lead agency for nonpoint source programs in the Commonwealth of Virginia. Effective July 1, 2013 DEQ has the lead for the entire TMDL program, including implementation, for the Commonwealth of Virginia. Information about the TMDL Implementation Program, including success stories and available funding for implementation of Best Management Practices, can be found here http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLImplementation.aspx

Table 7.1-2 TMDLs Completed

Year	TMDLs Completed
1999	1
2000	1
2001	21
2002	30
2003	25
2004	101
2005	41
2006	132
2007	91
2008	109
2009	57
2010	109
2011	29
2012	46
2013	31
2014	35
2015	36
2016	0 [1]
Totals	895

[1] As of May 1, 2016 VADEQ has received EPA approval for 0 TMDLs completed for FY16 although 33 were under preparation.

Figure 7.1.-1 TMDL Implementation Plan Development in Virginia



No Discharge Zone Program

No Discharge Zones (NDZs) are one tool for remediating bacterial contamination, particularly in smaller, poorly-flushed tidal Chesapeake Bay tributaries. This remediation tool is recommended in all tidal TMDLs where shellfish are present. Under the Clean Water Act, discharge of untreated sewage is illegal. NDZs are federally designated areas where this prohibition is extended to discharge of any vessel sewage. States seeking this designation for a water body must demonstrate to EPA that 1) adequate local disposal alternatives (such as marina-based pump-outs) exist, and 2) the designation protects natural resources.

In Virginia, DEQ is the coordinating agency for the preparation of NDZ applications and their submittal to EPA. Applications may be initiated as a component of a TMDL implementation plan or by request from the public. The application process includes coordination with other state agencies, analyses to estimate peak-season boat traffic for the area under evaluation, and an assessment of the existence and adequacy of all available disposal alternatives. The process also includes intensive public outreach to solicit and strengthen local support to elevate boaters' awareness of the importance of controlling bacteria sources. Once established, the designation is indicated by prominent on-the-water signage.

The Code of Virginia (§ 62.1-44.33) establishes all tidal creeks of the Commonwealth as NDZs where vessels may be prohibited from discharging treated or untreated waste into Virginia's waters. The Code further states that the establishment of an NDZ is to be premised on the improvement of impaired tidal creeks. For more information about Virginia's No Discharge Zone Program, including currently established NDZs, please visit http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/NoDischargeZoneDesignations.aspx

CHAPTER 7.2 IMPLEMENTING THE CLEAN WATER ACT 303(d) PROGRAM VISION

The Clean Water Act 303(d) Program Vision was announced by EPA in collaboration with the states in December 2013. While this Program Vision provides a new framework for implementing the 303(d) program, it is not a new rule or regulation and does not impose any new legal requirements on EPA, Virginia, or other stakeholders. Furthermore, it does not change any of the requirements or authorities of Virginia or EPA under the Clean Water Act section 303(d). Overall the new Vision introduces six new program enhancements with an emphasis on improving overall efficiency of the 303(d) program. The six program enhancements are addressed through the six Vision goals that include prioritization, assessment, protection, alternatives, engagement, and integration. The detailed Vision goals are described below:

1. "Prioritization" For the 2016 integrated reporting cycle and beyond, States review, systematically prioritize, and report priority watersheds or waters for restoration and protection in their biennial integrated reports to facilitate State strategic planning for achieving water quality goals.
2. "Assessment" By 2020, States identify the extent of healthy and Clean Water Act Section 303(d) impaired waters in each State's priority watersheds or waters through site-specific assessments.
3. "Protection" For the 2016 reporting cycle and beyond, in addition to the traditional TMDL development priorities and schedules for waters in need of restoration, States identify protection planning priorities and approaches along with schedules to help prevent impairments in healthy waters, in a manner consistent with each State's systematic prioritization.
4. "Alternatives" By 2018, States use alternative approaches, in addition to TMDLs, that incorporate adaptive management and are tailored to specific circumstances where such approaches are better suited to implement priority watershed or water actions that achieve the water quality goals of each state, including identifying and reducing nonpoint sources of pollution.
5. "Engagement" By 2014, EPA and the States actively engage the public and other stakeholders to improve and protect water quality, as demonstrated by documented, inclusive, transparent, and consistent communication; requesting and sharing feedback on proposed approaches; and enhanced understanding of program objectives.
6. "Integration" By 2016, EPA and the States identify and coordinate implementation of key point source and nonpoint source control actions that foster effective integration across Clean Water Act programs, other statutory programs (e.g., CERCLA, RCRA, SDWQ, CAA), and the water quality efforts of other Federal departments and agencies (e.g., Agriculture, Interior, Commerce) to achieve the water quality goals for each state.

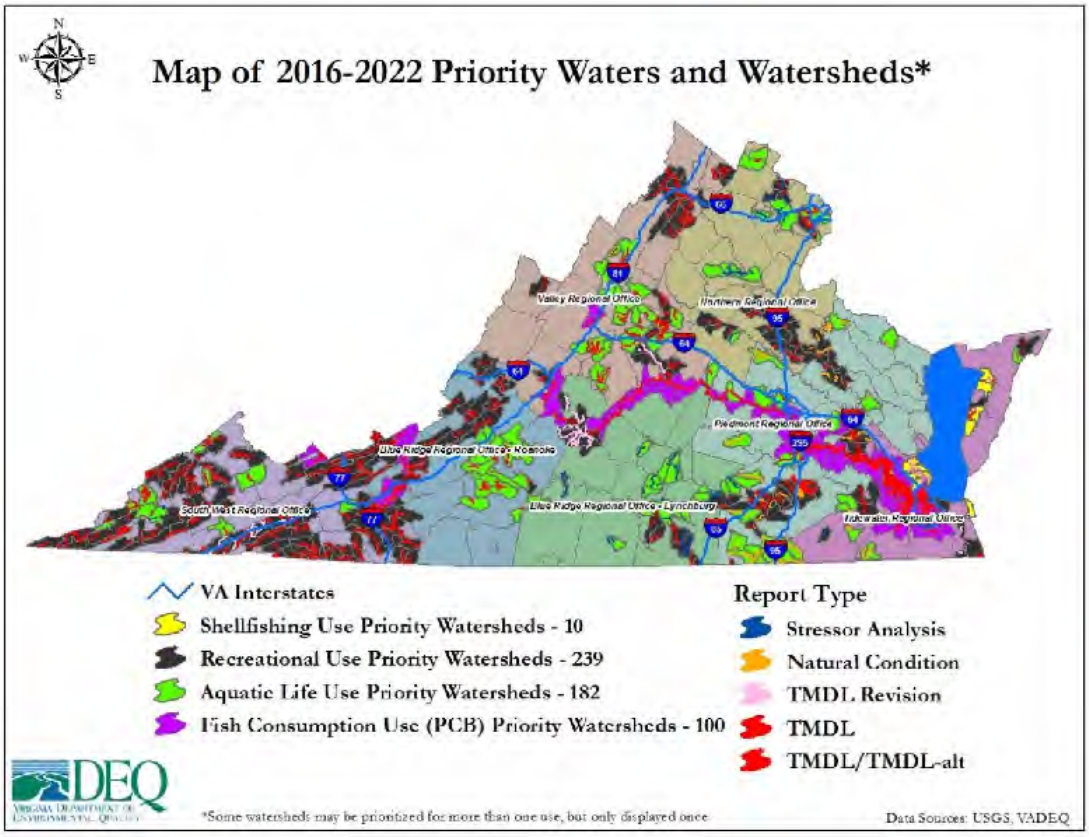
Virginia is well on track to meet and implement all six goals of the new Clean Water Act 303(d) Program Vision. The following sections of this chapter will detail Virginia's progress towards these Vision goals.

Prioritization

DEQ is currently implementing the national 303(d) Program Vision which calls for the prioritization of impaired waters for TMDL or TMDL alternative development over a six year window (currently 2016-2022). A description of the process and a list of waters with city/county information can be found at http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLDevelopment/TMDLProgramPriorities.aspx. Additionally, in the 303(d) list (Appendix 1a), the 2016-2022 priorities are denoted by "H" or "M" under the "TMDL Priority" column for high and medium priority. As part of the 303(d) Vision, DEQ submitted formal priorities to EPA that will be addressed with TMDLs or TMDL-alternatives by 2022. The priorities that were public noticed also included internal priorities that DEQ will aim to address with TMDLs, TMDL-alternatives, stressor analyses, or natural conditions reports by 2022. In the 303(d) list the priority waters formally submitted to EPA are the waters that have an "H" under the "TMDL Development Priority" column. The DEQ internal priorities, with the exception of those prioritized for natural conditions reports, are the waters that have an "M" under the "TMDL Development Priority"

column. Waters prioritized for Natural Conditions Reports receive a TMDL priority ranking of "L" for low since no TMDL or TMDL-alternative will be developed. While TMDL-alternatives may be pursued for any priority water, the decision between TMDL and TMDL-alternative development will be made at the onset of the study. For more information on TMDL-alternatives, see the section titled "Alternatives" below. In some instances, for a variety of reasons, the priority ranking of an impaired assessment unit may change from the list that was originally public noticed. One example of this occurrence is when a TMDL project is initiated for priority waters and it is realized that other potentially new impairments exist in the watershed. Since the TMDL project will address all of the impairments, the formerly low priority waters will change priority to match the priority of the waters that the project originally sought to address.

The resulting map of priority waters and watersheds is shown below (**Figure 7.2-1**).



One aspect is important to note: For the prioritization of waters with an impaired aquatic life use, DEQ looked at waters that were impaired by 1) low dissolved oxygen concentrations, 2) high or low pH levels, 3) high temperatures in coldwater streams, and 4) impairments to the benthic macroinvertebrate communities. Since these impairments result in impacts to the aquatic ecosystem, DEQ sought to prioritize waters impaired for the aquatic life use where additional benefits to aquatic ecosystems could be gained. In order to maximize these additional benefits DEQ conducted a statewide analysis of small watersheds (specifically 6th order Hydrologic Units) that contained waters impaired for one or more of the 4 reasons listed above in addition to waters that contained one or more of the following criteria:

1. The presence of a state and/or federally listed threatened or endangered species (spatial data provided by DGIF)
2. The presence of a DCR Stream Conservation Unit, which is based on:
   - The presence of a rare, threatened, or endangered species; or
   - The presence of an aquatic ecological community of high integrity

Since all TMDLs are designed to protect the watershed for which they are developed, the idea was that in developing a plan to restore waters impaired for the aquatic life use, other state and federal goals of protecting rare, threatened, or endangered species and ecological communities of high integrity could also be implemented. In this regard, the 303(d) Program Vision goal #3 “Protection” and #6 “Integration” were also addressed.

Assessment

Since the beginning of the TMDL program at DEQ, efforts have been made to coordinate TMDL development and water quality monitoring. Through these efforts, the appropriate water quality data was gathered to aid in the development of TMDLs. As part of the 303(d) Program Vision, the process of prioritizing waters for TMDL and TMDL alternative development over the next 6 years (2016-2022) has improved the process of water quality monitoring plan development by making the long-term plan more predictable.

Furthermore, in an effort to better plan for TMDLs or TMDL alternatives that address benthic macroinvertebrate impairments, DEQ staff are working to specify the group of parameters necessary for pre-TMDL monitoring. Because TMDLs must be developed for pollutants causing an impairment, TMDLs or TMDL alternatives that address benthic macroinvertebrate impairments require an analysis to determine what stressors (i.e., pollutants) are causing the impairment. Currently this analysis is done using all available data. The aim for this initiative is to provide the proper suite of parameters that will aid in a thorough analysis of potential stressors causing the impairment of the benthic macroinvertebrate community.

It is through these more coordinated efforts that DEQ believes it is on track to identify the extent of the impairments for each of Virginia’s priority waters through site specific assessments.

Protection

Due to the numerous water quality impairments across Virginia, DEQ is committed to addressing impaired waters. Other state agencies such as DCR take the lead in developing plans to protect “healthy waters.” While DEQ does not take the lead in developing these plans, the general concept of protecting waters and maintaining the anti-degradation policies for water quality is well-addressed through numerous DEQ programs and initiatives.

Already noted in the “Prioritization” section of this chapter was the dual benefit of protecting rare, threatened, or endangered species and aquatic ecological communities of high integrity through the prioritization of watersheds for TMDL or TMDL alternative development that contain these qualities in addition to downstream aquatic life use impairments. Furthermore, DEQ accepts nominations for Exceptional State Waters (Tier III), which the State Water Control Board approves if such nominations qualify as waters in a location of outstanding scenic beauty, have exceptional aquatic communities, and/or have superior recreational opportunities. This Tier III designation prohibits permanent new or increased discharges from point sources, maintaining a strong anti-degradation policy.

It is also worth noting that DEQ is evaluating an additional metric to assess benthic macroinvertebrate communities in Virginia streams, the Biological Condition Gradient (BCG). The BCG will categorize the diversity and abundance of macroinvertebrates sampled in streams and group them into categories along a 6-scale gradient of ecological stress. The BCG categories are determined by scientific decision criteria based on biological responses to anthropogenic stress. In other words, the BCG is a model that describes how the biota of stream ecosystems change with increasing anthropogenic stress. The BCG, once established in a particular ecoregion, offers a framework to help characterize the degree of stress on the aquatic system along a 6-scale gradient and to recognize incremental improvements in meeting water quality goals. Virginia will continue to use the Virginia Stream Condition Index (VSCI) score to determine whether or not a stream is impaired for the aquatic life use.

Alternatives

DEQ is currently exploring opportunities for TMDL alternative development. In certain circumstances the use of a TMDL alternative may offer more assurances that impaired waters will be restored in either a more timely or practical manner. As a result of the process described in the "Prioritization" section above, DEQ has listed 27 impairments on the priority list (Appendix 1a) where a TMDL alternative may be the best option for addressing the impairment. The ultimate decision on whether or not to pursue a TMDL or a TMDL alternative will be made by DEQ staff in conjunction with the technical advisory committee for the project at the onset of the project. Therefore, on the priority list found on the TMDL Program Priorities webpage these impairments are listed with a "Report Type" of "TMDL/TMDL-alt." Similarly, in Appendix 1a these waters are still considered for TMDL development and will be listed with an "H" or an "M" under the "TMDL Priority" column. Although these 17 impairments are prioritized considering the potential for pursuing a TMDL alternative, other impairments on the priority list may be addressed with TMDL alternatives. If a TMDL alternative is pursued, it will follow the same public participation process as a TMDL or TMDL implementation plan (see the "Engagement" section below), and will be briefly explained in this chapter of successive 305(b)/303(d) Integrated Reports. Furthermore, unless the alternative has enforceable pollution control requirements, the impaired water addressed with a TMDL alternative will remain in category 5, but be moved from subcategory 5A to subcategory 5R – "The water quality standard is not attained and the water is impaired, and implementation of an EPA-accepted restoration plan is expected to result in attainment." If the alternative does have enforceable pollution control requirements, the impaired water addressed will move to category 4B – "water is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements are reasonably expected to result in attainment of the water quality standard by the next reporting period or permit cycle." The waters with alternative restoration plans that are moved to subcategory 5R will remain in category 5 until water quality standards are attained. These waters are assigned lower priority for TMDL development as alternatives designed to achieve water quality standards are implemented in the near term. If water quality standards are not fully attained through alternative approaches, development of a TMDL would be necessary.

DEQ currently has 1 TMDL alternative in the Potomac-Shenandoah River Basin that is category 5R. It is the watershed plan to address the Fairview Beach recreational impairment due to excessive levels of bacteria. The TMDL alternative was pursued in this case due to the reasons listed below:

- The impaired area is very small and the local drainage area contributing to the swimming area is 1-2 mi^2.
- There are no point sources contributing to the excessive levels of bacteria, so the regulatory TMDL waste load allocation would not provide any significant load reductions in the watershed.
- Several pollution control measures are already implemented or are soon to be implemented.
- The stakeholder involvement in the watershed is strong, which should ensure success in implementing the voluntary pollution control measures necessary to meet water quality standards.

The Fairview Beach Watershed Plan can be found here:
http://www.deq.virginia.gov/Portals/0/DEQ/Water/TMDL/ImplementationPlans/FB_WP.pdf

Engagement

In the fall of 2014, DEQ finalized the revised Public Participation Procedures for Water Quality Management Planning guidance document. These procedures set forth the process to provide the public and stakeholders with an adequate opportunity to participate in the development and implementation of TMDLs, TMDL modifications, 305(b)/303(d) Integrated Reports, priority schedules for TMDL and TMDL alternative development, and non-TMDL waste load allocations. These procedures also exempt any of these actions from the full Administrative Process Act public participation process because they go above and beyond those requirements. For the development of TMDLs and TMDL Implementation Plans, stakeholders will have a minimum of two opportunities to provide comments. Stakeholders will also have a final opportunity to comment on TMDL projects prior to State Water Control Board Approval.

Opportunities for public comment also exist for the draft 305(b)/303(d) Integrated Report, the draft guidance for the 305(b)/303(d) Integrated Report, draft priority schedules for TMDL and TMDL alternative development, draft TMDL modifications, and non-TMDL waste load allocation development or modifications. It is the goal of these procedures to include stakeholders in water quality management actions from the initial listing of an impaired water, all the way to the implementation of the TMDL or TMDL alternative developed to address the impairment.

Stakeholders interested in participating in these water quality actions can see public notices for these actions in the Virginia Register, the Virginia Regulatory Town Hall, or on DEQ's website. In particular, public notices pertaining to the priority schedule for TMDL and TMDL alternative development, TMDL related regulatory actions, and TMDL and TMDL Implementation Plan development can be found at the DEQ TMDL Public Notices webpage.

Integration

Virginia's efforts towards program integration were aided with the migration of stormwater and nonpoint source programs from DCR to DEQ in July 2013. TMDL and TMDL Implementation Plan development programs, in addition to the grants management program for projects implementing the TMDL Implementation Plans, are now combined in one DEQ program office. With MS4 permitting now also at DEQ, this allows for close intra-agency collaboration on emerging concepts and approaches for addressing MS4 permits in TMDL watersheds. This collaboration is an ongoing effort to continuously improve DEQ's management of stormwater in watersheds with impaired waters.

DEQ also collaborates with VDH who conducts the beach monitoring program for Virginia. The data collected by the beach monitoring program is used by VDH to issue swimming advisories. That same data helps DEQ determine beach recreational use impairments, in addition to aiding the development of TMDLs and TMDL alternatives to address beach impairments. DEQ and VDH also have integrated efforts related to shellfish harvesting and shellfishing impairments. The VDH Division of Shellfish Sanitation conduct water quality monitoring and shoreline surveys in order to determine whether or not shellfish growing areas are suitable for shellfish harvesting. As a result of this data, DEQ then determines whether or not the shellfishing use is impaired. When it is impaired, this data is also considered during the TMDL or TMDL alternative development. Furthermore, the DEQ fish tissue monitoring program provides the data that VDH uses to determine fish consumption advisories. DEQ then uses the extent of the fish consumption advisories to assess the extent of state waters with fish consumption use impairments. Through the beach monitoring program and the Division of Shellfish Sanitation at VDH, and the fish tissue monitoring program at DEQ, VDH and DEQ partner to notify the public of public health related impairments, while also providing the information necessary to address these impairments with TMDLs and TMDL alternatives.

Additional integration efforts include:

- Spearheading work to integrate land division, water permitting division and water planning division efforts for addressing PCB fish tissue contamination issues.
- The aforementioned work between monitoring staff and TMDL staff to specify parameters necessary for conducting thorough stressor identification analyses in waters with benthic macroinvertebrate impairments that are prioritized for TMDL or TMDL alternative development.
- The aforementioned collaboration between DCR and DEQ for prioritization of watersheds for TMDL or TMDL alternative development that have both aquatic life use impairments and waters with ecological communities of high integrity and/or rare, threatened or endangered species.

CHAPTER 7.3 POLLUTION PREVENTION (P2) and ENVIRONMENTAL MANAGEMENT SYSTEMS

Pollution Prevention

"Pollution prevention" (or P2) is recognized by the US EPA as the most cost-effective form of environmental protection because it is an environmental management strategy that emphasizes the elimination or reduction of wastes at the source of their generation. Traditional waste management techniques such as treatment, disposal, and recycling concentrate on managing wastes after they are generated. P2 focuses on the question, "why are the wastes produced in the first place?"

Wastes are essentially wasted raw materials, and P2 efforts strive to identify opportunities to conserve and use raw materials as efficiently as possible. In addition, P2 stresses the reduction of toxicity and prevention of spills and raw material/product losses whenever possible. By definition, P2 is distinguished from recycling and reuse efforts because these management techniques involve waste handling, collection, and reprocessing into a new raw material or useable product. True P2, which is often referred to as "source reduction," eliminates or reduces the need for additional waste handling and the costs associated with that process. As such, P2 can result in significant cost savings while reducing overall environmental impacts and liabilities and facilitating compliance with environmental regulations.

Environmental Management Systems

Many facilities that understand the value of P2 have realized that the environmental impacts of their operations are not just a by-product of what they do, but an integral part of their business model that affects the very success or failure of their organization. These facilities have embraced the development of an "environmental management system" (EMS) to ensure that the environment is considered in all facets of the company's operations. A successful EMS sets goals for implementation of P2 and other projects that will enable "continuous improvements" in the facility's environmental performance year after year. Compliance with environmental regulations is assumed as a starting point for facilities with an EMS in place, and the EMS drives companies to focus on reducing environmental impacts rather than maintaining compliance.

What Do "P2" & "EMS" Mean for Water Quality?

P2 & EMS are good news for water quality as they offer cost-effective opportunities for reducing water contamination. P2 techniques offer excellent applications for reductions in water usage, chemical and nutrient inputs to wastewater, treatment, and stormwater minimization and management. EMSs will ensure that P2 techniques are considered and employed whenever possible as part of the facility's normal business process. Compliance with water quality standards will be the beginning point, and they will strive to continuously do better than those standards.

DEQ's Office of Pollution Prevention

The Virginia DEQ's Office of Pollution Prevention (OPP) is a non-regulatory program that promotes the use of voluntary pollution prevention approaches and technologies and the use of EMSs. OPP has developed a variety of voluntary programs and partnerships to encourage facilities that are interested in doing more than the minimum as required by regulations. These programs provide public recognition and award opportunities, assistance, and even regulatory incentives for participating.

<u>Voluntary Programs</u>

The ***Virginia Environmental Excellence Program (VEEP***) is DEQ's program to promote the voluntary use of environmental management systems (EMS) and pollution prevention (P2). VEEP offers recognition and regulatory incentives to

encourage facilities to develop and implement an EMS. For instance, wastewater treatment plants that participate in VEEP actually receive a discount on their annual permit fees. More than 600 Virginia facilities have been designated as VEEP facilities. For more information, see http://www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaEnvironmentalExcellenceProgram.aspx.

Virginia Green is DEQ's voluntary initiative to promote pollution prevention practices all aspects of Virginia's tourism industry. *Virginia Green* is run in partnership with the Virginia Tourism Corporation and the Virginia Hospitality & Travel Association. There are more than 1400 facilities who have met the minimum criteria for Virginia Green. For more information, go to http://www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaGreen.aspx.

Virginia Information Source for Energy (VISE) is DEQ's project to promote energy efficiency, conservation, and renewable energy technologies. DEQ maintains a website on energy-related technologies, conservation techniques and financial incentives at http://www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaInformationSourceForEnergy.aspx.

For more information on DEQ's P2 and EMS programs, contact Sharon Baxter at 804-698-4344 or sharon.baxter@deq.virginia.gov.

CHAPTER 7.4 COST/BENEFIT ASSOCIATED WITH THE CONSTRUCTION ASSISTANCE PROGRAM

Construction Grants

The Federal construction grants program was initiated in 1958 to provide financial assistance to municipalities for the planning, design, and construction of publicly owned treatment works. Until 1988, the program was an essential element in pollution control efforts, without which many localities would have been unable to provide wastewater treatment systems.

Through 1988, Virginia received approximately $1.2 billion in federal appropriations for construction grants. These federal funds financed up to 75% of the total eligible cost of approximately 183 projects. The state contributed another $52.3 million toward project costs, with the remainder coming from local sources. Total local investment in these projects is estimated at $500 million.

Virginia Clean Water Revolving Loan Fund

In 1988, a grant program was converted to a low-interest loan program to provide financial assistance for the planning, design and construction of POTW's. The 1986 General Assembly created the Virginia Water Facilities Loan Fund, through which loans could be made to local governments at or below current market interest rates for wastewater treatment improvements. Principal and interest repaid into the fund could then be loaned again for additional projects. The Federal Water Quality Act of 1987 established a State Revolving Loan Fund Capitalization Grant Program that provided an avenue for states to convert federal grant monies into a State Revolving Loan Fund.

On June 10, 1988, Virginia became the first state in EPA Region III and the fifth state in the nation to receive authorization to administer a State Revolving Loan Program. As of June 30, 2016, Virginia has received federal capitalization grants totaling $935,649,207. In addition, Virginia has provided the required matching funds of $171,088,383 to the program.

These funds, along with accrued interest earnings, repayments by loan recipients, and the implementation of a leveraging program in each of FY's 1999, 2000, 2004 and 2007 through 2013 (when demand exceeded available resources) have enabled the VRLF to provide loan assistance to 986 projects totaling over $3 billion.

AgBMP Loan Program

The 1999 General Assembly amended Chapter 22 of the Code of Virginia, expanding the activities of Virginia's Water Facilities (Clean Water) Revolving Fund, to allow low interest loan financing of specific agricultural best management practices (AgBMP). This legislation was amended to encourage the Commonwealth's farm communities to implement best management practices that reduce or eliminate agricultural non-point source pollution of Virginia's waters. This funding initiative went into effect July 1, 1999. Agreements were reached with the Virginia Resources Authority and the State's three Farm Credit Associations to allow them to perform necessary loan underwriting and execute and disburse loan proceeds to the recipients.

Virginia received its first request for low-interest loan assistance from its AgBMP program on January 14, 2000. Since then, DEQ has authorized more than $46 million in low-interest loan assistance to Virginia farmers for over 614 eligible BMP projects that would improve water quality in the Commonwealth.

Brownfield Program

The 2001 General Assembly amended the VRLF legislation to make loan assistance available for remediation of contaminated brownfield properties across the Commonwealth. This funding initiative

provides assistance to eligible entities for activities that result from an approved site characterization and remediation plan and where the remediation effort results in an improvement to or protection of surface or groundwater. As of June 30, 2016, six loans for brownfield projects have been closed totaling $4,487,349.

Land Conservation Loan Program

The 2003 General Assembly enacted legislation that expanded the activities of the fund by allowing Virginia to authorize low-interest loans for acquisition of title or other rights to real property when the Board was satisfied that the acquisition would protect or improve water quality and prevent pollution of state waters. The legislation provided that financing for land acquisition would be available only in those fiscal years when all other eligible loan requests from local governments had been satisfied. This program was included in each of the FY 04 through FY 16 loan solicitations and nine loans have been closed totaling $33,620,951. Table 7.2-1 summarizes Revolving Loan Fund cumulative status as of June 30, 2016.

Table 7.4 -1 Summary of Revolving Loan Fund Status

	Number	Amount
Section 212 Loans Closed*	**411**	**$ 2,821,039,275**
ARRA Loans Closed	**35**	**77,720,311**
Ag BMP Loans Closed	**491**	**$ 46,510,711**
Additional Section 319 Loans Closed	**21**	**$ 38,270,499**
Section 212 Loans Approved (not closed as of 6/30/2015)	**24**	**$ 97,028,478**
Ag BMP Loans Authorized (not closed as of 6/30/2015)	**0**	**$ 0**
Additional Section 319 Loans Approved (not closed as of 6/30/2015)	**4**	**$ 4,960,925**
TOTAL	**986**	**$ 3,085,530,199**

* *Includes projects funded with loan payments, leveraged bond proceeds, and amounts utilized for Program Administration.*

The impact of Virginia's loan program on water quality and public health can be summarized as follows:

- Eliminated Virginia's 12 remaining municipal "primary discharge" treatment plants
- Upgraded or replaced 38 inadequate municipal wastewater treatment lagoon systems
- Upgraded, expanded or replaced 171 outdated public wastewater treatment facilities
- Eliminated 235 major points of raw sewage overflows
- Improved water quality at 152 projects by significantly reducing infiltration/inflow loading to the plants and the receiving streams
- Addressed 62 potential community public health hazard situations by eliminating failing septic systems, pit privies and straight-line discharges through the construction of public sewer

systems

- Installed nutrient removal technology at 50 municipal treatment facilities discharging to the Chesapeake Bay
- Established 5 local loan programs for the replacement/rehabilitation of individual on-site wastewater treatment systems
- Conserved 10,717 acres of land, thereby protecting water quality in the associated watersheds
- Installed 9 water reuse projects
- Provided alternative energy production projects at 14 wastewater treatment facilities
- Installed new stormwater management systems at 9 projects

As of June 30, 2016, the Department of Environmental Quality's Ag BMP Loan Program had provided 491 low interest loans to Virginia farmers to assist them with implementation expenses related to the following 614 agricultural best management practices (see Table 7.2-2).

Table 7.4-2 Number of BMPs funded by the AgBMP Loan Program

BMP ID #	BMP Name	# of each BMP implemented at Farm Operation Type							Total Funded
		Dairy	Poultry	Beef	Swine	Sheep	Horse	Row Crop	
WP-6	Ag Chemical & Fertilizer Handling Facility							2	**2**
SL-6B	Alternative Water System	1		3		1			**5**
WP-4	Animal Waste Control Facility	84	88	60	1	1	1	1	**236**
WP-4E	Animal Waste Structure Pumping Equipment	18		1	9				**28**
WP-4C	Composter Facility	1	50		3				**54**
WP-4B	Loafing Lot Management System	41		2					**43**
WP-8	Relocation of Confined Feeding Operation	7		6					**13**
SL-11B	Animal Travel Lane Stabilization	7		4					**11**
SL-6	Grazing Land Protection	11		93			3		**107**
WP-2B	Stream Crossing & Hardened Access	1		2					**3**
WP-2	Stream Protection	2		3		1			**6**
WP-2A	Stream Bank Stabilization			2					**2**
WP-7	Surface Water Runoff Impoundment	1							**1**
NTD	No Till Planter/Drill	8		6				89	**103**
								Total BMPs Loan Funded =	**614**

CHAPTER 7.5 PUBLIC HEALTH/AQUATIC LIFE CONCERNS

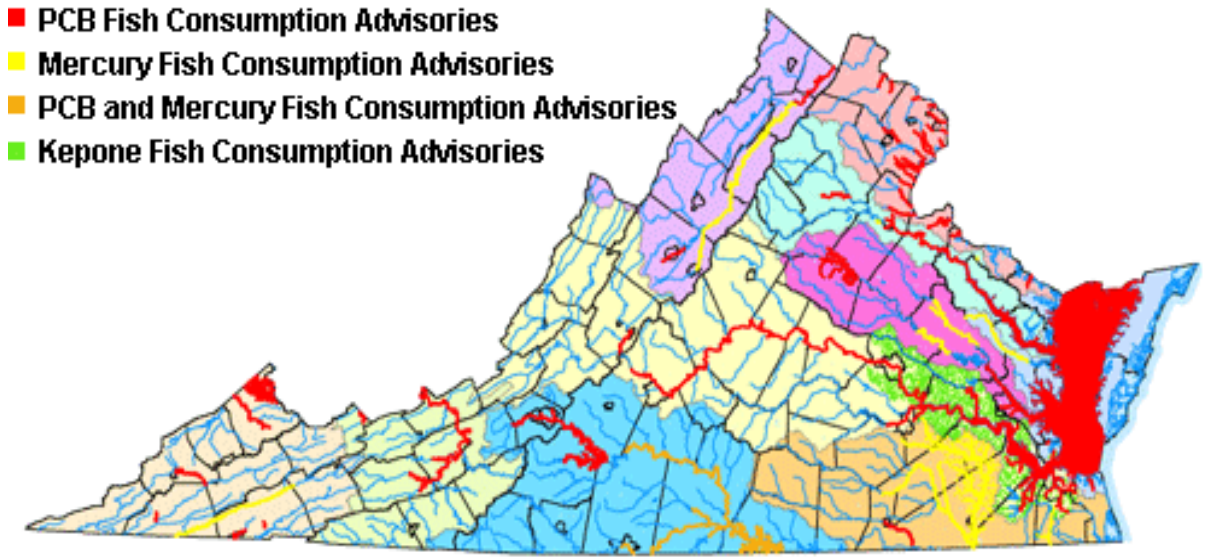
DEQ continues to address the role toxicants play in reducing water quality in state waters and supports programs to monitor, evaluate, and reduce toxicity to aquatic life and human health. Many of the programs in place at DEQ that address toxicity in state waters are described and discussed throughout this report.

The toxic pollutants that were monitored during the reporting period include toxic organics, metals and pesticides. Information on the state's monitoring programs and the results of this monitoring for toxics in water column, fish tissue, and sediment is provided in Chapters 3 and 4 of this report.

Fish Consumption Advisories and Restrictions

Virginia's fish consumption advisories are reviewed annually by the Virginia Department of Health (VDH). VDH has 64 health advisories in effect as of 2010. A health advisory warns of potentially dangerous levels of contamination found in fish tissues in an affected area and, in most cases, limits consumption but does not prohibit it. Under health advisories, the population at risk and a safe maximum consumption rate may be specified. All VDH fish consumption advisories for mercury and PCBs caution that women who are pregnant or may become pregnant, nursing mothers and young children should not eat any fish from affected waters to avoid ingesting contaminants. Contamination of fish by three toxic pollutants – (kepone, mercury, and polychlorinated biphenyls (PCBs) - have been the causes of the health advisories that are currently in place throughout the state. Four of the health advisories (kepone in the lower James River, mercury in the North Fork Holston River, mercury in the South River and sections of the Shenandoah River, and PCBs in the South Fork Shenandoah River, North Fork Shenandoah River and Shenandoah River) were the result of accidental industrial releases of toxic contaminants to the aquatic environment, while the contributing sources of contamination for the remainder of the advisories remain under investigation, primarily through TMDL studies and subsequent activities. The history of the four known industrial releases and general information about the fish consumption advisories is discussed below. The health advisories and affected watersheds can be found at this VDH link: http://www.vdh.virginia.gov/environmental-epidemiology/public-health-toxicology/fish-consumption-advisories/

A map showing the current fish consumption advisories is shown below (**Figure 7.5-1**):



For questions about human health risks from exposure to fish contaminants, please contact the Virginia Department of Health (VDH) at (804) 864-8182. For general questions about fishing regulations in Virginia, please call Game and Inland Fisheries at (804) 367-1000, or visit the DGIF webpage. For further information regarding the fish tissue sampling and analysis process, please contact the Department of Environmental Quality at (804) 698-4000, or visit the DEQ webpage.

Kepone in the Lower James River

From 1966 through 1975, Allied Chemical Company and its subsidiary Life Science Products, Inc. produced a persistent chlorinated hydrocarbon insecticide called Kepone. During production, an estimated 90,720 kg of Kepone was released to the environment through atmospheric emissions, wastewater discharges, and bulk-disposal of off-specification batches. The James River and its tributaries from Richmond to Newport News were contaminated with Kepone. In 1975, the entire James River from the fall line at Richmond to the Hampton Roads/Norfolk Bridge Tunnel, including all tributaries, was closed to the taking of any shellfish and/or finfish because of Kepone. From 1975 through 1988, various Kepone bans were in place. In 1988, all James River fishing restrictions due to Kepone were allowed to expire as Kepone levels in fish remained below the U.S. Food and Drug Administration (FDA) action level of 0.30 parts per million (ppm). This area, covering the main stem James River and all tributaries from the fall line at Richmond to the Hampton Roads-Norfolk Bridge Tunnel, is currently under a contaminant advisory. The Kepone advisory cautions anglers to limit the consumption of all species of fish from this part of the river to one meal per day. However, a more stringent consumption advisory due to PCBs has been in place since 2002 for portions of the same segment and anglers are advised to follow this advisory.

DEQ continually monitored Kepone levels in the James River since its identification in 1975 until 2009. The major areas of concern were Kepone levels in the water column, finfish, and sediment of the James River and its tributaries, and in the ground water in Hopewell. After continuous non-detectable results, water column monitoring was discontinued in 1981. Kepone levels in finfish, ground water, and sediment have decreased since the onset of the problem. The VDH has established a level of concern of 0.30 ppm Kepone in edible fish filet samples. The concentrations of Kepone in fish filet samples from this section of the James River watershed have not exceeded this level of concern since 1996.

Fish consumption advisories due to mercury contamination of fish

As of 2010, there are 27 health advisories that have been issued by the VDH due to mercury contamination of fish throughout the state.

Mercury is released into the environment by both natural sources and pollution. Biological processes transform mercury in the water into more toxic methylmercury. Fish absorb methylmercury directly from water, sediment and from eating smaller aquatic organisms that contain methylmercury.

Prior to 2001, VDH followed guidelines developed by the FDA that considered methylmercury levels higher than 1.0 ppm in exceedence of safety guidelines. In 2001, the VDH began to use a concentration of 0.5 ppm methylmercury in fish tissue as the guideline for issuing a fish consumption advisory statewide. The revised fish consumption guidelines for mercury contamination were based on an extensive review of literature by the National Academy of Sciences which indicated that lowering the amount of mercury recommended for fish consumption would provide more protection for the public. This lower concentration of 0.5 ppm is also based on assuming a consumption rate of two eight-ounce meals per month as an exposure rate for triggering a fish consumption advisory. This new, lower concentration of concern for mercury used by the VDH has increased the number of watersheds subject to fish consumption advisories due to mercury contamination. The watersheds covered by fish consumption advisories due to mercury contamination are described below.

- *Mercury in the North Fork Holston River*

Eighty miles of the North Fork Holston River in southwestern Virginia from Saltville to the Virginia-Tennessee state line were contaminated with mercury by releases from the Olin manufacturing operation in Saltville. Although the chemical plant closed in 1972, mercury levels in fish in this section of the river remain elevated above levels seen upstream and the consumption of fish from this area is prohibited. Since 1974, only catch and release fishing has been allowed. Several species of fish in these waters show mercury concentrations higher than the VDH's level of concern of 0.5 ppm. This health restriction affects the following watersheds VAS-O13, VAS-O12, VAS-O11, and VAS-O10. DEQ has completed a TMDL for mercury in the North Fork Holston River, and remediation of the industrial releases is ongoing.

- *Mercury in the South River, South Fork Shenandoah River, North Fork Shenandoah River and Shenandoah River*

Mercury was released by E. I. DuPont de Nemours and Company, a synthetic fibers plant in Waynesboro, into the South River and South Fork Shenandoah River from 1929 to 1950. The contamination was discovered in 1977 and was found to have contaminated more than 100 river miles from the plant to the Page/Warren county line. These areas remain under health advisories for fish consumption due to mercury contamination. The advisory was updated in 2001 as follows. For the South River, the VDH recommends that no fish, other than stocked trout, should be eaten from the footbridge at the DuPont plant in Waynesboro downstream to the confluence with the North River at Port Republic. For the South Fork Shenandoah River, the VDH recommends that no more than two eight-ounce meals per month of fish from these waters be consumed from Port Republic to the Riverton dam on the North Fork Shenandoah River and downstream in the Shenandoah River to the Warren Power dam just north of Front Royal. A concurrent advisory issued in 2004 due to PCB contamination of part of the segment recommends no consumption of channel catfish, carp or sucker species. Several species of fish in these waters show mercury concentrations higher than the VDH's level of concern of 0.5 ppm. This health advisory is located in all or a portion of watersheds, VAV-B40, VAV-B38, VAV-B37, VAV-B35, VAV-B33, and VAV-B32. DEQ has completed TMDLs for mercury in the affected water bodies, and remediation of the industrial releases is ongoing.

- *Mercury in swamp waters, lakes, impoundments, and other waters*

In October 2003, the VDH established fish consumption advisories due to elevated mercury levels detected in fish tissue in top level predator fish species for three swamps or "blackwater" rivers where there are no known significant anthropogenic sources of mercury contamination. Subsequent monitoring in other swamp influenced bodies of water has resulted in additional fish consumption advisories in other watersheds since 2003. These water bodies share similar natural, chemical and physical characteristics of low dissolved oxygen, low pH, high organic content and still or slow moving current which promote the natural methylation of mercury into the highly bioaccumulative compound methylmercury. In recent years, a better understanding has developed that waterbodies with these environmental conditions are likely to promote the conversion of elemental mercury into the toxic form methylmercury which is more easily bioaccumulated into fish tissue in these waters. Increased natural production of methylmercury in these waters enhances the possibility that the mercury content of fish will increase especially in upper level predators. Similar elevated levels of mercury in piscivorous species of fish have been noted in similar habitats in the southeastern United States as well as lakes, bogs and wetlands in New England, Wisconsin and Minnesota. In many of these areas, there are no known sources of mercury. Deposition of airborne mercury has been identified as a possible source of the mercury to the swamp waters. This is considered a possibility in swamp waters in Virginia also. DEQ is investigating air deposition of mercury and other potential sources of mercury to these water bodies. DEQ has initiated additional monitoring of fish in these areas to better understand the extent of the elevated mercury concentrations.

Fish Consumption Advisories issued October 29, 2003 due to Mercury are listed below:

- *Dragon Run Swamp and Piankatank River watershed*

The entire length of Dragon Run Swamp from Route 620 near the headwaters of Dragon Run downstream to a segment of the Piankatank River near the Route 606 boat landing is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of largemouth bass. The original advisory issued in 2003 was updated in 2005 to cover the entire Dragon Run Swamp watershed. DEQ is conducting an assessment of the watershed looking for sources of mercury to the watershed. The affected watersheds are VAP-C02R, VAP-C02E and VAP-C03E.

- *Great Dismal Swamp Canal watershed*

The segment of the Great Dismal Swamp Canal from Deep Creek Lock south to the Virginia-North Carolina state line, including Lake Drummond and the feeder ditch to Lake Drummond, is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of bowfin or chain pickerel. The inclusion of Lake Drummond in 2005 was an update of the previous advisory issued in 2003 for this area. The affected watershed is VAT-K39.

- *Blackwater River watershed*

The entire Blackwater River watershed from its headwaters near Petersburg downstream to the Virginia - North Carolina border including all its tributaries is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of largemouth bass, redear sunfish bowfin, white catfish, redhorse sucker, longnose gar and chain pickerel. The original advisory issued in 2003 affected largemouth bass and redear sunfish from the state line up to Rt. 460. The advisory was updated to include bowfin, white catfish, redhorse sucker and longnose gar and the segment was extended upstream to Rt. 31 in 2005 The latest update in 2007 expanded the segment to include the entire watershed and chain pickerel species. The affected watersheds are VAP-K31 VAP-K32 VAP-K34 VAT-K34, VAT-K33 and VAT-K36.

Fish Consumption Advisories issued September 30, 2004 due to Mercury are listed below:

- *Lake Trashmore*

Lake Trashmore (entire lake) in Virginia Beach is covered by an advisory. This advisory recommends eating no more than two eight-ounce meals per month of largemouth bass due to elevated levels of mercury and carp due to elevated levels of PCBs.

- *Lake Whitehurst*

Lake Whitehurst (entire lake) in Norfolk and Virginia Beach is covered by an advisory. The initial advisory recommended that carp should not be eaten due to elevated levels of mercury and PCBs and that no more than two eight-ounce meals per month of yellow perch should be eaten due to elevated levels of PCBs. The advisory for Lake Whitehurst (entire lake) has been expanded to include the Little Creek Reservoir arm of the lake in 2009. This updated advisory recommends that no more than two eight-ounce meals per month of carp or gizzard shad species should be consumed due to elevated levels of mercury and PCBs. Yellow perch is no longer affected by this advisory.

- *Lake Gordonsville*

Lake Gordonsville (entire lake) in Louisa County is covered by an advisory. This advisory recommends eating no more than two eight-ounce meals per month of largemouth bass.

- *Pamunkey River*

An advisory was issued for the segment of the Pamunkey River from the Route 615 bridge to the confluence with Jacks Creek. This advisory recommended eating no more than two eight-ounce meals

per month of blue catfish. In 2009, the segment was expanded from Route 615 to the confluence with the Mattaponi River near West Point. A concurrent advisory issued in 2009 due to PCB contamination of the segment recommends eating no more than two eight-ounce meals per month of gizzard shad as well. The expanded segment from Route 615 to the confluence with the Mattaponi River near West Point is now covered by both mercury and PCB advisories.

- *Mattaponi River*

An advisory was issued for the segment of the Mattaponi River from the Route 628 bridge downstream to Melrose Landing. This advisory recommended eating no more than two eight-ounce meals per month of largemouth bass. In 2009, the segment was expanded from Route 628 to the confluence with the Pamunkey River near West Point. There had been an existing advisory due to PCB contamination for part of the segment of the Mattaponi River from the confluence with Herring Creek downstream to the confluence with Aylett Creek since 2004 that recommended eating no more than two eight-ounce meals per month of striped bass, white perch or gizzard shad which was also updated in 2009. The expanded segment from Route 628 to the confluence with the Pamunkey River near West Point is now covered by both mercury and PCB advisories.

- *Herring Creek*

The segment of the Herring Creek in King William County from the Route 628 bridge to the confluence with the Mattaponi River is covered by an advisory. This advisory recommends eating no more than two eight-ounce meals per month of bluegill sunfish or yellow bullhead catfish.

Fish Consumption Advisories issued July 27, 2005 due to Mercury are listed below:

All the three fish consumption advisories listed below that were modifications to existing advisories issued in 2003 (see description under the 2003 fish consumption advisories).

- *Dragon Run Swamp and Piankatank River watershed*

The health advisory for the Dragon Run Swamp (entire length) from the Route 620 downstream to a segment of the Piankatank River near Deep Point Boat Landing at Route 606 across from Piankatank Shores was updated. The extension from the headwaters to Deep Point Boat Landing is an update of the previous advisory for this area.

- *Great Dismal Swamp Canal watershed*

The health advisory for the Great Dismal Swamp Canal from the Deep Creek Locks south to the Virginia/North Carolina state line including Lake Drummond and Feeder Ditch was updated. The inclusion of Lake Drummond is an update of the previous advisory for this area.

- *Blackwater River watershed*

The health advisory for the Blackwater River from Rt. 31 near Dendron downstream to the Virginia/North Carolina state line was updated. The extension of the Blackwater River from Rt. 460 to Rt. 31 is an update of the previous advisory for this area.

Fish Consumption Advisories issued July 20, 2006 due to Mercury are listed below:

- *Harrison Lake*

Harrison Lake (entire lake) in Charles City County is covered by an advisory. This advisory recommends that no more than two eight-ounce meals of redear sunfish, largemouth bass, chain

pickerel, or bowfin should be consumed per month.

- *Chickahominy Lake*

Chickahominy Lake (entire lake) in Charles City and New Kent counties is covered by an advisory. This advisory recommends that no more than two eight-ounce meals of largemouth bass, chain pickerel, or bowfin should be consumed per month.

Fish Consumption Advisories issued August 31, 2007 due to Mercury are listed below:

- *Blackwater River watershed*

The health advisory for the Blackwater River from the Virginia-North Carolina state line upstream to its headwaters near Petersburg including all its tributaries was updated (see description under the 2003 fish consumption advisories).

- *Nottoway River watershed*

The segment of the Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to Route 619 near Purdy including its tributary Assamoosick Swamp is covered by an advisory. This main stem Nottoway River segment is ~92 miles. The advisory recommends that no more than two eight-ounce meals per month of largemouth bass, smallmouth bass, bowfin, redhorse sucker species, longnose gar, channel catfish, chain pickerel, or sunfish species should be consumed.

- *Motts Run Reservoir*

Motts Run Reservoir (entire reservoir) is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of largemouth bass species should be consumed.

- *Chandler's Mill Pond*

Chandler's Mill Pond (entire pond) is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of largemouth bass species should be consumed.

- *Roanoke River watershed (Staunton River)*

The segment of the Roanoke (Staunton) River from below Leesville Dam downstream to the confluence with the Dan River including its tributary Cub Creek up to Rough Creek Road (Route 695) near Rough Creek is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of striped bass or white bass species should be consumed. There has been an existing advisory due to PCBs for various species in this segment since 1999.

- *Kerr Reservoir watershed*

Kerr Reservoir within the state of Virginia from the confluence of Dan River and Roanoke River to the John H. Kerr Dam including its tributaries Eastland Creek and Nutbush Creek (within the state of Virginia) is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of striped bass, white bass or largemouth bass species should be consumed. There has been an existing advisory due to PCBs for various species in this segment since 2004.

- *Dan River watershed*

The segment of the Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with the Roanoke River on the John H. Kerr Reservoir, including

its tributaries Hyco River up to the Route 738 bridge and Banister River up to the Banister Dam, is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of striped bass or white bass species should be consumed. There has been an existing advisory due to PCBs for various species in this segment since 1999.

Fish Consumption Advisories issued September 16, 2008 due to Mercury are listed below:

- *Lovills Creek Lake watershed*

Lovills Creek Lake (entire lake) is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of largemouth bass species should be consumed.

- *Dan River watershed*

The segment of the Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with the Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to the Rt. 738 bridge and Banister River up to the Banister Dam is covered by an advisory. This advisory was updated and recommends that in addition to striped bass and white bass no more than two eight-ounce meals per month of longnose gar, largemouth bass, flathead catfish or blue catfish species should be consumed.

- *Nottoway River watershed*

The segment of the Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy including its tributary Assamoosick Swamp, Three Creek up to I-95, Rowanty Creek and its tributaries Hatcher Run up to I-85 and Arthur Swamp up to I-85 is covered by an advisory. The previous advisory was updated with the addition of Three Creek up to I-95, Rowanty Creek and its tributaries Hatcher Run up to I-85 and Arthur Swamp up to I-85.

- *Emporia Reservoir watershed*

Emporia Reservoir on the Meherrin River (entire reservoir) is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of largemouth bass species should be consumed.

- *Meherrin River watershed*

The segment of the Meherrin River below Emporia Reservoir Dam to the Virginia-North Carolina state line including its tributaries Fontaine Creek up to I-95 bridge crossing and Mill Swamp up to I-95 bridge crossing is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of largemouth bass or bowfin species should be consumed. There has been an existing advisory due to PCB contamination of gizzard shad for a segment of the Meherrin River from Emporia Dam downstream to the Route 730 bridge crossing since 2004.

- *Big Cherry Reservoir watershed*

Big Cherry Reservoir (entire reservoir) is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of largemouth bass species should be consumed.

- *Lake Witten watershed*

Lake Witten (entire lake) is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of largemouth bass species should be consumed.

Fish Consumption Advisories issued October 7, 2009 due to Mercury are listed below:

- *Reedy Creek watershed*

The segment of Reedy Creek from Rt. 301 downstream to the confluence with the Mattaponi River is covered by an advisory. This advisory recommends eating no more than two eight-ounce meals per month of bluegill sunfish or yellow bullhead catfish.

- *Pamunkey River watershed*

The segment of the Pamunkey River from Nelson Bridge Road (Route 615 bridge) downstream to the confluence with the Mattaponi River near West Point is covered by an advisory. The previous segment was expanded to cover additional stretch of the river from Jacks Creek to West Point. The expanded segment is covered by both mercury and PCB advisories.

- *Mattaponi River watershed*

The segment of the Mattaponi River from Rt. 628 near gaging station downstream to the confluence with the Pamunkey River near West Point is covered by an advisory. The previous segment was expanded to cover additional stretch of the river from Melrose Landing to West Point. The expanded segment is covered by both mercury and PCB advisories.

- *Lake Whitehurst watershed including Little Creek Reservoir arm*

The advisory for Lake Whitehurst (entire lake) has been expanded to include the Little Creek Reservoir arm of the lake. This updated advisory recommends that no more than two eight-ounce meals per month of carp or gizzard shad species should be consumed. The expanded segment is covered by both mercury and PCB advisories.

Fish Consumption Advisories issued November 18, 2009 due to Mercury are listed below:

- *Lake Gaston watershed*

Lake Gaston within the state of Virginia from the confluence of John H. Kerr Dam to the state line is covered by an advisory including any tributary arms of the lake. This advisory recommends that no more than two eight-ounce meals per month of walleye should be consumed.

Fish consumption advisories due to polychlorinated biphenyls (PCBs) contamination

As of 2010, there are 43 health advisories that have been issued by the VDH due to contamination of fish by PCBs throughout the state. Historically, Virginia has steadily lowered the levels of PCBs considered acceptable in fish. Prior to 1980, VDH followed guidelines developed by the FDA that considered PCB levels higher than 5,000 parts per billion (ppb) in exceedence of safety guidelines. In 1984, the FDA reduced the level to 2,000 ppb. In 1998, VDH developed its own fish consumption advisory guidelines and set its levels of concern for PCBs in fish to no more than 600 ppb. This limit was lowered to 50 ppb in 2004. The latest guidelines announced by VDH in 2012 increased that level to 100 ppb. The change reflects VDH's adoption of the updated exposure factors (such as average body weight) and human behavior-related assumptions recommended by EPA. This change does not affect previously issued consumption advisories or current impairment listings. The watersheds covered by fish consumption advisories due to PCB contamination are described below.

- *South Fork Shenandoah River, North Fork Shenandoah River and Shenandoah River*

In 1989, the VDH issued a public health advisory warning against the consumption of fish taken from the South Fork Shenandoah River near Front Royal because of PCBs contamination of fish in the area. The advisory extended from the Route 619 bridge downstream to the Shenandoah River. It continued from the North Fork Shenandoah River at its confluence with Passage Creek downstream to the Shenandoah River; and from the Shenandoah River from the confluence of the North and South Fork Shenandoah Rivers to the Virginia-West Virginia state border. This segment covered approximately 45 stream miles. This advisory was issued after DEQ monitoring revealed PCB levels in fish tissue samples above the 2.0 ppm FDA action level. The advisory stated that fish caught in these waters should not be consumed. The source of this contamination has been identified as Avtex Fibers Front Royal Inc. This plant closed in 1989 following revocation of their VPDES permit. The advisory was updated in 2004 and the segment on the North Fork was modified to exclude the zone above the Riverton dam. The advisory recommended no consumption of channel catfish, carp or sucker species and that no more than two eight-ounce meals per month of smallmouth bass, largemouth bass, rock bass, or sunfish species should be consumed. This health advisory is located in the watersheds: VAV-B58, VAV-B57, VAV-B55, VAV-B51 and VAV-B41. DEQ has completed a TMDL for PCBs in the affected water bodies, and remediation of the industrial releases is ongoing.

- *Main stem Roanoke River watershed (Staunton River)*

In July 1998, a health advisory for fish consumption was issued for a 50-mile stretch of the Roanoke River running through Campbell, Charlotte, Halifax and Pittsylvania counties. PCBs had been detected at elevated levels in fish tissues of striped bass, white bass and carp. The advisory area extended from Seneca Creek at Route 704 near Long Island downstream to the point where a pipeline intersects Route 803 and where Route 633 in Charlotte County crosses the Roanoke River (approximately 5.4 river miles below the Rt. 360 bridge). In December 1999, the VDH expanded this fish advisory to include 29 additional miles upstream including Altavista to the Leesville Dam. In 2004, this advisory was extended to include the Roanoke River from the Leesville Dam downstream to the confluence with the Dan River. The advisory for this section of the Roanoke River recommends no consumption of carp and flathead catfish greater than 32 inches and no more than two eight-ounce meals per month of flathead catfish less than 32 inches, channel catfish, gizzard shad, golden redhorse sucker, redhorse sucker, quillback carpsucker, bluehead chub, white perch, walleye, striped bass, white bass, largemouth bass, smallmouth bass, spotted bass, rock bass or sunfish species should be consumed. The advisory has been updated in 2007 to include a portion of Cub Creek up to Rough Creek Road (State Route 695) near Rough Creek and recommends no more than two eight-ounce meals per month of blue catfish in the entire segment. A potential contributing source of the contamination has been identified but other sources are suspected. The affected watersheds are VAW-L19, VAW-L30, VAW-L31, VAP-L36, VAP-L38, VAP-L40, VAP-L75 and VAP-L80. In 2007, a mercury advisory was issued for striped bass and white bass for the segment. DEQ has completed a TMDL for PCBs in the affected water bodies, and is pursuing implementation strategies through permitting and collaboration with DEQ's clean-up programs.

- *Fresh tidal embayments of the Potomac River*

In April 1999, a health advisory for fish consumption was issued for a 33-mile stretch of the Potomac River from the Woodrow Wilson Bridge to Bent Point at the mouth of Aquia Creek due to contamination of fish by PCBs in the embayments of the Potomac River. The advisory states "channel catfish larger than 18 inches caught in the tidal areas in several tributaries flowing into the Potomac River near Quantico, VA may pose a potential public health risk". The VDH issued this advisory in collaboration with Maryland, since most of this area of the Potomac River is in Maryland. The advisory was modified in 2003 and 2004 to include other fish species. In December 2004, the VDH modified the fish consumption advisory for the tidal portion of the following tributaries and embayments to the Potomac River between the I-395 bridge in Arlington downstream to the Rt. 301 bridge: Four Mile Run, Hunting Creek, Little Hunting Creek, Pohick Creek, Accotink Creek, Occoquan River, Neabsco Creek, Powell Creek, Quantico Creek, Chopawamsic Creek, Aquia Creek, and Potomac Creek. The advisory recommends no consumption of carp or channel catfish greater than 18 inches and limiting consumption to no more than two eight-ounce meals per month of channel catfish less than 18 inches, American eel, bullhead catfish,

largemouth bass, anadromous striped bass, sunfish species, smallmouth bass, white catfish, white perch, gizzard shad, or yellow perch. This advisory was updated in 2009 to caution that American eel should not be eaten from these waters. DEQ has completed a TMDL for PCBs in the affected water bodies, and is pursuing implementation strategies through permitting and collaboration with DEQ's clean-up programs.

- *Levisa Fork*

In July 1999, a health advisory for fish consumption was issued for a 12-mile section of the Levisa Fork from Grundy downstream to the Virginia-Kentucky state line. This advisory recommends that no fish of any kind be eaten from that section of the Levisa Fork. The advisory was modified in 2003 and 2004. The affected watershed is VAS-Q08. DEQ has completed a TMDL for PCBs in the affected water bodies, and is pursuing implementation strategies through permitting and collaboration with DEQ's clean-up programs.

- *Dan River watershed*

In December 1999, a health advisory for fish consumption was issued for a 42 mile stretch of the Dan River from Kerr Reservoir at Staunton River State Park to southwestern Halifax County where the river crosses into North Carolina, north of Virginia Route 62. This fish consumption advisory was modified in December 2004 to cover the river within Virginia from the Brantley Steam Plant Dam in Danville and to include the following tributaries: the Hyco River up to the Rt. 738 bridge and the Banister River up to the Banister Dam. The advisory cautions people to not eat any flathead catfish greater than 32 inches and to eat no more than two eight-ounce meals per month of flathead catfish less than 32 inches, channel catfish, blue catfish, carp, redhorse sucker, striped bass, white bass, white perch or walleye taken from the advisory area. The affected watersheds are VAW-L60, VAP-L62, VAP-L64 and VAP-L73. In 2007, a mercury advisory was issued for striped bass and white bass for the segment. Longnose gar, largemouth bass, flathead catfish or blue catfish were added to the list of species affected by elevated mercury in 2008.

- *Bluestone River*

In August 2001, the VDH issued (and modified in December 2004) a health advisory for fish consumption for a section of the Bluestone River from the Rt. 460 bridge crossing south of Bluefield downstream to the Virginia-West Virginia state line near the town of Yards in Tazewell County. The advisory recommends not eating any carp and to limit consumption to no more than two eight-ounce meals per month of white sucker, rock bass or largemouth bass from this section of the Bluestone River. The affected watersheds are VAS-N36 and VAS-N37.

- *New River*

In August 2001, the VDH issued (and modified in December 2004) a health advisory for fish consumption for a section of the New River from the Claytor Lake Dam downstream to the Virginia/West Virginia state line near the town of Glen Lyn. The advisory recommends not eating any carp and limiting consumption of flathead or channel catfish to no more than two eight-ounce meals per month.

- *Tidal Lower James River watershed*

In July 2002, the VDH issued a health advisory for fish consumption for a section of the James River from the Interstate 95 bridge in Richmond downstream to the Hampton Roads bridge and the tidal portions of the following tributaries: Appomattox River up to the Lake Chesdin Dam, Bailey Creek up to Rt. 630, Bailey Bay, Chickahominy River up to Walkers Dam, Skiffes Creek up to the Skiffes Creek Dam, Pagan River and Jones Creek, Chuckatuck Creek, Nansemond River, Bennett Creek, Star Creek, Hampton River, Willoughby Bay and the Elizabeth River system (Western Branch, Eastern Branch, Southern Branch and the Lafayette River), and tidal tributaries St. Julian Creek, Deep Creek and Broad Creek. The advisory was modified in 2004 and recommends not eating any gizzard shad, carp or blue

catfish greater than 32 inches and limiting consumption to no more than two eight-ounce meals per month of blue catfish less than 32 inches, channel catfish, white catfish, largemouth bass, white perch, bluegill sunfish, American eel, flathead catfish, quillback carpsucker, smallmouth bass, creek chub, yellow bullhead catfish, anadromous striped bass, bluefish, croaker and spot. In 2006, the existing advisory was updated to include additional species, with a consumption recommendation of no more than two eight-ounce meals per month of hickory shad, blueback herring and flathead catfish less than 32 inches. Additionally, flathead catfish greater than or equal to 32 inches should not be eaten. Poythress Run, a small tributary in Hopewell, was added to the advisory for the lower James River. DEQ is conducting additional investigations in this area to better determine the extent of the concern and to try to find the source of the contamination. The affected watersheds are VAP-G01E through VAP-G04E, VAP-G08E, VAP-J15E, VAT-G10E, VAT-G11E, VAT-G13E and VAT-G15E.

- *Smith Mountain Lake watershed (Roanoke River)*

In October 2003, the VDH issued a fish consumption advisory for a section of the Roanoke River from the Niagara Dam downstream to a point in the Smith Mountain Lake, approximately 2.5 miles downstream of the Rt. 634 bridge. DEQ fish tissue monitoring data from 2002 showed that flathead catfish collected from the Roanoke River near Hardy contained total PCBs at levels that exceeded the VDH's level of concern. This advisory zone was modified in 2004 and expanded to the Smith Mountain Lake Dam including the Blackwater River arm up to the Rt. 122 bridge. This fish consumption advisory recommends not eating any flathead catfish greater than 32 inches and eating no more than one eight-ounce meal per month of flathead catfish less than 32 inches, striped bass, largemouth bass, carp, redhorse sucker, or gizzard shad from this advisory area. The advisory was updated in 2005 and recommended that in addition the species listed above no more than two eight-ounce meals per month of channel catfish should be consumed in this segment. The affected watersheds are VAW-L07 and VAW-L12.

- *Knox Creek watershed*

In May 2003, the VDH issued (and modified in June 2004 and updated in December 2004) a health advisory for fish consumption for a section of Knox Creek from the Virginia-Kentucky state line upstream to its headwaters. The advisory recommends not eating any smallmouth bass, rock bass, channel catfish, creek chub, golden redhorse sucker, northern hogsucker or redhorse sucker and eating no more than two eight-ounce meals per month of any other fish species taken from the advisory area. DEQ intends to conduct additional investigations in this area to better determine the extent of the concern and to try to find the source of the contamination. The affected watershed is VAS-Q03.

- *Beaver Creek watershed*

In May 2003, the VDH issued (and modified December 2004) a health advisory for fish consumption for a section of Beaver Creek from the Beaver Creek Lake Dam downstream to the Virginia-Tennessee state line in Bristol. The advisory recommends not eating any carp, largemouth bass or smallmouth bass and eating no more than one eight-ounce meal per month of any other fish taken from the advisory area. DEQ intends to conduct additional investigations in this area to better determine the extent of the concern and to try to find the source of the contamination. The affected watershed is VAS-O07.

- *Lake Anna watershed (York River)*

In June 2004, the VDH issued a fish consumption advisory for Lake Anna including its tributaries Terry's Run, Goldmine Creek and Contrary Creek. The advisory was modified in December 2004 to recommend eating no more than two eight-ounce meals per month of carp, largemouth bass, striped bass, white catfish, channel catfish or bluegill sunfish caught in the watershed. This advisory was updated in 2007 to further recommend not eating any gizzard shad and no more than two eight-ounce meals per month of white perch.

Fish Consumption Advisories issued in December 13, 2004 due to new PCBs guidelines are listed below:

In December 2004, following the lowering of the amount of PCBs necessary to trigger a fish consumption advisory, a number of new health advisories were issued throughout the state. The advisories that were issued are described below.

- *Lewis Creek*

The segment of Lewis Creek from Rt. 252 south of Staunton downstream to the confluence of the Middle River is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of bluehead chub or white sucker.

- *Upper Potomac River watershed*

The following tributaries to the Potomac River between the Virginia-Maryland state line near Rt. 340 downstream to the I-395 bridge in Arlington, Goose Creek up to the Dulles Greenway Road bridge, Broad Run up to Rt. 625, Difficult Run up to Rt. 7, and Pimmit Run up to Rt. 309 are covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of American eel from these waters.

- *Tidal tributaries of the Lower Potomac River*

The tidal portion of the following tributaries to the Potomac River between the Rt. 301 bridge downstream to the mouth of the river near Smith Point: Upper Machodoc Creek, Monroe Creek and Coan River are covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of gizzard shad, white perch or channel catfish from these waters.

- *Bull Run*

Bull Run in Fairfax County, Manassas Park City and Prince William County near Manassas Park from the I-66 bridge downstream to the Route 612 (Yates Ford Road) bridge is covered by an advisory. The previous advisory issued in 2004 recommended that no more than two eight-ounce meals per month of channel catfish should be consumed. The advisory was updated in 2005 to also recommend that no more than two eight-ounce meals per month of carp should be consumed.

- *Rappahannock River watershed*

The segment of the Rappahannock River from the I-95 bridge downstream to the mouth of the river including the tributaries Hazel Run up to the I-95 bridge and Claiborne Run up to the Rt. 1 bridge is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of American eel, blue catfish, carp, channel catfish, croaker, gizzard shad or striped bass caught in these waters.

- *Mountain Run*

The segment of Mountain Run from Rt. 15/29 bridge near Culpepper to the confluence with the Rappahannock River is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of American eel.

- *York River watershed*

The segment of the York River from West Point down to the mouth as well as the tidal portion of the following tributaries: King Creek, Queen Creek and Wormley Creek are covered by an advisory. The

advisory recommends eating no more than two eight-ounce meals per month of croaker, spot or gizzard shad caught in these waters.

- *Mattaponi River*

An advisory was issued for the segment of the Mattaponi River from the confluence with Herring Creek downstream to the confluence with Aylett Creek. The advisory recommended eating no more than two eight-ounce meals per month of anadromous striped bass, white perch or gizzard shad caught in this segment of the watershed. The segment was expanded in 2009 to cover additional stretch of the river from Rt. 628 near gaging station downstream to the confluence with the Pamunkey River near West Point. The expanded segment is covered by both mercury and PCB advisories.

- *Maury River*

The segment of the Maury River from Buena Vista at Rt. 60 to the confluence with the James River is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of redbreast sunfish, rock bass or yellow bullhead catfish caught in this section of the river. The advisory was updated in 2006 and also recommended that no more than two eight-ounce meals per month of carp should be eaten from this segment.

- *Middle James River watershed*

The segment of the James River from Big Island Dam (below the Blue Ridge Parkway) downstream to the I-95 bridge in Richmond including its tributaries: Hardware River up to the Rt. 6 bridge and Slate River up to Route 676 is covered by an advisory. The advisory recommends limiting consumption to no more than two eight-ounce meals per month of gizzard shad, carp, American eel, quillback carpsucker or flathead catfish caught in this section of the river.

- *Chesapeake Bay and Small Coastal Bays Basin*

The Chesapeake Bay and its small coastal tributaries are covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of anadromous striped bass caught in these waters.

- *Lake Trashmore*

Lake Trashmore (entire lake) in Virginia Beach is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of carp. Mercury advisory exists for largemouth bass for the segment as well.

- *Lake Whitehurst*

An advisory was issued for Lake Whitehurst (entire lake) in Norfolk. The advisory initially recommended that carp should not be eaten due to elevated levels of PCBs and mercury and that no more than two eight-ounce meals per month of yellow perch should be eaten due to elevated levels of PCBs. In 2009, the advisory for Lake Whitehurst (entire lake) was expanded to include the Little Creek Reservoir arm of the lake. This updated advisory recommends that no more than two eight-ounce meals per month of carp or gizzard shad species should be consumed. The expanded segment is covered by both mercury and PCB advisories. Yellow perch is no longer affected by this advisory.

- *Eastern Branch Lynnhaven River*

Eastern Branch of Lynnhaven River in Virginia Beach is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of gizzard shad.

- *Little Creek*

Little Creek in Norfolk near the Naval Reservation Little Creek Amphibious Base is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of gizzard shad, spot or croaker.

- *Tabb Creek*

An advisory was issued for Tabb Creek near Langley Air Force Base in Poquoson City. The advisory initially recommended eating no more than two eight-ounce meals per month of croaker or gizzard shad. In 2009, the advisory was updated to recommend that gizzard shad should not be eaten and that no more than two eight-ounce meals per month of croaker, striped bass, oyster or blue crab from this creek be eaten.

- *Mobjack Bay*

Mobjack Bay and its tributaries: East River, North River and Ware River in Mathews and Gloucester counties are covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of gizzard shad.

- *Meherrin River*

The segment of the Meherrin River from Emporia Dam downstream to Route 730 bridge crossing is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of gizzard shad. In 2008, a mercury advisory was issued for largemouth bass and bowfin for the segment as well.

- *Upper Roanoke River watershed*

The upper portion of the Roanoke River from the confluence of the South and North Forks of the Roanoke River at Lafayette downstream to the Niagara Dam including its tributaries Peters Creek up to the Rt. 460 bridge and Tinker Creek up to the confluence with Deer Branch Creek near Rt. 115 is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of carp, redhorse sucker, bluehead chub, largemouth bass, smallmouth bass, rock bass or redbreast sunfish.

- *Kerr Reservoir watershed (Roanoke River)*

Kerr Reservoir within the state of Virginia from the confluence of the Dan River and Roanoke River to the John H. Kerr Dam including its tributaries Eastland Creek and Nutbush Creek is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of carp, redhorse sucker, largemouth bass, smallmouth bass, white bass, striped bass, white perch, walleye, channel catfish or flathead catfish. In 2007, a mercury advisory was issued for striped bass, white bass and largemouth bass for the segment.

- *New River*

The segment of the New River from I-77 downstream to the Claytor Lake Dam including Peak Creek up to the confluence with North Fork Peak Creek (Track Fork) and Reed Creek up to the confluence with Miller Creek near Rt.121 is covered by an advisory. The advisory recommends not eating more than two eight-ounce meals per month of carp or smallmouth bass.

- *Upper Levisa Fork watershed*

The segment of the upper Levisa Fork from the confluence of Slate Creek upstream to the

confluence with Contrary Creek including the tributary Garden Creek up to the confluence of the Right Fork of Garden Creek is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of all fish species in the watershed.

- *Guest River watershed*

The segment of Guest River from Rt. 23 near Esserville downstream to the confluence with the Clinch River, including the tributary Bear Creek up to the confluence with Yellow Creek is covered by an advisory. The advisory recommends eating no more than two eight-ounce meals per month of carp, river chub or stoneroller from the watershed.

- *Stock Creek*

The segment of Stock Creek from Route 650 bridge above Natural Tunnel downstream to the confluence with Clinch River near Clinchport is covered by an advisory. The advisory recommends not eating more than two eight-ounce meals per month of brown trout, rainbow trout, or white sucker caught in this segment of the watershed.

- *Wolf Creek*

The segment of Wolf Creek from Route 670 near Abington downstream to Rt. 75 near Green Spring is covered by an advisory. The advisory recommends not eating more than two eight-ounce meals per month of carp or northern hogsucker caught in this segment of the watershed

- *North Fork Holston River*

A segment of the North Fork Holston River between Rt. 91 near Saltville downstream to Rt. 80 is covered by an advisory. PCBs were detected in fish above the guidelines recommended by the VDH for safe consumption of more than two eight-ounce meals per month. However, this segment of the river has an existing ban or prohibition on taking any fish for consumption in the North Fork Holston River due to mercury contamination. Only catch and release of these fish is permissible.

Fish Consumption Advisories issued in July 27, 2005 due to PCBs are listed below:

- *Indian Run*

Indian Run (entire Run) in Fairfax County near Annandale downstream from State Route 236 approximately three miles to Back Lick Run is covered by an advisory. The advisory recommends that no more than two eight-ounce meals per month of creek chub should be consumed.

- *Bull Run*

The health advisory for Bull Run in Fairfax County, Manassas Park City and Prince William County near Manassas Park from the I-66 bridge downstream to the Route 612 (Yates Ford Road) bridge has been updated. The previous advisory recommended that no more than two eight-ounce meals per month of channel catfish should be consumed. The advisory was updated in 2005 to also recommend that no more than two eight-ounce meals per month of carp should be consumed.

- *Smith Mountain Lake watershed (Roanoke River)*

The health advisory for Roanoke River/Smith Mountain Lake in Roanoke County, Franklin County, Bedford County and Pittsylvania County from below the Niagara Dam downstream to Smith Mountain Dam, including the Blackwater River to the Rt. 122 bridge has been updated. The advisory has been updated to also recommend that no more than two eight-ounce meals per month of channel catfish should be consumed.

- *Beaver Creek watershed*

The health advisory for Beaver Creek in Washington County and Bristol City from Beaver Creek Dam downstream to the Virginia-Tennessee state line within the City of Bristol has been updated. The affected segment was expanded to include, Little Creek, a tributary and modified to also recommend that smallmouth bass should not be eaten and no more than two eight-ounce meals per month of any other species should be consumed.

- *Knox Creek watershed*

The health advisory for Knox Creek in Buchanan County from the Virginia-Kentucky state line upstream to its headwaters near the Virginia-West Virginia state line including its tributaries has been updated. The advisory was modified to also recommend that channel catfish, redhorse sucker and creek chub not be consumed.

Fish Consumption Advisories issued in October 10, 2006 due to PCBs are listed below:

- *Maury River*

The health advisory for the segment of the Maury River from Buena Vista at Rt. 60 to where it meets the James River has been updated. VDH recommends that no more than two eight-ounce meals per month of carp should be consumed.

- *Tidal Lower James River watershed*

The health advisory for the segment of the James River from the I-95 James River bridge in Richmond downstream to the Hampton Roads Bridge Tunnel has been updated. VDH included additional species with a consumption recommendation of no more than two eight-ounce meals per month of hickory shad, blueback herring and flathead catfish less than 32 inches. Additionally, flathead catfish greater than or equal to 32 inches should not be eaten. Poythress Run, a small tributary in Hopewell, was added to the advisory for the lower James River.

Fish Consumption Advisories issued in August 31, 2007 due to PCBs are listed below:

- *Main stem Roanoke River watershed (Staunton River)*

The health advisory for the segment of the Roanoke (Staunton) River from below Leesville Dam downstream to the confluence of the Dan River has been updated to include its tributary Cub Creek up to Rough Creek Road (Route 695) near Rough Creek. A concurrent mercury advisory exists for various species in the segment as well.

- *Lake Anna watershed (York River)*

The health advisory for Lake Anna including its tributaries Terry's Run, Goldmine Creek and Contrary Creek has been updated to further recommend not eating any gizzard shad and no more than two eight-ounce meals per month of white perch.

Fish Consumption Advisories issued in September 16, 2008 due to PCBs are listed below:

- *Dan River watershed*

The advisory for the segment of the Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with the Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam has

been updated. This advisory also recommends that no more than two eight-ounce meals per month of walleye or longnose gar species should be consumed. Mercury advisory exists for various species in the segment as well.

Fish Consumption Advisories issued in October 7, 2009 due to PCBs are listed below:

- *Lake Whitehurst watershed including Little Creek Reservoir arm*

The advisory for Lake Whitehurst (entire lake) has been expanded to include the Little Creek Reservoir arm of the lake. This updated advisory recommends that no more than two eight-ounce meals per month of carp or gizzard shad species should be consumed. A concurrent mercury advisory exists for this watershed. Yellow perch is no longer affected by the advisory.

- *Tabb Creek watershed*

Tabb Creek (entire creek, ~2 miles) near Langley Air Force Base, a tributary of Northwest Branch Back River is covered by an advisory. This advisory was updated and recommends that gizzard shad should not be eaten and that no more than two eight-ounce meals per month of croaker, striped bass, blue crab or oyster species should be consumed.

- *Poquoson River watershed*

The tidal portion of Poquoson River and its tributary Chisman Creek is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of gizzard shad species should be consumed.

- *Piankatank River and lower Dragon Run Swamp watershed*

The segment of lower Dragon Run Swamp and upper Piankatank River from Rt. 17 downstream to Deep Point Boat Landing (State Route 606) across from Piankatank Shores is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of gizzard shad species should be consumed. A concurrent mercury advisory exists for largemouth bass for the segment as well.

- *Pamunkey River watershed*

The segment of the Pamunkey River from Nelson Bridge Road (Route 615 bridge) downstream to the confluence with the Mattaponi River near West Point is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of gizzard shad species should be consumed. The previous advisory due to mercury contamination was expanded to cover an additional stretch of the river from Jacks Creek to West Point. The expanded segment is covered by both mercury and PCB advisories. .

- *Mattaponi River watershed*

The segment of the Mattaponi River from the Rt. 628 near gaging station downstream to the confluence with the Pamunkey River near West Point is covered by an advisory. This is an update of the 2004 advisory segment. The previous advisory segment due to mercury contamination was also expanded to cover an additional stretch of the river from Melrose Landing to West Point. The expanded segment is covered by both mercury and PCB advisories.

- *Mill Creek watershed*

Mill Creek (entire creek) near Fort Monroe is covered by an advisory. This advisory recommends that no more than two eight-ounce meals per month of gizzard shad species should be consumed.

- *Potomac River watershed*

The segment of the Potomac River Basin comprising the tidal portion of the following tributaries and embayments from the I-395 bridge (above the Woodrow Wilson Bridge) to the Potomac River Bridge at Rt. 301: Four Mile Run, Hunting Creek, Little Hunting Creek, Pohick Creek, Accotink Creek, Occoquan River, Neabsco Creek, Powell Creek, Quantico Creek, Chopawamsic Creek, Aquia Creek, and Potomac Creek is covered by an advisory. This is an update of the previous advisory and recommends that American eel species should not be eaten.

- **Special Blue Crab hepatopancreas consumption advisories due to polychlorinated biphenyls (PCBs) and/or Dioxin contamination**

Fish Consumption Advisories issued in January 23, 2009 due to PCBs/Dioxin are listed below:

- *King Creek watershed: PCBs*

The segment of King Creek (a tidal tributary of York River ~3.5 miles) is covered under a special advisory only related to the consumption of the hepatopancreas of blue crab. The advisory states DO NOT EAT crab's hepatopancreas ("mustard," green gland, or tomalley). This advisory applies only to avoiding eating the crab's hepatopancreas or "mustard". Crab meat is not subject to this advisory.

- *Southern Branch Elizabeth River watershed: PCBs and Dioxin*

The segment comprising the Southern Branch of the Elizabeth River and its tidal tributaries (~ 23 miles) is covered under a special advisory only related to the consumption of the hepatopancreas of blue crab. The advisory states DO NOT EAT crab's hepatopancreas ("mustard," green gland, or tomalley). This advisory applies only to avoiding eating the crab's hepatopancreas or "mustard". Crab meat is not subject to this advisory.

Shellfish Condemnations

As of December 2014, VDH has prohibited and/or condemned harvest of approximately 56 square miles of productive shellfish areas in the waters of Virginia. Another 5 square miles have been seasonally condemned, which restricts direct harvesting from 1 April to 31 October of each year. These areas are all located in the Chesapeake Bay and tidewater areas of the state, and include waters surrounding certain point source discharges, as well as areas with elevated fecal coliform bacteria concentrations or other health-related pollutants. Shellfish may be harvested from most restricted areas; however, they must first be relayed to harvest “approved” waters for depuration for 15 days before marketing. Relaying is only allowed when the water temperature is above 50°F. Shellfish closures and advisories can be found on the VDH Division of Shellfish Sanitation website: http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/.

Fish Tissue Contamination

- *Routine and Special Study Fish Tissue Data*

This section summarizes the fish tissue contaminant data collected, analyzed and/or evaluated during the period covered in this report. The data were collected via DEQ's routine monitoring of fish and sediment samples for contaminant analysis in the state river basins as well as from follow-up and special monitoring studies conducted once the routine program identified potential problem areas. The data reviewed for this report covers data collected from 2009 through 2014. Fish tissue contaminants data for routine monitoring are posted on the DEQ website at http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/Fish

TissueMonitoring.aspx. All of these data have been reviewed by the VDH.

- *Virginia Water Quality Standard based Fish Tissue Value or Screening Value Exceedences*

The monitoring station data list found on the DEQ website at http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/FishTissueMonitoring.aspx includes the approximately 500 stations that DEQ sampled in its routine rotational river basin monitoring program (including follow-up monitoring) between 1995 and 2014. It also tabulates the number of exceedences of human health screening values for those routine monitoring stations where there were exceedences for one or more contaminants in edible fish fillets or shellfish. Contaminant screening values are computed using EPA risk assessment techniques for non-carcinogenic and carcinogenic effects and are based on the same fish tissue concentrations that are the basis for the numerical water quality criteria that are designed to prevent fish contamination. These stations were not randomly selected. Instead, many of the stations were targeted for sampling because of potential or known water pollution problems identified via a search of historical data and reports.

- Selection Basis for Stations Discussed

This report summary highlights those stations where current contaminant levels alone or in combination with other data and studies were:

a) at a Virginia Department of Health ("VDH") level of concern for human health requiring a fish consumption advisory or advisory extension or

b) at a VDH or DEQ level of concern requiring special follow-up studies (most are listed at http://www.deq.virginia.gov/Programs/Water/ReportsPublications.aspx, or

c) below levels of concern where VDH determined the existing fish consumption advisory could be lifted due to a decline in levels of contamination. A complete list of fish advisories in Virginia can be found at VDH fish consumption advisories webpage.

During this period DEQ and the VDH were also able to complete risk evaluations at several sites reported for ongoing or future evaluation in previous editions of this report. These decisions are included in this report in order to finalize the information on previously reported potential human health concerns. This report does not highlight station exceedences where VDH determined, at the time of data review, that no further action was needed unless these stations were monitored as a follow-up to a VDH request for additional sampling.

Lead

- No Current EPA Screening Value for Lead in fish tissue

The specific toxicological information needed to calculate a screening value is not available for lead at this time and EPA does not have a screening value for lead in fish tissue. Therefore, DEQ cannot use a screening value to assess the data for lead found in fish tissue. To address this issue, DEQ reports any concentration of lead detected by our contract analytical lab to the VDH for its review and recommendations. To address this unusual situation in this report, all instances of lead detected at any concentration in fish tissue are noted in the monitoring station data list found on the DEQ website.

- 1993 - 1994 Lead Data Suspect Due to Laboratory Problems

Previous 305(b) reports noted that lead had been detected in at least some of the fish samples at each station sampled in 1994 as well as in 1993, and additional follow-up work was planned. Upon further investigation, DEQ identified detection limit problems at the contract laboratory. This made all of the lead concentrations for the 1993 - 1994 fish tissue samples suspect. Therefore, these lead concentrations were not used in the assessment of the 1993-1994 data and were not included in the Final 2016

monitoring station list associated with previous reports as exceedences. Furthermore, VDH did not consider the concentrations for the suspect lead data to be at levels of concern. In 1995 DEQ switched to another contract lab capable of detecting metals and organics at lower detection limits. Lead was detected in less than 4 percent of fish analyzed between 1995 and 1998. When DEQ re-sampled one of the 1994 stations with suspect lead levels (Mattaponi River) in 1996, lead was reported below detection limits (<0.1 ppm).

- VDH Requests for Follow-up Sampling

In subsequent monitoring years (1995 – 1998), lead was detected at 15 river basin stations. Of these 15 stations, VDH asked DEQ to follow-up with additional sampling at two sites sampled in 1997 (Kiptopeke State Park and Bagwell Creek). These two stations were re-sampled in 2000 and lead was not detected in any fish samples from Bagwell Creek. Lead was detected at the detection level of 0.1 ppm in only one of six fish samples (gray trout) at Kiptopeke State Park. These data were reported to the VDH and they did not recommend any further action.

Arsenic

There are some uncertainties associated with assessing potential health risks posed by arsenic in fish tissue. Arsenic does not have a high potential for bioaccumulation and is not a common contaminant in most fish samples. It is more likely to be detected in marine and estuarine species and is seldom detected in freshwater species. On the other hand, arsenic has recently been classified as a human carcinogen, making this an important potential contaminant in fish tissue. However, the carcinogenic potential of arsenic is associated with the inorganic forms of arsenic while organic forms of arsenic are not thought to be carcinogenic. DEQ has developed a fish tissue screening value for arsenic in fish tissue of 72 µg/kg based on its carcinogenic potential and DEQ intends this screening value to be applied to the inorganic form of arsenic. Unfortunately, all data available to DEQ for arsenic in fish tissue are total arsenic concentrations, which include both organic and inorganic forms. This makes assessing the potential for increased cancer risk due to total arsenic in fish tissue problematic. For the 305(b) assessment purposes, DEQ uses a conservative approach and assesses the fish tissue screening value for inorganic arsenic using the available total arsenic concentrations. This approach essentially assumes all total arsenic in fish tissue may be in the inorganic form. DEQ uses this approach in order to be protective and avoid underestimating potential human health risks but also recognizes that this is a conservative method. Some studies (primarily involving marine and estuarine species) show that estimates for the portion of inorganic arsenic in fish tissue is variable but may be only approximately 10% of the total arsenic concentration.

In the 305(b) assessment process, all fish samples that exceed 72 µg/kg total arsenic will be assessed as fully supporting with observed effects, but will not result in an impaired assessment. The purpose of this conservative assessment is to identify areas with elevated levels of arsenic in fish tissue to help DEQ determine where additional investigation may be warranted. Additionally, all fish samples that exceed 72 µg/kg total arsenic are identified and reported to the VDH for their evaluation. EPA has recently developed a method for analyzing the speciation of arsenic in fish tissue which can differentiate inorganic forms of arsenic. However, this new method is complicated and is far more costly than total arsenic analysis. This new method may be useful in the future in identifying the inorganic arsenic concentrations in fish at sites where additional, more detailed investigations may be considered necessary. It is likely that during the current assessment period the fish tissue screening value could be modified based on an updated fish tissue consumption rate.

Polychlorinated Biphenyls (PCBs)

- Shenandoah River and South and North Forks of the Shenandoah River Fish Consumption Advisory

VDH reviewed the fish PCB data collected in 1996 and 1999 from stations on the Shenandoah River and South and North Forks of the Shenandoah River that contained PCBs above the VDH level of concern. Because these fish were from areas currently subject to a fish consumption advisory

established in 1989, VDH determined that no further action was needed. The advisory has since been modified.

- Roanoke (Staunton) River Fish Consumption Advisory

Data collected by DEQ in 1993 during a special Roanoke (Staunton) River basin study led VDH to issue a fish consumption advisory in 1998. The area covered by the advisory was expanded in 1999 in response to additional DEQ sampling results above the VDH level of concern of 600 parts per billion. (See the DEQ website for additional information). DEQ is now focusing on identification of potential point sources for the contamination.

- Dan River Fish Consumption Advisory

Data collected by DEQ in 1999 from the Dan River showed elevated levels of PCBs in some species of fish from various areas of the river. On December 27, 1999 the VDH issued a fish consumption advisory for the Dan River from the Virginia-North Carolina border (north of the VA Rt. 62) downstream to the Kerr Reservoir at the Staunton River State Park. The fish consumption advisory recommends that no more than two eight-ounce meals per month of flathead catfish or channel catfish be consumed. The advisory has since been modified.

- Levisa Fork Fish Consumption Advisory

In 1997, DEQ included a station on the Levisa Fork at the state line in its routine river basin rotational sampling because PCBs had previously been detected in fish at this location. Three out of four of the fish species samples collected at Levisa Fork in 1997 exceeded the 600 parts per billion level of concern for PCBs established by VDH for issuing fish consumption advisories. The VDH issued a fish-eating advisory for a 12-mile stretch of Levisa Fork in 1999. In response to a request from VDH, DEQ conducted a special fish and sediment study in Levisa Fork in 2000 in an attempt to bracket the extent of fish contamination. The VDH reviewed these new data and determined that the only fish that exceeded their level of concern were from areas currently subject to a fish consumption advisory. Therefore, VDH determined that no further action was needed at that time. Results of the 2002 DEQ fish tissue monitoring prompted the VDH to modify the existing fish consumption advisory to apply to all fish in this section of the river.

- Deep Creek Follow-up Sampling

VDH asked DEQ to resample Deep Creek (Southern Branch of the Elizabeth River) in 2000 because a gizzard shad sample collected at that station in 1998 exceeded the screening value for PCBs. DEQ had also conducted a special study in the Elizabeth River in 1993. PCB levels in all species collected at the Deep Creek station in 2000 except gizzard shad were below the VDH 600 ppb level of concern. Additional DEQ sampling in the Elizabeth River system was conducted in 2001. Analytical data from these 2001 fish samples were received by DEQ from the laboratory in the summer of 2002. Following the review and evaluation of these 2001 fish contaminant data, VDH included Deep Creek as part of the Lower James River PCBs advisory zone.

- Four Mile Run Special Study

Samples were collected in Four Mile Run during October 1997 in response to concerns about run-off problems from the nearby Potomac Yard in Northern Virginia. The local Health Department made the request for the special study via the DEQ Northern Regional Office in response to citizen concerns. VDH reviewed the data results and determined that the level of contaminants (PCBs, total chlordane and total PAHs) posed no significant risks to human health. In 2004, VDH issued a fish consumption advisory due to PCBs for this watershed.

- James River 1997 Fish Study of PCB Levels

The US Fish and Wildlife Service had expressed concern due to the presence of PCBs in fish tissue from the James River (River Miles 76.0-69.0) and the DEQ's "low" priority designation during its review of DEQ's final 303(d) TMDL (Total Maximum Daily Load) Priority List for 1996. The Service also expressed concern that the area was a roosting habitat for the bald eagle and limited fish tissue data were available for the river segment. In addition, DEQ-Piedmont Regional Office ("PRO") staff identified high concentrations of polychlorinated terphenyls (PCTs) in sediment in Bailey Creek. So in 1997, 45 fish tissue samples were collected from seven stations in the James River and its tributaries in the vicinity of Hopewell. The study was a joint effort between DEQ-PRO and Central Office staff, and involved fish tissue and sediment collections. These samples were analyzed for PCBs, PCTs, and chlorinated pesticides. Thirty-five of the 45 fish tissue samples had PCB levels in excess of the DEQ screening value; however, only one sample had a PCB concentration above the VDH advisory level. Fish tissue data were transmitted to PRO staff during November 1998. During early December 1998 PRO staff made a data report presentation to other DEQ staff and VDH personnel. An old landfill in Hopewell was identified as the source of PCBs and PCTs to the James River system. At PRO's request, USEPA Superfund monitoring staff sampled the landfill area and creek running through it in January 1999 and determined that the site contamination was not sufficient to warrant Superfund cleanup. EPA found PCTs upstream of the landfill and suggested that old industrial sources might be contributing to the contamination. At the request of the industry, PRO sampled stormwater outfalls at the headwaters of the creek for PCTs and PCBs in May 1999. PRO found PCTs in the 1 to 5 ppm ranges and PCBs in the 0.2 to 1.6 ppm range in sediments. These results were below the clean-up requirements of EPA Superfund, and the case was considered resolved pending further information. VDH asked DEQ to resample Bailey Bay in 2001 or 2002. DEQ re-sampled Bailey Bay in 2001. Analytical data from these 2001 fish samples were received by DEQ from the lab in the summer of 2002. DEQ and the VDH reviewed the 2001 fish-contaminant data to determine the need for appropriate follow-up action. After reviewing the data, the VDH issued a fish consumption advisory in July 2002. This fish consumption advisory is described above in the section on fish consumption advisories and restrictions. DEQ re-sampled additional fish from this section of the James in 2003 and 2005 to investigate this matter further.

- Revisit Potomac River Fish Consumption Advisory Area

At the request of VDH, DEQ re-sampled the Potomac River and Virginia tributaries in 2000. Some carp and channel catfish samples from the Potomac embayment stations had PCBs higher than the VDH level of concern of 600 ppb for PCBs. However, all these stations are within sections of the river where a fish consumption advisory is already in effect. Therefore, based on the year 2000 monitoring data, the VDH has determined that no further action is warranted at this time. The advisory has since been modified.

- Mountain Run and Bull Run

During this period, the DEQ completed follow-up monitoring of fish and sediment from Mountain Run and Bull Run. Latest sampling results in 1999 found PCBs and PAHs in the fish but not at the VDH levels of concern. In 2004, VDH issued fish consumption advisory due to PCBs for both bodies of water.

- New River Fish Consumption Advisory Area

Based on data from fish collected by DEQ in 2000, VDH issued a fish advisory for the New River from the Rt. 114 bridge north of Radford to the Virginia-West Virginia state line. This new fish consumption advisory applies only to carp and recommends that no carp be consumed from the affected portion of the river. Based on DEQ data collected in 2000 and discussions with VDH, DEQ collected additional samples from the New River in October 2001 at the following locations; downstream of Claytor Lake dam, downstream of Radford, near Whitethorne, near Pembroke and at Glen Lyn. Additional sampling to gain data in this section of the New River was performed for 2002. The VDH reviewed these data and determined that no adjustments were required to the fish consumption advisory issued in August 2001. The advisory has since been modified.

- Bluestone River Fish Consumption Advisory Area

Based on data from fish collected by DEQ in 2000, VDH issued a fish advisory on August 6, 2001 for the Bluestone River from the Rt. 460-bridge crossing south of Bluefield to the Virginia-West Virginia state line. This new fish consumption advisory applies only to carp and recommends that no carp be consumed from the affected portion of the river. Based on DEQ data collected in 2000 and discussions with VDH, DEQ re-sampled this area on the Bluestone River near the sewer plant road near Route 717 and near the town of Yards in 2002. The VDH reviewed these data and determined no adjustments were required to the fish consumption advisory issued in August 2001. The advisory has since been modified.

Mercury

- North Fork Holston Mercury Monitoring

A station on the North Fork of the Holston River exceeded the screening value for mercury in 1997. This area was already under a long-term fish consumption advisory prohibiting the taking of fish from these waters for human consumption due to historical mercury contamination from a Superfund site. DEQ fish tissue monitoring data from 1997 and 2002 showed no fish samples contained mercury at concentrations greater than the FDA action level for mercury (1.0 ppm). However, some samples of rock bass were above the Virginia Department of Health's level of concern for mercury of 0.5 ppm. Subsequent monitoring data in 2003 and 2005 indicated elevated mercury above the FDA action level in several species.

- Shenandoah River Mercury Monitoring

DEQ's Valley Regional Office has an ongoing monitoring program for mercury in fish tissue, water and sediment in the South River and South Fork Shenandoah River. There have been restrictions or health advisories on consumption of fish from portions of the South and South Fork Shenandoah Rivers since the 1970s. A fish consumption advisory in some form has been in place for some portions of this river system since the 1980s. The mercury contamination originated from historic practices at the E.I. DuPont Plant in Waynesboro. In a settlement between DuPont and the Commonwealth in the early 1980s, a trust fund was established to support monitoring in the river for a projected 100-year period. Fish were most recently sampled in 1999, 2001, 2003, 2005, 2007, and 2012. The results are available on the DEQ website at http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring/FishTissueMonitoring/ShenandoahMercury.aspx. The VDH has evaluated all these data as well as recent recommendations from the National Academy of Sciences regarding mercury toxicity and assumptions of fish consumption rates. Based on their review, the VDH has changed their guidelines for issuing fish consumption advisories for mercury and has lowered their level of concern from 1.0 ppm to 0.50 ppm mercury. This is based on a new assumption of two eight-ounce meals per month, while the old screening value was based on approximately one meal per month. Based on the new, lower level of concern for mercury the VDH determined that the existing fish consumption advisory should remain in effect and be expanded into some additional portions of the river system. The revised advisory also contains updated recommendations on the amounts of fish that can safely be consumed in different sections of the rivers. The VDH stated that this action was not due to changes in mercury levels in the fish but was due to the VDH "lowering the amount of mercury recommended for fish consumption to provide more protection to the public". More information regarding mercury fish consumption can be found at http://www.vdh.virginia.gov/epidemiology/DEE/PublicHealthToxicology/PressReleases.htm. DEQ continues to monitor mercury contamination in this river system through regular meetings with stakeholders, review of literature, and communications with other experts in the field. Additional fish tissue monitoring for mercury contamination in this river system is on-going as part of the 100-year monitoring plan.

- Dragon Swamp Mercury Monitoring

Based on mercury levels detected in fish collected during the routine rotational river basin

sampling in 1998, VDH requested that DEQ resample the site in 2000. One of seven species tested at this site in 2000 exceeded the VDH screening value of 0.50 ppm. This 2000 datum was for a largemouth bass at 0.59 ppm; in 1998 the largemouth bass sample was analyzed at 1.9 ppm. DEQ sampled the site again in 2002. As a result of the 2002 DEQ sampling the VDH issued a fish consumption advisory for largemouth bass for a section of the Dragon Swamp in 2003. This is discussed above in the section on fish consumption advisories and below under "mercury in swamp waters".

- Tennessee/Big Sandy River Basin Mercury Monitoring

The VDH had concerns about mercury concentrations in whole fish from two stations (Cranesnest River and J. W. Flannagan Reservoir) sampled during the DEQ 1991 coalfields study. However, VDH could not draw any significant conclusions on associated health risks from the whole fish data. DEQ re-sampled these two stations in 1997 for mercury analysis of edible fillets. VDH has reviewed the data from 1997 and determined that the reported levels were not at a level of concern and that no additional sampling from these sites was necessary.

Mercury in Swamp Waters

In recent years there has been increasing interest in mercury contamination in fish tissue. A number of studies around the country, from the Everglades through the swamps of the southeastern United States as well as in lakes, bogs and wetlands in New England, Wisconsin and Minnesota have shown that top level predator fish species analyzed in these habitats frequently contain elevated levels of mercury. A number of these studies show that there are no known local sources of mercury in these areas and suggest that deposition of airborne mercury is a suspected source. These water bodies share natural, physical characteristics of low pH, high organic content and still or slow moving current which promote the natural methylation of mercury into the highly bioaccumulative compound methylmercury. Increased natural production of methylmercury increases the possibility that the mercury content of fish will be elevated, especially in upper level predators. This emerging realization that some water bodies may be naturally more prone to elevated levels of bioaccumulative mercury, along with the new, lower fish mercury concentration that is now being used by the VDH as an acceptable level of mercury in fish tissue has prompted DEQ to investigate potential mercury contamination more closely.

DEQ has traditionally focused the fish tissue monitoring program to monitor sites with suspected sources of pollution and apparently unpolluted habitats such as swamps were given low priority for monitoring. In order to investigate the new concern for this swamp water and mercury methylation issue, DEQ has begun to sample these habitats in more areas where there are no known or suspected sources of mercury but where the environmental conditions are favorable for mercury methylation. As a result of this sampling in 2002, elevated levels of mercury were discovered in top-level predator fish species in three swamps or “blackwater” rivers.

In October 2003, VDH established fish consumption advisories due to elevated mercury levels detected in fish-tissue in top-level predator fish species for three swamps or “blackwater” rivers. These fish consumption advisories are for the Dragon Swamp /Piankatank River, the Great Dismal Swamp Canal and the Blackwater River. These fish consumption advisories are described in more detail in the section on fish consumption advisories.

Similar elevated levels of mercury in fish-eating species of fish have been noted in similar habitats in the southeastern United States as well as lakes, bogs and wetlands in New England, Wisconsin and Minnesota. In many of these areas there are no known sources of mercury. Deposition of airborne mercury has been identified as a possible source of the mercury to the swamp water, where methylation takes place resulting in bioaccumulation up the food chain, resulting in elevated levels of mercury in the fish eating fish. This is also considered a possibility in these swamp waters in Virginia. DEQ is investigating this possibility as well as other potential sources of mercury to these water bodies. DEQ has initiated additional monitoring of fish in these areas to better understand the extent of the elevated mercury concentrations.

DDT/DDE

- Two Lakes at Tidewater Community College

The DEQ Waste Division requested VDH review of DDT/DDE concentrations in whole fish collected from two Tidewater Community College lakes at a Superfund site. The VDH preferred edible fillets but found that even the concentrations in the whole fish were below levels of concern. At the request of citizens, DEQ collected fish from the two lakes for analysis of edible fish fillets in 2000 and the VDH has reviewed these data and determined that the low concentrations in the fish present no health risks.

Dioxin

- Blackwater and Nottoway Rivers

Due to dioxin contamination by the Union Camp Company in Franklin, Virginia, a fish eating advisory was issued by the VDH in 1990 for portions of the Blackwater and Nottoway Rivers. Union Camp subsequently changed its process operations. At the request of the VDH, DEQ sampled one station each in the Blackwater and Nottoway Rivers in late 1997 for dioxin levels in fish. The results verified similar findings by Union Camp Company that the dioxin levels in the fish were below the VDH level of concern, and the advisory was lifted by VDH on March 26, 1998.

Kepone

- James and Chickahominy Rivers

From 1975 until 2000, DEQ, in consultation with the VDH, annually collected fish for kepone analysis from the James River downstream of Hopewell, in the vicinity of the mouth of the Chickahominy River and in the Hampton Roads area. Nine of the 253 fish samples collected and analyzed in 1994 exceeded the FDA action level of 0.3 ppm. In 1995 one sample out of 260 exceeded the 0.3 ppm action level. Since 1995, none of the edible fillet samples from the annual collections has exceeded the FDA action level. A biennium sampling schedule was followed from 2000 until 2004, which was then changed to a 5-year schedule. The last sampling was conducted in 2009.

Relationship between *Pfiesteria* and water quality

The 2002 water quality assessment included the sampling and analysis for a microorganism ***Pfiesteria piscicida.*** This microorganism has been linked to extensive fish kills in North Carolina estuaries. Leading experts from North Carolina State University and the Florida Department of Environmental Protection as well as other scientists have not identified the toxic microbe in samples from Virginia. However, *Pfiesteria piscicida* was found in several rivers in Maryland where fish kills occurred during the summer of 1997. No confirmed cases were found in the waters of Virginia during the 1999 summer season and at this time, DEQ has reserved judgment on water quality issues associated with *Pfiesteria*.

Once a fish kill involving lesions is reported and if *Pfiesteria piscicida* is considered a possible cause, DEQ will collect water samples for oxygen and other chemical parameters along with actual fish samples. Water samples are sent to Old Dominion University (ODU) for analysis and fish samples are sent to Virginia Institute of Marine Science (VIMS).

Reporting fish kills or fishes with lesions

DEQ has responsibility for investigating fish kills in Virginia waters. Call 1 (800) 592-54VA to be directed to the appropriate regional office.

For any health related concerns, call the VDH hotline at 1 (888) 238-6154.

CHAPTER 7.6 VIRGINIA COASTAL ZONE MANAGEMENT PROGRAM

A. Description of the Virginia Coastal Zone Management Program

Virginia's coastal zone encompasses all of Virginia's Atlantic coast watershed as well as parts of the Chesapeake Bay and Albemarle/Pamlico Estuary watersheds. This coastal zone area, also known as Tidewater, Virginia, includes 29 counties, 15 cities and 42 towns as well as all waters within and out to the three-mile Territorial Sea boundary.



The Virginia Coastal Zone Management (CZM) Program was established in 1986 to protect and enhance Virginia's coastal resources. Virginia CZM is a network of state agencies and Tidewater local governments and the CZM laws and policies they implement. Through this network, the program manages sand dunes, wetlands, underwater lands, fisheries, point and nonpoint source air and water pollution, shoreline sanitation and a variety of other areas of particular concern such as coastal wildlife habitats and public access, waterfront redevelopment and underwater historic sites. See www.deq.virginia.gov/Programs/CoastalZoneManagement/Laws,Regulations,Guidance.aspx for more details about the laws and policies that define the program.

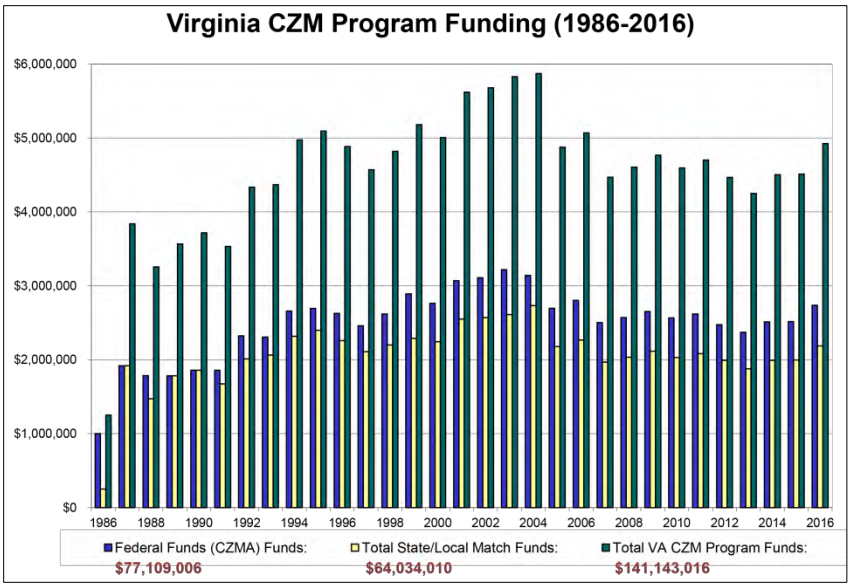
Executive Order No. 35 signed by Governor Terry McAuliffe in June 2014, continuing the Virginia CZM Program, directs all state agencies "to carry out their legally established duties consistent with this Program in a manner that promotes coordination among all government agencies." It is through this coordination that the Virginia CZM Program has been able to achieve great strides in achieving its goals and objectives." See www.deq.virginia.gov/Programs/CoastalZoneManagement/Laws,Regulations,Guidance.aspx for a list of the goals and go to www.deq.virginia.gov/Programs/CoastalZoneManagement/DescriptionBoundary/Goals.aspx to see what the program has accomplished toward reaching these goals.

Core regulatory agencies in the Virginia CZM Program network include the Marine Resources Commission (VMRC), the Department of Environmental Quality (DEQ), the Department of Game and Inland Fisheries (DGIF), the Department of Conservation and Recreation (DCR), and the Virginia Department of Health (VDH). Other agencies assisting with the Program include the Department of Historic Resources (DHR), Department of Forestry (DOF), Virginia Department of Agriculture and Consumer Services (VDACS), the Department of Mines, Minerals and Energy, the Virginia Institute of Marine Science (VIMS), the Virginia Economic Development Partnership (VEDP) and the Virginia Department of Transportation (VDOT). DEQ serves as the lead agency for Virginia's networked CZM Program and helps agencies and localities to develop and implement coordinated coastal policies.

By virtue of having a federally approved coastal zone management Program, Virginia also has the authority to require that federal actions within the coastal zone be consistent with Virginia's CZM Program. Environmental impact review staff at DEQ review federal actions in the coastal zone for consistency with Virginia's CZM Program laws and policies.

B. Coastal Zone Management Act Funding Received by Virginia

In addition to providing a forum for development and coordination of cross-cutting coastal issues, the Virginia CZM Program provides grant assistance to state agencies and local governments. Having a federally approved coastal zone management program qualifies Virginia to receive just under $3 million per year in federal funds under a formula allocation based on miles of shoreline and coastal zone population. The Office of Ocean and Coastal Resource Management at the National Oceanic and Atmospheric Administration (NOAA) allocates these funds under the Coastal Zone Management Act (CZMA). These grant funds are 50% matched by Virginia's state agencies and local governments.



Since 1986, Virginia has received just over $77 million dollars in federal CZMA funds, matched by over $64 million in state and local funds, including match from the Virginia Water Quality Improvement Fund which finances nutrient reduction strategies being developed for the Chesapeake Bay and its tributaries – specifically design and installation of nutrient reduction technology at Chesapeake Bay watershed publicly owned wastewater treatment plants. These funds are used to implement the Virginia CZM Program and to carry out a broad scope of state and local projects in the areas of coastal technical assistance, enforcement, environmental management, habitat monitoring and restoration, land acquisition, local government planning and comprehensive plans, public access planning and construction, public education, shoreline management, special area management planning, wetlands surveys and policy, and water quality monitoring/protection and improvements. For more information about the federal CZMA funding Virginia receives, how this funding is dispersed and the results of this funding visit www.deq.virginia.gov/Programs/CoastalZoneManagement/Funds,Initiatives,Projects.aspx.

Virginia Coastal Zone Management Program Initiatives Benefiting Water Quality

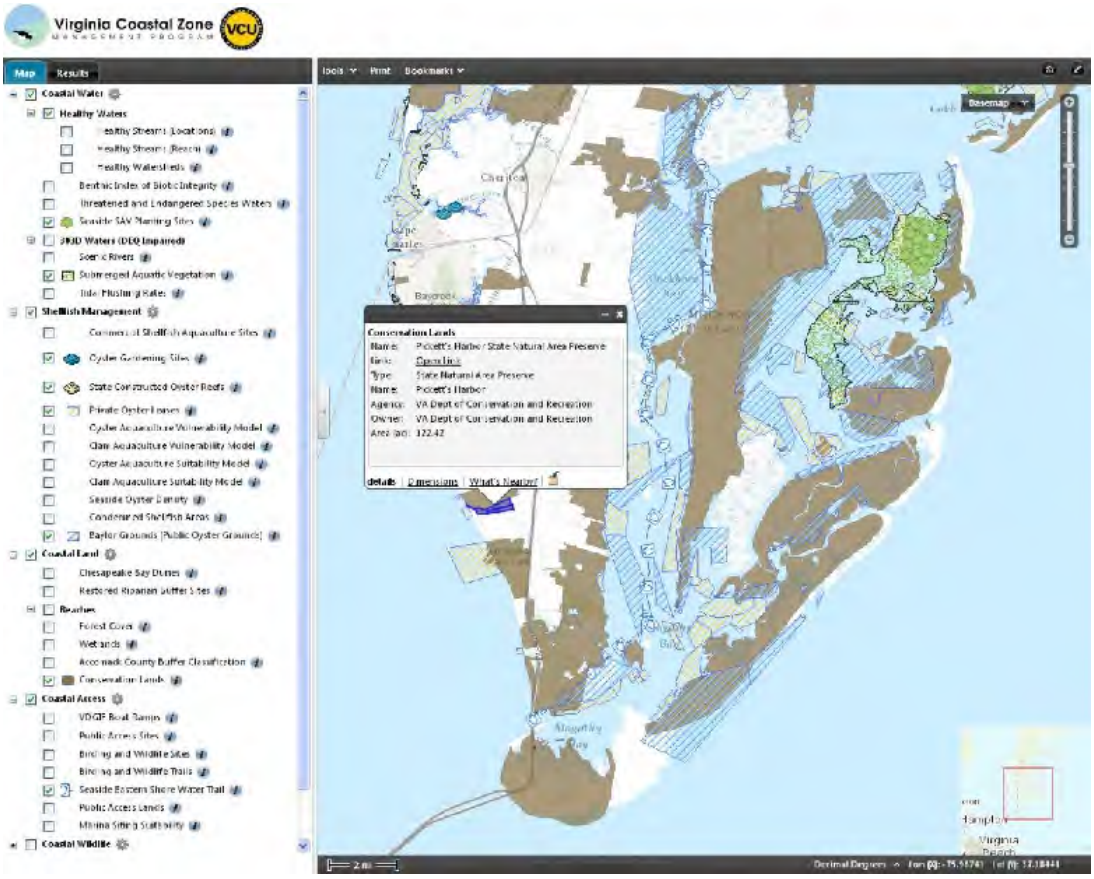
Several initiatives exemplify the Virginia CZM Program's unique opportunity to fund and support projects that protect the Commonwealth's coastal resources, while encouraging intergovernmental coordination and partnerships with a broad constituency. Highlighted below are Virginia CZM Program initiatives that address water quality and focus on education, monitoring and restoration of living resources to improve water quality in Virginia's coastal waters.

1. *Virginia CZM Program GIS-Mapping Efforts: Coastal GEMS and Coastal VEVA*

A. Virginia Coastal GEMS

In February 2007, the Virginia CZM Program launched "Coastal GEMS" (Coastal Geospatial and Educational Mapping System) found at www.deq.virginia.gov/Programs/CoastalZoneManagement/CoastalGEMSGeospatialData.aspx. Coastal GEMS integrates and provides access to a wide range of coastal resource data, fact sheets, relevant

projects, regulatory information, and important Web links. Coastal GEMS is a robust, one-stop, data gateway for federal, state, and local government decision makers. It facilitates data sharing among governments, NGOs, and the general public and promotes standards for environmental data management within the region. Coastal GEMS allows its users to explore and describe patterns and relationships among water and land ecosystem elements across broad (i.e., landscape-level) spatial scales.



The development of Coastal GEMS was a large-scale, multi-partner effort to create a "vision" or map of the ecologically and economically significant aquatic (marine and freshwater) and terrestrial resources found within Virginia's Coastal Zone. Although spatially displayed data for aquatic and terrestrial ecosystems are becoming more and more accessible through the Internet, often these data are sequestered in different agencies' and organizations' websites and are not joined into one central application to allow all users equal and efficient access. The vision was to build this type of access. Seeing the resources in one big picture could simplify the task of connecting local land use planning decisions to state and federal water use policies. A stronger understanding of how activities on the land and in the water affect one another would enable everyone to better protect and manage coastal resources in a logical and sustainable fashion - something critically needed in light of today's increasing development pressures.

The data which are being incorporated into Coastal GEMS have been the result of collaborative discussions and data-sharing efforts between many state and local agencies with a vested interest in Virginia's coastal zone and the Virginia CZM Program will continue to explore opportunities to include additional data layers from partner agencies as they are developed. The Virginia CZM Program has also funded many data development projects which are represented in Coastal GEMS data layers.

The availability of adequate coastal resource data is essential to improving decision-making at the state and local level. By mapping the best remaining blue and green infrastructure in coastal Virginia, the Virginia CZM Program's Coastal GEMS website provides an easy-to-access, visual reference for localities where vital coastal resources are located. The Virginia CZM Program continues to work closely with the Center for Environmental Studies at Virginia Commonwealth University, Worldview Solutions, Inc. and all its data-sharing partners to enhance the interface, tools, data, and information within Coastal GEMS. Coastal GEMS is now a dynamic Internet mapping application with aerial imagery, reference data layers such as roads and streams, and over 80 data layers of land and water coastal resources, models and examples for conservation planning. Unique selection tools allow you to generate tables of coastal resource information for a selected area and mapping tools allow you to easily investigate and navigate through the coastal zone and create maps that can be exported or printed for further use and analysis.

The divisions of state and local management of Virginia's coastal resources are complex and difficult for the general public to understand. In addition to the mapping component of Coastal GEMS, the Virginia CZM Program created "fact sheets" for each data layer to break down the complexity of coastal resource management. The fact sheets provide brief information and links to in-depth information on:

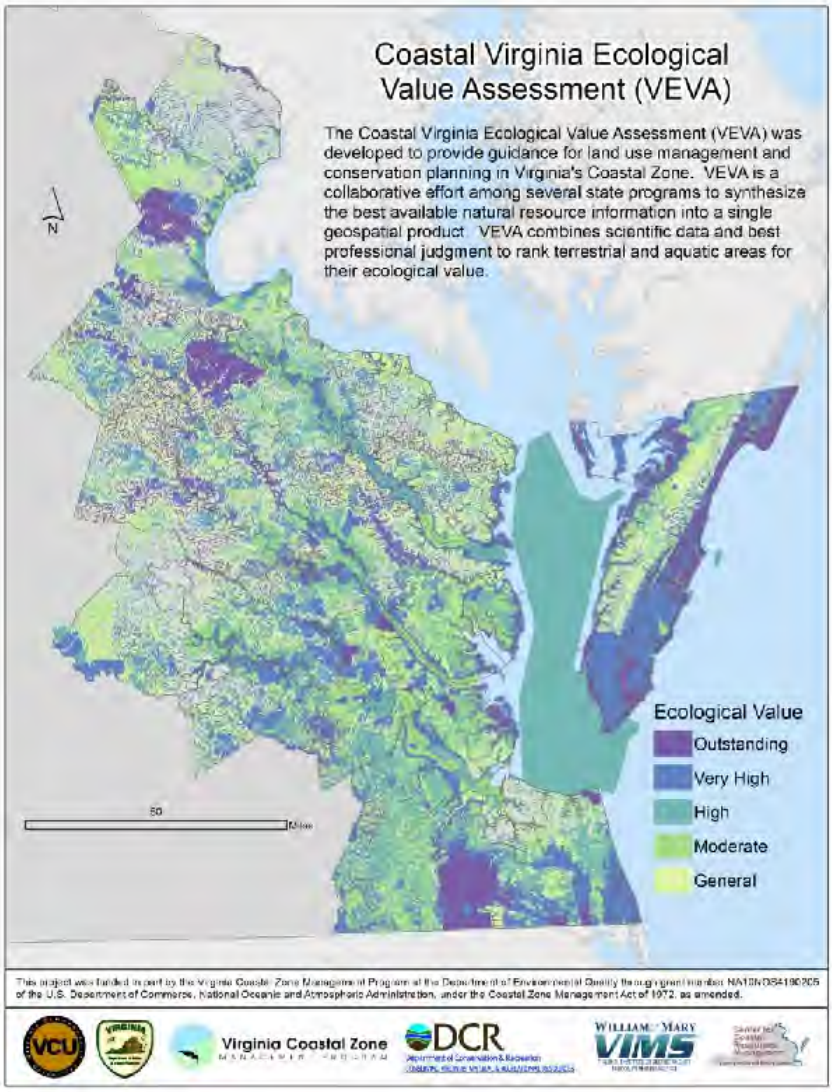
- The value of the resource (ecological, economic, and social).
- Management of the resource (at local, state, and federal levels).
- Why and how the data was developed.
- How to directly download the data or who to contact to obtain the dataset.
- Future directions if the data is associated with a long-term funded project.
- Frequently asked questions received from the general public.

The Virginia CZM Program released an improved version 2 of Coastal GEMS in 2008 and in 2013 released version 3 with additional basemaps, improved cartography, user markup and search features, and improved browser compatibility. A version 4 of Coastal GEMS is currently in the works incorporating updates that will allow users to display VBMP imagery and additional basemaps, load map services from outside sources, and view 3D visualizations of elevation and sea level rise data within Virginia's coastal zone. Version 4 updates will also include the addition of map stories to Coastal GEMS with focuses on data such as Coastal VEVA, SAV, oysters, and land conservation, as well as a new Coastal GEMS landing page with information about the Coastal GEMS application, data and partners, and links to map stories. CZM staff created and implemented a Coastal GEMS training program for state agencies, local governments, and conservation organizations including: a presentation about Coastal GEMS and why/how it was created, a live demo of Coastal GEMS which is tailored to the specific needs of the audience, and a handout with info about Coastal GEMS and the data layers available. Info regarding GEMS training was posted to GEMS website and publicized to CZM partners. The CZM Program also plans to develop a secondary education curriculum and has presented on the use Coastal GEMS in an educational context at the Virginia Environmental Education Conference.

For more information on Coastal GEMS and to see a full list of geospatial data available, please visit www.deq.virginia.gov/Programs/CoastalZoneManagement/CoastalGEMSGeospatialData.aspx *or contact Nick Meade at (804) 698-4297 or Nick.Meade@deq.virginia.gov.*

B. Coastal VEVA

Many years ago, the Virginia CZM Program envisioned a comprehensive planning tool that would streamline use of all state natural resource information into a single data set facilitating regional and local land-use management and conservation planning in the coastal zone. A collaborative effort led and funded by Virginia CZM culminated in FY 2010 (Task 11). This effort included key natural resource agencies and resulted in the Coastal Virginia Ecological Value Assessment (VEVA). Coastal VEVA integrates elements of more than 40 different data sets funded by the Virginia CZM Program alone, totaling approximately $1.3M.



Research and data collection that ultimately became the foundation for VEVA began in 1988 with CZM funded conservation planning in Virginia's Lower Peninsula (FY 1988 Task 13.b). Following this effort and throughout the 1990's, CZM funded natural heritage inventories in Virginia Beach, the Albemarle-Pamlico Estuarine region and Northampton County as well as an interstate study of the Neotropical Migratory songbird corridor in New Jersey, Delaware, Maryland and Virginia.

The idea of creating a synthesis of the multitude of this and other contributing state natural resource data layers was brought up at a 2001 Coastal Partners Workshop. Participants agreed that the Virginia CZM Program should create a map of the best remaining coastal lands and waters, in other words the best remaining "green" and "blue" infrastructure. In response, the Virginia CZM Program crafted a Section 309 strategy beginning in FY 2003 that focused on data collection and data synthesis. Grants were awarded to DCR/Natural Heritage for priority conservation areas, to VCU for in-stream assessments, and to VIMS for blue infrastructure maps. In 2008 work began on synthesizing the blue and green infrastructure layers. The Virginia Department of Game and Inland Fisheries (DGIF), Virginia Department of Conservation and Recreation – Division of Natural Heritage (DCR-DNH), and Virginia Commonwealth University – Center for Environmental Studies (VCU-CES) collaborated to combine conservation information and priorities into a unified dataset of priority conservation areas. While the PCA assessed priorities on land, incorporating both stream and watershed health, it did not include all ecologically valuable regions within Virginia's tidal waters. Coastal VEVA builds on the PCA and incorporates an

assessment of estuarine natural resources recognizing that ecological value of Virginia's coastal lands and waters are inextricably linked—with land use decisions on the upland ultimately affecting water quality and habitat health in receiving waters. The estuarine component was produced by VIMS College of William and Mary Center for Coastal Resource Management through a series of grants. Coastal VEVA is defined as lands, aquatic resources and surface waters identified as important for conservation of Virginia's wildlife, plants, and aquatic and natural communities. The identified lands, aquatic resources and waters can be used to prioritize areas for preservation, protection or specific management action.

An update to Coastal VEVA is currently in the works through Virginia CZM Program funding to DCR-DNH, DGIF, and VCU CES. DCR-DNH is updating their Virginia Natural Landscape Assessment using the 2011 NLCD and DGIF is updating their Priority Wildlife Diversity Conservation Areas synthesis (including updates to their Tiered Species Habitat, Anadromous Fish Use Waters, and Unique Terrestrial and Aquatic Areas datasets). Once the updates from DCR and DGIF are complete, VCU CES will compile all of the data that make up the Coastal VEVA synthesis (including the DCR-DNH and DGIF datasets as well as additional data layers from VCU and VIMS that have been updated since VEVA was originally created) and run the VEVA model update.

To view an interactive version of the Coastal VEVA data layer as well as an informative fact sheet (complete with links to download the data layer and its various inputs from our partners), visit the Virginia CZM's web mapping application Coastal GEMS at www.deq.virginia.gov/Programs/CoastalZoneManagement/CoastalGEMSGeospatialData.aspx. *For more information contact Nick Meade at (804) 698-4297 or Nick.Meade@deq.virginia.gov*

2. *Virginia Coastal Nonpoint Source Pollution Program*

In 2001, Virginia became the sixth state to receive full approval of its *Coastal Nonpoint Pollution Control Program* from NOAA and EPA. Development of the program was initiated in the fall of 1992 in response to Section 6217 of the Coastal Zone Management Act Reauthorization Amendments of 1990. Section 6217 of the Act requires that states with an approved coastal zone management program, develop a Coastal Nonpoint Source Pollution Control Program. The statute is meant to restore and protect coastal water quality through the application of economically achievable "best management practices" implemented through enforceable state policies and mechanisms. The federal government defines state enforceable policies and mechanisms as state and local regulatory controls and/or non-regulatory incentive programs combined with state enforcement authority.

There are 56 management measures contained in the *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*, a comprehensive technical document issued by EPA on methods to abate and control nonpoint pollution in coastal areas. The chapters include management measures in the following areas: agriculture, forestry, urban areas, marinas and recreational boating, and hydromodification (channelization and channel modification, dams and streambank and shoreline erosion). This document is available at www.epa.gov/owow/nps/MMGI/.

In order to gain approval of its Coastal Nonpoint Pollution Control Program, Virginia was required to show that:

1) State programs include appropriate management measures (defined in the above guidance) to control NPS pollution;
2) The state has a means of implementing the management measures, and;
3) The state has sufficient statutory authority and enforcement capabilities to ensure implementation of management measures to reduce NPS pollution impacts on coastal resources.

With approval of its Coastal Nonpoint Pollution Control Program, Virginia remains eligible for full funding under the Coastal Zone Management Act and Section 319 of the Clean Water Act.

Following are some of the projects that contributed to the approval of Virginia's Program:

- A series of workshops on the proper use of irrigation systems and development of informational material on irrigation best management practices;
- Development of a web-enabled database for use by local government to track erosion & sediment control activities; development of a model local stormwater ordinance; and an economic evaluation of incorporating BMPs into site design;
- Development of shore lands planning protocol for use by local governments to enhance planning capabilities for areas adjacent to shore lands;
- A statistical analysis of the impact of channelization activities and dams in Tidewater Virginia on in-stream & riparian habitat;
- A plasticulture guidebook for local government and farmers recommending practices to protect water quality for operations using plastic mulch;
- Development of the Virginia Clean Marina Program to provide technical assistance to marinas and recreational boaters.

See the most recent Virginia Nonpoint Source Management Plan annual report to EPA here. http://www.deq.virginia.gov/Portals/0/DEQ/Water/NonpointSource/NPSAnnualReports/2016%20Virginia%20NPS%20Annual%20Report.pdf

Virginia's Coastal Nonpoint Pollution Control Program is facilitated by the Virginia Coastal Zone Management (CZM) Program and implemented by CZM agency partners such as the Virginia Department of Environmental Quality (DEQ), the Virginia Department of Conservation and Recreation (DCR), the Virginia Department of Forestry (DOF), the Virginia Marine Resources Commission (MRC), Virginia Institute of Marine Science (VIMS) and Virginia Commonwealth University (VCU) along with local and regional governments from eight coastal planning districts.

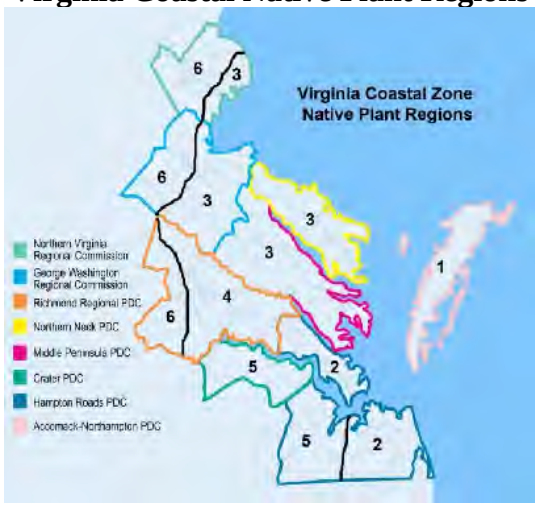
With no current appropriation to fund the Coastal Nonpoint Pollution Control Program, Virginia is addressing non-point pollution issues in the coastal zone through the Department of Conservation and Recreation's Healthy Waters program, providing support and technical assistance to local and regional government water quality protection, green infrastructure and sustainable shoreline planning projects.

For more information, contact Beth Polak, Coastal Planner at the Virginia CZM Program, 804-698-4260 or Todd Janeski,804-371-8984 Healthy Waters Program Manager.

3. Increasing the Availability and Use of Virginia Native Plants

In spring 2009, the Virginia CZM Program and its partners launched the *Plant ES Native*s campaign on Virginia's Eastern Shore using proven social marketing tools and techniques with a focus on increasing the use of Virginia native plants for their habitat, water quality and many other values. The campaign has been a model for additional regional campaigns funded by the Virginia CZM Program on the Northern Neck – *Plant NNK Natives*, in Northern Virginia – *Plant NoVA Natives* and a campaign being developed in the George Washington Regional Commission area – *Plant Central Rapp Natives*. A strategic plan was completed to increase native plant use and vegetative cover in the Hampton Roads in early 2016. Components of the *Plant ES Natives Campaign* strategy - such as a regional plant guide (based on the *Flora of Virginia* published in December 2012 - http://floraofvirginia.org/), - have been easily transferrable to address barriers common in all the regions to planting

Virginia Coastal Native Plant Regions



The Virginia CZM Program hopes to have a campaign in every coastal planting region – map above. These native plant regions were delineated by DCR Natural Heritage. The map shows the alignment of these planting regions with Virginia's 8 coastal planning district commissions.

natives. Regional native plant guides are now available for Northern Virginia, Northern Neck, Eastern Shore, Southeast Virginia (including Hampton Roads) and one is under development for the Central Rappahannock. A regional guide for the Richmond area is planned in 2017. Many of the same organizations are participating on the regional campaign steering teams, including planning district commission and local government staff, state agency staff, local chapters of the Virginia Native Plant Society, Master Gardeners, Master Naturalists, Virginia Soil and Water Conservation Districts.



Although the Virginia CZM Program's federal CZMA funding must be spent in Virginia's coastal zone, the efforts the program and its partners have generated interest in western areas of the state (a regional native plant guide is also available for the northern Piedmont), and presented an opportunity for the program to encourage and support state-wide coordination and collaboration on native plant marketing. In 2011, the Virginia CZM Program reached out to other state and regional focused partners engaged in native plant marketing efforts and initiated the ***Virginia Native Plant Marketing Partnership*** (VNPMP). The goal of the VNPMP is to *identify opportunities to collaborate and partner on Virginia native plant communication and marketing efforts and form a cohesive and coordinated strategy to encourage the use of native plants coastal zone wide for their many benefits and help meet Virginia's habitat restoration and water quality goals, specifically TMDL goals.*

One of the goals prioritized by the VNPMP members was support for the development of a Chesapeake Bay Landscape Professional (CBLP) Program to create a network of certified professionals who will be better stormwater partners and environmental stewards. This program was piloted in the fall of 2016 in Virginia, Maryland and DC, and will be available across the watershed in 2017. For more information, visit http://cblpro.org/about-cblp/.

For more information visit
www.deq.virginia.gov/Programs/CoastalZoneManagement/CZMIssuesInitiatives/NativePlants.aspx :
Virginia Witmer, Outreach Coordinator, Virginia CZM Program – 804.698.4320 or
Virginia.Witmer@deq.virginia.gov

4. Virginia Coastal Needs Assessments and Strategies

Section 309 of the Coastal Zone Management Act (CZMA) establishes a match-free coastal zone enhancement grants program to encourage coastal states to develop new enforceable policies. The National Oceanic and Atmospheric Administration (NOAA) awards CZMA funds and requires that coastal states assess changes, progress and new issues in the nine areas below every five years.

1. Wetlands
2. coastal hazards
3. public access
4. marine debris
5. cumulative and secondary impacts
6. special area management planning (SAMPs)
7. ocean resources
8. energy and government facility siting
9. aquaculture

After completion of a draft assessment, the Virginia CZM Program's Coastal Policy Team (CPT) meets to review and prioritize (high, medium or low priority) the nine assessment areas for the next five years of work and to develop strategies to address the priority areas. During the reporting period, the 2011-2015 Coastal Enhancement Strategies were completed, the 2015 Assessment was completed, and projects

were begun to address the 2016-2020 Strategies. All of the projects undertaken to implement the strategies have either direct or indirect impacts to water quality.

A. Virginia's 2010 Coastal Needs Assessment and FY2011 - FY2015 Strategies

Based on needs identified in the 309 assessment process and Coastal Policy Team discussion, the Virginia CZM Program focused its efforts on the following assessment areas and issues between 2011 and 2015.

- Cumulative and Secondary Impacts of Growth and Development (CSI)
  - Working Waterfronts
  - Living Shoreline Policies
  - Local Shoreline Plans
  - Water Quality: Urban, Transitional and Rural Areas
- Special Area Management Plans (SAMPs)
  - Seaside SAMP
- Ocean Resources
  - Ocean Planning
  - Marine Mammal Mapping
  - Marine Debris

B. Virginia's 2015 Coastal Needs Assessment and FY2016 - FY2020 Strategies

The Virginia CZM Program is focusing its efforts on the following assessment areas and issues between 2016 and 2020.

- Coastal Hazards
  - Shoreline Plan and Policy Development
  - Community Resiliency Plans
- Cumulative and Secondary Impacts
  - Chickahominy River: Leveraging Economic Benefits of Land Conservation
  - Working Waterfronts
- Ocean Resources
  - Stakeholder Coordination
  - Sand Management
  - Ocean Data Collection/Synthesis or Tools
  - Marine Debris

The Coastal Needs Assessment and Strategies portion of the Virginia CZM Program website provides detailed information on the Section 309 process as well as links to the 2011-15 and 2016-2020 documents. Pages 6 - 21 of the 2016-2020 Assessment and Strategies document provide a summary of accomplishments from the 2011-2015 Strategies.
www.deq.virginia.gov/Programs/CoastalZoneManagement/Funds,Initiatives,Projects/CoastalNeedsAssessment/CoastalNeedsAssessmentFY20112016.aspx

C. Virginia Marine Debris Reduction Plan

The Virginia CZM Program's Ocean Resources Strategy resulted in the development of the **Virginia Marine Debris Reduction Plan** – published in December of 2014. Virginia became the first state on the east coast to have a plan in place to address marine debris. The plan charts a course to reduce the amount of trash and marine debris from land-based and water-based sources in Virginia - for ecological, social and economic benefits - through: leadership, prevention, interception, innovation and removal. The complete plan and a summary publication are downloadable on the Virginia CZM Program website at http://www.deq.virginia.gov/Programs/CoastalZoneManagement/CZMIssuesInitiatives/MarineDebris.aspx. In March 2016, Virginia CZM Program funded and collaborated with its partners to conduct the 2nd Virginia Marine Debris Summit, including Clean Virginia Waterways of Longwood University, Virginia Institute of Marine Science - Sea Grant and Virginia Clean Marina Program, Virginia Aquarium, Keep Norfolk Beautiful, and the NOAA Marine Debris Program. The goal of the Summit was to bring together federal, state and local resource managers, scientists, community educators, non-profit members, citizens, and representatives of industry and commerce to share knowledge, evaluate progress, and craft next steps in the Virginia Marine Debris Reduction Plan. Among the ideas discussed were ways to integrate litter/trash programs with existing programs, like the MS4 permit process and the Chesapeake Bay cleanup efforts.

Having a Marine Debris Reduction Plan in place also will help Virginia meet one of its goals as a member of the Mid-Atlantic Regional Council on the Ocean (MARCO). One of MARCO's water quality issues of concern is marine debris. Read more about Virginia's role and work with MARCO at www.deq.virginia.gov/Programs/CoastalZoneManagement/CZMIssuesInitiatives/OceanPlanning/VirginiaOceanPlanning.aspx.

The Virginia CZM Program worked with the other Mid-Atlantic states to form the Mid-Atlantic Regional Council on the Ocean in 2009 (www.midatlanticocean.org) and joined with states, federal agencies and tribes to form the Mid-Atlantic Regional Planning Body in April 2013; www.boem.gov/Environmental-Stewardship/Mid-Atlantic-Regional-Planning-Body/index.aspx. In December 2016, the Mid-Atlantic RPB's **"Mid-Atlantic Ocean Action Plan"** was certified by the National Ocean Council **-** one of the nation's first two regional ocean plans in the U.S. The plan covers the ocean from Virginia to New York out to the 200-mile Exclusive Economic Zone. Its two main goals are to promote a healthy ocean ecosystem and sustainable human uses. Actions in the plan focus on better coordination and collaboration among federal agencies, states and tribes and the use of raw and synthesized data in the Mid-Atlantic Ocean Data Portal (http://portal.midatlanticocean.org). The plan can be viewed at http://www.boem.gov/Draft-MidA-Regional-Ocean-Action-Plan/.



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5. Coastal Planning District Commissions

Virginia's eight coastal planning district commissions (PDCs) play an integral role in the Virginia Coastal Zone Management (CZM) Program. (See What is a "planning district commission") and all eight coastal PDCs meet quarterly with Virginia CZM staff. In addition, each PDC holds quarterly meetings for its local coastal resource managers. Coastal PDCs provide an important link between the state agencies and 87 localities that constitute Virginia's network of coastal resource managers. A representative from each PDC serves on the Virginia CZM Program's Coastal Policy Team and all eight coastal PDCs meet quarterly with Virginia CZM staff. In addition, each PDC holds quarterly meetings for its local coastal resource managers.

- Accomack-Northampton Planning District Commission
- Crater Planning District Commission
- Hampton Roads Planning District Commission
- Middle Peninsula Planning District Commission
- Northern Neck Planning District Commission
- Northern Virginia Regional Commission
- George Washington Regional Commission
- Richmond Regional Planning District Commission

The Virginia CZM Program supports each coastal PDC with an annual technical assistance grant and has provided assistance for a variety of regional and local coastal resource management projects sponsored by the PDCs.

With this funding support, Virginia's coastal PDCs have been instrumental in the planning and implementation of key water quality projects including:

Accomack-Northampton Planning District Commission

A. Southern Accomack County Ground Water Summit

The *Southern Accomack County Ground Water Summit* focused on communities within southern Accomack County including the towns of Onancock, Onley, Accomac, Wachapreague, Melfa, Keller, Painter, and Belle Haven. Presentations were made summarizing specific ground water conditions to different stakeholder groups including town and county governments and planning commissions, private citizens, and businesses.

The summit provided information on how past environments on the Eastern Shore have influenced public ground water supply with specific descriptions concerning Chesapeake Bay bolide impact, the southward progradation of the Susquehanna River and the Delmarva Peninsula and the influence of Carolina Bays on ground water. Additional explanation was given of past environments and how they affect water quality, resulting in high iron in some areas, sulfur smell in other areas, and hard carbonate waters, all on the Eastern Shore. The presentations gave insight into most issues surrounding the region’s sole source aquifers.

George Washington Regional Commission

A. Caroline County BMP Assessment, Tracking and Monitoring System

In partnership with University of Mary Washington, GWRC enhanced Caroline County's very basic BMP tracking system to provide more efficient organization of BMP site information, including map coordinates and BMP locations, site and property owner contact information, maintenance agreements, approved site plans and schematic drawings. The improved database enables the County to record and track the status of BMP inspections required under the Virginia Storm Water Management regulations and Chesapeake Bay Preservation Act to ensure that they are functioning as intended. The County can also more efficiently perform assessments of the existing conditions of these BMPs and determine which are in need of remedial action to restore their original water quality improvement design efficiencies.

B. Regional VSMP/Construction General Permit Roundtable

GWRC Storm Water Managers Technical Committee and Rappahannock River Basin Commission hosted a regional roundtable for local government staff to discuss the successes, problems and concerns with implementing Virginia's recently adopted VSMP and the revised Construction General Permits. In July of 2014 all localities were required to either adopt a VSMP (not optional for MS4 localities) or have the State take control of the local storm water program. The "rural" localities needed to indicate their desire to opt-in to the VSMP program by July 1 if they chose to operate the VSMP themselves. The Commonwealth's Construction General Permit was revised significantly as well. As with any new statewide program, there are many issues that need to be addressed as implementation is underway. The objective of the forum was to bring forth a better understanding of the complexities, issues and challenges that face the public and private sector in addressing storm water runoff in the Basin and to explore how the current mechanisms of the state's storm water programs operate. The summit attracted over 75 participants and concluded with the recommendation that the GWRC/RRBC Technical Committees continue to discuss and develop recommendations for improving the coordination and implementation of storm water programs within the Rappahannock Basin.

CHAPTER 7.7 CHESAPEAKE BAY PROGRAM INITIATIVES

The Commonwealth of Virginia has 120 miles of Atlantic Ocean coastline and approximately 2,200 square miles of estuary. The estuarine waters of Chesapeake Bay and its tidal tributaries are valued for their commercial fishing, wildlife, sporting, and recreational opportunities, as well as its commercial values in shipping and industry. In the late 1970's, adverse trends in water quality and living resources were noted and prompted creation of the Federal-Interstate Chesapeake Bay Program (CBP).

Through participation in the CBP and implementation of special state initiatives, Virginia maintains a firm commitment to rehabilitate and wisely manage its estuarine resources. This chapter provides an overview of the state's initiatives intended to restore and preserve the Chesapeake Bay and its tidal tributaries.

More about the Chesapeake Bay Program can be found on their website: http://www.chesapeakebay.net/.

Chesapeake Bay Program and the Bay TMDL

In 1983, Virginia, Maryland, Pennsylvania, the District of Columbia, the Environmental Protection Agency, and the Chesapeake Bay Commission signed the first Chesapeake Bay Agreement, formally initiating the restoration and protection of the Bay using a cooperative Chesapeake Bay Program approach. This approach established specific mechanisms for its coordination among the Program participants. Over the past decades several updated and new Bay Agreements, Executive Council Directives and pollution reduction strategies have been adopted by the Bay Program partners, generally refining and making the goals and objectives of the restoration effort more specific, establishing timelines and measurable outcomes to gauge progress.

On June 28, 2000, the Chesapeake Executive Council signed Chesapeake 2000 – a far-reaching agreement that has been guiding Maryland, Pennsylvania, Virginia, the District of Columbia, the Chesapeake Bay Commission, and the U.S. Environmental Protection Agency (EPA) in their combined efforts to restore and protect the Chesapeake Bay. Chesapeake 2000 outlined over 100 commitments in five program areas – Living Resource Protection and Restoration, Vital Habitat Protection and Restoration, Water Quality Protection and Restoration, Sound Land Use, and Stewardship and Community Engagement – detailing protection and restoration goals critical to the health of the Bay watershed. From pledges to increase riparian forest buffers, preserve additional tracts of land, restore oyster populations and protect wetlands, Chesapeake 2000 pushed improving water quality as the most critical element in the overall protection and restoration of the Bay and its tributaries.

On June 16, 2014, the Chesapeake Executive Council signed the Chesapeake Bay Watershed Agreement – an update to the Chesapeake 2000 agreement. Representatives from Maryland, Pennsylvania, Virginia, the District of Columbia, the Chesapeake Bay Commission, and the U.S. Environmental Protection Agency (EPA) reaffirmed their support of the partnership. The 2014 agreement recommits partners to the Bay watershed restoration effort and emphasizes the need for a strategic, cost-effective approach to watershed restoration and protection. New signatories include New York, West Virginia and Delaware; over 12 federal agencies have also committed to restoration and protection efforts. The 2014 Watershed Agreement outlined 10 goals for five program areas – Abundant Life, Clean Water, Climate Change, Conserved Lands, and Engaged Communities – including the development and implementation of management strategies for the outcomes supporting goals outlined in the Agreement.

Despite some reductions in pollution resulting from nutrient load reduction efforts, the Chesapeake Bay and most of its tidal tributaries have been placed on the "impaired waters" list due to non-attainment of water quality standards. Per Section 303(d) of the Clean Water Act, this action necessitated the development of a "total maximum daily load" (TMDL). Since 2005 DEQ and regulatory agencies across seven jurisdictions (Virginia, Maryland, Delaware, West Virginia, Pennsylvania, New York, and the District

of Columbia) have been actively involved with EPA in the development of this TMDL, the largest ever developed to date. The Chesapeake Bay TMDL, approved December 31, 2010 by EPA, is an aggregation of smaller TMDLs representing the 92 individual tidal segments (39 of which belong to Virginia) comprising the Bay and its tributaries. The TMDL sets Bay watershed annual limits of 185.9 million pounds for nitrogen (25% reduction), 12.5 million pounds of phosphorus (24% reduction), and 6.45 billion pounds of sediment (20% reduction). These limits are divided by jurisdiction and major river basin as determined by modeling, on-the-ground monitoring data, and peer-reviewed science. A goal has been set to put all pollution control measures in place by 2025, with 60% of actions being completed by 2017. Increased dissolved oxygen concentrations, improved water clarity and growth of submerged aquatic vegetation (SAV), and the reduction in the frequency and size of algal blooms (as measured by chlorophyll *a* concentrations) are among the anticipated outcomes in water quality from these actions. More about the Chesapeake Bay TMDL can be found here: http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html.

In Virginia, the Department of Environmental Quality (DEQ) has primary responsibility for point source discharge issues, non-point source control programs, bringing together programs in the areas of surface and groundwater protection, waste management, and air pollution control. Other state and federal agencies that provide vital support include: Department of Conservation and Recreation, Game and Inland Fisheries, Forestry, Health, Marine Resources Commission, Agriculture and Consumer Services, the United States Geological Survey and the scientific community via agreements with the Virginia Institute of Marine Science, Old Dominion University and Virginia Commonwealth University.

Watershed Implementation Plan

Virginia's Watershed Implementation Plan (WIP) for the Bay TMDL is an evolution of Virginia's Tributary Strategies Program started in 2005. It was designed through a collaboration of agencies under the Secretary of Natural Resources, local and regional non-regulatory governmental bodies, concerned citizen groups, and the regulated community to accomplish the allocation goals set by the Bay TMDL. The first of three phases of the WIP establishes the authorities, actions, and control measures that will be implemented to achieve the non-point and point source TMDL allocations. It allocates basin-specific pollution loads to wastewater treatment plants, agriculture, forest, urban stormwater, septic, and air sources. It is anticipated that many of these allocations will be achieved through the enforcement of current and proposed regulations. Proposed tax credits and existing grant programs (such as Virginia's Water Quality Improvement Fund) will facilitate Best Management Practices (BMPs) and system upgrades that prevent and/or reduce nutrient and sediment pollution. Use of the existing Nutrient Credit Exchange program is also incorporated into the plan. Additionally, the WIP charts out a study designed to evaluate the numeric chlorophyll *a* standards used to determine nutrient impairment in the tidal portion of the James River. More information about Virginia's Phase II WIP can be found at the following website: http://www.deq.virginia.gov/Portals/0/DEQ/Water/TMDL/Baywip/vatmdlwipphase2.pdf. Virginia is currently preparing its Phase III WIP, which will include a more focused and sustainable local engagement effort and local strategies, as described here: http://www.deq.virginia.gov/Programs/Water/ChesapeakeBay/ChesapeakeBayTMDL/PhaseIIIWatershedImplementationPlanning.aspx. This planning is partially informed by the midpoint assessment – a review of the progress Virginia has made towards meeting the nutrient and sediment pollutant load reductions necessary for Bay restoration. Virginia reports on progress in the annual report on Chesapeake Bay and Virginia Waters Clean-Up Plan. The latest report is found at http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/RD4002016/$file/RD400.pdf.

Water Quality and Habitat Monitoring Initiatives

Chesapeake Bay Program

Monitoring is vital to understanding environmental problems, developing strategies for managing the Bay's resources, and assessing progress of management practices. The purpose of the Chesapeake Bay Program (CBP) Water Quality and Habitat Monitoring Program is to assess status and trends in

water quality and living resources throughout the Virginia portion of the Bay and its major tidal tributaries. Parameters monitored include those directly related to Water Quality Standards (e.g. dissolved oxygen, water clarity, chlorophyll *a,* etc.) as well as basic ecological health indicators such as primary productivity, nutrients, phytoplankton species, etc. A general description of Virginia's Chesapeake Bay monitoring program is:

- Water quality monitoring at 45 fixed stations on the Rappahannock, York and James Rivers;
- Water quality monitoring at 27 fixed stations in the Chesapeake Bay mainstem;
- Water quality monitoring and estimates of nutrient loading at stations on the James, Rappahannock, Mattaponi, Pamunkey, Shenandoah, Appomattox, Chickahominy and other smaller rivers throughout the Bay watershed;
- Monitoring of benthos communities in the Bay and its tributaries at 19 fixed stations and 100 random stations per year;
- Spatially and temporally intensive monitoring of selected water quality parameters on a rotating waterbody basis for 3-year periods.
- Annual aerial submerged aquatic vegetation surveys through-out the Bay and its tributaries.

Estuarine Probabilistic Monitoring Program (Coastal 2000)

A less extensive monitoring program which probabilistically samples all of VA's estuarine waters (including those outside the Bay watershed such as on the Atlantic coast of the Eastern Shore, Back Bay, and North Landing River) is the "National Coastal Assessment (NCA) Program", formerly known as the "Coastal 2000 Initiative". A detailed description of this program is provided in Chapter 3.2.

Habitat Restoration

The Bay Program partnership implements programs to restore critical habitats and tracks progress on an annual basis. These efforts not only restore habitat for wildlife and fisheries, but they also improve water quality. Since 2003, 173 acres of submerged aquatic vegetation were planted Bay-wide. Between 2010 and 2012, 5,503 acres of wetland were established Bay-wide. Since 1988, 2,576 miles of fish passage (primarily via dam removals) were restored Bay-wide. As of 2014, oyster restoration efforts have taken place in the Lynnhaven, Piankatank, and Lafayette Rivers. For more information on DEQ's role in coastal habitat restoration, see Chapter 7.5.

The 2014 Watershed Agreement included a Vital Habitats Goal to "restore, enhance and protect a network of land and water habitats to support fish and wildlife and to afford other public benefits, including water quality, recreational uses and scenic value across the watershed." Goal outcomes addressed the following areas of concern: wetlands, black duck population, stream health, brook trout population, fish passage, submerged aquatic vegetation, forest buffers, and urban tree canopy,

Toxics

The 1987 Chesapeake Bay Agreement committed signatories to develop, adopt and begin implementation of a basin-wide toxics strategy to achieve a reduction of toxic pollutants consistent with the Water Quality Act of 1987. Following the implementation of a multi-jurisdictional effort to define the nature, extent, and magnitude of toxics problems, the strategy was further strengthened with the adoption of the 1994 Basin-Wide Toxics Reduction and Prevention Strategy. The primary goal of the 1994 strategy was to have a "*Bay free of toxics by reducing and eliminating the input of chemical contaminants from all controllable sources to levels that result in no toxic or bioaccumulative impact on living resources that inhabit the Bay or on human health".*

Building upon progress achieved through the implementation of the 1994 Strategy, the Chesapeake Bay Program adopted a revised strategy in December 2000 known as the "Toxics 2000 Strategy". With the

retention of the 1994 goal, new objectives and commitments were developed and incorporated. The agreement made commitments to four goals: 1) prevent and reduce chemical contaminant inputs and eliminate toxic impacts on living resources that inhabit the Bay and rivers 2) eliminate all chemical contaminant-related fish consumption bans and advisories, 3) clean up contaminants in the sediment in the three most urbanized areas referred to as "Regions of Concern" (i.e., Baltimore Harbor, Anacostia River, Elizabeth River), and 4) sustain progress in the face of increasing population and expanded development within the watershed. Though much of the pollution control measures since 2000 have focused on nutrients and sediments, progress has been made on accomplishing these goals through the collaborative work of federal, jurisdictional, and non-governmental organizations. One success story is the removal of sediments contaminated by polyaromatic hydrocarbons and other pollutants from the Elizabeth River. The Toxic 2000 Strategy also includes commitments to the continued monitoring and reporting of toxics and their biological impacts. *Toxic Contaminants in the Chesapeake Bay and its Watershed: Extent and Severity of Occurrence and Potential Biological Effects* [1] provides the most recent overview of this work.

The 2014 Watershed Agreement established a Toxic Contaminants Goal to "ensure that the Bay and its rivers are free of the effects of toxic contaminants on living resources and human health." Goal outcomes included increased research efforts related to the impact and mitigation of toxic contaminants as well as improved policy and prevention efforts.

[1] *US Environmental Protection Agency, US Geological Survey, US Fish and Wildlife Service, 2012 Toxic Contaminants in the Chesapeake Bay and its Watershed: Extent and Severity of Occurrence and Potential Biological Effects, USEPA Chesapeake Bay Program Office, Annapolis, MD, December, 2012, 175 pages*

CHAPTER 7.8 WETLANDS ASSESSMENT AND PROGRAM INITIATIVES

Overview

Generally speaking, wetlands are lands transitioning between terrestrial and deep-water habitats where the water table is usually at or near the land surface or where the land is covered by shallow water (Cowardin *et al*., 1979). Virginia has many different types of wetlands, including salt marshes, estuarine wetlands along freshwater portions of tidal streams, interdunal swales, pocosins, palustrine wetlands in freshwater floodplains, freshwater swamps, bogs, fens, wet weadows, and isolated wetlands.

Wetlands may be defined in different ways with regard to jurisdictional issues, but all wetlands have in common a seasonal pattern of hydrology or continuous inundation, characteristic hydric soils, and vegetation adapted to growing under saturated condition. For example, the Wetlands Act of 1972 (Title 62.1 of the Code of Virginia) defines tidal wetlands for the purposes of protecting the resource and regulating development. As such, vegetated tidal wetlands are defined in the Act as "all land lying between and contiguous to mean low water and an elevation above mean low water equal to the factor 1.5 times the mean tide range at the site of the proposed project in the county, city or town in question," and on which are growing one or more of 37 specified species of wetlands vegetation. Non-vegetated wetlands are defined as all other lands between mean low water and mean high water. The Act does not include a definition for non-tidal wetlands, nor does it include all lands that are considered to be wetlands under federal law. The definition of wetlands contained in the DEQ's Virginia Water Protection Permit Program Regulation 9VAC25-210-10 *et seq*. parallels the federal definition of wetlands contained in Section 404 of the Clean Water Act: "Wetlands mean those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and, under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." Wetlands are part of State Waters per Section 62.1-44.3 of the Code of Virginia. State Waters means “all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.”

Wetlands occupy approximately four percent of Virginia’s land mass (Dahl, 1990). United States Fish and Wildlife Service National Wetlands Inventory mapping and research from state scientists have estimated that vegetated palustrine wetlands cover approximately 1,075,443 acres of Virginia; estuarine wetlands cover approximately 190,996 acres; lacustrine wetlands cover about 193 acres; and riverine wetlands cover about 380 acres (Hershner *et al*., 2000). Approximately 72 percent of the wetland areas in Virginia, including all the estuarine wetlands and most of the large nontidal palustrine wetlands, are in the Coastal Plain (Tiner and Finn, 1986). Approximately 22 percent of the wetlands in Virginia are in the Piedmont, and the remaining 6 percent are in the Appalachian Plateau (Tiner and Finn, 1986; Harlow and LeCain, 1991). Virginia has worked with local scientists to develop geographic information system-based (GIS) estimates of wetland acreage and wetland type by watershed, which can be used in cumulative wetland impact assessments, as discussed further in the Wetland Monitoring and Assessment section of this report.

Development activities in wetlands in Virginia are regulated by the U.S. Army Corps of Engineers (the Corps) through Section 404 of the Clean Water Act; by the Department of Environmental Quality, through the Virginia Water Protection Permit Program and Section 401 of the Clean Water Act; by the Virginia Marine Resources Commission (VMRC); and by local Wetland Boards through the Virginia Tidal Wetlands Act of 1972. For more information about wetlands, the historical development of the program, applicable laws/regulations, and permitting, see the VWP Permit Program web page at http://www.deq.virginia.gov/Programs/Water/WetlandsStreams.aspx.

Virginia has experienced losses of wetlands as a result of human-related development. In the 1780’s, wetlands covered about 1,849,000 acres (more than 7 percent) of Virginia (Dahl, 1990). By the mid-1980’s, when permits began to be required for most impacts to wetlands, about 1,075,000 wetland acres remained in Virginia – an overall loss of about 42 percent in 200 years (Dahl, 1990).

Agriculture and forestry, industrial and urban development, and recreation have led to the draining, dredging and ditching, filling, diking, and damming of wetlands in Virginia. According to a Chesapeake Bay Foundation fact sheet (2001), Virginia lost more than 770,000 acres of wetlands, for an average annual loss of 3,870 acres, during the 200-year period from the 1780s to the 1980s. From mid-1980 to the late 1990's, 80% of estimated losses of freshwater vegetated wetlands (mostly forested systems) occurred in the Coastal Plain. Wetland trends for the Norfolk/Hampton region of Virginia indicated a loss of about 4,800 acres of vegetated wetlands between 1982 and 1989-90 (Tiner and Foulis, 1994). During 1998 and 1999 alone, more than 2,500 acres of non-tidal wetlands in Virginia were ditched for development. The net loss of wetland areas has slowed since 2000 due to stricter laws, greater enforcement, and new mitigation strategies.

Wetland Monitoring and Assessment

Background

A key aspect of the Commonwealth of Virginia's nontidal wetlands program is ensuring that there is no net loss of wetland acreage and function through permitted impacts and a net gain in wetland resource through voluntary programs. To accomplish these goals, the Virginia Water Protection (VWP) Permit Program received grants from EPA in August 2003, October 2004, October 2006, October 2007, and October 2008 to determine the status of wetland resources in Virginia, in terms of location, extent, and overall quality of wetlands in each watershed. Using this information, the VWP Permit Program tracks changes in wetland acreage and functions, target certain watersheds, and help determine the effectiveness of compensatory mitigation replacing lost wetland acreage and function. As a first step, Virginia developed a long-term Wetland Monitoring and Assessment Strategy for wetland monitoring and assessment, including the goals and objectives of a monitoring and assessment program and a time frame for implementation. The strategy provides a framework for an ongoing assessment of the status of the Commonwealth's wetland resources and the success of both our wetland regulatory and voluntary programs. The end result of the ten-year strategy is expected to be the incorporation of wetland monitoring and assessment data into the Commonwealth's water quality monitoring programs.

Virginia has narrative water quality standards for all surface waters, including wetlands. The overall water quality for state waters is determined based on whether or not the condition of the waterbody being assessed allows citizens to safely enjoy the six designated uses of the water (aquatic life use, fish consumption use, swimming use, public water supply use, shellfish consumption use, and wildlife use), as described in the Virginia Water Quality Standards (9VAC25-260 et seq). Part of the above-referenced monitoring and assessment strategy includes 1) the evaluation of these designated uses for their applicability to a wetland's condition, and 2) the assessment of whether other designated uses of wetlands may apply. The strategy may also support the agency's goal of developing specific wetland quality standards as narrative use criteria.

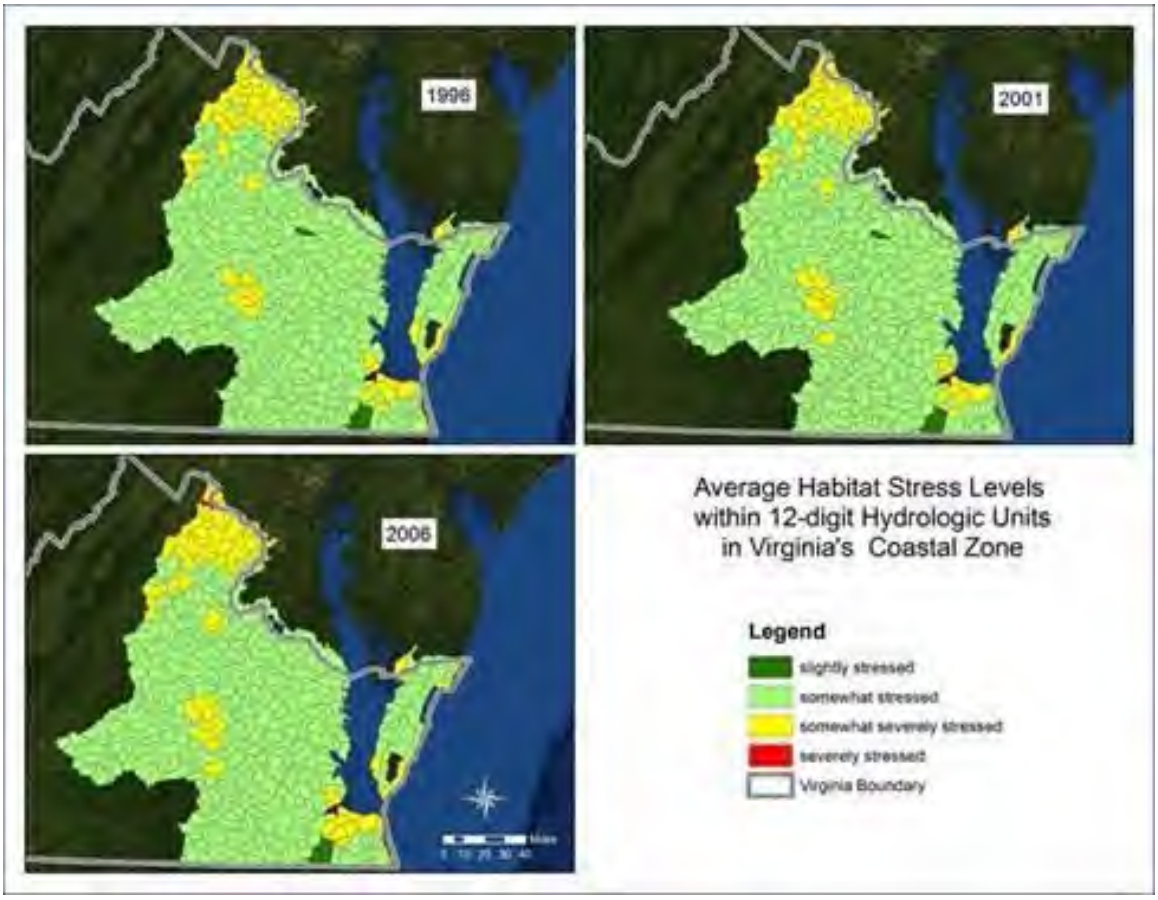
The wetland monitoring and assessment strategy incorporates the EPA March 2003 "Elements of a Wetland Monitoring and Assessment Program Checklist" and the EPA May 2006 "Application of Elements of a State Water Monitoring and Assessment Program for Wetlands" (a supplement to the 2003 EPA document). The strategy uses a three-tiered census approach to wetlands assessment, using a suite of core and supplemental indicators, to assess whether or not a particular wetland is performing at a similar condition as an identified reference wetland. The first tier (Level 1 analysis) consists of a comprehensive coverage of all mapped wetlands using a GIS-based analysis of remotely sensed information. The second tier of assessment (Level 2) is intended for use in a statistically selected sub-sample of the watershed wetland population and involves a more sophisticated analysis of remotely sensed information and a site visit for verification and additional data collection. The third tier assessment (Level 3) is designed to specifically evaluate performance of functions in wetlands under varying degrees of stress, as indicated by the results of Levels I and II.

Since 2003, the overall wetland monitoring and assessment strategy has been to establish baseline conditions in various broad contexts, such as land use, watershed, and wetland type. The elements of the wetland monitoring and assessment program are listed in Table 7.8-1 below.

Table 7.8-1 Wetland Monitoring and Assessment Program Elements	
Monitoring Strategy	1. Establish baseline condition of nontidal wetlands by broad category scaleable from individual wetland to small watershed to physiographic province to entire State. 2. Guide management decisions regarding restoration, compensation, and regulation of wetlands.
Monitoring Objectives	1. Support regulatory decision-making. 2. Report wetland condition. 3. Guide policy development. 4. Evaluate cumulative impacts of wetland loss. 5. Evaluate wetland restoration and compensatory mitigation effectiveness.
Survey Design	Three-Tiered: Sample Frame = all NWI wetlands 1. Enhanced GIS analysis (census) – Level I (Model Development). 2. Probability-based sampling for field assessment of anthropogenic stressors – Level II (Model Calibration). 3. Intensive study of biological endpoints (birds, amphibians, water quality) along stressor gradient – Level III+ (Model Validation).
Assessment Indicators and Methods	1. Level I (Model Development): land use adjacent, within 200m, and within 1000m of wetland, wetland size, type, hydroperiod, proximity to other wetlands, road type, road density, and road alignment. 2. Level II (Model Calibration): field assessment of anthropogenic stressors within 30m of wetland assessment point and within 100m of wetland assessment point. 3. Level III (Model Validation): population and community structure metrics for birds and amphibians. Water quality modification metrics.
Quality Assurance	An EPA-approved Quality Management Plan coupled with the VIMS' Quality Assurance Plan used to prevent random and systematic errors. Techniques include direct electronic field data assimilation to prevent transcription error as well as random return site visits and redundant QA assessment loops.

Example of Results

Wetland condition scores for both habitat and water quality for the coastal plain showed shifts over a 10 year period from 1996 to 2006. Overall wetland habitat considered severely and somewhat severely stressed increased from 18.2% in 1996 to 21.2% in 2006 with a concurrent decrease in wetlands considered somewhat stressed and slightly stressed from 81.6% in 1996 to 78.8% in 2006. Wetlands with water quality condition considered severely and somewhat severely stressed increased from 33.1% in 1996 to 35.3% in 2006 with a concurrent decrease in wetlands considered somewhat stressed and slightly stressed from 66.9% in 1996 to 64.7% in 2006 (Table 8). Condition scores averaged by 12-digit HUC are shown for three years (1996, 2001, 2006) in Figure 7.8-1.



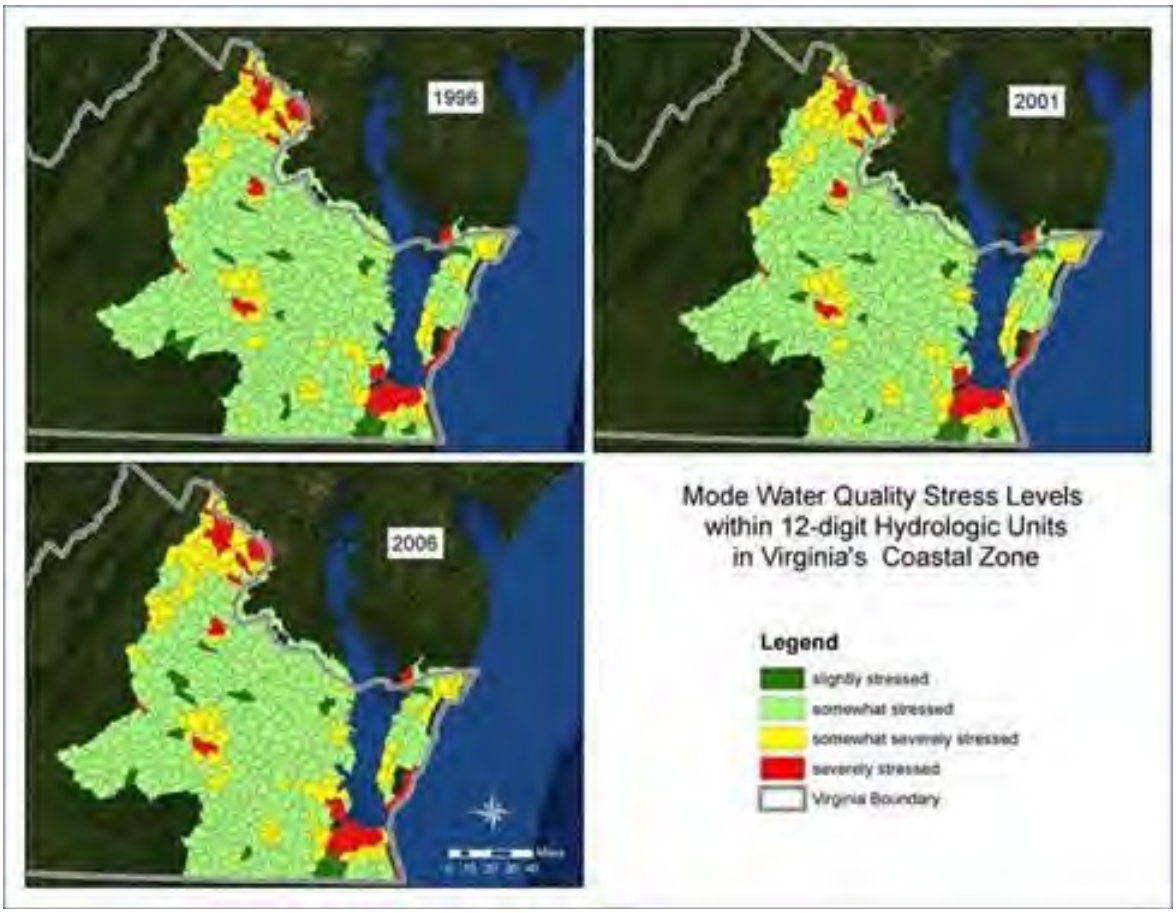


Figure 7.8-2. Wetland condition scores by 12-digit HUC for habitat ecosystem service and water quality ecosystem service in the coastal plain of Virginia for the years 1996, 2001, 2006.

Current initiatives

DEQ's monitoring objectives are designed to support regulatory decision-making, allow reporting of wetland conditions, and provide information for policy development. Products from the wetlands monitoring and assessment strategy directly support Goal 4 of EPA's Strategic Plan to provide *"…additional focus on assessment of wetland condition"* and the National Priority of "*wetlands monitoring and assessment".* Table 7.8-2 provides an overview of the strategy's milestones and the status of each.

Table 7.8-2: Long-term wetlands field assessment strategy for Virginia

Phase 1	Oct. 2003	Begin Level I assessment for Virginia.	Complete
	Dec. 2004	Begin Level II site assessment of Coastal Plain wetlands.	Complete
	Dec. 2005	Complete Level I assessment of Virginia, Complete Level II site assessment of Coastal Plain, Develop protocol for Level III assessment for Coastal Plain physiographic province.	Complete
Phase 2	Dec. 2005	Begin Level II site assessment of Piedmont physiographic province.	Complete
	Sept. 2007	Complete Level II site assessment of Piedmont. Begin Level III sampling for coastal plain sites.	Complete

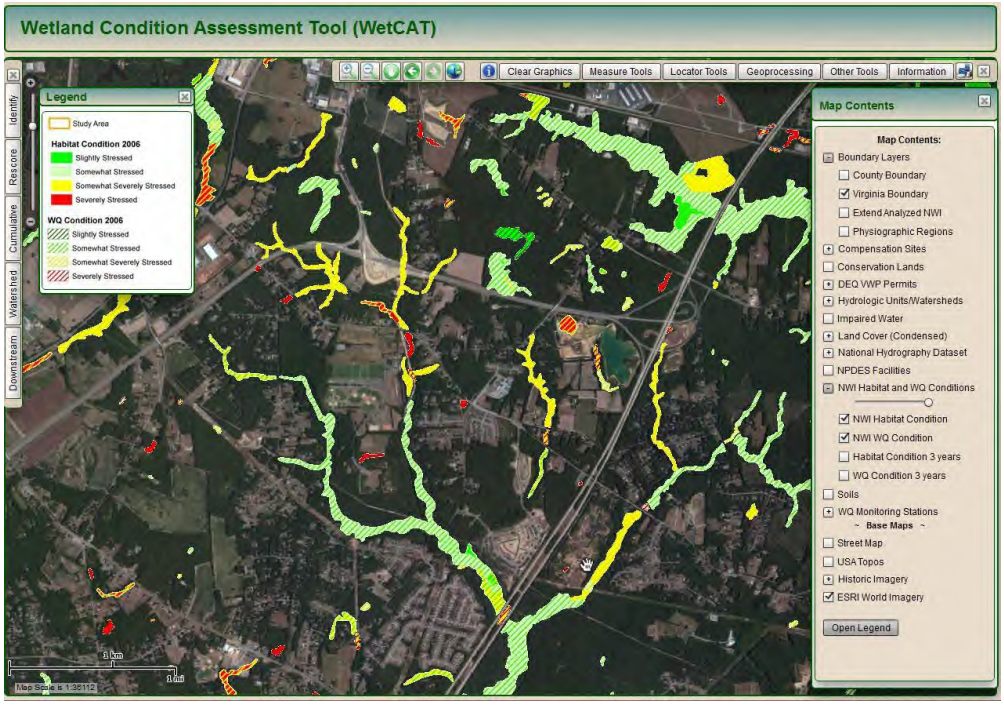
Phase 3	Oct. 2007 – Sept. 2008	Complete enhanced wetland site selection for Ridge and Valley Level II site assessment using a protocol for probable wetlands location. Complete Level II site assessment for Ridge and Valley physiographic provinces. Continue Level III sampling for Coastal Plain.	Complete
Phase 4	Oct. 2008 – Sept 2010	Begin Level III (model validation) sampling for Piedmont, and Ridge and Valley. Begin Level II re-sample coastal plain subset for calibration.	Complete
Phase 5	Oct. 2010	Begin Level I re-sample of Virginia for trends analysis.	Complete
Phase 6	Oct. 2010	Development of a Wetland Program Comprehensive Plan, refinement of our environmental database, and continued development of the wetlands monitoring and assessment program.	Complete
Phase 7	Oct. 2011 – Dec. 2014	Collaborate with VDOT to incorporate linear transportation projects into the wetland data viewer, potentially review and update the monitoring and assessment strategy to incorporate completed tasks and re-evaluate the direction of the strategy. Continued re-calibration of the assessment model.	Complete
Phase 8	Oct. 2014	New data collection equipment have been distributed to DEQ monitoring staff and the training field staff is complete. Development and testing of new protocols for DEQ field staff that provides for integrated data collection and quality assurance in support of the recalibration effort and non-mapped NWI wetland identification is ongoing. Continuing the model recalibration and developing additional datasets for WetCAT.	Ongoing

The following summarizes some key results of the strategy effort to date:

- Based on the model validation (Level 3) for the Piedmont and Ridge & Valley physiographic provinces of Virginia, and the re-calibration of the Coastal Plain, the relative stressor frequency has remained similar in the coastal plain between 2004 and 2010 with some slight increases in eroding banks/slopes and sediment deposits/plumes but with a decrease in 2010 of potential non-point discharge toxics/nutrients. Re-calibration of surrounding landcover and stressors shows that the landcover classes remain valid for condition assessment scoring. All landcover types identified in the earlier assessment as having significant relationship to the ecosystem endpoints of habitat and water quality continue to have significant relationships with the identified onsite stressors.
- DEQ and VIMS staff have designed and implemented procedures to facilitate the routine application of inventory and monitoring data in permitting decisions. A web-based delivery of monitoring data and a prototype tool for assessment of wetlands that are not part of the NWI database has been developed. Both of these tools were designed to assist DEQ wetland project managers by providing desktop access to information on wetland resources throughout the Commonwealth. Additional work was needed to improve the user interface such that cumulative impacts may be assessed and compensation opportunities may be identified.
- A pilot study that included input from state and federal personnel on the use of the wetland data viewer was conducted in 2011. We anticipate that these data may be used by local governments (for comprehensive planning process and zoning), regulatory agencies (for cumulative impact analysis), researchers (for developing new studies and research questions), and the general public (for wetland and watershed awareness).

- Virginia continues to develop a baseline data set, documenting current conditions and the general quality of wetlands throughout the state to determine whether existing wetland conditions are affecting wetland functions and values. Using a Geographic Information System (GIS), a baseline map has been developed by overlaying wetlands, as depicted on National Wetland Inventory (NWI) maps and other data sources listed previously, and a wetland quality indicator developed from the use of a stressor checklist tool and wetland landscape position. This information can be reported in the context of wetland types, land use, landscape position, or by watersheds, depending upon the information needed. Preliminary data and mapping has been uploaded to a web-access server, hosted by the Virginia Institute of Marine Science (VIMS), and once made public, these data will allow anyone to search the data base by several parameters (preview in Figure 7.7-3). The data viewer has been refined to include tools for assessing linear projects, and GIS mitigation bank data from the Regulatory In-lieu fee and Bank Information Tracking System (RIBITS) has been incorporated.

Figure 7.8-3. GIS-based Wetland data viewer



- Continue development of both a training manual as a reference for users, and a training event that can be self-paced. This information and all other accomplishments completed since 2005 will be incorporated into an updated Monitoring and Assessment Strategy. The project will increase the understanding of a wetland's condition and improve evaluation of environmental impacts to wetlands during permit reviews as part of Virginia's regulatory program.

Future actions

DEQ is currently conducting orthophotography of the entire Commonwealth of Virginia through funding from NOAA. This data will be imported into WetCAT once completed. As additional data are collected, Virginia will use this sequential survey information to look at changes in wetland quantity and quality over time. This temporal analysis will be accomplished by continuing to refine the wetland database with information on wetland losses and gains in each watershed using the permit tracking database, as well as periodically conducting wetland quality assessments in select watersheds to make inferences on wetland conditions. This in turn will allow for management decisions to be made that could provide additional protections for watersheds experiencing significant declines in wetland quantity and/or quality. For example, monitoring information could be used to identify exceptional value wetlands that should have greater protection within the context of permitting programs and to identify good candidates for targeting wetland restoration projects.

In order to generate the type of site specific guidance and recommendations that DEQ wetland project managers indicate would be most useful, VIMS developed and tested some new analytical protocols modeled on procedures developed by VIMS under previous EPA grants. Future success will be measured by an increasing trend in the statistically-reliable Level I protocol that is used by wetland managers to assess cumulative wetland impacts and wetland and watershed restoration opportunities. By having a statistically-validated tool that measures wetland quality as a function of habitat and water quality parameters, our permit staff will be able to make better permit decisions relative to potential cumulative impacts. Further, we will also be able to measure how well we are protecting the function of our more vulnerable wetlands (i.e. isolated wetlands, vernal pools, white cedar swamps) by comparing the condition of wetland habitat and water quality parameters, as a function of the assessment scoring over time. The overall outcome of this continued focus on wetland monitoring and assessment will be better protection of wetlands and more definitive and defensible information on wetland condition over time, and documentation of how we are achieving no net loss of wetland acreage and function in Virginia.

As State Water Control Law (SWCL) and VWP Permit Program regulations require compensation for unavoidable, permanent impacts to surface waters that are sufficient to achieve no net loss of existing wetland acreage and function and no net loss of function in all surface waters (See, § 62.1-44.15:21 and 9VAC25-210-80 (C)), the data collected will also be used in conjunction with other water monitoring data to evaluate the effectiveness of wetland protection programs in terms of meeting the goal of no net loss of wetland acreage and functions. This will be accomplished through Section 305(b) reporting, and will include a determination of whether the wetland regulatory program is attaining this goal. In addition, wetland monitoring information can be used within the context of the following programs to address additional management measures: Section 319 (nonpoint source control), Section 314 (Clean Lakes), Section 303(d) Total Maximum Daily Loads (TMDLs), Section 402 (NPDES permits), and water quality standards modifications.

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CHAPTER 7.9 DEQ WATER QUALITY REGIONAL INITIATIVES

For more information about DEQ's regional offices, please visit
http://www.deq.virginia.gov/Locations.aspx

VALLEY REGIONAL OFFICE (VRO)

South River Mercury.

Mercury was used in a manufacturing process at the DuPont plant in Waynesboro, VA from 1929-1950. Mercury losses and resulting contamination to the river and floodplain from that process resulted in a legacy problem that continues today. In a 1984 settlement between DuPont and the State Water Control Board, a fund was established to support monitoring of water, sediments, and fish tissue in the river system for a projected 100-year period. More recently, in 2006, DEQ established a full-time position in the Valley Regional Office to focus on this serious environmental issue. Specific activities in this program area that occurred during 2014-2015 are outlined below.

a) **Water Sample Collection and Analysis for Mercury in the South River and South Fork Shenandoah River, Virginia.** This monitoring project focuses on water column concentrations of dissolved and total mercury in the South River and South Fork Shenandoah River. Monitoring through the 1990s rarely detected measurable amounts of mercury in water, due to analytical constraints. With the development of more sensitive techniques ("clean" metals sampling and analyses) during the 1990s, quantifiable levels are now routinely recorded. Since 2001, DEQ staff has collected total and dissolved mercury samples from multiple sites on the South River and South Fork Shenandoah River on a bimonthly frequency.

b) **South River Science Team.** DEQ staff members continue to coordinate with members of the South River Science Team on a number of surveys and studies in which data are gathered for water, sediments, floodplain soils, and biota in and along the South River. The South River Science team is comprised of representatives from industry, academic institutions, state and federal agencies, environmental groups and independent researchers. This group meets quarterly to coordinate efforts, collaborate on future work, and communicate results. Ongoing studies address mercury source identification, fate and transport, methylation processes, and ecological processes. Information on the activities of the South River Science Team can be found at http://www.southriverscienceteam.org/.

c) **Natural Resources Damage Assessment (NRDA) for South River and South Fork Shenandoah River.** DEQ is working with other state partners (as the state trustee) and the US Fish & Wildlife Service (as federal trustee) to continue assessment of damages to aquatic and terrestrial life in and along these rivers. Studies by South River Science Team partners and contractors will serve as the basis for damage assessment and will also help identify opportunities for restoration and mitigation. Final settlement, expected in 2016 or 2017, is intended to address restoration of numerous resources and services, including fish, birds, amphibians, and recreational fishing.

BLUE RIDGE REGIONAL OFFICE – LYNCHBURG (BRRO-L)

Total Maximum Daily Load (TMDL) Studies

There are currently three (3). TMDL studies being conducted or been completed by BRRO-L water staff. There are currently two (2) Implementation Plans either being conducted or have been completed in BRRO-L over the past two years. The projects are listed in detail below.

Kits Creek
The TMDL study was completed and approved by EPA and is awaiting approval from the Virginia SWCB. The project addressed benthic impairment in Kits Creek. A public meeting was held to discuss the TMDL process and the sources of sediment and phosphorus unique to Kits Creek watershed.

Kerr Reservoir Tributaries
The TMDL study is currently underway with a public comment period on the draft report ending February 27, 2017. The project addresses bacteria impairments in several tributaries to Kerr Reservoir including, Little Bluestone Creek, Bluestone Creek, Allen Creek, unnamed tributary, Allen Creek, Cotton Creek, Kettles Creek, Smith Creek, and Lizard Creek. A public meeting was held to discuss the TMDL process and the sources of bacteria unique to the Kerr reservoir Tributaries.

James River Basin
The TMDL re-development study was started in 2013. The project addresses bacteria impairments in the James River as well as several tributaries including, Ivy Creek, Tomahawk Creek, Burton Creek, UT Burton Creek, Judith Creek, Fishing Creek, Blackwater Creek, beaver Creek, Harris Creek, Dreaming Creek, Opossum Creek, Williams Run, Graham Creek, and Pedlar River. A public meeting was held to discuss the TMDL process and the sources of bacteria unique to the James River basin. DEQ is currently formulating responses to public comments received.

Ash Camp Creek and Twittys Creek Implementation Plan
The project addressed benthic impairments in Ash Camp Creek and Twittys Creek watershed. A public meeting was held to discuss the Implementation Plan process and the sources of bacteria unique to the watershed. The final report was approved by the Virginia SWCB on 02/25/2016.

Banister River and Winn Creek Implementation Plan
The project addressed bacteria impairments in Banister River and Winn Creek Watershed. A public meeting was held to discuss the Implementation Plan process and the sources of bacteria unique to the watershed. . The final report was approved by the Virginia SWCB on 02/25/2016.

Dan River Watershed Implementation Plan
The project addresses bacteria impairments in the Dan River Watershed, including the Dan River, Birch Creek, Byrds Branch, Doubles Creek, Fall Creek and Sandy Creek. The project start date is February 2017.

Environmental Pollution Response

Dan River Coal Ash Spill
On February 2, 2014 a broken stormwater pipe beneath a Duke Energy coal ash retention pond located next to the Dan River near Eden, NC was reported. Approximately 38,000 tons of coal ash spilled into the Dan River. Coal ash contains heavy metals and can be harmful to human health. Monitoring for metals in the water and sediment at eight Dan River sites and two Kerr Reservoir sites began in February 2014 and continued monthly through 2016. Bi-monthly monitoring has begun in 2017. In addition, two boatable probabilistic sites on the Dan River will be sampled in the spring and fall on an annual basis for benthic macroinvertebrates, fish, algae, water chemistry, and habitat quality.

Public Outreach

Watershed Educator Institute
Regional Biologist, Kelly Hazlegrove, provided an overview of DEQ biomonitoring and assessment to the Watershed Educator Institute held in Charlottesville, Virginia on April 12, 2016. The Watershed Educators Institute is a series of one and two day workshops offered from October 2015 through June 2016 for those desiring to be formally recognized as leaders in watershed education in the Commonwealth of Virginia.

Franklin County Fair

Monitoring and TMDL staff from BRRO-L presented a storm water education program to over 300 5th grade students on September 16, 2016. The table allows for a hand on demonstration of the impacts of storm water on forest land, farm land and urban settings.

BLUE RIDGE REGIONAL OFFICE (BRRO-ROANOKE)

TMDL and Implementation Planning Activities in the BRRO-Roanoke

BRRO-Roanoke's TMDL staff assisted in the completion of Implementation Plans on the Upper Roanoke River watershed, Crab Creek, and Smith and Mayo Rivers. DCR was the lead agency on all of the aforementioned TMDL Implementation Plans except for Roanoke River and Crab Creek.

BRRO-Roanoke TMDL staff took the lead on the Implementation Plan for the Upper Roanoke River. The kick-off meeting for this project occurred in the form of a watershed open house featuring a series of presentations and informational booths for visitors to peruse. Due to the size of the watershed, implementation plan development was divided into two parts. Throughout 2013 and 2014, the Part I government, residential, agricultural, and business working groups met two times to discuss and select appropriate best management practices. Part I and Part II Implementation Planning continued beyond 2014.

In addition, BRRO-Roanoke TMDL Staff led Implementation Plan development for Pigg River watershed, and Little River Watershed TMDL and Implementation Plan, and ultimately the Crab Creek Implementation Plan. DCR and local stakeholders like the Blue Ridge Soil and Water Conservation District and Skyline Soil and Water Conservation District assisted with the projects. A watershed tour, agricultural and residential working group meetings, and public meetings encouraged public involvement in the projects. Presentations about the Pigg River Watershed Implementation Plan were given at the Franklin County Cattlemen's Association and the Roanoke River Currents Conference.

Special studies related to TMDLs included water column PCB sampling in the Roanoke River and New River watersheds, diurnal dissolved oxygen studies in the Smith River and Jackson River (Smith River included temperature data). In addition, TMDL staff made presentations to permittees in the Roanoke River regarding PCBs and PCB TMDL development.

BRRO-Roanoke Community Involvement

The BRRO-Roanoke Water Monitoring Group (monitoring, TMDL, and assessment staff) participated in numerous outreach events during 2009-2014. Staff taught area students and teachers about biological monitoring at events such as the Clean Valley Council's Earth Summit, Fall Waterways Cleanup, Smith Mountain Lake State Park's Junior Rangers program, Bedford Elementary "Camp Bees" day camp, and Roanoke area Cub Scouts at "Bug Scouts" day camps. The group had displays at Earth Day Celebration, 18th Annual Salem Fall Home Show, and Philpott Reservoir Environmental Expo. Staff also made presentations on water pollution, monitoring, and restoration at the following events: Friends of Claytor Lake meetings, Roanoke River Currents Conference, Smith River Trout Unlimited Chapter meeting, Southern Rivers Grant Project leaders gathering in Radford, 2012 Citizens Stormwater Committee Meeting, National Water Quality Monitoring Conference (Cincinnati, OH), Jackson River Preservation Association meetings, Isaak Walton League (Covington-Alleghany Chapter) meetings, meetings with Roanoke City Stormwater staff, and a Radford University Environmental Regulations class. DEQ hosted a booth at the Christiansburg High School Environmental Expo with information about water quality monitoring, biomonitoring and watershed stewardship.

BRRO-Roanoke Water Permitting, Waste and TMDL staff partnered with the Western Virginia Water Authority and worked with local Girl Scout troops to educate them about environmental issues. The girls learned about aquatic insects, water quality monitoring, watersheds and landfills. They collected water

quality data including pH, dissolved oxygen, and turbidity from Carvins Cove Reservoir. Troops also toured the water treatment plant in Roanoke.

Regional Monitoring Networks (RMNs) to Detect Changing Baselines in Freshwater Wadeable Streams

The United States Environmental Protection Agency (U.S. EPA) is working with its regional offices, states, tribes, and other entities to establish Regional Monitoring Networks (RMNs). The RMNs will help EPA and their partners collect current, baseline biological, thermal, and hydrologic data from freshwater wadeable streams. This information will be used to help quantify and detect long-term changes in conditions of high-quality streams. Project discussion began in 2013 with data collection beginning in 2014 and is ongoing. DEQ monitoring staff coordinates and conducts deployment and maintenance of temperature monitoring equipment.

Stream Flow Modification Monitoring

In 2013 and 2014, DEQ water monitoring staff began using Biological Monitoring (benthic macroinvertebrates and fish) and streamflow measurements to determine the ecological impacts of stream flow interruption by a small hydropower facility. This effort began as a result of complaints made to DEQ by downstream landowners and ultimately included site visits by multiple state agencies. Biologists collected and analyzed samples Spring and Fall of 2013 and 2014. Due to above-normal precipitation resulting in higher than normal flows in addition to maintenance on the hydropower facilities yielding less stream flow interruptions, the sampling effort will continue beyond 2014.

Stressor Identification in Virginia

BRRO and SWRO led an effort to improve the stressor identification process for benthic macroinvertebrate community (aquatic life use) impairments in the Commonwealth. The DEQ assesses aquatic invertebrate communities in order to evaluate whether or not Virginia's aquatic life use standard is being met. The root cause of an aquatic community shift is rarely obvious even though changes in the composition and/or abundance of the benthic macroinvertebrate community are distinct. DEQ utilizes EPA's recommended method, stressor analysis, to systematically characterize the cause of an aquatic community shift. The goal of the stressor analysis process is to apply a weight-of-evidence approach to define a/the most probable stressor(s) that explain(s) the shift in the benthic macroinvertebrate community. Aquatic community stressors encompass a wide array of parameters that have varying degrees of synergistic interactions, further complicating the stressor analysis process. Recognizing these challenges, stressor thresholds were developed utilizing ten years of data collected through DEQ's Freshwater Probabilistic Monitoring Program. Stressor thresholds are concentration/measured ranges linked to varying levels of stress to aquatic life that present context for stressor analyses reviewers and developers to evaluate water quality datasets and relate them to aquatic community outcomes. Statewide, ecoregion-, basin-, and stream order-specific context is presented in relation to the following common aquatic stressors: dissolved oxygen, pH, total phosphorus, total nitrogen, ionic strength (specific conductivity, TDS, and dissolved sulfate, chloride, sodium, and potassium), dissolved metals cumulative criterion unit, total habitat and relative bed stability. Specifically, thresholds ranging from no stress to aquatic life to high probability of stress aquatic life were developed and integrated into a web-based application for better understanding stressors.

Livability Initiatives

The Livability Initiatives provided multiple forums for residents to discuss housing, transportation, energy, natural resource, economic development, community health, and arts and cultural heritage factors that affect quality of life now and in the future. BRRO-Roanoke staff participated in Livability Initiative working groups in both the Roanoke and New River Valleys.

Jackson River Restoration and the Gathright Dam Water Control Plan

The Virginia Department of Environmental Quality's monitoring and assessment data and Jackson River benthic Total Maximum Daily Load (TMDL) development (DEQ 2010) has documented that low flow conditions in the fall represent the most stressed water quality conditions in the Jackson River. The Jackson River benthic TMDL study established nitrogen and phosphorous reduction targets in the Jackson River and called for restoring natural flow variability during the growing season (defined in the TMDL study as June 1st to October 31st). To assess flow variability impacts on water quality habitat and biology, DEQ asked the U.S. Army Corps of Engineers (ACE) to perform a 216 study that could result in permanent flow modifications in the Jackson River. The 216 Study was later changed to the Gathright Dam Water Control Plan. As part of the study and later the plan, the ACE performed test pulses during the following dates: August 17, 2010, September 28, 2011, and October 3, 2012. In 2010 thru 2014, DEQ collected an extensive suite of field data, water chemistry, habitat, and biological parameters in order to document baseline conditions and evaluate effects of the test pulses. DEQ is committed to extensive water quality monitoring in the Jackson River throughout the development of the Water Control Plan project and during the implementation of the recommended hydrologic changes. DEQ published the following reports which summarize existing water quality conditions and document results of the pulse events: *Characterization of 2010 Base Flow and Pulse Flow Water Quality in the Jackson River and Characterization of Jackson River Base Flow* and *Pulse Flow Water Quality: 2011 and 2012*. DEQ continues to monitor and evaluate water quality on the Jackson River.

PCB Source Investigations in the New River VDH Fish Consumption Advisory Area

From 2002 – 2004, an intense search for PCB sources was conducted in the New River watershed from Claytor Lake Dam to the Virginia-West Virginia State line near Glen Lyn. The investigation involved extensive review of VA DEQ agency records, interviews of local officials, citizens, industry representatives, and information provided by the New River PCB Source Study Citizen's Committee. Based on these interviews and follow-up onsite inspections, DEQ teams sampled soil and sediment from multiple areas in the New River Valley in the fall of 2003. The investigation incorporated approximately 50 sites of sediment and soil samples. DEQ initiated additional source investigation and pre-TMDL PCB monitoring in 2010 and continues to collect fish tissue, sediment and water column PCB data.

James River Fishkill Monitoring

During the spring and summer periods of 2007 – 2010, BRRO-Roanoke staff has assisted with the investigation of fish kills of unknown causes in the upper James River system. Predominantly smallmouth bass and sunfish are the affected species and have been observed with skin lesions and other health problems during the spring and early summer. During 2007 staff monitored and confirmed citizen reports of distressed and dead fish in the James River, monitored environmental conditions and assisted VDGIF biologists with fish collection for health analyses by USGS and university scientists. In 2008, staff continued to track citizen reports and collected multiple parameters (physical/environmental conditions, metals, organics, nutrients, and pesticides) on the James River and a reference site on the New River, as well as assisted with the collection of fish during pre-kill, within kill, and post-kill periods on both rivers. During spring and summer 2009 and 2010, staff collected weekly bacteria samples for Aeromonas salmonicida at ten stations on the upper James River and several tributaries. Staff also assisted with fish collection on the James River and tributaries and deployed temperature loggers at multiple locations to monitor daily water temperatures.

Mudlick Creek Stream Restoration Project

BRRO-Roanoke water monitoring and VWP staff assisted Roanoke County with a stream restoration project at Garst Mill Park from 2007 to 2009. Pre-restoration activity included monitoring the benthic macroinvertebrate community, monitoring turbidity during storm events, and measuring stream bank erosion in several sections of Mudlick Creek. Staff also provided technical guidance with restoration and design plans for County officials, DCR staff, and consultants that produced the design and supervised the project. Staff attended informational meetings held at the park to inform citizens of the project and its benefits to water quality. Post-restoration monitoring will include assisting the county with biological monitoring bank erosion surveys.

SOUTHWEST REGIONAL OFFICE (SWRO)

Coeburn-Norton-Wise Regional Wastewater Treatment Plant

Additional hydraulic capacity was created within the existing WWTP without building additional secondary treatment structures. The existing site is built out and the ability to increase hydraulic capacity via typical methods, i.e., build new tanks and increase volume, was not an available option. Hydraulic capacity was increased from 5.0 MGD to 6.5 MGD by improving the existing treatment scheme, particularly the secondary treatment process, and by adding tertiary filtration. Sludge processes were improved and capacity increased via covered tanks and heat addition to speed up the aerobic digestion process. The WWTP reliability was also improved through the addition of an emergency generator. Additionally, the WWTP upgrade included a septage receiving station and treatment unit that enables the CNWRWTA to accept septage from on-site systems throughout the region, and gives septic haulers a place to legally dispose of septic tank wastewater. The total project cost was approximately $15,000,000.00 and should serve the area for the next 20-25 years.

This project was unique because CNW serves four communities who own capacity in the regional WWTP. CNW does not collect wastewater, but only transports and treats. Each member community has a unique collection system that they are responsible for. CNW does not have any effective regulatory authority over the communities' systems. Each system is subject to I/I and flow to the WWTP reflects impact due to rainfall-induced inflow/infiltration. As a result, CNW was experiencing permit violations due to hydraulic overloading, especially during significant precipitation events.

Tazewell County PSA—Tazewell to Divides Collection System (Phase I)

Construction has begun on a force main/gravity sewer system from Tazewell to the landfill near the Divides. This is Phase I of a multi-phase project and will provide the spine or interceptor that will initially take leachate flow from the landfill site and transport it to the Town of Tazewell collection system with ultimate treatment at the Tazewell WWTP. Subsequent phases will provide collection systems to built-up areas along Route 460 between Tazewell and the Divides. Currently the landfill leachate is trucked to area wastewater treatment plants for treatment. Realization of this project will eliminate the expense of trucking and the dangers associated with trucking along routes where T&E waters are present, and also significantly eliminate potential for leachate to migrate to the headwaters of the North Fork Clinch River. The project cost is $4,678,659.

NORTHERN REGIONAL OFFICE (NRO)

The summary of regional initiatives focuses on updates and/or new activities since the publication of the 2014 Integrated Report. Accordingly, updates are primarily highlighted for 2013 and 2014.

Biological Monitoring:

<u>Probabilistic Biomonitoring and Chemical Monitoring Program in Virginia Non-Tidal Streams</u>

NRO has participated in DEQ's Probabilistic Monitoring Program for non-tidal streams since its inception in the spring of 2000. This program consists of three sampling components: a thorough examination of the benthic macroinvertebrate community utilizing the EPA's Rapid Bioassessment Protocols, sampling a full suite of water chemical parameters, and a physical habitat evaluation at each station. The stations are biologically and chemically sampled twice a year, once each in the spring and fall, while a single, extensive, physical habitat evaluation is conducted in the fall. In 2013, NRO sampled eight probabilistic monitoring stations and another nine stations in 2014.

Genus Virginia Stream Condition Index (VSCI) and Coastal Plain Macroinvertebrate Index (CPMI) Development Sampling

NRO has been participating since 2009 through 2014 in the development of both a family-level and a genus-level benthic macroinvertebrate index to refine the assessment of Coastal Plain and Southeastern Plains, defined-channel streams. The monitoring effort included biologically and chemically sampling in at both excellent-condition and stressed-condition streams.

Citizen Monitoring Requests:

Ambient Monitoring

In 2013, citizens of Virginia requested that 3 streams (Wolftrap Run, Bull Run and an Unnamed tributary to the Occoquan River) be monitored by NRO for chemical parameters, of which all 3 were honored/ Monitoring of two streams of the three requested streams (Wolftrap Run and Bull Run) continued to be sampled in 2014. No requests from citizens for monitoring of chemical parameters were received in 2014.

Biological Monitoring

In 2013, citizens of Virginia requested that 3 streams (Ballywhack aka Tanyard Creek, Bull Run, and Wolf Trap Run/Old Courthouse Branch) be biologically monitored by NRO, of which all 3 were honored. Similarly, 4 streams (South Fork Catoctin, Sycolin Creek, Goose Creek and Bull Run) were requested by citizens in 2014, of which DEQ was able to honor the request for 2 (Goose Creek and Bull Run) out of the 4 streams. All of the locations were sampled twice in one year, once each in the spring and the fall.

Special Studies:

Quantico Creek

NRO initiated a special study monitoring program in 2014 in the tidal embayment and the free-flowing, riverine portion of Quantico Creek. This special study was initiated as a follow-up from the aquatic life use impairment first listed in 2001 for a portion of the Quantico Creek embayment, The study involved collecting metals data from sediment and water samples at six monitoring stations in the watershed.

Potomac Creek

NRO conducted follow-up sediment sampling in Potomac Creek in 2014 due to elevated concentrations of various constituents in sediment from the Estuarine/Coastal Probabilistic Monitoring Program sampling completed in previous years.

Harmful Algae Bloom (HAB) Monitoring

In 2013, the NRO investigated two reports of algae bloom and collected seven samples following Harmful Algae Bloom (HAB) protocols. There were two sampling events on upper portions of Lake Anna and one in Potomac Creek. In 2014, NRO investigated three reports of algae bloom and collected 5 samples following the HAB protocols. There were sampling events on the hot side of Lake Anna, Potomac Creek and Quantico Creek.

Total Maximum Daily Load Monitoring:

In 2013 and 2014, NRO devoted a significant amount of their monitoring efforts to collecting data for the Total Maximum Daily Load (TMDL) Program. Monitoring was conducted for the purpose of TMDL development and TMDL Implementation Plan follow-up.

TMDL Development Monitoring

In 2013 and 2014, NRO collected ambient monitoring data to support anticipated development of TMDLs to address aquatic life use and recreational use impairments in the following streams: North Fork Catoctin Creek, Jefferies Branch, South Fork Broad Run, Broad Run, Horsepen Run, Indian Creek, Beaverdam Run, Pohick Creek, South Run, Middle Run, Summerduck Run, Northeast Creek and an unnamed tributary to Northeast Creek (at Route 659), Music Branch, Arnolds Creek, Mountain Run, Flat Run, and Jonas Run.

Additionally, NRO collected water and sediment PCBs samples in 2013 and 2014 to support anticipated TMDL development to address fish consumption use impairments in the Mountain Run watershed (RA19) in the vicinity of Culpeper, Virginia.

TMDL Implementation Plan Follow-Up Monitoring

In 2013 and 2014, NRO collected ambient monitoring data as follow-up to TMDL implementation plans developed for the following streams: Thumb Run, Carter Run, Deep Run, Marsh Run watershed (Brown Run, Craig Run and Marsh Run), Hazel River, Catoctin Creek, Upper Hazel, Hughes River, Rush River, Beaver Creek, Mountain Run, Terrys Run, Northeast Creek watershed (Music Branch, Arnolds Creek unnamed tributary to Northeast Creek and Northeast Creek), Pamunkey Creek, Blue Run, Beautiful Run, Rapidan River and unnamed tributaries to the Rapidan River (at Routes 621 and 634), and Wilderness Run.

TMDL Studies:

Development of bacteria TMDLs were initiated in late 2014 in the Mattaponi River Watershed for the following streams: Brock Run, Chapel Creek, Doctors Creek, Glady Run, Maracossic Creek, Mat River, Matta River, Mattaponi River, Motto River, Po River, Polecat Creek, Poni River, Reedy Creek, and Root Swamp. The TMDL study was completed in early 2016 and approved by EPA in July 2016.

Development of sediment and chloride TMDLs are currently under way for the Accotink Creek watershed to address the benthic impairment in the following streams: Upper Accotink Creek (above Lake Accotink), Lower Accotink Creek (below Lake Accotink) and Long Branch. The study began with a stressor analysis, initiated in 2014, which identified chlorides and sediment as the most probable stressors. The TMDL reports are scheduled to be completed Summer 2017.

TMDL Implementation Plan Projects:

Development of an implementation plan for the Upper York River watershed was initiated in 2011 and completed in 2013 for the following streams: Beaver Creek, Goldmine Creek, Mountain Run, Pamunkey Creek, Plentiful Creek and Terrys Run. In the implementation plan development process, major emphasis is placed on discussing best management practices (BMPs), locations of control measures, education, technical assistance, monitoring, and funding.

PIEDMONT REGIONAL OFFICE (PRO)

James River PCB Studies

Due to the presence of PCBs, the VDH has issued a fish consumption advisory for the James River from the I-95 Bridge in Richmond downstream to the Hampton Roads Bridge Tunnel and the tidal portion of the following tributaries: Appomattox River up to Lake Chesdin Dam, Bailey Creek up to Rt. 630, Poythress Run, Bailey Bay, and the Chickahominy River up to Walkers Dam. The advisory recommends that adults do not eat gizzard shad, carp, or blue- and flathead catfish >32 inches long. It also recommends that adults eat no more than two meals/month of blue and flathead catfish <32 inches long, channel catfish, white catfish, largemouth bass, bluegill sunfish, American eel, quillback carpsucker, smallmouth bass, creek chub, yellow bullhead catfish, white perch, striped bass, bluefish, croaker, spot, blueback herring,

and hickory shad.

In preparation for development of the Tidal James River PCB TMDL, DEQ initiated a study of PCBs in ambient water in the James River using a high resolution/low detection method (EPA Method 1668A). During mid-to late 2011, one-time samples were collected at four stations between Hopewell and the Chickahominy River. In addition, monthly samples were collected at the James River near Jordan Point (Rt. 156 bridge station 2-JMS074.44). DEQ also collected PCB samples in multiple watersheds where biosolids had been applied. The data is being used to support development of a model for the James River TMDL.

Mercury Water Column Studies in the Chickahominy, Pamunkey, Mattaponi, Nottoway-, Meherrin-, and Rappahannock Rivers

The Virginia Department of Health issues fish consumption advisories when fish tissue contaminant levels exceed guidelines. (http://www.vdh.virginia.gov/environmental-epidemiology/public-health-toxicology/fish-consumption-advisories/) The fish tissue monitoring program is conducted by the DEQ. The Chickahominy-, Pamunkey, Mattaponi-, Nottoway-, and Meherrin-, and Rappahannock Rivers, among others, are all currently under advisories due to elevated mercury levels. The sources of mercury are considered unknown, but can include atmospheric deposition or industrial discharges. The Piedmont Regional Office has been collecting mercury water column samples in preparation for development of Total Maximum Daily Loads (TMDLs) in those river systems. The sampling is designed to further delineate the extent of the impairments, identify any potential sources or hot spots within the watershed, and quantify levels for future water quality improvement efforts.

Total Maximum Daily Load (TMDL) Studies

During 2009-2016, the Piedmont Regional Office (PRO) completed TMDLs for the following waterbodies:

Chickahominy River and Tributaries - bacterial TMDL
Chickahominy River - benthic (sediment) TMDL
Turkey Island Creek and James River Westover to Claremont Watershed - bacterial TMDL
Pamunkey River and Tributaries - bacterial TMDL
Lower Chickahominy River Watershed - bacterial TMDL (draft)

In addition, PRO is assisting with the development of the Tidal James River PCB TMDL, which is currently under development.

TIDEWATER REGIONAL OFFICE (TRO)

Harmful Algal Blooms Monitoring

The Department of Environmental Quality and the Department of Health, including the Division of Shellfish Sanitation, work together to respond to potentially harmful algal blooms (HABs). Samples from algal blooms and fish kill sites are sent to Old Dominion University and the Virginia Institute of Marine Science for a detailed evaluation for potential harmful algae species. Additional information can be found at http://www.vdh.virginia.gov/environmental-epidemiology/harmful-algal-blooms-habs/.

Coastal 2000 Initiative

The Tidewater Regional Office has been involved with the Coastal 2000 Program as part of the EPA National Coastal Assessments Program. Data has been collected during summer months from 2001 through 2016 at randomly selected sites. For additional information contact the project manager, Dr. Don Smith at donald.smith@deq.virginia.gov.

APPENDIX 1 INTEGRATED LIST OF ALL WATERS

Purpose of the Integrated List

In the 2004 303(d) Impaired Waters Report, Virginia categorized assessed waters in an integrated format for the first time. Virginia has worked closely with the United States Environmental Protection Agency (EPA) to develop an Integrated Report that meets the current EPA assessment guidance and is also representative of the monitoring program and assessment methodology used in Virginia.

The 2016 Integrated List is a general list of all assessed surface waters in Virginia derived from an EPA database known as the Assessment Database (ADB). A description of each of the 2016 assessment categories and sub-categories used in ADB can be found below. They include both EPA-defined categories and Virginia-defined subcategories agreed to by EPA through their review of DEQ guidance for the 2016 water quality assessment. DEQ draft guidance, describing the various assessment methodologies, was released in January 2016, revised in response to EPA and public comment, and finalized in April 2016. The 2016 305(b)/303(d) Water Quality Assessment Guidance Manual can be found on the DEQ water quality website.

The Integrated List uses the highest numbered category that applies to all of the assessed designated uses for a given segment. For instance, if a water is assessed as category 5A for the aquatic life use but attains all other assessed uses, the water is categorized as category 5A. Impaired waters fact sheets provide details about individual segments in Category 5. These fact sheets can be found at the aforementioned website.

Assessed waters in the Virginia 2016 Integrated List were placed in one of the following categories and subcategories:

FULLY SUPPORTING - Waters are supporting one or more designated uses

- **EPA Category 1 -** Attaining all associated designated uses and no designated use is threatened.

  Va. Category 1A - waters are attaining all uses and a TMDL has been developed for one or more uses.

- **EPA Category 2 -** Available data and/or other information indicate that some, but not all of the designated uses are supported.

  Va. Category 2A - waters are supporting all of the uses for which they are monitored.

  Va. Category 2B - waters are of concern to the state but no water quality standard exists for a specific pollutant, or the water exceeds a state screening value or toxicity test.

  Va. Category 2C - waters are now attaining the use(s) for which they were originally 303(d) listed and the TMDL is EPA approved but other applicable use(s) were not monitored and assessed.

INDETERMINATE - Waters needing additional information

- **EPA Category 3 -** Insufficient data and/or information to determine whether any designated uses are met.

  Va. Category 3A - no data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.

  Va. Category 3B - some data exists but it is insufficient to determine support of any designated uses. Such waters will be prioritized for follow up monitoring.

Va. Category 3C - data collected by a citizen monitoring or other organization indicate water quality problems may exist but the methodology and/or data quality has not been approved for a determination of support of designated use(s). These waters are considered as having insufficient data with observed effects. Such waters will be prioritized by DEQ for follow up monitoring.

Va. Category 3D - data collected by a citizen monitoring or other organization indicate designated use(s) are being attained but the methodology and/or data quality has not been approved for such a determination.

IMPAIRED - Waters are impaired or threatened but a TMDL is not required

- **EPA Category 4A -** water is impaired or threatened for one or more designated uses but does not require a TMDL because the TMDL for specific pollutant(s) is complete and US EPA approved.

- **EPA Category 4B -** water is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements (such as VPDES limits under a compliance schedule) are reasonably expected to result in attainment of the water quality standard by the next reporting period or permit cycle.

- **EPA Category 4C -** water is impaired or threatened for one or more designated uses but does not require a TMDL because the impairment is not caused by a pollutant and/or is determined to be caused by natural conditions.

Va. Category 4D - part(s) of a water quality standard is attained for a pollutant with a TMDL, but the remaining criteria for the standard were not assessed due to insufficient information. (Only to be applied to dissolved oxygen in tidal waters of the Chesapeake Bay).

IMPAIRED - Waters are impaired or threatened and require a TMDL

- **EPA Category 5 - Waters are impaired or threatened and a TMDL is needed.**

Va. Category 5A - a water quality standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list).

Va. Category 5B - the water quality standard for shellfish use is not attained. One or more pollutants causing impairment require TMDL development.

Va. Category 5C - the water quality standard is not attained due to "suspected" natural conditions. The water is impaired for one or more designated uses by a pollutant(s) and may require a TMDL (303d list). Water quality standards for these waters may be re-evaluated due to the presence of natural conditions.

Va. Category 5D - a water quality standard is not attained where TMDLs for a pollutant(s) have been developed, but one or more pollutants are still causing impairment requiring additional TMDL development.

Va. Category 5E - effluent-limited waters receiving discharges from facilities not expected to meet compliance schedules by next permit cycle or reporting period.

Va. Category 5F - the water quality standard is attained for a pollutant(s) with a TMDL and 303(d) delisting approved, but the water remains impaired for additional pollutant(s) requiring TMDL development.

Va. Category 5R - the Water Quality Standard is not attained and the water is impaired, and

implementation of an EPA-approved restoration plan is expected to result in attainment. A status update will be provided each 303(d) cycle to evaluate progress.

- **EPA Category 5M -** waters impaired due to atmospheric mercury.

Potomac and Shenandoah River Basins

Overall Category	305(b) ID	Waterbody Name	Size
1A	VAN-A30R_UMC01A00	Upper Machodoc Creek	2.29 MILES
2A	VAN-A01R_DUT01A06	Dutchman Creek	2.25 MILES
2A	VAN-A01R_DUT02A06	Dutchman Creek	0.68 MILES
2A	VAN-A01R_PIA02A06	Piney Run	5.46 MILES
2A	VAN-A01R_XCO01A06	Unnamed tributary to Dutchman Creek	2.83 MILES
2A	VAN-A01R_XDI01A08	Unnamed tributary to unnamed tributary to Dutchman Creek	0.94 MILES
2A	VAN-A01R_XKT01A04	Unnamed tributary to Piney Run	3.82 MILES
2A	VAN-A04R_CRA02A08	Crooked Run	3.58 MILES
2A	VAN-A05R_XCD01A16	Unnamed tributary to Jeffries Branch	0.31 MILES
2A	VAN-A06R_NOG01A06	North Fork Goose Creek	2.21 MILES
2A	VAN-A09R_BRB05A12	Broad Run	1.89 MILES
2A	VAN-A10R_OFT01A14	Unnamed Tributary to Sugarland Run (Offuts Branch)	1.36 MILES
2A	VAN-A11R_COV01A02	Colvin Run	1.09 MILES
2A	VAN-A11R_ROE01A08	Rocky Run	3.38 MILES
2A	VAN-A13R_TUC01A14	Turkeycock Run	2.93 MILES
2A	VAN-A14R_XMS01A14	Unnamed tributary to Dogue Creek	2.50 MILES
2A	VAN-A16L_SOH01A06	Burke Lake	208.10 ACRES
2A	VAN-A16R_XMT01A14	Unnamed tributary to Pohick Creek	1.33 MILES
2A	VAN-A18R_XLR01A12	Unnamed tributary to Town Run	1.05 MILES
2A	VAN-A18R_XMJ01A14	Unnamed tributary to Cedar Run	1.20 MILES
2A	VAN-A19L_BRU02A02	Lake Manassas (Broad Run Reservoir)	131.64 ACRES
2A	VAN-A19L_BRU03A02	Lake Manassas (Broad Run Reservoir)	163.85 ACRES
2A	VAN-A19L_BRU04A02	Lake Manassas (Broad Run Reservoir)	187.95 ACRES
2A	VAN-A19L_BRU06A12	Lake Manassas (Broad Run Reservoir)	26.48 ACRES
2A	VAN-A19L_BRU07A12	Lake Manassas (Broad Run Reservoir)	14.58 ACRES
2A	VAN-A19L_NOF01A12	Lake Manassas (Broad Run Reservoir)	109.26 ACRES
2A	VAN-A20R_CRE01A16	Crooked Creek	1.14 MILES
2A	VAN-A21R_CHT01A14	Chestnut Lick	3.64 MILES
2A	VAN-A22R_FLL02A14	Flatlick Branch	3.39 MILES
2A	VAN-A22R_FRB01A14	Frog Branch	1.41 MILES
2A	VAN-A23R_CAT01A14	Castle Creek	2.34 MILES
2A	VAN-A23R_WIO01A14	Willow Springs Branch	1.25 MILES
2A	VAN-A23R_XMU01A14	Unnamed tributary to Popes Head Creek	1.62 MILES
2A	VAN-A26R_MIP01A12	Middle Branch Chopawamsic Creek	5.55 MILES
2A	VAN-A26R_SOB01A12	South Branch Chopawamsic Creek	4.66 MILES
2A	VAN-A26R_SOQ01A06	South Fork Quantico Creek	5.63 MILES
2A	VAN-A27L_AUA01A02	Smith Lake (Aquia Reservoir)	95.40 ACRES
2A	VAN-A27L_BED01A02	Smith Lake (Aquia Reservoir)	101.89 ACRES
2A	VAN-A27R_BED02A16	Beaverdam Run	2.78 MILES
2A	VAN-A28R_AUA01A08	Aquia Creek	1.93 MILES
2A	VAN-A28R_XKV01A06	Unnamed tributary to Austin Run	3.45 MILES
2A	VAN-A29L_LOH01A02	Abel Lake	137.43 ACRES
2A	VAN-A29L_LOH02A02	Curtis Lake	86.13 ACRES
2A	VAN-A29L_POM01A02	Abel Lake	18.97 ACRES
2A	VAN-A29L_POM02A02	Abel Lake	6.78 ACRES
2A	VAN-A29L_POM03A02	Abel Lake	11.06 ACRES
2A	VAN-A29R_DBR01A10	Dirt Bridge Run	1.81 MILES
2A	VAN-A29R_POM03A06	Potomac Creek	3.82 MILES
2A	VAN-A29R_XKZ01A06	Unnamed tributary to Accokeek Creek	1.29 MILES
2A	VAP-A31R_BRG01A12	Bridges Creek	1.83 MILES
2A	VAP-A32R_BEA01A04	Beales Mill Run	0.40 MILES
2A	VAP-A32R_CHC01A14	Cold Harbor Creek	0.21 MILES
2A	VAP-A32R_NOM01A00	Nomini Creek	1.98 MILES
2A	VAP-A32R_NOM02A14	Nomini Creek	3.37 MILES
2A	VAP-A33R_HAM01A16	Hampton Hall Branch	0.04 MILES
2A	VAP-A33R_WHP01A14	White Point Creek	1.52 MILES
2A	VAP-A34R_HUL01A14	Hull Creek	0.18 MILES
2A	VAP-A34R_XLM01A10	Coan Mill Stream, UT	1.72 MILES
2A	VAV-B01R_LAR01A00	Laurel Fork	15.99 MILES
2A	VAV-B01R_STT01A00	Straight Fork	7.46 MILES
2A	VAV-B01R_XER01A00	Bearwallow Run	2.54 MILES
2A	VAV-B01R_XSC01A04	Lost Run	1.88 MILES
2A	VAV-B02R_SOA01A00	South Branch Potomac River	1.01 MILES
2A	VAV-B02R_SOA01B10	South Branch Potomac River	4.32 MILES
2A	VAV-B02R_SOA02A10	South Branch Potomac River	5.03 MILES
2A	VAV-B02R_XAL01A16	Virginia Trout Monterey Spring Branch	0.32 MILES
2A	VAV-B07R_BAB01A00	Babbs Run	11.83 MILES
2A	VAV-B07R_BAR01A00	Back Creek	1.93 MILES
2A	VAV-B07R_BAR02A10	Back Creek	4.92 MILES
2A	VAV-B08R_BLR01A08	Buffalo Lick Run	4.76 MILES
2A	VAV-B08R_WRR01A08	Wrights Run	5.60 MILES
2A	VAV-B08R_XOP01A08	X-trib to Opequon Creek near Stephens City.	2.46 MILES
2A	VAV-B08R_XXO01A08	X-trib to Opequon Creek x-trib near Aylor Road.	1.25 MILES
2A	VAV-B09L_ABR01A08	Shenandoah University South Pond	0.19 ACRES
2A	VAV-B09L_ABR01B08	Shenandoah University North Pond	0.19 ACRES
2A	VAV-B09R_DRS01A00	Dry Marsh Run	12.05 MILES
2A	VAV-B09R_SYL01A10	Sylvan Run and tributary	3.90 MILES
2A	VAV-B09R_TWN01A08	Town Run	3.93 MILES
2A	VAV-B11R_EDB02A10	East Dry Branch	3.18 MILES
2A	VAV-B11R_JEN01A00	Jennings Branch	4.11 MILES
2A	VAV-B11R_JEN02A00	Jennings Branch	4.95 MILES
2A	VAV-B11R_JEN03A10	Jennings Branch	2.67 MILES
2A	VAV-B11R_WSK01A00	Whisky Creek	2.14 MILES
2A	VAV-B11R_XED01A02	Falls Hollow	3.63 MILES
2A	VAV-B12R_MDL01A00	Middle River	23.15 MILES
2A	VAV-B12R_MDL01B10	Middle River	2.92 MILES
2A	VAV-B14R_BKB01A00	Barterbrook Branch	3.08 MILES
2A	VAV-B14R_BKB02A10	Barterbrook Branch	1.42 MILES
2A	VAV-B16L_01	Staunton Dam Lake	20.71 ACRES

Overall Category	305(b) ID	Waterbody Name	Size
2A	VAV-B16R_LTT01A00	Little River	10.47 MILES
2A	VAV-B16R_NTH01A00	North River	6.09 MILES
2A	VAV-B16R_NTH02A00	North River	1.31 MILES
2A	VAV-B16R_NTH03A00	North River	10.25 MILES
2A	VAV-B16R_SKF01A00	Skidmore Fork	5.94 MILES
2A	VAV-B18R_BRY02A00	Briery Branch	6.20 MILES
2A	VAV-B18R_HQR01A00	Hone Quarry Run	6.24 MILES
2A	VAV-B18R_MNS01A04	Mines Run	4.13 MILES
2A	VAV-B19R_XMS01A04	Mt. Solon Spring	0.34 MILES
2A	VAV-B20R_RCK01A02	Rocky Run	9.75 MILES
2A	VAV-B21R_DUR04A00	Dry River	4.08 MILES
2A	VAV-B25L_00	Silver Lake	10.51 ACRES
2A	VAV-B29L_CNG01A04	Lake Shenandoah	36.13 ACRES
2A	VAV-B30R_BHC01A06	Broadhead Creek	5.50 MILES
2A	VAV-B30R_POR01A00	Poor Creek	6.62 MILES
2A	VAV-B30R_STO01A00	Stony Run	5.07 MILES
2A	VAV-B30R_STO02A10	Stony Run	1.67 MILES
2A	VAV-B33R_BGR01A00	Big Run	3.60 MILES
2A	VAV-B33R_BGR02A10	Big Run	4.81 MILES
2A	VAV-B35R_ELK01A00	Elk Run	19.46 MILES
2A	VAV-B35R_SNN01A00	Stony Run	7.35 MILES
2A	VAV-B39L_DRI01A08	Lake Arrowhead	36.07 ACRES
2A	VAV-B39R_LHC01A00	Little Hawksbill Creek	0.52 MILES
2A	VAV-B39R_LHC02A10	Little Hawksbill Creek	4.34 MILES
2A	VAV-B40R_OVL01A00	Overall Run	4.94 MILES
2A	VAV-B42R_GER01A00	German River	61.90 MILES
2A	VAV-B43R_GRE01A02	Gate Run	2.70 MILES
2A	VAV-B44R_SLB01A00	Slate Lick Branch	3.06 MILES
2A	VAV-B44R_SLB02A10	Slate Lick Branch	5.80 MILES
2A	VAV-B44R_TUR01A02	Turner Run	5.65 MILES
2A	VAV-B44R_XEQ01A02	Hawk Cave Run	2.04 MILES
2A	VAV-B45R_BRO01A14	Brocks Creek	4.00 MILES
2A	VAV-B45R_XHA01A08	Unnamed tributary of Holmans Creek	2.98 MILES
2A	VAV-B45R_XHB01A08	X-trib to an unnamed tributary to Holmans Creek.	0.98 MILES
2A	VAV-B45R_XHC01A08	Unnamed tributary to Holmans Creek near North Mountain.	0.61 MILES
2A	VAV-B48R_SRT01A00	Straight Run	4.62 MILES
2A	VAV-B49R_FTZ01A00	Foltz Creek	2.97 MILES
2A	VAV-B49R_LAR01A00	Laurel Run	3.80 MILES
2A	VAV-B49R_MAY01A08	May Spring Run	2.87 MILES
2A	VAV-B49R_XEN01A02	Poplar Run	1.84 MILES
2A	VAV-B50R_JDN01A00	Jordan Run	5.41 MILES
2A	VAV-B50R_TMB01A00	Toms Brook	9.51 MILES
2A	VAV-B51R_PYH01A06	Posey Hollow	2.99 MILES
2A	VAV-B52R_PDY01A00	Paddy Run	1.89 MILES
2A	VAV-B52R_PDY02A10	Paddy Run	6.22 MILES
2A	VAV-B54R_LPC01A00	Little Passage Creek	4.62 MILES
2A	VAV-B54R_PMR01A00	Peters Mill Run	8.68 MILES
2A	VAV-B54R_XPG01A08	Unnamed tributary to Passage Creek near Big Spring.	2.82 MILES
2A	VAV-B56L_CRO01A04	Lake Frederick	78.46 ACRES
2A	VAV-B56R_CRO02A16	Crooked Run	1.89 MILES
2A	VAV-B56R_MCR01A00	Molly Camel Run	3.67 MILES
2A	VAV-B56R_STV02A08	Stephens Run	9.28 MILES
2A	VAV-B56R_XCR01A06	X-trib to Crooked Run	0.19 MILES
2A	VAV-B56R_XDR01A06	Dry Run	3.67 MILES
2A	VAV-B57R_LWS01A00	Lewis Run	1.48 MILES
2A	VAV-B57R_LWS02A00	Lewis Run	4.81 MILES
2B	VAN-A02R_XKR01A08	Unnamed tributary to Catoctin Creek	2.20 MILES
2B	VAN-A04R_GOO01A08	Goose Creek	3.51 MILES
2B	VAN-A04R_GOO02A04	Goose Creek	8.11 MILES
2B	VAN-A05R_GOO01A00	Goose Creek	7.29 MILES
2B	VAN-A05R_XMI01A12	Unnamed tributary to Cromwells Run	4.11 MILES
2B	VAN-A07R_XGU01A08	Unnamed tributary to Beaverdam Creek	1.12 MILES
2B	VAN-A08R_BAO01A06	Bartons Creek	4.81 MILES
2B	VAN-A08R_GOO04A08	Goose Creek	3.61 MILES
2B	VAN-A08R_HUN01A06	Hungry Run	6.23 MILES
2B	VAN-A08R_LIV03A06	Little River	5.86 MILES
2B	VAN-A11R_COV01B06	Colvin Run	0.94 MILES
2B	VAN-A11R_DIF04A02	Difficult Run	2.64 MILES
2B	VAN-A11R_SOL01A02	South Fork Little Difficult Run	2.96 MILES
2B	VAN-A19R_BRU01B06	Broad Run	2.08 MILES
2B	VAN-A21R_CAA02A08	Catharpin Creek	3.46 MILES
2B	VAN-A21R_LII03A06	Little Bull Run	9.93 MILES
2B	VAN-A22R_BIR02A02	Big Rocky Run	2.40 MILES
2B	VAN-A24L_OCC01A02	Occoquan Reservoir	1,250.03 ACRES
2B	VAN-A25R_NEA01A00	Neabsco Creek	9.42 MILES
2B	VAN-A26L_CHO01A08	Breckenridge Reservoir	46.81 ACRES
2B	VAN-A26R_CHO01A02	Chopawamsic Creek	1.87 MILES
2B	VAN-A26R_LIE01A02	Little Creek	4.43 MILES
2B	VAP-A32R_SCA01A96	Scates Branch	1.03 MILES
2B	VAV-B11R_WTK01A02	White Oak Run	2.57 MILES
2B	VAV-B36R_NKW01A00	West Branch Naked Creek	2.19 MILES
2B	VAV-B36R_NKW02A10	West Branch Naked Creek	4.29 MILES
2B	VAV-B37R_MGN01A02	Morgan Run	2.43 MILES
2B	VAV-B39R_DNF01A02	Dry Run North Fork	4.03 MILES
2B	VAV-B49R_LSC01A00	Little Stony Creek	3.54 MILES
2B	VAV-B50R_NFS02A00	North Fork Shenandoah River	11.87 MILES
2B	VAV-B50R_NFS03A00	North Fork Shenandoah River	5.14 MILES
2B	VAV-B51R_NFS05A00	North Fork Shenandoah River	1.63 MILES
2B	VAV-B51R_NFS06A00	North Fork Shenandoah River	5.86 MILES
2B	VAV-B51R_NFS07A00	North Fork Shenandoah River	7.01 MILES
2B	VAV-B53R_CDR02A00	Cedar Creek	9.77 MILES
2B	VAV-B53R_CDR03A10	Cedar Creek	4.57 MILES
2B	VAV-B54R_PSG01A00	Passage Creek	3.86 MILES
2B	VAV-B54R_PSG01B10	Passage Creek	4.79 MILES
2C	VAN-A13R_CAM01A04	Cameron Run/Hunting Creek	1.91 MILES
2C	VAN-A21R_LII02A02	Little Bull Run	3.17 MILES
2C	VAV-B43R_BBL01A10	Bible Run	9.83 MILES
2C	VAV-B43R_CRH01A10	Carr Run	3.02 MILES
2C	VAV-B43R_LTD01A00	Little Dry River	34.58 MILES

Overall Category	305(b) ID	Waterbody Name	Size
2C	VAV-B43R_NFS01A00	North Fork Shenandoah River	6.64 MILES
2C	VAV-B43R_SBL01A10	Seventy Buck Lick Run	2.04 MILES
2C	VAV-B43R_XCL01A10	Clay Lick Hollow	2.95 MILES
2C	VAV-B44R_NFS01A00	North Fork Shenandoah River	4.21 MILES
2C	VAV-B44R_SMK01A00	Shoemaker River	1.87 MILES
2C	VAV-B44R_SMK02A10	Shoemaker River	3.36 MILES
2C	VAV-B45R_NFS04A04	North Fork Shenandoah River	2.02 MILES
3A	VAN-A01R_ZZZ01A00	Potomac River/Piney Run/Dutchman Creek	65.50 MILES
3A	VAN-A02R_ZZZ02A00	South Fork Catoctin Creek	107.14 MILES
3A	VAN-A02R_ZZZ03A00	Catoctin Creek	68.17 MILES
3A	VAN-A03R_ZZZ04A00	Potomac River/Tuscarora Creek	21.99 MILES
3A	VAN-A03R_ZZZ05A00	Potomac River/Limestone Branch	57.75 MILES
3A	VAN-A04R_XJI01A04	Unnamed tributary to Goose Creek	1.61 MILES
3A	VAN-A04R_ZZZ06A00	Goose Creek/Mitchells Branch	55.46 MILES
3A	VAN-A04R_ZZZ07A00	Goose Creek/Crooked Run/Gap Run	114.50 MILES
3A	VAN-A05R_ZZZ07A00	Goose Creek/Crooked Run/Gap Run	21.77 MILES
3A	VAN-A05R_ZZZ08A00	Panther Skin Creek	50.47 MILES
3A	VAN-A05R_ZZZ09A00	Cromwells Run	36.69 MILES
3A	VAN-A05R_ZZZ10A00	Goose Creek/Wanopin Creek	65.86 MILES
3A	VAN-A06R_ZZZ12A00	North Fork Goose Creek	82.94 MILES
3A	VAN-A07R_ZZZ11A00	Beaverdam Creek	112.00 MILES
3A	VAN-A08L_BEE01A08	Beaverdam Reservoir	301.08 ACRES
3A	VAN-A08L_GOO02B06	Goose Creek Reservoir	58.12 ACRES
3A	VAN-A08R_ZZZ13A00	Little River	103.80 MILES
3A	VAN-A08R_ZZZ14A00	Goose Creek/Big Branch	46.79 MILES
3A	VAN-A08R_ZZZ15A00	Sycolin Creek	24.93 MILES
3A	VAN-A08R_ZZZ16A00	Goose Creek/Cattail Branch	43.35 MILES
3A	VAN-A09R_ZZZ17A00	Broad Run/Lenah Run	53.62 MILES
3A	VAN-A09R_ZZZ18A00	Horsepen Run	28.01 MILES
3A	VAN-A09R_ZZZ19A00	Broad Run/Beaverdam Run	61.98 MILES
3A	VAN-A09R_ZZZ20A00	Potomac River/Selden Island	12.89 MILES
3A	VAN-A10R_ZZZ21A00	Sugarland Run	42.38 MILES
3A	VAN-A11R_ZZZ22A00	Difficult Run	56.97 MILES
3A	VAN-A11R_ZZZ23A00	Potomac River/Nichols Run/Scott Run	49.23 MILES
3A	VAN-A12R_ZZZ24A00	Potomac River/Pimmit Run	8.70 MILES
3A	VAN-A12R_ZZZ25A00	Potomac River/Four Mile Run	5.91 MILES
3A	VAN-A13R_HFF01A02	Hooff Run	0.29 MILES
3A	VAN-A13R_ZZZ26A00	Cameron Run	29.01 MILES
3A	VAN-A14R_ZZZ27A00	Dogue Creek	24.82 MILES
3A	VAN-A14R_ZZZ28A00	Potomac River/Little Hunting Creek	10.02 MILES
3A	VAN-A15R_FLR01A02	Field Lark Branch	1.45 MILES
3A	VAN-A15R_ZZZ30A00	Accotink Creek	57.76 MILES
3A	VAN-A16R_ZZZ29A00	Pohick Creek	54.83 MILES
3A	VAN-A17R_ZZZ35A00	Cedar Run/Mill Run	62.37 MILES
3A	VAN-A17R_ZZZ36A00	Cedar Run/Owl Run	99.10 MILES
3A	VAN-A17R_ZZZ37A00	Licking Run	44.29 MILES
3A	VAN-A17R_ZZZ38A00	Cedar Run/Walnut Branch	25.10 MILES
3A	VAN-A18R_ELK02A06	Elk Run	4.52 MILES
3A	VAN-A18R_GON01A04	Goslin Run	0.80 MILES
3A	VAN-A18R_ZZZ38A00	Cedar Run/Walnut Branch	14.59 MILES
3A	VAN-A18R_ZZZ39A00	Town Run	92.25 MILES
3A	VAN-A18R_ZZZ40A00	Cedar Run/Slate Run	116.45 MILES
3A	VAN-A19L_ZZZ01A02	Lake Manassas (Broad Run Reservoir)	51.98 ACRES
3A	VAN-A19R_BRU03A04	Broad Run	4.06 MILES
3A	VAN-A19R_ZZZ31A00	Broad Run/Trapp Branch	74.00 MILES
3A	VAN-A19R_ZZZ32A00	Broad Run/Catletts Branch	61.33 MILES
3A	VAN-A19R_ZZZ33A00	Kettle Run	57.47 MILES
3A	VAN-A19R_ZZZ34A00	Broad Run/Rocky Branch	81.15 MILES
3A	VAN-A20R_ZZZ41A00	Occoquan River/Occoquan Reservoir/Lake Jackson	63.31 MILES
3A	VAN-A21R_BUL01C06	Bull Run	0.97 MILES
3A	VAN-A21R_ZZZ42A00	Upper Bull Run	104.78 MILES
3A	VAN-A21R_ZZZ43A00	Little Bull Run	44.40 MILES
3A	VAN-A21R_ZZZ44A00	Middle Bull Run	48.67 MILES
3A	VAN-A22R_ZZZ45A00	Cub Run	80.64 MILES
3A	VAN-A23R_XJL01A02	Unnamed tributary to Piney Branch	0.38 MILES
3A	VAN-A23R_ZZZ46A00	Lower Bull Run	79.59 MILES
3A	VAN-A24R_XJN01A02	Unnamed tributary to Sandy Run	1.31 MILES
3A	VAN-A24R_ZZZ47A00	Occoquan River/Occoquan Reservoir	64.36 MILES
3A	VAN-A25L_OCC01A10	Occoquan Reservoir	20.28 ACRES
3A	VAN-A25R_OCC01A12	Occoquan River	0.31 MILES
3A	VAN-A25R_ZZZ48A00	Occoquan River/Belmont Bay	37.94 MILES
3A	VAN-A25R_ZZZ49A00	Neabsco Creek	40.40 MILES
3A	VAN-A25R_ZZZ50A00	Potomac River/Occoquan Bay	20.25 MILES
3A	VAN-A26R_ZZZ51A00	Powells Creek	28.04 MILES
3A	VAN-A26R_ZZZ52A00	Quantico Creek	75.79 MILES
3A	VAN-A26R_ZZZ53A00	Chopawamsic Creek	61.48 MILES
3A	VAN-A26R_ZZZ54A00	Potomac River/Tank Creek	22.11 MILES
3A	VAN-A27L_BED02A08	Lunga Reservoir	476.98 ACRES
3A	VAN-A27R_BED01A00	Beaverdam Run	4.22 MILES
3A	VAN-A27R_CNN01A02	Cannon Creek	3.07 MILES
3A	VAN-A27R_ZZZ55A00	Beaverdam Run	30.82 MILES
3A	VAN-A27R_ZZZ56A00	Upper Aquia Creek	75.76 MILES
3A	VAN-A28R_ZZZ57A00	Lower Aquia Creek	59.06 MILES
3A	VAN-A29R_ZZZ58A00	Accokeek Creek	57.78 MILES
3A	VAN-A29R_ZZZ59A00	Potomac Creek/Long Branch	63.49 MILES
3A	VAN-A29R_ZZZ60A00	Potomac Creek/Beaverdam Creek	87.82 MILES
3A	VAN-A29R_ZZZ61A00	Potomac River/Passapatanzy Creek	38.95 MILES
3A	VAN-A29R_ZZZ62A00	Potomac River/Chotank Creek	25.70 MILES
3A	VAN-A30R_ZZZ63A00	Potomac River/Gambo Creek	25.45 MILES
3A	VAN-A30R_ZZZ64A00	Upper Machodoc Creek	101.62 MILES
3A	VAP-A31R_DNC01A04	Dancing Marsh	0.91 MILES
3A	VAP-A31R_ZZZ01A14	Unsegmented rivers in A31	12.67 MILES
3A	VAP-A31R_ZZZ01B14	Unsegmented rivers in A31	21.92 MILES
3A	VAP-A32R_ZZZ01A14	Unsegmented rivers in A32	71.54 MILES
3A	VAP-A32R_ZZZ01B14	Unsegmented rivers in A32	19.52 MILES
3A	VAP-A32R_ZZZ01C14	Unsegmented rivers in A32	31.64 MILES
3A	VAP-A33R_ZZZ01A00	Unsegmented Rivers in A33	69.13 MILES

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3A	VAP-A34R_CON01A00	Coan Mill Stream	0.95 MILES
3A	VAP-A34R_ZZZ01A14	Unsegmented rivers in A34	44.10 MILES
3A	VAP-A34R_ZZZ01B14	Unsegmented rivers in A34	35.93 MILES
3A	VAP-A34R_ZZZ02A14	Unsegmented rivers in A34	7.77 MILES
3A	VAV-B01R_ZZZ01A00	Unsegmented x-tribs in VAV-B01R	35.85 MILES
3A	VAV-B02R_WSC01A00	West Strait Creek	3.60 MILES
3A	VAV-B02R_ZZZ01A00	Unsegmented x-tribs in VAV-B02R - PU02	93.06 MILES
3A	VAV-B02R_ZZZ02A10	Unsegmented x-tribs in VAV-B02R - PU04	2.92 MILES
3A	VAV-B02R_ZZZ03A14	Unsegmented x-tribs located within VAV-B02R - PU03	58.88 MILES
3A	VAV-B03R_BYF01A00	Brushy Fork	2.38 MILES
3A	VAV-B03R_ZZZ01A14	Unsegmented x-tribs located within VAV-B03R - PU06	26.21 MILES
3A	VAV-B03R_ZZZ02A14	Unsegmented x-tribs located within VAV-B03R - PU05	2.47 MILES
3A	VAV-B04R_BEG01A10	Bear Garden Run	4.25 MILES
3A	VAV-B04R_ZZZ01A00	Unsegmented x-tribs in VAV-B04R - PU08	28.80 MILES
3A	VAV-B04R_ZZZ02A10	Unsegmented x-tribs in VAV-B04R - PU09	10.92 MILES
3A	VAV-B05R_BAR01A00	Back Creek	0.87 MILES
3A	VAV-B05R_ISC02A16	Isaacs Creek	12.28 MILES
3A	VAV-B05R_LIG02A00	Little Isaacs Creek	0.53 MILES
3A	VAV-B05R_XBK01A10	Barclay Run	0.89 MILES
3A	VAV-B05R_ZZZ01A00	Unsegmented x-tribs in VAV-B05R - PU10	72.03 MILES
3A	VAV-B05R_ZZZ02A10	Unsegmented x-tribs in VAV-B05R - PU11	20.81 MILES
3A	VAV-B05R_ZZZ03A16	Unsegmented tributaries to Isaacs Creek	41.63 MILES
3A	VAV-B06R_GAN01A06	Gap Run	19.24 MILES
3A	VAV-B06R_ZZZ01A00	Unsegmented x-tribs in VAV-B06R	56.92 MILES
3A	VAV-B07R_BRH01A00	Brush Creek	42.79 MILES
3A	VAV-B07R_PAR01A08	Parrish Run	6.09 MILES
3A	VAV-B07R_ZZZ01A00	Unsegmented x-tribs in VAV-B07R - PU13	27.78 MILES
3A	VAV-B07R_ZZZ02A10	Unsegmented x-tribs in VAV-B07R - PU14	34.79 MILES
3A	VAV-B07R_ZZZ03A10	Unsegmented x-tribs in VAV-B07R - PU15	8.82 MILES
3A	VAV-B08R_ZZZ01A00	Unsegmented x-tribs in VAV-B08R - PU16	73.83 MILES
3A	VAV-B09L_ABR01C08	Winchester Country Club Pond	0.55 ACRES
3A	VAV-B09R_CLB01A04	Clearbrook Run	2.17 MILES
3A	VAV-B09R_CLB02A10	Clearbrook Run	0.10 MILES
3A	VAV-B09R_HOT01A10	Hot Run	4.16 MILES
3A	VAV-B09R_TRK01A10	Turkey Run	3.38 MILES
3A	VAV-B09R_ZZZ01A00	Unsegmented x-tribs in VAV-B09R - PU17	10.08 MILES
3A	VAV-B09R_ZZZ02A10	Unsegmented x-tribs in VAV-B09R - PU18	26.63 MILES
3A	VAV-B09R_ZZZ03A10	Unsegmented x-tribs in VAV-B09R - PU19	29.58 MILES
3A	VAV-B09R_ZZZ04A10	Unsegmented x-tribs in VAV-B09R - PU20	3.02 MILES
3A	VAV-B10R_ZZZ01A14	Unsegmented x-tribs in VAV-B10R - PS01	101.52 MILES
3A	VAV-B11R_BFP01A00	Buffalo Branch	4.21 MILES
3A	VAV-B11R_EDB01A00	East Dry Branch	3.32 MILES
3A	VAV-B11R_MCK01A00	McKittricks Branch	5.64 MILES
3A	VAV-B11R_WSK02A00	Whisky Creek	2.13 MILES
3A	VAV-B11R_ZZZ01A14	Unsegmented x-tribs in VAV-B11R - PS03	69.72 MILES
3A	VAV-B11R_ZZZ02A14	Unsegmented x-tribs in VAV-B11R - PS02	44.09 MILES
3A	VAV-B12L_TAM01A08	Tams Lake	2.75 ACRES
3A	VAV-B12R_BLL01A00	Bell Creek	4.35 MILES
3A	VAV-B12R_BMS01A10	Buttermilk Spring Run	3.76 MILES
3A	VAV-B12R_FSR01A00	Falling Spring Run	3.72 MILES
3A	VAV-B12R_LEW02A00	Lewis Creek	2.47 MILES
3A	VAV-B12R_MDL02A00	Middle River	1.77 MILES
3A	VAV-B12R_PEY01A10	Peyton Creek	2.89 MILES
3A	VAV-B12R_POG01A00	Poague Run	4.45 MILES
3A	VAV-B12R_XEE01A10	Lewis Creek UT	4.61 MILES
3A	VAV-B12R_ZZZ01A14	Unsegmented x-tribs in VAV-B12R - PS07	50.24 MILES
3A	VAV-B12R_ZZZ02A14	Unsegmented x-tribs in VAV-B12R - PS06	32.57 MILES
3A	VAV-B12R_ZZZ03A14	Unsegmented x-tribs in VAV-B12R - PS04	23.56 MILES
3A	VAV-B13R_XEI01A02	Tunnel Hollow	1.26 MILES
3A	VAV-B13R_ZZZ01A14	Unsegmented x-tribs in VAV-B13R - PS05	56.60 MILES
3A	VAV-B14R_GOS01A00	Goose Creek	6.10 MILES
3A	VAV-B14R_POO01A10	Poor Farm Draft	3.38 MILES
3A	VAV-B14R_XCK01A04	Christians Creek X-Trib	2.86 MILES
3A	VAV-B14R_ZZZ01A14	Unsegmented x-tribs in VAV-B14R - PS10	32.34 MILES
3A	VAV-B14R_ZZZ02A14	Unsegmented x-tribs in VAV-B14R - PS09	91.99 MILES
3A	VAV-B14R_ZZZ03A14	Unsegmented x-tribs in VAV-B14R - PS08	89.22 MILES
3A	VAV-B15R_XBF01A04	Middle River X-Trib	4.58 MILES
3A	VAV-B15R_ZZZ01A00	Unsegmented x-tribs in VAV-B15R	53.98 MILES
3A	VAV-B16R_ZZZ01A00	Little River	3.38 MILES
3A	VAV-B16R_ZZZ01B00	Big Run	4.62 MILES
3A	VAV-B16R_ZZZ02A14	Unsegmented x-tribs in VAV-B16R - PS13	48.42 MILES
3A	VAV-B16R_ZZZ03A14	Unsegmented x-tribs in VAV-B16R - PS12	65.87 MILES
3A	VAV-B17R_FMN01A10	Freemason Run	5.75 MILES
3A	VAV-B17R_XSB01A04	Spring Creek	2.00 MILES
3A	VAV-B17R_XSB02A10	Spring Creek	1.84 MILES
3A	VAV-B17R_ZZZ01A14	Unsegmented x-tribs in VAV-B17R - PS16	111.33 MILES
3A	VAV-B18R_ZZZ01A14	Unsegmented x-tribs in VAV-B18R - PS14	81.10 MILES
3A	VAV-B19R_ZZZ01A00	Unsegmented x-tribs in VAV-B19R	36.63 MILES
3A	VAV-B20R_PCH01A10	Peach Run	1.63 MILES
3A	VAV-B20R_RAC01A10	Raccoon Run	2.23 MILES
3A	VAV-B20R_SKD01A04	Skidmore Fork	1.15 MILES
3A	VAV-B20R_SKD02A00	Skidmore Fork	1.90 MILES
3A	VAV-B20R_XDR01A10	Hopkins Hollow	2.48 MILES

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3A	VAV-B20R_ZZZ01A00	Unsegmented x-tribs in VAV-B20R - PS18	9.03 MILES
3A	VAV-B20R_ZZZ01B10	Unsegmented x-tribs in VAV-B20R - PS17	13.57 MILES
3A	VAV-B20R_ZZZ02A00	Unsegmented PWS x-tribs in VAV-B20R - PS17	27.93 MILES
3A	VAV-B20R_ZZZ03A14	Unsegmented PWS x-tribs in VAV-B20R - PS18	12.43 MILES
3A	VAV-B21R_ZZZ01A14	Unsegmented x-tribs in VAV-B21R - PS20	22.89 MILES
3A	VAV-B22R_WRB01A00	War Branch	30.33 MILES
3A	VAV-B22R_ZZZ01A14	Unsegmented PWS x-tribs in VAV-B22R - PS19	1.68 MILES
3A	VAV-B22R_ZZZ02A14	Unsegmented x-tribs in VAV-B22R - PS19	36.64 MILES
3A	VAV-B23R_XEC01A02	Williams Run	3.78 MILES
3A	VAV-B23R_ZZZ01A00	Unsegmented x-tribs in VAV-B23R - PS25	56.50 MILES
3A	VAV-B23R_ZZZ02A10	Unsegmented x-tribs in VAV-B23R - PS26	23.51 MILES
3A	VAV-B24R_ZZZ01A00	Unsegmented x-tribs in VAV-B24R	41.06 MILES
3A	VAV-B25R_XTB01A04	Sunset Heights Branch X-trib	0.04 MILES
3A	VAV-B25R_ZZZ01A14	Unsegmented x-tribs in VAV-B25R - PS23	43.40 MILES
3A	VAV-B26R_XBK01A08	X-trib to Blacks Run in Park View	0.21 MILES
3A	VAV-B26R_ZZZ01A14	Unsegmented x-tribs in VAV-B26R - PS22	25.95 MILES
3A	VAV-B27R_ZZZ01A14	Pleasant Run tributaries	11.80 MILES
3A	VAV-B28R_BYR01A00	Byers Branch	5.63 MILES
3A	VAV-B28R_ZZZ01A00	Unsegmented x-tribs in VAV-B28R	43.01 MILES
3A	VAV-B29R_ZZZ01A16	Unsegmented x-tribs in VAV-B29R - PS26	21.07 MILES
3A	VAV-B30R_CRN01A00	Cold Spring Branch	1.09 MILES
3A	VAV-B30R_CRN02A10	Cold Spring Branch	4.43 MILES
3A	VAV-B30R_DPD01A00	Deep Pond Run	1.68 MILES
3A	VAV-B30R_ZZZ01A00	Unsegmented x-tribs in VAV-B30R	43.35 MILES
3A	VAV-B31R_BKN01A10	N.F. Back Creek	2.65 MILES
3A	VAV-B31R_CDA01A00	Canada Run	5.44 MILES
3A	VAV-B31R_EFB01A10	East Fork Back Creek	1.79 MILES
3A	VAV-B31R_FS00	Forest Service Bio - 1	1.66 MILES
3A	VAV-B31R_FS10	Forest Service Bio - 2	1.38 MILES
3A	VAV-B31R_INC01A02	Inch Branch	1.15 MILES
3A	VAV-B31R_INC02A10	Inch Branch	1.67 MILES
3A	VAV-B31R_XEF01A02	Williams Branch	0.88 MILES
3A	VAV-B31R_XEH01A02	Robinson Hollow	0.93 MILES
3A	VAV-B31R_XEH02A10	Robinson Hollow	1.71 MILES
3A	VAV-B31R_XSB01A10	X-tribs to the South Fork Back Creek.	4.52 MILES
3A	VAV-B31R_XTB01A10	Toms Branch X-trib	1.12 MILES
3A	VAV-B31R_ZZZ01A00	Unsegmented x-tribs in VAV-B31R - PS28	51.64 MILES
3A	VAV-B31R_ZZZ02A10	Unsegmented x-tribs in VAV-B31R - PS29	48.09 MILES
3A	VAV-B32R_JOH01A10	Jones Hollow	1.07 MILES
3A	VAV-B32R_JOH02A10	Jones Hollow	3.02 MILES
3A	VAV-B32R_LRR01A00	Laurel Run	2.20 MILES
3A	VAV-B32R_MRB01A00	Mine Run Branch	2.58 MILES
3A	VAV-B32R_MRR01A00	Miller Run	6.09 MILES
3A	VAV-B32R_PFD01A00	Porterfield Run	4.59 MILES
3A	VAV-B32R_SLL01A00	Stull Run	5.12 MILES
3A	VAV-B32R_TNB01A00	Tunnel Branch	2.57 MILES
3A	VAV-B32R_XDH01A04	South River X-Trib	0.71 MILES
3A	VAV-B32R_XMR01A10	Cool Spring Hollow	2.06 MILES
3A	VAV-B32R_ZZZ01A00	Unsegmented x-tribs in VAV-B23R - PS31	77.99 MILES
3A	VAV-B32R_ZZZ02A10	Unsegmented x-tribs in VAV-B23R - PS30	71.78 MILES
3A	VAV-B33R_ULR01A00	Upper Lewis Run	0.59 MILES
3A	VAV-B33R_ULR02A10	Upper Lewis Run	2.45 MILES
3A	VAV-B33R_WOK01A10	Whiteoak Run	3.16 MILES
3A	VAV-B33R_ZZZ01A14	Unsegmented x-tribs in VAV-B33R - PS32	40.37 MILES
3A	VAV-B34R_ZZZ01A00	Cub Run X-tribs - PS33	54.58 MILES
3A	VAV-B35R_BNB01A00	Bonnie Brook	3.82 MILES
3A	VAV-B35R_GAP01A00	Gap Run	4.44 MILES
3A	VAV-B35R_GAP02A10	Gap Run	4.28 MILES
3A	VAV-B35R_HKL01A00	Hawksbill Creek	0.81 MILES
3A	VAV-B35R_HKL02A10	Hawksbill Creek	6.82 MILES
3A	VAV-B35R_HKL03A10	Hawksbill Creek	1.33 MILES
3A	VAV-B35R_HUM01A00	Humes Run	2.82 MILES
3A	VAV-B35R_LEE01A10	Lee Run	0.61 MILES
3A	VAV-B35R_LEE02A10	Lee Run	2.37 MILES
3A	VAV-B35R_MNG01A00	Monger Run	2.75 MILES
3A	VAV-B35R_SNN02A10	Stony Run	3.89 MILES
3A	VAV-B35R_WSR01A00	West Swift Run	1.60 MILES
3A	VAV-B35R_WSR02A10	West Swift Run	2.77 MILES
3A	VAV-B35R_XHB01A10	Hawksbill Creek X-trib	4.52 MILES
3A	VAV-B35R_XHK01A10	Hawksbill Creek X-trib	3.15 MILES
3A	VAV-B35R_ZZZ01A00	Unsegmented x-tribs in VAV-B35R - PS35	70.29 MILES
3A	VAV-B35R_ZZZ02A10	Unsegmented x-tribs in VAV-B35R - PS34	60.42 MILES
3A	VAV-B36R_DEP01A00	Deep Run	2.06 MILES
3A	VAV-B36R_MDH01A00	Mudhole Run	1.54 MILES
3A	VAV-B36R_NKS01A00	South Branch Naked Creek	1.75 MILES
3A	VAV-B36R_SYR02A10	Stony Run	5.25 MILES
3A	VAV-B36R_XHC01A10	Harris Cove	1.62 MILES
3A	VAV-B36R_ZZZ01A14	Unsegmented x-tribs in VAV-B36R - PS36	28.67 MILES
3A	VAV-B37R_PTR01A00	Peterfish Run	6.95 MILES
3A	VAV-B37R_ZZZ01A02	Unsegmented x-tribs in VAV-B37R	73.34 MILES
3A	VAV-B37R_ZZZ02A14	Unsegmented x-tribs in VAV-B37R - PS38	14.67 MILES
3A	VAV-B37R_ZZZ03A14	Unsegmented x-tribs in VAV-B37R - PS39	42.20 MILES
3A	VAV-B38R_BWN01A00	Browns Run	3.79 MILES
3A	VAV-B38R_XEJ01A02	Waterfall Trib	2.62 MILES
3A	VAV-B38R_ZZZ01A14	Unsegmented x-tribs in VAV-B38R - PS41	62.99 MILES
3A	VAV-B38R_ZZZ02A14	Unsegmented x-tribs in VAV-B38R - PS40	53.20 MILES
3A	VAV-B39R_DRI02A10	Dry Run	4.23 MILES

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3A	VAV-B39R_ZZZ01A14	Unsegmented x-tribs in VAV-B39R - PS43	33.41 MILES
3A	VAV-B39R_ZZZ02A14	Unsegmented x-tribs in VAV-B39R - PS42	68.41 MILES
3A	VAV-B40R_DPR01A00	Dry Mine Run	2.89 MILES
3A	VAV-B40R_DYN01A00	Dry Run	3.88 MILES
3A	VAV-B40R_XEK01A02	Panhandle Trib(2)	2.02 MILES
3A	VAV-B40R_XEL01A02	Panhandle Trib(1)	1.95 MILES
3A	VAV-B40R_ZZZ01A14	Unsegmented x-tribs in VAV-B40R - PS45	113.34 MILES
3A	VAV-B40R_ZZZ02A14	Unsegmented x-tribs in VAV-B40R - PS46	40.64 MILES
3A	VAV-B40R_ZZZ03A14	Unsegmented x-tribs in VAV-B40R - PS44	79.33 MILES
3A	VAV-B41R_CBN01A00	Cabin Run	5.06 MILES
3A	VAV-B41R_SLN01A00	Sloan Creek	1.77 MILES
3A	VAV-B41R_ZZZ01A14	Unsegmented PWS x-tribs in VAV-B41R - PS47	15.74 MILES
3A	VAV-B41R_ZZZ02A14	Unsegmented x-tribs in VAV-B41R - PS47	51.02 MILES
3A	VAV-B41R_ZZZ03A14	Unsegmented PWS x-tribs in VAV-B41R - PS48	20.75 MILES
3A	VAV-B41R_ZZZ04A14	Unsegmented x-tribs in VAV-B41R - PS48	12.78 MILES
3A	VAV-B42R_BNT01A00	Bennett Run	6.96 MILES
3A	VAV-B42R_CPR01A00	Capon Run	3.48 MILES
3A	VAV-B42R_OVY01A00	Overly Run	4.48 MILES
3A	VAV-B42R_SPG01A00	Spring Run	1.66 MILES
3A	VAV-B42R_SRK01A10	Sirks Run	1.31 MILES
3A	VAV-B42R_ZZZ01A14	Unsegmented x-tribs in VAV-B42R - PS50	38.23 MILES
3A	VAV-B42R_ZZZ02A14	Unsegmented x-tribs in VAV-B42R - PS51	25.16 MILES
3A	VAV-B43R_LRS01A00	Lairs Run	3.80 MILES
3A	VAV-B43R_MSL01A00	Marshall Run	1.20 MILES
3A	VAV-B43R_XEM01A02	Spruce Lick Run	1.67 MILES
3A	VAV-B43R_ZZZ01A14	Unsegmented x-tribs in VAV-B43R - PS51	44.28 MILES
3A	VAV-B43R_ZZZ02A14	Unsegmented x-tribs in VAV-B43R - PS52	13.58 MILES
3A	VAV-B44R_FHW01A00	Fawley Hollow	3.43 MILES
3A	VAV-B44R_HPN01A02	Hogpen Run	3.86 MILES
3A	VAV-B44R_SMK03A10	Shoemaker River	6.25 MILES
3A	VAV-B44R_XSE01A04	Tomahawk Branch	1.15 MILES
3A	VAV-B44R_ZZZ01A14	Unsegmented x-tribs in VAV-B44R - PS54	62.21 MILES
3A	VAV-B44R_ZZZ02A14	Unsegmented Class V x-tribs in VAV-B44R - PS53	20.66 MILES
3A	VAV-B44R_ZZZ03A14	Unsegmented x-tribs in VAV-B44R - PS53	23.24 MILES
3A	VAV-B44R_ZZZ04A14	Unsegmented Class VI x-tribs in VAV-B44R - PS53	14.37 MILES
3A	VAV-B45R_FRT01A00	Fort Run	4.43 MILES
3A	VAV-B45R_XDX01A04	Plains Mill Spring	0.71 MILES
3A	VAV-B45R_ZZZ01A00	Unsegmented PWS x-tribs in VAV-B45R - PS55	13.81 MILES
3A	VAV-B45R_ZZZ02A14	Unsegmented x-tribs in VAV-B45R - PS58	36.68 MILES
3A	VAV-B45R_ZZZ03A14	Unsegmented x-tribs in VAV-B45R - PS57	83.93 MILES
3A	VAV-B45R_ZZZ04A14	Unsegmented x-tribs in VAV-B45R - PS55	35.46 MILES
3A	VAV-B46R_DPH01A00	Daphna Creek	3.24 MILES
3A	VAV-B46R_JOE01A00	Joe's Creek	7.05 MILES
3A	VAV-B46R_LVW01A00	West Fork Linville Creek	2.44 MILES
3A	VAV-B46R_TSB01A00	Tide Spring Branch	0.68 MILES
3A	VAV-B46R_TSB02A04	Tide Spring Branch	2.20 MILES
3A	VAV-B46R_ZZZ01A14	Unsegmented PWS x-tribs in VAV-B46R - PS56	18.31 MILES
3A	VAV-B46R_ZZZ02A14	Unsegmented x-tribs in VAV-B46R - PS56	72.57 MILES
3A	VAV-B47R_GPC01A00	Gap Creek	4.70 MILES
3A	VAV-B47R_ZZZ01A00	Unsegmented x-tribs in VAV-B47R - PS60	43.12 MILES
3A	VAV-B47R_ZZZ02A14	Unsegmented x-tribs in VAV-B47R - PS62	94.42 MILES
3A	VAV-B47R_ZZZ03A14	Unsegmented x-tribs in VAV-B47R - PS61	56.26 MILES
3A	VAV-B47R_ZZZ04A14	Unsegmented x-tribs in VAV-B47R - PS59	19.33 MILES
3A	VAV-B48L_00	Mount Jackson Reservoir	0.62 ACRES
3A	VAV-B48R_ZZZ01A14	Unsegmented x-tribs in VAV-B48R - PS64	68.71 MILES
3A	VAV-B48R_ZZZ02A14	Unsegmented x-tribs in VAV-B48R - PS63	82.54 MILES
3A	VAV-B49R_BBR01A16	Bear Run	2.32 MILES
3A	VAV-B49R_BRB01A00	Barb Run	2.69 MILES
3A	VAV-B49R_BTL01A00	Beetle Run	3.55 MILES
3A	VAV-B49R_CGR01A10	Cold Spring Run	0.90 MILES
3A	VAV-B49R_FAL01A00	Falls Run	4.91 MILES
3A	VAV-B49R_PNT01A00	Painter Run	5.48 MILES
3A	VAV-B49R_RIL01A00	Riles Run	8.11 MILES
3A	VAV-B49R_SWV01A00	Swover Creek	7.33 MILES
3A	VAV-B49R_ZZZ01A00	Unsegmented x-tribs in VAV-B49R - PS66	10.61 MILES
3A	VAV-B49R_ZZZ02A10	Unsegmented x-tribs in VAV-B49R - PS67	68.05 MILES
3A	VAV-B49R_ZZZ03A10	Unsegmented x-tribs in VAV-B49R - PS65	69.74 MILES
3A	VAV-B50R_ZZZ01A00	Unsegmented x-tribs in VAV-B50R (Section 6)	94.85 MILES
3A	VAV-B50R_ZZZ02A10	Unsegmented x-tribs in VAV-B50R (Section 6d)	8.84 MILES
3A	VAV-B50R_ZZZ03A14	Unsegmented x-tribs in VAV-B50R - PS69	33.55 MILES
3A	VAV-B51R_CLT01A02	Catlett Run	2.97 MILES
3A	VAV-B51R_MBR01A02	Molly Booth Run	4.49 MILES
3A	VAV-B51R_TBL01A00	Tumbling Run	0.95 MILES
3A	VAV-B51R_ZZZ01A00	Unsegmented x-tribs in VAV-B51R (Section 6c)	52.71 MILES
3A	VAV-B51R_ZZZ02A10	Unsegmented x-tribs in VAV-B51R (Section 6)	13.89 MILES
3A	VAV-B51R_ZZZ03A14	Unsegmented x-tribs in VAV-B51R - PS78	46.72 MILES
3A	VAV-B52R_CDR01A00	Cedar Creek	2.17 MILES
3A	VAV-B52R_DCK01A00	Duck Run	21.62 MILES
3A	VAV-B52R_FUR01A00	Furnace Run	29.99 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAV-B52R_XSF01A04	Cedar Creek X-Trib	1.22 MILES
3A	VAV-B52R_XSH01A04	Vance's Cove	2.64 MILES
3A	VAV-B52R_ZZZ01A00	Unsegmented x-tribs in VAV-B52R - PS72	34.99 MILES
3A	VAV-B52R_ZZZ02A10	Unsegmented x-tribs in VAV-B52R	32.82 MILES
3A	VAV-B52R_ZZZ03A10	Unsegmented x-tribs in VAV-B52R - PS71	20.05 MILES
3A	VAV-B53R_FRM01A00	Froman Run	23.64 MILES
3A	VAV-B53R_MDB01A00	Meadow Brook	10.09 MILES
3A	VAV-B53R_MDB02A10	Meadow Brook	6.68 MILES
3A	VAV-B53R_MLB01A00	Mulberry Run	17.79 MILES
3A	VAV-B53R_ZZZ01A00	Unsegmented PWS x-tribs in VAV-B53R	8.97 MILES
3A	VAV-B53R_ZZZ01B00	Unsegmented x-tribs in VAV-B53R - PS75	48.89 MILES
3A	VAV-B53R_ZZZ02A10	Unsegmented x-tribs in VAV-B53R - PS74	23.53 MILES
3A	VAV-B54L_00	Strasburg Reservoir	4.97 ACRES
3A	VAV-B54R_MML01A04	Mill Run	3.30 MILES
3A	VAV-B54R_MNE01A00	Mine Run	3.96 MILES
3A	VAV-B54R_PSG02A00	Passage Creek	12.85 MILES
3A	VAV-B54R_XEP01A02	Taskers Gap	2.78 MILES
3A	VAV-B54R_XTC01A04	Duncan Hollow	5.41 MILES
3A	VAV-B54R_ZZZ01A00	Unsegmented x-tribs in VAV-B45R - PS76	125.99 MILES
3A	VAV-B54R_ZZZ02A10	Unsegmented x-tribs in VAV-B45R - PS77	85.28 MILES
3A	VAV-B55R_HVL01A00	Howellsville Branch	4.32 MILES
3A	VAV-B55R_VNS01A04	Venus Run	7.56 MILES
3A	VAV-B55R_ZZZ01A00	Unsegmented x-tribs in VAV-B55R	39.87 MILES
3A	VAV-B55R_ZZZ02A14	Unsegmented x-tribs in VAV-B55R - PS80	36.66 MILES
3A	VAV-B56R_SHP01A00	Sheep Run	14.65 MILES
3A	VAV-B56R_XCE01A02	Crooked Run UT	0.75 MILES
3A	VAV-B56R_XCO01A10	X-trib to Crooked Run	3.38 MILES
3A	VAV-B56R_ZZZ01A00	Unsegmented x-tribs in VAV-B56R	61.95 MILES
3A	VAV-B57R_MMS01A00	Morgan Mill Stream	20.67 MILES
3A	VAV-B57R_ZZZ01A00	Unsegmented PWS x-tribs in VAV-B57R	7.62 MILES
3A	VAV-B57R_ZZZ01B00	Unsegmented x-tribs to Spout Run	5.83 MILES
3A	VAV-B57R_ZZZ01C00	Unsegmented x-tribs in VAV-B57R	36.79 MILES
3A	VAV-B58R_BMR01A00	Buck Marsh Run	3.25 MILES
3A	VAV-B58R_CRG01A16	Craig Run	2.72 MILES
3A	VAV-B58R_CRG02A16	Craig Run	1.68 MILES
3A	VAV-B58R_SPT01A10	Spout Run	3.06 MILES
3A	VAV-B58R_ZZZ01A00	Unsegmented PWS x-tribs in VAV-B58R	43.15 MILES
3A	VAV-B58R_ZZZ01B00	Xtribs-Wheat Spring Branch	8.24 MILES
3B	VAN-A29R_XLG01A10	Unnamed Tributary to Chotank Creek	1.12 MILES
3B	VAV-B41R_XEH01A12	X-trib to the South Fork Shenandoah River.	0.34 MILES
3C	VAN-A02R_CAX02A08	Catoctin Creek	6.52 MILES
3C	VAN-A02R_MIH01B02	Milltown Creek	2.17 MILES
3C	VAN-A03R_BSC01A06	Big Spring Creek	4.49 MILES
3C	VAN-A06R_JAC01A04	Jacks Run	3.18 MILES
3C	VAN-A06R_NOG01B04	North Fork Goose Creek	2.63 MILES
3C	VAN-A06R_NOG04A04	North Fork Goose Creek	3.88 MILES
3C	VAN-A06R_SIM01A04	Simpsons Creek	1.06 MILES
3C	VAN-A07R_BUS01A02	Butchers Branch	1.14 MILES
3C	VAN-A08R_XLO01A10	Unnamed tributary to Goose Creek	1.36 MILES
3C	VAN-A09R_BRB03C10	Broad Run	5.76 MILES
3C	VAN-A09R_CAB01A12	Cabin Branch	3.13 MILES
3C	VAN-A09R_XMG01A12	Unnamed tributary to Broad Run	1.80 MILES
3C	VAN-A10R_XLP01A10	Unnamed tributary to Sugarland Run	1.02 MILES
3C	VAN-A11R_BUN01A02	Bullneck Run	2.05 MILES
3C	VAN-A11R_CLA01A02	Clarks Branch	0.23 MILES
3C	VAN-A11R_LID02A02	Little Difficult Run	2.92 MILES
3C	VAN-A11R_PIY01A08	Piney Branch	2.93 MILES
3C	VAN-A11R_SCO01A02	Scott Run	2.92 MILES
3C	VAN-A11R_SNA02A02	Snakeden Branch	0.52 MILES
3C	VAN-A11R_SNA03A02	Snakeden Branch	0.23 MILES
3C	VAN-A11R_SNA04A02	Snakeden Branch	1.45 MILES
3C	VAN-A11R_THG01A10	The Glade	2.83 MILES
3C	VAN-A11R_WOT02A14	Wolftrap Creek	4.80 MILES
3C	VAN-A11R_XJJ01A02	Unnamed tributary to Colvin Run	0.62 MILES
3C	VAN-A12R_DON01A04	Donaldson Run	1.56 MILES
3C	VAN-A12R_GUL01A04	Gulf Branch	0.88 MILES
3C	VAN-A12R_SPU01A04	Spout Run	0.85 MILES
3C	VAN-A12R_WIN01A10	Windy Run	0.61 MILES
3C	VAN-A12R_XKS01A06	Unnamed tributary to Pimmit Run	0.65 MILES
3C	VAN-A15R_CAL01A02	Calamo Branch	0.83 MILES
3C	VAN-A15R_CRK01A02	Crook Branch	2.02 MILES
3C	VAN-A15R_DAN01A06	Daniels Run	2.69 MILES
3C	VAN-A15R_LOB01A02	Long Branch	2.68 MILES
3C	VAN-A15R_TUE01A10	Turkey Run	2.14 MILES
3C	VAN-A15R_XKY01A06	Unnamed tributary to Accotink Creek	1.20 MILES
3C	VAN-A16R_POH04A02	Pohick Creek	0.48 MILES
3C	VAN-A16R_RAB01A12	Rabbit Branch	1.76 MILES
3C	VAN-A16R_SID01A02	Sideburn Branch	2.03 MILES
3C	VAN-A18R_XKU01A06	Unnamed tributary to Slate Run	2.14 MILES
3C	VAN-A19R_SOU01A12	South Run	3.63 MILES
3C	VAN-A19R_XMH01A12	Unnamed tributary to Kettle Run	0.98 MILES
3C	VAN-A22R_XJK01A02	Unnamed tributary to Big Rocky Run	0.73 MILES
3C	VAN-A22R_XLJ01A06	Unnamed tributary to Elklick Run	0.54 MILES
3C	VAN-A23R_JOH01A02	Johnny Moore Creek	4.34 MILES
3C	VAN-A23R_POE02A02	Popes Head Creek	0.35 MILES
3C	VAN-A24R_WOL02A12	Wolf Run	2.88 MILES
3C	VAN-A24R_XLI01A08	Unnamed tributary to Sandy Run	1.42 MILES
3C	VAN-A25R_CWB01A12	Cow Branch	3.99 MILES
3C	VAN-A25R_HED01A12	Headly Run	3.15 MILES
3C	VAN-A29R_PAS01A14	Passapatanzy Creek	0.51 MILES
3C	VAN-A29R_XMR01A14	Unnamed tributary to Fairview Beach (Potomac River)	0.69 MILES
3C	VAV-B20R_LAU01A10	Laurel Run	7.70 MILES
3C	VAV-B20R_LLR01A02	Little Laurel Run	6.92 MILES

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3C	VAV-B20R_LPR01A10	Low Place Run	5.85 MILES
3C	VAV-B26L_NEW01A08	Newman Lake	8.74 ACRES
3C	VAV-B32R_SAW01A00	Sawmill Run	6.00 MILES
3C	VAV-B32R_SAW02A10	Sawmill Run	3.03 MILES
3C	VAV-B33R_MAD01A00	Madison Run	3.09 MILES
3C	VAV-B33R_MAD02A10	Madison Run	4.37 MILES
3C	VAV-B33R_RMR01A10	Rocky Mountain Run	1.80 MILES
3C	VAV-B38R_XMC01A08	X-trib to Mill Creek just south of Route 211.	2.98 MILES
3C	VAV-B47R_XGC01A16	Gap Run X-trib	1.15 MILES
3C	VAV-B49R_LAR02A08	Laurel Run	4.87 MILES
3C	VAV-B49R_XBR01A16	Bear Run X-trib	0.93 MILES
3C	VAV-B52R_XCR01A16	UT to Cedar Creek X-trib	0.48 MILES
3C	VAV-B57R_WBK01A00	Westbrook Run	9.16 MILES
3D	VAN-A02R_XLH01A08	Unnamed tributary to South Fork Catoctin Creek	0.81 MILES
3D	VAN-A12R_LOF01A08	Long Branch	2.14 MILES
3D	VAN-A19R_CAE01A02	Catletts Branch	2.82 MILES
3D	VAN-A21R_LII01A02	Little Bull Run	1.95 MILES
3D	VAN-A23R_PIY01A02	Piney Branch	1.80 MILES
3D	VAN-A23R_XJM01A02	Unnamed tributary to Popes Head Creek	1.33 MILES
3D	VAN-A26R_XMQ01A14	Unnamed tributary to Quantico Creek	1.02 MILES
3D	VAV-B01R_BLT01A16	Blights Run	1.65 MILES
3D	VAV-B01R_BUR01A04	Buck Run	2.43 MILES
3D	VAV-B01R_MUL01A10	Mullenax Run	1.47 MILES
3D	VAV-B01R_NEW01A10	Newman Run	1.78 MILES
3D	VAV-B01R_SLA01A00	Slabcamp Run	2.76 MILES
3D	VAV-B01R_XTD01A04	Locust Spring Run	3.01 MILES
3D	VAV-B11R_BFP02A10	Buffalo Branch	3.13 MILES
3D	VAV-B18R_XED01A06	Beaver Creek Spring Branch aka Waggys Creek	0.94 MILES
3D	VAV-B20R_BBB01A00	Black Run	6.39 MILES
3D	VAV-B20R_DRU01A10	Dry Run	4.18 MILES
3D	VAV-B20R_GUM01A02	Gum Run	6.46 MILES
3D	VAV-B20R_KPT01A10	Kephart Run	4.76 MILES
3D	VAV-B20R_MSP01A10	Miller Spring Run	4.36 MILES
3D	VAV-B20R_MSR01A10	Maple Spring Run	3.12 MILES
3D	VAV-B20R_SND01A10	Sand Run	2.33 MILES
3D	VAV-B20R_XXB01A16	Black Run X-trib	2.01 MILES
3D	VAV-B31R_BKN02A10	N.F. Back Creek	5.24 MILES
3D	VAV-B35R_DRU01A00	Dry Run	9.84 MILES
3D	VAV-B35R_XBN01A16	Boone Run X-trib	2.32 MILES
3D	VAV-B36R_BIC01A00	Big Creek	2.73 MILES
3D	VAV-B36R_NKS02A10	South Branch Naked Creek	12.79 MILES
3D	VAV-B36R_SYR01A00	Stony Run	1.64 MILES
3D	VAV-B37R_FLZ01A00	Fultz Run	2.70 MILES
3D	VAV-B37R_FLZ02A10	Fultz Run	2.39 MILES
3D	VAV-B37R_PSR01A00	Pitt Spring Run	5.39 MILES
3D	VAV-B37R_RNR01A00	Roaring Run	2.10 MILES
3D	VAV-B37R_STR01A00	Stony Run	7.88 MILES
3D	VAV-B38R_XML01A08	X-trib to Mill Creek (near Mill Creek Church)	6.04 MILES
3D	VAV-B42R_BLR01A02	Beech Lick Run	2.49 MILES
3D	VAV-B42R_CRR01A10	Camp Rader Run	6.86 MILES
3D	VAV-B42R_RAT01A16	Rattlesnake Run	1.87 MILES
3D	VAV-B42R_SPU01A16	Spruce Run	1.97 MILES
3D	VAV-B42R_SRK02A10	Sirks Run	2.95 MILES
3D	VAV-B42R_SUM01A10	Sumac Run	2.66 MILES
3D	VAV-B42R_XSK01A16	X-trib to Sirks Run	0.79 MILES
3D	VAV-B43R_MSL02A10	Marshall Run	4.39 MILES
3D	VAV-B43R_RTR01A16	Root Run and tributaries	4.01 MILES
3D	VAV-B44R_LON01A02	Long Run	5.84 MILES
3D	VAV-B49R_AND01A16	Anderson Run	1.79 MILES
3D	VAV-B52R_XSG01A04	Sulphur Springs	2.37 MILES
4A	VAN-A01R_PIA01A00	Piney Run	3.94 MILES
4A	VAN-A02R_CAX01A00	Catoctin Creek	7.49 MILES
4A	VAN-A02R_MIH01A06	Milltown Creek	3.90 MILES
4A	VAN-A02R_NOC02A02	North Fork Catoctin Creek	3.43 MILES
4A	VAN-A02R_SOC01A00	South Fork Catoctin Creek	6.33 MILES
4A	VAN-A02R_SOC02A02	South Fork Catoctin Creek	3.23 MILES
4A	VAN-A02R_SOC03A04	South Fork Catoctin Creek	3.59 MILES
4A	VAN-A02R_SOC04A04	South Fork Catoctin Creek	5.34 MILES
4A	VAN-A02R_XJT01A06	Unnamed tributary to Catoctin Creek	4.35 MILES
4A	VAN-A03R_LIM01A00	Limestone Branch	1.26 MILES
4A	VAN-A03R_LIM01B06	Limestone Branch	3.66 MILES
4A	VAN-A03R_XAQ01A04	Unnamed tributary to Limestone Branch	0.91 MILES
4A	VAN-A03R_XAQ01B06	Unnamed tributary to Limestone Branch	1.02 MILES
4A	VAN-A03R_XGJ01A04	Unnamed tributary to Limestone Branch	3.81 MILES
4A	VAN-A03R_XGJ01B10	Unnamed tributary to Limestone Branch	1.33 MILES
4A	VAN-A04R_BOL01A04	Bolling Branch	3.64 MILES
4A	VAN-A04R_CRA01A04	Crooked Run	1.85 MILES
4A	VAN-A04R_GAR01A04	Gap Run	3.21 MILES
4A	VAN-A04R_GOO01B00	Goose Creek	4.31 MILES
4A	VAN-A04R_XLW01A14	Unnamed tributary to Goose Creek	5.91 MILES
4A	VAN-A05R_CRM01A00	Cromwells Run	3.81 MILES
4A	VAN-A05R_CRM02A06	Cromwells Run	6.76 MILES
4A	VAN-A05R_GOO02A06	Goose Creek	2.74 MILES
4A	VAN-A05R_GOO02B06	Goose Creek	2.68 MILES
4A	VAN-A05R_GOO02C04	Goose Creek	3.27 MILES
4A	VAN-A05R_PAE01A02	Panther Skin Creek	3.91 MILES
4A	VAN-A05R_PAE02A06	Panther Skin Creek	5.27 MILES
4A	VAN-A06R_CRF01A02	Crooked Run	2.16 MILES
4A	VAN-A06R_NOG03A02	North Fork Goose Creek	2.96 MILES
4A	VAN-A07R_BEC01A00	Beaverdam Creek	6.50 MILES
4A	VAN-A07R_BEC02A04	Beaverdam Creek	1.26 MILES
4A	VAN-A07R_BEC03A12	Beaverdam Creek	4.37 MILES
4A	VAN-A07R_NOB01A02	North Fork Beaverdam Creek	3.15 MILES
4A	VAN-A07R_NOB02A04	North Fork Beaverdam Creek	2.60 MILES
4A	VAN-A08R_BIB01A14	Big Branch	2.61 MILES
4A	VAN-A08R_GOO03A02	Goose Creek	2.54 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAN-A08R_HOW01A08	Howsers Branch	5.10 MILES
4A	VAN-A08R_LIV01A00	Little River	6.41 MILES
4A	VAN-A08R_LIV02A06	Little River	2.48 MILES
4A	VAN-A08R_LIV02B10	Little River	4.36 MILES
4A	VAN-A08R_SFS01A02	South Fork Sycolin Creek	3.76 MILES
4A	VAN-A08R_SYC01A00	Sycolin Creek	1.19 MILES
4A	VAN-A08R_SYC01B06	Sycolin Creek	1.90 MILES
4A	VAN-A08R_SYC02A02	Sycolin Creek	4.00 MILES
4A	VAN-A08R_SYC03A02	Sycolin Creek	3.98 MILES
4A	VAN-A11R_MNR01A04	Mine Run	1.02 MILES
4A	VAN-A11R_WOT01A02	Wolftrap Creek	0.76 MILES
4A	VAN-A11R_WOT01B06	Wolftrap Creek	1.96 MILES
4A	VAN-A12E_POT01A16	Potomac River	0.05 SQUARE MILES
4A	VAN-A12R_FOU01A00	Four Mile Run	7.96 MILES
4A	VAN-A12R_LBR01A08	Long Branch	1.97 MILES
4A	VAN-A12R_LIO01A10	Little Pimmit Run	2.35 MILES
4A	VAN-A12R_PIM02B06	Pimmit Run	3.33 MILES
4A	VAN-A13E_HFF01A06	Hooff Run	0.01 SQUARE MILES
4A	VAN-A13E_HUT01A02	Hunting Creek	0.53 SQUARE MILES
4A	VAN-A13R_BAL01A00	Backlick Run	6.68 MILES
4A	VAN-A13R_HOR01A00	Holmes Run	3.58 MILES
4A	VAN-A14E_DOU01A00	Dogue Creek	0.74 SQUARE MILES
4A	VAN-A14E_LIF01A00	Little Hunting Creek	0.25 SQUARE MILES
4A	VAN-A14E_POT01A08	Potomac River	0.85 SQUARE MILES
4A	VAN-A14E_POT02A16	Potomac River	0.03 SQUARE MILES
4A	VAN-A14R_LIF01A08	Little Hunting Creek	1.09 MILES
4A	VAN-A15E_ACO01A06	Accotink Bay	0.40 SQUARE MILES
4A	VAN-A15E_POH01A00	Gunston Cove	1.50 SQUARE MILES
4A	VAN-A15R_LOA01A08	Long Branch	4.47 MILES
4A	VAN-A17R_CER01A02	Cedar Run	1.64 MILES
4A	VAN-A17R_CER02A02	Cedar Run	6.46 MILES
4A	VAN-A17R_CER03A02	Cedar Run	4.22 MILES
4A	VAN-A17R_CER03B06	Cedar Run	2.49 MILES
4A	VAN-A17R_CER03C12	Cedar Run	2.41 MILES
4A	VAN-A17R_CER04A06	Cedar Run	2.49 MILES
4A	VAN-A17R_LIL01A00	Licking Run	6.13 MILES
4A	VAN-A17R_LIL01B06	Licking Run	0.27 MILES
4A	VAN-A17R_LIL02A04	Licking Run	3.51 MILES
4A	VAN-A17R_LIL02B06	Licking Run	3.50 MILES
4A	VAN-A17R_OWL01A14	Owl Run	5.85 MILES
4A	VAN-A17R_TUK01A06	Turkey Run	3.61 MILES
4A	VAN-A17R_WAL01A06	Walnut Branch	1.69 MILES
4A	VAN-A18R_CER01A02	Cedar Run	7.80 MILES
4A	VAN-A18R_CER01B06	Cedar Run	1.24 MILES
4A	VAN-A18R_CER02A02	Cedar Run	3.64 MILES
4A	VAN-A18R_CER02B06	Cedar Run	0.77 MILES
4A	VAN-A18R_ELK01A08	Elk Run	2.27 MILES
4A	VAN-A18R_SLE01A08	Slate Run	6.97 MILES
4A	VAN-A18R_TON01A08	Town Run	2.51 MILES
4A	VAN-A19R_BRU01A04	Broad Run	2.40 MILES
4A	VAN-A19R_BRU02A00	Broad Run	7.59 MILES
4A	VAN-A19R_BRU07A02	Broad Run	1.54 MILES
4A	VAN-A19R_BRU07B06	Broad Run	1.15 MILES
4A	VAN-A19R_BRU08A04	Broad Run	1.16 MILES
4A	VAN-A19R_BRU08B10	Broad Run	4.17 MILES
4A	VAN-A19R_KET01A00	Kettle Run	7.76 MILES
4A	VAN-A19R_KET01B12	Kettle Run	2.45 MILES
4A	VAN-A19R_KET02A04	Kettle Run	3.61 MILES
4A	VAN-A19R_NOF01A10	North Fork Broad Run	3.66 MILES
4A	VAN-A19R_SOT01A00	South Run	2.34 MILES
4A	VAN-A19R_TRA01A06	Trapp Branch	1.78 MILES
4A	VAN-A20R_OCC01A04	Occoquan River	3.35 MILES
4A	VAN-A20R_OCC02A00	Occoquan River	1.63 MILES
4A	VAN-A20R_PUR01A06	Purcell Branch	3.85 MILES
4A	VAN-A21R_BUL01D08	Bull Run	4.02 MILES
4A	VAN-A21R_YOU01A02	Youngs Branch	6.05 MILES
4A	VAN-A23R_POE01A00	Popes Head Creek	5.63 MILES
4A	VAN-A25E_MAE01A16	Massey Creek	0.07 SQUARE MILES
4A	VAN-A25E_NEA20A02	Neabsco Creek	0.18 SQUARE MILES
4A	VAN-A25E_OCC01A04	Occoquan Bay	0.72 SQUARE MILES
4A	VAN-A25E_OCC01A10	Occoquan Bay	0.60 SQUARE MILES
4A	VAN-A25E_OCC01A12	Occoquan Bay/Belmont Bay	0.41 SQUARE MILES
4A	VAN-A25E_OCC01B12	Occoquan Bay	0.71 SQUARE MILES
4A	VAN-A25E_OCC01C16	Occoquan Bay/Belmont Bay	0.44 SQUARE MILES
4A	VAN-A25E_OCC02A00	Occoquan Bay	0.63 SQUARE MILES
4A	VAN-A25E_OCC04A02	Belmont Bay	0.41 SQUARE MILES
4A	VAN-A25E_OCC04B08	Occoquan River	0.60 SQUARE MILES
4A	VAN-A25E_OCC20A02	Occoquan Bay/Belmont Bay	2.70 SQUARE MILES
4A	VAN-A25E_OCC30A02	Occoquan Bay/Belmont Bay	0.13 SQUARE MILES
4A	VAN-A25E_POT01A10	Potomac River	0.63 SQUARE MILES
4A	VAN-A26E_CHO01A04	Chopawamsic Creek	0.59 SQUARE MILES
4A	VAN-A26E_CHO01B06	Chopawamsic Creek	0.10 SQUARE MILES
4A	VAN-A26E_POT01A08	Potomac River	0.26 SQUARE MILES
4A	VAN-A26E_POW01A02	Powells Creek	0.23 SQUARE MILES
4A	VAN-A26E_POW20A10	Powells Creek	0.66 SQUARE MILES
4A	VAN-A26E_QUA01A10	Quantico Creek	0.19 SQUARE MILES
4A	VAN-A26E_QUA02A06	Quantico Creek	0.21 SQUARE MILES
4A	VAN-A26E_QUA20A10	Quantico Creek	0.29 SQUARE MILES
4A	VAN-A26R_NOR01A02	North Branch Chopawamsic Creek	7.26 MILES
4A	VAN-A26R_POW01A00	Powells Creek	5.37 MILES
4A	VAN-A26R_POW02A02	Powells Creek	3.91 MILES
4A	VAN-A26R_QUA01A00	Quantico Creek	1.47 MILES
4A	VAN-A26R_SOQ01B02	South Fork Quantico Creek	4.82 MILES
4A	VAN-A28E_AUA01A14	Aquia Creek	0.74 SQUARE MILES
4A	VAN-A28E_AUA01B06	Aquia Creek	1.21 SQUARE MILES
4A	VAN-A28E_AUA01C00	Aquia Creek	0.36 SQUARE MILES
4A	VAN-A28E_AUA01D06	Aquia Creek	0.58 SQUARE MILES
4A	VAN-A28E_AUA02A04	Aquia Creek	0.23 SQUARE MILES
4A	VAN-A28E_AUA20A02	Aquia Creek	0.60 SQUARE MILES
4A	VAN-A28R_AUS01A04	Austin Run	0.85 MILES
4A	VAN-A28R_AUS02A06	Austin Run	0.69 MILES
4A	VAN-A29E_ACC01A00	Accokeek Creek	0.44 SQUARE MILES
4A	VAN-A29E_CHN01A10	Chotank Creek	0.12 SQUARE MILES
4A	VAN-A29E_POM01A04	Potomac Creek	0.43 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAN-A29E_POM02A02	Potomac Creek	0.60 SQUARE MILES
4A	VAN-A29E_POM02B16	Potomac Creek	0.18 SQUARE MILES
4A	VAN-A29E_POM03A08	Potomac Creek	0.32 SQUARE MILES
4A	VAN-A29E_POM20A04	Potomac Creek	0.33 SQUARE MILES
4A	VAN-A29E_POT20A06	Potomac River	0.01 SQUARE MILES
4A	VAN-A29R_ACC01A00	Accokeek Creek	4.48 MILES
4A	VAN-A29R_POM01A00	Potomac Creek	2.18 MILES
4A	VAN-A29R_POM02A06	Potomac Creek	1.91 MILES
4A	VAN-A30E_DEE01A00	Deep Creek	0.03 SQUARE MILES
4A	VAN-A30E_DEE02A08	Deep Creek	0.04 SQUARE MILES
4A	VAN-A30E_UMC01A02	Upper Machodoc Creek	0.02 SQUARE MILES
4A	VAN-A30E_UMC01B06	Upper Machodoc Creek	0.06 SQUARE MILES
4A	VAN-A30E_UMC02A04	Upper Machodoc Creek	0.03 SQUARE MILES
4A	VAN-A30E_UMC03A04	Upper Machodoc Creek	0.04 SQUARE MILES
4A	VAN-A30E_UMC03B10	Upper Machodoc Creek	0.05 SQUARE MILES
4A	VAN-A30E_UMC04A10	Upper Machodoc Creek	0.42 SQUARE MILES
4A	VAN-A30E_UMC04B06	Upper Machodoc Creek	0.42 SQUARE MILES
4A	VAN-A30E_UMC04C06	Upper Machodoc Creek	0.13 SQUARE MILES
4A	VAN-A30E_UMC05A02	Upper Machodoc Creek	0.70 SQUARE MILES
4A	VAN-A30E_WLL01A02	Williams Creek	0.04 SQUARE MILES
4A	VAN-A30E_WLL01B10	Williams Creek	0.11 SQUARE MILES
4A	VAN-A30E_WLL02A02	Williams Creek	0.02 SQUARE MILES
4A	VAP-A30E_ZZZ01A10	Unsegmented estuaries in PRO's portion of A30	0.03 SQUARE MILES
4A	VAP-A31E_GLD01A00	Goldman Creek	0.04 SQUARE MILES
4A	VAP-A31E_MAO01A98	Mattox Creek	0.34 SQUARE MILES
4A	VAP-A31E_MAO01B10	Mattox Creek	0.36 SQUARE MILES
4A	VAP-A31E_MAO02A00	Mattox Creek	0.34 SQUARE MILES
4A	VAP-A31E_MAO04A08	Mattox Creek	0.01 SQUARE MILES
4A	VAP-A31E_MAO05A08	Mattox Creek	0.01 SQUARE MILES
4A	VAP-A31E_MON01A00	Monroe Creek/Monroe Bay	0.18 SQUARE MILES
4A	VAP-A31E_MON02A98	Monroe Bay	0.35 SQUARE MILES
4A	VAP-A31E_MON03A98	Monroe Bay	0.17 SQUARE MILES
4A	VAP-A31E_MON03B16	Monroe Bay	0.06 SQUARE MILES
4A	VAP-A31E_MON04A00	Monroe Bay	0.22 SQUARE MILES
4A	VAP-A31E_MON05A04	Monroe Bay	0.01 SQUARE MILES
4A	VAP-A31E_POP01A98	Popes Creek	0.58 SQUARE MILES
4A	VAP-A31E_ROS01A98	Rosier Creek	0.21 SQUARE MILES
4A	VAP-A31E_ROS02A00	Rosier Creek	0.12 SQUARE MILES
4A	VAP-A31E_XFF01A04	Mattox Creek, UT (XFF)	0.01 SQUARE MILES
4A	VAP-A31E_ZZZ01A14	Unsegmented estuaries in A31	0.01 SQUARE MILES
4A	VAP-A31E_ZZZ01B14	Unsegmented estuaries in A31	0.32 SQUARE MILES
4A	VAP-A31R_POP01A00	Popes Creek	29.88 MILES
4A	VAP-A32E_BAN01A00	Barnes Creek	0.02 SQUARE MILES
4A	VAP-A32E_BAN01B14	Barnes Creek	0.01 SQUARE MILES
4A	VAP-A32E_BAN02A08	Barnes Creek	0.06 SQUARE MILES
4A	VAP-A32E_BRA01A98	Branson Cove	0.02 SQUARE MILES
4A	VAP-A32E_BUB01A04	Buckner Creek	0.07 SQUARE MILES
4A	VAP-A32E_BUB01B16	Buckner Creek	0.11 SQUARE MILES
4A	VAP-A32E_BUB02A06	Buckner Creek	0.37 SQUARE MILES
4A	VAP-A32E_BUB02B14	Buckner Creek	0.02 SQUARE MILES
4A	VAP-A32E_CAP01A04	Cabin Point Creek	0.12 SQUARE MILES
4A	VAP-A32E_CHB01A98	Cold Harbor Bay	0.08 SQUARE MILES
4A	VAP-A32E_CHB02A06	Cold Harbor Creek / Currioman Bay	0.04 SQUARE MILES
4A	VAP-A32E_CRB02A00	Currioman Bay	0.73 SQUARE MILES
4A	VAP-A32E_CRB03A14	Currioman Bay	0.92 SQUARE MILES
4A	VAP-A32E_CUR01A98	Currioman Creek	0.05 SQUARE MILES
4A	VAP-A32E_CUR01B08	Currioman Creek	0.02 SQUARE MILES
4A	VAP-A32E_DAV01A08	Davis Creek	0.03 SQUARE MILES
4A	VAP-A32E_GLB01A00	Glebe Creek	0.04 SQUARE MILES
4A	VAP-A32E_GLB02A08	Aimes and Glebe Creeks	0.14 SQUARE MILES
4A	VAP-A32E_JUL01A08	Jules Creek	0.04 SQUARE MILES
4A	VAP-A32E_LOW01A04	Lower Machodoc Creek	0.46 SQUARE MILES
4A	VAP-A32E_LOW01B14	Lower Machodoc Creek	0.08 SQUARE MILES
4A	VAP-A32E_LOW02A00	Lower Machodoc Creek	0.27 SQUARE MILES
4A	VAP-A32E_LOW02C12	Lower Machodoc Creek, UT	0.06 SQUARE MILES
4A	VAP-A32E_LOW02D16	Lower Machodoc Creek	2.14 SQUARE MILES
4A	VAP-A32E_MAT01A08	Matthews Cove	0.02 SQUARE MILES
4A	VAP-A32E_NOM01A04	Nomini Creek, Pierce Creek	0.35 SQUARE MILES
4A	VAP-A32E_NOM01A98	Nomini Creek	0.54 SQUARE MILES
4A	VAP-A32E_NOM02A00	Nomini Creek	2.15 SQUARE MILES
4A	VAP-A32E_NOM04A00	Nomini Bay	2.50 SQUARE MILES
4A	VAP-A32E_NOP01A02	North Prong Buckner Creek	0.02 SQUARE MILES
4A	VAP-A32E_NOP02A08	North Prong Buckner Creek	0.03 SQUARE MILES
4A	VAP-A32E_PEI01A98	Peirce Creek	0.14 SQUARE MILES
4A	VAP-A32E_POO01A08	Poor Jack Creek	0.15 SQUARE MILES
4A	VAP-A32E_WEA02A04	Weatherall Creek	0.06 SQUARE MILES
4A	VAP-A32E_ZZZ01A14	Unsegmented estuaries in A32	0.01 SQUARE MILES
4A	VAP-A32E_ZZZ01B14	Unsegmented estuaries in A32	0.05 SQUARE MILES
4A	VAP-A32R_LEC01A10	Lee Creek	1.35 MILES
4A	VAP-A32R_XCJ01A10	Jones Branch, UT	1.02 MILES
4A	VAP-A33E_BOM01A98	Bonum Creek	0.20 SQUARE MILES
4A	VAP-A33E_BOM01B10	Bonum Creek	0.01 SQUARE MILES
4A	VAP-A33E_DUA01A04	Dungan Cove	0.02 SQUARE MILES
4A	VAP-A33E_DUA01B08	Dungan Cove	0.01 SQUARE MILES
4A	VAP-A33E_GAD01A98	Gardner Creek	0.13 SQUARE MILES
4A	VAP-A33E_GAD01B14	Gardner Creek	0.05 SQUARE MILES
4A	VAP-A33E_GAD02A00	Gardner Creek	0.01 SQUARE MILES
4A	VAP-A33E_HAM01A02	Hampton Hall Branch	0.27 SQUARE MILES
4A	VAP-A33E_JCK01A98	Jackson Creek	0.14 SQUARE MILES
4A	VAP-A33E_KIN01A12	Kinsale Branch	0.11 SQUARE MILES
4A	VAP-A33E_LOG03A08	Lodge Creek	0.02 SQUARE MILES
4A	VAP-A33E_MIA01A98	Mill Creek	0.12 SQUARE MILES
4A	VAP-A33E_MIA01B10	Mill Creek	0.09 SQUARE MILES
4A	VAP-A33E_RAG01A06	Ragged Point Bay	0.23 SQUARE MILES
4A	VAP-A33E_SHA01A98	Shannon Branch	0.04 SQUARE MILES
4A	VAP-A33E_SHA03A06	Shannon Branch	0.04 SQUARE MILES
4A	VAP-A33E_SOV01A02	South Yeocomico River	0.59 SQUARE MILES
4A	VAP-A33E_SOV02A06	South Yeocomico River	0.05 SQUARE MILES
4A	VAP-A33E_WES01A06	West Yeocomico River	0.03 SQUARE MILES
4A	VAP-A33E_WES01B12	West Yeocomico River	0.05 SQUARE MILES
4A	VAP-A33E_WES02A06	West Yeocomico River	0.39 SQUARE MILES
4A	VAP-A33E_WHP01A98	White Point Creek	0.08 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAP-A33E_WHP03A06	NW Yeocomico (White Point Creek/Shannon Branch)	0.03 SQUARE MILES
4A	VAP-A33E_YEO01A02	Yeocomico River and Tributaries	1.88 SQUARE MILES
4A	VAP-A33E_ZZZ01A14	Unsegmented estuaries in A33	1.38 SQUARE MILES
4A	VAP-A33E_ZZZ01C14	Unsegmented estuaries in A33	0.12 SQUARE MILES
4A	VAP-A33R_MIA01A00	Mill Creek	5.00 MILES
4A	VAP-A33R_XMA01A14	XMA - Hampton Hall Branch, UT	2.07 MILES
4A	VAP-A34E_BAC01A12	Back Creek	0.04 SQUARE MILES
4A	VAP-A34E_BBC01A08	Bridgemans Back Creek	0.05 SQUARE MILES
4A	VAP-A34E_BOT01A04	Boathouse Creek	0.07 SQUARE MILES
4A	VAP-A34E_BRD01A98	Bridgeman Creek	0.04 SQUARE MILES
4A	VAP-A34E_BRI01C98	Bridge Creek	0.13 SQUARE MILES
4A	VAP-A34E_BRI02C98	Bridge Creek	0.09 SQUARE MILES
4A	VAP-A34E_COA01A02	Coan River	0.01 SQUARE MILES
4A	VAP-A34E_COA01A98	Coan River	0.32 SQUARE MILES
4A	VAP-A34E_COA01B16	Coan River	0.03 SQUARE MILES
4A	VAP-A34E_COA02A02	Coan River	2.76 SQUARE MILES
4A	VAP-A34E_COC01A98	Cod Creek	0.05 SQUARE MILES
4A	VAP-A34E_COC01B02	Cod Creek, UT	0.05 SQUARE MILES
4A	VAP-A34E_COC02A14	Cod Creek	0.07 SQUARE MILES
4A	VAP-A34E_COC02B14	Cod Creek, UT	0.03 SQUARE MILES
4A	VAP-A34E_COO01A98	Cod Creek, Trib to Little Wicomico	0.08 SQUARE MILES
4A	VAP-A34E_COO02A14	Little Wicomico River / Cod Creek	0.01 SQUARE MILES
4A	VAP-A34E_CUT01A98	Cubitt Creek	0.23 SQUARE MILES
4A	VAP-A34E_ELL01A06	Ellyson Creek	0.10 SQUARE MILES
4A	VAP-A34E_FLP01A10	Flag Pond	0.04 SQUARE MILES
4A	VAP-A34E_FTN01A06	Fountain Cove	0.07 SQUARE MILES
4A	VAP-A34E_GLE01A04	The Glebe	0.04 SQUARE MILES
4A	VAP-A34E_GLE01A98	The Glebe	0.13 SQUARE MILES
4A	VAP-A34E_GLE03A00	The Glebe	0.77 SQUARE MILES
4A	VAP-A34E_GLE04A04	Wrights Cove, UT	0.05 SQUARE MILES
4A	VAP-A34E_HAC01A00	Hack Creek	0.22 SQUARE MILES
4A	VAP-A34E_HEA01A98	Headly Cove	0.03 SQUARE MILES
4A	VAP-A34E_HUL01A02	Hull Creek and Floyd Cove	0.23 SQUARE MILES
4A	VAP-A34E_HUL01B12	Hull Creek	0.30 SQUARE MILES
4A	VAP-A34E_HUL01C12	Fleets Cove (Hull Creek, UT)	0.02 SQUARE MILES
4A	VAP-A34E_KIN01A00	Kingscote Creek	0.35 SQUARE MILES
4A	VAP-A34E_KIN02A06	Kingscote Creek	0.01 SQUARE MILES
4A	VAP-A34E_KIN03A06	Kingscote Creek	0.01 SQUARE MILES
4A	VAP-A34E_KIN04A06	Kingscote Creek	0.01 SQUARE MILES
4A	VAP-A34E_KNC01A98	Killneck Creek	0.03 SQUARE MILES
4A	VAP-A34E_KNC01B06	Killneck Creek, UT	0.01 SQUARE MILES
4A	VAP-A34E_KNC02A10	Killneck Creek	0.02 SQUARE MILES
4A	VAP-A34E_LIS01A02	Little Wicomico River	0.37 SQUARE MILES
4A	VAP-A34E_LIS01A98	Little Wicomico River	0.20 SQUARE MILES
4A	VAP-A34E_LIS01B12	Little Wicomico River	0.02 SQUARE MILES
4A	VAP-A34E_LIS02A00	Little Wicomico River	0.54 SQUARE MILES
4A	VAP-A34E_LIS02B08	Little Wicomico River	0.01 SQUARE MILES
4A	VAP-A34E_LIS03A98	Little Wicomico River	0.02 SQUARE MILES
4A	VAP-A34E_LIS04A00	Little Wicomico River	0.97 SQUARE MILES
4A	VAP-A34E_LIS04B12	Little Wicomico River, UT	0.02 SQUARE MILES
4A	VAP-A34E_MII01A06	Mill Creek	0.10 SQUARE MILES
4A	VAP-A34E_PRE01A98	Presley Creek	0.33 SQUARE MILES
4A	VAP-A34E_ROG01A98	Rogers Creek	0.04 SQUARE MILES
4A	VAP-A34E_ROG01B16	Rogers Creek	0.02 SQUARE MILES
4A	VAP-A34E_SLO05A98	Little Wicomico River: Slough Creek	0.03 SQUARE MILES
4A	VAP-A34E_SLO06A06	Slough Creek	0.03 SQUARE MILES
4A	VAP-A34E_SPN01A04	Spring Cove	0.01 SQUARE MILES
4A	VAP-A34E_XFI01A98	Coan River, UT - Stevens Point	0.04 SQUARE MILES
4A	VAP-A34E_XFJ01A98	Coan River, UT (Cellars Cove)	0.03 SQUARE MILES
4A	VAP-A34E_XLV01A10	Corbin Pond (aka XLV - Potomac River, UT)	0.04 SQUARE MILES
4A	VAP-A34E_ZZZ01A00	Unsegmented estuaries in A34	0.29 SQUARE MILES
4A	VAP-A34R_CON01B10	Coan Mill Stream	2.93 MILES
4A	VAV-B02R_STC01A00	Strait Creek	3.29 MILES
4A	VAV-B02R_WSC02A00	West Strait Creek	0.36 MILES
4A	VAV-B06R_HOC01A00	Hogue Creek	6.43 MILES
4A	VAV-B06R_HOC02A10	Hogue Creek	8.52 MILES
4A	VAV-B06R_HOC03A10	Hogue Creek	2.29 MILES
4A	VAV-B08R_OPE01A00	Opequon Creek	12.83 MILES
4A	VAV-B08R_OPE02A10	Opequon Creek	9.46 MILES
4A	VAV-B08R_OPE03A10	Opequon Creek	0.92 MILES
4A	VAV-B09R_ABR01A00	Abrams Creek	11.18 MILES
4A	VAV-B09R_LIR01A00	Lick Run	8.21 MILES
4A	VAV-B09R_OPE01A00	Opequon Creek	3.02 MILES
4A	VAV-B09R_OPE02A10	Opequon Creek	6.02 MILES
4A	VAV-B09R_RED01A00	Redbud Run	4.50 MILES
4A	VAV-B09R_RED02A10	Redbud Run	2.00 MILES
4A	VAV-B09R_XRD01A10	Redbud Run x-trib	1.55 MILES
4A	VAV-B10R_BAK01A00	Back Creek	9.40 MILES
4A	VAV-B10R_EDN01A00	Eidson Creek	8.84 MILES
4A	VAV-B10R_MDL01A00	Middle River	4.78 MILES
4A	VAV-B10R_MDL02A00	Middle River	9.30 MILES
4A	VAV-B10R_MDL03A00	Middle River	2.97 MILES
4A	VAV-B10R_XDN01A00	Cockran Spring Branch	0.58 MILES
4A	VAV-B11R_MDL01A00	Middle River	3.37 MILES
4A	VAV-B11R_MDL02A00	Middle River	3.49 MILES
4A	VAV-B13R_ELK01A00	Elk Run	4.13 MILES
4A	VAV-B13R_MFT01A00	Moffett Creek	9.91 MILES
4A	VAV-B14R_CST01A00	Christians Creek	18.61 MILES
4A	VAV-B14R_CST02A00	Christians Creek	14.34 MILES
4A	VAV-B14R_FMC01A00	Folly Mills Creek	2.48 MILES
4A	VAV-B14R_FMC02A10	Folly Mills Creek	7.34 MILES
4A	VAV-B14R_XFM01A10	Folly Mills Creek X-trib	4.32 MILES
4A	VAV-B15R_MDL01A00	Middle River	17.85 MILES
4A	VAV-B15R_PCD01A00	Polecat Draft	7.90 MILES
4A	VAV-B17R_NTH01A00	North River	3.48 MILES
4A	VAV-B17R_NTH02A00	North River	1.31 MILES
4A	VAV-B17R_NTH03A00	North River	5.77 MILES
4A	VAV-B17R_TRN01A00	Thorny Branch	7.76 MILES
4A	VAV-B18R_BRY01A02	Briery Branch	1.47 MILES
4A	VAV-B18R_BVR01A00	Beaver Creek	2.65 MILES
4A	VAV-B18R_BVR02A00	Beaver Creek	3.63 MILES
4A	VAV-B19R_MSS01A00	Mossy Creek	2.29 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAV-B19R_MSS02A00	Mossy Creek	5.10 MILES
4A	VAV-B19R_MSS03A10	Mossy Creek	3.07 MILES
4A	VAV-B21R_DUR01A00	Dry River	2.69 MILES
4A	VAV-B21R_DUR02A00	Dry River	2.20 MILES
4A	VAV-B21R_DUR03A00	Dry River	1.66 MILES
4A	VAV-B21R_HNY01A02	Honey Run	1.14 MILES
4A	VAV-B21R_HNY02A02	Honey Run	3.11 MILES
4A	VAV-B22R_MDD01A00	Muddy Creek	2.33 MILES
4A	VAV-B22R_MDD02A00	Muddy Creek	1.33 MILES
4A	VAV-B22R_MDD03A00	Muddy Creek	7.47 MILES
4A	VAV-B23R_NTH01A04	North River	4.70 MILES
4A	VAV-B23R_NTH01B10	North River	4.25 MILES
4A	VAV-B23R_NTH02A04	North River	6.87 MILES
4A	VAV-B23R_NTH03A04	North River	3.33 MILES
4A	VAV-B23R_NTH04A04	North River	2.22 MILES
4A	VAV-B24R_LGC01A00	Long Glade Creek	11.22 MILES
4A	VAV-B25R_CKS01A00	Cooks Creek	7.74 MILES
4A	VAV-B25R_CKS02A04	Cooks Creek	6.63 MILES
4A	VAV-B25R_SLV01A04	Silver Creek	0.20 MILES
4A	VAV-B25R_XBU01A02	Sunset Heights Branch	4.74 MILES
4A	VAV-B26R_BLK01A00	Blacks Run	11.64 MILES
4A	VAV-B27R_PLR01A00	Pleasant Run	6.73 MILES
4A	VAV-B28R_NKD01A00	Naked Creek	3.79 MILES
4A	VAV-B28R_NKD02A10	Naked Creek	3.33 MILES
4A	VAV-B28R_NKN01A00	North Fork Naked Creek	5.24 MILES
4A	VAV-B29R_CNG01A00	Congers Creek	3.20 MILES
4A	VAV-B29R_CNG02A10	Congers Creek	2.79 MILES
4A	VAV-B29R_DKR01A00	Duck Run	2.87 MILES
4A	VAV-B29R_MIC01A00	Mill Creek	2.78 MILES
4A	VAV-B29R_MIC02A00	Mill Creek	3.46 MILES
4A	VAV-B30R_STH01A00	South River	12.42 MILES
4A	VAV-B31R_STH01A00	South River	10.78 MILES
4A	VAV-B32R_STH02A04	South River	11.55 MILES
4A	VAV-B32R_STH03A04	South River	7.44 MILES
4A	VAV-B32R_STH04A04	South River	2.11 MILES
4A	VAV-B32R_STH05A04	South River	2.82 MILES
4A	VAV-B32R_STL01A16	Steele Run	3.78 MILES
4A	VAV-B33R_SSF01A00	South Fork Shenandoah River	7.88 MILES
4A	VAV-B34R_CBR01A00	Cub Run	14.89 MILES
4A	VAV-B35R_SSF01A00	South Fork Shenandoah River	3.55 MILES
4A	VAV-B35R_SSF01B14	South Fork Shenandoah River	4.04 MILES
4A	VAV-B35R_SSF02A10	South Fork Shenandoah River	7.08 MILES
4A	VAV-B38R_MLC01A00	Mill Creek	7.06 MILES
4A	VAV-B38R_SSF01A00	South Fork Shenandoah River	10.46 MILES
4A	VAV-B38R_SSF02A10	South Fork Shenandoah River	5.98 MILES
4A	VAV-B39R_HKS01A00	Hawksbill Creek	6.04 MILES
4A	VAV-B39R_HKS01B10	Hawksbill Creek	1.31 MILES
4A	VAV-B39R_HKS02A00	Hawksbill Creek	5.91 MILES
4A	VAV-B39R_HKS03A10	Hawksbill Creek	3.84 MILES
4A	VAV-B39R_HKS04A10	Hawksbill Creek	2.78 MILES
4A	VAV-B40R_SSF01A00	South Fork Shenandoah River	6.60 MILES
4A	VAV-B40R_SSF01B14	South Fork Shenandoah River	2.17 MILES
4A	VAV-B40R_SSF01C14	South Fork Shenandoah River	10.35 MILES
4A	VAV-B40R_SSF02A00	South Fork Shenandoah River	1.22 MILES
4A	VAV-B40R_SSF03A14	South Fork Shenandoah River	5.39 MILES
4A	VAV-B40R_SSF04A14	South Fork Shenandoah River	6.96 MILES
4A	VAV-B41R_HPY01A00	Happy Creek	5.70 MILES
4A	VAV-B41R_HPY02A00	Happy Creek	2.84 MILES
4A	VAV-B44R_RUN01A00	Runion Creek	14.80 MILES
4A	VAV-B45R_HMN01A00	Holmans Creek	5.22 MILES
4A	VAV-B45R_HMN02A00	Holmans Creek	2.65 MILES
4A	VAV-B45R_HMN03A00	Holmans Creek	3.22 MILES
4A	VAV-B45R_NFS01A00	North Fork Shenandoah River	3.59 MILES
4A	VAV-B45R_NFS03A00	North Fork Shenandoah River	2.93 MILES
4A	VAV-B46R_LNV01A00	Linville Creek	5.38 MILES
4A	VAV-B46R_LNV02A04	Linville Creek	9.00 MILES
4A	VAV-B47R_LAC01A00	Lacey Spring Branch	0.59 MILES
4A	VAV-B47R_MTN01A00	Mountain Run	5.69 MILES
4A	VAV-B47R_MTN02A00	Mountain Run	0.94 MILES
4A	VAV-B47R_SMT01A00	Smith Creek	14.09 MILES
4A	VAV-B47R_SMT02A00	Smith Creek	5.44 MILES
4A	VAV-B47R_SMT03A00	Smith Creek	6.88 MILES
4A	VAV-B47R_SMT04A00	Smith Creek	9.22 MILES
4A	VAV-B47R_WAR01A00	War Branch	7.10 MILES
4A	VAV-B47R_XSG01A12	X-trib to Smith Creek	1.16 MILES
4A	VAV-B48R_MIL01A00	Mill Creek	2.88 MILES
4A	VAV-B48R_MIL02A04	Mill Creek	1.66 MILES
4A	VAV-B48R_MIL02B10	Mill Creek	3.23 MILES
4A	VAV-B48R_MIL03A04	Mill Creek	7.88 MILES
4A	VAV-B48R_NFS01A00	North Fork Shenandoah River	12.25 MILES
4A	VAV-B49R_STY06A10	Stony Creek	3.50 MILES
4A	VAV-B49R_XBP01A10	Orkney Springs Run	2.19 MILES
4A	VAV-B50R_NFS01A00	North Fork Shenandoah River	12.31 MILES
4A	VAV-B50R_NFS04A00	North Fork Shenandoah River	4.29 MILES
4A	VAV-B50R_NPC01A00	Narrow Passage Creek	0.55 MILES
4A	VAV-B50R_NPC02A00	Narrow Passage Creek	11.06 MILES
4A	VAV-B50R_XSH01A10	Spring Hollow	6.39 MILES
4A	VAV-B52R_XOS01A00	Orndorff Spring Branch	0.23 MILES
4A	VAV-B55R_BMR01A00	Borden Marsh Run	15.68 MILES
4A	VAV-B55R_MAN01A00	Manassas Run	5.01 MILES
4A	VAV-B55R_MAN02A04	Manassas Run	10.08 MILES
4A	VAV-B55R_SHN01A00	Shenandoah River	8.51 MILES
4A	VAV-B55R_SHN01B10	Shenandoah River	4.42 MILES
4A	VAV-B55R_SHN02A00	Shenandoah River	3.66 MILES
4A	VAV-B55R_WLO01A06	Willow Brook	4.09 MILES
4A	VAV-B56R_CRO01A00	Crooked Run	6.90 MILES
4A	VAV-B56R_WST01A00	West Run	8.08 MILES
4A	VAV-B57R_LNG01A04	Long Branch	3.87 MILES
4A	VAV-B57R_PGE01A00	Page Brook Run	1.31 MILES
4A	VAV-B57R_PGE02A10	Page Brook Run	9.66 MILES
4A	VAV-B57R_RSC01A00	Roseville Run	6.39 MILES
4A	VAV-B57R_SHN01A00	Shenandoah River	2.72 MILES
4A	VAV-B57R_SHN02A00	Shenandoah River	3.31 MILES
4A	VAV-B57R_SPR01A00	Spout Run	4.12 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4C	VAP-A31R_CAS01A00	Canal Swamp Watershed	12.57 MILES
4C	VAP-A31R_MAO01A98	Mattox Creek	68.45 MILES
4C	VAP-A31R_MRC01A98	Monroe Creek	12.27 MILES
4C	VAV-B13R_XEI02A02	Tunnel Hollow x-trib	0.58 MILES
4C	VAV-B20R_SKD03A00	Skidmore Fork	5.44 MILES
4C	VAV-B31R_TMS01A02	Toms Branch	1.15 MILES
4C	VAV-B31R_TMS02A10	Toms Branch	2.34 MILES
4C	VAV-B36R_NAK01A00	Naked Creek	6.66 MILES
4C	VAV-B36R_NKE01A10	East Branch Naked Creek	6.15 MILES
4C	VAV-B49L_STY01A10	Lake Laura	46.25 ACRES
5A	VAN-A03R_CLK01A08	Clarks Run	5.46 MILES
5A	VAN-A05R_WAC01A04	Wancopin Creek	3.44 MILES
5A	VAN-A07R_NOB03A04	North Fork Beaverdam Creek	4.81 MILES
5A	VAN-A08L_GOO02A02	Goose Creek Reservoir	39.63 ACRES
5A	VAN-A08R_DRL01A16	Dry Mill Branch	2.97 MILES
5A	VAN-A09R_BEM01A04	Beaverdam Run	2.31 MILES
5A	VAN-A09R_BEM02B10	Beaverdam Run	1.54 MILES
5A	VAN-A09R_BRB01A00	Broad Run	2.93 MILES
5A	VAN-A09R_BRB02A06	Broad Run	2.27 MILES
5A	VAN-A09R_BRB03A06	Broad Run	1.11 MILES
5A	VAN-A09R_BRB03B08	Broad Run	2.11 MILES
5A	VAN-A09R_BRB04A08	Broad Run	1.42 MILES
5A	VAN-A09R_HPR01A00	Horsepen Run	8.17 MILES
5A	VAN-A09R_INI01A14	Indian Creek	3.48 MILES
5A	VAN-A09R_SOR01A04	South Fork Broad Run	5.28 MILES
5A	VAN-A09R_XLE01A10	Unnamed tributary to Potomac River	1.74 MILES
5A	VAN-A10R_SUG02A02	Sugarland Run	3.77 MILES
5A	VAN-A11R_COV02A02	Colvin Run	2.09 MILES
5A	VAN-A11R_DEA01A04	Dead Run	2.82 MILES
5A	VAN-A11R_DIF01B06	Difficult Run	1.05 MILES
5A	VAN-A11R_NIC01A02	Nichols Run	4.56 MILES
5A	VAN-A11R_OCS01A04	Old Courthouse Spring Branch	2.11 MILES
5A	VAN-A11R_TUY01A06	Turkey Run	1.34 MILES
5A	VAN-A13R_INA01A06	Indian Run	3.18 MILES
5A	VAN-A14R_DOU01A04	Dogue Creek	1.41 MILES
5A	VAN-A14R_PAU01A04	Paul Springs Branch	3.38 MILES
5A	VAN-A15L_ACO01A10	Lake Accotink	73.93 ACRES
5A	VAN-A15R_ACO01B10	Accotink Creek	2.62 MILES
5A	VAN-A15R_ACO03A02	Accotink Creek	0.98 MILES
5A	VAN-A15R_ACO05A04	Accotink Creek	3.34 MILES
5A	VAN-A15R_LOE01A02	Long Branch	2.37 MILES
5A	VAN-A16R_MID01A16	Middle Run	2.85 MILES
5A	VAN-A16R_POH01A00	Pohick Creek	3.78 MILES
5A	VAN-A16R_POH01B14	Pohick Creek	2.61 MILES
5A	VAN-A16R_POH02A02	Pohick Creek	5.41 MILES
5A	VAN-A16R_POH03A04	Pohick Creek	1.77 MILES
5A	VAN-A16R_SOH01A12	South Run	4.16 MILES
5A	VAN-A18R_LUC01A04	Lucky Run	3.48 MILES
5A	VAN-A21R_BUL01A06	Bull Run	0.19 MILES
5A	VAN-A21R_BUL01B06	Bull Run	2.63 MILES
5A	VAN-A21R_BUL02A00	Bull Run	4.66 MILES
5A	VAN-A22R_CUB02A02	Cub Run	6.34 MILES
5A	VAN-A23R_BUL01A06	Bull Run	2.90 MILES
5A	VAN-A23R_BUL01C04	Bull Run	0.95 MILES
5A	VAN-A24L_OCC02A06	Occoquan Reservoir	63.12 ACRES
5A	VAN-A24R_HOO01A02	Hooes Run	0.98 MILES
5A	VAN-A24R_SAD01A04	Sandy Run	2.10 MILES
5A	VAN-A24R_SAD01A10	Sandy Run	3.98 MILES
5A	VAN-A24R_WOL01A06	Wolf Run	2.50 MILES
5A	VAN-A25R_MAU01A04	Marumsco Creek	0.53 MILES
5A	VAN-A25R_XMK01A16	Unnamed Tributary to Occoquan River	1.11 MILES
5A	VAN-A27R_AUA01A00	Aquia Creek	6.36 MILES
5A	VAN-A27R_AUA02A02	Aquia Creek	8.81 MILES
5A	VAN-A27R_XLN01A10	Unnamed tributary to Aquia Creek	2.25 MILES
5A	VAN-A29R_XLB01A08	Unnamed tributary to Long Branch	2.30 MILES
5A	VAP-A31R_PIN01A00	Pine Hill Creek Watershed	34.91 MILES
5A	VAP-A33R_LOG01A04	Lodge Creek	3.44 MILES
5A	VAP-A33R_XMC01A14	XMC - Lodge Creek, UT	1.69 MILES
5A	VAV-B02R_STC02A00	Strait Creek	2.77 MILES
5A	VAV-B03R_SFP01A00	South Fork South Branch Potomac River	2.71 MILES
5A	VAV-B04R_MIS01A14	Middle Fork Sleepy Creek	2.93 MILES
5A	VAV-B04R_SLP01A00	Sleepy Creek	7.72 MILES
5A	VAV-B05R_BAR01B10	Back Creek	2.47 MILES
5A	VAV-B05R_BAR02A04	Back Creek	10.94 MILES
5A	VAV-B05R_BAR03A10	Back Creek	4.20 MILES
5A	VAV-B05R_ISC01A00	Isaacs Creek	2.84 MILES
5A	VAV-B05R_LIG01A00	Little Isaacs Creek	9.93 MILES
5A	VAV-B16L_NTH01A04	Elkhorn Lake	52.66 ACRES
5A	VAV-B17R_NTH04A00	North River	4.46 MILES
5A	VAV-B18R_ROB01A02	Rocky Run	1.93 MILES
5A	VAV-B18R_USB01A00	Union Springs Run	3.07 MILES
5A	VAV-B18R_USB02A10	Union Springs Run	0.66 MILES
5A	VAV-B18R_WFR01A02	Wolf Run	1.18 MILES
5A	VAV-B18R_WFR02A02	Wolf Run	2.11 MILES
5A	VAV-B20L_01	Switzer Lake	100.81 ACRES
5A	VAV-B20R_DUR01A00	Dry River	1.52 MILES
5A	VAV-B20R_DUR02A00	Dry River	4.32 MILES
5A	VAV-B20R_DUR02B10	Dry River	0.64 MILES
5A	VAV-B20R_DUR03A00	Dry River	3.70 MILES
5A	VAV-B30R_LOV01A00	Loves Run	2.70 MILES
5A	VAV-B30R_LOV02A10	Loves Run	2.93 MILES
5A	VAV-B31L_00	Coles Run Reservoir	10.84 ACRES
5A	VAV-B31R_BCK01A00	Back Creek	9.23 MILES
5A	VAV-B31R_BSK01A10	South Fork Back Creek	3.62 MILES
5A	VAV-B31R_CLS01A00	Coles Run	4.25 MILES
5A	VAV-B31R_CLS02A10	Coles Run	2.63 MILES
5A	VAV-B31R_JHN01A00	Johns Run	5.45 MILES
5A	VAV-B31R_KND01A00	Kennedy Creek	15.47 MILES
5A	VAV-B31R_MLS01A02	Mills Creek	1.66 MILES
5A	VAV-B31R_MLS02A10	Mills Creek	2.44 MILES
5A	VAV-B31R_MLS03A10	Mills Creek	5.02 MILES
5A	VAV-B31R_ORE01A02	Orebank Creek	3.55 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5A	VAV-B32R_MDW01A00	Meadow Run	8.82 MILES
5A	VAV-B32R_PAN01A00	Paine Run	1.90 MILES
5A	VAV-B32R_PAN02A10	Paine Run	4.83 MILES
5A	VAV-B33R_DPR01A00	Deep Run	1.87 MILES
5A	VAV-B33R_DPR02A10	Deep Run	2.62 MILES
5A	VAV-B33R_LLW01A00	Lower Lewis Run	1.90 MILES
5A	VAV-B33R_LLW02A10	Lower Lewis Run	2.03 MILES
5A	VAV-B35R_BON01A00	Boone Run	6.52 MILES
5A	VAV-B35R_BON02A10	Boone Run	7.29 MILES
5A	VAV-B35R_ONE01A00	One Mile Run	1.62 MILES
5A	VAV-B35R_ONE02A10	One Mile Run	7.54 MILES
5A	VAV-B35R_QAL03A00	Quail Run	1.46 MILES
5A	VAV-B35R_TWO01A00	Two Mile Run	1.53 MILES
5A	VAV-B35R_TWO02A10	Two Mile Run	3.52 MILES
5A	VAV-B37R_CUB01A00	Cub Run	2.87 MILES
5A	VAV-B37R_CUB02A10	Cub Run	6.92 MILES
5A	VAV-B37R_HDY01A00	Honey Run	5.10 MILES
5A	VAV-B37R_LIN01A06	Line Run	4.93 MILES
5A	VAV-B38R_BIG01A00	Big Run	6.40 MILES
5A	VAV-B39R_DRI01A00	Dry Run	5.52 MILES
5A	VAV-B39R_RKB01A00	Rocky Branch	4.25 MILES
5A	VAV-B40R_FNT01A00	Flint Run	4.10 MILES
5A	VAV-B40R_FNT02A10	Flint Run	3.35 MILES
5A	VAV-B40R_GNY01A00	Gooney Run	6.73 MILES
5A	VAV-B40R_GNY02A10	Gooney Run	3.39 MILES
5A	VAV-B40R_GRS01A10	Greasy Run	3.64 MILES
5A	VAV-B40R_JER01A00	Jeremy's Run	4.54 MILES
5A	VAV-B40R_JER02A10	Jeremy's Run	7.15 MILES
5A	VAV-B40R_LND01A10	Lands Run	3.97 MILES
5A	VAV-B40R_SMC02A10	Smith Creek	2.44 MILES
5A	VAV-B40R_XFT01A10	Flint Run X-trib	5.13 MILES
5A	VAV-B42R_CRB01A00	Crab Run	3.93 MILES
5A	VAV-B42R_NFS01A00	North Fork Shenandoah River	2.59 MILES
5A	VAV-B47R_FDY01A02	Fridley Run	2.38 MILES
5A	VAV-B48R_CKD01A00	Crooked Run	4.07 MILES
5A	VAV-B49R_LSC01B08	Little Stony Creek	4.91 MILES
5A	VAV-B49R_STY05A04	Stony Creek	9.46 MILES
5A	VAV-B50R_PGH01A00	Pugh's Run	7.00 MILES
5A	VAV-B51R_NFS03A00	North Fork Shenandoah River	1.28 MILES
5A	VAV-B51R_NFS04A00	North Fork Shenandoah River	3.78 MILES
5A	VAV-B51R_NFS04B10	North Fork Shenandoah River	1.21 MILES
5A	VAV-B51R_TBL02A04	Tumbling Run	4.24 MILES
5A	VAV-B52R_CDR02A00	Cedar Creek	3.14 MILES
5A	VAV-B52R_CDR02B10	Cedar Creek	6.08 MILES
5A	VAV-B52R_CDR03A00	Cedar Creek	2.76 MILES
5A	VAV-B52R_CDR03B10	Cedar Creek	4.82 MILES
5A	VAV-B52R_CDR04A02	Cedar Creek	3.45 MILES
5A	VAV-B52R_FLR01A14	Fall Run	15.17 MILES
5A	VAV-B52R_GSR01A16	Gravel Springs	3.29 MILES
5A	VAV-B53R_CDR01A00	Cedar Creek	3.75 MILES
5A	VAV-B54R_PSG01C10	Passage Creek	10.42 MILES
5A	VAV-B54R_PSG03A10	Passage Creek	5.44 MILES
5A	VAV-B57R_CPL01A00	Chapel Run	11.74 MILES
5A	VAV-B58R_DGR01A00	Dog Run	6.13 MILES
5A	VAV-B58R_LSR01A00	Long Marsh Run	7.09 MILES
5A	VAV-B58R_WSB01A00	Wheat Spring Branch	4.69 MILES
5C	VAN-A30R_GAM01A04	Gambo Creek	0.50 MILES
5C	VAN-A30R_PEP01A10	Pepper Mill Creek	8.66 MILES
5C	VAP-A32R_ANT01A14	Antioch Branch	2.06 MILES
5C	VAP-A32R_MPB01A14	Mount Pleasant Branch	2.26 MILES
5C	VAP-A32R_NET01A14	Newtons Mill Run	3.18 MILES
5C	VAP-A32R_OLD01A14	Oldham Creek	1.99 MILES
5C	VAP-A32R_THP01A06	Thompson Branch	1.60 MILES
5C	VAP-A32R_XLK01A10	Nomini Creek, UT	1.45 MILES
5C	VAP-A33L_HAM01A12	Hampton Hall, Gardy Millpond	45.86 ACRES
5C	VAP-A33R_XLZ01A14	XLZ - Hampton Hall Branch, UT	3.13 MILES
5C	VAP-A33R_XMB01A14	XMB - Hampton Hall Branch, UT	3.48 MILES
5C	VAP-A34R_LIS01A06	Little Wicomico River	2.33 MILES
5C	VAP-A34R_XLL01A10	Coan Mill Stream, UT	2.10 MILES
5C	VAV-B18R_BRY03A00	Briery Branch	7.18 MILES
5D	VAN-A02R_NOC01A00	North Fork Catoctin Creek	4.42 MILES
5D	VAN-A02R_NOC03A02	North Fork Catoctin Creek	2.54 MILES
5D	VAN-A05R_JEE01A16	Jeffries Branch	1.43 MILES
5D	VAN-A05R_JEE02A08	Jeffries Branch	4.76 MILES
5D	VAN-A06R_NOG02A00	North Fork Goose Creek	4.69 MILES
5D	VAN-A08R_GOO01A00	Goose Creek	4.81 MILES
5D	VAN-A08R_TUS01A00	Tuscarora Creek	2.80 MILES
5D	VAN-A08R_TUS01B06	Tuscarora Creek	1.09 MILES
5D	VAN-A10R_SUG01A00	Sugarland Run	4.88 MILES
5D	VAN-A10R_SUG01B06	Sugarland Run	1.06 MILES
5D	VAN-A11R_CAH01A04	Captain Hickory Run	2.19 MILES
5D	VAN-A11R_CAH01B06	Captain Hickory Run	1.08 MILES
5D	VAN-A11R_DIF01A00	Difficult Run	3.17 MILES
5D	VAN-A11R_DIF02A02	Difficult Run	0.85 MILES
5D	VAN-A11R_DIF02B06	Difficult Run	1.97 MILES
5D	VAN-A11R_DIF03A02	Difficult Run	3.55 MILES
5D	VAN-A11R_LID01A02	Little Difficult Run	1.75 MILES
5D	VAN-A11R_SNA01A02	Snakeden Branch	0.97 MILES
5D	VAN-A12E_FOU01A00	Four Mile Run	0.05 SQUARE MILES
5D	VAN-A12R_PIM01A00	Pimmit Run	1.64 MILES
5D	VAN-A12R_PIM02A00	Pimmit Run	2.76 MILES
5D	VAN-A13R_HOR01B00	Holmes Run	6.09 MILES
5D	VAN-A13R_TRI01A00	Tripps Run	3.70 MILES
5D	VAN-A15E_POH02A00	Pohick Bay	0.62 SQUARE MILES
5D	VAN-A15R_ACO01A00	Accotink Creek	7.47 MILES
5D	VAN-A15R_ACO02A00	Accotink Creek	5.22 MILES
5D	VAN-A15R_ACO04A02	Accotink Creek	2.05 MILES
5D	VAN-A16E_POH01A06	Pohick Bay	0.29 SQUARE MILES
5D	VAN-A21R_CAA01A02	Catharpin Creek	6.80 MILES
5D	VAN-A22R_BIR01A02	Big Rocky Run	4.34 MILES
5D	VAN-A22R_CUB01A00	Cub Run	6.89 MILES
5D	VAN-A22R_ELC01A04	Elklick Run	2.27 MILES
5D	VAN-A22R_FLL01A04	Flatlick Branch	3.22 MILES
5D	VAN-A23R_BUL02A02	Bull Run	4.86 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAN-A23R_LIP01A06	Little Rocky Run	5.23 MILES
5D	VAN-A25E_MAU01A12	Marumsco Creek	0.03 SQUARE MILES
5D	VAN-A25E_NEA01A00	Neabsco Bay	0.54 SQUARE MILES
5D	VAN-A25E_OCC03A04	Belmont Bay (Occoquan River)	0.29 SQUARE MILES
5D	VAN-A25E_OCC05A02	Occoquan River	0.07 SQUARE MILES
5D	VAN-A25R_GIL01A04	Giles Run	6.48 MILES
5D	VAN-A25R_WLB01A02	Mills Branch	1.72 MILES
5D	VAN-A26E_POW02A02	Powells Creek	0.40 SQUARE MILES
5D	VAN-A26E_QUA01B04	Quantico Creek	0.42 SQUARE MILES
5D	VAN-A26L_POW01A06	Lake Montclair	103.54 ACRES
5D	VAN-A26R_XLF01A10	Unnamed tributary to Potomac River	3.67 MILES
5D	VAN-A29E_CHN02A10	Chotank Creek	0.05 SQUARE MILES
5D	VAN-A29E_POM01B06	Potomac Creek	0.59 SQUARE MILES
5D	VAN-A29R_POR01A06	Potomac Run	6.59 MILES
5D	VAN-A30E_GAM01A02	Gambo Creek	0.18 SQUARE MILES
5D	VAP-A31E_BRG01A04	Bridges Creek	0.18 SQUARE MILES
5D	VAP-A31E_ROS01A08	Rosier Creek / Goldman Creek	0.27 SQUARE MILES
5D	VAP-A32E_LOW02B16	Lower Machodoc Creek	0.69 SQUARE MILES
5D	VAP-A32R_BAN01A14	Barnes Creek	1.94 MILES
5D	VAP-A32R_BUV01A14	Buena Vista Branch	2.26 MILES
5D	VAP-A32R_MAR01A14	Marshall Creek	2.88 MILES
5D	VAP-A32R_TAE01A12	Tavern Run	3.27 MILES
5D	VAP-A32R_TEM01A14	Templeman Run	3.99 MILES
5D	VAP-A33E_LOG01A98	Lodge Creek	0.03 SQUARE MILES
5D	VAP-A33E_LOG02A98	Lodge Creek	0.15 SQUARE MILES
5D	VAP-A33E_LOG02B10	Lodge Creek	0.07 SQUARE MILES
5D	VAP-A33E_LOG02C12	Lodge Creek	0.05 SQUARE MILES
5D	VAP-A33R_GAD01A10	Gardner Creek	1.40 MILES
5D	VAV-B02R_WSC03A00	West Strait Creek	0.87 MILES
5D	VAV-B12R_LEW01A00	Lewis Creek	10.06 MILES
5D	VAV-B14R_LMR01A00	Long Meadow Run	11.06 MILES
5D	VAV-B30R_PNE01A00	Pine Run	20.38 MILES
5D	VAV-B32R_STH01A04	South River	5.37 MILES
5D	VAV-B35R_QAL01A00	Quail Run	4.39 MILES
5D	VAV-B35R_QAL02A00	Quail Run	0.73 MILES
5D	VAV-B37R_SSF01A00	South Fork Shenandoah River	4.98 MILES
5D	VAV-B37R_SSF02A10	South Fork Shenandoah River	12.16 MILES
5D	VAV-B37R_SSF02B14	South Fork Shenandoah River	1.98 MILES
5D	VAV-B39R_EHC01A00	East Hawksbill Creek	9.38 MILES
5D	VAV-B39R_PSS01A00	Pass Run	9.47 MILES
5D	VAV-B41R_SSF01A00	South Fork Shenandoah River	1.85 MILES
5D	VAV-B41R_SSF02A00	South Fork Shenandoah River	2.45 MILES
5D	VAV-B41R_SSF03A00	South Fork Shenandoah River	1.54 MILES
5D	VAV-B41R_SSF04A00	South Fork Shenandoah River	4.47 MILES
5D	VAV-B45R_LOM01A00	Long Meadow Run	9.85 MILES
5D	VAV-B45R_NFS01B14	North Fork Shenandoah River	7.07 MILES
5D	VAV-B45R_NFS02A00	North Fork Shenandoah River	4.47 MILES
5D	VAV-B45R_NFS02B08	North Fork Shenandoah River	1.05 MILES
5D	VAV-B45R_NFS02C10	North Fork Shenandoah River	0.93 MILES
5D	VAV-B45R_TRL01A00	Turley Creek	2.20 MILES
5D	VAV-B45R_TRL02A00	Turley Creek	1.83 MILES
5D	VAV-B47R_DFK01A00	Dry Fork	10.85 MILES
5D	VAV-B49R_STY01A00	Stony Creek	4.58 MILES
5D	VAV-B49R_STY02A00	Stony Creek	1.27 MILES
5D	VAV-B49R_STY03A00	Stony Creek	3.43 MILES
5D	VAV-B49R_STY04A04	Stony Creek	4.68 MILES
5D	VAV-B51R_NFS01A00	North Fork Shenandoah River	0.71 MILES
5D	VAV-B51R_NFS02A00	North Fork Shenandoah River	4.71 MILES
5D	VAV-B56R_CRO01B16	Crooked Run	2.32 MILES
5D	VAV-B56R_STV01A00	Stephens Run	0.99 MILES
5D	VAV-B57R_SHN03A00	Shenandoah River	5.40 MILES
5D	VAV-B58R_SHN01A00	Shenandoah River	5.10 MILES
5D	VAV-B58R_SHN02A00	Shenandoah River	2.80 MILES
5R	VAN-A29E_POT01A06	Fairview Beach/Potomac River	0.01 SQUARE MILES

James River Basin

Overall Category	305(b) ID	Waterbody Name	Size
1	VAC-H04R_HAZ01A00	Harris Creek	7.19 MILES
1	VAP-H37R_XVX01A06	UT to Little Lickinghole Creek	1.04 MILES
1A	VAP-J11R_DPC01B00	Deep Creek	11.54 MILES
1A	VAP-J11R_DPC02A00	Deep Creek	5.67 MILES
2A	VAC-H02L_POL01A02	Pedlar Lake	117.74 ACRES
2A	VAC-H02R_BMT01A00	Brown Mountain Creek	3.92 MILES
2A	VAC-H02R_BMT02A06	Brown Mountain Creek	3.40 MILES
2A	VAC-H02R_BNC01A02	Browns Creek	10.93 MILES
2A	VAC-H02R_DNC01A02	Dancing Creek	0.94 MILES
2A	VAC-H02R_DNC01B06	Dancing Creek	5.70 MILES
2A	VAC-H02R_ECH01A02	Enchanted Creek and Tributaries	4.77 MILES
2A	VAC-H02R_LIF01A02	Little Irish Creek and Tributaries	6.06 MILES
2A	VAC-H02R_POL04A02	Pedlar River	0.92 MILES
2A	VAC-H02R_POL05B02	Pedlar River	4.89 MILES
2A	VAC-H02R_POL06B02	Pedlar River	2.54 MILES
2A	VAC-H02R_RBT01A00	Roberts Creek	2.33 MILES
2A	VAC-H02R_SMC01A02	Shady Mountain Creek	1.22 MILES
2A	VAC-H02R_SRC01A02	Statons Creek	11.73 MILES
2A	VAC-H02R_XTI01A12	Little Irish Creek, UT	1.68 MILES
2A	VAC-H04L_GRA01A02	Graham Creek Reservoir	39.50 ACRES
2A	VAC-H05R_WKF01A10	Walkers Ford Creek	4.27 MILES
2A	VAC-H06R_BKF01A16	Blackfoot Creek	2.95 MILES
2A	VAC-H06R_PLP02A10	Phelps Branch	2.67 MILES
2A	VAC-H08R_OWN01A06	Owens Creek	6.59 MILES
2A	VAC-H08R_XUM01A06	Alabama Creek, Unnamed Tributary	2.61 MILES
2A	VAC-H11R_BNF01A02	North Fork Buffalo River	1.75 MILES
2A	VAC-H11R_BNF02A02	North Fork Buffalo River	2.19 MILES
2A	VAC-H11R_BNF03A06	North Fork Buffalo River	4.51 MILES
2A	VAC-H11R_CVE01A06	Cove Creek	2.93 MILES
2A	VAC-H11R_LTU01A02	Little Cove Creek	1.87 MILES
2A	VAC-H12R_RTD02A00	Rutledge Creek	2.55 MILES
2A	VAC-H12R_WLL01A10	Williams Creek	3.71 MILES
2A	VAC-H14R_SCM01A00	Sycamore Creek	6.87 MILES
2A	VAC-H14R_XAC01A12	UT, Mallorys Creek	0.95 MILES
2A	VAC-H17R_RKI01A00	Rock Island Creek	8.88 MILES
2A	VAC-H17R_XAD01A14	Unnamed Tributary to Little Georgia Creek	1.58 MILES
2A	VAC-H20R_NOR02A02	North Creek	1.98 MILES
2A	VAC-H21R_AUS01A00	Austin Creek	6.21 MILES
2A	VAC-H21R_BYN01A12	Bryant Creek	4.40 MILES
2A	VAC-H21R_COO01A08	Cooper Creek	3.34 MILES
2A	VAC-H21R_FRY01A00	Frisby Branch	4.00 MILES
2A	VAC-H21R_MEA01A08	Meadow Creek	6.30 MILES
2A	VAC-H21R_SLT03A08	Slate River	12.80 MILES
2A	VAC-H21R_WTN02A16	Walton Fork	9.63 MILES
2A	VAC-H21R_XZF01A10	Bryant Creek, Unnamed Tributary	1.87 MILES
2A	VAC-H22R_SHR01A10	Sharps Creek	8.08 MILES
2A	VAC-H36R_BAA01A12	Buck and Game Creek	5.20 MILES
2A	VAC-H36R_BRK01A08	Bonbrook Creek	4.12 MILES
2A	VAC-H36R_BRK01C10	Bonbrook Creek	3.57 MILES
2A	VAC-H36R_RND02A06	Randolph Creek	0.34 MILES
2A	VAC-J01L_HOL01A06	Holiday Lake	113.14 ACRES
2A	VAC-J01R_BOW01A10	Bowler Creek	3.24 MILES
2A	VAC-J01R_CBH01A10	Cabin Branch	2.59 MILES
2A	VAC-J01R_HOL01B04	Holiday Creek	6.69 MILES
2A	VAC-J01R_PRB01A04	Plain Run Branch	2.98 MILES
2A	VAC-J02R_NBS01A08	North Branch	4.29 MILES
2A	VAC-J03L_SDY01A06	Sandy River Reservoir	738.97 ACRES
2A	VAC-J03L_SDY02A06	Prince Edward Lake	26.37 ACRES
2A	VAC-J03L_XEP01A06	Goodwin Lake	12.28 ACRES
2A	VAC-J05L_BRI01L98	Briery Creek Lake	819.66 ACRES
2A	VAC-J06R_LID01A00	Little Guinea Creek	5.98 MILES
2A	VAC-J06R_SYL02A06	Saylers Creek	4.40 MILES
2A	VAC-J06R_XAH01A16	Big Guinea Creek, UT	2.95 MILES
2A	VAP-H33R_GDC01A14	Gold Dust Creek	0.41 MILES
2A	VAP-H33R_STG01A00	Stegers Creek	3.43 MILES
2A	VAP-H34R_EFK01A10	East Fork Kent Branch	2.87 MILES
2A	VAP-H34R_LTP01A04	Little Byrd Creek	8.14 MILES
2A	VAP-H34R_RSM01A08	Ransome Creek	3.37 MILES
2A	VAP-H34R_RTS01A14	Rattlesnake Run	4.05 MILES
2A	VAP-H37R_XAP01A16	XAP - Tarred Rat Creek, UT	1.98 MILES
2A	VAP-H38R_XAV01A16	XAV - James River, UT	0.35 MILES
2A	VAP-H39R_XAM01A14	XAM - UT to Stony Run, UT (XYT)	0.88 MILES
2A	VAP-H39R_XUT01A04	XUT - Tuckahoe Creek, UT	1.80 MILES
2A	VAP-J07R_SQT01A00	Skinquarter Creek	5.29 MILES
2A	VAP-J08R_HAW01A12	Haw Branch	2.20 MILES
2A	VAP-J11R_LTA01A00	Little Creek	6.96 MILES
2A	VAP-J12R_WPK01A98	Winterpock Creek	8.43 MILES
2A	VAP-J12R_WTK01A00	Winticomack Creek	7.40 MILES
2A	VAP-J12R_XTZ01A04	UT to Winticomack Creek	2.81 MILES
2A	VAP-J14R_CCC01A06	Cattle Creek	2.25 MILES
2A	VAP-J15R_WAL01A12	Wallace Creek	3.05 MILES
2A	VAP-J15R_XBK01A14	UT to Fleets Branch	0.08 MILES
2A	VAP-J15R_XDW01A12	UT to Appomattox	2.17 MILES
2A	VAP-J16R_SFT03A12	Swift Creek	3.53 MILES
2A	VAP-J17R_FNK01A00	Franks Branch	10.35 MILES
2A	VAP-J17R_SEC01A00	Second Branch	2.12 MILES
2A	VAP-J17R_TBY01A06	Timsbury Creek	6.66 MILES
2A	VAT-G11L_LSL01F06	Lone Star Lake F (PWS)	18.86 ACRES
2A	VAT-G11L_LSL01G06	Lone Star Lake G (PWS)	89.65 ACRES
2A	VAT-G11L_LSL01I06	Lone Star Lake I (PWS)	33.20 ACRES
2A	VAT-G11R_CYP01A14	Cypress Creek	2.10 MILES
2A	VAT-G11R_MHC01A16	Mount Holly Creek	0.75 MILES
2A	VAV-H09R_CBL01A00	Campbell Creek	3.31 MILES
2A	VAV-H09R_MDH01A10	Maidenhead Branch	2.32 MILES
2A	VAV-H09R_TYE04A04	Tye River	4.09 MILES
2A	VAV-H09R_TYS01A00	Tye River South Fork	19.98 MILES
2A	VAV-H10R_GGO01A02	Georges Creek	2.15 MILES
2A	VAV-H10R_LIR01A00	Little Piney River	19.11 MILES
2A	VAV-H10R_PRS01A00	S.F. Piney River	8.50 MILES
2A	VAV-H13R_TYE01A00	Tye River	7.65 MILES
2A	VAV-H15R_SYC01A06	Stony Creek	1.03 MILES

Overall Category	305(b) ID	Waterbody Name	Size
2A	VAV-H15R_SYC02A10	Stony Creek	2.35 MILES
2A	VAV-H15R_SYC03A10	Stony Creek	3.04 MILES
2A	VAV-H16R_RKF01A00	Rockfish River	6.06 MILES
2A	VAV-H18R_HAK01A00	Hardware River South Fork	18.79 MILES
2A	VAV-H18R_WNT02A16	Walnut Branch	1.20 MILES
2A	VAV-H18R_XFN01A10	X-trib to the South Branch North Fork Hardware River 2	0.57 MILES
2A	VAV-H18R_XHK01A16	South Fork Hardware River X-trib	0.44 MILES
2A	VAV-H18R_XHM01A16	Middle Branch North Fork Hardware River UT.	1.55 MILES
2A	VAV-H18R_XMH01A16	Middle Branch North Fork Hardware River X-trib	4.73 MILES
2A	VAV-H19R_XDC01A16	Dry Creek	5.41 MILES
2A	VAV-H19R_XHR01A16	Hardware River X-trib	2.28 MILES
2A	VAV-H23L_00	Beaver Creek Reservoir	95.54 ACRES
2A	VAV-H23R_WTB01A12	Whiteside Branch	3.56 MILES
2A	VAV-H23R_XMM01A10	X-trib to Mechums River	1.49 MILES
2A	VAV-H24L_MNR01A04	Sugar Hollow Reservoir	47.46 ACRES
2A	VAV-H24R_DYL01A00	Doyles River	64.50 MILES
2A	VAV-H24R_DYL02A10	Doyles River	9.21 MILES
2A	VAV-H24R_MNK01A00	Moormans River South Fork	9.62 MILES
2A	VAV-H24R_ROC01A12	Rocky Creek	23.93 MILES
2A	VAV-H24R_WDC01A06	Wards Creek	18.14 MILES
2A	VAV-H25R_XBM01A12	Elk Creek	5.77 MILES
2A	VAV-H26L_01	S F Rivanna River Reservoir	398.69 ACRES
2A	VAV-H27L_JCB01A08	Chris Green Lake	57.07 ACRES
2A	VAV-H27R_FOS01A12	Foster Branch	4.26 MILES
2A	VAV-H27R_HRC01A12	Herring Branch	3.03 MILES
2A	VAV-H27R_LYN01A04	Lynch River	4.38 MILES
2A	VAV-H27R_LYN02A10	Lynch River	3.88 MILES
2A	VAV-H27R_XPR01A14	X-trib to Preddy Creek	4.94 MILES
2A	VAV-H28L_XLV01A04	Ragged Mountain Reservoir	70.74 ACRES
2A	VAV-H28R_MSC02A00	Moores Creek	4.16 MILES
2A	VAV-H28R_XRD01A12	Redbud Creek x-trib	2.72 MILES
2A	VAV-H28R_XRZ01A12	Rivanna River x-trib	2.01 MILES
2A	VAV-H29R_JCB01A12	Jacobs Creek	4.01 MILES
2A	VAV-H29R_SHD01A12	Shadwell Creek	1.87 MILES
2A	VAV-H29R_SQC01A08	Slate Quarry Creek	2.69 MILES
2A	VAV-H29R_XBI01A12	Winston Creek	1.27 MILES
2A	VAV-H30R_MCK01A00	Mechunk Creek	7.27 MILES
2A	VAV-H30R_TSC01A14	Turkeysag Creek	14.26 MILES
2A	VAV-H31R_ABL01A00	Able Creek	5.12 MILES
2A	VAV-H31R_BOT01A12	Boston Creek and tributaries	9.90 MILES
2A	VAV-H31R_LSD01A02	Long Island Creek	3.85 MILES
2A	VAV-H31R_RCN01A08	Raccoon Creek (Including Little Raccoon Creek)	9.63 MILES
2A	VAV-H31R_STI01A12	Stigger Creek	4.77 MILES
2A	VAV-I01R_JKS03A04	Jackson River	0.45 MILES
2A	VAV-I01R_JKS04A10	Jackson River	4.06 MILES
2A	VAV-I01R_JKS05A10	Jackson River	7.47 MILES
2A	VAV-I01R_MYY01A02	Muddy Run	2.64 MILES
2A	VAV-I01R_MYY02A02	Muddy Run	2.78 MILES
2A	VAV-I01R_RWN01A00	Rowan Run	1.19 MILES
2A	VAV-I01R_RWN02A10	Rowan Run	2.69 MILES
2A	VAV-I01R_WSR01A06	Warm Springs Run	5.53 MILES
2A	VAV-I01R_XSE01A02	Gauley Run	1.08 MILES
2A	VAV-I02R_BCC01A00	Back Creek	7.22 MILES
2A	VAV-I02R_BCC02A00	Back Creek	18.98 MILES
2A	VAV-I02R_BVN01A02	Beaver Run	1.19 MILES
2A	VAV-I02R_FDR01A02	Ford Run	1.62 MILES
2A	VAV-I02R_LTB01A00	Little Back Creek	15.00 MILES
2A	VAV-I02R_PLB01A12	Pole Bar Run	2.09 MILES
2A	VAV-I02R_XRH01A02	Back Creek X-Trib	1.82 MILES
2A	VAV-I02R_XSB01A02	Ruckman Draft	3.79 MILES
2A	VAV-I05R_CRE01A00	Cedar Creek Lower	1.61 MILES
2A	VAV-I05R_CRE01A06	Cedar Creek	1.83 MILES
2A	VAV-I09L_WLN01A00	Douthat Lake	46.67 ACRES
2A	VAV-I09R_BHC01A02	Brown Hollow Creek	0.87 MILES
2A	VAV-I09R_XWC01A12	X-trib to Wilson Creek	1.90 MILES
2A	VAV-I09R_XWL01A12	X-trib to Wilson Creek	4.84 MILES
2A	VAV-I12R_BES01A00	Benson Run	5.82 MILES
2A	VAV-I12R_CWP01A00	Cowpasture River	10.61 MILES
2A	VAV-I12R_SHW01A00	Shaws Fork	12.36 MILES
2A	VAV-I14R_BNY01A02	Barney Run	1.38 MILES
2A	VAV-I14R_CUN01A02	Cub Run	1.93 MILES
2A	VAV-I14R_DUN02A10	Dry Run	12.44 MILES
2A	VAV-I15R_LIK01A02	Lick Run	3.71 MILES
2A	VAV-I15R_LIK02A10	Lick Run	3.77 MILES
2A	VAV-I15R_STU01A00	Stuart Run	18.30 MILES
2A	VAV-I16R_MIW01A00	Mill Creek	5.35 MILES
2A	VAV-I16R_MIW02A10	Mill Creek	5.99 MILES
2A	VAV-I17R_PDS01A02	S.F. Pads Creek	35.95 MILES
2A	VAV-I28R_XRQ01A02	Opossum Hollow	2.09 MILES
2A	VAV-I29R_CFP01A00	Calfpasture River	4.15 MILES
2A	VAV-I29R_CFP02A00	Calfpasture River	9.53 MILES
2A	VAV-I29R_XEG01A02	Dowell's Draft	2.08 MILES
2A	VAV-I30R_CFP01A00	Calfpasture River	4.53 MILES
2A	VAV-I30R_CFP02A00	Calfpasture River	19.85 MILES
2A	VAV-I30R_DDY01A06	Daddy Run	3.94 MILES
2A	VAV-I30R_LIL01A02	Little Mill Creek	5.23 MILES
2A	VAV-I30R_MIT01A02	Mill Creek	2.08 MILES
2A	VAV-I30R_MIT02A10	Mill Creek	20.23 MILES
2A	VAV-I31R_BKN01A02	Black Run	1.86 MILES
2A	VAV-I31R_BRT01A00	Brattons Run	7.51 MILES
2A	VAV-I31R_BRT02A02	Brattons Run	2.41 MILES
2A	VAV-I31R_BRT03A02	Brattons Run	2.00 MILES
2A	VAV-I31R_XBR01A12	X-trib to Black Run	1.09 MILES
2A	VAV-I32R_LCF02A00	Little Calfpasture River	10.37 MILES
2A	VAV-I33R_GIM01A12	Gilmer Creek	5.45 MILES
2A	VAV-I33R_MRY01A00	Maury River	3.63 MILES
2A	VAV-I33R_MRY01B10	Maury River	9.36 MILES
2A	VAV-I33R_MRY02A04	Maury River	6.22 MILES
2A	VAV-I34R_XQO01A04	Poor Creek X-Trib	3.03 MILES
2A	VAV-I35R_MRY01A00	Maury River	6.06 MILES
2A	VAV-I35R_MRY02A00	Maury River	1.59 MILES

Overall Category	305(b) ID	Waterbody Name	Size
2A	VAV-I36R_BBC01A02	Big Bend Creek	2.01 MILES
2A	VAV-I36R_BMC01A00	Big Mary's Creek	5.42 MILES
2A	VAV-I36R_ISH01A00	Irish Creek	8.53 MILES
2A	VAV-I36R_LIJ01A02	Little Marys Creek	3.29 MILES
2A	VAV-I36R_MLC01A14	Marl Creek at Steeles Tavern	1.66 MILES
2A	VAV-I36R_SMR02A02	Saint Mary's River	1.95 MILES
2A	VAV-I36R_SMR03A10	Saint Mary's River	3.74 MILES
2A	VAV-I36R_STH01A00	South River	5.60 MILES
2A	VAV-I36R_STH03A12	South River	6.33 MILES
2A	VAV-I37R_BNR01A02	Bennetts Run	2.32 MILES
2A	VAV-I37R_PCR01A02	Poplar Cove Run	2.64 MILES
2A	VAV-I38L_XMW01A04	Lake Robertson	24.88 ACRES
2A	VAV-I38R_XXF01A16	Spring Branch to North Fork Buffalo Creek.	0.13 MILES
2A	VAW-H01R_HUO02A02	Hunting Creek	3.97 MILES
2A	VAW-H01R_SNO01A02	Snow Creek	0.62 MILES
2A	VAW-H01R_SNO02A02	Snow Creek	2.58 MILES
2A	VAW-H01R_TRR01A02	Terrapin Creek	2.31 MILES
2A	VAW-I03R_HKY01A12	Hickory Lick	2.14 MILES
2A	VAW-I04R_JKS03A00	Jackson River	5.15 MILES
2A	VAW-I04R_JKS04A00	Jackson River	2.78 MILES
2A	VAW-I04R_JKS04B14	Jackson River	3.84 MILES
2A	VAW-I04R_JKS05A02	Jackson River	6.34 MILES
2A	VAW-I06R_SSC01A02	Sweet Springs Creek	2.98 MILES
2A	VAW-I07R_DNP01A00	Dunlap Creek	2.59 MILES
2A	VAW-I07R_DNP02A00	Dunlap Creek	3.78 MILES
2A	VAW-I07R_DNP05A06	Dunlap Creek	9.07 MILES
2A	VAW-I07R_JED01A02	Jerrys Run	6.72 MILES
2A	VAW-I07R_JED02A02	Jerrys Run	3.79 MILES
2A	VAW-I08R_OGL01A00	Ogle Creek	1.38 MILES
2A	VAW-I08R_OGL02A02	Ogle Creek	10.42 MILES
2A	VAW-I09L_SMH01A02	Smith Creek Reservoir (Clifton Forge)	10.88 ACRES
2A	VAW-I09R_KAR01A00	Karnes Creek	1.40 MILES
2A	VAW-I09R_KAR02A02	Karnes Creek	6.68 MILES
2A	VAW-I10R_POT02A02	Potts Creek	3.98 MILES
2A	VAW-I11R_CSR01A02	Cast Steel Run & Tributaries	12.58 MILES
2A	VAW-I11R_LLB02A02	Laurel Branch	3.10 MILES
2A	VAW-I11R_POT01A00	Potts Creek	5.09 MILES
2A	VAW-I11R_POT02A02	Potts Creek	2.19 MILES
2A	VAW-I11R_POT02B14	Potts Creek	4.17 MILES
2A	VAW-I17R_BSB01A08	Blue Suck Branch	3.58 MILES
2A	VAW-I17R_DWN01A08	Downy Branch	2.86 MILES
2A	VAW-I17R_SPN02A08	Simpson Creek	5.84 MILES
2A	VAW-I17R_SPO01A08	North Branch Simpson Creek	3.93 MILES
2A	VAW-I18R_BKL01A02	Black Lick Creek	5.30 MILES
2A	VAW-I18R_MIV01A00	Mill Creek	5.78 MILES
2A	VAW-I18R_TRB01A02	Trout Run	2.46 MILES
2A	VAW-I19R_CRG03A02	Craig Creek	5.94 MILES
2A	VAW-I19R_CRG04A02	Craig Creek	12.64 MILES
2A	VAW-I19R_TTC01A02	Trout Creek & Tributaries	14.28 MILES
2A	VAW-I19R_ZAF01A12	Craig Creek, UT (ZAF)	0.69 MILES
2A	VAW-I20R_MEO01A00	Meadow Creek	2.59 MILES
2A	VAW-I21R_DCK01A06	Dicks Creek	4.01 MILES
2A	VAW-I21R_GRN01A02	Grannys Creek & Tributaries	10.99 MILES
2A	VAW-I21R_JOB01A00	Johns Creek	2.20 MILES
2A	VAW-I21R_JOB02A02	Johns Creek	8.07 MILES
2A	VAW-I22R_MIU01A02	Mill Creek	1.89 MILES
2A	VAW-I22R_PTR01B06	Patterson Creek	7.78 MILES
2A	VAW-I22R_SNM01A02	Stony Run	5.14 MILES
2A	VAW-I22R_ZAG01A12	Patterson Creek, UT (ZAG)	2.97 MILES
2A	VAW-I22R_ZAH02A12	Craig Creek, UT (ZAH)	1.84 MILES
2A	VAW-I23R_BAR01A02	Barbours Creek	6.55 MILES
2A	VAW-I25R_CAT01A00	Catawba Creek	7.48 MILES
2A	VAW-I25R_CAT02A00	Catawba Creek	4.23 MILES
2A	VAW-I25R_HAM01A02	Haymaker Branch	1.36 MILES
2A	VAW-I25R_LTQ01A04	Little Catawba Creek	4.53 MILES
2A	VAW-I27R_JES01A00	Jennings Creek	0.62 MILES
2A	VAW-I27R_JES01A08	Jennings Creek	3.89 MILES
2A	VAW-I27R_JES02A08	Jennings Creek	9.42 MILES
2A	VAW-I27R_NRT01A02	North Creek	3.08 MILES
2A	VAW-I27R_NRT02A08	North Creek	4.05 MILES
2A	VAW-I27R_XRO01A12	James River, UT (XRO)	2.21 MILES
2B	VAP-G01R_FAC01A00	Falling Creek	3.14 MILES
2B	VAP-G01R_GRK01A12	Grindall Creek	4.65 MILES
2B	VAP-G01R_XAQ01A10	Falling Creek, UT	0.54 MILES
2B	VAP-G01R_XAY01A06	James River, UT	0.23 MILES
2B	VAP-G01R_XBG01A14	XBG - Goode Creek, UT	0.48 MILES
2B	VAP-G01R_XBZ01A14	XBZ - Falling Creek, UT	2.89 MILES
2B	VAP-G01R_XCI01A16	XCI - UT to XFU (Pocoshock Creek, UT)	0.30 MILES
2B	VAP-G01R_XDA01A12	Falling Creek	2.42 MILES
2B	VAP-G01R_XYJ01A06	James River, UT	0.22 MILES
2B	VAP-G01R_XYK01A06	James River, UT	0.08 MILES
2B	VAP-G01R_XYL01A06	XYL - James River, UT	0.36 MILES
2B	VAP-G01R_XYS01A12	XYS - UT to XNU (James River, UT)	0.33 MILES
2B	VAP-G01R_ZZZ01A14	Unsegmented rivers in G01	33.86 MILES
2B	VAP-G01R_ZZZ01B14	Unsegmented rivers in G01	73.56 MILES
2B	VAP-G01R_ZZZ01C14	Unsegmented rivers in G01	47.04 MILES
2B	VAP-G02R_ROT02A00	Roundabout Creek	2.05 MILES
2B	VAP-G02R_SHN01A16	Shand Creek	2.01 MILES
2B	VAP-G02R_XYH01A06	XYH - James River, UT	0.87 MILES
2B	VAP-G02R_ZZZ01A14	Unsegmented rivers in G02	31.05 MILES
2B	VAP-G02R_ZZZ01B14	Unsegmented rivers in G02	43.59 MILES
2B	VAP-G02R_ZZZ03A10	Unsegmented rivers in G02	0.54 MILES
2B	VAP-G03L_ZZZ01A08	Unsegmented lakes in G03	95.50 ACRES
2B	VAP-G03R_BER01A06	West Bear Creek	0.41 MILES
2B	VAP-G03R_GLB01A00	Glebe Creek	3.21 MILES
2B	VAP-G03R_GRV01A06	Gravelly Run	0.53 MILES
2B	VAP-G03R_GUN01A00	Gunns Run and tributaries	19.75 MILES
2B	VAP-G03R_HEC01A00	Herring Creek	1.86 MILES
2B	VAP-G03R_KMG01A02	Kimages Creek	2.93 MILES
2B	VAP-G03R_PHC01A00	Parish Hill Creek	4.87 MILES
2B	VAP-G03R_PWL01A04	Powell Creek	7.62 MILES
2B	VAP-G03R_XBL01A14	XBL - Bailey Creek, UT	0.17 MILES

Overall Category	305(b) ID	Waterbody Name	Size
2B	VAP-G03R_XBM01A14	XBM - Bailey Creek, UT	0.13 MILES
2B	VAP-G03R_XGI01A06	UT to Gravelly Run	0.62 MILES
2B	VAP-G03R_XNY01A06	UT to West Bear Creek	0.19 MILES
2B	VAP-G03R_XYB01A06	UT to Cattail Creek	0.39 MILES
2B	VAP-G03R_XYN01A06	UT to Cattail Creek	0.15 MILES
2B	VAP-G03R_XYP01A06	UT to Gravelly Run	0.02 MILES
2B	VAP-G03R_ZZZ01A14	Unsegmented rivers in G03	60.54 MILES
2B	VAP-G03R_ZZZ01B14	Unsegmented rivers in G03	59.02 MILES
2B	VAP-G03R_ZZZ01C14	Unsegmented rivers in G03	17.55 MILES
2B	VAP-G03R_ZZZ01D14	Unsegmented rivers in G03	20.49 MILES
2B	VAP-G04R_ZZZ01A14	Unsegmented rivers in G04	20.98 MILES
2B	VAP-G04R_ZZZ01B14	Unsegmented rivers in G04	56.12 MILES
2B	VAP-G04R_ZZZ01C14	Unsegmented rivers in G04	52.48 MILES
2B	VAP-G04R_ZZZ01D14	Unsegmented rivers in G04	87.73 MILES
2B	VAP-G04R_ZZZ01E14	Unsegmented rivers in G04	22.93 MILES
2B	VAP-G04R_ZZZ01F14	Unsegmented rivers in G04	1.25 MILES
2B	VAP-G05R_MDT01A02	Meredith Branch	3.01 MILES
2B	VAP-G05R_XBP01A14	XBP - Chickahominy River, UT	1.85 MILES
2B	VAP-G05R_XYC01A08	Chickahominy River, UT (XYC)	2.25 MILES
2B	VAP-G05R_ZZZ01A14	Unsegmented rivers in G05	49.72 MILES
2B	VAP-G05R_ZZZ02B14	Unsegmented rivers in G05	32.40 MILES
2B	VAP-G06R_BOS01A08	Boar Swamp	3.50 MILES
2B	VAP-G06R_BRA01A14	Brandy Branch	2.14 MILES
2B	VAP-G06R_CHK03A02	Chickahominy River	2.33 MILES
2B	VAP-G06R_CNS01A02	Canal Swamp	2.97 MILES
2B	VAP-G06R_CPS01A02	Crumps Swamp	4.61 MILES
2B	VAP-G06R_DER01A04	Deep Run	2.35 MILES
2B	VAP-G06R_HIG01A02	Higgins Swamp	3.02 MILES
2B	VAP-G06R_HRN01A02	Horse Swamp Creek	2.81 MILES
2B	VAP-G06R_POS01A00	Possum Run	4.86 MILES
2B	VAP-G06R_TIS01A00	Toe Ink Swamp	0.96 MILES
2B	VAP-G06R_TIS02A02	Toe Ink Swamp	2.58 MILES
2B	VAP-G06R_WOS02A02	White Oak Swamp	3.48 MILES
2B	VAP-G06R_WSC01A04	White Oak Swamp Creek	3.81 MILES
2B	VAP-G06R_XBT01A16	XBT - Beaverdam Creek, UT	1.42 MILES
2B	VAP-G06R_XBW01A16	XBW - Possum Run, UT	0.24 MILES
2B	VAP-G06R_XCH01A16	XCH - Chickahominy River, UT	1.50 MILES
2B	VAP-G06R_XDM01A04	Chickahominy River, UT	2.27 MILES
2B	VAP-G06R_XTE01A02	Chickahominy River, UT	2.34 MILES
2B	VAP-G06R_XTF01A02	Chickahominy River, UT	4.34 MILES
2B	VAP-G06R_XVN01A02	UT to Toe Ink Swamp	2.76 MILES
2B	VAP-G06R_XVS01A02	Chickahominy River, UT	2.88 MILES
2B	VAP-G06R_XVT01A06	XVT - Chickahominy River, UT (aka Tuckers Branch)	2.62 MILES
2B	VAP-G06R_XVU01A06	Chickahominy River, UT	1.59 MILES
2B	VAP-G06R_XZS01A10	White Oak Swamp, UT	1.44 MILES
2B	VAP-G06R_ZZZ01A14	Unsegmented rivers in G06	83.12 MILES
2B	VAP-G06R_ZZZ01B14	Unsegmented rivers in G06	46.15 MILES
2B	VAP-G06R_ZZZ01C14	Unsegmented rivers in G06	46.91 MILES
2B	VAP-G06R_ZZZ02A10	Unsegmented rivers in G06	43.18 MILES
2B	VAP-G07R_BRL01A00	Bradley Run	3.51 MILES
2B	VAP-G07R_CNR02A00	Collins Run	1.02 MILES
2B	VAP-G07R_DKM01A10	Dockman Swamp	2.35 MILES
2B	VAP-G07R_JRN01A00	Jones Run	1.00 MILES
2B	VAP-G07R_PEL01A10	Pelham Swamp	1.34 MILES
2B	VAP-G07R_XCN01A08	Chickahominy River, UT (canal)	1.18 MILES
2B	VAP-G07R_XQA01A00	Chickahominy River, UT	2.88 MILES
2B	VAP-G07R_XTG01A02	Schiminoe Creek, UT	2.72 MILES
2B	VAP-G07R_XTH01A02	Chickahominy River, UT	2.26 MILES
2B	VAP-G07R_ZZZ01A14	Unsegmented rivers in G07	66.55 MILES
2B	VAP-G07R_ZZZ01B14	Unsegmented rivers in G07	27.76 MILES
2B	VAP-G07R_ZZZ02A00	Unsegmented rivers in G07	17.10 MILES
2B	VAP-G08L_LTL01A06	Little Creek Reservoir (PWS)	943.76 ACRES
2B	VAP-G08R_MOC01A98	Morris Creek	6.93 MILES
2B	VAP-G08R_XAF01A12	XAF - Morris Creek, UT	1.06 MILES
2B	VAP-G08R_ZZZ01A14	Unsegmented rivers in G08	44.46 MILES
2B	VAP-G08R_ZZZ01B14	Unsegmented rivers in G08	40.41 MILES
2B	VAP-G08R_ZZZ01C14	Unsegmented rivers in G08	88.42 MILES
2B	VAP-G08R_ZZZ01D14	Unsegmented rivers in G08	126.10 MILES
2B	VAP-G08R_ZZZ02A10	Unsegmented rivers in G08	21.48 MILES
2B	VAP-G09R_XAI01A12	XAI - Diascund Creek, UT	2.79 MILES
2B	VAP-G09R_XAM01A12	XAM - Diascund Creek, UT	1.18 MILES
2B	VAP-G09R_ZZZ01A00	Unsegmented rivers in G09	69.29 MILES
2B	VAP-G10R_GRB01A16	Grays Creek	4.64 MILES
2B	VAP-G10R_ZZZ01A14	Unsegmented rivers in G10R	23.49 MILES
2B	VAP-G10R_ZZZ01B14	Unsegmented rivers in G10R	50.15 MILES
2B	VAP-H34R_MFK01A06	Middle Fork Kent Branch	4.78 MILES
2B	VAP-J11L_LDJ01A98	Lake Nottoway (Lee Lake)	161.07 ACRES
2B	VAP-J14L_APP01A00	Lake Chesdin	3,164.42 ACRES
2B	VAP-J15R_XBJ01A14	UT to Appomattox River, North Channel	0.22 MILES
2B	VAP-J16L_SFT02A98	Swift Creek Reservoir	1,579.46 ACRES
2B	VAP-J17R_TRO01A00	Third Branch	6.36 MILES
2B	VAT-G14R_ZZZ01B14	Great Swamp & Nuby Run	29.44 MILES
2B	VAV-H23R_PWC01A10	Powells Creek	11.29 MILES
2B	VAV-H24R_MNR01A00	Moormans River	27.72 MILES
2B	VAV-H24R_MNR02A10	Moormans River	20.72 MILES
2B	VAV-H27R_PKR01A10	Parker Branch	12.73 MILES
2B	VAV-H27R_RCH01A00	Roach River	44.20 MILES
2B	VAV-H27R_SFR02A00	Swift Run	13.61 MILES
2B	VAV-H27R_SFR03A10	Swift Run	1.82 MILES
2B	VAV-H31R_BAG01A06	Ballinger Creek	52.62 MILES
2B	VAV-H31R_RVN01A00	Rivanna River	15.34 MILES
2B	VAV-H31R_XBK01A12	X-trib to Burke Creek	0.50 MILES
2B	VAV-I01R_KLY01A02	Kelly Run	2.39 MILES
2B	VAV-I02R_XSF01A16	Scaffold Run UT	1.12 MILES
2B	VAV-I14R_CWP01A00	Cowpasture River	10.04 MILES
2B	VAV-I14R_CWP02A04	Cowpasture River	16.62 MILES
2B	VAV-I14R_MRE01A00	Mare Run	7.03 MILES
2B	VAV-I14R_PNR01A02	Panther Run	2.16 MILES
2B	VAV-I14R_TMP01A02	Thompson Creek	1.52 MILES
2B	VAV-I14R_TMP02A10	Thompson Creek	1.63 MILES
2B	VAV-I16R_CWP01A00	Cowpasture River	25.37 MILES
2B	VAV-I28R_BLF01A02	Belfast Creek	1.45 MILES

Overall Category	305(b) ID	Waterbody Name	Size
2B	VAV-I28R_JMS01A00	James River	6.72 MILES
2B	VAW-I03L_JKS01A02	Lake Moomaw (Jackson River)	763.44 ACRES
2B	VAW-I03L_JKS02A02	Lake Moomaw (Jackson River)	1,328.13 ACRES
2B	VAW-I03L_JKS03A02	Lake Moomaw (Jackson River)	310.53 ACRES
2B	VAW-I09R_PMC01A02	Pounding Mill Creek	6.22 MILES
2B	VAW-I17R_CWP01A00	Cowpasture River	6.65 MILES
2B	VAW-I17R_CWP02A08	Cowpasture River	6.18 MILES
2B	VAW-I18R_JMS01A00	James River	7.77 MILES
2B	VAW-I24R_JMS01A00	James River	5.11 MILES
2B	VAW-I24R_JMS01A10	James River	15.40 MILES
2B	VAW-I25R_CAT05A02	Catawba Creek	5.17 MILES
2B	VAW-I25R_CAT06A08	Catawba Creek	4.49 MILES
2C	VAC-H21R_NTH01A00	North River	3.28 MILES
2C	VAC-H21R_SLT02B12	Slate River	6.80 MILES
2C	VAC-H36R_WLS02A06	Willis River	6.78 MILES
2C	VAC-J03R_LIT01A02	Little Sandy Creek	2.94 MILES
2C	VAP-G04E_ZZZ02A06	Unsegmented estuaries in G04	0.01 SQUARE MILES
2C	VAP-G04R_WRD01A00	Wards Creek	8.10 MILES
2C	VAP-G08E_GOR01A06	Gordon Creek	0.20 SQUARE MILES
2C	VAP-G08E_THD01A16	Tomahund Creek	0.11 SQUARE MILES
2C	VAP-G08E_YRM01A04	Yarmouth Creek	0.12 SQUARE MILES
2C	VAP-G08E_ZZZ01A14	Unsegmented estuaries in G08	0.12 SQUARE MILES
2C	VAP-G08E_ZZZ01B14	Unsegmented estuaries in G08	0.16 SQUARE MILES
2C	VAP-G08E_ZZZ01C14	Unsegmented estuaries in G08	0.48 SQUARE MILES
2C	VAP-G08E_ZZZ01D14	Unsegmented estuaries in G08	0.43 SQUARE MILES
2C	VAP-G10E_ZZZ01A14	Unsegmented estuaries in G10E	0.02 SQUARE MILES
2C	VAP-G10E_ZZZ01B14	Unsegmented estuaries in G10E	0.48 SQUARE MILES
2C	VAP-H37R_BLG01B10	Big Lickinghole Creek	5.11 MILES
2C	VAP-H37R_BLG02A08	Big Lickinghole Creek	3.34 MILES
2C	VAP-H38R_FIN01A98	Fine Creek	10.46 MILES
2C	VAP-J17R_SFT01C98	Swift Creek	4.20 MILES
2C	VAT-G11E_ZZZ03A10	Unsegmented estuaries - Homewood Creek	0.06 SQUARE MILES
2C	VAT-G11E_ZZZ04A10	Unsegmented estuaries - Hog Island Cr	0.14 SQUARE MILES
2C	VAT-G15E_ZZZ01A00	Unsegmented estuaries in Hampton Roads Harbor	0.01 SQUARE MILES
2C	VAV-H23R_BVR02A04	Beaver Creek	4.07 MILES
2C	VAW-I09R_JKS01A00	Jackson River	3.53 MILES
2C	VAW-I09R_JKS02A00	Jackson River	1.74 MILES
2C	VAW-I09R_JKS03A00	Jackson River	4.71 MILES
3A	VAC-H02R_DEV01A02	Devils Branch	1.75 MILES
3A	VAC-H02R_HOY01A02	Horsely Creek	6.23 MILES
3A	VAC-H02R_LAD01A02	Lady Slipper Run	1.74 MILES
3A	VAC-H02R_LLC01A02	Love Lady Creek	1.44 MILES
3A	VAC-H02R_MPL01A02	Maple Creek Upper	5.27 MILES
3A	VAC-H02R_NCH01A02	Nicholson Run	2.11 MILES
3A	VAC-H02R_SWP01A02	Swapping Camp Creek	3.97 MILES
3A	VAC-H02R_WHL01A02	Wheelers Run	2.61 MILES
3A	VAC-H02R_XTJ01A02	Pedlar River, Unnamed Tributary	1.20 MILES
3A	VAC-H02R_XWM01A06	Pedlar Reservoir, Unnamed Tributary	1.10 MILES
3A	VAC-H02R_ZZZ01A00	Unsegmented Portion of Watershed H02	100.99 MILES
3A	VAC-H02R_ZZZ01B14	Unsegmented Portion of Watershed H02	39.51 MILES
3A	VAC-H02R_ZZZ02A02	Unsegmented Portion of Watershed H02 - PWS	18.27 MILES
3A	VAC-H03R_JMS10A14	Unsegmented Portion - WQS Section 11g	7.31 MILES
3A	VAC-H03R_JMS20A00	Unsegmented Portion - WQS Section 11g	6.61 MILES
3A	VAC-H03R_JMS21A02	Unsegmented Portion - WQS Section 11h	65.71 MILES
3A	VAC-H03R_XTK01A02	Judith Creek, Unnamed Tributary	1.10 MILES
3A	VAC-H03R_ZZZ01A00	Unsegmented Portion of Watershed H03	81.75 MILES
3A	VAC-H03R_ZZZ02A14	Unsegmented Portion of Watershed H03	38.28 MILES
3A	VAC-H03R_ZZZ03A14	Unsegmented Portion of Watershed H03	21.22 MILES
3A	VAC-H04R_ZZZ01A00	Unsegmented Portion of Watershed H04	125.09 MILES
3A	VAC-H05R_CVB01A02	Carters Creek	2.89 MILES
3A	VAC-H05R_ZZZ01A00	Unsegmented Portion of Watershed H05	43.12 MILES
3A	VAC-H05R_ZZZ01B14	Unsegmented Portion of H05	40.62 MILES
3A	VAC-H05R_ZZZ01C14	Unsegmented Portion of H05	103.94 MILES
3A	VAC-H05R_ZZZ01D14	Unsegmented Portion of H05	51.49 MILES
3A	VAC-H05R_ZZZ01E14	Unsegmented Portion of H05	82.37 MILES
3A	VAC-H05R_ZZZ02A02	Unsegmented Portion of Watershed H05	46.00 MILES
3A	VAC-H06R_ZZZ01A00	Unsegmented Portion of Watershed H06	128.17 MILES
3A	VAC-H07R_ZZZ01A00	Unsegmented Portion of Watershed H07	69.99 MILES
3A	VAC-H08R_ZZZ01A00	Unsegmented Portion of Watershed H08	61.42 MILES
3A	VAC-H08R_ZZZ01B14	Unsegmented Portion of Watershed H08	110.74 MILES
3A	VAC-H11R_BUF20A00	Buffalo River Tributaries	32.47 MILES
3A	VAC-H11R_NFT01A02	North Fork Thrashers Creek	2.59 MILES
3A	VAC-H11R_RKY01A06	Rocky Branch	1.25 MILES
3A	VAC-H11R_ZZZ01A00	Unsegmented Portion of Watershed H11	79.15 MILES
3A	VAC-H11R_ZZZ01B14	Unsegmented Portion of Watershed H11R	108.79 MILES
3A	VAC-H12R_XMJ01A00	Williams Creek, Unnamed Tributary	1.21 MILES
3A	VAC-H12R_ZZZ01A00	Unsegmented Portion of Watershed H12	31.52 MILES
3A	VAC-H12R_ZZZ01B14	Unsegmented Portion of Watershed H12	77.03 MILES
3A	VAC-H12R_ZZZ01C14	Unsegmented Portion of H12R	15.63 MILES
3A	VAC-H14R_ZZZ01A00	Unsegmented Portion of Watershed H14	69.67 MILES
3A	VAC-H14R_ZZZ01B14	Unsegmented Portion of Watershed H14R	115.77 MILES
3A	VAC-H17R_LTD01A02	Little Georgia Creek	6.16 MILES
3A	VAC-H17R_ZZZ01A00	Unsegmented waters in H17	76.80 MILES
3A	VAC-H17R_ZZZ01B14	Unsegmented Portion of Watershed H17R	55.07 MILES
3A	VAC-H17R_ZZZ01C14	Unsegmented Portion of Watershed H17R	53.12 MILES

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3A	VAC-H20R_ZZZ01A00	Unsegmented Portion of Watershed H20 - PWS	35.86 MILES
3A	VAC-H20R_ZZZ01B14	Unsegmented Portion of watershed H20R - PWS	9.46 MILES
3A	VAC-H20R_ZZZ02A00	Unsegmented Portion of Watershed H20	101.06 MILES
3A	VAC-H20R_ZZZ02A14	Unsegmented Portion of watershed H20R	65.86 MILES
3A	VAC-H21R_FLG01A04	Flaggy Branch	0.48 MILES
3A	VAC-H21R_TBM01A00	Troublesome Creek	0.90 MILES
3A	VAC-H21R_ZZZ01A00	Unsegmented Portion of Watershed H21	83.25 MILES
3A	VAC-H21R_ZZZ01B14	Unsegmented Portion of Watershed H21R	68.39 MILES
3A	VAC-H21R_ZZZ01C14	Unsegmented Portion of Watershed H21R	54.57 MILES
3A	VAC-H21R_ZZZ01D14	Unsegmented Portion of Watershed H21R	79.18 MILES
3A	VAC-H21R_ZZZ02A00	Unsegmented Portion of Watershed H21 - PWS	15.92 MILES
3A	VAC-H22R_ZZZ01A00	Unsegmented Portion of Watershed H22	79.36 MILES
3A	VAC-H22R_ZZZ01B14	Unsegmented Portion of Watershed H22R	91.29 MILES
3A	VAC-H22R_ZZZ01C14	Unsegmented Portion of Watershed H22R	38.21 MILES
3A	VAC-H35R_ZZZ01A00	Unsegmented Portion of Watershed H35	79.89 MILES
3A	VAC-H35R_ZZZ01B14	Unsegmented Portion of Watershed H35R	72.22 MILES
3A	VAC-H35R_ZZZ01C14	Unsegmented Portion of Watershed H35R	84.35 MILES
3A	VAC-H36L_BRC01A06	Bear Creek Lake	41.11 ACRES
3A	VAC-H36R_ZZZ01A00	Unsegmented Portion of Watershed H36	104.13 MILES
3A	VAC-H36R_ZZZ01B14	Unsegmented Portion of Watershed H36R	59.86 MILES
3A	VAC-H36R_ZZZ01C10	Unsegmented Portion of Watershed H36	10.15 MILES
3A	VAC-H36R_ZZZ01D14	Unsegmented Portion of Watershed H36R	38.36 MILES
3A	VAC-H36R_ZZZ01E14	Unsegmented Portion of Watershed H36R	41.13 MILES
3A	VAC-H36R_ZZZ01F14	Unsegmented Portion of Watershed H36R	94.96 MILES
3A	VAC-H36R_ZZZ02C14	Unsegmented Portion of Watershed H36R	15.92 MILES
3A	VAC-H36R_ZZZ03C14	Unsegmented Portion of Watershed H36R	31.89 MILES
3A	VAC-J01R_BDL01A04	Bad Luck Branch	3.58 MILES
3A	VAC-J01R_DRC01A04	Dry Creek	4.54 MILES
3A	VAC-J01R_HOL01A04	Holiday Creek	0.90 MILES
3A	VAC-J01R_ZZZ01A02	Unsegmented Portion of Watershed J01	63.42 MILES
3A	VAC-J01R_ZZZ01B14	Unsegmented Portion of Watershed J01	86.88 MILES
3A	VAC-J01R_ZZZ01C14	Unsegmented Portion of Watershed J01	72.27 MILES
3A	VAC-J01R_ZZZ01D14	Unsegmented Portion of Watershed J01	51.28 MILES
3A	VAC-J01R_ZZZ01E14	Unsegmented Portion of Watershed J01	85.64 MILES
3A	VAC-J01R_ZZZ01F14	Unsegmented Portion of Watershed J01	22.30 MILES
3A	VAC-J01R_ZZZ02A00	Unsegmented Portion of Watershed J01 - PWS	29.03 MILES
3A	VAC-J02R_LTN01A04	Little Buffalo Creek	2.08 MILES
3A	VAC-J02R_MUC01A04	Mud Creek	1.72 MILES
3A	VAC-J02R_ZZZ01A00	Unsegmented Portion of Watershed J02	124.66 MILES
3A	VAC-J02R_ZZZ01B14	Unsegmented Portion of Watershed J02	80.52 MILES
3A	VAC-J02R_ZZZ01C14	Unsegmented Portion of Watershed J02	84.42 MILES
3A	VAC-J03R_MBN01A02	Marrowbone Creek	3.64 MILES
3A	VAC-J03R_SNN01A06	North Branch Sandy River	3.66 MILES
3A	VAC-J03R_ZZZ01A02	Unsegmented Portion of Watershed J03	85.35 MILES
3A	VAC-J04R_BSR01A98	Bush River	5.76 MILES
3A	VAC-J04R_MLS01A02	Millers Creek	2.51 MILES
3A	VAC-J04R_XQJ01A00	Bush River, Unnamed Tributary	1.45 MILES
3A	VAC-J04R_ZZZ01A00	Unsegmented Portion of Watershed J04	41.79 MILES
3A	VAC-J04R_ZZZ01B14	Unsegmented Portion of Watershed J04R	41.82 MILES
3A	VAC-J04R_ZZZ01C14	Unsegmented Portion of Watershed J04	81.54 MILES
3A	VAC-J05R_ZZZ01A00	Unsegmented Portion of Watershed J05	99.63 MILES
3A	VAC-J06R_DAW01A04	Dawsons Creek	4.77 MILES
3A	VAC-J06R_LGU01A04	Little Guinea Creek	6.41 MILES
3A	VAC-J06R_ZZZ01A00	Unsegmented Portion of Watershed J06	89.28 MILES
3A	VAC-J06R_ZZZ01B14	Unsegmented Portion of Watershed J06R	50.45 MILES
3A	VAC-J06R_ZZZ01C14	Unsegmented Portion of Watershed J)^	91.89 MILES
3A	VAC-J06R_ZZZ01D14	Unsegmented Portion of Watershed J06	54.70 MILES
3A	VAC-J06R_ZZZ01E14	Unsegmented Portion of Watershed J06	44.95 MILES
3A	VAC-J06R_ZZZ01F14	Unsegmented Portion of Watershed J06	27.29 MILES
3A	VAP-H33R_DCR01A02	Deep Creek	5.91 MILES
3A	VAP-H33R_DCR01B10	Deep Creek	11.04 MILES
3A	VAP-H33R_DCR03A98	Deep Creek	2.74 MILES
3A	VAP-H33R_MUY01A00	Muddy Creek	3.97 MILES
3A	VAP-H33R_MUY01B00	Muddy Creek	3.58 MILES
3A	VAP-H33R_MXM01A00	Maxey Mill Creek	6.34 MILES
3A	VAP-H33R_XGB01A00	James River, UT	1.74 MILES
3A	VAP-H33R_ZZZ01A14	Unsegmented Rivers in H33	44.75 MILES
3A	VAP-H33R_ZZZ01B14	Unsegmented Rivers in H33	108.58 MILES
3A	VAP-H33R_ZZZ01C14	Unsegmented Rivers in H33	54.06 MILES
3A	VAP-H33R_ZZZ01D14	Unsegmented Rivers in H33	128.57 MILES
3A	VAP-H33R_ZZZ01E14	Unsegmented Rivers in H33	37.17 MILES
3A	VAP-H33R_ZZZ01F14	Unsegmented Rivers in H33	31.54 MILES
3A	VAP-H34R_EBR01A08	East Branch	4.24 MILES
3A	VAP-H34R_KBR01A08	Kent Branch	1.80 MILES
3A	VAP-H34R_ZZZ01A14	Unsegmented Rivers in H34R	108.19 MILES
3A	VAP-H34R_ZZZ01B14	Unsegmented Rivers in H34R	39.20 MILES

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3A	VAP-H34R_ZZZ01C14	Unsegmented Rivers in H34R	84.01 MILES
3A	VAP-H37R_XYQ01A08	UT to Big Lickinghole Creek	2.69 MILES
3A	VAP-H37R_ZZZ01A14	Unsegmented Rivers in H37	80.99 MILES
3A	VAP-H37R_ZZZ01B14	Unsegmented Rivers in H37	61.74 MILES
3A	VAP-H38R_XVW01A04	UT to UT XVV	0.22 MILES
3A	VAP-H38R_ZZZ01A00	Unsegmented Rivers in H38	22.60 MILES
3A	VAP-H38R_ZZZ02A14	Unsegmented Rivers in H38R	33.57 MILES
3A	VAP-H38R_ZZZ02B14	Unsegmented Rivers in H38R	91.20 MILES
3A	VAP-H38R_ZZZ02C14	Unsegmented Rivers in H38R	61.78 MILES
3A	VAP-H39L_XXC01A06	Cherokee Lake (UT to James River)	11.53 ACRES
3A	VAP-H39R_ADN01A02	Anderson Creek	2.31 MILES
3A	VAP-H39R_CBN01A04	Cabin Branch	2.04 MILES
3A	VAP-H39R_DOV01A00	Dover Creek	4.76 MILES
3A	VAP-H39R_DOV01B00	Dover Creek	0.93 MILES
3A	VAP-H39R_FLT01A04	Flat Branch	2.28 MILES
3A	VAP-H39R_ROB01A08	Roberts Branch	2.34 MILES
3A	VAP-H39R_XCZ01A04	UT to Tuckahoe Creek	2.62 MILES
3A	VAP-H39R_XUQ01A04	UT to Tuckahoe Creek (aka Harding Branch)	2.80 MILES
3A	VAP-H39R_XUS01A04	UT to Little Tuckahoe Creek	1.94 MILES
3A	VAP-H39R_XXC01A08	UT to James River	0.24 MILES
3A	VAP-H39R_XYV01A10	James River, UT	0.63 MILES
3A	VAP-H39R_XZH01A10	Bernards Creek, UT	4.02 MILES
3A	VAP-H39R_ZZZ01A14	Unsegmented Rivers in H39	89.27 MILES
3A	VAP-H39R_ZZZ01B14	Unsegmented Rivers in H39	88.26 MILES
3A	VAP-H39R_ZZZ01C14	Unsegmented Rivers in H39	66.48 MILES
3A	VAP-H39R_ZZZ01D14	Unsegmented Rivers in H39	75.66 MILES
3A	VAP-H39R_ZZZ02A00	Unsegmented Rivers in H39	26.98 MILES
3A	VAP-J07R_FGT01A00	Fighting Creek	5.23 MILES
3A	VAP-J07R_LBC01A00	Little Bent Creek	2.18 MILES
3A	VAP-J07R_SKP01A00	Skippers Creek	3.05 MILES
3A	VAP-J07R_XPY01A00	Appomattox River, UT	2.80 MILES
3A	VAP-J07R_ZZZ01A14	Unsegmented rivers in J07	127.62 MILES
3A	VAP-J07R_ZZZ01B14	Unsegmented rivers in J07	47.75 MILES
3A	VAP-J07R_ZZZ01C14	Unsegmented rivers in J07	117.43 MILES
3A	VAP-J08R_ZZZ01A14	Unsegmented rivers in J08	86.95 MILES
3A	VAP-J08R_ZZZ01B14	Unsegmented rivers in J08	103.62 MILES
3A	VAP-J08R_ZZZ01C14	Unsegmented rivers in J08	97.37 MILES
3A	VAP-J09R_ZZZ01A00	Unsegmented rivers in J09	52.15 MILES
3A	VAP-J10R_ZZZ01A00	Unsegmented rivers in J10	140.60 MILES
3A	VAP-J11R_DPC02B10	Deep Creek	8.82 MILES
3A	VAP-J11R_NBK01A00	North Buckskin Creek	3.70 MILES
3A	VAP-J11R_SBC01A00	South Buckskin Creek	1.18 MILES
3A	VAP-J11R_WET01A00	West Creek	3.46 MILES
3A	VAP-J11R_XGP01A00	Deep Creek, UT	3.63 MILES
3A	VAP-J11R_ZZZ01A14	Unsegmented rivers in J11	124.54 MILES
3A	VAP-J11R_ZZZ01B14	Unsegmented rivers in J11	81.20 MILES
3A	VAP-J11R_ZZZ01C14	Unsegmented rivers in J11	112.96 MILES
3A	VAP-J11R_ZZZ01D14	Unsegmented rivers in J11	71.02 MILES
3A	VAP-J11R_ZZZ01E14	Unsegmented rivers in J11	72.98 MILES
3A	VAP-J12R_BUR01A04	Burton Creek	2.27 MILES
3A	VAP-J12R_LNG01A04	Long Branch	4.86 MILES
3A	VAP-J12R_SUC01A00	Surline Creek	1.78 MILES
3A	VAP-J12R_WPK01A00	Winterpock Creek	10.47 MILES
3A	VAP-J12R_XTY01A04	UT to Winticomack Creek	0.96 MILES
3A	VAP-J12R_XWB01A04	UT to Winticomack Creek (Long Branch)	3.94 MILES
3A	VAP-J12R_ZZZ01A14	Unsegmented rivers in J12	83.97 MILES
3A	VAP-J12R_ZZZ01B14	Unsegmented rivers in J12	22.53 MILES
3A	VAP-J12R_ZZZ01C14	Unsegmented rivers in J12	18.38 MILES
3A	VAP-J12R_ZZZ02A14	Unsegmented rivers in J12	16.03 MILES
3A	VAP-J12R_ZZZ02B14	Unsegmented rivers in J12	18.07 MILES
3A	VAP-J13R_ZZZ01A00	Unsegmented rivers in J13	149.66 MILES
3A	VAP-J14R_ZZZ01A14	Unsegmented rivers in J14	26.42 MILES
3A	VAP-J14R_ZZZ01B14	Unsegmented rivers in J14	33.80 MILES
3A	VAP-J15R_ZZZ01A00	Unsegmented rivers in J15	61.27 MILES
3A	VAP-J15R_ZZZ02A02	Unsegmented rivers in J15	38.70 MILES
3A	VAP-J16R_HEP01A04	Horsepen Creek	3.57 MILES
3A	VAP-J16R_ZZZ01A00	Unsegmented rivers in J16	62.50 MILES
3A	VAP-J16R_ZZZ02A00	Unsegmented rivers in J16	93.93 MILES
3A	VAP-J17R_FST01A00	First Branch	4.66 MILES
3A	VAP-J17R_REY01A10	Reedy Branch	3.44 MILES
3A	VAP-J17R_RTA01A08	Rita Branch	4.74 MILES
3A	VAP-J17R_SFT01D06	Swift Creek	2.44 MILES
3A	VAP-J17R_XZG01A10	UT to Swift Creek	3.37 MILES
3A	VAP-J17R_ZZZ01A00	Unsegmented rivers in J17	56.28 MILES
3A	VAP-J17R_ZZZ02A14	Unsegmented rivers in J17	15.39 MILES
3A	VAP-J17R_ZZZ02B14	Unsegmented rivers in J17	73.74 MILES
3A	VAP-J17R_ZZZ02C14	Unsegmented rivers in J17	63.05 MILES
3A	VAT-G11R_CUR01A06	Curtis Run to Lee Hall Reservoir (PWS)	1.66 MILES
3A	VAT-G11R_WWK01A08	Warwick River	0.65 MILES
3A	VAT-G11R_ZZZ01A00	Unsegmented rivers in G11R (not PWS)	432.06 MILES
3A	VAT-G12R_CHN01A00	Cohoon Creek (PWS)	18.21 MILES
3A	VAT-G12R_ZZZ01A00	Unsegmented rivers in G12R (PWS)	76.00 MILES
3A	VAT-G13R_SGL01A06	Shingle Creek	5.68 MILES
3A	VAT-G13R_ZZZ01A00	Unsegmented rivers in G13R	165.36 MILES
3A	VAT-G14R_ZZZ01A00	Unsegmented rivers in G14R (PWS)	62.20 MILES
3A	VAT-G15R_EBE01A00	Eastern Branch, Elizabeth R. - Riverine	47.06 MILES
3A	VAT-G15R_LAF01A00	Lafayette River, Elizabeth R. - Riverine	11.11 MILES
3A	VAT-G15R_SBE01A00	Southern Branch, Elizabeth R. - Riverine	128.45 MILES
3A	VAT-G15R_WBE01A00	Western Branch, Elizabeth R. - Riverine	75.68 MILES
3A	VAT-G15R_ZZZ01A06	Unsegmented rivers in G15R - Hampton Roads area	58.97 MILES
3A	VAV-H09R_HAP01A10	Harpers Creek	5.43 MILES
3A	VAV-H09R_MIP01A10	Mill Creek	3.18 MILES
3A	VAV-H09R_XTN01A10	North Fork Tye River X-trib	6.52 MILES
3A	VAV-H09R_ZZZ01A00	Unsegmented x-tribs to Campbell Creek in VAV-H09R	7.31 MILES
3A	VAV-H09R_ZZZ02A10	Unsegmented x-tribs in VAV-H09R - JM27	50.11 MILES

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3A	VAV-H09R_ZZZ02B10	Unsegmented x-tribs in VAV-H09R - JM24	27.97 MILES
3A	VAV-H09R_ZZZ02C10	Unsegmented x-tribs in VAV-H09R - JM22	57.38 MILES
3A	VAV-H09R_ZZZ02D10	Unsegmented x-tribs in VAV-H09R - JM23	63.82 MILES
3A	VAV-H09R_ZZZ03A10	Unsegmented x-tribs to Black Creek in VAV-H09R	12.46 MILES
3A	VAV-H09R_ZZZ04A10	Unsegmented x-tribs to Coxs Creek in VAV-H09R	9.56 MILES
3A	VAV-H10R_CWL01A10	Crawleys Creek	3.59 MILES
3A	VAV-H10R_INC01A00	Indian Creek	25.83 MILES
3A	VAV-H10R_KNG01A02	Kings Creek	2.69 MILES
3A	VAV-H10R_PNY04A10	Piney River	3.29 MILES
3A	VAV-H10R_XSV01A02	Davis Branch	1.84 MILES
3A	VAV-H10R_XSW01A02	Elk Pond Branch	2.96 MILES
3A	VAV-H10R_XSX01A02	Big Hollow	0.74 MILES
3A	VAV-H10R_ZZZ01A00	Unsegmented x-tribs in VAV-H10R - JM26	54.81 MILES
3A	VAV-H10R_ZZZ02A10	Unsegmented natural trout x-tribs in VAV-H10R	13.18 MILES
3A	VAV-H10R_ZZZ03A10	Unsegmented x-tribs in VAV-H10R - JM25	24.60 MILES
3A	VAV-H13R_ZZZ01A00	Unsegmented x-tribs to the Tye River in VAV-H13R	33.24 MILES
3A	VAV-H13R_ZZZ01B00	Unsegmented x-tribs to Rucker Run in VAV-H13R	108.38 MILES
3A	VAV-H15R_AND01A02	Anderson Creek	3.24 MILES
3A	VAV-H15R_SPC01A10	Spruce Creek	1.61 MILES
3A	VAV-H15R_WMS01A02	Williams Creek	3.73 MILES
3A	VAV-H15R_XMW01A10	Meriwether Creek	8.23 MILES
3A	VAV-H15R_XST01A10	Little Stony Creek	2.77 MILES
3A	VAV-H15R_ZZZ01A00	Unsegmented x-tribs to the S F Rockfish River in VAV-H15R	67.15 MILES
3A	VAV-H15R_ZZZ01B00	Unsegmented x-tribs to the N F Rockfish River in VAV-H15R	131.12 MILES
3A	VAV-H15R_ZZZ02A10	Unsegmented x-tribs to the SF Rockfish River in Section 10q	9.33 MILES
3A	VAV-H16R_DAV01A00	Davis Creek	34.13 MILES
3A	VAV-H16R_GRH01A00	Green Creek	58.02 MILES
3A	VAV-H16R_MYO01A00	Muddy Creek	19.09 MILES
3A	VAV-H16R_ZZZ01A00	Unsegmented x-tribs in VAV-H16R - JM41	77.10 MILES
3A	VAV-H16R_ZZZ02A10	Unsegmented x-trib in VAV-H16R in Section 10d - JM40	2.46 MILES
3A	VAV-H16R_ZZZ03A10	Unsegmented x-tribs in VAV-H16R - JM38	105.05 MILES
3A	VAV-H16R_ZZZ04A10	Unsegmented x-tribs in VAV-H16R - JM40	69.03 MILES
3A	VAV-H16R_ZZZ05A12	Cove Creek Tributaries	43.43 MILES
3A	VAV-H17R_RCL01A00	Rock Castle Creek	9.90 MILES
3A	VAV-H17R_RCL02A00	Rock Castle Creek	9.01 MILES
3A	VAV-H17R_ZZZ01B00	Unsegmented PWS x-tribs to Totier Creek	18.03 MILES
3A	VAV-H17R_ZZZ01D00	Unsegmented sections of Totier Creek x-tribs	27.92 MILES
3A	VAV-H18R_WNT01A16	Walnut Branch	1.95 MILES
3A	VAV-H18R_ZZZ01A00	Unsegmented x-tribs to the N F Hardware River in VAV-H18R	46.80 MILES
3A	VAV-H18R_ZZZ01B00	Unsegmented x-tribs to the S F Hardware River in VAV-H18R	79.88 MILES
3A	VAV-H19R_BRR01A00	Briery Creek	21.96 MILES
3A	VAV-H19R_ZZZ01A00	Unsegmented x-tribs in VAV-H19R - JM49	58.77 MILES
3A	VAV-H19R_ZZZ02A10	Unsegmented x-tribs in VAV-H19R - JM48	79.64 MILES
3A	VAV-H23R_BVR01A00	Beaver Creek	2.18 MILES
3A	VAV-H23R_DLN01A00	Dollins Creek	4.60 MILES
3A	VAV-H23R_PNG01A00	Pounding Branch	6.37 MILES
3A	VAV-H23R_PRT01A10	Parrott Branch	2.21 MILES
3A	VAV-H23R_SIN01A04	Spring Creek	0.34 MILES
3A	VAV-H23R_XRB01A02	Stony Run	4.15 MILES
3A	VAV-H23R_ZZZ01A00	Unsegmented x-tribs in VAV-H23R; Section 10 - JR01	60.26 MILES
3A	VAV-H23R_ZZZ01C00	Unsegmented PWS x-tribs to Beaver Creek in VAV-H23R	20.31 MILES
3A	VAV-H23R_ZZZ01D10	Unsegmented x-tribs in VAV-H23R; Section 10 - JR02	3.53 MILES
3A	VAV-H23R_ZZZ02A10	Unsegmented x-tribs in VAV-H23R; Section 10h - JR01	38.01 MILES
3A	VAV-H23R_ZZZ03A10	Unsegmented x-tribs in VAV-H23R; Section 10h - JR02	44.31 MILES
3A	VAV-H25R_ZZZ01A00	Unsegmented x-tribs in VAV-	82.87 MILES
3A	VAV-H26R_JMP01A12	Jumping Branch	4.32 MILES
3A	VAV-H26R_LIG01A00	Little Ivy Creek	7.85 MILES
3A	VAV-H26R_RRS03A00	Rivanna River South Fork	2.53 MILES
3A	VAV-H26R_ZZZ01A14	Unsegmented PWS x-tribs to the South Fork Rivanna Reservoir	11.06 MILES
3A	VAV-H26R_ZZZ01B00	Unsegmented x-tribs in Ivy Creek/Jumping Creek in VAV-H26R	36.69 MILES
3A	VAV-H26R_ZZZ02A14	Ivy Creek x-tribs	7.71 MILES
3A	VAV-H26R_ZZZ03A14	Rivanna River South Fork tribs	8.25 MILES
3A	VAV-H27R_FLB01A08	Flat Branch	1.86 MILES
3A	VAV-H27R_HAF01A10	Haneytown Branch	7.50 MILES
3A	VAV-H27R_MSH01A14	Marshall Creek	14.96 MILES
3A	VAV-H27R_SDY01A14	Sandy Branch	4.99 MILES
3A	VAV-H27R_TUY01A14	Turkey Run	18.65 MILES
3A	VAV-H27R_WEL01A04	Welsh Run	5.42 MILES
3A	VAV-H27R_XPY01A14	Preddy Creek UT's	48.46 MILES
3A	VAV-H27R_ZZZ01A00	Unsegmented x-tribs in VAV-H27R - JR13	36.16 MILES
3A	VAV-H27R_ZZZ01B00	Unsegmented PWS x-tribs in VAV-H27R	16.80 MILES
3A	VAV-H27R_ZZZ01C00	Unsegmented x-tribs of Swift Run in VAV-H27R (JR10)	69.91 MILES
3A	VAV-H27R_ZZZ01D10	Mutton Hollow	4.92 MILES
3A	VAV-H27R_ZZZ02A10	Unsegmented x-tribs in VAV-H27R - JR11	17.87 MILES
3A	VAV-H27R_ZZZ03A10	Unsegmented x-tribs in VAV-H27R - JR09	48.86 MILES
3A	VAV-H28R_BSC02A10	Biscuit Run	21.96 MILES
3A	VAV-H28R_XQZ01A02	Meadow Creek X-Trib	2.05 MILES
3A	VAV-H28R_XRA01A02	Cow Branch	2.47 MILES
3A	VAV-H28R_ZZZ01A00	Unsegmented x-tribs in VAV-	29.89 MILES
3A	VAV-H28R_ZZZ01B00	Unsegmented x-tribs to Moores Creek in VAV-H28R	25.85 MILES

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3A	VAV-H28R_ZZZ01C10	Unsegmented x-tribs to Moores Creek in Section 10n	2.26 MILES
3A	VAV-H29R_LJC01A12	Left Branch Lee Jones Creek	1.56 MILES
3A	VAV-H29R_RVN01A00	Rivanna River	1.68 MILES
3A	VAV-H29R_RVN02A00	Rivanna River	2.69 MILES
3A	VAV-H29R_RVN03A00	Rivanna River	2.40 MILES
3A	VAV-H29R_ZZZ01A00	Unsegmented x-tribs in Section 10 of the Rivanna River	36.98 MILES
3A	VAV-H29R_ZZZ01B00	Unsegmented PWS x-tribs to the Rivanna River in VAV-H29R	20.05 MILES
3A	VAV-H29R_ZZZ01C00	Unsegmented x-tribs to Buck Island Creek in VAV-H29R	70.33 MILES
3A	VAV-H29R_ZZZ01D00	Unsegmented PWS x-tribs to Buck Island Creek in VAV-H29R	4.98 MILES
3A	VAV-H29R_ZZZ02A10	Unsegmented x-tribs in Section 11 of the Rivanna River	6.40 MILES
3A	VAV-H29R_ZZZ03A10	Unsegmented x-tribs to Section 10m of the Rivanna River	7.20 MILES
3A	VAV-H30R_MCX01A08	North Prong of X-trib to Mechunk Creek.	3.12 MILES
3A	VAV-H30R_XGF01A00	Oliver Creek Xtrib	2.65 MILES
3A	VAV-H30R_ZZZ01A00	Unsegmented x-tribs in VAV-H30R in Section 10s	106.92 MILES
3A	VAV-H30R_ZZZ02A10	Unsegmented x-tribs in VAV-H30R in Section 11.	11.13 MILES
3A	VAV-H30R_ZZZ03A10	Unsegmented x-tribs in VAV-H30R in Section 10.	3.74 MILES
3A	VAV-H31R_WHI01A08	Headwater tributary of Able Creek near Route 649	0.34 MILES
3A	VAV-H31R_ZZZ01A00	Unsegmented x-tribs in VAV-H31R - JR22	103.18 MILES
3A	VAV-H31R_ZZZ02A10	Unsegmented x-tribs in VAV-H31R - JR19	41.81 MILES
3A	VAV-H32R_CFK02A10	Cunningham Creek North Fork	2.53 MILES
3A	VAV-H32R_CSF01A00	Cunningham Creek South Fork	5.39 MILES
3A	VAV-H32R_ZZZ01A00	Unsegmented x-trib to Cunningham Creek in VAV-H23R	10.14 MILES
3A	VAV-H32R_ZZZ01B00	Unsegmented x-tribs to the N F Cunningham Creek in VAV-H32R	17.20 MILES
3A	VAV-H32R_ZZZ01C00	Unsegmented x-tribs to the M F Cunningham Creek in VAV-H32R	23.48 MILES
3A	VAV-H32R_ZZZ01D00	Unsegmented x-tribs to the S F Cunningham Creek in VAV-H32R	22.37 MILES
3A	VAV-I01R_BOL02A10	Bolar Run	5.62 MILES
3A	VAV-I01R_CWD01A00	Cowardin Run	3.27 MILES
3A	VAV-I01R_ROR01A02	Rocky Run	2.40 MILES
3A	VAV-I01R_XSF01A02	Three Putt TS	1.32 MILES
3A	VAV-I01R_XSG01A02	Muddy Run X-Trib 1	0.90 MILES
3A	VAV-I01R_XSH01A02	Muddy Run X-Trib 2	0.36 MILES
3A	VAV-I01R_XSI01A02	Muddy Run X-Trib 3	0.90 MILES
3A	VAV-I01R_XXO01A04	Hidden Valley	1.03 MILES
3A	VAV-I01R_ZZZ01A00	Unsegmented x-tribs in VAV-I01R - JU03	101.15 MILES
3A	VAV-I01R_ZZZ02A10	Unsegmented x-tribs in VAV-I01R - JU02	127.77 MILES
3A	VAV-I01R_ZZZ03A10	Unsegmented x-tribs in VAV-I01R - JU01	133.66 MILES
3A	VAV-I02R_LYQ01A02	Long Run	2.31 MILES
3A	VAV-I02R_XRD01A02	Townsend Draft	3.37 MILES
3A	VAV-I02R_XRE01A02	Townsend Draft Tributary	1.66 MILES
3A	VAV-I02R_XRF01A02	Erwin Draft	3.02 MILES
3A	VAV-I02R_XRG01A02	Paddy Lick	1.94 MILES
3A	VAV-I02R_XSA01A02	Lick Draft	2.04 MILES
3A	VAV-I02R_XSC01A02	Campground Hollow	1.66 MILES
3A	VAV-I02R_XSD01A02	Big Turn Run and X-Tribs	5.65 MILES
3A	VAV-I02R_XXB01A02	Back Creek X-Trib	0.54 MILES
3A	VAV-I02R_XXB02A04	Back Creek X-Trib	2.88 MILES
3A	VAV-I02R_ZZZ01A00	Unsegmented x-tribs in VAV-I02R - JU07	29.73 MILES
3A	VAV-I02R_ZZZ02A10	Unsegmented x-tribs in VAV-I02R - JU05	108.19 MILES
3A	VAV-I02R_ZZZ03A10	Unsegmented x-tribs in VAV-I02R - JU04	92.84 MILES
3A	VAV-I02R_ZZZ04A14	Unsegmented x-tribs in VAV-I01R - JU06	42.42 MILES
3A	VAV-I05R_CSC01A10	Cascades Creek & Tributaries	29.99 MILES
3A	VAV-I05R_HSR01A02	Hot Springs Run	7.56 MILES
3A	VAV-I05R_ZZZ01A00	Cedar Creek Tributaries	53.03 MILES
3A	VAV-I09R_LBR01A02	Lick Block Run	2.00 MILES
3A	VAV-I09R_ZZZ01A08	Wilson Creek tributaries	34.90 MILES
3A	VAV-I09R_ZZZ02A08	Wilson Creek Upper tributaries	24.11 MILES
3A	VAV-I12R_ZZZ01A00	Unsegmented x-tribs in VAV-I12R - JU27	93.66 MILES
3A	VAV-I12R_ZZZ02A14	Unsegmented x-tribs in VAV-I12R - JU26	63.37 MILES
3A	VAV-I12R_ZZZ03A14	Unsegmented x-tribs in VAV-I12R - JU25	32.77 MILES
3A	VAV-I13R_DAR01A10	Davis Run	0.34 MILES
3A	VAV-I13R_DAR02A10	Davis Run	3.54 MILES
3A	VAV-I13R_ZZZ01A00	Unsegmented x-tribs to the Bullpasture R. in VAV-I13R JU29	122.21 MILES
3A	VAV-I13R_ZZZ02A10	Unsegmented x-tribs to the Bullpasture R in VAV-I13R JU28	151.58 MILES
3A	VAV-I14R_DUN01A08	Dry Run	1.52 MILES
3A	VAV-I14R_PTY02A04	Pheasanty Run	1.95 MILES
3A	VAV-I14R_XSJ01A02	Jordan Run X-Trib	0.60 MILES
3A	VAV-I14R_ZZZ01A00	Unsegmented x-tribs in VAV-I14R - JU32 - Guys Run	60.49 MILES
3A	VAV-I14R_ZZZ02A10	Unsegmented x-tribs in VAV-I14R - JU30	92.41 MILES
3A	VAV-I14R_ZZZ03A14	Unsegmented x-tribs in VAV-I14R - JU31	38.65 MILES
3A	VAV-I15R_ZZZ01A00	Unsegmented x-tribs in VAV-I15R	120.61 MILES
3A	VAV-I16R_LWL01A00	Little Wilson Creek	1.10 MILES
3A	VAV-I16R_XSK01A02	Hickman Draft	3.62 MILES
3A	VAV-I16R_ZZZ01A00	Unsegmented x-tribs in VAV-I16R	104.18 MILES
3A	VAV-I16R_ZZZ02A10	Little Wilson Creek X-trib	3.26 MILES
3A	VAV-I17R_PAD01A00	Pads Creek	29.68 MILES
3A	VAV-I17R_PAD02A10	Pads Creek	36.07 MILES
3A	VAV-I28R_EKE01A02	East Fork Elk Creek	0.84 MILES
3A	VAV-I28R_HOP01A02	Hopper Creek	2.57 MILES
3A	VAV-I28R_XRP01A02	Back Run	2.17 MILES
3A	VAV-I28R_XRR01A02	Snakeden Branch	2.51 MILES
3A	VAV-I28R_XRT01A02	Saw Mill Hollow	1.73 MILES
3A	VAV-I28R_XRU01A00	Locher Tract Spring	1.46 MILES

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3A	VAV-I28R_XST01A02	Back Run	1.27 MILES
3A	VAV-I28R_ZZZ01A00	Unsegmented waters in I28 (JU60)	30.08 MILES
3A	VAV-I28R_ZZZ01B00	Unsegmented x-tribs to Cedar Creek in VAV-I28R	26.78 MILES
3A	VAV-I28R_ZZZ01C00	Unsegmented x-tribs to Elk Creek in VAV-I28R	27.72 MILES
3A	VAV-I28R_ZZZ02C10	Unsegmented x-tribs to East Fork Elk Creek in VAV-I28R	9.69 MILES
3A	VAV-I29R_RDL01A02	Ramseys Draft Left Prong	2.52 MILES
3A	VAV-I29R_XRJ01A02	Tims Draft Right Fork	4.94 MILES
3A	VAV-I29R_XRK01A02	Hodges Draft	6.18 MILES
3A	VAV-I29R_XXQ01A04	Johnson Draft	1.74 MILES
3A	VAV-I29R_ZZZ01A00	Unsegmented x-tribs in VAV-I29R - JU63	83.00 MILES
3A	VAV-I29R_ZZZ02A10	Unsegmented x-tribs in VAV-I29R - JU61	52.27 MILES
3A	VAV-I29R_ZZZ03A14	Unsegmented x-tribs in VAV-I29R - JU62	30.05 MILES
3A	VAV-I30R_CAB01A04	Cabin Creek	19.95 MILES
3A	VAV-I30R_CYN01A02	Clayton Mill Creek	4.74 MILES
3A	VAV-I30R_FRI01A10	Fridley Branch	5.23 MILES
3A	VAV-I30R_XRC01A02	Clayton Mill Creek Trib	1.11 MILES
3A	VAV-I30R_XRM01A02	Back Draft	3.82 MILES
3A	VAV-I30R_ZZZ01A00	Unsegmented x-tribs in VAV-I30R - JU68	34.19 MILES
3A	VAV-I30R_ZZZ02A10	Unsegmented x-tribs in VAV-I30R - JU66	70.23 MILES
3A	VAV-I30R_ZZZ03A10	Unsegmented x-tribs in VAV-I30R - JU65	107.47 MILES
3A	VAV-I30R_ZZZ04A10	Unsegmented x-tribs in VAV-I30R - JU64	43.35 MILES
3A	VAV-I30R_ZZZ05A14	Unsegmented x-tribs in VAV-I30R - JU63	19.15 MILES
3A	VAV-I31R_ALU01A00	Alum Creek	1.88 MILES
3A	VAV-I31R_XBB01A10	Brattons Run x-trib	2.38 MILES
3A	VAV-I31R_ZZZ01A00	Unsegmented x-tribs in VAV-I31R	40.88 MILES
3A	VAV-I31R_ZZZ02A10	Unsegmented natural trout x-tribs in VAV-I31R	3.77 MILES
3A	VAV-I32R_ARC01A10	Allen Creek	3.48 MILES
3A	VAV-I32R_GLV01A10	Glover Run	2.17 MILES
3A	VAV-I32R_KSB01A10	Kelso Spring Branch	1.92 MILES
3A	VAV-I32R_SMI01A04	Smith Creek	5.76 MILES
3A	VAV-I32R_XMO02A04	Wallace Mill Stream	1.05 MILES
3A	VAV-I32R_XXG01A04	Glover Run X-Trib	0.94 MILES
3A	VAV-I32R_ZZZ01A00	Unsegmented x-tribs in VAV-I32R	75.34 MILES
3A	VAV-I32R_ZZZ02A10	Unsegmented natural trout x-tribs in VAV-I32R	120.07 MILES
3A	VAV-I33R_ZZZ01A00	Unsegmented x-tribs in VAV-I33R - JU74	21.25 MILES
3A	VAV-I33R_ZZZ01B10	Unsegmented x-tribs in VAV-I33R - JU71	24.38 MILES
3A	VAV-I33R_ZZZ01C00	Unsegmented x-tribs to Cedar Grove Branch in VAV-I33R	20.23 MILES
3A	VAV-I33R_ZZZ01D00	Unsegmented x-tribs to Kerrs Creek in of VAV-I33R - JU75	70.64 MILES
3A	VAV-I34R_ZZZ01A00	Unsegmented x-tribs in VAV-I34R - JU73	74.89 MILES
3A	VAV-I34R_ZZZ02A10	Unsegmented x-tribs in VAV-I34R - JU72	62.54 MILES
3A	VAV-I35R_XQY01A02	Sarah's Run	2.46 MILES
3A	VAV-I35R_ZZZ01A00	Unsegmented PWS x-tribs in VAV-I35R	3.35 MILES
3A	VAV-I35R_ZZZ01B00	Unsegmented PWS x-tribs of Whistle Creek in VAV-I35R	11.56 MILES
3A	VAV-I35R_ZZZ01C00	Unsegmented x-tribs to Mill Creek in VAV-I35R	18.56 MILES
3A	VAV-I35R_ZZZ01D00	Unsegmented x-tribs of the Maury River in VAV-I35R	22.16 MILES
3A	VAV-I35R_ZZZ02A14	Unsegmented x-tribs in VAV-I35R - JU76	6.82 MILES
3A	VAV-I36R_CGC01A02	Craig Creek	1.46 MILES
3A	VAV-I36R_MBK01A10	Marlbrook Creek	2.42 MILES
3A	VAV-I36R_RCK01A10	Rock Branch	1.65 MILES
3A	VAV-I36R_XNT01A10	Wigwam Creek	1.40 MILES
3A	VAV-I36R_XRW01A02	Dogwood Hollow	2.67 MILES
3A	VAV-I36R_XSH01A10	Lower UT's to Irish Creek	7.97 MILES
3A	VAV-I36R_ZZZ01A00	Unsegmented x-tribs in VAV-I36R - JU80	34.84 MILES
3A	VAV-I36R_ZZZ01B00	North Fork Spy Run	1.85 MILES
3A	VAV-I36R_ZZZ01C10	Unsegmented x-tribs in VAV-I36R - JU78	59.54 MILES
3A	VAV-I36R_ZZZ02A10	Unsegmented natural trout x-tribs in VAV-I36R	4.90 MILES
3A	VAV-I36R_ZZZ02B10	Cellar Hollow	2.17 MILES
3A	VAV-I36R_ZZZ03A14	Unsegmented x-tribs in VAV-I36R - JU79	6.98 MILES
3A	VAV-I36R_ZZZ04A14	Unsegmented x-tribs in VAV-I36R - JU77	11.72 MILES
3A	VAV-I37R_DON01A02	Davidson Run	3.18 MILES
3A	VAV-I37R_IGR01A00	Indian Gap Run	2.95 MILES
3A	VAV-I37R_LWR01A10	Lowry Run	0.21 MILES
3A	VAV-I37R_PGP01A10	Pedlar Gap Run	1.02 MILES
3A	VAV-I37R_ZZZ01A00	Unsegmented x-tribs in VAV-I37R - JU86	16.83 MILES
3A	VAV-I37R_ZZZ02A10	Unsegmented natural trout x-tribs in VAV-I37R	2.00 MILES
3A	VAV-I37R_ZZZ03A10	Unsegmented x-tribs in VAV-I37R - JU81	49.70 MILES
3A	VAV-I38R_BLA01A04	Blacks Creek	6.60 MILES
3A	VAV-I38R_HAB01A04	Hayslette Creek	3.08 MILES
3A	VAV-I38R_MOR01A10	Moores Creek	3.47 MILES
3A	VAV-I38R_MOR02A10	Moores Creek	1.27 MILES
3A	VAV-I38R_SUG01A04	Sugar Creek	4.44 MILES
3A	VAV-I38R_TDR01A04	Toad Run	3.96 MILES
3A	VAV-I38R_XMW01A04	Colliers Creek X-Trib	0.69 MILES
3A	VAV-I38R_XMW02A10	Colliers Creek X-Trib	1.00 MILES
3A	VAV-I38R_XRN01A02	Blacks Creek Trib	0.63 MILES
3A	VAV-I38R_XSB01A06	South Buffalo Creek X-trib	1.23 MILES
3A	VAV-I38R_ZZZ01A00	Unsegmented x-tribs in VAV-I38R - JU85	94.05 MILES
3A	VAV-I38R_ZZZ02A04	Colliers Creek X-Tribs	51.42 MILES
3A	VAV-I38R_ZZZ03A10	Unsegmented x-tribs in VAV-I38R - JU83	26.34 MILES
3A	VAV-I38R_ZZZ04A10	Unsegmented x-tribs in VAV-I38R - JU82	16.41 MILES
3A	VAW-H01R_BAT01A02	Battery Creek	2.38 MILES
3A	VAW-H01R_BAT02A02	Battery Creek	3.12 MILES

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3A	VAW-H01R_BLE01A02	Bellamy Creek	1.97 MILES
3A	VAW-H01R_BYB01A02	Billys Branch	3.15 MILES
3A	VAW-H01R_CSW01A02	Cashaw Creek	2.83 MILES
3A	VAW-H01R_FRC01A02	Falling Rock Creek	1.53 MILES
3A	VAW-H01R_HUO01A00	Hunting Creek	3.70 MILES
3A	VAW-H01R_HUO20A16	Hunting Creek Tributaries	12.58 MILES
3A	VAW-H01R_JMS20A00	James River Tributaries	55.09 MILES
3A	VAW-H01R_JMS30A00	James River Tributaries	62.35 MILES
3A	VAW-H01R_JMS30B14	James River Tributaries	4.58 MILES
3A	VAW-H01R_MTT01A02	Matts Creek	3.52 MILES
3A	VAW-H01R_OTR01A02	Otter Creek	4.90 MILES
3A	VAW-H01R_OTR02A02	Otter Creek Tributaries	11.77 MILES
3A	VAW-H01R_PRC01A02	Peters Creek	0.21 MILES
3A	VAW-H01R_PRC02A02	Peters Creek	6.20 MILES
3A	VAW-H01R_RED02A02	Reed Creek	7.51 MILES
3A	VAW-H01R_RED03A16	Reed Creek Tributaries	57.80 MILES
3A	VAW-H01R_RRW01A02	Rocky Row Run	4.15 MILES
3A	VAW-H01R_XWK01A06	Hunting Creek, UT (XWK)	0.99 MILES
3A	VAW-H01R_XWQ01A06	Reed Creek, UT (XWQ)	0.66 MILES
3A	VAW-I03R_ZZZ01A00	Lake Moomaw/Hughes Draft	63.56 MILES
3A	VAW-I04R_DRU01A02	Dry Run	4.27 MILES
3A	VAW-I04R_FAS02A02	Falling Spring Creek	2.48 MILES
3A	VAW-I04R_RRG01A00	Roaring Run	0.28 MILES
3A	VAW-I04R_RRG02A02	Roaring Run	1.87 MILES
3A	VAW-I04R_ZZZ01A00	Jackson River Tributaries	63.96 MILES
3A	VAW-I04R_ZZZ02A14	Jackson River/Falling Spring Creek	64.79 MILES
3A	VAW-I06R_ZZZ01A00	Cove Creek/Sweet Springs Creek	29.23 MILES
3A	VAW-I07R_DNP03A00	Dunlap Creek	1.29 MILES
3A	VAW-I07R_DNP04A06	Dunlap Creek	9.17 MILES
3A	VAW-I07R_MLE01A02	Miller Branch	4.00 MILES
3A	VAW-I07R_MRU01A04	Moss Run North Branch	0.93 MILES
3A	VAW-I07R_MSS01A04	Moss Run	1.81 MILES
3A	VAW-I07R_SNR01A02	Snake Run & Tributaries	14.90 MILES
3A	VAW-I07R_TYC01A02	Tygers Creek	5.54 MILES
3A	VAW-I07R_XWC01A04	Jerrys Run, UT (XWC)	2.18 MILES
3A	VAW-I07R_ZZZ01A00	Dunlap Creek Tributaries	91.04 MILES
3A	VAW-I07R_ZZZ02A02	Dunlap Creek Tributaries	6.36 MILES
3A	VAW-I07R_ZZZ03A14	Dunlap Creek & Jerrys Run Tributaries	49.08 MILES
3A	VAW-I08R_THN01A12	Thorny Branch	0.45 MILES
3A	VAW-I08R_THN02A12	Thorny Branch	0.95 MILES
3A	VAW-I08R_ZZZ01A00	Ogle Creek Tributaries	95.05 MILES
3A	VAW-I08R_ZZZ02A02	Johnsons Creek	0.67 MILES
3A	VAW-I09R_SMH02A02	Smith Creek	2.29 MILES
3A	VAW-I09R_SMH03A02	Smith Creek	0.09 MILES
3A	VAW-I09R_XUF01A04	Unnamed Tributary (XUF)	0.99 MILES
3A	VAW-I09R_ZAC01A12	Jackson River, UT (ZAC)	1.20 MILES
3A	VAW-I09R_ZAD01A12	Jackson River, UT (ZAD)	0.51 MILES
3A	VAW-I09R_ZZZ01A00	Lower Jackson River Tributaries	53.75 MILES
3A	VAW-I09R_ZZZ02A02	Karnes Creek Tributaries Class VI	16.20 MILES
3A	VAW-I09R_ZZZ03A14	Karnes CreekTributaries	1.75 MILES
3A	VAW-I09R_ZZZ04C14	Lower Jackson River Tributaries	48.29 MILES
3A	VAW-I09R_ZZZ04D14	Pounding Mill Creek Tributaries Class VI	16.29 MILES
3A	VAW-I10R_EWN01A02	Ewin Run	1.36 MILES
3A	VAW-I10R_MIY01A02	Mill Branch & Tributaries	18.50 MILES
3A	VAW-I10R_PBC01A02	Paint Bank Branch & Tributaries	21.87 MILES
3A	VAW-I10R_POT01A02	Potts Creek	4.20 MILES
3A	VAW-I10R_POT04A02	Potts Creek	2.73 MILES
3A	VAW-I10R_POT04B14	Potts Creek	2.70 MILES
3A	VAW-I10R_XTL01A02	Potts Creek, UT (XTL)	1.00 MILES
3A	VAW-I10R_ZZZ01A00	Upper Potts Creek	46.57 MILES
3A	VAW-I10R_ZZZ02A02	Potts Creek Tributaries	45.95 MILES
3A	VAW-I10R_ZZZ02B14	Potts Creek Tributaries	10.15 MILES
3A	VAW-I11R_BNT01A02	Bennetts Run & Tributaries	3.52 MILES
3A	VAW-I11R_BSP01A02	Blue Spring Run & Tributaries	8.37 MILES
3A	VAW-I11R_BSP01B10	Blue Spring Run & Tributaries	30.71 MILES
3A	VAW-I11R_CSY01A02	Christleys Run & Tributaries	7.65 MILES
3A	VAW-I11R_HYY01A02	Hays Creek & Tributaries	18.69 MILES
3A	VAW-I11R_JHN01A02	Johns Run	0.15 MILES
3A	VAW-I11R_LLB01A02	Laurel Branch	0.56 MILES
3A	VAW-I11R_PNL01A02	Pond Lick Branch	1.97 MILES
3A	VAW-I11R_POT03A02	Potts Creek	4.69 MILES
3A	VAW-I11R_POT04A02	Potts Creek	4.80 MILES
3A	VAW-I11R_SGN01A14	Sugar Run	0.81 MILES
3A	VAW-I11R_SOR01A02	Solomans Run	1.28 MILES
3A	VAW-I11R_ZAE01A12	Cast Steel Run, UT (ZAE)	0.97 MILES
3A	VAW-I11R_ZZZ01A00	Potts Creek Tributaries	19.65 MILES
3A	VAW-I11R_ZZZ01B14	Potts Creek Tributaries	3.02 MILES
3A	VAW-I11R_ZZZ02A14	Potts Creek Tributaries	60.46 MILES
3A	VAW-I17R_XSM01A02	Simpson Creek, UT (XSM)	1.74 MILES
3A	VAW-I17R_ZZZ01A00	Unsegmented x-tribs in I17 (JU36)	71.15 MILES
3A	VAW-I17R_ZZZ02A14	Blue Suck Branch & Simpson Creek Tributaries	21.88 MILES
3A	VAW-I18R_BGK01A08	Big Creek	6.11 MILES
3A	VAW-I18R_MIV02A02	Mill Creek & Tributaries	17.41 MILES
3A	VAW-I18R_MIV02B14	Mill Creek Tributaries	18.64 MILES
3A	VAW-I18R_SKG20B14	Sinking Creek Tributaries	21.39 MILES
3A	VAW-I18R_SUL01A02	Stull Run	1.43 MILES
3A	VAW-I18R_XQS01A08	Sinking Creek, UT (XQS)	5.22 MILES
3A	VAW-I18R_XTM01A02	Sinking Creek, UT (XTM)	2.57 MILES
3A	VAW-I18R_XYE01A06	Unnamed Tributrary (XYE) to James R., UT (XYD)	2.02 MILES
3A	VAW-I18R_ZZZ01A00	James River Tributaries	43.13 MILES
3A	VAW-I18R_ZZZ02A14	Upper James River/Sinking Creek/Mill Creek	51.84 MILES
3A	VAW-I19R_BON01A02	Broad Run	7.91 MILES
3A	VAW-I19R_BON20A02	Broad Run Tributaries	34.37 MILES
3A	VAW-I19R_CRG01A14	Craig Creek	8.13 MILES
3A	VAW-I19R_LCB01A02	Lick Branch & Tributaries	8.85 MILES
3A	VAW-I19R_MAF01A02	McAfee Run	1.90 MILES
3A	VAW-I19R_PIK01A02	Pickles Branch	4.02 MILES
3A	VAW-I19R_TPK01A02	Turnpike Creek	2.34 MILES
3A	VAW-I19R_XTP01A02	Craig Creek UT (XTP)	1.26 MILES
3A	VAW-I19R_XZQ01A08	Craig Creek, UT (XZQ)	1.07 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAW-I19R_ZZZ02A14	Craig Creek Tributaries	143.29 MILES
3A	VAW-I20R_ZZZ01A00	Meadow Creek Tributaries	16.59 MILES
3A	VAW-I21R_BDB01A02	Big Double Branch	1.91 MILES
3A	VAW-I21R_GRY01A02	Grannys Creek, West Branch	8.21 MILES
3A	VAW-I21R_JOB04A02	Johns Creek	4.42 MILES
3A	VAW-I21R_MDO01A02	Meadow Branch	3.51 MILES
3A	VAW-I21R_MID01A02	Middle Creek	2.00 MILES
3A	VAW-I21R_POF01A02	Porterfield Branch	2.74 MILES
3A	VAW-I21R_ROK01A08	Rocky Branch	2.62 MILES
3A	VAW-I21R_TUB01A02	Tub Run	4.20 MILES
3A	VAW-I21R_XTQ01A02	Snodgrass Creek, UT (XTQ)	1.42 MILES
3A	VAW-I21R_XWE01A04	Tub Run, UT (XWE)	1.08 MILES
3A	VAW-I21R_XWF01A04	Rocky Branch, UT (XWF)	2.68 MILES
3A	VAW-I21R_XYG01A06	Johns Creek, UT (XYG)	1.46 MILES
3A	VAW-I21R_ZZZ01A00	Johns Creek Tributaries	109.41 MILES
3A	VAW-I21R_ZZZ02A14	Johns Creek Tributaries	81.36 MILES
3A	VAW-I22R_CRG04A14	Craig Creek	10.43 MILES
3A	VAW-I22R_DTM01A02	Dutchman Branch	3.47 MILES
3A	VAW-I22R_PTR01A14	Patterson Creek	2.43 MILES
3A	VAW-I22R_SWS01A10	Swanson Branch	1.57 MILES
3A	VAW-I22R_WIS01A02	Wilson Branch	2.45 MILES
3A	VAW-I22R_XTR01A02	Mill Creek, UT (XTR)	1.29 MILES
3A	VAW-I22R_ZAH01A12	Craig Creek, UT (ZAH)	1.43 MILES
3A	VAW-I22R_ZZZ01A00	Lower Craig Creek Tributaries	41.37 MILES
3A	VAW-I22R_ZZZ02A14	Patterson Creek Tributaries	70.47 MILES
3A	VAW-I22R_ZZZ03A14	Craig Creek Tributaries	87.10 MILES
3A	VAW-I22R_ZZZ04A14	Lower Barbours Creek Tributaries	5.24 MILES
3A	VAW-I22R_ZZZ05A14	Craig Creek Tributaries	34.15 MILES
3A	VAW-I24R_SSB01A02	Spreading Spring Branch	1.95 MILES
3A	VAW-I24R_ZZZ01A00	James River Tributaries	91.56 MILES
3A	VAW-I24R_ZZZ02A14	James River Tributaries	41.48 MILES
3A	VAW-I25R_BDN01A02	Borden Creek	1.70 MILES
3A	VAW-I25R_CSH01A02	Crush Run	2.82 MILES
3A	VAW-I25R_SCC01A02	Stone Coal Creek	3.50 MILES
3A	VAW-I25R_XEV01A02	Catawba Creek, UT (XEV)	1.22 MILES
3A	VAW-I25R_XEV02A02	Catawba Creek, UT (XEV)	0.31 MILES
3A	VAW-I25R_XQS01A08	Catawba Creek, UT (XQS)	0.53 MILES
3A	VAW-I25R_ZZZ01A00	Catawba Creek Tributaries	154.62 MILES
3A	VAW-I25R_ZZZ02A14	Catawba Creek & Tributaries	103.82 MILES
3A	VAW-I25R_ZZZ02B14	Catawba Creek Tributaries	20.14 MILES
3A	VAW-I26R_ZZZ01A00	Looney Creek/Mill Creek	166.58 MILES
3A	VAW-I27R_CVV01A02	Cove Creek	2.13 MILES
3A	VAW-I27R_CXX01A02	Chestnut Run	1.61 MILES
3A	VAW-I27R_FAW02A08	Fallingwater Creek Tributaries	2.14 MILES
3A	VAW-I27R_JES03A08	Jennings Creek Tributaries	10.16 MILES
3A	VAW-I27R_LTV01A00	Little Cove Creek	1.22 MILES
3A	VAW-I27R_MDL01A02	Middle Creek	5.40 MILES
3A	VAW-I27R_MDL20A14	Middle Creek Tributaries	8.47 MILES
3A	VAW-I27R_MFL01A02	McFalls Creek	4.71 MILES
3A	VAW-I27R_MFL20A14	McFalls Creek Tributaries	6.39 MILES
3A	VAW-I27R_NRT03A08	North Creek Tributaries	19.70 MILES
3A	VAW-I27R_PGT01A00	Purgatory Creek	8.93 MILES
3A	VAW-I27R_PGT02A08	Purgatory Creek Tributaries	19.17 MILES
3A	VAW-I27R_RNG01A14	Roaring Run & Tributaries	14.27 MILES
3A	VAW-I27R_STS01A02	Sprouts Run	4.41 MILES
3A	VAW-I27R_XSQ01A02	Colon Hollow (XSQ)	1.41 MILES
3A	VAW-I27R_XSR01A02	Apple Orchard (XSR)	3.60 MILES
3A	VAW-I27R_XSS01A02	McCoglin Branch	1.02 MILES
3A	VAW-I27R_YST01A02	Yellowstone Creek	2.07 MILES
3A	VAW-I27R_ZZZ01A00	James River Tributaries	37.48 MILES
3A	VAW-I27R_ZZZ02A14	James River Tributaries	14.84 MILES
3A	VAW-I28R_ZZZ01A08	James River Tributaries	5.98 MILES
3B	VAC-H11R_PPY01A06	Puppy Creek	4.89 MILES
3B	VAC-H21R_XQL01A00	Frisby Branch, Unnamed Tributary	1.10 MILES
3B	VAT-G10R_ZZZ01A00	Unsegmented rivers in G10R	125.94 MILES
3B	VAV-H27R_XQT01A14	Quarter Creek X-trib	0.86 MILES
3B	VAV-I34R_SNL01A16	Stony Run	1.30 MILES
3B	VAW-I10R_STV01A02	Shawvers Run & Tributaries	13.07 MILES
3B	VAW-I11R_XQT01A08	Johns Run, UT (XQT)	1.57 MILES
3B	VAW-I17R_PMB01A08	Piney Mountain Branch	2.78 MILES
3B	VAW-I17R_SPN01A02	Simpson Creek	4.56 MILES
3B	VAW-I17R_XSP01A02	Simpson Creek, UT (XSP)	1.24 MILES
3B	VAW-I18R_SMT01A12	Smith Branch	4.08 MILES
3B	VAW-I19R_XTO01A02	Craig Creek, UT (XTO)	1.88 MILES
3B	VAW-I19R_XWD01A04	Craig Creek, UT (XWD)	2.42 MILES
3B	VAW-I19R_XYF01A06	Unnamed Tributary (XYF) to Craig Creek, UT (XWD)	0.94 MILES
3B	VAW-I21R_BLL01A02	Big Laurel Branch	2.62 MILES
3B	VAW-I21R_GEO01A04	Georges Swamp Branch	1.28 MILES
3B	VAW-I21R_JOB01B04	Johns Creek	6.74 MILES
3B	VAW-I21R_JOB03A02	Johns Creek	10.56 MILES
3B	VAW-I21R_TAL01A08	Taylor Creek	3.53 MILES
3B	VAW-I22R_RGR01A04	Roaring Run	4.08 MILES
3B	VAW-I22R_RRB01A02	Rolands Run Branch	1.58 MILES
3B	VAW-I23R_XTS01A02	Barbours Creek UT 1 (XTS)	2.66 MILES
3B	VAW-I26R_BAC01A04	Back Creek	5.44 MILES
3B	VAW-I27R_FAW01A02	Fallingwater Creek	2.67 MILES
3C	VAP-H39R_XAT01A14	XAT - Unnamed Tributary to Marine Spring Branch (MAR)	0.46 MILES
3C	VAP-J17R_SEC01C14	Second Branch	0.49 MILES
3C	VAP-J17R_SNC01A00	Spring Run	4.46 MILES
3C	VAV-H09R_CRB01A00	Crabtree Creek	3.56 MILES
3C	VAV-H09R_MDC01A02	Meadow Creek	2.94 MILES
3C	VAV-H10R_GRE01A02	Greasy Spring Branch	1.75 MILES
3C	VAV-H10R_PRN01A02	N.F. Piney River	4.67 MILES
3C	VAV-H26R_JMP02A12	Jumping Branch	1.91 MILES
3C	VAV-H27R_BVM01A00	Beaverdam Creek	7.67 MILES
3C	VAV-H29R_HEN01A12	Henderson Creek	3.32 MILES
3C	VAV-H29R_SQC02A08	Slate Quarry Creek	2.97 MILES
3C	VAV-H29R_XQC01A08	North headwater tributary to Slate Quarry Creek.	1.38 MILES
3C	VAV-H29R_XRT01A12	Rivanna River x-trib	1.12 MILES
3C	VAV-H31R_XBR01A12	Burke Creek UT	0.64 MILES
3C	VAV-I16R_LWL02A10	Little Wilson Creek	4.79 MILES
3C	VAV-I28R_LIE01A02	Little Hellgate Creek	2.19 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3C	VAV-I28R_XRP02A10	Back Run	3.69 MILES
3C	VAV-I29R_RRP01A02	Ramseys Draft Right Prong	1.82 MILES
3C	VAV-I33R_LAR01A10	Laurel Run and tributaries	6.36 MILES
3C	VAW-I19R_ZZZ01A00	Craig Creek Tributaries	91.38 MILES
3C	VAW-I21R_JOB05A02	Johns Creek	7.56 MILES
3C	VAW-I21R_PXT01A02	Paxton Branch	2.72 MILES
3C	VAW-I21R_WAR01A02	War Spur Branch	3.79 MILES
3C	VAW-I22R_BGN01A02	Biggs Run	7.98 MILES
3C	VAW-I25R_TNB01A12	Town Branch	1.80 MILES
3C	VAW-I27R_CES01A02	Cornelius Creek	2.64 MILES
3D	VAP-H39R_MAR01A08	Marine Spring Branch	2.27 MILES
3D	VAP-H39R_XAJ01A12	XAJ - Powhite Creek, UT	1.55 MILES
3D	VAP-H39R_XAK01A12	XAK - Powhite Creek, UT	0.52 MILES
3D	VAP-H39R_XAS01A14	XAS - Unnamed Tributary to Michauk Creek	1.31 MILES
3D	VAP-H39R_XAY01A16	XAY - Powhite Creek, UT	0.75 MILES
3D	VAP-H39R_XDI01A14	XDI - Powhite Creek, UT	1.71 MILES
3D	VAP-H39R_XIJ01A12	XIJ - James River, UT	1.10 MILES
3D	VAP-J11R_NBU01A04	UT to North Buckskin Creek	1.56 MILES
3D	VAP-J12R_XUC01A04	UT to Surline Creek	3.53 MILES
3D	VAP-J16R_DRY01A14	Dry Creek, West Branch	1.02 MILES
3D	VAP-J16R_LIX01A14	UT to Little Tomahawk Creek	0.26 MILES
3D	VAP-J16R_OTD01A14	Otterdale Branch	4.38 MILES
3D	VAV-H09R_CHB01A10	Cub Creek	13.37 MILES
3D	VAV-H09R_DHM01A10	Durham Run	4.50 MILES
3D	VAV-H09R_MIO01A00	Mill Creek	4.77 MILES
3D	VAV-H09R_RCN01A10	Rocky Run	8.55 MILES
3D	VAV-H09R_SLV01A10	Silver Creek	4.42 MILES
3D	VAV-H09R_TYN01A00	Tye River North Fork	2.95 MILES
3D	VAV-H09R_TYN02A10	Tye River North Fork	19.70 MILES
3D	VAV-H09R_WHB01A10	White Rock Creek	2.70 MILES
3D	VAV-H09R_XSY01A02	Coxs Creek	3.11 MILES
3D	VAV-H10R_LSB01A10	Louisa Spring Branch	2.25 MILES
3D	VAV-H10R_SHO01A00	Shoe Creek	13.11 MILES
3D	VAV-H15R_SPC02A10	Spruce Creek	3.81 MILES
3D	VAV-H15R_XML01A10	Mill Creek	4.32 MILES
3D	VAV-H15R_XPL01A10	Pauls Creek	7.08 MILES
3D	VAV-H15R_XRD01A10	Rodes Creek	3.24 MILES
3D	VAV-H24R_XDY01A10	Jones Falls Run	2.93 MILES
3D	VAV-H27R_IVI01A04	Ivy Creek	4.20 MILES
3D	VAV-H30R_OLV01A00	Oliver Creek	19.08 MILES
3D	VAV-I01R_XXJ01A16	Jackson River UT	1.56 MILES
3D	VAV-I02R_BIR01A16	Big Ridge	1.72 MILES
3D	VAV-I02R_BLN01A02	Big Lick Run	1.70 MILES
3D	VAV-I02R_JIR01A16	Jim Dave Run and tributaries	6.81 MILES
3D	VAV-I02R_LSR01A02	Long Spring Run	1.72 MILES
3D	VAV-I02R_SAW01A16	Sawmill Run	2.51 MILES
3D	VAV-I02R_SPI01A16	Spring Run	3.61 MILES
3D	VAV-I02R_WLH01A16	Wildcat Hollow	2.79 MILES
3D	VAV-I09R_WLN01A06	Wilson Creek Lower	7.47 MILES
3D	VAV-I09R_WNL01A02	Left Prong Wilson Creek	3.88 MILES
3D	VAV-I12R_LPB01A16	Left Prong Benson Run	2.28 MILES
3D	VAV-I12R_RPB01A16	Right Prong Benson Run	2.29 MILES
3D	VAV-I13R_CRU01A06	Crab Run	7.57 MILES
3D	VAV-I13R_XDR01A16	Davis Run UT	1.52 MILES
3D	VAV-I14R_JOO01A10	Jordan Run	5.54 MILES
3D	VAV-I14R_XXP01A04	Bear Hole Run	2.04 MILES
3D	VAV-I28R_EKE02A10	East Fork Elk Creek	4.53 MILES
3D	VAV-I28R_HLG01A02	Big Hellgate Creek	2.82 MILES
3D	VAV-I28R_XRS01A02	Sulfur Spring Hollow	1.27 MILES
3D	VAV-I29R_CLH01A16	Chestnut Lick Hollow	1.98 MILES
3D	VAV-I29R_JEA01A02	Jerrys Run	2.06 MILES
3D	VAV-I30R_GUY01A10	Guy Run and tributaries	17.56 MILES
3D	VAV-I30R_JER01A02	Jerkemtight Branch	4.86 MILES
3D	VAV-I30R_STL01A02	Still Run	2.92 MILES
3D	VAV-I31R_ALU02A10	Alum Creek	2.87 MILES
3D	VAV-I31R_XBA01A10	Gochenour Branch	4.31 MILES
3D	VAV-I33R_MOU01A14	Mouse Run	3.11 MILES
3D	VAV-I35R_WST01A00	Whistle Creek	5.21 MILES
3D	VAV-I36R_CHM01A02	Chimney Branch	1.64 MILES
3D	VAV-I36R_DHK01A16	Dark Hollow	1.25 MILES
3D	VAV-I36R_HOB01A10	Hogback Creek	1.64 MILES
3D	VAV-I36R_ISH02A10	Irish Creek	14.19 MILES
3D	VAV-I36R_MBC01A02	Mine Bank Creek	1.46 MILES
3D	VAV-I36R_NSB01A10	Nettle Spring Branch	1.87 MILES
3D	VAV-I36R_NTL01A02	Nettle Creek	3.85 MILES
3D	VAV-I36R_SUR01A02	Spy Run	3.97 MILES
3D	VAV-I36R_XRY01A02	Sugartree Branch	1.80 MILES
3D	VAV-I36R_XRZ01A02	Bear Run	1.82 MILES
3D	VAV-I37R_BLV01A04	Belle Cove Branch	4.67 MILES
3D	VAV-I37R_LWR02A10	Lowry Run	2.97 MILES
3D	VAV-I37R_NFB01A16	North Fork Bennetts Run	1.35 MILES
3D	VAV-I37R_PGP02A10	Pedlar Gap Run	2.58 MILES
3D	VAV-I37R_SFB01A16	South Fork Bennetts Run	1.95 MILES
3D	VAV-I37R_XXS01A04	Indian Gap Run X-Trib (Reservoir Hollow)	4.17 MILES
3D	VAW-I03R_MIX01A02	Mill Creek & Tributaries	38.81 MILES
3D	VAW-I07R_COW01A02	Crow Run	3.99 MILES
3D	VAW-I07R_LTW01A02	Little Crow Run	1.82 MILES
3D	VAW-I09R_PNE01A02	Piney Branch	6.32 MILES
3D	VAW-I09R_SMH04A00	Smith Creek & Tributaries	12.07 MILES
3D	VAW-I09R_WRC01A02	White Rock Creek & Tributaries	14.56 MILES
3D	VAW-I10R_NSE01A16	Nelse Branch	4.37 MILES
3D	VAW-I10R_VLY01A02	Valley Branch & Tributaries	7.67 MILES
3D	VAW-I18R_SKG02A02	Sinking Creek	5.01 MILES
3D	VAW-I18R_SKG20A02	Sinking Creek Tributaries	25.80 MILES
3D	VAW-I21R_JOB30A02	Johns Creek Tributaries	33.15 MILES
3D	VAW-I22R_FUR01A02	Furnace Branch & Tributaries	9.04 MILES
3D	VAW-I22R_HIP01A02	Hipes Branch & Tributaries	7.13 MILES
3D	VAW-I23R_ZZZ01A00	Upper Barbours Creek Tributaries	60.37 MILES
3D	VAW-I25R_LEE01A02	Lees Creek	2.02 MILES
3D	VAW-I25R_ZAB01A12	Catawba Creek, UT (ZAB)	0.50 MILES
4A	VAC-H02R_POL01A00	Pedlar River	5.53 MILES
4A	VAC-H02R_POL01B14	Pedlar River	1.33 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAC-H02R_POL02A00	Pedlar River	2.53 MILES
4A	VAC-H02R_POL03A02	Pedlar River	6.99 MILES
4A	VAC-H02R_POL07B02	Pedlar River	8.94 MILES
4A	VAC-H03R_DMG01A08	Dreaming Creek	5.04 MILES
4A	VAC-H03R_FSG01A00	Fishing Creek	6.32 MILES
4A	VAC-H03R_WLM01A02	Williams Run	6.49 MILES
4A	VAC-H03R_XXA01A08	Burton Creek, Unnamed Tributary	3.46 MILES
4A	VAC-H04R_GRA02A02	Graham Creek	5.59 MILES
4A	VAC-H04R_HAZ02A08	Harris Creek	8.33 MILES
4A	VAC-H05R_OPP01A00	Opossum Creek	3.17 MILES
4A	VAC-H05R_STW01A08	Stonewall Creek	9.39 MILES
4A	VAC-H06R_NOT01A10	North Creek	5.87 MILES
4A	VAC-H06R_PLP01A08	Phelps Branch	2.21 MILES
4A	VAC-H06R_WIC01A00	Wreck Island Creek	9.77 MILES
4A	VAC-H06R_WIC02A10	Wreck Island Creek	9.77 MILES
4A	VAC-H07R_BTC01A00	Bent Creek	13.82 MILES
4A	VAC-H11R_BUF01A00	Buffalo River	4.59 MILES
4A	VAC-H11R_BUF02A00	Buffalo River	5.26 MILES
4A	VAC-H11R_BUF03A00	Buffalo River	3.66 MILES
4A	VAC-H11R_BUF03B14	Buffalo River	2.17 MILES
4A	VAC-H11R_BUF04A08	Buffalo River	2.09 MILES
4A	VAC-H11R_LOB01A04	Long Branch	3.59 MILES
4A	VAC-H11R_MIN01A08	Mill Creek	4.15 MILES
4A	VAC-H12R_BUF01A00	Buffalo River	2.34 MILES
4A	VAC-H12R_BUF02A02	Buffalo River	5.46 MILES
4A	VAC-H12R_RTD03A14	Rutledge Creek	4.16 MILES
4A	VAC-H12R_TNR01A08	Turner Creek	4.49 MILES
4A	VAC-H17R_BLR01A00	Ballinger Creek	10.08 MILES
4A	VAC-H20R_BGC01A98	Bear Garden Creek	4.70 MILES
4A	VAC-H20R_BGC02A04	Bear Garden Creek	4.88 MILES
4A	VAC-H20R_NOR01A02	North Creek	3.32 MILES
4A	VAC-H21R_GRD01A08	Grease Creek	10.73 MILES
4A	VAC-H21R_NTH02A08	North River	5.43 MILES
4A	VAC-H21R_SLT01A00	Slate River	6.69 MILES
4A	VAC-H21R_SLT02A08	Slate River	6.25 MILES
4A	VAC-H22R_HUS01A06	Hunts Creek	11.48 MILES
4A	VAC-H22R_MYC01A08	Muddy Creek	6.76 MILES
4A	VAC-H22R_SLT01A06	Slate River	9.04 MILES
4A	VAC-H22R_SLT02A02	Slate River	3.26 MILES
4A	VAC-H22R_TPN01A08	Turpin Creek	7.30 MILES
4A	VAC-H35R_LWW01A08	Little Willis River	6.13 MILES
4A	VAC-H35R_WLS01A04	Willis River	12.25 MILES
4A	VAC-H35R_WLS02A04	Willis River	10.34 MILES
4A	VAC-H35R_WSP01A08	Whispering Creek	13.46 MILES
4A	VAC-H35R_XQM01A00	Willis River, Unnamed Tributary	1.68 MILES
4A	VAC-H36R_HCH01A04	Hatcher Creek	10.18 MILES
4A	VAC-H36R_WLS01A00	Willis River	12.97 MILES
4A	VAC-H36R_WLS01B08	Willis River	4.83 MILES
4A	VAC-H36R_WLS01C10	Willis River	15.20 MILES
4A	VAC-J01R_APP01A02	Appomattox River	4.72 MILES
4A	VAC-J01R_APP01B04	Appomattox River	7.90 MILES
4A	VAC-J01R_APP02A02	Appomattox River	12.09 MILES
4A	VAC-J01R_APP03A02	Appomattox River	6.83 MILES
4A	VAC-J01R_APP04A02	Appomattox River	5.01 MILES
4A	VAC-J01R_APP05A04	Appomattox River	2.65 MILES
4A	VAC-J01R_APP05B14	Appomattox River	6.55 MILES
4A	VAC-J01R_ARS01A04	South Fork Appomattox River	5.79 MILES
4A	VAC-J01R_DKR01A12	Ducker Creek	5.74 MILES
4A	VAC-J01R_FSP01A06	Fishpond Creek	9.49 MILES
4A	VAC-J01R_GSK01A08	Gross Creek	1.91 MILES
4A	VAC-J01R_PUM01A08	Plum Creek	3.75 MILES
4A	VAC-J01R_RGH01A04	Rough Creek	6.50 MILES
4A	VAC-J01R_SUA01A04	Suanee Creek	6.31 MILES
4A	VAC-J01R_VNS01A02	Vaughans Creek	4.31 MILES
4A	VAC-J01R_VNS02A10	Vaughans Creek	8.60 MILES
4A	VAC-J01R_XZO01A08	Gross Creek, UT	0.64 MILES
4A	VAC-J02R_BFL01A14	Buffalo Creek	0.39 MILES
4A	VAC-J02R_BFL02A02	Buffalo Creek	11.03 MILES
4A	VAC-J02R_BFL03A06	Buffalo Creek	4.83 MILES
4A	VAC-J02R_SPA01A02	Spring Creek	5.47 MILES
4A	VAC-J02R_SPA02A04	Spring Creek	2.39 MILES
4A	VAC-J03R_BSR03A02	Bush River	0.80 MILES
4A	VAC-J03R_LIT02A12	Little Sandy Creek	3.27 MILES
4A	VAC-J03R_SDY01A00	Sandy River	3.43 MILES
4A	VAC-J04R_BSR02A02	Bush River	4.40 MILES
4A	VAC-J05R_TNY01A04	Tanyard Branch	0.46 MILES
4A	VAC-J06R_ANG01A00	Angola Creek	4.23 MILES
4A	VAC-J06R_ANG02A00	Angola Creek	2.74 MILES
4A	VAC-J06R_APP05A02	Appomattox River	21.06 MILES
4A	VAC-J06R_BGU01A98	Big Guinea Creek	8.72 MILES
4A	VAC-J06R_GRF01A04	Green Creek	5.14 MILES
4A	VAC-J06R_LIU01A02	Little Sayler's Creek	6.78 MILES
4A	VAC-J06R_SCK01A06	Stock Creek	8.69 MILES
4A	VAC-J06R_SND01A04	Sandy Creek	8.29 MILES
4A	VAC-J06R_SYL01A98	Saylers Creek	5.13 MILES
4A	VAP-G01E_KAN01A14	Kanawha Canal	0.01 SQUARE MILES
4A	VAP-G01E_ZZZ01A14	Unsegmented estuaries in G01	0.01 SQUARE MILES
4A	VAP-G01E_ZZZ01B14	Unsegmented estuaries in G01	0.01 SQUARE MILES
4A	VAP-G01E_ZZZ01C14	Unsegmented estuaries in G01	0.02 SQUARE MILES
4A	VAP-G01R_BDO01A06	Broad Rock Creek	3.12 MILES
4A	VAP-G01R_CEL01A04	Cornelius Creek	7.22 MILES
4A	VAP-G01R_FAC02A04	Falling Creek	10.60 MILES
4A	VAP-G01R_FAC02C08	Falling Creek	5.39 MILES
4A	VAP-G01R_HAO01A08	Horners Run	2.43 MILES
4A	VAP-G01R_LIB01A08	Licking Creek	3.24 MILES
4A	VAP-G01R_PSK01A04	Pocoshock Creek	8.70 MILES
4A	VAP-G01R_RDK01A12	Reedy Creek	3.42 MILES
4A	VAP-G01R_SNH01A08	Stony Run	3.16 MILES
4A	VAP-G01R_XSZ01A04	XSZ - James River, UT (aka No Name Creek)	2.22 MILES
4A	VAP-G01R_XXN01A08	Falling Creek, UT	2.32 MILES
4A	VAP-G01R_XYA01A08	Almond Creek, UT (XYA)	1.14 MILES
4A	VAP-G02E_JMC01A10	James River - Old Channel (aka Farrar Gut)	0.51 SQUARE MILES
4A	VAP-G02E_XGJ01A06	Appomattox River, UT	0.01 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAP-G02E_XGK01A06	James River, UT	0.01 SQUARE MILES
4A	VAP-G02E_XMT01A08	UT to James River	0.14 SQUARE MILES
4A	VAP-G02E_XQW01A08	James River, UT	0.39 SQUARE MILES
4A	VAP-G02E_ZZZ02A14	Unsegmented estuaries in G02	0.07 SQUARE MILES
4A	VAP-G02E_ZZZ02B14	Unsegmented estuaries in G02	1.04 SQUARE MILES
4A	VAP-G02E_ZZZ02C14	Unsegmented estuaries in G02	0.03 SQUARE MILES
4A	VAP-G02R_FOM01A02	Fourmile Creek	37.00 MILES
4A	VAP-G02R_FOM02A06	Upper Fourmile Creek	9.91 MILES
4A	VAP-G02R_TIC01A00	Turkey Island Creek	1.82 MILES
4A	VAP-G02R_WSN01A00	Western Run	1.84 MILES
4A	VAP-G03E_GRV01A02	Gravelly Run	0.01 SQUARE MILES
4A	VAP-G03E_GUN01B00	Gunns Run	0.04 SQUARE MILES
4A	VAP-G03E_PWL01A02	Powell Creek	0.40 SQUARE MILES
4A	VAP-G03E_QEE01A06	Queens Creek	0.23 SQUARE MILES
4A	VAP-G03E_ZZZ01A14	Unsegmented estuaries in G03	0.27 SQUARE MILES
4A	VAP-G03E_ZZZ01C14	Unsegmented estuaries in G03	0.34 SQUARE MILES
4A	VAP-G03R_CRT01B00	Courthouse Creek	4.39 MILES
4A	VAP-G03R_CTC01A00	Cattail Creek	1.67 MILES
4A	VAP-G03R_SOU01A08	Southerly Run	2.84 MILES
4A	VAP-G03R_WLR01A06	Walls Run	5.85 MILES
4A	VAP-G03R_XXO01A08	Powell Creek, UT	1.72 MILES
4A	VAP-G04E_BNG01A04	Brandon Gut	0.01 SQUARE MILES
4A	VAP-G04E_KEN01A06	Kennon Creek	0.05 SQUARE MILES
4A	VAP-G04E_UCK01A06	Upper Chippokes Creek	1.02 SQUARE MILES
4A	VAP-G04E_ZZZ01A14	Unsegmented estuaries in G04	0.08 SQUARE MILES
4A	VAP-G04E_ZZZ01B14	Unsegmented estuaries in G04	0.23 SQUARE MILES
4A	VAP-G04E_ZZZ01C14	Unsegmented estuaries in G04	0.35 SQUARE MILES
4A	VAP-G04R_FDH01A16	Flowerdew Hundred Creek	3.68 MILES
4A	VAP-G04R_UCK01A08	Upper Chippokes Creek	5.61 MILES
4A	VAP-G04R_XBB01A14	XBB - Upper Chippokes Creek, UT	7.09 MILES
4A	VAP-G05R_ALL01A14	Allens Branch	3.32 MILES
4A	VAP-G05R_CHK01A00	Chickahominy River	7.08 MILES
4A	VAP-G05R_CHK01C12	Chickahominy River	5.98 MILES
4A	VAP-G05R_CHK02A04	Chickahominy River	8.27 MILES
4A	VAP-G05R_SNF01A02	Stony Run	0.21 MILES
4A	VAP-G05R_SNF02A12	Stony Run and Tributaries	39.87 MILES
4A	VAP-G05R_XAR03A06	Upham Brook, UT	1.20 MILES
4A	VAP-G05R_ZZZ01B02	Upham Brook Tributaries	39.98 MILES
4A	VAP-G06R_BEV01A00	Beaverdam Creek	4.97 MILES
4A	VAP-G06R_CHK02A02	Chickahominy River	2.85 MILES
4A	VAP-G06R_CHK02A14	Chickahominy River	8.93 MILES
4A	VAP-G06R_WOS01A98	White Oak Swamp	6.68 MILES
4A	VAP-G07R_CHK01A00	Chickahominy River	11.03 MILES
4A	VAP-G08E_MOC01A02	Morris Creek	0.39 SQUARE MILES
4A	VAP-H33R_DVS01A00	Davis Creek	7.68 MILES
4A	VAP-H33R_SLE01A00	Sallee Creek	7.08 MILES
4A	VAP-H33R_SOL01A10	Solomons Creek	4.05 MILES
4A	VAP-H33R_XAQ01A16	XAQ - Deep Creek, UT	3.18 MILES
4A	VAP-H34R_BYR01A98	Byrd Creek	19.36 MILES
4A	VAP-H34R_MML01A08	Mill Creek	5.99 MILES
4A	VAP-H34R_VNB01A08	Venable Creek	8.06 MILES
4A	VAP-H37R_BLG01A98	Big Lickinghole Creek/Little Lickinghole Creek/White Hall Creek	22.53 MILES
4A	VAP-H37R_TRT01A08	Tarred Rat Creek	3.30 MILES
4A	VAP-H38R_BDC01A98	Beaverdam Creek	8.74 MILES
4A	VAP-H38R_CTS01A06	Courthouse Creek	10.33 MILES
4A	VAP-H38R_MOH01A12	Mohawk Creek	4.69 MILES
4A	VAP-H38R_XVV01A04	UT to UT (XNH) to James River	0.41 MILES
4A	VAP-H39R_BOD01A00	Broad Branch	2.42 MILES
4A	VAP-H39R_GEN01A00	Genito Creek	6.81 MILES
4A	VAP-H39R_MAN01A12	Manchester Canal (aka Walker Creek)	0.85 MILES
4A	VAP-H39R_MCU01A12	Michauk Creek	4.48 MILES
4A	VAP-H39R_NWD01B12	Norwood Creek	6.36 MILES
4A	VAP-H39R_RDD01A00	Reedy Creek	2.37 MILES
4A	VAP-H39R_RDD01C10	Reedy Creek	1.08 MILES
4A	VAP-H39R_RTL01A08	Rattlesnake Creek	2.23 MILES
4A	VAP-H39R_SAL01A08	Salles Creek	1.96 MILES
4A	VAP-H39R_TKO01A98	Tuckahoe Creek	7.70 MILES
4A	VAP-H39R_TKO03A98	Tuckahoe Creek	8.97 MILES
4A	VAP-H39R_XCK01A14	XCK - Reedy Creek, UT	1.25 MILES
4A	VAP-H39R_XHP01A04	XHP - UT to XCZ (Tuckahoe Creek, UT)	1.73 MILES
4A	VAP-J07R_APP01A98	Appomattox River	28.82 MILES
4A	VAP-J07R_BWD01A00	Butterwood Creek	5.62 MILES
4A	VAP-J07R_RFD01A00	Rocky Ford Creek	5.72 MILES
4A	VAP-J08R_FLA01A00	Flat Creek	4.09 MILES
4A	VAP-J08R_FLA02A02	Flat Creek	29.89 MILES
4A	VAP-J09R_NBB01A98	Nibbs Creek	5.46 MILES
4A	VAP-J09R_NBB01B10	Nibbs Creek	0.63 MILES
4A	VAP-J10R_APP01A98	Appomattox River	10.18 MILES
4A	VAP-J11R_BVP01A00	Beaverpond Creek	6.47 MILES
4A	VAP-J11R_CLR01A00	Cellar Creek	10.96 MILES
4A	VAP-J11R_DPC01C02	Deep Creek	1.65 MILES
4A	VAP-J11R_LDJ01A10	Lees Creek	3.31 MILES
4A	VAP-J11R_RKN01A12	Rocky Run	3.42 MILES
4A	VAP-J11R_SWT01A00	Sweathouse Creek	11.41 MILES
4A	VAP-J11R_WET02A00	West Creek	7.36 MILES
4A	VAP-J11R_WGM01A00	Winningham Creek	5.93 MILES
4A	VAP-J11R_XFT01A10	UT to Winningham Creek	2.07 MILES
4A	VAP-J11R_XZN01A10	UT to Winningham Creek (easternmost)	2.16 MILES
4A	VAP-J12R_APP01A08	Appomattox River	8.77 MILES
4A	VAP-J15E_ZZZ01A14	Unsegmented portion of J15E	0.03 SQUARE MILES
4A	VAP-J15R_ASH01A06	Ashton Creek	7.80 MILES
4A	VAP-J15R_CLC01A12	Cattail Run	4.26 MILES
4A	VAP-J15R_HRA01A04	Harrison Creek	3.22 MILES
4A	VAP-J15R_LTC01A08	Lieutenant Run	3.50 MILES
4A	VAP-J15R_POR01A04	Poor Creek	3.13 MILES
4A	VAP-J16R_SFT01A00	Swift Creek	1.80 MILES
4A	VAP-J17E_SFT01D04	Swift Creek	0.09 SQUARE MILES
4A	VAP-J17E_ZZZ02A02	Unsegmented portion in J17E watershed	0.05 SQUARE MILES
4A	VAP-J17L_SFT02A08	Lakeview Reservoir	43.50 ACRES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAP-J17R_LIA01A10	Licking Creek	0.46 MILES
4A	VAP-J17R_SFT02B00	Swift Creek	5.12 MILES
4A	VAT-G11E_BAL01A06	Ballard Creek & Bay- James R. South Shore Tributary	0.02 SQUARE MILES
4A	VAT-G11E_CYP01A06	Cypress Creek	0.26 SQUARE MILES
4A	VAT-G11E_DEP01A02	Deep Creek - Lower	0.10 SQUARE MILES
4A	VAT-G11E_KIN01A06	Kings Creek & Bay - James R. South Shore Tributary	0.04 SQUARE MILES
4A	VAT-G11E_LAW01A00	Lawnes Creek (Tributary to James River)	0.29 SQUARE MILES
4A	VAT-G11E_MRS01A06	Morrisons Creek - Mulberry Island	0.13 SQUARE MILES
4A	VAT-G11E_RIC01A06	Ragged Island Creek	0.29 SQUARE MILES
4A	VAT-G11E_TYB01A00	Tylers Beach Boat Basin	0.01 SQUARE MILES
4A	VAT-G11E_WWK01A08	Warwick River - Upper Tidal Portion	0.28 SQUARE MILES
4A	VAT-G11E_WWK02A08	Warwick River - Middle Tidal Portion	0.08 SQUARE MILES
4A	VAT-G11E_WWK03A08	Warwick River - Lower Tidal Portion	2.51 SQUARE MILES
4A	VAT-G11E_ZZZ01A00	Unsegmented estuaries - James R. Tribs	0.36 SQUARE MILES
4A	VAT-G11E_ZZZ02A00	Unsegmented estuaries - Warwick R. Tribs	0.12 SQUARE MILES
4A	VAT-G11R_BAP01A04	Baptist Run	3.15 MILES
4A	VAT-G13E_BHN01A00	Bleakhorn Creek - Tributary to Nansemond R. Mouth	0.01 SQUARE MILES
4A	VAT-G13E_BML01A06	Burnetts Mill Creek - Tributary to Upper Nansemond R.	0.03 SQUARE MILES
4A	VAT-G13E_KNC01A00	Knotts Creek - Tributary to E. shore Nansemond R.	0.12 SQUARE MILES
4A	VAT-G13E_WBN01A06	Western Branch - Tributary to Nansemond R.	0.11 SQUARE MILES
4A	VAT-G13E_ZZZ01A00	Unsegmented Estuaries - Upper Nansemond R.	0.10 SQUARE MILES
4A	VAT-G13E_ZZZ02A08	Unsegmented Estuaries - Lower Nansemond R.	0.06 SQUARE MILES
4A	VAT-G15E_BAB01A06	Bailey Creek, Western Branch Elizabeth R.	0.04 SQUARE MILES
4A	VAT-G15E_GOE01A06	Goose Creek - Western Branch, Elizabeth R.	0.05 SQUARE MILES
4A	VAT-G15E_HOF01A06	Hoffler Creek	0.05 SQUARE MILES
4A	VAT-G15E_KMK01A12	Knitting Mill Creek	0.03 SQUARE MILES
4A	VAT-G15E_SRE01A06	Streeter Creek	0.03 SQUARE MILES
4A	VAV-H09R_TYE01A00	Tye River	8.24 MILES
4A	VAV-H09R_TYE02A00	Tye River	8.40 MILES
4A	VAV-H10R_PNY01A00	Piney River	5.29 MILES
4A	VAV-H10R_PNY02A00	Piney River	1.60 MILES
4A	VAV-H10R_PNY03A04	Piney River	6.50 MILES
4A	VAV-H13R_BOB01A10	Bobs Creek	4.34 MILES
4A	VAV-H13R_RKR01A00	Rucker Run	18.35 MILES
4A	VAV-H15R_GOW01A16	Goodwin Creek	2.55 MILES
4A	VAV-H15R_RFN01A00	Rockfish River North Fork	7.18 MILES
4A	VAV-H15R_RFS01A00	Rockfish River South Fork	7.81 MILES
4A	VAV-H15R_RFS02A10	Rockfish River South Fork	3.74 MILES
4A	VAV-H16R_RKF02A00	Rockfish River	5.77 MILES
4A	VAV-H17R_TOT02A00	Totier Creek	4.01 MILES
4A	VAV-H17R_TOT03A00	Totier Creek	5.59 MILES
4A	VAV-H18R_HNF01A00	Hardware River North Fork	11.34 MILES
4A	VAV-H18R_HNS01A08	South Branch North Fork Hardware River	24.01 MILES
4A	VAV-H18R_XNH01A10	X-trib to the South Branch North Fork Hardware River 1	1.76 MILES
4A	VAV-H23R_MCM01A00	Mechums River	7.26 MILES
4A	VAV-H23R_MCM01B10	Mechums River	3.92 MILES
4A	VAV-H27R_RRN01A00	Rivanna River North Fork	6.56 MILES
4A	VAV-H27R_RRN01B10	Rivanna River North Fork	3.98 MILES
4A	VAV-H28R_MSC01B12	Moores Creek	0.54 MILES
4A	VAV-H28R_RVN01A00	Rivanna River	5.48 MILES
4A	VAV-H29R_RVN04A00	Rivanna River	5.91 MILES
4A	VAV-I14R_PTY01A00	Pheasanty Run	0.41 MILES
4A	VAV-I28R_CEC01A00	Cedar Creek	6.88 MILES
4A	VAV-I28R_CEC02A10	Cedar Creek	5.22 MILES
4A	VAV-I32R_LCF01A00	Little Calfpasture River	0.80 MILES
4A	VAV-I32R_XMO01A00	Wallace Mill Stream	0.91 MILES
4A	VAV-I34R_HYS01A00	Hays Creek	10.03 MILES
4A	VAV-I34R_HYS02A10	Hays Creek	1.91 MILES
4A	VAV-I34R_MOF01A00	Moffatts Creek	8.85 MILES
4A	VAV-I34R_OTS01A00	Otts Creek	5.39 MILES
4A	VAV-I34R_WKS01A06	Walker Creek	8.79 MILES
4A	VAV-I38R_BLD01A00	Buffalo Creek	3.96 MILES
4A	VAV-I38R_BLD02A04	Buffalo Creek	9.14 MILES
4A	VAV-I38R_BLD03A10	Buffalo Creek	2.99 MILES
4A	VAV-I38R_CLL01A00	Colliers Creek	15.11 MILES
4A	VAV-I38R_NBF01A00	Buffalo Creek North Fork	2.92 MILES
4A	VAV-I38R_NBF02A10	Buffalo Creek North Fork	4.65 MILES
4A	VAV-I38R_SBF01A00	Buffalo Creek South Fork	14.47 MILES
4A	VAW-H01R_RED01A00	Reed Creek	8.83 MILES
4A	VAW-I09R_JKS03B10	Jackson River	3.37 MILES
4A	VAW-I26R_ELS01A02	Ellis Run	1.69 MILES
4A	VAW-I26R_LMC01A00	Looney Creek	2.66 MILES
4A	VAW-I26R_MIA01A04	Mill Creek	8.89 MILES
4C	VAP-G07R_PEL01B10	Pelham Swamp	1.57 MILES
4C	VAP-G07R_RUM01A98	Rumley Marsh	4.59 MILES
4C	VAP-G07R_XAA01A10	Rumley Marsh, UT	1.76 MILES
4C	VAP-H39R_GER01A02	Georges Branch	1.86 MILES
4C	VAP-H39R_RDR01A02	Readers Branch	3.14 MILES
4C	VAP-H39R_TKE01A04	Tuckahoe Creek, East Branch	3.48 MILES
4C	VAP-H39R_XUR01A04	UT to Tuckahoe Creek	2.66 MILES
4C	VAT-G12R_ELE01A00	Eley Swamp tributary to Lake Cohoon (PWS)	4.80 MILES
4C	VAW-I22R_CRD01A04	Crawford Branch	1.87 MILES
4C	VAW-I23R_CVA01A02	Cove Branch	6.04 MILES
5A	VAC-H05R_ACH01A16	Archer Creek	7.46 MILES
5A	VAC-H05R_ANC01A16	Allens Creek	7.18 MILES
5A	VAC-H05R_BCR01A00	Beaver Creek	8.67 MILES
5A	VAC-H05R_BEK01A06	Beck Creek	6.28 MILES
5A	VAC-H05R_JMS01A00	James River	6.26 MILES
5A	VAC-H05R_JMS02A00	James River	6.78 MILES
5A	VAC-H05R_JMS02B14	James River	3.05 MILES
5A	VAC-H05R_JMS03A00	James River	7.71 MILES
5A	VAC-H05R_LTJ01A10	Little Beaver Creek	7.13 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5A	VAC-H05R_PDG01A06	Partridge Creek	10.40 MILES
5A	VAC-H08R_DVD01A00	David Creek	5.18 MILES
5A	VAC-H08R_JMS01A00	James River	9.67 MILES
5A	VAC-H11L_MIN01A06	Mill Creek Reservoir	186.40 ACRES
5A	VAC-H11L_SHS01A02	Stonehouse Creek Reservoir	33.53 ACRES
5A	VAC-H11L_TRH01A02	Thrashers Creek Reservoir	31.95 ACRES
5A	VAC-H14R_JMS01A00	James River	18.57 MILES
5A	VAC-H14R_MLY01A14	Mallorys Creek	8.75 MILES
5A	VAC-H17R_JMS01A00	James River	18.69 MILES
5A	VAC-H20R_JMS01A02	James River	1.98 MILES
5A	VAC-H20R_JMS02A02	James River	5.10 MILES
5A	VAC-H20R_JMS03A02	James River	9.24 MILES
5A	VAC-H20R_SSX01A08	South Creek	6.66 MILES
5A	VAC-H21L_TBM01A06	Troublesome Reservoir	52.68 ACRES
5A	VAC-H21R_WTN01A08	Walton Fork	2.99 MILES
5A	VAC-H36R_BFC01A08	Buffalo Creek	7.10 MILES
5A	VAC-H36R_BIO01A08	Bigger Creek	1.20 MILES
5A	VAC-H36R_BIO01C10	Bigger Creek	3.23 MILES
5A	VAC-J03R_SDY02A12	Sandy River	4.08 MILES
5A	VAC-J04R_MTC01A10	Mountain Creek	8.97 MILES
5A	VAC-J04R_RCE01A12	Rice Creek	4.59 MILES
5A	VAP-G01R_XFU01A16	XFU - Pocoshock Creek, UT	3.83 MILES
5A	VAP-G01R_XVO01A08	XVO - Almond Creek, UT	0.46 MILES
5A	VAP-G01R_XVP01A08	XVP - Almond Creek, UT	0.36 MILES
5A	VAP-G03L_WER04A06	Harrison Lake	60.16 ACRES
5A	VAP-G03R_PTH01A10	Poythress Run	0.70 MILES
5A	VAP-G03R_XUD01A06	UT to West Run	1.57 MILES
5A	VAP-G03R_XYO01A06	UT to Cattail Creek	0.34 MILES
5A	VAP-G04L_SKC01A08	Sunken Meadow Pond	172.85 ACRES
5A	VAP-G04R_BLB01A06	Bailey Branch	5.69 MILES
5A	VAP-G06L_XBT01A14	Westhaven Lake	15.12 ACRES
5A	VAP-G07L_CHK01A00	Chickahominy Lake	1,050.46 ACRES
5A	VAP-G07R_RUM01B14	Rumley Marsh	1.31 MILES
5A	VAP-G07R_XWS01A10	Rumley Marsh, UT	2.17 MILES
5A	VAP-G08R_BRW01A14	Barrows Creek	6.93 MILES
5A	VAP-G08R_MCR01A04	Mill Creek	4.81 MILES
5A	VAP-G09L_DSC01A00	Diascund Creek Reservoir	1,056.13 ACRES
5A	VAP-G09R_BDM01A98	Beaverdam Creek	4.34 MILES
5A	VAP-G09R_XAH01A12	XAH - Beaverdam Creek, UT	2.23 MILES
5A	VAP-G09R_XBY01A16	XBY - Beaverdam Creek, UT	1.08 MILES
5A	VAP-G10R_DRK01A14	Dark Swamp	3.15 MILES
5A	VAP-G10R_XHC01A08	Dark Swamp, UT	1.30 MILES
5A	VAP-H33L_STG01A12	Powhatan Lakes	61.36 ACRES
5A	VAP-H38R_JMS01A06	James River	2.35 MILES
5A	VAP-H38R_JMS03A06	James River	6.94 MILES
5A	VAP-H38R_JMS04A06	James River	0.51 MILES
5A	VAP-H39R_JMS01A98	James River	7.44 MILES
5A	VAP-H39R_JMS01B00	James River	2.03 MILES
5A	VAP-H39R_JMS02A98	James River	3.35 MILES
5A	VAP-H39R_JMS02B04	James River	4.37 MILES
5A	VAP-H39R_SNJ01A04	Stony Run	1.01 MILES
5A	VAP-H39R_SNJ02A04	Stony Run	1.35 MILES
5A	VAP-H39R_XYT01A08	Stony Run, UT (XYT)	1.27 MILES
5A	VAP-J10R_XUE01A06	UT to Appomattox River	1.49 MILES
5A	VAP-J15R_APP01A12	Appomattox River	1.94 MILES
5A	VAP-J17L_SFT01A98	Swift Creek Lake	107.74 ACRES
5A	VAP-J17R_NUT01A06	Nuttree Branch	5.58 MILES
5A	VAP-J17R_SFT01A00	Swift Creek	3.78 MILES
5A	VAP-J17R_SFT02A00	Swift Creek	2.88 MILES
5A	VAT-G10E_CLG01A06	College Creek	0.58 SQUARE MILES
5A	VAT-G10E_JMS01A06	James River Mainstem - Chickahominy R. to Hog Point	17.84 SQUARE MILES
5A	VAT-G10E_JMS01B08	James River - Carters Grove Area (G10)	0.99 SQUARE MILES
5A	VAT-G10E_JMS02A06	James River - Hog Point Area (Open Shellfish Area)	2.24 SQUARE MILES
5A	VAT-G10E_ZZZ01A00	Unsegmented estuaries in G10E	1.12 SQUARE MILES
5A	VAT-G10E_ZZZ02A00	Unsegmented estuaries - Hog Point Area	0.01 SQUARE MILES
5A	VAT-G10R_CGE01A02	College Run	2.61 MILES
5A	VAT-G10R_POW01A00	Powhatan Creek	5.36 MILES
5A	VAT-G10R_XZK01A10	Unnamed tributary to Mill Creek	1.22 MILES
5A	VAT-G11E_JMS01B08	James River - Hog Island Area [JMSOH area]	3.85 SQUARE MILES
5A	VAT-G11E_JMS01D14	James River - Carters Grove Area (G11)	1.22 SQUARE MILES
5A	VAT-G11L_LHR01A08	Lee Hall Reservoir	292.14 ACRES
5A	VAT-G11L_SFP01A16	Scotts Factory Pond	14.83 ACRES
5A	VAT-G11R_CKT01A04	Chuckatuck Creek	1.53 MILES
5A	VAT-G11R_CPN01A00	Champion Swamp	3.16 MILES
5A	VAT-G11R_PGN01A04	Pagan River (including Wrenns Millpond)	1.35 MILES
5A	VAT-G12L_LCN01A06	Lake Cohoon (PWS)	454.16 ACRES
5A	VAT-G12L_LKK01A06	Lake Kilby (PWS)	200.03 ACRES
5A	VAT-G12L_LMD01A06	Lake Meade (PWS)	489.49 ACRES
5A	VAT-G12L_SPE01A06	Speights Run - Lake (PWS)	120.87 ACRES
5A	VAT-G14L_LPR01A06	Lake Prince - Reservoir (PWS)	715.37 ACRES
5A	VAT-G14L_NWB01A08	Lake Burnt Mills	637.99 ACRES
5A	VAT-G14L_NWB02A08	Western Branch Reservoir	1,209.67 ACRES
5A	VAT-G14R_CRL02A08	Carbell Swamp - Lower	2.88 MILES
5A	VAT-G15E_HAI01A06	Hampton River	0.55 SQUARE MILES
5A	VAT-G15E_MIG01A10	Mill Creek, Trib to Hampton Roads Harbor	0.91 SQUARE MILES
5A	VAT-G15E_WLY01A06	Willoughby Bay [Less Beach Area]	2.48 SQUARE MILES
5A	VAT-G15E_WLY03A06	Willoughby Bay - Beach Area	0.14 SQUARE MILES
5A	VAV-H09R_BKC01A14	Black Creek	1.95 MILES
5A	VAV-H09R_TYE03A00	Tye River	6.95 MILES
5A	VAV-H09R_TYE03B10	Tye River	0.75 MILES
5A	VAV-H13L_XLU01A04	Lake Nelson	40.62 ACRES
5A	VAV-H16R_BVC01A04	Beaver Creek	7.41 MILES
5A	VAV-H16R_COV01A00	Cove Creek	10.46 MILES
5A	VAV-H16R_RKF01B10	Rockfish River	8.01 MILES
5A	VAV-H16R_RKF01C10	Rockfish River	9.27 MILES
5A	VAV-H16R_XRK01A14	Rockfish River UT	2.69 MILES
5A	VAV-H17L_TOT01A04	Totier Creek Reservoir	37.23 ACRES
5A	VAV-H23L_SIN01A04	Lake Albemarle	37.01 ACRES
5A	VAV-H23R_BRX01A00	Broad Axe Run	8.31 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5A	VAV-H23R_LKN01A00	Lickinghole Creek	8.93 MILES
5A	VAV-H23R_SIN02A10	Spring Creek	3.48 MILES
5A	VAV-H23R_SKM01A10	Stockton Creek	12.06 MILES
5A	VAV-H23R_SLB01A08	Slabtown Branch	4.92 MILES
5A	VAV-H23R_XPT01A10	X-trib to Parrott Branch	1.15 MILES
5A	VAV-H24R_MNF01A00	Moormans River North Fork	19.07 MILES
5A	VAV-H24R_PRG01A10	Pond Ridge Branch	2.03 MILES
5A	VAV-H24R_XDL01A12	X-trib to Doyles River	4.74 MILES
5A	VAV-H25R_BKM01A00	Buck Mountain Creek	10.59 MILES
5A	VAV-H25R_XPY01A12	Piney Creek X-trib	3.22 MILES
5A	VAV-H26R_FSH01A12	Fishing Creek	12.53 MILES
5A	VAV-H26R_IVC01A00	Ivy Creek	2.56 MILES
5A	VAV-H26R_IVC02A00	Ivy Creek	4.02 MILES
5A	VAV-H26R_IVC03A00	Ivy Creek	5.49 MILES
5A	VAV-H26R_NKD01A10	Naked Creek	9.82 MILES
5A	VAV-H26R_PLC01A10	Powell Creek	10.36 MILES
5A	VAV-H26R_RRS01A00	Rivanna River South Fork	3.47 MILES
5A	VAV-H26R_XLI01A16	Little Ivy Creek X-trib	4.44 MILES
5A	VAV-H26R_XRV01A10	South Fork Rivanna River X-trib	3.20 MILES
5A	VAV-H27R_BLU01A04	Blue Run	8.72 MILES
5A	VAV-H27R_FTB01A08	X-trib to Flat Branch	2.03 MILES
5A	VAV-H27R_MAR01A10	Marsh Run	3.65 MILES
5A	VAV-H27R_QTR01A16	Quarter Creek	1.58 MILES
5A	VAV-H27R_SDV01A14	Stanardsville Run	5.70 MILES
5A	VAV-H27R_SFR01A00	Swift Run	1.91 MILES
5A	VAV-H28R_BSC01A00	Biscuit Run	6.59 MILES
5A	VAV-H28R_MOY01A02	Morey Creek	2.93 MILES
5A	VAV-H28R_SNK01A02	Schenk's Branch	2.91 MILES
5A	VAV-H28R_TWN01A10	Town Branch	1.19 MILES
5A	VAV-H28R_XMR01A12	X-trib to Moores Creek	2.23 MILES
5A	VAV-H28R_XMW01A10	Meadow Creek X-trib	1.78 MILES
5A	VAV-H28R_XRC01A04	Moores Creek X-Trib	1.66 MILES
5A	VAV-H29R_BID01A00	Buck Island Creek	2.65 MILES
5A	VAV-H29R_BID02A00	Buck Island Creek	6.51 MILES
5A	VAV-H29R_CAR01A06	Carroll Creek	18.45 MILES
5A	VAV-H30R_BEP01A12	East Prong Beaverdam Creek	4.69 MILES
5A	VAV-H30R_JAK01A12	Jacks Branch	7.16 MILES
5A	VAV-H30R_MCK02A10	Mechunk Creek	12.60 MILES
5A	VAV-H31R_CRY01A08	Carys Creek	1.79 MILES
5A	VAV-H31R_RVN02A00	Rivanna River	8.38 MILES
5A	VAV-H31R_XRN01A10	X-trib to the Rivanna River	1.00 MILES
5A	VAV-H31R_XYX01A10	X-trib to Boston Creek (Lake Monticello)	2.29 MILES
5A	VAV-H32L_00	Fluvanna Ruritan Lake	51.13 ACRES
5A	VAV-H32R_CFK01A00	Cunningham Creek North Fork	4.18 MILES
5A	VAV-H32R_CNM01A00	Cunningham Creek Middle Fork	3.40 MILES
5A	VAV-H32R_CNM02A04	Middle Fork Cunningham Creek	4.02 MILES
5A	VAV-H32R_CXB01A00	Cunningham Creek	5.62 MILES
5A	VAV-H32R_XCF01A10	X-trib to North Fork Cunningham Creek	0.59 MILES
5A	VAV-H32R_XPA01A06	X-trib to the Middle Fork Cunningham Creek	3.77 MILES
5A	VAV-I02R_BCC03A00	Back Creek	12.28 MILES
5A	VAV-I02R_BCC04A10	Back Creek	2.77 MILES
5A	VAV-I12R_CWP02A10	Cowpasture River	8.30 MILES
5A	VAV-I13R_BLP01A00	Bullpasture River	12.62 MILES
5A	VAV-I13R_BLP02A10	Bullpasture River	11.94 MILES
5A	VAV-I14R_LAA01A02	Laurel Run	2.03 MILES
5A	VAV-I16R_XRI01A02	Porters Mill Creek	4.85 MILES
5A	VAV-I28R_ELK01A00	Elk Creek	0.70 MILES
5A	VAV-I28R_ELK02A10	Elk Creek	1.39 MILES
5A	VAV-I28R_ELK03A10	Elk Creek	1.42 MILES
5A	VAV-I28R_ELK04A10	Elk Creek	0.47 MILES
5A	VAV-I29R_RAM01A00	Ramseys Draft	10.29 MILES
5A	VAV-I30R_CFP03A10	Calfpasture River	2.83 MILES
5A	VAV-I30R_HAM01A16	Hamilton Branch	6.28 MILES
5A	VAV-I30R_XGR01A06	Piney Branch	2.33 MILES
5A	VAV-I32R_LCF03A00	Little Calfpasture River	5.32 MILES
5A	VAV-I32R_LCF04A10	Little Calfpasture River	7.03 MILES
5A	VAV-I33R_CGB01A00	Cedar Grove Branch	4.62 MILES
5A	VAV-I33R_KRR01A00	Kerrs Creek	3.04 MILES
5A	VAV-I33R_KRR02A00	Kerrs Creek	8.82 MILES
5A	VAV-I35R_MIS01A00	Mill Creek	9.13 MILES
5A	VAV-I35R_WOS01A00	Woods Creek	6.05 MILES
5A	VAV-I36R_MRC01A00	Moores Creek	9.09 MILES
5A	VAV-I36R_MRL01A00	Marl Creek	7.74 MILES
5A	VAV-I36R_SMR01A00	Saint Marys River	1.97 MILES
5A	VAV-I36R_STH02A10	South River	7.95 MILES
5A	VAV-I37R_MRY01A00	Maury River	5.10 MILES
5A	VAV-I37R_MRY02A00	Maury River	7.24 MILES
5A	VAV-I37R_MRY03A00	Maury River	4.58 MILES
5A	VAV-I37R_PGH01A00	Poague Run	17.12 MILES
5A	VAV-I38L_MOR01A10	Lexington Reservoir	22.60 ACRES
5A	VAW-H01R_JMS01A00	James River	1.36 MILES
5A	VAW-H01R_JMS01A04	James River	0.70 MILES
5A	VAW-H01R_JMS02A00	James River	3.30 MILES
5A	VAW-H01R_JMS03A00	James River	3.05 MILES
5A	VAW-H01R_JMS04A00	James River	7.42 MILES
5A	VAW-I04R_FAS01A00	Falling Spring Creek	5.10 MILES
5A	VAW-I04R_JKS02A00	Jackson River	1.27 MILES
5A	VAW-I09R_SMH01A00	Smith Creek	1.21 MILES
5A	VAW-I18R_JMS02A00	James River	7.63 MILES
5A	VAW-I18R_SKG01A00	Sinking Creek	6.42 MILES
5A	VAW-I19R_CRG02A02	Craig Creek	6.55 MILES
5A	VAW-I19R_CRG02A14	Craig Creek	1.35 MILES
5A	VAW-I22R_BAR01A00	Barbours Creek	7.15 MILES
5A	VAW-I22R_CRG01A00	Craig Creek	5.96 MILES
5A	VAW-I22R_CRG02A00	Craig Creek	6.23 MILES
5A	VAW-I22R_CRG02B10	Craig Creek	4.67 MILES
5A	VAW-I22R_CRG03A14	Lower Craig Creek	10.70 MILES
5A	VAW-I22R_CRG05A02	Craig Creek	5.38 MILES
5A	VAW-I22R_CRG05B14	Craig Creek	6.05 MILES
5A	VAW-I22R_LIP01A04	Little Patterson Creek	4.24 MILES
5A	VAW-I22R_MIU02A02	Mill Creek	4.24 MILES
5A	VAW-I24R_LAP01A08	Lapsley Run	9.01 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5A	VAW-I25R_CAT03A00	Catawba Creek	6.66 MILES
5A	VAW-I25R_CAT03A14	Catawba Creek	4.26 MILES
5A	VAW-I25R_CAT03B04	Catawba Creek	1.41 MILES
5A	VAW-I25R_CAT04A04	Catawba Creek	0.32 MILES
5A	VAW-I25R_CAT04B04	Catawba Creek	0.81 MILES
5A	VAW-I25R_CAT04C04	Catawba Creek	2.07 MILES
5A	VAW-I25R_CAT04D12	Catawba Creek	1.16 MILES
5A	VAW-I26R_XUL01A10	Mill Creek, UT (XUL)	5.37 MILES
5A	VAW-I27R_JMS01A00	James River	7.97 MILES
5A	VAW-I27R_JMS02A14	James River	7.15 MILES
5A	VAW-I28R_JMS01A08	James River	1.55 MILES
5C	VAP-G01R_RDW01A06	Redwater Creek	2.96 MILES
5C	VAP-G01R_XBD01B04	UT (dry ditch) to James River	0.39 MILES
5C	VAP-G01R_XYI01A06	XYI - Coles Run, UT	0.94 MILES
5C	VAP-G02R_JOD01A04	Johnson Creek	16.27 MILES
5C	VAP-G02R_ROT01A00	Roundabout Creek	3.96 MILES
5C	VAP-G02R_XBE01A14	XBE - Roundabout Creek, UT	1.43 MILES
5C	VAP-G03R_WER01A00	Upper West Run Watershed	43.70 MILES
5C	VAP-G05R_GRC01A04	Grassy Swamp Creek	1.02 MILES
5C	VAP-G05R_XDD02A06	XDD - Chickahominy River, UT	0.56 MILES
5C	VAP-G06R_BDY01A04	Bloody Run	1.16 MILES
5C	VAP-G06R_PWH01A02	Powhite Creek	2.14 MILES
5C	VAP-G07R_XAB01A10	Collins Run, UT	1.72 MILES
5C	VAP-G08R_YRM01A12	Yarmouth Creek	4.09 MILES
5C	VAP-G09R_DSC01A00	Diascund Creek	6.88 MILES
5C	VAP-G09R_WAS01A00	Wahrani Swamp	3.66 MILES
5C	VAP-G09R_XAJ01A12	XAJ - Diascund Creek, UT	2.93 MILES
5C	VAP-G09R_XAK01A12	XAK - Diascund Creek, UT	2.91 MILES
5C	VAP-G09R_XAL01A12	XAL - Diascund Creek, UT	1.22 MILES
5C	VAP-H33R_DCR01A98	Deep Creek	0.37 MILES
5C	VAP-H38R_BNH01A08	Branch Creek	5.51 MILES
5C	VAP-J07L_XLW01A00	Amelia Lake	98.31 ACRES
5C	VAP-J10R_GOC01A08	Goodes Creek	2.91 MILES
5C	VAP-J12R_HOI01A00	Horsepen Branch	4.44 MILES
5C	VAP-J13R_NMZ01A00	Namozine Creek	12.91 MILES
5C	VAP-J14R_STY01A08	Stoney Creek	2.59 MILES
5C	VAP-J15R_OTC01B08	Oldtown Creek	6.22 MILES
5C	VAP-J16R_BCM01A04	Blackman Creek	4.56 MILES
5C	VAP-J17R_CUR01A08	Church Branch	2.64 MILES
5C	VAP-J17R_LNS01A10	Long Swamp	3.72 MILES
5C	VAP-J17R_SEC01B06	Second Branch	6.22 MILES
5C	VAT-G14R_CRL01A08	Carbell Swamp - Upper	2.95 MILES
5C	VAV-I01R_BOL01A04	Bolar Run	2.09 MILES
5C	VAV-I01R_JKS01A00	Jackson River	13.49 MILES
5C	VAV-I01R_JKS02A00	Jackson River	15.37 MILES
5C	VAV-I09R_WLN03A06	Wilson Creek Upper	6.74 MILES
5C	VAW-I10R_POT03A02	Potts Creek	5.66 MILES
5D	VAC-H03R_BKW01A00	Blackwater Creek	10.54 MILES
5D	VAC-H03R_BUN01A06	Burton Creek	3.47 MILES
5D	VAC-H03R_IVA01A00	Ivy Creek	21.44 MILES
5D	VAC-H03R_JMS01A00	James River	3.85 MILES
5D	VAC-H03R_JMS04A02	James River	4.21 MILES
5D	VAC-H03R_JMS06A02	James River	8.25 MILES
5D	VAC-H03R_JTH01A06	Judith Creek	11.08 MILES
5D	VAC-H03R_THK01A06	Tomahawk Creek	6.06 MILES
5D	VAC-H05R_JMS04A00	James River	2.68 MILES
5D	VAC-H12R_RTD01A00	Rutledge Creek	3.32 MILES
5D	VAC-H21R_HOX01A08	Horsepen Creek	5.86 MILES
5D	VAC-H22R_SLT03A02	Slate River	3.89 MILES
5D	VAC-H36R_RLD01A06	Reynolds Creek	4.14 MILES
5D	VAC-H36R_RLD01C10	Reynolds Creek	2.70 MILES
5D	VAC-H36R_RND01A00	Randolph Creek	11.80 MILES
5D	VAC-J01R_CNE01A10	Crane Creek	5.18 MILES
5D	VAC-J01R_HRE01A04	Horsepen Creek	4.00 MILES
5D	VAC-J04R_BSR01B10	Bush River	11.48 MILES
5D	VAC-J05R_BRI01A98	Briery Creek	10.48 MILES
5D	VAC-J06R_HRP01A00	Horsepen Creek	3.99 MILES
5D	VAP-G01E_JMS01A02	James River	0.24 SQUARE MILES
5D	VAP-G01E_JMS02A02	James River	0.02 SQUARE MILES
5D	VAP-G01E_JMS03A02	James River	1.23 SQUARE MILES
5D	VAP-G01R_ALM01A98	Almond Creek	2.10 MILES
5D	VAP-G01R_FAC02B08	Falling Creek	0.98 MILES
5D	VAP-G01R_GIL01A04	Gillies Creek	5.88 MILES
5D	VAP-G01R_GOD01A00	Goode Creek	1.21 MILES
5D	VAP-G01R_GTB01A12	Great Branch	4.38 MILES
5D	VAP-G01R_KSL01A04	Kingsland Creek	8.54 MILES
5D	VAP-G01R_PCT01A06	Proctors Creek	8.26 MILES
5D	VAP-G02E_APP01A12	Appomattox River	0.11 SQUARE MILES
5D	VAP-G02E_JMS01A00	James River	0.08 SQUARE MILES
5D	VAP-G02E_JMS02A00	James River	3.97 SQUARE MILES
5D	VAP-G02E_JMS03A06	James River	0.63 SQUARE MILES
5D	VAP-G02R_CCH01A00	Crewes Channel	3.24 MILES
5D	VAP-G02R_TIC01B16	Turkey Island Creek	7.03 MILES
5D	VAP-G03E_BLY01A98	Bailey Creek/Cattail Creek	0.11 SQUARE MILES
5D	VAP-G03E_JMS01A00	James River	10.19 SQUARE MILES
5D	VAP-G03E_JMS01B10	James River	3.49 SQUARE MILES
5D	VAP-G03E_PTH01A00	Poythress Run	0.01 SQUARE MILES
5D	VAP-G03R_BLY01A98	Bailey Creek	5.12 MILES
5D	VAP-G03R_BLY02A08	Bailey Creek	1.35 MILES
5D	VAP-G03R_WER03A00	West Run	1.86 MILES
5D	VAP-G04E_JMS01A02	James River	7.76 SQUARE MILES
5D	VAP-G04E_JMS03A04	James River	3.76 SQUARE MILES
5D	VAP-G05R_CHK01B10	Chickahominy River	2.30 MILES
5D	VAP-G05R_JOP01A14	Jordans Branch	2.19 MILES
5D	VAP-G05R_NTR01A00	North Run	4.24 MILES
5D	VAP-G05R_NTR02A06	North Run	3.66 MILES
5D	VAP-G05R_UPM01A02	Upham Brook	10.99 MILES
5D	VAP-G05R_UPM01B08	Upham Brook	1.16 MILES
5D	VAP-G05R_XCJ01A16	XCJ - North Run, UT	0.42 MILES
5D	VAP-G05R_XDD01A98	XDD - Chickahominy River, UT	1.17 MILES
5D	VAP-G05R_XXP01A08	Upham Brook, UT (XXP)	1.46 MILES
5D	VAP-G06R_BEV01B16	Beaverdam Creek	2.67 MILES
5D	VAP-G06R_BTS01A02	Boatswain Creek	3.75 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAP-G06R_CHK01A98	Chickahominy River	7.45 MILES
5D	VAP-G07R_CNR01A00	Collins Run	4.49 MILES
5D	VAP-G07R_SMN01A00	Schiminoe Creek	6.22 MILES
5D	VAP-H33R_JMS01A98	James River	23.08 MILES
5D	VAP-H34R_PHL01A08	Phils Creek	6.69 MILES
5D	VAP-H38R_LLI01A12	Little Creek	0.65 MILES
5D	VAP-H39R_BOD02A06	Broad Branch	2.63 MILES
5D	VAP-H39R_BOR01A02	Bernards Creek	8.12 MILES
5D	VAP-H39R_DPR01A00	Deep Run	4.16 MILES
5D	VAP-H39R_DPR02A00	Deep Run	1.49 MILES
5D	VAP-H39R_JMS03A98	James River	2.94 MILES
5D	VAP-H39R_JMS03B14	James River - South Channel	0.94 MILES
5D	VAP-H39R_JOH01A08	Jones Creek	8.19 MILES
5D	VAP-H39R_LIY01A00	Little Tuckahoe Creek	6.02 MILES
5D	VAP-H39R_RDD01B10	Reedy Creek	0.35 MILES
5D	VAP-H39R_XAB01A10	XAB - Salles Creek, UT	0.10 MILES
5D	VAP-H39R_XBH01A14	XBH - Reedy Creek, UT	0.11 MILES
5D	VAP-H39R_XZE01A10	James River, UT	1.30 MILES
5D	VAP-J09R_NBB01A12	Nibbs Creek South Branch	5.86 MILES
5D	VAP-J10R_SMK01A06	Smacks Creek	9.06 MILES
5D	VAP-J11R_BLO01A00	Bland Creek	6.51 MILES
5D	VAP-J11R_CLR01B10	Cellar Creek	2.70 MILES
5D	VAP-J11R_WDY01A00	Woody Creek	7.97 MILES
5D	VAP-J12R_WTK02A00	Winticomack Creek	4.07 MILES
5D	VAP-J14R_WNK01A00	Whipponock Creek	6.82 MILES
5D	VAP-J15E_APP01A98	Lower Appomattox River/Ashton Creek	0.51 SQUARE MILES
5D	VAP-J15E_APP02A98	Appomattox River	1.36 SQUARE MILES
5D	VAP-J15E_APP02B12	Appomattox River	0.70 SQUARE MILES
5D	VAP-J15R_OTC01A00	Oldtown Creek	4.22 MILES
5D	VAT-G10E_MIC01A00	Mill Creek	0.08 SQUARE MILES
5D	VAT-G10E_POW01A02	Powhatan Creek/Sandy Bay	0.20 SQUARE MILES
5D	VAT-G11E_CKT01A04	Chuckatuck & Brewers Creeks	0.56 SQUARE MILES
5D	VAT-G11E_CKT02A12	Chuckatuck Creek and Mouth in James	0.89 SQUARE MILES
5D	VAT-G11E_JMS01A06	James River - Gravel Neck to Pagan River	40.26 SQUARE MILES
5D	VAT-G11E_JMS01C08	James River - Carter Grove Area	0.40 SQUARE MILES
5D	VAT-G11E_JMS02A06	James River - Jail Point to Hilton Village	24.70 SQUARE MILES
5D	VAT-G11E_JMS03A06	James River - Along Lower North Shore	3.94 SQUARE MILES
5D	VAT-G11E_JMS03B06	James River - Hilton Beach Area	0.11 SQUARE MILES
5D	VAT-G11E_JMS03C06	James River - Huntington Beach Area	0.01 SQUARE MILES
5D	VAT-G11E_JMS04A06	James River - Hilton Village to Craney Island	24.88 SQUARE MILES
5D	VAT-G11E_JMS06A10	James River - Outside Mouth Streeter & Hoffler Creeks	0.16 SQUARE MILES
5D	VAT-G11E_JOG01A08	Jones Creek - Tributary to Pagan River	0.23 SQUARE MILES
5D	VAT-G11E_JOG02A08	Jones Creek - Tributary to Pagan River	0.10 SQUARE MILES
5D	VAT-G11E_PGN01A08	Pagan River - Upstream of Chalmers Point	0.30 SQUARE MILES
5D	VAT-G11E_PGN01D16	Pagan River - Middle	0.15 SQUARE MILES
5D	VAT-G11E_PGN02A08	Pagan River - Middle	0.92 SQUARE MILES
5D	VAT-G11E_PGN02B14	Pagan River - Middle	0.25 SQUARE MILES
5D	VAT-G11E_PGN02D16	Pagan River - Middle	0.08 SQUARE MILES
5D	VAT-G11E_PGN03A10	Pagan River - Mouth Area	0.74 SQUARE MILES
5D	VAT-G11E_SFF02A08	Skiffes Creek System [Admin Cond]	0.45 SQUARE MILES
5D	VAT-G11E_SFF03A10	Skiffes Creek - Mouth	0.06 SQUARE MILES
5D	VAT-G11E_TTS01A16	Titus Creek	0.02 SQUARE MILES
5D	VAT-G13E_BEN01A04	Bennett Creek - Tributary to Nansemond R. [No TMDL]	0.54 SQUARE MILES
5D	VAT-G13E_NAN01A00	Nansemond River - Upper	0.27 SQUARE MILES
5D	VAT-G13E_NAN02A06	Nansemond River - Upper Middle	0.21 SQUARE MILES
5D	VAT-G13E_NAN03A06	Nansemond River - Lower Middle	2.83 SQUARE MILES
5D	VAT-G13E_NAN04A00	Nansemond River - Lower [No TMDL]	6.30 SQUARE MILES
5D	VAT-G13E_NAN04C10	Nansemond River - Lower DSS Condemned at Knotts Cr	0.47 SQUARE MILES
5D	VAT-G13E_SGL01A00	Shingle Creek - Tributary to Nansemond R.	0.04 SQUARE MILES
5D	VAT-G13E_STR01A04	Star & Oyster House Creeks - Tributary to Nansemond R.	0.05 SQUARE MILES
5D	VAT-G15E_BRO01A02	Broad Creek, Eastern Br. Elizabeth R.	0.37 SQUARE MILES
5D	VAT-G15E_DEC01A06	Deep Creek, Southern Br. Elizabeth R.	0.28 SQUARE MILES
5D	VAT-G15E_DPT01A06	Drum Point Creek - Western Branch, Elizabeth R.	0.15 SQUARE MILES
5D	VAT-G15E_EBE01A00	Eastern Branch, Elizabeth R. - Upper	0.38 SQUARE MILES
5D	VAT-G15E_EBE02A06	Eastern Branch, Elizabeth R. - Lower	1.02 SQUARE MILES
5D	VAT-G15E_ELI01A06	Elizabeth River Mainstem - Upper	0.47 SQUARE MILES
5D	VAT-G15E_ELI02A06	Elizabeth River Mainstem - Middle	4.00 SQUARE MILES
5D	VAT-G15E_ELI03A08	Elizabeth River Mainstem - Mouth	3.44 SQUARE MILES
5D	VAT-G15E_GIL01A10	Gilligan Cr - Upper, trib to SB Eliz R	0.01 SQUARE MILES
5D	VAT-G15E_GIL02A10	Gilligan Cr - Lower, trib to SB Eliz R	0.01 SQUARE MILES
5D	VAT-G15E_IND01A02	Indian River - Eastern Branch, Elizabeth R.	0.27 SQUARE MILES
5D	VAT-G15E_JMS01A00	James River at Hampton Roads Harbor	25.54 SQUARE MILES
5D	VAT-G15E_JMS01B06	James River - King/Lincoln Park Beach Area	0.01 SQUARE MILES
5D	VAT-G15E_JMS01C06	James River - Anderson Park Beach Area	0.01 SQUARE MILES
5D	VAT-G15E_JMS05A06	James River - Newport News Point to NW Corner Craney Isl.	3.61 SQUARE MILES
5D	VAT-G15E_JON01A10	Jones Cr - Upper, trib to SB Eliz R	0.03 SQUARE MILES
5D	VAT-G15E_JON02A10	Jones Cr - Lower, trib to SB Eliz R	0.02 SQUARE MILES
5D	VAT-G15E_LAF01A06	Lafayette River - Upper	1.74 SQUARE MILES
5D	VAT-G15E_LAF02A06	Lafayette River - Lower	0.40 SQUARE MILES
5D	VAT-G15E_MAI01A10	Mains Cr. - SB Eliz R. E shore Tributary	0.01 SQUARE MILES
5D	VAT-G15E_MCE01A10	Mill Creek - SB Elizabeth R. S. shore tributary	0.02 SQUARE MILES
5D	VAT-G15E_MDM01A10	Milldam Cr trib S. Br. Elizabeth R.	0.07 SQUARE MILES
5D	VAT-G15E_NMC01A00	New Mill Creek - Southern Br. Elizabeth R.	0.08 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAT-G15E_NTN01A10	Newton Cr trib to SB Eliz R	0.04 SQUARE MILES
5D	VAT-G15E_PAR01A06	Paradise Creek - Upper, trib. to S. Br. Elizabeth R.	0.03 SQUARE MILES
5D	VAT-G15E_PAR02A10	Paradise Creek - Lower, trib. to S. Br. Elizabeth R.	0.03 SQUARE MILES
5D	VAT-G15E_SBE01A00	Southern Branch, Elizabeth R. - Upper	0.64 SQUARE MILES
5D	VAT-G15E_SBE02A06	Southern Branch, Elizabeth R. - Middle	1.07 SQUARE MILES
5D	VAT-G15E_SBE03A06	Southern Branch, Elizabeth R. - Lower	0.55 SQUARE MILES
5D	VAT-G15E_SCO01A06	Scott Creek	0.19 SQUARE MILES
5D	VAT-G15E_STJ01A04	Saint Julian Creek	0.13 SQUARE MILES
5D	VAT-G15E_STM01A10	Steamboat Creek	0.06 SQUARE MILES
5D	VAT-G15E_WBE01A02	Western Branch, Elizabeth R. - Upper	0.56 SQUARE MILES
5D	VAT-G15E_WBE02A00	Western Branch, Elizabeth R. - Lower	1.46 SQUARE MILES
5D	VAT-G15E_XFR01A10	UT to SB Elizabeth R. S shore estuary SE of Mill Cr.	0.01 SQUARE MILES
5D	VAT-G15E_XQT01A10	UT to SB Elizabeth R. N shore creek near Great Bridge Locks	0.04 SQUARE MILES
5D	VAT-G15E_XQU01A10	SB Eliz N shore creek SW of Mains Cr.	0.02 SQUARE MILES
5D	VAT-G15E_ZZZ02A08	Unsegmented estuaries in	0.06 SQUARE MILES
5D	VAT-G15E_ZZZ03A08	Unsegmented estuaries in	0.26 SQUARE MILES
5D	VAT-G15E_ZZZ04A08	Unsegmented estuaries in WBEMH	0.56 SQUARE MILES
5D	VAV-H09R_HAT01A04	Hat Creek	9.51 MILES
5D	VAV-H09R_MSB01A00	Montebello Spring Branch	0.13 MILES
5D	VAV-H15R_TLR01A08	Taylor Creek	4.99 MILES
5D	VAV-H17R_TOT01A00	Totier Creek	0.71 MILES
5D	VAV-H19R_HRD01A00	Hardware River	11.34 MILES
5D	VAV-H19R_HRD02A10	Hardware River	11.90 MILES
5D	VAV-H23R_MCM02A00	Mechums River	2.07 MILES
5D	VAV-H23R_MCM02B10	Mechums River	13.09 MILES
5D	VAV-H27R_PRD01A00	Preddy Creek	7.48 MILES
5D	VAV-H27R_PRD02A06	Preddy Creek North Branch	6.24 MILES
5D	VAV-H27R_RRN02A00	Rivanna River North Fork	3.82 MILES
5D	VAV-H27R_RRN03A10	Rivanna River North Fork	3.51 MILES
5D	VAV-H28R_MSC01A00	Moores Creek	6.32 MILES
5D	VAV-H28R_MWC01A00	Meadow Creek	4.98 MILES
5D	VAW-I04R_JKS01A00	Jackson River	0.47 MILES
5D	VAW-I09R_JKS04A00	Jackson River	5.91 MILES
5D	VAW-I09R_JKS04B14	Jackson River	0.31 MILES
5D	VAW-I09R_JKS05A00	Jackson River	3.01 MILES
5D	VAW-I09R_JKS06A00	Jackson River	1.66 MILES
5F	VAP-G01L_FAC01A98	Falling Creek Reservoir	88.37 ACRES
5F	VAP-G04E_JMS02A02	James River	20.41 SQUARE MILES
5F	VAP-G08E_CHK01A00	Chickahominy River	1.37 SQUARE MILES
5F	VAP-G08E_CHK02A00	Chickahominy River	5.92 SQUARE MILES
5F	VAP-G08E_DSC01A00	Diascund Creek	0.27 SQUARE MILES
5F	VAP-G08E_XAC01A10	XAC - Chickahominy River, UT	0.02 SQUARE MILES
5F	VAP-H38R_JMS02A04	James River	3.75 MILES
5F	VAP-H39R_PWT01A98	Powhite Creek	8.13 MILES
5F	VAP-J15R_APP01A98	Appomattox River	5.57 MILES
5F	VAP-J15R_RHC01A06	Rohoic Creek	13.45 MILES
5F	VAP-J17R_SFT01B98	Swift Creek	7.25 MILES

Rappahannock River Basin

Overall Category	305(b) ID	Waterbody Name	Size
2A	VAN-E01R_HIT01A14	Hittles Mill Stream	3.83 MILES
2A	VAN-E01R_RPP03A04	Rappahannock River	7.76 MILES
2A	VAN-E02R_CAE02C14	Carter Run	2.83 MILES
2A	VAN-E02R_RPP04A14	Rappahannock River	4.39 MILES
2A	VAN-E04R_HAZ03A02	Hazel River	11.48 MILES
2A	VAN-E05R_COV01A02	Covington River	3.37 MILES
2A	VAN-E05R_PIY01A04	Piney River	0.81 MILES
2A	VAN-E05R_THO02A02	Thornton River	4.37 MILES
2A	VAN-E05R_THR02A02	Thornton River, North Fork	1.62 MILES
2A	VAN-E07R_HAZ02A00	Hazel River	3.55 MILES
2A	VAN-E07R_WAF01A10	Waterford Run	6.23 MILES
2A	VAN-E09L_MTN01A02	Lake Pelham	249.70 ACRES
2A	VAN-E09L_MTN02A02	Mountain Run Reservoir	72.75 ACRES
2A	VAN-E10R_RPP01A00	Rappahannock River	2.62 MILES
2A	VAN-E11R_CON02A06	Conway River	4.79 MILES
2A	VAN-E11R_GAR02A06	Garth Run	5.82 MILES
2A	VAN-E11R_RAP01A00	Rapidan River	4.92 MILES
2A	VAN-E11R_RAP02A00	Rapidan River	1.85 MILES
2A	VAN-E12R_ENT01A10	Entry Run	3.34 MILES
2A	VAN-E12R_RAP01A00	Rapidan River	2.33 MILES
2A	VAN-E12R_RAP01B06	Rapidan River	4.92 MILES
2A	VAN-E12R_SOT01A04	South River	1.67 MILES
2A	VAN-E12R_XGR01A10	Unnamed Tributary to Entry Run	1.79 MILES
2A	VAN-E14R_ROB02A02	Robinson River	2.26 MILES
2A	VAN-E14R_ROB02B06	Robinson River	2.86 MILES
2A	VAN-E14R_ROB02C06	Robinson River	1.04 MILES
2A	VAN-E18L_HNT01A08	Hunting Run Reservoir	420.92 ACRES
2A	VAN-E18R_FLT01A10	Flat Run	3.36 MILES
2A	VAN-E18R_KEA01A12	Keatons Run	2.50 MILES
2A	VAN-E18R_RUL01A14	Russell Run	4.73 MILES
2A	VAN-E18R_WNR01A12	North Wilderness Run	2.38 MILES
2A	VAN-E19R_LAR01A04	LaRogue Run	2.56 MILES
2A	VAN-E19R_RPP01A02	Rappahannock River	1.97 MILES
2A	VAN-E19R_RPP02A02	Rappahannock River	3.43 MILES
2A	VAN-E19R_RPP02B10	Rappahannock River	1.15 MILES
2A	VAN-E20R_RPP01A10	Rappahannock River	2.13 MILES
2A	VAN-E20R_XFB01A06	Unnamed tributary to Massaponax Creek	5.53 MILES
2A	VAP-E22R_BAY02A14	Baylors Pond	1.10 MILES
2A	VAP-E23R_MTL01A98	Mount Landing Creek	1.15 MILES
2A	VAP-E23R_XFM01A04	UT to Piscataway Creek	3.58 MILES
2A	VAP-E23R_XFN01A04	UT to Piscataway Creek	3.61 MILES
2A	VAP-E25R_LAN01A08	Lancaster Creek	4.68 MILES
2A	VAP-E26R_CTO01A04	Western Branch Corrotoman River	5.63 MILES
2A	VAP-E26R_TAY01A16	Taylor Creek	1.81 MILES
2A	VAP-E26R_XEY01A06	UT to Western Branch Corrotoman River	3.27 MILES
2B	VAN-E02R_XAC01A04	Unnamed tributary to Great Run	2.78 MILES
2B	VAN-E03R_BKK01A02	Brokenback Run	3.67 MILES
2B	VAN-E05R_PIY02B10	Piney River	5.10 MILES
2B	VAN-E05R_THR01A02	Thornton River, North Fork	1.94 MILES
2B	VAN-E05R_THR03A16	Thornton River, North Fork	3.95 MILES
2B	VAN-E10R_SMR01A04	Sumerduck Run	3.77 MILES
2B	VAN-E11R_STT01A04	Staunton River	4.12 MILES
2B	VAN-E14R_ROE02A06	Rose River	6.22 MILES
2B	VAN-E14R_WOC01A06	White Oak Canyon	4.07 MILES
2B	VAN-E16R_CED01A00	Cedar Run	2.25 MILES
2B	VAN-E20R_MAP02A02	Massaponax Creek	1.20 MILES
2B	VAP-E22L_XDW01A08	Wilna Pond	20.06 ACRES
2C	VAN-E05R_THO03B16	Thornton River	3.12 MILES
2C	VAN-E07R_IND01A04	Indian Run	3.84 MILES
2C	VAN-E14R_ROB01A06	Robinson River	3.75 MILES
2C	VAN-E14R_ROB01B06	Robinson River	0.78 MILES
2C	VAN-E21E_MIC01A06	Mill Creek	0.20 SQUARE MILES
2C	VAN-E21E_RPP48A02	Rappahannock River-Muddy Creek	0.01 SQUARE MILES
2C	VAN-E21E_RPP49A02	Rappahannock River-Mount Creek	0.15 SQUARE MILES
2C	VAN-E21E_RPP51A02	Rappahannock River-Goldenvale Creek	0.19 SQUARE MILES
2C	VAN-E21E_RPP52A02	Rappahannock River-Portobago Creek	0.08 SQUARE MILES
2C	VAN-E22E_ZZZ01A08	Unnamed Rappahannock River Embayments	0.07 SQUARE MILES
2C	VAP-E22E_ELM01A10	Elmwood Creek	0.05 SQUARE MILES
2C	VAP-E22E_ZZZ01A00	Unsegmented estuaries in E22	0.16 SQUARE MILES
2C	VAP-E22E_ZZZ01A06	Unsegmented estuaries in E22	0.49 SQUARE MILES
3A	VAN-E01R_RPP01A04	Rappahannock River	4.09 MILES
3A	VAN-E01R_ZZZ01A00	Rappahannock River-Buck Run	76.48 MILES
3A	VAN-E01R_ZZZ02A00	Jordan River	81.37 MILES
3A	VAN-E01R_ZZZ03A00	Rappahannock River-Lake Mosby	30.80 MILES
3A	VAN-E01R_ZZZ04A00	Thumb Run	72.14 MILES
3A	VAN-E02R_ZZZ05A00	Rappahannock River-Glascock Run	35.41 MILES
3A	VAN-E02R_ZZZ06A00	Carter Run	133.33 MILES
3A	VAN-E02R_ZZZ07A00	Rappahannock River-Great Run	123.96 MILES
3A	VAN-E03R_RAG01A06	Ragged Run	0.63 MILES
3A	VAN-E03R_RAG02A06	Ragged Run	2.38 MILES
3A	VAN-E03R_ZZZ08A00	Hughes River	84.09 MILES
3A	VAN-E04R_ZZZ09A00	Hazel River-Sams Run	43.18 MILES
3A	VAN-E04R_ZZZ10A00	Hazel River-Devils Run	128.50 MILES
3A	VAN-E05R_COV02A06	Covington River	3.25 MILES
3A	VAN-E05R_PIY02A06	Piney River	2.31 MILES
3A	VAN-E05R_RUS01A02	Rush River	0.90 MILES
3A	VAN-E05R_THO04A06	Thornton River	2.03 MILES
3A	VAN-E05R_ZZZ11A00	Thornton River-Piney River	92.44 MILES
3A	VAN-E05R_ZZZ12A00	Covington River	89.77 MILES
3A	VAN-E06R_THO01A02	Thornton River	1.55 MILES
3A	VAN-E06R_ZZZ13A00	Battle Run	75.89 MILES
3A	VAN-E06R_ZZZ14A00	Thornton River-Mill Run	95.62 MILES
3A	VAN-E07R_ZZZ15A00	Muddy Run	66.09 MILES
3A	VAN-E07R_ZZZ16A00	Hazel River-Indian Run	93.14 MILES
3A	VAN-E08R_ZZZ17A00	Marsh Run	87.65 MILES
3A	VAN-E08R_ZZZ18A00	Rappahannock River-Ruffans Run	88.17 MILES
3A	VAN-E09R_XDJ01A04	Unnamed tributary to Jonas Run	4.00 MILES
3A	VAN-E09R_ZZZ19A00	Mountain Run-Hiders Branch	107.83 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAN-E09R_ZZZ20A00	Jonas Run	40.06 MILES
3A	VAN-E09R_ZZZ21A00	Mountain Run-Flat Run	39.73 MILES
3A	VAN-E10R_RPP02A02	Rappahannock River	5.58 MILES
3A	VAN-E10R_ZZZ22A00	Rappahannock River-Rock Run	103.37 MILES
3A	VAN-E10R_ZZZ23A00	Rappahannock River-Deep Run	96.12 MILES
3A	VAN-E11R_CON03A06	Conway River	6.26 MILES
3A	VAN-E11R_PHO01A06	Pocosin Hollow	2.94 MILES
3A	VAN-E11R_RAP03A06	Rapidan River	5.89 MILES
3A	VAN-E11R_ZZZ24A00	Rapidan River-Garth Run	68.51 MILES
3A	VAN-E11R_ZZZ25A00	Conway River	44.26 MILES
3A	VAN-E12R_ZZZ26A00	Rapidan River-South River	128.00 MILES
3A	VAN-E13R_SKN01A04	Skinner Branch	1.43 MILES
3A	VAN-E13R_ZZZ27A00	Rapidan River-Marsh Run	99.27 MILES
3A	VAN-E13R_ZZZ28A00	Blue Run	79.05 MILES
3A	VAN-E13R_ZZZ29A00	Beautiful Run	50.10 MILES
3A	VAN-E13R_ZZZ30A00	Rapidan River-Poplar Run	49.00 MILES
3A	VAN-E14R_BEH01A06	Berry Hollow	1.67 MILES
3A	VAN-E14R_HOG01A06	Hogcamp Branch	1.94 MILES
3A	VAN-E14R_ZZZ31A00	Robinson River-Rose River	30.31 MILES
3A	VAN-E14R_ZZZ32A00	Robinson River-Leathers Run	88.83 MILES
3A	VAN-E14R_ZZZ33A00	White Oak Run	55.41 MILES
3A	VAN-E15R_ROB02A04	Robinson River	1.24 MILES
3A	VAN-E15R_ZZZ34A00	Robinson River-Deep Run	153.63 MILES
3A	VAN-E15R_ZZZ35A00	Crooked Run	62.67 MILES
3A	VAN-E15R_ZZZ36A00	Robinson River-Great Run	39.88 MILES
3A	VAN-E16R_ZZZ37A00	Rapidan River-Rapidan	53.77 MILES
3A	VAN-E16R_ZZZ38A00	Cedar Run	54.91 MILES
3A	VAN-E16R_ZZZ39A00	Rapidan River-Potato Run	10.64 MILES
3A	VAN-E17R_ZZZ39A00	Rapidan River-Potato Run	92.61 MILES
3A	VAN-E17R_ZZZ40A00	Mountain Run-Mill Run	71.77 MILES
3A	VAN-E17R_ZZZ41A00	Mine Run	97.14 MILES
3A	VAN-E18R_ZZZ42A00	Rapidan River-Fields Run	96.31 MILES
3A	VAN-E18R_ZZZ43A00	Wilderness Run	48.16 MILES
3A	VAN-E18R_ZZZ44A00	Rapidan River-Hazel Run	48.03 MILES
3A	VAN-E19R_ENG02A00	England Run	1.48 MILES
3A	VAN-E19R_RPP03A02	Rappahannock River	3.59 MILES
3A	VAN-E19R_XFA01A02	Unnamed tributary to Golin Run	1.22 MILES
3A	VAN-E19R_ZZZ45A00	Rappahannock River-Motts Run	79.60 MILES
3A	VAN-E19R_ZZZ46A00	Rappahannock River-Hazel Run	14.06 MILES
3A	VAN-E20R_XFC01A06	Unnamed tributary to Haislip Pond	2.17 MILES
3A	VAN-E20R_XFG01A02	Unnamed tributary to Massaponax Creek	1.60 MILES
3A	VAN-E20R_XFH01A02	Unnamed tributary to Massaponax Creek	1.78 MILES
3A	VAN-E20R_ZZZ46A00	Rappahannock River-Hazel Run	73.66 MILES
3A	VAN-E20R_ZZZ47A00	Massaponax Creek	78.12 MILES
3A	VAN-E20R_ZZZ48A00	Rappahannock River-Muddy Creek	19.01 MILES
3A	VAN-E21R_GIN02A04	Gingoteague Creek	3.37 MILES
3A	VAN-E21R_XDC01A02	Unnamed tributary to Mill Creek	1.16 MILES
3A	VAN-E21R_XEF01A02	Unnamed tributary to Birchwood Run	2.12 MILES
3A	VAN-E21R_XFJ01A02	Unnamed tributary to Mill Creek	1.09 MILES
3A	VAN-E21R_ZZZ48A02	Rappahannock River-Muddy Creek	43.58 MILES
3A	VAN-E21R_ZZZ49A02	Rappahannock River-Mount Creek	131.65 MILES
3A	VAN-E21R_ZZZ50A02	Mill Creek	87.27 MILES
3A	VAN-E21R_ZZZ51A02	Rappahannock River-Goldenvale Creek	93.31 MILES
3A	VAN-E21R_ZZZ52A02	Rappahannock River-Portobago Creek	73.68 MILES
3A	VAP-E22R_TRY01A06	Troy Creek	4.29 MILES
3A	VAP-E22R_ZZZ01A14	Unsegmented rivers in E22	33.60 MILES
3A	VAP-E22R_ZZZ01B14	Unsegmented rivers in E22	74.85 MILES
3A	VAP-E22R_ZZZ01C14	Unsegmented rivers in E22	43.60 MILES
3A	VAP-E22R_ZZZ01D14	Unsegmented rivers in E22	96.04 MILES
3A	VAP-E23R_BNC01A04	Bull Neck Creek	4.48 MILES
3A	VAP-E23R_MTL02A04	Mount Landing Creek	5.00 MILES
3A	VAP-E23R_PIS02A04	Piscataway Creek	5.16 MILES
3A	VAP-E23R_STU01A04	Sturgeon Swamp	4.13 MILES
3A	VAP-E23R_XBK01A06	UT to Ticknor's Creek	2.65 MILES
3A	VAP-E23R_XFK01A04	UT to Mount Landing Creek	2.60 MILES
3A	VAP-E23R_XFL01A04	UT to Piscataway Creek	2.83 MILES
3A	VAP-E23R_ZZZ01A14	Unsegmented rivers in E23	54.20 MILES
3A	VAP-E23R_ZZZ01B14	Unsegmented rivers in E23	17.02 MILES
3A	VAP-E23R_ZZZ01C14	Unsegmented rivers in E23	49.58 MILES
3A	VAP-E23R_ZZZ01D14	Unsegmented rivers in E23	65.31 MILES
3A	VAP-E23R_ZZZ01E14	Unsegmented rivers in E23	63.78 MILES
3A	VAP-E23R_ZZZ02A14	Unsegmented rivers in E23	42.90 MILES
3A	VAP-E23R_ZZZ02B14	Unsegmented rivers in E23	46.42 MILES
3A	VAP-E24R_XHB01A10	Rappahannock River, UT	1.69 MILES
3A	VAP-E24R_ZZZ01A14	Unsegmented rivers in E24	35.86 MILES
3A	VAP-E24R_ZZZ01B14	Unsegmented rivers in E24	18.45 MILES
3A	VAP-E24R_ZZZ01C14	Unsegmented rivers in E24	40.55 MILES
3A	VAP-E25R_MUC01A00	Mud Creek	1.97 MILES
3A	VAP-E25R_ZZZ01A14	Unsegmented rivers in E25	32.77 MILES
3A	VAP-E25R_ZZZ01B14	Unsegmented rivers in E25	58.52 MILES
3A	VAP-E25R_ZZZ01C14	Unsegmented rivers in E25	57.20 MILES
3A	VAP-E25R_ZZZ01D14	Unsegmented rivers in E25	61.59 MILES
3A	VAP-E26R_CAM01A06	Camps Prong	0.65 MILES
3A	VAP-E26R_ZZZ01A14	Unsegmented rivers in E26	60.07 MILES
3A	VAP-E26R_ZZZ01B14	Unsegmented rivers in E26	52.61 MILES
3A	VAP-E26R_ZZZ01C14	Unsegmented rivers in E26	8.20 MILES
3A	VAP-E26R_ZZZ01D14	Unsegmented rivers in E26	14.18 MILES
3A	VAP-E26R_ZZZ01E14	Unsegmented rivers in E26	12.33 MILES
3B	VAN-E05R_XGU01A06	Unnamed tributary to Piney River	1.26 MILES
3B	VAN-E16R_RAP02A02	Rapidan River	2.00 MILES
3B	VAN-E16R_XHQ01A12	Unnamed tributary to Cedar Run	2.48 MILES
3B	VAN-E17R_RAP01A06	Rapidan River	3.56 MILES
3C	VAN-E02R_RPP02A04	Rappahannock River	1.71 MILES
3C	VAN-E05R_XHC01A08	Unnamed tributary to Big Branch	1.20 MILES
3C	VAN-E05R_XHD01A08	Unnamed tributary to Rush River	1.43 MILES
3C	VAN-E05R_XHF01A08	Unnamed tributary to Rush River	1.31 MILES
3C	VAN-E08R_BOS02A12	Browns Run	2.89 MILES
3C	VAN-E08R_BWN01A02	Bowens Run	3.69 MILES
3C	VAN-E08R_XCC01A12	Unnamed tributary to Browns Run	3.71 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3C	VAN-E09R_XGN01A04	Unnamed tributary to Mountain Run	1.10 MILES
3C	VAN-E09R_XGV01A06	Unnamed tributary to Mountain Run	2.41 MILES
3C	VAN-E15R_ROB03A02	Robinson River	1.13 MILES
3C	VAN-E19R_ENG01A00	England Run	0.50 MILES
3C	VAN-E19R_RPR01A04	Rocky Pen Run	4.02 MILES
3C	VAN-E20R_MAP01A02	Massaponax Creek	0.33 MILES
3C	VAN-E20R_MAP05A02	Massaponax Creek	4.51 MILES
3C	VAN-E20R_XFD01A06	Unnamed tributary to Haislip Pond	1.54 MILES
3C	VAN-E20R_XFF01A02	Unnamed tributary to Massaponax Creek	0.69 MILES
3C	VAN-E20R_XFI01A06	Unnamed tributary to Massaponax Creek	2.13 MILES
3D	VAN-E02R_XHS01A12	Unnamed Tributary to Great Run	0.57 MILES
3D	VAN-E05R_XHE01A10	Unnamed tributary to Rush River	1.20 MILES
3D	VAN-E13R_XHP01A10	Unnamed Tributary to Poplar Run	0.60 MILES
4A	VAN-E01R_BUC01A10	Buck Run	9.76 MILES
4A	VAN-E01R_FIR01A04	Fiery Run	9.38 MILES
4A	VAN-E01R_JOR01A04	Jordan River	7.05 MILES
4A	VAN-E01R_RPP02A00	Rappahannock River	2.27 MILES
4A	VAN-E01R_THU01A00	Thumb Run	7.67 MILES
4A	VAN-E01R_THW01A02	Thumb Run, West Branch	12.08 MILES
4A	VAN-E02R_BRW01A06	Barrows Run	4.52 MILES
4A	VAN-E02R_CAE01A00	Carter Run	3.62 MILES
4A	VAN-E02R_CAE02A04	Carter Run	1.56 MILES
4A	VAN-E02R_CAE02B12	Carter Run	7.20 MILES
4A	VAN-E02R_CAE03A06	Carter Run	1.63 MILES
4A	VAN-E02R_GLC02A12	Glascock Run	1.75 MILES
4A	VAN-E02R_GLC02B12	Glascock Run	2.06 MILES
4A	VAN-E02R_GRT04A04	Great Run	9.46 MILES
4A	VAN-E02R_RPP01A02	Rappahannock River	7.04 MILES
4A	VAN-E02R_RPP03A04	Rappahannock River	1.42 MILES
4A	VAN-E02R_SUT01A04	South Run	1.50 MILES
4A	VAN-E02R_SUT01B12	South Run	2.59 MILES
4A	VAN-E03R_HUE01A00	Hughes River	3.84 MILES
4A	VAN-E03R_POH01A02	Popham Run	2.21 MILES
4A	VAN-E04R_BLC01A10	Blackwater Creek	8.97 MILES
4A	VAN-E04R_HAZ01A00	Hazel River	5.77 MILES
4A	VAN-E04R_HAZ01B06	Hazel River	4.47 MILES
4A	VAN-E04R_HAZ01C06	Hazel River	5.65 MILES
4A	VAN-E04R_HAZ02A02	Hazel River	0.83 MILES
4A	VAN-E05R_BIG01A08	Big Branch	3.04 MILES
4A	VAN-E05R_RUS01B08	Rush River	3.35 MILES
4A	VAN-E05R_RUS02A02	Rush River	5.86 MILES
4A	VAN-E05R_THO01A02	Thornton River	3.45 MILES
4A	VAN-E06R_BTL01A02	Battle Run	2.23 MILES
4A	VAN-E06R_THO02A02	Thornton River	5.52 MILES
4A	VAN-E06R_XHH01A12	Unnamed tributary to Thornton River	5.02 MILES
4A	VAN-E07R_HAZ01A04	Hazel River	3.36 MILES
4A	VAN-E07R_MUU01A00	Muddy Run	6.09 MILES
4A	VAN-E07R_MUU02A02	Muddy Run	8.25 MILES
4A	VAN-E08R_BOS01A02	Browns Run	2.54 MILES
4A	VAN-E08R_CRA01A02	Craig Run	3.72 MILES
4A	VAN-E08R_MAH01A00	Marsh Run	2.32 MILES
4A	VAN-E08R_MAH03A02	Marsh Run	3.87 MILES
4A	VAN-E08R_RPP01A02	Rappahannock River	2.85 MILES
4A	VAN-E08R_RPP02A02	Rappahannock River	2.11 MILES
4A	VAN-E08R_TIN01A08	Tinpot Run	1.28 MILES
4A	VAN-E09R_FLA01A08	Flat Run	6.23 MILES
4A	VAN-E09R_MTN05A04	Mountain Run	1.63 MILES
4A	VAN-E10R_ALC01A00	Alcotti Run	5.16 MILES
4A	VAN-E10R_DPR01A00	Deep Run	4.93 MILES
4A	VAN-E10R_DPR02A02	Deep Run	3.02 MILES
4A	VAN-E10R_DPR03A02	Deep Run	3.75 MILES
4A	VAN-E11R_GAR01A02	Garth Run	1.61 MILES
4A	VAN-E13R_BFL01A04	Beautiful Run	1.18 MILES
4A	VAN-E13R_BFL03A16	Beautiful Run	8.45 MILES
4A	VAN-E13R_BLU01A00	Blue Run	0.33 MILES
4A	VAN-E13R_BLU01B12	Blue Run	4.01 MILES
4A	VAN-E13R_BLU02A04	Blue Run	8.38 MILES
4A	VAN-E13R_MAS01A04	Marsh Run	5.64 MILES
4A	VAN-E13R_POL01A04	Poplar Run	4.14 MILES
4A	VAN-E13R_RAP01A00	Rapidan River	7.63 MILES
4A	VAN-E13R_RAP02A06	Rapidan River	0.30 MILES
4A	VAN-E13R_RAP02B12	Rapidan River	4.03 MILES
4A	VAN-E13R_XBO01A04	Unnamed tributary to Rapidan River	3.11 MILES
4A	VAN-E13R_XEZ01A04	Unnamed tributary to Rapidan River	2.67 MILES
4A	VAN-E14R_FIK01A06	Finks Run	3.16 MILES
4A	VAN-E14R_LEA01A06	Leathers Run	2.17 MILES
4A	VAN-E14R_WHO01A06	White Oak Run	3.19 MILES
4A	VAN-E15R_COO01A04	Crooked Run	7.89 MILES
4A	VAN-E15R_DAK01A10	Dark Run	8.59 MILES
4A	VAN-E15R_DRN01A04	Deep Run	2.47 MILES
4A	VAN-E15R_GRA01A04	Great Run	9.31 MILES
4A	VAN-E15R_LDR01A00	Little Dark Run	2.11 MILES
4A	VAN-E15R_LDR02A02	Little Dark Run	2.42 MILES
4A	VAN-E15R_ROB01A00	Robinson River	5.31 MILES
4A	VAN-E16R_CED02A04	Cedar Run	3.53 MILES
4A	VAN-E16R_RAP01A04	Rapidan River	4.66 MILES
4A	VAN-E16R_RAP03A08	Rapidan River	3.39 MILES
4A	VAN-E17R_BWR01A06	Black Walnut Run	6.48 MILES
4A	VAN-E17R_MIR01A00	Mine Run	10.50 MILES
4A	VAN-E17R_MTR01A00	Mountain Run	10.10 MILES
4A	VAN-E17R_MTR02A02	Mountain Run	7.46 MILES
4A	VAN-E17R_POT01A14	Potato Run	6.83 MILES
4A	VAN-E17R_SUM01A04	Sumerduck Run	6.20 MILES
4A	VAN-E18R_HAE01A12	Hazel Run	4.06 MILES
4A	VAN-E18R_RAP05A08	Rapidan River	3.51 MILES
4A	VAN-E18R_WIL01A08	Wilderness Run	5.56 MILES
4A	VAN-E20R_MAP03A02	Massaponax Creek	1.67 MILES
4A	VAN-E20R_MAP04A02	Massaponax Creek	2.17 MILES
4A	VAN-E20R_XHN01A10	Unnamed Tributary to Hazel Run	1.53 MILES
4A	VAN-E20R_XIA01A12	Unnamed tributary to Hazel Run	2.23 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAN-E21R_LAM01A08	Lambs Creek	0.54 MILES
4A	VAP-E22E_OCC01A08	Occupacia Creek	0.67 SQUARE MILES
4A	VAP-E22E_PEE01A14	Peedee Creek	0.15 SQUARE MILES
4A	VAP-E22E_ZZZ02A06	Unsegmented estuaries in E22	0.04 SQUARE MILES
4A	VAP-E22R_OCC01A98	Occupacia Creek	2.34 MILES
4A	VAP-E23E_CAT01A02	Cat Point Creek	1.28 SQUARE MILES
4A	VAP-E23E_CRC01A08	Church Swamp	0.01 SQUARE MILES
4A	VAP-E23E_HOK01A98	Hoskins Creek	0.08 SQUARE MILES
4A	VAP-E23E_HOK02A08	Hoskins Creek	0.05 SQUARE MILES
4A	VAP-E23E_HOK02A10	Hoskins Creek	0.02 SQUARE MILES
4A	VAP-E23E_LIE01A98	Little Carter Creek, Jugs Creek	0.42 SQUARE MILES
4A	VAP-E23E_MTL01A10	Mount Landing Creek	0.17 SQUARE MILES
4A	VAP-E23E_PIS02A00	Piscataway Creek	0.59 SQUARE MILES
4A	VAP-E23E_ZZZ02A06	Unsegmented estuaries in E23	0.05 SQUARE MILES
4A	VAP-E23E_ZZZ02B10	Unsegmented estuaries in E23	0.01 SQUARE MILES
4A	VAP-E23E_ZZZ02C12	Unsegmented estuaries in E23	0.01 SQUARE MILES
4A	VAP-E23R_BLA01A06	Black Swamp	4.18 MILES
4A	VAP-E23R_CAT01A98	Cat Point Creek	5.33 MILES
4A	VAP-E23R_CAT02A02	Cat Point Creek	1.19 MILES
4A	VAP-E23R_CAT03A04	Cat Point Creek tributaries	94.76 MILES
4A	VAP-E23R_CLK01A14	Clarks Run	3.82 MILES
4A	VAP-E23R_MUR01A04	Muddy Run	4.65 MILES
4A	VAP-E23R_NSS01A12	Nanny Sanford Swamp	3.58 MILES
4A	VAP-E23R_PIS01A98	Piscataway Creek	3.17 MILES
4A	VAP-E23R_TBS01A06	The Big Swamp	6.74 MILES
4A	VAP-E24E_RIC01A04	Richardson Creek	0.17 SQUARE MILES
4A	VAP-E24E_RIC01B10	Richardson Creek	0.15 SQUARE MILES
4A	VAP-E24E_RIC01C10	Richardson Creek	0.02 SQUARE MILES
4A	VAP-E24R_LIK01A08	Little Totuskey Creek	1.90 MILES
4A	VAP-E24R_TOT01A06	Totuskey Creek	8.04 MILES
4A	VAP-E24R_TOT02B12	Totuskey Creek Tributaries	73.26 MILES
4A	VAP-E25E_DEE01A04	Deep Creek	0.05 SQUARE MILES
4A	VAP-E25E_DEE01B08	Deep Creek	0.07 SQUARE MILES
4A	VAP-E25E_FAM01A98	Farnham Creek	0.36 SQUARE MILES
4A	VAP-E25E_FAM01B10	Farnham Creek	0.07 SQUARE MILES
4A	VAP-E25E_GEE01A98	Greenvale Creek	0.09 SQUARE MILES
4A	VAP-E25E_GEE02A06	Greenvale Creek	0.01 SQUARE MILES
4A	VAP-E25E_GEE02B10	Greenvale Creek/Belmont Creek	0.04 SQUARE MILES
4A	VAP-E25E_HRY01A06	Harry George Creek	0.10 SQUARE MILES
4A	VAP-E25E_LAN01A98	Lancaster Creek	0.27 SQUARE MILES
4A	VAP-E25E_LAN01B08	Lancaster Creek	0.20 SQUARE MILES
4A	VAP-E25E_LAN02A02	Lancaster Creek	1.32 SQUARE MILES
4A	VAP-E25E_LAN03A06	Lancaster Creek	0.02 SQUARE MILES
4A	VAP-E25E_LGG01A98	Lagrange Creek	0.59 SQUARE MILES
4A	VAP-E25E_LGG02A06	Lagrange Creek	0.05 SQUARE MILES
4A	VAP-E25E_MTT01A00	Morattico Creek	0.14 SQUARE MILES
4A	VAP-E25E_MUB01A02	Mulberry Creek	0.14 SQUARE MILES
4A	VAP-E25E_MUB01B16	Mulberry Creek	0.01 SQUARE MILES
4A	VAP-E25E_MUB02A06	Mulberry Creek	0.05 SQUARE MILES
4A	VAP-E25E_MUB02B14	Mulberry Creek	0.04 SQUARE MILES
4A	VAP-E25E_MUB03A08	Mulberry Creek	0.01 SQUARE MILES
4A	VAP-E25E_MUC01A04	Mud Creek	0.20 SQUARE MILES
4A	VAP-E25E_PAY01A02	Paynes Creek	0.05 SQUARE MILES
4A	VAP-E25E_PRR01A02	Parrotts Creek	0.15 SQUARE MILES
4A	VAP-E25E_PRR02A08	Parrotts Creek	0.03 SQUARE MILES
4A	VAP-E25E_ROS01A00	Robinson Creek	0.16 SQUARE MILES
4A	VAP-E25E_ROS01B16	Robinson Creek	0.04 SQUARE MILES
4A	VAP-E25E_ROS02A04	Robinson Creek	0.04 SQUARE MILES
4A	VAP-E25E_ROS02B12	Robinson Creek	0.01 SQUARE MILES
4A	VAP-E25E_ROS02C16	Robinson Creek	0.01 SQUARE MILES
4A	VAP-E25E_TWN01A12	Town Bridge Swamp	0.01 SQUARE MILES
4A	VAP-E25E_URB01A00	Urbanna Creek	0.21 SQUARE MILES
4A	VAP-E25E_URB02A00	Urbanna Creek	0.24 SQUARE MILES
4A	VAP-E25E_WEE01A00	Weeks Creek	0.12 SQUARE MILES
4A	VAP-E25E_WEE02A04	Weeks Creek	0.03 SQUARE MILES
4A	VAP-E25E_XDV01A02	Beach Creek	0.08 SQUARE MILES
4A	VAP-E25E_ZZZ01A14	Unsegmented estuaries in E25	0.08 SQUARE MILES
4A	VAP-E25E_ZZZ01C14	Unsegmented estuaries in E25	0.27 SQUARE MILES
4A	VAP-E25E_ZZZ01D14	Unsegmented estuaries in E25	0.28 SQUARE MILES
4A	VAP-E25R_LAT01A14	Laton Swamp	4.86 MILES
4A	VAP-E25R_NIC01A12	Nickleberry Swamp	1.86 MILES
4A	VAP-E26E_BES01A98	Bells Creek	0.06 SQUARE MILES
4A	VAP-E26E_BLD01A98	Belwood Swamp	0.01 SQUARE MILES
4A	VAP-E26E_BPC01A98	Bush Park Creek	0.10 SQUARE MILES
4A	VAP-E26E_BRD01A00	Broad Creek	0.08 SQUARE MILES
4A	VAP-E26E_BRD02A00	Broad Creek	0.04 SQUARE MILES
4A	VAP-E26E_BRD04A00	Broad Creek	0.04 SQUARE MILES
4A	VAP-E26E_CEB01A00	Eastern Branch Carter Creek	0.08 SQUARE MILES
4A	VAP-E26E_CEB01B08	Eastern Branch Carter Creek	0.03 SQUARE MILES
4A	VAP-E26E_CEB03C16	Eastern Branch Carter Creek	0.01 SQUARE MILES
4A	VAP-E26E_CTM02A08	Eastern Branch Corrotoman River, UT	0.01 SQUARE MILES
4A	VAP-E26E_CTO01C12	Western Branch Corrotoman River, UT	0.01 SQUARE MILES
4A	VAP-E26E_CTR01A00	Carter Creek	0.20 SQUARE MILES
4A	VAP-E26E_CTR02A00	Carter Creek	0.06 SQUARE MILES
4A	VAP-E26E_CTR03A00	Carter Creek	0.11 SQUARE MILES
4A	VAP-E26E_CTR03B16	Carter Creek	0.39 SQUARE MILES
4A	VAP-E26E_CTR04A02	Carter Cove	0.04 SQUARE MILES
4A	VAP-E26E_CTR04B14	Carter Cove	0.02 SQUARE MILES
4A	VAP-E26E_DAS01A02	Davis Creek	0.03 SQUARE MILES
4A	VAP-E26E_EWE01A00	Ewells Prong	0.03 SQUARE MILES
4A	VAP-E26E_EWE01B16	Ewells Prong	0.01 SQUARE MILES
4A	VAP-E26E_EWE02A08	Ewells Prong	0.01 SQUARE MILES
4A	VAP-E26E_HLS01A00	Hills Creek	0.06 SQUARE MILES
4A	VAP-E26E_HNU01A08	Hunting Creek	0.02 SQUARE MILES
4A	VAP-E26E_JON01A08	John Creek	0.04 SQUARE MILES
4A	VAP-E26E_JON02A08	John Creek	0.02 SQUARE MILES
4A	VAP-E26E_LIT01A06	Little Branch	0.11 SQUARE MILES
4A	VAP-E26E_LOL01A02	Locklies Creek	0.07 SQUARE MILES
4A	VAP-E26E_LOL01B12	Locklies Creek	0.03 SQUARE MILES
4A	VAP-E26E_LOL02A06	Locklies Creek	0.05 SQUARE MILES
4A	VAP-E26E_LOL03A08	Roane Cove of Locklies Creek	0.03 SQUARE MILES
4A	VAP-E26E_LOW01A08	Lowrey Creek	0.03 SQUARE MILES
4A	VAP-E26E_MEA01A00	Meachim Creek	0.08 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAP-E26E_MEA01B00	Meachim Creek	0.03 SQUARE MILES
4A	VAP-E26E_MEA01C06	Meachim Creek	0.03 SQUARE MILES
4A	VAP-E26E_MEA02A00	Meachim Creek	0.14 SQUARE MILES
4A	VAP-E26E_MEA03A10	Meachim Creek	0.05 SQUARE MILES
4A	VAP-E26E_MEA03B12	Meachim Creek	0.01 SQUARE MILES
4A	VAP-E26E_MIP01A00	Millenbeck Prong	0.04 SQUARE MILES
4A	VAP-E26E_MIP01B10	Millenbeck Prong	0.01 SQUARE MILES
4A	VAP-E26E_MLL01A98	Mill Creek	0.11 SQUARE MILES
4A	VAP-E26E_MLL01B12	Mill Creek	0.01 SQUARE MILES
4A	VAP-E26E_MLL02A06	Mill Creek	0.36 SQUARE MILES
4A	VAP-E26E_MOR01A08	Moran Creek	0.05 SQUARE MILES
4A	VAP-E26E_MOR01B12	Moran Creek	0.01 SQUARE MILES
4A	VAP-E26E_MOR02A08	Moran Creek	0.09 SQUARE MILES
4A	VAP-E26E_MOS01A00	Mosquito Creek	0.02 SQUARE MILES
4A	VAP-E26E_MOS01B12	Mosquito Creek	0.05 SQUARE MILES
4A	VAP-E26E_MYE01A00	Myer Creek	0.05 SQUARE MILES
4A	VAP-E26E_MYE01A16	Myer Creek	0.03 SQUARE MILES
4A	VAP-E26E_MYE01B02	Myer Creek, UT	0.04 SQUARE MILES
4A	VAP-E26E_MYE01C04	Myer Creek	0.08 SQUARE MILES
4A	VAP-E26E_MYE02C16	Myer Creek	0.02 SQUARE MILES
4A	VAP-E26E_MYE03A08	Myer Creek	0.47 SQUARE MILES
4A	VAP-E26E_SEN01A00	Senior Creek	0.07 SQUARE MILES
4A	VAP-E26E_STE01A98	Sturgeon Creek	0.07 SQUARE MILES
4A	VAP-E26E_STE01B12	Sturgeon Creek	0.01 SQUARE MILES
4A	VAP-E26E_STE01C12	Sturgeon Creek	0.02 SQUARE MILES
4A	VAP-E26E_STE02A08	Sturgeon Creek	0.19 SQUARE MILES
4A	VAP-E26E_TAY01A00	Taylor Creek	0.08 SQUARE MILES
4A	VAP-E26E_TAY02A08	Taylor Creek	0.02 SQUARE MILES
4A	VAP-E26E_TAY03A12	Taylor Creek	0.09 SQUARE MILES
4A	VAP-E26E_TON01A00	Town Creek	0.02 SQUARE MILES
4A	VAP-E26E_WHR01A00	Whitehouse Creek	0.05 SQUARE MILES
4A	VAP-E26E_WID01A12	Windmill Point Creek	0.08 SQUARE MILES
4A	VAP-E26E_WOO01A08	Woods Creek	0.04 SQUARE MILES
4A	VAP-E26E_XEV01A02	Windmill Point Yacht Harbor	0.02 SQUARE MILES
4A	VAP-E26E_ZZZ01D14	Unsegmented estuaries in E26	0.03 SQUARE MILES
4A	VAP-E26E_ZZZ01E14	Unsegmented estuaries in E26	0.66 SQUARE MILES
4A	VAP-E26E_ZZZ02A14	Unsegmented estuaries in E26	0.10 SQUARE MILES
4A	VAP-E26E_ZZZ02C14	Unsegmented estuaries in E26	0.53 SQUARE MILES
4A	VAP-E26R_BLD01A08	Belwood Swamp and Tributaries	24.54 MILES
4A	VAP-E26R_LIT01A14	Little Branch	0.63 MILES
4C	VAP-E22R_XGI01A10	Occupacia Creek, UT	1.96 MILES
4C	VAP-E23R_MLC01A04	Mill Creek	5.26 MILES
4C	VAP-E23R_XGX01A08	Hoskins Creek, UT	2.49 MILES
4C	VAP-E23R_XGY01A08	Hoskins Creek, UT (XGY)	2.03 MILES
5A	VAN-E01R_XHU01A14	Unnamed Tributary to Thumb Run, West Branch	0.80 MILES
5A	VAN-E03R_HUE02A02	Hughes River	3.20 MILES
5A	VAN-E05R_THO03A02	Thornton River	0.86 MILES
5A	VAN-E09R_MTN02A04	Mountain Run	5.67 MILES
5A	VAN-E10R_SMR02A06	Sumerduck Run	1.85 MILES
5A	VAN-E11R_CON01A04	Conway River	0.35 MILES
5A	VAN-E11R_CON01B12	Conway River	2.63 MILES
5A	VAN-E14R_ROB01C00	Robinson River	3.00 MILES
5A	VAN-E14R_ROE01A02	Rose River	2.58 MILES
5A	VAN-E17R_BRK01A04	Brook Run	2.51 MILES
5A	VAN-E18R_RAP01A02	Rapidan River	1.24 MILES
5A	VAN-E18R_RAP02A02	Rapidan River	3.64 MILES
5A	VAN-E18R_RAP03A02	Rapidan River	2.58 MILES
5A	VAN-E18R_RAP04A04	Rapidan River	2.33 MILES
5A	VAN-E19L_MOT01A02	Motts Run Reservoir	62.88 ACRES
5A	VAN-E19L_MOT02A02	Motts Run Reservoir	74.29 ACRES
5A	VAN-E19R_HOR01A04	Horsepen Run	5.70 MILES
5A	VAN-E19R_MIN01A14	Mine Run	4.01 MILES
5A	VAN-E20R_DEP03A12	Deep Run	1.56 MILES
5A	VAN-E20R_FAL01A04	Falls Run	7.35 MILES
5A	VAN-E20R_XFE01A02	Unnamed tributary to Massaponax Creek	1.27 MILES
5A	VAN-E21E_RPP01A02	Rappahannock River	4.55 SQUARE MILES
5A	VAN-E21E_RPP03A02	Rappahannock River	1.37 SQUARE MILES
5A	VAN-E21E_RPP04A02	Rappahannock River	1.21 SQUARE MILES
5A	VAN-E21E_RPP05A02	Rappahannock River	0.58 SQUARE MILES
5A	VAN-E21R_GIN01A08	Gingoteague Creek	1.49 MILES
5A	VAN-E21R_JET01A10	Jetts Creek	1.85 MILES
5A	VAN-E21R_MIC01A08	Mill Creek	4.58 MILES
5A	VAN-E21R_MIC02A06	Mill Creek	3.59 MILES
5A	VAN-E21R_PBC01A10	Portobago Creek	7.00 MILES
5A	VAN-E21R_WAE02A04	Ware Creek	3.06 MILES
5A	VAP-E22R_BAY01A08	Baylors Creek	5.89 MILES
5A	VAP-E22R_ELM01A06	Elmwood Creek and tributary XHY	9.07 MILES
5A	VAP-E22R_OCC01B06	Occupacia Creek and tributaries	74.69 MILES
5A	VAP-E22R_PEE01A08	Peedee Creek	3.29 MILES
5A	VAP-E22R_STL01A14	Stillwater Creek	3.52 MILES
5A	VAP-E22R_XHW01A14	XHW - UT to Peedee Creek, UT (XHV)	0.47 MILES
5A	VAP-E23L_CMR01A08	Chandlers Millpond	47.99 ACRES
5A	VAP-E23R_CRC01A06	Church Swamp	3.24 MILES
5C	VAN-E21R_GLL01A08	Goldenvale Creek	5.31 MILES
5C	VAN-E21R_HUH01A02	Hugh Run	2.45 MILES
5C	VAP-E22R_MSW01A14	Mill Swamp	0.72 MILES
5C	VAP-E22R_SMO01A14	Smoots Mill Run, UT	1.67 MILES
5C	VAP-E23R_MUS01A04	Mussell Swamp	5.13 MILES
5C	VAP-E23R_SMS01A14	Scates Millstream	2.89 MILES
5C	VAP-E24R_BRA01A08	Branham Mill Swamp	3.66 MILES
5C	VAP-E25R_LGG01A98	Lagrange Creek	2.49 MILES
5C	VAP-E25R_MAO01A00	Masons Mill Swamp	3.37 MILES
5C	VAP-E26R_NOR01A08	Norris Prong	2.47 MILES
5D	VAN-E01R_THM01A02	Thumb Run, East Branch	6.59 MILES
5D	VAN-E02R_GRT01A00	Great Run	2.81 MILES
5D	VAN-E02R_GRT02A04	Great Run	2.84 MILES
5D	VAN-E02R_GRT03A02	Great Run	1.54 MILES
5D	VAN-E04R_HAZ02B06	Hazel River	3.63 MILES
5D	VAN-E08R_MAH02A02	Marsh Run	6.01 MILES
5D	VAN-E09R_JOA01A06	Jonas Run	3.78 MILES
5D	VAN-E09R_MTN01A00	Mountain Run	7.58 MILES
5D	VAN-E09R_MTN03A00	Mountain Run	6.65 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAN-E09R_MTN04A04	Mountain Run	4.63 MILES
5D	VAN-E12R_RIP01A04	Rippin Run	0.60 MILES
5D	VAN-E13R_BFL02A12	Beautiful Run	2.50 MILES
5D	VAN-E20E_RPP01A02	Rappahannock River	0.19 SQUARE MILES
5D	VAN-E20E_RPP02A02	Rappahannock River	0.23 SQUARE MILES
5D	VAN-E20E_RPP03A02	Rappahannock River	0.21 SQUARE MILES
5D	VAN-E20R_CLB01A00	Claiborne Run	4.52 MILES
5D	VAN-E20R_HAL01A00	Hazel Run	4.72 MILES
5D	VAN-E20R_LIA01A04	Little Falls Run	4.92 MILES
5D	VAN-E20R_MAP02B12	Massaponax Creek	5.19 MILES
5D	VAN-E21R_MTC01A08	Mount Creek	4.46 MILES
5D	VAN-E21R_MUY01A00	Muddy Creek	3.58 MILES
5D	VAN-E21R_WAE01A08	Ware Creek	4.50 MILES
5D	VAN-E21R_WHT01A06	White Oak Run	6.51 MILES
5D	VAP-E22E_RPP02B16	Rappahannock River	2.00 SQUARE MILES
5D	VAP-E22E_RPP05A02	Rappahannock River	6.96 SQUARE MILES
5D	VAP-E22R_FAR01A04	Farmers Hall Creek	4.00 MILES
5D	VAP-E23E_RPP02A98	Rappahannock River	6.69 SQUARE MILES
5D	VAP-E23E_RPP02B10	Rappahannock River	0.16 SQUARE MILES
5D	VAP-E23E_RPP02C12	Rappahannock River	1.81 SQUARE MILES
5D	VAP-E23R_HOK01A04	Hoskins Creek	13.16 MILES
5D	VAP-E23R_RUN01A14	Ruin Branch	2.53 MILES
5D	VAP-E24E_LIK01A12	Little Totuskey Creek	0.06 SQUARE MILES
5D	VAP-E24E_RPP01B14	Garrett's Marina	0.01 SQUARE MILES
5D	VAP-E24E_RPP01B98	Rappahannock River: Garrett's Marina	0.02 SQUARE MILES
5D	VAP-E24E_RPP01C06	Rappahannock River	0.70 SQUARE MILES
5D	VAP-E24E_RPP01D10	Rappahannock River	0.14 SQUARE MILES
5D	VAP-E24E_RPP03A00	Rappahannock River	10.92 SQUARE MILES
5D	VAP-E24E_TOT01A00	Totuskey Creek	0.30 SQUARE MILES
5D	VAP-E24E_TOT02A00	Totuskey Creek	0.65 SQUARE MILES
5D	VAP-E24E_TOT02B10	Totuskey Creek	0.06 SQUARE MILES
5D	VAP-E24R_BMS01A98	Bookers Mill Stream	6.53 MILES
5D	VAP-E24R_MAY01A12	Marshy Swamp	9.53 MILES
5D	VAP-E24R_MUG01A08	Muddy Gut	2.63 MILES
5D	VAP-E24R_RIC01A12	Richardson Creek and Tributaries	17.21 MILES
5D	VAP-E24R_XHL01A12	XHL - Bookers Mill Stream, UT	2.01 MILES
5D	VAP-E25E_RPP01A02	Rappahannock River	6.14 SQUARE MILES
5D	VAP-E25E_RPP01C10	Rappahannock River: Mark Haven Beach Basin	0.01 SQUARE MILES
5D	VAP-E25E_RPP01C98	Mark Haven Beach Basin	0.01 SQUARE MILES
5D	VAP-E25E_RPP02A02	Rappahannock River	75.15 SQUARE MILES
5D	VAP-E25E_RPP03A06	Rappahannock River	0.01 SQUARE MILES
5D	VAP-E25E_RPP03B16	Rappahannock River	0.01 SQUARE MILES
5D	VAP-E25R_LSB01A12	South Branch Lagrange Creek	0.40 MILES
5D	VAP-E26E_CRR01A00	Corrotoman River	3.77 SQUARE MILES
5D	VAP-E26E_CRR02A08	Corrotoman River	1.04 SQUARE MILES
5D	VAP-E26E_CTM01A00	Eastern Branch Corrotoman River	0.39 SQUARE MILES
5D	VAP-E26E_CTM01B10	Eastern Branch Corrotoman River	0.23 SQUARE MILES
5D	VAP-E26E_CTM03A08	Eastern Branch Corrotoman River	0.76 SQUARE MILES
5D	VAP-E26E_CTO01A02	Western Branch Corrotoman River	0.39 SQUARE MILES
5D	VAP-E26E_CTO01B12	Western Branch Corrotoman River	0.21 SQUARE MILES
5D	VAP-E26E_CTO02A06	Western Branch Corrotoman River	1.21 SQUARE MILES
5D	VAP-E26E_RPP02A00	Rappahannock River	0.13 SQUARE MILES
5D	VAP-E26E_RPP03A00	Rappahannock River	0.03 SQUARE MILES
5D	VAP-E26E_RPP04A00	Rappahannock River	0.13 SQUARE MILES
5D	VAP-E26E_RPP05A00	Rappahannock River	0.03 SQUARE MILES
5D	VAP-E26E_RPP07A02	Rappahannock River	0.14 SQUARE MILES
5D	VAP-E26E_WHS01B00	Whiting Creek	0.19 SQUARE MILES
5D	VAP-E26R_BON01A08	Browns Creek	2.58 MILES
5F	VAP-E22E_RPP01A02	Rappahannock River	5.13 SQUARE MILES
5F	VAP-E22E_RPP02A02	Rappahannock River	1.34 SQUARE MILES
5F	VAP-E22E_RPP03A02	Rappahannock River	2.01 SQUARE MILES
5F	VAP-E22E_RPP04A02	Rappahannock River	0.94 SQUARE MILES

Roanoke and Yadkin River Basins

Overall Category	305(b) ID	Waterbody Name	Size
1	VAC-L73R_AAR01A00	Aarons Creek	5.05 MILES
2A	VAC-L13R_CLA01A10	Clay Branch	4.02 MILES
2A	VAC-L19R_SCE01A00	Sycamore Creek	15.31 MILES
2A	VAC-L27L_BWA01A08	Timber Lake	56.65 ACRES
2A	VAC-L27R_BRW01A08	Browns Creek	1.53 MILES
2A	VAC-L27R_BWA04A08	Buffalo Creek	4.11 MILES
2A	VAC-L27R_WTR01A08	Waterlick Creek	1.19 MILES
2A	VAC-L28R_JNS01A02	Johnson Creek	5.79 MILES
2A	VAC-L28R_TRB01A02	Troublesome Creek	3.12 MILES
2A	VAC-L29R_FCA01A00	Flat Creek	7.66 MILES
2A	VAC-L31R_SEN01A00	Seneca Creek	9.21 MILES
2A	VAC-L34L_PLP01A02	Phelps Creek Reservoir	15.24 ACRES
2A	VAC-L34R_PLP01A00	Phelps Creek	0.41 MILES
2A	VAC-L37R_LUB01A06	Little Cub Creek	9.21 MILES
2A	VAC-L39L_SRN01L00	Keysville Reservoir	37.86 ACRES
2A	VAC-L39R_FAR01A16	Farmers Branch	3.44 MILES
2A	VAC-L39R_LRO01A00	Little Roanoke Creek	4.46 MILES
2A	VAC-L41R_DFF02A98	Difficult Creek	4.43 MILES
2A	VAC-L41R_XVN01A12	Difficult Creek, Unnamed Tributary (XVN)	3.20 MILES
2A	VAC-L41R_XVV01A16	Difficult Creek, Unnamed Tributary (XVV)	1.24 MILES
2A	VAC-L57R_DAN02A00	Dan River	2.51 MILES
2A	VAC-L57R_HLL01A14	Hollins Branch	1.45 MILES
2A	VAC-L57R_MCG01A06	McGuff Creek	5.08 MILES
2A	VAC-L57R_TRO01A08	Trotters Creek	6.33 MILES
2A	VAC-L58R_SRV02A04	Sandy River	6.31 MILES
2A	VAC-L58R_SRV03A06	Sandy River	6.88 MILES
2A	VAC-L58R_SSP01A06	South Prong Sandy River	13.22 MILES
2A	VAC-L61R_XVP01A16	Little Fall Creek, Unnamed Tributary	0.71 MILES
2A	VAC-L64R_XMD01A10	Reedy Creek, Unnamed Tributary	0.37 MILES
2A	VAC-L65R_PDD01A12	Pudding Creek	5.49 MILES
2A	VAC-L65R_XUZ01A10	Banister River, Unnamed Tributary	0.75 MILES
2A	VAC-L68L_GEO01A02	Georges Creek Reservoir	7.79 ACRES
2A	VAC-L68R_GEO01B14	Georges Creek	11.77 MILES
2A	VAC-L68R_MIL01A16	Mill Creek	9.29 MILES
2A	VAC-L70R_JSR01A08	Johns Run	0.88 MILES
2A	VAC-L70R_JSR02A08	Johns Run	4.34 MILES
2A	VAC-L70R_SNA02A08	Sandy Creek	9.55 MILES
2A	VAC-L70R_XUS01A08	Sandy Creek, Unnamed Tributary	1.03 MILES
2A	VAC-L74R_LOL01A06	Little Coleman Creek	3.59 MILES
2A	VAC-L75R_BHB01A98	Butcher Creek	12.69 MILES
2A	VAC-L75R_BPC01A04	Beaver Pond Creek	4.72 MILES
2A	VAC-L75R_XVL01A12	UT, Beaver Pond Creek	1.12 MILES
2A	VAC-L76R_BMA01A06	Buffalo Creek	5.68 MILES
2A	VAC-L77R_DEV01A14	Devils Branch	3.56 MILES
2A	VAC-L77R_LNE02A06	Little Bluestone Creek	5.48 MILES
2A	VAC-L77R_POP01A14	Popes Creek	2.65 MILES
2A	VAC-L81R_MCC01A14	Mill Creek	2.47 MILES
2A	VAC-L81R_POB01A00	Poplar Creek	3.45 MILES
2A	VAS-M02R_ELK01A02	Elk Spur Branch & tributaries	12.52 MILES
2A	VAS-M02R_PAU01A02	Pauls Creek Lower	4.26 MILES
2A	VAW-L01R_BLG01A10	Big Laurel Creek	5.22 MILES
2A	VAW-L01R_ELT01A02	Elliot Creek	5.27 MILES
2A	VAW-L01R_ELT02A02	Elliot Creek	4.63 MILES
2A	VAW-L02R_RNF01A00	N.F. Roanoke River	3.56 MILES
2A	VAW-L02R_RNF01B14	N.F. Roanoke River	0.47 MILES
2A	VAW-L02R_RNF02A02	N.F. Roanoke River	2.37 MILES
2A	VAW-L03L_SHR01A06	Spring Hollow Reservoir	120.67 ACRES
2A	VAW-L05L_CRV01A02	Carvin Cove Reservoir	631.53 ACRES
2A	VAW-L05R_CNE01A14	Coyner Branch	2.08 MILES
2A	VAW-L05R_XVR01A14	Glade Creek, UT (XVR)	1.07 MILES
2A	VAW-L07L_FIN01A02	Falling Creek Reservoir	18.19 ACRES
2A	VAW-L07R_XNA02A12	Lynville Creek, UT (XNA)	2.76 MILES
2A	VAW-L10R_BSA01A06	Bull Run	1.03 MILES
2A	VAW-L11R_JOL01A02	Jack-O-Lantern Creek	1.20 MILES
2A	VAW-L11R_XON01A12	Jack-O-Lantern Branch, UT (XON)	0.60 MILES
2A	VAW-L11R_XOO01A12	Gills Creek, UT (XOO)	0.40 MILES
2A	VAW-L14R_PGG01A00	Pigg River	9.86 MILES
2A	VAW-L15R_CNT03A14	Big Chestnut Creek	5.44 MILES
2A	VAW-L17R_XMY01A08	Turkeycock Creek, UT (XMY)	0.64 MILES
2A	VAW-L17R_XOF01A14	Turkeycock Creek, UT (XOF)	0.71 MILES
2A	VAW-L17R_XOF02A14	Turkeycock Creek, UT (XOF).	1.33 MILES
2A	VAW-L18R_CEC01A10	Cedar Creek	2.58 MILES
2A	VAW-L20R_DAY01A00	Day Creek	0.66 MILES
2A	VAW-L20R_DAY02A00	Day Creek	5.40 MILES
2A	VAW-L20R_XNC01A12	Day Creek, UT (XNC)	3.15 MILES
2A	VAW-L20R_XOH01A16	S.F. Goose Creek, UT (XOH)	0.75 MILES
2A	VAW-L20R_XOI01A16	S.F. Goose Creek, UT (XOI)	1.28 MILES
2A	VAW-L20R_XOL01A14	Goose Creek, UT (XOL)	0.74 MILES
2A	VAW-L23L_SCB01A02	Bedford (Stony Creek) Reservoir	28.30 ACRES
2A	VAW-L23R_SCB04A10	Stony Creek & Tributaries	11.66 MILES
2A	VAW-L24R_OST02A02	Overstreet Creek	4.29 MILES
2A	VAW-L25R_XNE01A12	Elk Creek, UT (XNE)	0.81 MILES
2A	VAW-L26R_XOD01A14	Little Otter River, UT (XOD).	1.44 MILES
2A	VAW-L42R_IVV01A02	Ivy Creek & Tributaries	17.72 MILES
2A	VAW-L42R_XOE01A14	Little Dan River, UT (XOE)	1.62 MILES
2A	VAW-L43R_SNF02A04	North Fork South Mayo River	2.23 MILES
2A	VAW-L44R_XSP02A14	Spoon Creek, UT	2.48 MILES
2A	VAW-L46R_PBA02A02	Polebridge Creek & Tributaries	19.22 MILES
2A	VAW-L49R_MTR01A02	Matrimony Creek	4.83 MILES
2A	VAW-L50R_RCC02A02	Rock Castle Creek	8.96 MILES
2A	VAW-L51L_GOB02A06	Fairystone Lake (Goblin Town Creek)	129.89 ACRES
2A	VAW-L51R_LBT01A06	Little Goblintown Creek	4.26 MILES
2A	VAW-L51R_SRE08A00	Smith River	1.45 MILES
2A	VAW-L52R_SRE03A00	Smith River	2.86 MILES
2A	VAW-L52R_SRE04A00	Smith River	0.17 MILES
2A	VAW-L52R_SRE05A00	Smith River	3.24 MILES
2A	VAW-M03R_BIR01A14	Birds Branch	1.33 MILES
2B	VAC-L13L_OWC01A02	Old Womans Creek	145.91 ACRES
2B	VAC-L13L_ROA01A02	Leesville Lake	403.53 ACRES
2B	VAC-L13L_ROA02A02	Leesville Lake Middle (Roanoke R.)	1,586.63 ACRES

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2B	VAC-L13L_ROA03A02	Leesville Lake	336.90 ACRES
2B	VAC-L19R_XLN01A02	Roanoke (Staunton) River, Unnamed Tributary	0.19 MILES
2B	VAC-L59R_SCR01A02	Sandy Creek	5.52 MILES
2B	VAC-L66R_CRR01A00	Cherrystone Creek	2.60 MILES
2B	VAW-L42L_DAN02A02	Townes Reservoir	28.12 ACRES
2B	VAW-L42R_DAN03A02	Dan River	3.39 MILES
2C	VAC-L36R_CBA01A06	Catawba Creek	7.73 MILES
2C	VAC-L37R_CUB01A00	Cub Creek	9.05 MILES
2C	VAW-L06R_BAA01A00	Back Creek	5.68 MILES
2C	VAW-L06R_BAA02A00	Back Creek	4.36 MILES
2C	VAW-L22R_GSE01A00	Goose Creek	7.90 MILES
3A	VAC-L13R_ZZZ01A00	Leesville Lake Tributaries	73.75 MILES
3A	VAC-L13R_ZZZ01A06	Old Womans Creek Tributaries	26.87 MILES
3A	VAC-L13R_ZZZ01B14	Unnsegmented Portion of Watershed L13R	16.25 MILES
3A	VAC-L19R_FRZ01A00	Frazier Creek	0.77 MILES
3A	VAC-L19R_ZZZ01A00	Unsegmented Portion of Watershed L19	9.47 MILES
3A	VAC-L19R_ZZZ01A10	Reed Creek Tributaries - Unsegmented Section 5e	22.99 MILES
3A	VAC-L19R_ZZZ01B14	Unnsegmented Portion of Watershed L19	47.00 MILES
3A	VAC-L19R_ZZZ01C14	Unsegmented Portion of Watershed L19	44.31 MILES
3A	VAC-L27R_ZZZ01A08	Buffalo Creek	43.15 MILES
3A	VAC-L28R_MBC01A00	Mill Creek	2.58 MILES
3A	VAC-L28R_ZZZ01A00	Unsegmented Portion of Watershed L28 - PWS	59.06 MILES
3A	VAC-L28R_ZZZ01A02	Unsegmented Portion of Watershed L28 - PWS	9.55 MILES
3A	VAC-L28R_ZZZ01B14	Unsegmented Portion of Watershed L28	22.67 MILES
3A	VAC-L29R_ZZZ01A00	Unsegmented Portion of Watershed L29	71.43 MILES
3A	VAC-L30R_HIL01A02	Hill Creek	4.70 MILES
3A	VAC-L30R_LNA01A02	Long Branch	2.41 MILES
3A	VAC-L30R_MRC01A04	Mill Creek	4.37 MILES
3A	VAC-L30R_SSC02A12	Straightstone Creek	10.04 MILES
3A	VAC-L30R_XMG01A02	Roanoke (Staunton) River, Unnamed Tributary	1.94 MILES
3A	VAC-L30R_XMH01A02	Roanoke (Staunton) River, Unnamed Tributary	4.20 MILES
3A	VAC-L30R_ZZZ01A00	Unsegmented Portion of Watershed L30	98.79 MILES
3A	VAC-L30R_ZZZ01B14	Unsegmented Portion of Watershed L30	74.30 MILES
3A	VAC-L30R_ZZZ01C14	Unsegmented Portion of Watershed L30	101.39 MILES
3A	VAC-L30R_ZZZ01D14	Unsegmented Portion of Watershed L30	74.61 MILES
3A	VAC-L30R_ZZZ01E14	Unsegmented Portion of Watershed L30	110.42 MILES
3A	VAC-L31R_ZZZ01A00	Unsegmented Portion of Watershed L31	127.35 MILES
3A	VAC-L32R_ZZZ01A00	Unsegmented Portion of Watershed L32	77.88 MILES
3A	VAC-L32R_ZZZ01B14	Unsegmented Portion of Watershed L32	84.58 MILES
3A	VAC-L33R_ZZZ01A00	Unsegmented Portion of Watershed L33	102.53 MILES
3A	VAC-L34R_FRV20A00	Unnamed tribs to Falling River	22.58 MILES
3A	VAC-L34R_FRV30A00	Unsegmented Tributaries to Falling River	22.65 MILES
3A	VAC-L34R_HAT01A00	Hat Creek	11.67 MILES
3A	VAC-L34R_PLP01B04	Phelps Creek	3.43 MILES
3A	VAC-L34R_ZZZ01A00	Unsegmented Portion of Watershed L34	11.08 MILES
3A	VAC-L34R_ZZZ01B14	Unsegmented Portion of Watershed L34R	98.03 MILES
3A	VAC-L34R_ZZZ01C14	Unsegmented Portion of Watershed L34R	62.46 MILES
3A	VAC-L35L_MEY01A06	Mollys Creek Reservoir	62.41 ACRES
3A	VAC-L35R_ZZZ01A00	Unsegmented Portion of Watershed L35R	60.22 MILES
3A	VAC-L36R_EIS01A06	Ellis Creek	6.05 MILES
3A	VAC-L36R_ZZZ01A00	Unsegmented Portion of Watershed L36	79.05 MILES
3A	VAC-L36R_ZZZ01B14	Unsegmented Portion of Watershed L36	67.83 MILES
3A	VAC-L36R_ZZZ01C14	Unsegmented Portion of Watershed L36	90.00 MILES
3A	VAC-L37R_ZZZ01A00	Unsegmented Portion of Watershed L37	85.88 MILES
3A	VAC-L37R_ZZZ01B14	Unsegmented Portion of Watershed L37R	136.38 MILES
3A	VAC-L37R_ZZZ01C14	Unsegmented Portion of Watershed L37	67.14 MILES
3A	VAC-L37R_ZZZ01D14	Unsegmented Portion of Watershed L37	52.54 MILES
3A	VAC-L38R_ZZZ01A00	Unsegmented Portion of Watershed L38	152.23 MILES
3A	VAC-L39R_RES01A06	Reeses Creek	4.46 MILES
3A	VAC-L39R_SRN01A00	Spring Creek	1.27 MILES
3A	VAC-L39R_ZZZ01A00	Unsegmented Portion of Watershed L39	40.24 MILES
3A	VAC-L39R_ZZZ01B14	Unsegmented Portion of Watershed L39R	122.99 MILES
3A	VAC-L39R_ZZZ01C14	Unsegmented Portion of Watershed L39	70.41 MILES
3A	VAC-L39R_ZZZ01D14	Unsegmented Portion of Watershed L39R	66.84 MILES
3A	VAC-L39R_ZZZ01E14	Unsegmented Portion of Watershed L39	141.41 MILES
3A	VAC-L39R_ZZZ01F14	Unsegmented Portion of Watershed L39R	108.88 MILES
3A	VAC-L40R_ZZZ01A00	Unsegmented Portion of Watershed L40	129.12 MILES
3A	VAC-L40R_ZZZ01B14	Unsegmented Portion of Watershed L40R	34.25 MILES
3A	VAC-L41R_ZZZ01A00	Unsegmented Portion of Watershed L41	47.54 MILES
3A	VAC-L41R_ZZZ01B14	Unsegmented Portion of Watershed L41	139.02 MILES
3A	VAC-L57R_CAS02A02	Cascade Creek Tributaries	55.97 MILES
3A	VAC-L57R_DAN03A00	Dan River	4.16 MILES
3A	VAC-L57R_ZZZ01A00	Unsegmented Portion of Watershed L57	70.82 MILES
3A	VAC-L57R_ZZZ01A10	Dan River Tributaries - Unsegmented Section 3a	38.07 MILES

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3A	VAC-L57R_ZZZ01B14	Unsegmented Portion of Watershed L57	18.95 MILES
3A	VAC-L58R_ZZZ01A00	Unsegmented Portion of Watershed L58	107.92 MILES
3A	VAC-L58R_ZZZ01B14	Unsegmented Portion of Watershed L58R	56.37 MILES
3A	VAC-L58R_ZZZ01C14	Unsegmented Portion of Watershed L58R	95.30 MILES
3A	VAC-L59R_ZZZ01A00	Unsegmented Portion of Watershed L59	71.79 MILES
3A	VAC-L60R_CLC01A02	Country Line Creek	0.41 MILES
3A	VAC-L60R_XME01A06	Dan River, Unnamed Tributary	2.16 MILES
3A	VAC-L60R_ZZZ01A00	Unsegmented Portion of Watershed L60	38.35 MILES
3A	VAC-L60R_ZZZ01B14	Unsegmented Portion of Watershed L60R	3.39 MILES
3A	VAC-L60R_ZZZ01C14	Unsegmented Portion of Watershed L60R	49.79 MILES
3A	VAC-L61R_ZZZ01A00	Unsegmented Portion of Watershed L61	80.98 MILES
3A	VAC-L62R_ZZZ01A00	Unsegmented Portion of Watershed L62	68.28 MILES
3A	VAC-L62R_ZZZ01B14	Unsegmented Portion of Watershed L62R	127.92 MILES
3A	VAC-L62R_ZZZ01C14	Unsegmented Portion of Watershed L62R	50.56 MILES
3A	VAC-L62R_ZZZ01D14	Unsegmented Portion of Watershed L62R	41.40 MILES
3A	VAC-L63R_ZZZ01A00	Unsegmented Portion of Watershed L63	160.20 MILES
3A	VAC-L64R_ZZZ01A00	Unsegmented Portion of Watershed L64	63.49 MILES
3A	VAC-L64R_ZZZ01B14	Unsegmented Portion of Watershed L64R	75.73 MILES
3A	VAC-L64R_ZZZ01C14	Unsegmented Portion of Watershed L64	50.39 MILES
3A	VAC-L64R_ZZZ01D14	Unsegmented Portion of Watershed L64	80.93 MILES
3A	VAC-L65R_BAN01A00	Banister River	8.66 MILES
3A	VAC-L65R_BAN02A00	Banister River	2.69 MILES
3A	VAC-L65R_BAN05A00	Banister River Tributaries	29.32 MILES
3A	VAC-L65R_BKN02A06	Bearskin Creek Tributaries	45.55 MILES
3A	VAC-L65R_SRW01A00	Strawberry Creek Tributaries	29.17 MILES
3A	VAC-L65R_WSC01A00	Wetsleeve Creek and Tributaries	12.87 MILES
3A	VAC-L65R_ZZZ01A00	Unsegmented Portion of Watershed L65	57.73 MILES
3A	VAC-L66R_CRR04A00	Cherrystone Creek	4.10 MILES
3A	VAC-L66R_ZZZ01A00	Unsegmented Portion of Watershed L66	43.49 MILES
3A	VAC-L66R_ZZZ02A06	Cherrystone Creek Tributaries	39.37 MILES
3A	VAC-L67R_BAN01B00	Banister River Tributaries	97.97 MILES
3A	VAC-L67R_BAN01C14	Unsegmented Portion of Watershed L67R - PWS	9.94 MILES
3A	VAC-L67R_BAN01D14	Unsegmented Portion of Watershed L67R - PWS	17.29 MILES
3A	VAC-L67R_ZZZ01A00	Unsegmented Portion of Watershed L67	77.27 MILES
3A	VAC-L67R_ZZZ01B14	Unsegmented Portion of Watershed L67R	31.68 MILES
3A	VAC-L67R_ZZZ01C14	Unsegmented Portion of Watershed L67R	61.52 MILES
3A	VAC-L68R_GEO01A00	Georges Creek Reservoir Tributaries	4.13 MILES
3A	VAC-L68R_WRN03A00	Whitehorn Creek Tributaries	81.89 MILES
3A	VAC-L68R_ZZZ01A00	Unsegmented Portion of Watershed L68	39.14 MILES
3A	VAC-L69R_ZZZ01A00	Unsegmented Portion of Watershed L69	75.62 MILES
3A	VAC-L70R_SNA01B00	Sandy Creek Tributaries	57.23 MILES
3A	VAC-L70R_ZZZ01A00	Unsegmented Portion of Watershed L70	24.51 MILES
3A	VAC-L70R_ZZZ01B14	Unsegmented Portion of Watershed L70R	141.00 MILES
3A	VAC-L71R_BAN02B00	Banister River Tributaries	80.13 MILES
3A	VAC-L71R_XCZ01A10	Banister River, Unnamed Tributary	0.72 MILES
3A	VAC-L71R_ZZZ01A00	Unsegmented Portion of Watershed L71	116.93 MILES
3A	VAC-L72R_ZZZ01A06	Unsegmented Portion of Watershed L72	103.38 MILES
3A	VAC-L73R_ZZZ01A00	Unsegmented Portion of Watershed L73	50.56 MILES
3A	VAC-L73R_ZZZ01B14	Unsegmented Portion of Watershed L73	89.86 MILES
3A	VAC-L74R_XMF01A08	Hyco River, Unnamed Tributary	1.54 MILES
3A	VAC-L74R_ZZZ01A00	Unsegmented Portion of Watershed L74	58.11 MILES
3A	VAC-L74R_ZZZ01B14	Unsegmented Portion of Watershed L74	65.19 MILES
3A	VAC-L74R_ZZZ01C14	Unsegmented Portion of Watershed L74R	39.31 MILES
3A	VAC-L74R_ZZZ01D14	Unsegmented Portion of Watershed L74	17.54 MILES
3A	VAC-L74R_ZZZ01E14	Unsegmented Portion of Watershed L74	24.88 MILES
3A	VAC-L74R_ZZZ01F14	Unsegmented Portion of Watershed L74	17.92 MILES
3A	VAC-L75R_ZZZ01A00	Unsegmented Portion of Watershed L75	26.30 MILES
3A	VAC-L75R_ZZZ01B14	Unsegmented Portion of Watershed L75R	29.62 MILES
3A	VAC-L75R_ZZZ01C14	Unsegmented Portion of Watershed L75R	3.63 MILES
3A	VAC-L75R_ZZZ01D14	Unsegmented Portion of Watershed L75R	37.68 MILES
3A	VAC-L75R_ZZZ01E14	Unsegmented Portion of Watershed L75R	8.36 MILES
3A	VAC-L75R_ZZZ01F14	Unsegmented Portion of Watershed L75R	7.31 MILES
3A	VAC-L75R_ZZZ01G14	Unsegmented Portion of Watershed L75R	21.97 MILES
3A	VAC-L75R_ZZZ01H14	Unsegmented Portion of Watershed L75R	97.50 MILES
3A	VAC-L75R_ZZZ01I14	Unsegmented Portion of Watershed L75R	14.89 MILES
3A	VAC-L75R_ZZZ01J14	Unsegmented Portion of Watershed L75R	1.07 MILES
3A	VAC-L76R_ZZZ01A00	Unsegmented Portion of Watershed L76	73.60 MILES
3A	VAC-L77R_ZZZ01A00	Unsegmented Portion of Watershed L77	146.07 MILES
3A	VAC-L77R_ZZZ01B14	Unsegmented Portion of Watershed L77R	107.01 MILES

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3A	VAC-L77R_ZZZ01C14	Unsegmented Portion of Watershed L77R	38.06 MILES
3A	VAC-L78R_XUR01A04	Lake Gaston, Unnamed Tributary	2.01 MILES
3A	VAC-L78R_ZZZ01A02	Unsegmented Portion of Watershed L78	126.82 MILES
3A	VAC-L78R_ZZZ01B14	Unsegmented Portion of Watershed L78R	147.50 MILES
3A	VAC-L78R_ZZZ01C14	Unsegmented Portion of Watershed L78R	44.14 MILES
3A	VAC-L79R_ZZZ01A02	Unsegmented Portion of Watershed L79	138.09 MILES
3A	VAC-L79R_ZZZ01B14	Unsegmented Portion of Watershed L79R	81.32 MILES
3A	VAC-L79R_ZZZ01C14	Unsegmented Portion of Watershed L79R	26.83 MILES
3A	VAC-L80R_ZZZ01A00	Unsegmented Portion of Watershed L80	60.80 MILES
3A	VAC-L81L_ZZZ01A04	Lake Gaston	537.46 ACRES
3A	VAC-L81R_ZZZ01A00	Unsegmented Portion of Watershed L81	75.81 MILES
3A	VAC-L81R_ZZZ01B14	Unsegmented Portion of Watershed L81	21.35 MILES
3A	VAC-L81R_ZZZ01C14	Unsegmented Portion of Watershed L81	10.44 MILES
3A	VAC-L82L_ZZZ01A04	Lake Gaston	753.40 ACRES
3A	VAC-L82R_ZZZ01A00	Unsegmented Portion of Watershed L82	36.14 MILES
3A	VAS-M01R_LFR01A16	Little Fisher Creek	0.71 MILES
3A	VAS-M01R_ZZZ01A00	Unsegmented rivers in YA01	3.40 MILES
3A	VAS-M01R_ZZZ02A00	Unsegmented rivers in YA02	5.35 MILES
3A	VAS-M02R_HAL01A02	Halls Branch	4.14 MILES
3A	VAS-M02R_HAL02A02	Halls Branch	1.01 MILES
3A	VAS-M02R_LIT01A02	Little Pauls Creek	2.85 MILES
3A	VAS-M02R_LIT02A02	Little Pauls Creek & tributaries	7.19 MILES
3A	VAS-M02R_LOV02A02	Lovills Creek	5.98 MILES
3A	VAS-M02R_LOV03A04	Lovills Creek	1.48 MILES
3A	VAS-M02R_PAU02A02	Pauls Creek Upper & Tributaries	21.97 MILES
3A	VAS-M02R_STA01A02	South Fork Stewarts Creek & tributaries	5.28 MILES
3A	VAS-M02R_STE02A02	Stewarts Creek	1.99 MILES
3A	VAS-M02R_STW01A02	Stewarts Creek, North Fork & tributaries	3.44 MILES
3A	VAS-M02R_TUR01A02	Turkey Creek & tributaries	4.04 MILES
3A	VAS-M02R_WAT01A02	Waterfall Branch & tributaries	1.79 MILES
3A	VAS-M02R_ZZZ01A00	Unassessed streams in YA05	49.90 MILES
3A	VAS-M02R_ZZZ02A00	Unsegmented rivers in YA06	34.24 MILES
3A	VAS-M02R_ZZZ03A00	Unsegmented rivers in YA07	26.02 MILES
3A	VAW-L01R_DAB01A02	Dry Branch	2.39 MILES
3A	VAW-L01R_ELT03A02	Elliot Creek	4.06 MILES
3A	VAW-L01R_FBR01A08	Falling Branch	1.69 MILES
3A	VAW-L01R_PUR01A02	Purgatory Creek & Tributaries	18.29 MILES
3A	VAW-L01R_RDC01A02	Rocky Branch	3.84 MILES
3A	VAW-L01R_SPG01A02	Spring Branch & Tributaries	15.69 MILES
3A	VAW-L01R_STA01A02	Smith Creek	2.85 MILES
3A	VAW-L01R_ZZZ01A00	Goose Creek & Tribs.	23.25 MILES
3A	VAW-L01R_ZZZ02A02	S.F. Roanoke River Tribs.	4.21 MILES
3A	VAW-L01R_ZZZ03A02	Bottom Creek Tribs.	56.07 MILES
3A	VAW-L01R_ZZZ03A14	S.F. Roanoke River Tribs.	24.48 MILES
3A	VAW-L01R_ZZZ04A14	S.F. Roanoke River Trib.	68.18 MILES
3A	VAW-L01R_ZZZ05A14	S.F. Roanoke River Tribs.	59.64 MILES
3A	VAW-L02R_CDN01A02	Cedar Run	3.47 MILES
3A	VAW-L02R_MKC01A02	Mill Creek & Tributaries	10.52 MILES
3A	VAW-L02R_MSP01A10	Mossy Spring Branch & Tributaries	4.46 MILES
3A	VAW-L02R_RNF05A02	N.F. Roanoke River	7.68 MILES
3A	VAW-L02R_SIT01A16	Sites Branch	0.86 MILES
3A	VAW-L02R_WLN20A04	Wilson Creek Tribs.	18.97 MILES
3A	VAW-L02R_ZZZ01A00	Bradshaw Creek Tribs.	66.22 MILES
3A	VAW-L02R_ZZZ02A02	Roanoke River, North Fork Tributaries	11.45 MILES
3A	VAW-L02R_ZZZ03A14	North Fork Roanoke River Tribs.	64.71 MILES
3A	VAW-L02R_ZZZ04A14	N.F. Roanoke River Tribs.	92.99 MILES
3A	VAW-L03R_DRR01A06	Dry Run & Tributaries	17.22 MILES
3A	VAW-L03R_ZZZ01A00	Roanoke River Tribs.	16.48 MILES
3A	VAW-L03R_ZZZ02A02	Roanoke River Tribs.	24.00 MILES
3A	VAW-L03R_ZZZ03A02	Roanoke River Tributaries	85.41 MILES
3A	VAW-L03R_ZZZ04A02	Roanoke River Tribs.	12.45 MILES
3A	VAW-L04R_JRC01A02	Jumping Run	2.89 MILES
3A	VAW-L04R_WOR01A00	Wolf Creek Tribs.	4.64 MILES
3A	VAW-L04R_XNB01A08	Mason Creek, UT (XNB)	1.02 MILES
3A	VAW-L04R_ZZZ01A00	Roanoke River Tribs.	46.43 MILES
3A	VAW-L04R_ZZZ01B14	Roanoke River Tribs.	10.45 MILES
3A	VAW-L04R_ZZZ02A14	Mason Cr. Tribs.	58.39 MILES
3A	VAW-L05R_CRV03A00	Carvin Creek	0.52 MILES
3A	VAW-L05R_CRV04A00	Carvin Cr. Reservoir Drainage	58.34 MILES
3A	VAW-L05R_ZZZ01A00	Tinker Cr./Glade Cr.	80.81 MILES
3A	VAW-L05R_ZZZ02A14	Carvin Cr.Tribs.	24.16 MILES
3A	VAW-L05R_ZZZ03A14	Tinker Cr. Tribs.	54.39 MILES
3A	VAW-L05R_ZZZ04A14	Tinker Cr. Tribs	36.90 MILES
3A	VAW-L06R_XVE01A10	Back Creek, UT (XVE)	2.63 MILES
3A	VAW-L06R_ZZZ01A00	Back Creek Tribs.	112.79 MILES
3A	VAW-L06R_ZZZ02A02	Back Creek Tribs.	13.12 MILES
3A	VAW-L07R_BDA01B14	Beaverdam Creek Tribs	6.22 MILES
3A	VAW-L07R_BVE04A00	Beaverdam Creek, West Fork	1.81 MILES
3A	VAW-L07R_FIN01A00	Falling Creek & Tributaries	19.27 MILES
3A	VAW-L07R_FIN02A00	Falling Creek & Tributaries	8.78 MILES
3A	VAW-L07R_FIN04A00	Falling Creek Reservoir	2.38 MILES
3A	VAW-L07R_JUM01A02	Jumping Run	4.00 MILES
3A	VAW-L07R_LVL01A00	Lynville Creek Tributaries	20.86 MILES
3A	VAW-L07R_LVL02A00	Lynville Creek & Tributaries	17.41 MILES
3A	VAW-L07R_PTA01A00	Prater Creek & Tributaries	13.51 MILES
3A	VAW-L07R_SCA01A00	Sandy Creek & Tributaries	7.64 MILES
3A	VAW-L07R_SCA02A00	Sandy Creek & Tributaries	2.25 MILES
3A	VAW-L07R_SML01A00	Smith Mountain Lake Tribs.	30.46 MILES
3A	VAW-L07R_SML02A14	Smith Mountain Lake Tribs.	15.95 MILES
3A	VAW-L07R_SML03A14	Smith Mountain Lake Tribs.	40.31 MILES
3A	VAW-L07R_SML04A14	Smith Mountain Lake Tribs.	24.68 MILES
3A	VAW-L07R_XNA01A12	Lynville Creek, UT (XNA)	0.89 MILES
3A	VAW-L07R_XOC01A10	Smith Mountain Lake, UT (XOC)	0.33 MILES
3A	VAW-L07R_ZZZ01A00	Beaverdam Cr. Tribs.	30.96 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAW-L08R_DRU01A02	Daniel's Run	7.67 MILES
3A	VAW-L08R_DRU01A16	Daniel's Run	3.23 MILES
3A	VAW-L08R_RRI01A02	Roaring Run	3.39 MILES
3A	VAW-L08R_ZZZ01A00	Blackwater River Tribs.	131.26 MILES
3A	VAW-L08R_ZZZ01B14	Blackwater River Tribs.	3.59 MILES
3A	VAW-L08R_ZZZ02A14	N.F. Blackwater River Tribs.	77.70 MILES
3A	VAW-L08R_ZZZ03A14	S.F. Blackwater River Tribs.	45.82 MILES
3A	VAW-L09R_ZZZ01A00	Maggodee Creek Tribs.	117.26 MILES
3A	VAW-L10R_COA01A02	Cool Branch	0.77 MILES
3A	VAW-L10R_MLE01A02	Maple Branch & Tributaries	5.69 MILES
3A	VAW-L10R_PCP01A02	Poplar Camp Creek	3.87 MILES
3A	VAW-L10R_SFD01A02	Standiford Creek	2.74 MILES
3A	VAW-L10R_XNX01A10	Cool Branch, UT (XNX)	1.03 MILES
3A	VAW-L10R_XNY01A10	Unnamed Tributary (XNY)	0.59 MILES
3A	VAW-L10R_ZZZ01A00	Blackwater River Tribs./SML	19.57 MILES
3A	VAW-L10R_ZZZ01B14	Blackwater River Tribs./SML	33.72 MILES
3A	VAW-L10R_ZZZ02A06	Blackwater River Tribs.	40.92 MILES
3A	VAW-L11R_GIL03A00	Gills Creek Tribs./SML	18.05 MILES
3A	VAW-L11R_ZZZ01A00	Gills Creek Tribs.	54.70 MILES
3A	VAW-L12R_CCK08A00	Craddock Creek Tribs.	10.50 MILES
3A	VAW-L14R_PGG07A02	Pigg River	3.07 MILES
3A	VAW-L14R_PGG08A16	Pigg River	11.53 MILES
3A	VAW-L14R_PSP01A02	South Prong Pigg River	6.63 MILES
3A	VAW-L14R_ZZZ01A00	Pigg River Tribs.	93.77 MILES
3A	VAW-L14R_ZZZ02A14	Pigg River Tribs.	99.48 MILES
3A	VAW-L15R_ZZZ01A00	Big Chestnut Creek Tributaries	127.47 MILES
3A	VAW-L16R_ZZZ01A00	Pigg River Tribs.	86.93 MILES
3A	VAW-L17R_GOR01A02	Gourd Creek	2.59 MILES
3A	VAW-L17R_ZZZ01A00	Snow Creek Tribs.	53.85 MILES
3A	VAW-L17R_ZZZ02A14	Turkeycock Creek Tribs.	90.59 MILES
3A	VAW-L17R_ZZZ03A14	Snow Creek Tribs.	114.49 MILES
3A	VAW-L18R_ZZZ01A00	Pigg RiverTribs.	101.27 MILES
3A	VAW-L18R_ZZZ02A14	Pigg RiverTribs.	92.55 MILES
3A	VAW-L20R_GNE01A04	Goose Creek, North Fork	2.72 MILES
3A	VAW-L20R_GSF01A04	Goose Creek, South Fork	3.38 MILES
3A	VAW-L20R_XOG01A16	S.F. Goose Creek, UT (XOG)	1.21 MILES
3A	VAW-L20R_ZZZ01A00	Goose Creek Tribs.	189.03 MILES
3A	VAW-L21R_MMN01A08	Mooman Creek	3.60 MILES
3A	VAW-L21R_ZZZ01A00	Goose Creek Tribs.	137.54 MILES
3A	VAW-L21R_ZZZ02A14	Stony Fork Tribs.	43.16 MILES
3A	VAW-L21R_ZZZ03A14	Bore Auger Creek Tribs.	49.69 MILES
3A	VAW-L22R_ZZZ01A00	Goose Creek Tribs.	56.67 MILES
3A	VAW-L22R_ZZZ02A14	Goose Creek Tribs	38.59 MILES
3A	VAW-L22R_ZZZ03A14	Goose Creek Tribs.	135.60 MILES
3A	VAW-L23R_CMP01A02	Camp Creek	1.05 MILES
3A	VAW-L23R_CMP02A02	Camp Creek	2.83 MILES
3A	VAW-L23R_LSA01A00	Little Stony Creek	1.02 MILES
3A	VAW-L23R_LSA01A04	Little Stony Creek Trib.	1.11 MILES
3A	VAW-L23R_LSA02A00	Little Stony Creek	4.88 MILES
3A	VAW-L23R_LSA02A04	Little Stony Creek Tribs.	6.44 MILES
3A	VAW-L23R_SCB02A02	Stony Creek Lower Tribs. PWS	10.85 MILES
3A	VAW-L23R_XMB01A02	Big Otter River, UT (XMB)	2.42 MILES
3A	VAW-L23R_ZZZ01A00	Big Otter River Tribs.	35.12 MILES
3A	VAW-L23R_ZZZ02A02	Big Otter River Tributaries	26.32 MILES
3A	VAW-L23R_ZZZ03A02	Sheep Creek Tribs.	36.69 MILES
3A	VAW-L23R_ZZZ04A10	Stony Creek Tribs.	4.37 MILES
3A	VAW-L24R_GUN01A00	Gunstock Creek & Tributaries	10.84 MILES
3A	VAW-L24R_OSL01A02	Oslin Creek	8.10 MILES
3A	VAW-L24R_OST01A00	Overstreet Creek	1.42 MILES
3A	VAW-L24R_OST30A02	Overstreet Creek Tribs.	18.43 MILES
3A	VAW-L24R_ZZZ01A00	North Otter Creek Tribs.	99.22 MILES
3A	VAW-L25R_ECR03A02	Elk Creek	5.15 MILES
3A	VAW-L25R_RAN01A02	Roaring Run	4.81 MILES
3A	VAW-L25R_XND01A12	Elk Creek, UT (XND)	5.59 MILES
3A	VAW-L25R_ZZZ01A00	Big Otter River Tribs.	40.34 MILES
3A	VAW-L25R_ZZZ02A14	Elk Creek Tribs.	82.10 MILES
3A	VAW-L26R_ZZZ01A00	Little Otter River Tribs.	80.33 MILES
3A	VAW-L26R_ZZZ02A14	Machine Creek Tribs.	57.41 MILES
3A	VAW-L27R_ORR01A00	Orrix Creek	1.86 MILES
3A	VAW-L27R_ORR01A04	Orrix Creek	4.26 MILES
3A	VAW-L27R_ORR02A04	Orrix Creek	3.52 MILES
3A	VAW-L27R_ZZZ01A00	Big Otter River Tribs.	67.63 MILES
3A	VAW-L27R_ZZZ02A02	Big Otter River Tribs.	4.54 MILES
3A	VAW-L42R_BCB01A02	Big Cherry Creek	2.26 MILES
3A	VAW-L42R_BDR01A02	Browns Dan River	3.83 MILES
3A	VAW-L42R_BND01A02	Barnard Creek & Tributaries	3.93 MILES
3A	VAW-L42R_DAN04A02	Dan River between Talbott & Townes Reservoirs	4.68 MILES
3A	VAW-L42R_DAN07A02	Dan River & Tributaries	15.40 MILES
3A	VAW-L42R_MAB01A02	Mayberry Creek & Tribs.	5.36 MILES
3A	VAW-L42R_MRW01A14	Mill Creek	1.40 MILES
3A	VAW-L42R_PRS20A02	Peters Creek & Tributaries	37.78 MILES
3A	VAW-L42R_RMC01A02	Round Meadow Creek & Tributaries	20.41 MILES
3A	VAW-L42R_SQL01A02	Squall Creek & Tributaries	5.86 MILES
3A	VAW-L42R_TGG01A02	Tuggle Creek & Tributaries	5.62 MILES
3A	VAW-L42R_ZZZ01A00	Dan River Tribs.	41.40 MILES
3A	VAW-L42R_ZZZ02A14	Dan River Tribs.	9.47 MILES
3A	VAW-L42R_ZZZ03A14	Dan River Tribs.	7.67 MILES
3A	VAW-L42R_ZZZ04A14	Little Dan River Tribs.	47.82 MILES
3A	VAW-L42R_ZZZ05A14	Elk Creek Tribs.	13.28 MILES
3A	VAW-L42R_ZZZ06A14	Peters Creek Tribs.	8.11 MILES
3A	VAW-L43R_LCB01A14	Lily Cove Branch & Tributaries	1.61 MILES
3A	VAW-L43R_LCB02A14	Lily Cove Branch	0.54 MILES
3A	VAW-L43R_POO01A02	Poorhouse Creek	2.63 MILES
3A	VAW-L43R_POO02A02	Poorhouse Creek & Tributaries	13.42 MILES
3A	VAW-L43R_RCH01A02	Rich Creek	1.57 MILES
3A	VAW-L43R_RCH02A02	Rich Creek & Tributaries	7.17 MILES
3A	VAW-L43R_RYE01A14	Rye Cove Creek & Tribs.	4.41 MILES
3A	VAW-L43R_SMR20A00	South Mayo Tribs.	12.04 MILES
3A	VAW-L43R_SMR30A00	South Mayo River Tribs.	4.74 MILES
3A	VAW-L43R_SMR40A14	South Mayo River Tribs.	4.39 MILES
3A	VAW-L43R_SNF01A02	North Fork South Mayo River & Tributaries	36.83 MILES
3A	VAW-L43R_ZZZ01A00	South Mayo River Tribs.	40.13 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAW-L43R_ZZZ02A14	Russell Creek Tribs.	58.22 MILES
3A	VAW-L44R_XSP01A14	Spoon Creek, UT	1.14 MILES
3A	VAW-L44R_XSP01B14	Spoon Creek, UT (XSP)	0.31 MILES
3A	VAW-L44R_ZZZ01A00	Spoon Creek Tributaries	39.53 MILES
3A	VAW-L45R_CRO01A00	Crooked Creek	2.47 MILES
3A	VAW-L45R_CRO02A02	Crooked Creek & Tributaries	2.98 MILES
3A	VAW-L45R_CRO03A02	Crooked Creek & Tributaries	4.65 MILES
3A	VAW-L45R_WMR01A02	White Mud Branch & Tributaries	3.17 MILES
3A	VAW-L45R_ZZZ01A00	South Mayo River Tributaries	6.13 MILES
3A	VAW-L45R_ZZZ02A14	South Mayo River Tribs	37.93 MILES
3A	VAW-L46R_NMR20A00	North Mayo River Tributaries.	12.53 MILES
3A	VAW-L46R_PBA01A02	Polebridge Creek & Tributaries	8.91 MILES
3A	VAW-L46R_SEC01A02	Spencer Creek & Tributaries	13.45 MILES
3A	VAW-L46R_SEC02A02	Spencer Creek & Tributaries	14.62 MILES
3A	VAW-L46R_XNI01A08	Mill Creek, UT (XNI)	1.96 MILES
3A	VAW-L46R_ZZZ01A00	North Mayo River Tributaries	118.91 MILES
3A	VAW-L46R_ZZZ02A14	North Mayo River Tributaries	24.83 MILES
3A	VAW-L47R_XMW01A10	Horse Pasture Creek, UT (XMW)	1.56 MILES
3A	VAW-L47R_ZZZ01A00	Horse Pasture Creek Tributaries	71.05 MILES
3A	VAW-L48R_ZZZ01A00	Fall Creek tributaries	11.49 MILES
3A	VAW-L49R_ZZZ01A00	Matrimony Creek Tributaries	22.66 MILES
3A	VAW-L50R_RCC01A02	Rock Castle Creek	3.68 MILES
3A	VAW-L50R_RIC01A00	Rich Run & Unnamed Tributary	2.44 MILES
3A	VAW-L50R_SRE05A00	Smith River	5.64 MILES
3A	VAW-L50R_ZZZ01A00	Smith River Tributaries	46.46 MILES
3A	VAW-L50R_ZZZ02A14	Smith River Tributaries	21.34 MILES
3A	VAW-L50R_ZZZ03A14	Smith River Tributaries	45.68 MILES
3A	VAW-L51R_HLE01A00	Hales Creek & Tributaries	6.82 MILES
3A	VAW-L51R_HLE02A00	Hales Creek & Tributaries	1.77 MILES
3A	VAW-L51R_OER01A02	Otter Creek & Tributaries	8.58 MILES
3A	VAW-L51R_SOT02A14	Shooting Creek Tributaries (RD17).	18.97 MILES
3A	VAW-L51R_SRE05A00	Smith River	0.78 MILES
3A	VAW-L51R_ZZZ01A00	Philpott Reservoir Tributaries	62.32 MILES
3A	VAW-L51R_ZZZ02A02	Smith River Tributaries	61.41 MILES
3A	VAW-L51R_ZZZ02B14	Philpott Reservoir tributaries	55.37 MILES
3A	VAW-L51R_ZZZ03A14	Philpott Reservoir tributaries (RD18).	41.87 MILES
3A	VAW-L51R_ZZZ03B14	Philpott Reservoir Tributaries	9.18 MILES
3A	VAW-L52R_BRY20A00	Blackberry Creek Tributaries	22.69 MILES
3A	VAW-L52R_SRE20A00	Smith River Tributaries	1.90 MILES
3A	VAW-L52R_SRE21A00	Smith River, UT	2.13 MILES
3A	VAW-L52R_SRE30A00	Smith River Tributaries	118.10 MILES
3A	VAW-L52R_WTT01A00	Whitts Branch	4.12 MILES
3A	VAW-L52R_ZZZ01A00	Smith River Tributaries	24.38 MILES
3A	VAW-L53R_BAU20A06	Beaver & Jones Creek Drainages	47.71 MILES
3A	VAW-L53R_DEL20A14	Daniels Creek Tributaries	2.12 MILES
3A	VAW-L53R_GAS01A00	Grassy Creek & Tributaries	12.32 MILES
3A	VAW-L53R_JOR20A06	Jordan Creek Tributaries	17.43 MILES
3A	VAW-L53R_LEE01A00	Little Reed Creek & Drainage	13.66 MILES
3A	VAW-L53R_REE02A00	Reed Creek & Drainage	63.37 MILES
3A	VAW-L53R_REL01A00	Rangely Creek	2.31 MILES
3A	VAW-L53R_REL02A08	Rangely Creek	1.93 MILES
3A	VAW-L53R_REL03A08	Rangely Creek Tributaries	11.18 MILES
3A	VAW-L53R_RKN01A10	Rock Run	1.36 MILES
3A	VAW-L53R_RKN02A10	Rock Run	1.54 MILES
3A	VAW-L53R_RKN03A10	Rock Run	1.53 MILES
3A	VAW-L53R_SRE01A06	Smith River Power Pool	1.25 MILES
3A	VAW-L53R_SRE19A02	Smith River Tributaries	7.05 MILES
3A	VAW-L53R_SRE20A00	Smith River Tributaries	6.16 MILES
3A	VAW-L53R_SRE21A14	Smith River Tributaries	8.42 MILES
3A	VAW-L53R_SRE30A00	Smith River Tributaries	8.13 MILES
3A	VAW-L53R_XMP02A06	Jones Creek, UT (XMP)	1.39 MILES
3A	VAW-L53R_XMX01A08	Reed Creek, UT (XMX)	2.75 MILES
3A	VAW-L53R_XMX02A08	Reed Creek, UT (XMX)	3.14 MILES
3A	VAW-L53R_XMX03A08	Reed Creek, UT (XMX)	2.56 MILES
3A	VAW-L54R_MBY02A10	Mulberry Creek	3.62 MILES
3A	VAW-L54R_SRE20A00	Stuart Creek & Tributaries	18.77 MILES
3A	VAW-L54R_ZZZ01A00	Smith River Tributaries	81.55 MILES
3A	VAW-L54R_ZZZ02A14	Smith River Tributaries	40.40 MILES
3A	VAW-L55R_MRR02A00	Marrowbone Creek & Tributaries	65.05 MILES
3A	VAW-L55R_ZZZ01A00	Marrowbone Creek Tributaries	24.20 MILES
3A	VAW-L56R_XMU01A08	Mill Creek, UT (XMU)	1.79 MILES
3A	VAW-L56R_ZZZ01A00	Leatherwood Creek Tributaries	34.41 MILES
3A	VAW-L56R_ZZZ02A14	West Fork Leatherwood Creek & Tributaries	65.52 MILES
3A	VAW-L56R_ZZZ03A14	Leatherwood Creek & Tributaries	48.77 MILES
3A	VAW-M03R_ARA02A02	Ararat River	1.77 MILES
3A	VAW-M03R_ARA03A02	Ararat River	4.53 MILES
3A	VAW-M03R_JOE01A02	East Fork Johnson Creek & Tributaries	18.54 MILES
3A	VAW-M03R_SUN01A02	Sun Run	2.94 MILES
3A	VAW-M03R_THO01A02	Thompson Creek	2.34 MILES
3A	VAW-M03R_ZZZ01A00	Ararat River Tribs.	95.40 MILES
3A	VAW-M03R_ZZZ02A14	Johnson Creek Tribs.	20.42 MILES
3B	VAC-L28R_TDY01A02	Tardy Branch	4.03 MILES
3B	VAC-L28R_XMA01A02	Big Otter River, Unnamed Tributary	2.52 MILES
3B	VAW-L01R_FBR02A08	Falling Branch	2.79 MILES
3B	VAW-L01R_XMT01A06	Lick Fork, UT (XMT)	0.97 MILES
3B	VAW-L02R_SIT02A16	Sites Branch	0.89 MILES
3B	VAW-L03R_PBB01A08	Paint Bank Branch	4.34 MILES
3B	VAW-L03R_SNY01A02	Snyders Branch	2.88 MILES
3B	VAW-L04R_GND01A10	Garnard Branch	1.99 MILES
3B	VAW-L05R_COO01A02	Cook Creek	2.66 MILES
3B	VAW-L06R_BAA03A00	Back Creek	5.86 MILES
3B	VAW-L07R_BKY01A06	Beckys Creek	1.60 MILES
3B	VAW-L07R_BTT01A06	Bettys Creek	1.96 MILES
3B	VAW-L07R_BVE01A00	West Fork Beaverdam Creek & Tributaries	10.03 MILES
3B	VAW-L07R_BVE02A00	West Fork Beaverdam Creek & Tributaries	21.91 MILES
3B	VAW-L07R_HFW01A06	Hales Creek	2.08 MILES
3B	VAW-L10R_LUL01A06	Little Bull Run	1.94 MILES
3B	VAW-L15R_CTO01A04	Canton Creek	2.30 MILES
3B	VAW-L15R_LNT01A04	Little Chestnut Creek	1.86 MILES
3B	VAW-L15R_MFK01A08	Muddy Fork	3.56 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3B	VAW-L15R_ROT01A10	Root Mill Creek	3.45 MILES
3C	VAC-L37R_TUR01A14	Turkey Branch	2.32 MILES
3C	VAW-L02R_INN01A12	Indian Run & Tributaries	7.43 MILES
3C	VAW-L04R_WOR01A10	Wolf Creek	2.61 MILES
3C	VAW-L04R_WOR02A08	Wolf Creek	1.89 MILES
3C	VAW-L06R_LBC01A08	Little Back Creek	4.58 MILES
3C	VAW-L07R_GRM01A12	Grimes Creek	2.17 MILES
3C	VAW-L07R_LVL01A02	Lynville Creek	4.84 MILES
3C	VAW-L07R_XOM01A12	Indian Creek, UT (XOM)	1.07 MILES
3C	VAW-L52R_SRE02A00	Smith River	2.53 MILES
3C	VAW-L53R_XNJ01A08	Rangely Creek, UT (XNJ)	1.32 MILES
3D	VAW-L01R_BTM03A06	Bottom Creek	8.19 MILES
3D	VAW-L01R_CAP01A08	Camp Creek	2.28 MILES
3D	VAW-L01R_LKF01A02	Lick Fork & Tributaries	35.45 MILES
3D	VAW-L04R_MSN02A00	Mason Creek	9.83 MILES
3D	VAW-L04R_XVS01A14	Mudlick Creek, UT (XVS)	0.49 MILES
3D	VAW-L05R_BPA01A04	Buffalo Creek	3.79 MILES
3D	VAW-L06R_BAA05B14	Back Creek	3.32 MILES
3D	VAW-L07R_IND01A02	Indian Creek	4.06 MILES
3D	VAW-L07R_SWC01A02	Stony Creek (SWC)	2.17 MILES
3D	VAW-L07R_XNK01A10	Roanoke River, UT (XNK)	1.35 MILES
3D	VAW-L07R_XOC02A10	Roanoke River, UT (XOC)	1.00 MILES
3D	VAW-L11R_GNF01A02	North Fork Gills Creek & Tributaries	16.50 MILES
3D	VAW-L14R_XVT01A14	Story Creek, UT (XVT)	0.82 MILES
3D	VAW-L14R_XVU01A14	Pigg River, UT (XVU)	0.89 MILES
3D	VAW-L42R_HOO01A02	Hookers Creek & Tributaries	15.16 MILES
3D	VAW-L42R_LDR20A02	Little Dan River & Tributaries	22.93 MILES
3D	VAW-L42R_RAR01A02	Roaring Run & Tributaries	7.03 MILES
3D	VAW-L43R_CPC01A12	Campbell Branch	1.98 MILES
3D	VAW-L43R_RHY01A02	Rhody Creek & Tributaries	7.30 MILES
3D	VAW-L43R_RYE02A14	Rye Cove Creek & Tributaries	4.84 MILES
3D	VAW-L43R_SMR07A00	South Mayo River	3.52 MILES
3D	VAW-L50R_NFS01A00	North Fork Smith River & Tributaries	9.60 MILES
3D	VAW-L50R_RCC20A04	Rock Castle Creek Tributaries	22.54 MILES
3D	VAW-L51R_RBC03A02	Rennet Bag Creek Tributaries	30.24 MILES
3D	VAW-L51R_ROL01A12	Roland Branch	0.52 MILES
3D	VAW-L51R_SHB01A12	Salthouse Branch	0.30 MILES
3D	VAW-L51R_WID01A02	Widgeon Creek & Tributaries	25.48 MILES
4A	VAC-L13R_OWC01A00	Old Womans Creek	4.90 MILES
4A	VAC-L27R_BWA01A00	Buffalo Creek	2.10 MILES
4A	VAC-L27R_BWA02A02	Buffalo Creek	6.43 MILES
4A	VAC-L28R_BOR01A00	Big Otter River	9.45 MILES
4A	VAC-L28R_BOR02A00	Big Otter River	2.22 MILES
4A	VAC-L28R_BOR03A00	Big Otter River	2.34 MILES
4A	VAC-L30R_BHA01A02	Buffalo Creek	10.23 MILES
4A	VAC-L30R_CRE01A00	Childrey Creek	14.53 MILES
4A	VAC-L30R_LHT01A06	Little Straightstone Creek	7.57 MILES
4A	VAC-L30R_SSC01A02	Straightstone Creek	8.75 MILES
4A	VAC-L30R_WPP01A02	Whipping Creek	13.90 MILES
4A	VAC-L32R_FRV01A06	Falling River	18.17 MILES
4A	VAC-L33R_BTF01A06	Button Creek	7.86 MILES
4A	VAC-L33R_FSF01A06	South Fork Falling River	16.78 MILES
4A	VAC-L34R_DOG01A10	Dog Creek	2.66 MILES
4A	VAC-L34R_FRV01A00	Falling River	2.95 MILES
4A	VAC-L34R_FRV02A00	Falling River	0.32 MILES
4A	VAC-L34R_FRV03A00	Falling River	4.37 MILES
4A	VAC-L34R_FRV04A00	Falling River	0.86 MILES
4A	VAC-L34R_FRV05A02	Falling River	6.50 MILES
4A	VAC-L34R_FRV06A02	Falling River	2.85 MILES
4A	VAC-L34R_HCK01A10	Hickory Creek	2.76 MILES
4A	VAC-L34R_LRV01A00	Little Falling River	0.81 MILES
4A	VAC-L34R_LRV02A06	Little Falling River	8.90 MILES
4A	VAC-L34R_LRV03A06	Little Falling River	4.41 MILES
4A	VAC-L34R_LRV04A12	Little Falling River	1.81 MILES
4A	VAC-L34R_SUC01A06	Suck Creek	8.49 MILES
4A	VAC-L35R_MEY02A06	Mollys Creek	15.59 MILES
4A	VAC-L36R_ATD02A14	Armistead Branch	1.92 MILES
4A	VAC-L36R_BCD01A08	Buckskin Creek	7.65 MILES
4A	VAC-L36R_TIP01A00	Turnip Creek	2.61 MILES
4A	VAC-L36R_TIP02A06	Turnip Creek	17.13 MILES
4A	VAC-L37R_BUB01A06	Big Cub Creek	33.68 MILES
4A	VAC-L37R_LOU01A06	Louse Creek	8.70 MILES
4A	VAC-L37R_TYS01A08	Terrys Creek	7.14 MILES
4A	VAC-L38R_BWC01A06	Black Walnut Creek	6.39 MILES
4A	VAC-L38R_HTA01A06	Hunting Creek	3.24 MILES
4A	VAC-L39R_ACC01A98	Ash Camp Creek	8.18 MILES
4A	VAC-L39R_HEN01A00	Horsepen Creek	1.86 MILES
4A	VAC-L39R_TWT01A98	Twittys Creek	14.79 MILES
4A	VAC-L39R_WFC01A00	Wards Fork Creek	5.30 MILES
4A	VAC-L39R_WMB01A08	Middle Branch Wards Fork Creek	7.39 MILES
4A	VAC-L40R_CAR01A08	Cargills Creek	4.27 MILES
4A	VAC-L40R_SLA01A06	Sandy Creek	5.41 MILES
4A	VAC-L40R_XMC01A06	Buffalo Creek, Unnamed Tributary	1.49 MILES
4A	VAC-L41R_DFF01A02	Difficult Creek	7.00 MILES
4A	VAC-L57R_CAS01A00	Cascade Creek	11.81 MILES
4A	VAC-L57R_DAN04A00	Dan River	7.36 MILES
4A	VAC-L58R_SRV01A00	Sandy River	7.22 MILES
4A	VAC-L58R_SRV04A06	Sandy River	10.78 MILES
4A	VAC-L58R_SUT01A08	Sugartree Creek	6.96 MILES
4A	VAC-L58R_SWA01A08	Stewart Creek	7.34 MILES
4A	VAC-L58R_TRD01A06	Tanyard Creek	2.85 MILES
4A	VAC-L59R_SCR02A02	Sandy Creek	9.48 MILES
4A	VAC-L61R_LAW01A04	Lawless Creek	4.71 MILES
4A	VAC-L62R_BTC01A08	Big Toby Creek	7.56 MILES
4A	VAC-L62R_BYR01A04	Byrds Branch	3.76 MILES
4A	VAC-L62R_DBC01A98	Double Creek	8.88 MILES
4A	VAC-L62R_POW01A08	Powells Creek	4.63 MILES
4A	VAC-L62R_SLC01A04	Sandy Creek	9.41 MILES
4A	VAC-L62R_WNS01A04	Winns Creek	7.11 MILES
4A	VAC-L63R_BIR01A98	Birch Creek	20.15 MILES
4A	VAC-L63R_GER01A08	Germy Creek	5.36 MILES
4A	VAC-L63R_XDK01A06	Birch Creek, Unnamed Tributary	5.35 MILES
4A	VAC-L64R_LSN02A02	Lawsons Creek	7.27 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAC-L64R_MRY01A04	Miry Creek	1.11 MILES
4A	VAC-L64R_SKS01A08	Stokes Creek	6.35 MILES
4A	VAC-L65R_BAN03A00	Banister River	5.09 MILES
4A	VAC-L65R_BAN04A00	Banister River	6.79 MILES
4A	VAC-L65R_WOA01A10	White Oak Creek	6.36 MILES
4A	VAC-L66R_CRR02A00	Cherrystone Creek	3.48 MILES
4A	VAC-L66R_CRR03A00	Cherrystone Creek	2.48 MILES
4A	VAC-L66R_LCC01A08	Little Cherrystone Creek	4.83 MILES
4A	VAC-L66R_PDE01A10	Pole Bridge Branch	5.01 MILES
4A	VAC-L67R_ALL01A08	Allen Creek	6.02 MILES
4A	VAC-L67R_BAN01A98	Banister River	8.60 MILES
4A	VAC-L67R_BAN02A04	Banister River	1.83 MILES
4A	VAC-L67R_BAN03A04	Banister River	7.47 MILES
4A	VAC-L67R_BAN04A08	Banister River	16.87 MILES
4A	VAC-L67R_BDB01A08	Bradley Creek	6.46 MILES
4A	VAC-L67R_BYE01A08	Bye Creek	7.29 MILES
4A	VAC-L68R_WRN01A00	Whitehorn Creek	0.78 MILES
4A	VAC-L69R_SNE01A00	Stinking River	14.15 MILES
4A	VAC-L70R_SNA01A00	Sandy Creek	14.56 MILES
4A	VAC-L70R_SNA01B10	Sandy Creek	5.89 MILES
4A	VAC-L71R_BAN02A98	Banister River	4.49 MILES
4A	VAC-L71R_WNN01A06	Winn Creek	7.09 MILES
4A	VAC-L73R_AAR02A10	Aarons Creek	9.40 MILES
4A	VAC-L73R_NFA01A06	North Fork Aarons Creek	9.75 MILES
4A	VAC-L74R_MYO01A04	Mayo Creek	4.93 MILES
4A	VAC-L74R_PWL01A10	Powells Creek	4.65 MILES
4A	VAC-L79R_FLT02A96	Flat Creek	6.23 MILES
4A	VAC-L79R_FLT03A08	Flat Creek	1.41 MILES
4A	VAC-L80R_GRT01A00	Great Creek	6.68 MILES
4A	VAC-L80R_HAG01A06	Hagood Creek	6.80 MILES
4A	VAC-L80R_LYA01A06	Long Branch	2.08 MILES
4A	VAW-L01R_GOS01A02	Goose Creek	2.30 MILES
4A	VAW-L01R_XMV01A10	Smith Creek, UT (XMV)	1.61 MILES
4A	VAW-L02R_RNF03A02	N.F. Roanoke River	6.93 MILES
4A	VAW-L02R_RNF04A02	N.F. Roanoke River	9.16 MILES
4A	VAW-L02R_WLN01A00	Wilson Creek	2.76 MILES
4A	VAW-L02R_WLN02A00	Wilson Creek	1.73 MILES
4A	VAW-L02R_WLN03A00	Wilson Creek	2.50 MILES
4A	VAW-L03R_ROA01A00	Roanoke River	1.20 MILES
4A	VAW-L03R_ROA06A00	Roanoke River	0.95 MILES
4A	VAW-L03R_ROA07A12	Roanoke River	1.26 MILES
4A	VAW-L04R_BHT01A10	Barnhardt Creek	5.31 MILES
4A	VAW-L04R_GSH01A14	Gish Branch	2.40 MILES
4A	VAW-L04R_MDL01A06	Mud Lick Creek	7.61 MILES
4A	VAW-L04R_MSN01A00	Mason Creek	7.72 MILES
4A	VAW-L04R_MUR01A00	Murray Run	3.57 MILES
4A	VAW-L04R_ORE01A00	Ore Branch	2.55 MILES
4A	VAW-L04R_PEE01A02	Peters Creek	2.58 MILES
4A	VAW-L04R_PEE02A02	Peters Creek	4.62 MILES
4A	VAW-L04R_ROA02A00	Roanoke River Niagara	0.76 MILES
4A	VAW-L04R_ROA03A00	Roanoke River Niagara	0.87 MILES
4A	VAW-L04R_ROA04A00	Roanoke River	0.20 MILES
4A	VAW-L05R_CRV01A00	Carvin Creek	1.83 MILES
4A	VAW-L05R_CRV02A00	Carvin Creek	3.62 MILES
4A	VAW-L05R_GLA01A00	Glade Creek	1.59 MILES
4A	VAW-L05R_GLA02A00	Glade Creek	3.15 MILES
4A	VAW-L05R_GLA03A00	Glade Creek	1.23 MILES
4A	VAW-L05R_GLA04A00	Glade Creek	6.98 MILES
4A	VAW-L05R_LAY01A00	Laymantown Creek	2.11 MILES
4A	VAW-L05R_LCK01A00	Lick Run	9.64 MILES
4A	VAW-L05R_TKR02A00	Tinker Creek	4.46 MILES
4A	VAW-L05R_TKR03A00	Tinker Creek	3.25 MILES
4A	VAW-L07L_ROA01A10	Smith Mtn. Lake (Roanoke River)	1,770.53 ACRES
4A	VAW-L07L_XNT01A10	Smith Mtn. Lake (Roanoke R., UT XNT)	68.39 ACRES
4A	VAW-L07L_XNU01A10	Smith Mtn. Lake (Roanoke R., UT XNU)	125.41 ACRES
4A	VAW-L08R_BNR01A00	N.F. Blackwater River	3.21 MILES
4A	VAW-L08R_BNR02A00	N.F. Blackwater River	9.23 MILES
4A	VAW-L08R_BWR01A00	Blackwater River	3.02 MILES
4A	VAW-L08R_BWR01B06	Blackwater River	2.96 MILES
4A	VAW-L08R_BWR02A00	Blackwater River	4.59 MILES
4A	VAW-L08R_BWR03A00	Blackwater River	5.00 MILES
4A	VAW-L08R_BWR04A00	Blackwater River	10.10 MILES
4A	VAW-L08R_BWR05A00	Blackwater River	5.61 MILES
4A	VAW-L08R_XKF01A06	Little Creek, UT (XKF)	1.04 MILES
4A	VAW-L09R_MEE02A00	Maggodee Creek	1.67 MILES
4A	VAW-L09R_MEE03A00	Maggodee Creek	6.02 MILES
4A	VAW-L09R_MHA01A00	Mollie Branch	0.91 MILES
4A	VAW-L09R_MHA02A00	Mollie Branch	1.83 MILES
4A	VAW-L10L_BSA01A10	Smith Mtn. Lake (Bull Run)	1,156.52 ACRES
4A	VAW-L10L_BWR01A10	Smith Mtn. Lake (Blackwater River)	2,460.63 ACRES
4A	VAW-L10L_BWR02A10	Smith Mtn. Lake (Blackwater River)	1,849.56 ACRES
4A	VAW-L10L_COA01A10	Smith Mtn. Lake (Cool Branch)	362.12 ACRES
4A	VAW-L10L_XNZ01A10	Smith Mtn. Lake (Little Bull Run, UT XNZ)	15.21 ACRES
4A	VAW-L10R_FGC01A00	Foul Ground Creek	4.19 MILES
4A	VAW-L11L_GIL01A10	Smith Mtn. Lake (Gills Creek)	527.21 ACRES
4A	VAW-L11L_GIL02A10	Smith Mtn. Lake (Gills Creek)	197.42 ACRES
4A	VAW-L11R_GIL01A00	Gills Creek	4.85 MILES
4A	VAW-L11R_GIL02A02	Gills Creek	4.39 MILES
4A	VAW-L11R_GIL03A02	Gills Creek	11.22 MILES
4A	VAW-L12L_CCK01A02	Smith Mtn. Lake (Craddock Creek)	1,547.11 ACRES
4A	VAW-L12L_LOS01A10	Smith Mtn. Lake (Louse Creek)	152.09 ACRES
4A	VAW-L12L_ROA01A02	Smith Mtn. Lake (Roanoke River)	2,088.33 ACRES
4A	VAW-L12L_WTH01A10	Smith Mtn. Lake (Witcher Creek)	322.34 ACRES
4A	VAW-L12L_XNW01A10	Smith Mtn. Lake (Witcher Creek, UT(XNW)	136.22 ACRES
4A	VAW-L13L_PGG01A02	Leesville Lake (Pigg R.)	158.36 ACRES
4A	VAW-L14R_DOE01A06	Doe Run	5.68 MILES
4A	VAW-L14R_PGG02A00	Pigg River	10.92 MILES
4A	VAW-L14R_PGG03A00	Pigg River	4.72 MILES
4A	VAW-L14R_PGG04A00	Pigg River	5.77 MILES
4A	VAW-L14R_PGG05A02	Pigg River	11.92 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAW-L14R_SDA02A00	Story Creek	2.04 MILES
4A	VAW-L15R_CNT01A00	Big Chestnut Creek	12.43 MILES
4A	VAW-L15R_CNT02A14	Big Chestnut Creek	6.77 MILES
4A	VAW-L16R_PGG01A00	Pigg River	6.66 MILES
4A	VAW-L16R_PGG02A00	Pigg River	8.93 MILES
4A	VAW-L17R_SNW01A00	Snow Creek	10.95 MILES
4A	VAW-L17R_SNW02A12	Snow Creek	2.54 MILES
4A	VAW-L17R_SNW03A14	Snow Creek	3.95 MILES
4A	VAW-L17R_TCC01A06	Turkeycock Creek	6.50 MILES
4A	VAW-L18R_HPN01A06	Harpen Creek	5.35 MILES
4A	VAW-L18R_PGG01A00	Pigg River	5.58 MILES
4A	VAW-L18R_PGG02A00	Pigg River	7.78 MILES
4A	VAW-L18R_TMA01A06	Tomahawk Creek	4.58 MILES
4A	VAW-L20R_GSE01A00	Goose Creek	6.93 MILES
4A	VAW-L21R_GSE01A00	Goose Creek	7.24 MILES
4A	VAW-L21R_SBA01A08	Stony Fork	4.75 MILES
4A	VAW-L21R_SBA02A08	Stony Fork	8.42 MILES
4A	VAW-L22R_CMC01A12	Carter Mill Creek	7.26 MILES
4A	VAW-L22R_GSE01A14	Goose Creek	2.18 MILES
4A	VAW-L22R_GSE02A02	Goose Creek	8.93 MILES
4A	VAW-L22R_HNT01A10	Hunting Creek	2.63 MILES
4A	VAW-L22R_MWW01A10	Mill Creek	5.26 MILES
4A	VAW-L23R_BOR01A02	Big Otter River	6.00 MILES
4A	VAW-L23R_BOR02A02	Big Otter River	3.58 MILES
4A	VAW-L23R_BOR03A02	Big Otter River	0.04 MILES
4A	VAW-L23R_SCB01A00	Stony Creek	4.37 MILES
4A	VAW-L23R_SEE01A00	Sheeps Creek	4.89 MILES
4A	VAW-L23R_SEE02A00	Sheeps Creek	3.24 MILES
4A	VAW-L24R_NOT01A02	North Otter Creek	6.80 MILES
4A	VAW-L25R_BOR01A02	Big Otter River	4.49 MILES
4A	VAW-L25R_BOR02A02	Big Otter River	5.98 MILES
4A	VAW-L25R_BOR03A04	Big Otter River	1.35 MILES
4A	VAW-L25R_ECR01A00	Elk Creek	7.52 MILES
4A	VAW-L25R_ECR02A02	Elk Creek	12.83 MILES
4A	VAW-L26R_LOR05A00	Little Otter River	5.58 MILES
4A	VAW-L26R_MCR01A00	Machine Creek	11.59 MILES
4A	VAW-L27R_BOR01A00	Big Otter River	2.66 MILES
4A	VAW-L27R_BOR02A00	Big Otter River	2.71 MILES
4A	VAW-L27R_FNG01A02	Falling Creek	5.92 MILES
4A	VAW-L42R_DAN05A02	Dan River	2.73 MILES
4A	VAW-L42R_DAN06A02	Dan River	5.72 MILES
4A	VAW-L42R_ELK01A12	Elk Creek	7.78 MILES
4A	VAW-L42R_LDR01A02	Little Dan River	7.26 MILES
4A	VAW-L42R_PRS01A02	Peters Creek	5.96 MILES
4A	VAW-L43R_RSL01A12	Russell Creek	8.53 MILES
4A	VAW-L43R_SMR02A02	South Mayo River	8.15 MILES
4A	VAW-L43R_SMR03A02	South Mayo River	4.61 MILES
4A	VAW-L43R_SMR03B02	South Mayo River	2.32 MILES
4A	VAW-L43R_SMR04A00	South Mayo River	0.43 MILES
4A	VAW-L43R_SMR05A00	South Mayo River	0.43 MILES
4A	VAW-L44R_SOO01A00	Spoon Creek	8.17 MILES
4A	VAW-L45R_SMR04A14	South Mayo River	5.83 MILES
4A	VAW-L46R_NMR01A00	North Mayo River	4.37 MILES
4A	VAW-L46R_NMR02A00	North Mayo River	0.72 MILES
4A	VAW-L46R_NMR03A00	North Mayo River	5.25 MILES
4A	VAW-L46R_NMR04A00	North Mayo River	2.76 MILES
4A	VAW-L46R_NMR05A02	North Mayo River	7.75 MILES
4A	VAW-L46R_NMR06A14	North Mayo River	2.07 MILES
4A	VAW-L48R_FCR01A16	Mayo River (Fall Creek)	4.02 MILES
4A	VAW-L50R_SYC01A12	Sycamore Creek	6.15 MILES
4A	VAW-L51R_NCH01A12	Nicholas Creek	5.40 MILES
4A	VAW-L52R_BRY01A00	Blackberry Creek	0.53 MILES
4A	VAW-L52R_BRY02A00	Blackberry Creek	3.72 MILES
4A	VAW-L52R_BRY03A00	Blackberry Creek	5.54 MILES
4A	VAW-L52R_BRY04A02	Blackberry Creek	4.55 MILES
4A	VAW-L52R_SRE01A00	Smith River	0.96 MILES
4A	VAW-L52R_TWN01A12	Town Creek	1.88 MILES
4A	VAW-L52R_XMI01A02	Blackberry Creek, UT (XMI)	1.15 MILES
4A	VAW-L53L_BAU01A02	Martinsville (Beaver Creek) Reservoir	182.28 ACRES
4A	VAW-L53R_JOR01A06	Jordan Creek	6.00 MILES
4A	VAW-L53R_REE01A00	Reed Creek	4.13 MILES
4A	VAW-L53R_SRE01B06	Smith River	0.49 MILES
4A	VAW-L53R_SRE04A00	Smith River	0.81 MILES
4A	VAW-L53R_SRE05A00	Smith River	1.54 MILES
4A	VAW-L54R_SRE01A00	Smith River	3.19 MILES
4A	VAW-L54R_SRE02A00	Smith River	3.11 MILES
4A	VAW-L54R_SRE03A00	Smith River	4.67 MILES
4A	VAW-L54R_SRE03A02	Smith River	1.74 MILES
4A	VAW-L54R_SRE04A00	Smith River	0.39 MILES
4A	VAW-L54R_SRE05A00	Smith River	3.27 MILES
4A	VAW-L54R_SRE06A00	Smith River	3.65 MILES
4A	VAW-L55R_MRR01A00	Marrowbone Creek	4.47 MILES
4A	VAW-L56R_LWD01A00	Leatherwood Creek	5.44 MILES
4A	VAW-L56R_LWD02A00	Leatherwood Creek	3.01 MILES
4A	VAW-L56R_LWD02B14	Leatherwood Creek	0.03 MILES
4A	VAW-L56R_LWD03A00	Leatherwood Creek	25.30 MILES
4A	VAW-L56R_LWF01A00	West Fork Leatherwood Creek & Tributaries	23.45 MILES
4C	VAC-L71L_BAN03L00	Banister Lake	351.84 ACRES
5A	VAC-L19R_RAB01A00	Reed Creek	8.90 MILES
5A	VAC-L19R_XCN01A02	Roanoke (Staunton) River, Unnamed Tributary	4.10 MILES
5A	VAC-L29R_FCA02A10	Flat Creek	8.21 MILES
5A	VAC-L31R_XUP01A06	East Little Seneca Creek, Unnamed Tributary	1.50 MILES
5A	VAC-L34R_XVK01A12	Entry Creek, Unnamed Tributary	1.69 MILES
5A	VAC-L38L_HTA01L00	Conner Lake	101.92 ACRES
5A	VAC-L39R_BWB01A10	Bush Ford Branch	3.09 MILES
5A	VAC-L39R_HEN02A04	Horsepen Creek	5.32 MILES
5A	VAC-L39R_LRO02A10	Little Roanoke Creek	10.15 MILES
5A	VAC-L39R_XVO01A14	UT, Spencer Creek	2.90 MILES
5A	VAC-L57R_DAN01A00	Dan River	1.17 MILES
5A	VAC-L60R_DAN02A00	Dan River	2.02 MILES
5A	VAC-L60R_DAN03A02	Dan River	0.37 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5A	VAC-L60R_DAN04A06	Dan River	4.27 MILES
5A	VAC-L60R_RUT01A12	Rutledge Creek	4.37 MILES
5A	VAC-L62R_WFE01A08	Wolfe Creek	2.86 MILES
5A	VAC-L64R_GSY01A08	Grassy Creek	0.83 MILES
5A	VAC-L64R_PDA01A10	Poplar Creek	4.04 MILES
5A	VAC-L64R_RAC01A04	Reedy Creek	2.92 MILES
5A	VAC-L65R_SRW02A08	Strawberry Creek	5.96 MILES
5A	VAC-L66L_CRR01A02	Cherrystone Reservoir	104.27 ACRES
5A	VAC-L66L_RFK01A06	Roaring Fork Reservoir	19.58 ACRES
5A	VAC-L67R_EKH01A04	Elkhorn Creek	3.00 MILES
5A	VAC-L67R_EKH02A10	Elkhorn Creek	9.90 MILES
5A	VAC-L70R_BAR01A06	Bar Branch	4.03 MILES
5A	VAC-L70R_SDE01A12	Sweden Fork	8.63 MILES
5A	VAC-L72R_TRR01A00	Terrible Creek	4.82 MILES
5A	VAC-L73L_DAN07A04	Dan River	1,655.18 ACRES
5A	VAC-L74R_BOS01A06	Bowes Branch	1.44 MILES
5A	VAC-L75L_ROA05L98	Kerr Reservoir	30,665.42 ACRES
5A	VAC-L76L_BMA01A06	Buffalo Creek	358.96 ACRES
5A	VAC-L77L_BST01A06	Bluestone Creek	860.21 ACRES
5A	VAC-L77R_BST01A98	Bluestone Creek	13.73 MILES
5A	VAC-L77R_BST02A06	Bluestone Creek	8.25 MILES
5A	VAC-L77R_LNE01A98	Little Bluestone Creek	9.38 MILES
5A	VAC-L78R_ALN03A04	Allen Creek	8.97 MILES
5A	VAC-L78R_ALN04A06	Allen Creek	15.27 MILES
5A	VAC-L78R_COX01A04	Cox Creek	10.80 MILES
5A	VAC-L78R_CTT01A08	Cotton Creek	4.39 MILES
5A	VAC-L78R_KTT01A12	Kettles Creek	5.48 MILES
5A	VAC-L78R_LYT01A06	Layton Creek	8.64 MILES
5A	VAC-L78R_ROA06A98	Roanoke River	5.69 MILES
5A	VAC-L78R_XUQ01A04	Allen Creek, Unnamed Tributary	1.27 MILES
5A	VAC-L79L_MES01L00	Lake Gordon	107.48 ACRES
5A	VAC-L79L_ROA07A98	Roanoke River	1,369.24 ACRES
5A	VAC-L79R_MES01A98	Miles Creek	5.97 MILES
5A	VAC-L79R_SMI01A08	Smith Creek	1.90 MILES
5A	VAC-L80L_ROA08A04	Lake Gaston	3,071.69 ACRES
5A	VAC-L81R_LIZ01A10	Lizard Creek	2.73 MILES
5A	VAC-L81R_LPP01A16	Little Poplar Creek	6.51 MILES
5A	VAC-L82R_PHC01A00	Pea Hill Creek	4.86 MILES
5A	VAS-M02L_LOV01B10	Lovills Creek Lake	42.46 ACRES
5A	VAS-M02R_LOV01A02	Lovills Creek	2.15 MILES
5A	VAS-M02R_STE01A02	Stewarts Creek	2.05 MILES
5A	VAW-L05R_DEE01A08	Deer Branch	1.38 MILES
5A	VAW-L06R_BAA04A00	Back Creek	5.11 MILES
5A	VAW-L06R_BAA04B14	Back Creek	1.25 MILES
5A	VAW-L06R_BAA05A08	Back Creek	0.56 MILES
5A	VAW-L07R_BDA02A00	Beaverdam Creek	5.35 MILES
5A	VAW-L07R_XUO01A06	Merriman Run, UT (XUO)	0.88 MILES
5A	VAW-L11R_XML01A06	North Fork Gills Creek, UT (XML)	1.43 MILES
5A	VAW-L12R_XME01A02	Craddock Creek, UT (XME)	1.23 MILES
5A	VAW-L42L_DAN01A02	Talbott Reservoir	140.51 ACRES
5A	VAW-L51L_GOB01A02	Philpott Reservoir (Goblin Town Creek)	532.38 ACRES
5A	VAW-L51L_SRE01A02	Philpott Reservoir (Smith River)	1,221.36 ACRES
5A	VAW-L51L_SRE02A02	Philpott Reservoir (Smith River)	671.08 ACRES
5A	VAW-L51L_SRE03A02	Philpott Reservoir (Smith River)	388.70 ACRES
5A	VAW-L53R_JCR01A16	Jones Creek	2.36 MILES
5A	VAW-M03R_ARA01A00	Ararat River	6.13 MILES
5A	VAW-M03R_JOH01A02	Johnson Creek	9.15 MILES
5C	VAW-L01R_BTM01A06	Bottom Creek	2.32 MILES
5C	VAW-L01R_BTM02A06	Bottom Creek	2.17 MILES
5C	VAW-L07L_XKD01A02	Beaverdam Reservoir (XKD)	66.93 ACRES
5C	VAW-L51R_SRE06A00	Smith River	2.55 MILES
5C	VAW-L51R_SRE07A00	Smith River	6.43 MILES
5D	VAC-L19R_LYH01A02	Lynch Creek	0.37 MILES
5D	VAC-L19R_LYH02A02	Lynch Creek	3.53 MILES
5D	VAC-L19R_ROA01A00	Roanoke (Staunton) River	3.76 MILES
5D	VAC-L19R_ROA03A00	Roanoke (Staunton) River	6.77 MILES
5D	VAC-L19R_ROA04A00	Roanoke (Staunton) River	3.46 MILES
5D	VAC-L30R_ROA01A00	Roanoke (Staunton) River	3.89 MILES
5D	VAC-L30R_ROA02A00	Roanoke (Staunton) River	2.23 MILES
5D	VAC-L30R_ROA03A00	Roanoke (Staunton) River	0.92 MILES
5D	VAC-L30R_ROA04A00	Roanoke (Staunton) River	5.05 MILES
5D	VAC-L30R_ROA06A00	Roanoke (Staunton) River	22.35 MILES
5D	VAC-L34R_ENT01A08	Entry Creek	4.73 MILES
5D	VAC-L35R_MEY01A00	Mollys Creek	1.99 MILES
5D	VAC-L36R_ATD01A08	Armistead Branch	3.20 MILES
5D	VAC-L36R_ROA01A98	Roanoke (Staunton) River	12.78 MILES
5D	VAC-L37R_CUB01B08	Cub Creek	5.58 MILES
5D	VAC-L37R_CUB02A06	Cub Creek	8.80 MILES
5D	VAC-L38R_ROA02A98	Roanoke (Staunton) River	12.49 MILES
5D	VAC-L39R_ROC01A98	Roanoke Creek	7.85 MILES
5D	VAC-L39R_ROC02A06	Roanoke Creek	2.65 MILES
5D	VAC-L40R_BLE01A06	Berles Creek	2.28 MILES
5D	VAC-L40R_BNN01A06	Buffalo Creek	2.35 MILES
5D	VAC-L40R_ROA03A98	Roanoke (Staunton) River	10.19 MILES
5D	VAC-L40R_ROA04A98	Roanoke (Staunton) River	3.82 MILES
5D	VAC-L60R_CAN1A02	Cane Creek	12.25 MILES
5D	VAC-L60R_DAN01A00	Dan River	1.83 MILES
5D	VAC-L60R_PKP01A06	Pumpkin Creek	4.28 MILES
5D	VAC-L61R_FAL01A00	Fall Creek	11.97 MILES
5D	VAC-L62R_DAN02A98	Dan River	11.86 MILES
5D	VAC-L62R_DAN03A98	Dan River	2.80 MILES
5D	VAC-L62R_XVQ01A16	Sandy Creek, Unnamed Tributary	2.29 MILES
5D	VAC-L64R_DAN04A98	Dan River	10.56 MILES
5D	VAC-L64R_DAN05A98	Dan River	6.58 MILES
5D	VAC-L64R_LSN01A98	Lawsons Creek	8.26 MILES
5D	VAC-L65R_BKN01A00	Bearskin Creek	9.57 MILES
5D	VAC-L68R_WRN02A06	Whitehorn Creek	15.10 MILES
5D	VAC-L71R_BAN04A00	Banister River	1.39 MILES
5D	VAC-L71R_BAN05A00	Banister River	8.25 MILES
5D	VAC-L71R_BAN06A08	Banister River	2.33 MILES
5D	VAC-L71R_GIB01A08	Gibson Creek	5.38 MILES
5D	VAC-L71R_PEC01A04	Polecat Creek	9.70 MILES
5D	VAC-L73R_DAN06A98	Dan River	3.30 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAC-L73R_PET01A16	Peter Creek	6.61 MILES
5D	VAC-L74R_BLU01A08	Big Bluewing Creek	11.23 MILES
5D	VAC-L74R_CLB01A06	Coleman Creek	8.48 MILES
5D	VAC-L74R_HYC01A00	Hyco River	6.12 MILES
5D	VAC-L74R_HYC02A06	Hyco River	17.48 MILES
5D	VAC-L75R_BEE01A98	Beech Creek	4.69 MILES
5D	VAC-L76R_LFF01A00	Little Buffalo Creek	2.51 MILES
5D	VAC-L79R_FLT01A00	Flat Creek	1.69 MILES
5D	VAW-L01R_RSF01A00	S.F. Roanoke River	3.27 MILES
5D	VAW-L01R_RSF02A00	S.F. Roanoke River	3.00 MILES
5D	VAW-L01R_RSF03A00	S.F. Roanoke River	6.43 MILES
5D	VAW-L01R_RSF04A02	S.F. Roanoke River	4.61 MILES
5D	VAW-L02R_BDC01A04	Bradshaw Creek	0.85 MILES
5D	VAW-L02R_BDC02A04	Bradshaw Creek	9.51 MILES
5D	VAW-L03R_ROA02A00	Roanoke River	2.67 MILES
5D	VAW-L03R_ROA03A00	Roanoke River	3.42 MILES
5D	VAW-L03R_ROA04A00	Roanoke River	5.57 MILES
5D	VAW-L03R_ROA05A00	Roanoke River	1.43 MILES
5D	VAW-L04R_ROA01A00	Roanoke River	3.16 MILES
5D	VAW-L04R_ROA05A00	Roanoke River	0.40 MILES
5D	VAW-L04R_ROA06A00	Roanoke River	4.34 MILES
5D	VAW-L04R_ROA07A00	Roanoke River	3.32 MILES
5D	VAW-L04R_ROA08A02	Roanoke River	2.22 MILES
5D	VAW-L05R_TKR01A00	Tinker Creek	5.37 MILES
5D	VAW-L05R_TKR01B06	Tinker Creek	6.50 MILES
5D	VAW-L07L_BDA01A10	Smith Mtn. Lake (Beaverdam Creek)	151.70 ACRES
5D	VAW-L07L_BKY01A10	Smith Mtn. Lake (Beckys Creek)	246.94 ACRES
5D	VAW-L07L_BTT01A10	Smith Mtn. Lake (Bettys Creek)	213.19 ACRES
5D	VAW-L07L_FIN02A10	Smith Mtn. Lake (Falling Creek)	18.36 ACRES
5D	VAW-L07L_HFW01A10	Smith Mtn. Lake (Hales Creek)	117.90 ACRES
5D	VAW-L07L_IND01A10	Smith Mtn. Lake (Indian Creek)	161.67 ACRES
5D	VAW-L07L_JUM01A10	Smith Mtn. Lake (Jumping Run)	29.10 ACRES
5D	VAW-L07L_LVL01A10	Smith Mtn. Lake (Lynville Creek)	76.75 ACRES
5D	VAW-L07L_ROA02A10	Smith Mtn. Lake (Roanoke River)	2,434.87 ACRES
5D	VAW-L07L_ROA03A10	Smith Mtn. Lake (Roanoke River)	2,195.99 ACRES
5D	VAW-L07L_ROA04A10	Smith Mtn. Lake (Roanoke River)	184.71 ACRES
5D	VAW-L07L_ROA05A14	Smith Mtn. Lake (Roanoke River)	165.29 ACRES
5D	VAW-L07L_SWC01A10	Smith Mtn. Lake (Stony Creek)	48.61 ACRES
5D	VAW-L07L_XNK01A10	Smith Mtn. Lake (Roanoke R., UT XNK)	79.98 ACRES
5D	VAW-L07L_XNL01A10	Smith Mtn. Lake (Roanoke R., UT XNL)	109.32 ACRES
5D	VAW-L07L_XNM01A10	Smith Mtn. Lake (Roanoke R., UT XNM)	38.40 ACRES
5D	VAW-L07L_XNN01A10	Smith Mtn. Lake (Roanoke R., UT XNN)	87.77 ACRES
5D	VAW-L07L_XOC01A10	Smith Mtn. Lake (Roanoke R., UT XOC)	119.55 ACRES
5D	VAW-L07R_BDA01A00	Beaverdam Creek	4.98 MILES
5D	VAW-L08R_BCE01A08	Buck Run	3.77 MILES
5D	VAW-L08R_BSF01A00	S.F. Blackwater River	2.26 MILES
5D	VAW-L08R_BSF02A00	S.F. Blackwater River	3.94 MILES
5D	VAW-L08R_GCR01A00	Green Creek	4.09 MILES
5D	VAW-L08R_LLE01A00	Little Creek	1.89 MILES
5D	VAW-L08R_LLE02A00	Little Creek	0.85 MILES
5D	VAW-L08R_LLE03A00	Little Creek	5.11 MILES
5D	VAW-L08R_TEL01A00	Teels Creek	4.76 MILES
5D	VAW-L09R_MEE01A00	Maggodee Creek	7.47 MILES
5D	VAW-L09R_MEE04A00	Maggodee Creek	0.99 MILES
5D	VAW-L09R_MEE05A00	Maggodee Creek	4.43 MILES
5D	VAW-L10L_BWR03A10	Smith Mtn. Lake (Blackwater River)	351.97 ACRES
5D	VAW-L10L_BWR03B14	Smith Mtn. Lake (Blackwater River)	114.22 ACRES
5D	VAW-L10L_PCP01A10	Smith Mtn. Lake (Poplar Camp Creek)	58.59 ACRES
5D	VAW-L10L_XUV01A10	Smith Mtn. Lake - Crazy Horse Camp Ground and Marinia	30.27 ACRES
5D	VAW-L10R_BWR01A00	Blackwater River	0.39 MILES
5D	VAW-L10R_BWR02A00	Blackwater River	5.20 MILES
5D	VAW-L10R_BWR03A00	Blackwater River	2.62 MILES
5D	VAW-L14R_PGG05B12	Pigg River	1.48 MILES
5D	VAW-L14R_PGG06A02	Pigg River	1.01 MILES
5D	VAW-L14R_PGG06B12	Pigg River	1.94 MILES
5D	VAW-L14R_SDA01A00	Story Creek	9.82 MILES
5D	VAW-L17R_PAA01A04	Poplar Branch	2.56 MILES
5D	VAW-L18R_FRY01A06	Fryingpan Creek	2.56 MILES
5D	VAW-L21R_BOE01A08	Bore Auger Creek	5.73 MILES
5D	VAW-L21R_BOE02A08	Bore Auger Creek	3.83 MILES
5D	VAW-L21R_WLF01A08	Wolf Creek	4.16 MILES
5D	VAW-L21R_WLF02A08	Wolf Creek	2.97 MILES
5D	VAW-L26R_JHN01A00	Johns Creek	2.24 MILES
5D	VAW-L26R_LOR01A00	Little Otter River	4.47 MILES
5D	VAW-L26R_LOR02A00	Little Otter River	4.24 MILES
5D	VAW-L26R_LOR03A00	Little Otter River	5.90 MILES
5D	VAW-L26R_LOR04A00	Little Otter River	7.44 MILES
5D	VAW-L26R_WEL01A02	Wells Creek	3.93 MILES
5D	VAW-L42R_DAN01A00	Dan River	9.66 MILES
5D	VAW-L42R_DAN02A02	Dan River	5.81 MILES
5D	VAW-L43R_SMR06A00	South Mayo River	4.73 MILES
5D	VAW-L45R_SMR01A00	South Mayo River	5.01 MILES
5D	VAW-L45R_SMR02A00	South Mayo River	0.72 MILES
5D	VAW-L45R_SMR03A00	South Mayo River	5.24 MILES
5D	VAW-L47R_HRN01A00	Horse Pasture Creek	0.47 MILES
5D	VAW-L47R_HRN02A00	Horse Pasture Creek	6.97 MILES
5D	VAW-L50R_SRE01A00	Smith River	3.88 MILES
5D	VAW-L50R_SRE02A00	Smith River	0.25 MILES
5D	VAW-L50R_SRE03A00	Smith River	0.58 MILES
5D	VAW-L50R_SRE04A00	Smith River	2.86 MILES
5D	VAW-L51R_GOB01A08	Goblintown Creek	1.20 MILES
5D	VAW-L51R_GOB02A08	Goblintown Creek	5.60 MILES
5D	VAW-L51R_RBC01A00	Rennet Bag Creek	2.13 MILES
5D	VAW-L51R_RBC02A02	Rennet Bag Creek	9.41 MILES
5D	VAW-L51R_SOT01A08	Shooting Creek	7.32 MILES
5D	VAW-L51R_SRE08B14	Smith River	1.91 MILES
5D	VAW-L53R_BAU01A06	Beaver Creek	5.30 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAW-L53R_BAU02A06	Beaver Creek	6.97 MILES
5D	VAW-L53R_DEL01A10	Daniels Creek	3.99 MILES
5D	VAW-L53R_SRE02A00	Smith River	4.25 MILES
5D	VAW-L53R_SRE03A00	Smith River	2.25 MILES
5D	VAW-L53R_XMP01A06	Jones Creek, UT (XMP)	2.00 MILES
5D	VAW-L54R_MBY01A10	Mulberry Creek	2.60 MILES
5D	VAW-L54R_MCH01A10	Machine Branch	0.68 MILES

Chowan River and Dismal Swamp Basins

Overall Category	305(b) ID	Waterbody Name	Size
1	VAC-K14L_BHC01L00	Lunenburg Beach Lake	11.90 ACRES
2A	VAC-K01R_BKS01A16	Blackstone Creek	4.47 MILES
2A	VAC-K01R_CPR01A14	Crupper Run	5.94 MILES
2A	VAC-K01R_KTS01A14	Kits Creek	4.75 MILES
2A	VAC-K01R_SMR02A16	South Meherrin River	9.03 MILES
2A	VAC-K01R_XHR01A10	Kits Creek, UT	1.08 MILES
2A	VAC-K02R_NMR03A12	North Meherrin River	6.39 MILES
2A	VAC-K02R_TSK01A14	Tussekiah Creek	5.82 MILES
2A	VAC-K02R_XET01A06	Reedy Creek, Unnamed Tributary	2.06 MILES
2A	VAC-K03R_BEC01A14	Bears Element Creek	9.34 MILES
2A	VAC-K03R_CRK01A14	Crooked Creek	12.68 MILES
2A	VAC-K03R_FRC01B10	Flat Rock Creek	4.09 MILES
2A	VAC-K03R_XFI01A06	Flat Rock Creek, Unnamed Tributary	4.10 MILES
2A	VAC-K14R_DRY01A06	Dry Creek	7.04 MILES
2A	VAC-K14R_MDT01B06	Modest Creek	2.50 MILES
2A	VAC-K14R_MDT01C06	Modest Creek	2.35 MILES
2A	VAC-K14R_NTW01B06	Nottoway River	4.44 MILES
2A	VAC-K14R_XIA01A14	Modest Creek, Unnamed Tributary	1.82 MILES
2A	VAC-K16R_CKD01A00	Crooked Creek	3.07 MILES
2A	VAC-K16R_HUR01A04	Hurricane Branch	2.00 MILES
2A	VAP-K05R_TYD01A16	Tanyard Branch	1.48 MILES
2A	VAP-K05R_XIM01A16	UT to Hays Creek	0.28 MILES
2A	VAP-K08R_MHN01B10	Meherrin River	3.04 MILES
2A	VAP-K08R_RDC01A98	Reedy Creek	7.12 MILES
2A	VAP-K10R_LNG01A10	Long Branch	2.67 MILES
2A	VAP-K10R_LTL01A12	Little Creek	1.88 MILES
2A	VAP-K11R_XGW01A10	XGW - Fontaine Creek, UT	4.46 MILES
2A	VAP-K12R_CNY01A00	Caney Swamp	2.09 MILES
2A	VAP-K12R_MLS01B10	Mill Swamp	1.32 MILES
2A	VAP-K12R_ZZZ01A00	Unsegmented Rivers in K12	99.90 MILES
2A	VAP-K17R_STH01A12	Smith Creek	4.68 MILES
2A	VAP-K17R_WAQ01A98	Waqua Creek	7.89 MILES
2A	VAP-K18R_LLD01A10	Lloyds Run	6.10 MILES
2A	VAP-K18R_STG01A98	Sturgeon Creek	8.17 MILES
2A	VAP-K19R_HRS01A02	Harris Swamp	2.49 MILES
2A	VAP-K19R_HRS02A08	Harris Swamp	3.27 MILES
2A	VAP-K19R_NTW02A06	Nottoway River	5.38 MILES
2A	VAP-K20R_BTR02A06	Butterwood Creek	9.70 MILES
2A	VAP-K20R_BTR03A06	Butterwood Creek	5.28 MILES
2A	VAP-K20R_RRC01A00	Rocky Run Creek	9.36 MILES
2A	VAP-K20R_WOK01A00	White Oak Swamp	14.83 MILES
2A	VAP-K21R_CBC02A16	Chamberlains Bed	2.83 MILES
2A	VAP-K21R_STO02A00	Stony Creek	4.47 MILES
2A	VAP-K21R_STO02C08	Stony Creek	10.04 MILES
2A	VAP-K21R_SWT01A08	Southwest Swamp Watershed	23.85 MILES
2A	VAP-K21R_XID01A12	XID - Chamberlains Bed, UT	2.95 MILES
2A	VAP-K22R_HSP01A00	Horsepen Branch	3.96 MILES
2A	VAP-K22R_MLB01A00	Mill Run Branch	0.61 MILES
2A	VAP-K22R_SAP01C16	Sappony Creek	9.18 MILES
2A	VAP-K23R_ATH01B10	Arthur Swamp	0.24 MILES
2A	VAP-K23R_BBS01A08	Black Branch Swamp	6.26 MILES
2A	VAP-K23R_CBP01A08	Cabin Point Swamp	6.55 MILES
2A	VAP-K23R_JNH01B16	Jones Hole Swamp	4.28 MILES
2A	VAP-K23R_JNH01C16	UT to Jones Hole Swamp	9.11 MILES
2A	VAP-K23R_NBT01A98	Nebletts Mill Run and Tributaries	48.55 MILES
2A	VAP-K23R_NBT02A00	Nebletts Mill Run	3.77 MILES
2A	VAP-K23R_NBT03A04	Nebletts Mill Run lower tributaries	14.01 MILES
2A	VAP-K23R_ROW01A98	Rowanty Creek Tributaries	140.45 MILES
2A	VAP-K23R_ROW03A06	Rowanty Creek Tributaries	133.22 MILES
2A	VAP-K23R_XFZ01A08	Joseph Swamp, UT	1.39 MILES
2A	VAP-K24R_HQS01B08	Hunting Quarter Swamp Tributaries	56.97 MILES
2A	VAP-K25R_LTS01A06	Little Swamp	8.53 MILES
2A	VAP-K25R_SGC01A98	Spring Creek	16.59 MILES
2A	VAP-K25R_XFA01A06	UT to Raccoon Creek	4.30 MILES
2A	VAP-K25R_XFB01A06	UT to Spring Creek	4.12 MILES
2A	VAP-K26R_OTD01A98	Otterdam Swamp	7.02 MILES
2A	VAP-K26R_URH01A12	Uriah Branch	4.08 MILES
2A	VAP-K29R_BLS01A00	Black Swamp	4.55 MILES
2A	VAP-K29R_DEP01A10	Deep Branch	4.19 MILES
2A	VAP-K29R_GMN01A10	German Swamp	1.07 MILES
2A	VAP-K29R_IVY01A10	Ivy Branch	3.70 MILES
2A	VAP-K29R_MRN01A12	Mill Run	6.79 MILES
2A	VAP-K29R_PNS01A02	Pigeon Swamp	4.11 MILES
2A	VAP-K29R_PRK01A10	Parkers Branch	3.94 MILES
2A	VAT-K13R_MHN01A00	Meherrin River (Lower)	4.52 MILES
2A	VAT-K27R_ANG01A12	Angelico Creek	1.90 MILES
2A	VAT-K38R_ZZZ01A00	Unsegmented rivers in K38R	306.27 MILES
2A	VAT-K41R_NLR04A08	North Landing River - Lower	10.55 MILES
2A	VAT-K41R_WNC02A04	West Neck Creek - Lower	6.77 MILES
2A	VAT-K42E_BKY01A08	Redhead Bay and Sand Bay	15.40 SQUARE MILES
2A	VAT-K42E_BKY02A00	Redhead Bay at Drum Point	0.20 SQUARE MILES
2A	VAT-K42E_BKY03A08	Back Bay	16.50 SQUARE MILES
2A	VAT-K42E_BKY04A14	Back Bay	1.66 SQUARE MILES
2A	VAT-K42E_HPC02A04	Hell Point Creek - Lower (at mouth)	0.01 SQUARE MILES
2A	VAT-K42E_SHB01A00	Shipps Bay, Back Bay Area	3.12 SQUARE MILES
2B	VAC-K14L_MDT01L00	Modest Creek Reservoir	19.42 ACRES
2B	VAC-K16R_HUR02A04	Hurricane Branch	2.48 MILES
2B	VAC-K16R_NTW01A02	Nottoway River	2.90 MILES
2B	VAC-K17R_NTW01A08	Nottoway River	1.63 MILES
2B	VAP-K04R_MHN01A06	Meherrin River	3.44 MILES
2B	VAP-K06L_GTC03B00	Great Creek Reservoir	216.93 ACRES
2B	VAP-K11R_FON01A10	Fontaine Creek (aka Fountains Creek)	4.71 MILES
2B	VAP-K23R_XFL01A08	Spring Branch, UT (XFL)	0.36 MILES
2C	VAC-K14R_LTH01A08	Little Hounds Creek	8.99 MILES
2C	VAP-K26R_TRE01A00	Three Creek	4.43 MILES
3A	VAC-K01R_ZZZ01A00	Unsegmented Portion of Watershed K01	65.92 MILES
3A	VAC-K01R_ZZZ01B14	Unsegmented Portion of Watershed K01	89.84 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAC-K01R_ZZZ01C14	Unsegmented Portion of Watershed K01	63.16 MILES
3A	VAC-K02R_NMR01B00	North Meherrin River	5.12 MILES
3A	VAC-K02R_ZZZ01A00	Unsegmented Portion of Watershed K02	111.38 MILES
3A	VAC-K02R_ZZZ01B14	Unsegmented Portion of Watershed K02	42.41 MILES
3A	VAC-K02R_ZZZ01C14	Unsegmented Portion of Watershed K02	128.60 MILES
3A	VAC-K02R_ZZZ01D14	Unsegmented Portion of Watershed K02	91.94 MILES
3A	VAC-K03R_ZZZ01A00	Unsegmented waters of K03	62.91 MILES
3A	VAC-K03R_ZZZ01B14	Unsegmented Portion of Watershed K03	111.79 MILES
3A	VAC-K03R_ZZZ01C14	Unsegmented Portion of Watereshed K03	71.97 MILES
3A	VAC-K03R_ZZZ02A06	Unsegmented Portion of Watershed K03	36.81 MILES
3A	VAC-K03R_ZZZ02B14	Unsegmented Portion of Watershed K03	9.55 MILES
3A	VAC-K14R_MDT01A00	Modest Creek	12.57 MILES
3A	VAC-K14R_NTW03A00	Nottoway River Tributaries	3.42 MILES
3A	VAC-K14R_NTW03B14	Nottoway River Tributaries	15.83 MILES
3A	VAC-K14R_NTW03C14	Nottoway River Tributaries	3.35 MILES
3A	VAC-K14R_ZZZ01A00	Unsegmented Portion of Watershed K14	50.58 MILES
3A	VAC-K14R_ZZZ01B14	Unsegmented Portion of Watershed K14	48.83 MILES
3A	VAC-K14R_ZZZ01C14	Unsegmented Portion of Watershed K14	24.31 MILES
3A	VAC-K14R_ZZZ01D14	Unsegmented Portion of Watershed K14	90.95 MILES
3A	VAC-K15R_LNT03A04	Little Nottoway River Tributaries	1.03 MILES
3A	VAC-K15R_LZT01R00	Lazaretto Creek and tributaries	7.41 MILES
3A	VAC-K15R_ZZZ01A00	Unsegmented Portion of Watershed K15	85.79 MILES
3A	VAC-K15R_ZZZ01B14	Unsegmented Portion of Watershed K15	71.49 MILES
3A	VAC-K16R_NTW02B04	Nottoway River and Tributaries	43.23 MILES
3A	VAC-K16R_ZZZ01A00	Unsegmented Portion of Watershed K16	32.29 MILES
3A	VAC-K16R_ZZZ01B14	Unsegmented Portion of Watershed K16	76.43 MILES
3A	VAC-K16R_ZZZ01C14	Unsegmented Portion of Watershed K16	74.02 MILES
3A	VAC-K16R_ZZZ01D14	Unsegmented Portion of Watershed K16	27.65 MILES
3A	VAC-K16R_ZZZ01E14	Unsegmented Portion of Watershed K16	58.77 MILES
3A	VAC-K17R_ZZZ01A08	Unsegmented Rivers in K17	9.34 MILES
3A	VAP-K04R_ZZZ01A14	Unsegmented rivers in K04	144.00 MILES
3A	VAP-K05R_ZZZ01A14	Unsegmented rivers in K05	86.90 MILES
3A	VAP-K05R_ZZZ01B14	Unsegmented rivers in K05	53.40 MILES
3A	VAP-K05R_ZZZ01C14	Unsegmented rivers in K05	123.95 MILES
3A	VAP-K05R_ZZZ02A14	Unsegmented rivers in K05	23.76 MILES
3A	VAP-K06R_GTC01A00	Great Creek	2.85 MILES
3A	VAP-K06R_GTC01B00	Great Creek	2.94 MILES
3A	VAP-K06R_GTC05B00	Great Creek	7.50 MILES
3A	VAP-K06R_XEH01A04	Great Creek, UT	2.04 MILES
3A	VAP-K06R_XEK01A02	Great Creek, UT	2.38 MILES
3A	VAP-K06R_XEM01A02	UT to Great Creek, UT (XEL)	0.53 MILES
3A	VAP-K06R_ZZZ01A00	Unsegmented Rivers in K06	106.95 MILES
3A	VAP-K07R_ZZZ01A00	Unsegmented Rivers in K07	46.25 MILES
3A	VAP-K08R_MHN01C00	Meherrin River and tribs	7.61 MILES
3A	VAP-K08R_ZZZ01A14	Unsegmented Rivers in K08	73.91 MILES
3A	VAP-K08R_ZZZ01B14	Unsegmented Rivers in K08	60.17 MILES
3A	VAP-K08R_ZZZ01C14	Unsegmented Rivers in K08	30.78 MILES
3A	VAP-K09R_ZZZ01A14	Unsegmented Rivers in K09	46.55 MILES
3A	VAP-K09R_ZZZ01B14	Unsegmented Rivers in K09	103.46 MILES
3A	VAP-K10R_HOU01A10	Houses Creek	3.87 MILES
3A	VAP-K10R_ZZZ01A14	Unsegmented Rivers in K10	76.60 MILES
3A	VAP-K10R_ZZZ01B14	Unsegmented Rivers in K10	53.36 MILES
3A	VAP-K11R_ZZZ01A14	Unsegmented Rivers in K11	75.90 MILES
3A	VAP-K11R_ZZZ01B14	Unsegmented Rivers in K11	32.82 MILES
3A	VAP-K11R_ZZZ01C14	Unsegmented Rivers in K11	3.79 MILES
3A	VAP-K11R_ZZZ02A10	Unsegmented Rivers in K11	1.64 MILES
3A	VAP-K17R_RAN01A10	Rainey Creek	3.39 MILES
3A	VAP-K17R_ZZZ01A14	Unsegmented Rivers in K17	109.04 MILES
3A	VAP-K17R_ZZZ01B14	Unsegmented Rivers in K17	64.71 MILES
3A	VAP-K18R_ZZZ01A00	Unsegmented Rivers	121.42 MILES
3A	VAP-K19R_MRS01B10	Moores Swamp	0.63 MILES
3A	VAP-K19R_NTW01A00	Nottoway River	0.60 MILES
3A	VAP-K19R_NTW02C08	Nottoway River	3.73 MILES
3A	VAP-K19R_ZZZ01A14	Unsegmented Rivers in K19	28.58 MILES
3A	VAP-K19R_ZZZ01B10	Unsegmented Rivers in K19	8.79 MILES
3A	VAP-K19R_ZZZ01B14	Unsegmented Rivers in K19	22.36 MILES
3A	VAP-K19R_ZZZ01C14	Unsegmented Rivers in K19	57.02 MILES
3A	VAP-K19R_ZZZ01D14	Unsegmented Rivers in K19	55.36 MILES
3A	VAP-K19R_ZZZ02A08	Unsegmented Rivers in K19	38.92 MILES
3A	VAP-K20R_BSC01A06	Bar Swamp Creek	4.08 MILES
3A	VAP-K20R_BTR01A02	Butterwood Creek	4.31 MILES
3A	VAP-K20R_CKS02A06	Cooks Branch	0.97 MILES
3A	VAP-K20R_RDK01A00	Reedy Creek	4.53 MILES
3A	VAP-K20R_STO01A00	Stony Creek	2.77 MILES
3A	VAP-K20R_XFE01A06	UT to Rocky Run Creek	4.40 MILES
3A	VAP-K20R_ZZZ01A14	Unsegmented Rivers in K20	95.33 MILES
3A	VAP-K20R_ZZZ01B14	Unsegmented Rivers in K20	59.63 MILES
3A	VAP-K20R_ZZZ01C14	Unsegmented Rivers in K20	22.91 MILES
3A	VAP-K21R_ZZZ01A14	Unsegmented Rivers in K21	78.87 MILES
3A	VAP-K21R_ZZZ01B14	Unsegmented Rivers in K21	72.51 MILES
3A	VAP-K22R_XEZ01A06	UT to Sappony Creek	2.71 MILES
3A	VAP-K22R_ZZZ01A14	Unsegmented Rivers in K22	69.61 MILES
3A	VAP-K22R_ZZZ01B14	Unsegmented Rivers in K22	61.98 MILES
3A	VAP-K23R_HRA02A08	Hatcher Run	1.15 MILES
3A	VAP-K23R_PCT01A08	Picture Branch	5.09 MILES
3A	VAP-K23R_XGB01A10	UT to XGA (Nottoway River, UT)	1.60 MILES
3A	VAP-K23R_ZZZ01A14	Unsegmented Rivers in K23	5.99 MILES
3A	VAP-K23R_ZZZ01B14	Unsegmented Rivers in K23	72.44 MILES
3A	VAP-K24R_ZZZ01A14	Unsegmented Rivers in K24	62.65 MILES
3A	VAP-K24R_ZZZ01B14	Unsegmented Rivers in K24	21.06 MILES
3A	VAP-K25R_XGH01A08	UT to Spring Creek	2.25 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAP-K25R_ZZZ01A14	Unsegmented Rivers in K25	23.62 MILES
3A	VAP-K25R_ZZZ01B14	Unsegmented Rivers in K25	64.43 MILES
3A	VAP-K26R_ZZZ01A14	Unsegmented Rivers in K26	31.81 MILES
3A	VAP-K26R_ZZZ01B14	Unsegmented Rivers in K26	52.84 MILES
3A	VAP-K26R_ZZZ02A10	Unsegmented Rivers in K26	87.74 MILES
3A	VAP-K29R_XEB01A06	UT to Assamoosick Swamp	3.93 MILES
3A	VAP-K29R_XGK01A10	XGK - Black Swamp, UT	1.22 MILES
3A	VAP-K29R_ZZZ01A14	Unsegmented Rivers in K29	45.87 MILES
3A	VAP-K29R_ZZZ01B14	Unsegmented Rivers in K29	18.83 MILES
3A	VAP-K29R_ZZZ01C14	Unsegmented Rivers in K29	47.08 MILES
3A	VAP-K29R_ZZZ02A08	Unsegmented Rivers in K29	34.58 MILES
3A	VAT-K09R_ZZZ01A08	Unsegmented Rivers in K09	41.52 MILES
3A	VAT-K13R_ZZZ01A00	Unsegmented rivers in K13R	227.49 MILES
3A	VAT-K27R_ZZZ01A00	Unsegmented rivers in K27R	237.97 MILES
3A	VAT-K28R_ZZZ01A00	Unsegmented rivers in K28R (PWS)	24.98 MILES
3A	VAT-K28R_ZZZ02A00	Unsegmented rivers in K28R (NON-PWS)	169.50 MILES
3A	VAT-K32R_ZZZ01A08	Unsegmented Rivers in K32R	11.47 MILES
3A	VAT-K37R_ZZZ01A00	Unsegmented Tributary in K37	2.01 MILES
3A	VAT-K39R_ZZZ01A00	Unsegmented rivers in K39R	201.59 MILES
3A	VAT-K40R_ZZZ01A00	Unsegmented rivers in K40R (non-PWS)	414.20 MILES
3A	VAT-K41L_STK01A08	Stumpy Lake	263.57 ACRES
3A	VAT-K41R_MLD01A06	Milldam Creek - Upper	2.27 MILES
3A	VAT-K41R_NLR01A06	North Landing River - Upper	3.99 MILES
3A	VAT-K41R_XAQ01A10	Unnamed tributary in K41R	2.33 MILES
3A	VAT-K41R_ZZZ01A00	Unsegmented rivers in K41R	595.92 MILES
3A	VAT-K42E_ZZZ01A00	Unsegmented estuaries in K42E	0.03 SQUARE MILES
3A	VAT-K42R_ZZZ01A00	Unassessed Waters in K42	208.89 MILES
3B	VAC-K01R_XEI01A08	South Meherrin River, Unnamed Tributary	1.26 MILES
3B	VAP-K26R_TRE01B10	Three Creek	1.44 MILES
3B	VAT-K42E_NTH01A00	North Bay - Back Bay Area	2.01 SQUARE MILES
3D	VAT-K30R_ZZZ01A00	Unsegmented rivers in K30R	169.40 MILES
4A	VAC-K01R_MMR01A98	Middle Meherrin River	7.15 MILES
4A	VAC-K01R_SMR01A06	South Meherrin River	7.10 MILES
4A	VAC-K02R_BJC01A98	Big Juniper Creek	6.68 MILES
4A	VAC-K02R_RYK01A08	Reedy Creek	10.40 MILES
4A	VAC-K03R_BRD01A06	Broad Branch	3.53 MILES
4A	VAC-K03R_MHN01A00	Meherrin River	5.03 MILES
4A	VAC-K03R_MHN01B06	Meherrin River	1.94 MILES
4A	VAC-K03R_MHN02A04	Meherrin River	1.29 MILES
4A	VAC-K03R_MHN03A08	Meherrin River	3.17 MILES
4A	VAC-K03R_XFH01A06	Flat Rock Creek, Unnamed Tributary	3.44 MILES
4A	VAC-K14R_BHC01B98	Big Hounds Creek	10.34 MILES
4A	VAC-K14R_NTW01A98	Nottoway River	13.35 MILES
4A	VAC-K14R_NTW02A98	Nottoway River	4.19 MILES
4A	VAC-K15R_CRY01A06	Carys Creek	6.34 MILES
4A	VAC-K15R_LNT01A00	Little Nottoway River	9.14 MILES
4A	VAC-K15R_LNT02A04	Little Nottoway River	0.83 MILES
4A	VAC-K15R_WSN01A08	Whetstone Creek	8.41 MILES
4A	VAC-K16R_BPC01A00	Beaver Pond Creek	7.43 MILES
4A	VAC-K16R_XBL01A94	Hurricane Branch, Unnamed Tributary	1.07 MILES
4A	VAC-K16R_XBL02A02	Hurricane Branch, Unnamed Tributary	2.10 MILES
4A	VAP-K04R_MHN01B10	Meherrin River	6.95 MILES
4A	VAP-K04R_SHN01A06	Shining Creek	7.74 MILES
4A	VAP-K04R_SNY01A96	Stony Creek	14.24 MILES
4A	VAP-K04R_TLR01A10	Taylors Creek	10.35 MILES
4A	VAP-K05R_ALN01A08	Allen Creek	6.96 MILES
4A	VAP-K05R_BRY01A02	Briery Branch	4.01 MILES
4A	VAP-K05R_EVN01A10	Evans Creek	11.72 MILES
4A	VAP-K05R_GTO01A94	Genito Creek	8.13 MILES
4A	VAP-K05R_HIC01A10	Hicks Creek	7.37 MILES
4A	VAP-K05R_MHN01B98	Meherrin River	6.95 MILES
4A	VAP-K05R_MHN02B98	Meherrin River	5.03 MILES
4A	VAP-K05R_MHN03B98	Meherrin River	14.22 MILES
4A	VAP-K05R_TRO01A10	Totaro Creek	4.96 MILES
4A	VAP-K05R_TRO01B10	Totaro Creek	0.37 MILES
4A	VAP-K06R_GTC01C10	Great Creek	6.02 MILES
4A	VAP-K06R_GTC02B00	Great Creek	2.60 MILES
4A	VAP-K06R_GTC04B00	Great Creek	2.82 MILES
4A	VAP-K06R_STV01A10	Stevens Branch	4.30 MILES
4A	VAP-K06R_TEA01A10	Tea Branch	3.24 MILES
4A	VAP-K06R_XHQ01A10	Great Creek, UT	2.12 MILES
4A	VAP-K07R_RSE01A96	Roses Creek	9.85 MILES
4A	VAP-K07R_RSE01B10	Roses Creek	1.95 MILES
4A	VAP-K08R_RNS01A10	Robinson Creek	6.07 MILES
4A	VAP-K10R_FON01B10	Fontaine Creek	0.56 MILES
4A	VAP-K11R_CTT01A02	Cattail Creek	5.33 MILES
4A	VAP-K23R_XDV01A02	UT to Nebletts Mill Run	1.78 MILES
4A	VAP-K25R_RCN01A02	Raccoon Creek	19.90 MILES
4A	VAP-K26R_MCC01A00	Maclins Creek	8.80 MILES
4A	VAP-K29R_GMN01A02	German Swamp	2.62 MILES
4A	VAP-K29R_SRE01A02	Seacorrie Swamp	7.03 MILES
4A	VAP-K29R_XDW01A02	XDW - UT to Assamoosick Swamp	2.05 MILES
4A	VAP-K29R_XDX01A02	Seacorrie Swamp, UT	1.46 MILES
4A	VAP-K29R_XGS01A10	XGS - Assamoosick Swamp, UT	2.36 MILES
4A	VAT-K13R_TRR01A00	Tarrara Creek	14.49 MILES
4A	VAT-K40R_NTW01A00	Northwest River - Upper (Non-PWS)	6.48 MILES
4A	VAT-K40R_NTW03B10	Northwest River - Lower (PWS)	1.20 MILES
4A	VAT-K40R_NTW04A08	Northwest River - Mouth (PWS)	0.70 MILES
4A	VAT-K40R_XAM01A02	Unnamed tributary to Northwest River (PWS)	4.06 MILES
4A	VAT-K41R_AAC01A06	Albemarle Canal (upstream of North Landing River)	8.55 MILES
4A	VAT-K41R_MLD02A06	Milldam Creek - Lower	2.54 MILES
4A	VAT-K41R_NLR02A06	North Landing River - Middle	2.15 MILES
4A	VAT-K41R_NLR03A06	North Landing River - Middle	1.38 MILES
4A	VAT-K42E_HPC01A00	Hell Point Creek - Upper	0.03 SQUARE MILES
4A	VAT-K42E_MDY01A04	Muddy Creek	0.03 SQUARE MILES
4A	VAT-K42E_NWN01A00	Nawney Creek - Upper	0.02 SQUARE MILES
4A	VAT-K42E_NWN02A00	Nawney Creek - Lower	0.02 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
4C	VAP-K11R_CTT01B10	Cattail Creek	2.05 MILES
4C	VAP-K20R_WOK02A06	White Oak Swamp	2.20 MILES
4C	VAT-K37R_XDN01A00	Buckhorn Creek	1.52 MILES
5A	VAC-K01R_FNY01A08	Finneywood Creek	5.11 MILES
5A	VAC-K02R_KIT01A06	Kits Creek	4.82 MILES
5A	VAC-K02R_NMR02B04	North Meherrin River	2.63 MILES
5A	VAC-K03R_MSC01A10	Mason Creek	2.85 MILES
5A	VAC-K03R_MSC01B14	Mason Creek	5.20 MILES
5A	VAC-K14L_NTW01L00	Nottoway Falls Lake	32.19 ACRES
5A	VAC-K14R_NTW01C98	Nottoway River	6.18 MILES
5A	VAC-K14R_NTW01D04	Nottoway River	1.08 MILES
5A	VAC-K15L_LZT01L00	Nottoway Pond	50.70 ACRES
5A	VAC-K15R_MLL01A06	Mallorys Creek	7.11 MILES
5A	VAC-K16L_NTW01L04	Fort Pickett Reservoir	318.95 ACRES
5A	VAC-K16R_NTW01B04	Nottoway River	3.39 MILES
5A	VAC-K16R_SYC01A14	Seay Creek	6.01 MILES
5A	VAC-K16R_SYC02B14	Seay Creek	1.47 MILES
5A	VAC-K16R_TMT01A10	Tommeheton Creek	7.84 MILES
5A	VAP-K05R_LTG01A10	Little Genito Creek	12.05 MILES
5A	VAP-K08L_MHN02C98	Emporia Lake (Meherrin Reservoir)	263.68 ACRES
5A	VAP-K08L_RDC01A98	Brunswick Lake (County Pond)	160.33 ACRES
5A	VAP-K08R_DUK01A16	Dukes Branch	2.41 MILES
5A	VAP-K08R_WIL01A10	Wilson Creek	2.74 MILES
5A	VAP-K08R_XII01A16	UT to Dukes Branch	1.71 MILES
5A	VAP-K09R_MHN01D98	Meherrin River	26.75 MILES
5A	VAP-K09R_MHN02D00	Meherrin River	2.26 MILES
5A	VAP-K12R_MLS01A00	Mill Swamp	11.53 MILES
5A	VAP-K17R_GRC01A16	Great Creek	5.45 MILES
5A	VAP-K17R_NTW01A00	Nottoway River	9.99 MILES
5A	VAP-K17R_RYC01A16	Reedy Creek	6.02 MILES
5A	VAP-K17R_TEG01A16	Turkey Egg Creek	5.64 MILES
5A	VAP-K17R_WAQ01B00	Waqua Creek	3.57 MILES
5A	VAP-K17R_WAQ02B16	Waqua Creek	1.09 MILES
5A	VAP-K17R_WAQ03A16	Waqua Creek	5.59 MILES
5A	VAP-K19R_BSK01A00	Buckskin Creek	9.94 MILES
5A	VAP-K19R_BSK01B12	Buckskin Creek	1.96 MILES
5A	VAP-K19R_MRS01A08	Moores Swamp	5.08 MILES
5A	VAP-K19R_MSN01A10	Masons Branch	4.89 MILES
5A	VAP-K19R_NTW01B00	Nottoway River	13.90 MILES
5A	VAP-K19R_NTW01C08	Nottoway River	4.43 MILES
5A	VAP-K19R_NTW02B08	Nottoway River	1.04 MILES
5A	VAP-K19R_XEJ01A04	UT to Nottoway River	2.88 MILES
5A	VAP-K19R_XHW01A12	XHW - Buckskin Creek, UT	1.63 MILES
5A	VAP-K19R_XHX01A12	XHX - Buckskin Creek, UT	2.66 MILES
5A	VAP-K19R_XHY01A12	XHY - Buckskin Creek, UT	1.61 MILES
5A	VAP-K21R_MTR01A14	Mortar Branch	6.12 MILES
5A	VAP-K21R_STO01B00	Stony Creek	2.60 MILES
5A	VAP-K21R_STO02B00	Stony Creek	5.75 MILES
5A	VAP-K22R_SAP01A00	Sappony Creek	11.86 MILES
5A	VAP-K22R_SAP01B00	Sappony Creek	4.35 MILES
5A	VAP-K23R_ATH01A08	Arthur Swamp	8.38 MILES
5A	VAP-K23R_GSE01A98	Gosee Swamp and tributaries	27.71 MILES
5A	VAP-K23R_HRA01B10	Hatcher Run	16.22 MILES
5A	VAP-K23R_JNH01A98	Jones Hole Swamp/Moores Swamp watershed	70.67 MILES
5A	VAP-K23R_JOE01A10	Joseph Swamp	11.22 MILES
5A	VAP-K23R_NTW02B00	Nottoway River	16.66 MILES
5A	VAP-K23R_ROW03B10	Rowanty Creek	14.07 MILES
5A	VAP-K24R_HQS01A98	Hunting Quarter Swamp	16.67 MILES
5A	VAP-K24R_NTW03B00	Nottoway River	3.56 MILES
5A	VAP-K24R_NTW04B00	Nottoway River	15.61 MILES
5A	VAP-K24R_TWT01A16	Thweatt Branch Tributaries	7.26 MILES
5A	VAP-K26R_TRE01B98	Three Creek	5.10 MILES
5A	VAP-K29R_ASM02A02	Assamoosick Swamp	2.46 MILES
5A	VAP-K29R_ASM02A98	Assamoosick Swamp	5.56 MILES
5A	VAP-K29R_XGT01A10	Assamoosick Swamp, UT - XGT	1.93 MILES
5A	VAP-K31R_CAT01A10	Cattail Creek	3.43 MILES
5A	VAP-K31R_WKS02A04	Warwick Swamp	6.23 MILES
5A	VAP-K31R_XAT01A10	Blackwater Swamp, UT	1.46 MILES
5A	VAP-K31R_XES01A08	Warwick Swamp, UT	3.43 MILES
5A	VAP-K31R_XFN01A08	North Fork Blackwater Swamp, UT	2.82 MILES
5A	VAP-K31R_XFX01A10	Warwick Swamp, UT	2.95 MILES
5A	VAP-K31R_XGE01A10	Blackwater Swamp, UT	1.46 MILES
5A	VAP-K31R_XHP01A10	Blackwater Swamp, UT	2.50 MILES
5A	VAP-K31R_XHS01A12	XHS - Second Swamp, UT	4.39 MILES
5A	VAP-K31R_ZZZ01A14	Unsegmented Rivers in K31	40.84 MILES
5A	VAP-K31R_ZZZ01B14	Unsegmented Rivers in K31	94.09 MILES
5A	VAP-K31R_ZZZ01C14	Unsegmented Rivers in K31	59.14 MILES
5A	VAP-K32R_CPH01A98	Coppahaunk Swamp	11.98 MILES
5A	VAP-K32R_OTR01A98	Otterdam Swamp	7.44 MILES
5A	VAP-K32R_RED01A08	Reedy Branch Watershed	7.31 MILES
5A	VAP-K32R_SRN02A06	Spring Branch	0.11 MILES
5A	VAP-K32R_XDS01A06	UT to Otterdam Swamp	1.12 MILES
5A	VAP-K32R_XFM01A08	Blackwater River, UT	3.13 MILES
5A	VAP-K32R_XFV01A10	XFV - Otterdam Swamp, UT	1.20 MILES
5A	VAP-K32R_XGC01A10	XGC - Coppahaunk Swamp, UT	2.97 MILES
5A	VAP-K32R_ZZZ01A14	Unsegmented Rivers in K32R	30.88 MILES
5A	VAP-K32R_ZZZ01B14	Unsegmented Rivers in K32R	40.81 MILES
5A	VAP-K32R_ZZZ01C14	Unsegmented Rivers in K32R	111.12 MILES
5A	VAT-K09R_MHN02D08	Meherrin River	5.42 MILES
5A	VAT-K13R_FTS01A04	Flat Swamp	8.48 MILES
5A	VAT-K27R_APW01A04	Applewhite Swamp	8.16 MILES
5A	VAT-K28R_BKH01A08	Buckhorn Swamp	5.68 MILES
5A	VAT-K28R_BKH01B12	Buckhorn Swamp	4.22 MILES
5A	VAT-K28R_NTW01A00	Nottoway River - Upper	4.44 MILES
5A	VAT-K28R_NTW02A00	Nottoway River - Middle (PWS area)	5.53 MILES
5A	VAT-K28R_NTW03A00	Nottoway River - Lower	10.06 MILES
5A	VAT-K28R_XEC01A14	Unnamed Tributary To Mill Swamp	1.85 MILES
5A	VAT-K30R_NTW01A08	Nottoway River - Upper	0.45 MILES
5A	VAT-K30R_NTW02A08	Nottoway River -Lower Middle	10.96 MILES
5A	VAT-K30R_NTW02B14	Nottoway River - Lower	4.54 MILES
5A	VAT-K33R_ANT01A06	Antioch Swamp - Middle	1.45 MILES
5A	VAT-K33R_BLW01A00	Blackwater River - Upper	19.10 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5A	VAT-K33R_BLW02A04	Blackwater River - Middle	1.04 MILES
5A	VAT-K33R_BLW03A08	Blackwater River - Lower	4.18 MILES
5A	VAT-K33R_BLW04A08	Blackwater River	1.81 MILES
5A	VAT-K33R_BMS01A12	Burnt Mills Swamp	5.16 MILES
5A	VAT-K33R_ZZZ01A00	Unsegmented rivers in K33R, Villines Swamp	199.37 MILES
5A	VAT-K34R_ZZZ01A00	Unsegmented rivers in K34R, Rattlesnake Swamp	161.94 MILES
5A	VAT-K35L_LTD01A02	Airfield Pond	120.07 ACRES
5A	VAT-K35R_BNT01A04	Brantley Swamp - Lower	3.65 MILES
5A	VAT-K35R_RHS01A08	Round Hill Swamp	0.64 MILES
5A	VAT-K35R_SCK01A00	Seacock Swamp - Upper	0.84 MILES
5A	VAT-K35R_SCK02A08	Seacock Swamp - Lower	2.50 MILES
5A	VAT-K35R_SCK03A08	Seacock Swamp - Lower	2.59 MILES
5A	VAT-K35R_SCK04A10	Seacock Swamp	0.81 MILES
5A	VAT-K35R_SCK04A14	Seacock Swamp	3.75 MILES
5A	VAT-K35R_XDY01A04	UT Seacock Swamp	1.02 MILES
5A	VAT-K35R_XDZ01A04	UT Airfield Pond - Upper	0.68 MILES
5A	VAT-K35R_XDZ02A04	UT Airfield Pond - Lower	0.71 MILES
5A	VAT-K35R_ZZZ01A00	Unsegmented rivers in Seacock Swamp.	223.96 MILES
5A	VAT-K36R_BLC01A06	Black Creek	4.95 MILES
5A	VAT-K36R_BLC02A10	Black Creek - Upper	1.25 MILES
5A	VAT-K36R_BLW01A00	Blackwater River - Uppermost (PWS)	4.28 MILES
5A	VAT-K36R_BLW01B08	Blackwater River - Upper	6.47 MILES
5A	VAT-K36R_BLW02A08	Blackwater River - Middle	3.85 MILES
5A	VAT-K36R_BLW02B08	Blackwater River - Upper	2.47 MILES
5A	VAT-K36R_BLW02C10	Blackwater River - Upper	3.00 MILES
5A	VAT-K36R_BLW03A08	Blackwater River - Middle	2.23 MILES
5A	VAT-K36R_BLW04A08	Blackwater River - Lower Middle	2.83 MILES
5A	VAT-K36R_BLW04B12	Blackwater River - Lower Middle	0.69 MILES
5A	VAT-K36R_BLW04C12	Blackwater River - Lower Middle	3.98 MILES
5A	VAT-K36R_BLW04D14	Blackwater River - Lower Middle	0.77 MILES
5A	VAT-K36R_BLW05A08	Blackwater River - Lower	4.41 MILES
5A	VAT-K36R_BLW06A08	Blackwater River - Mouth	0.69 MILES
5A	VAT-K36R_CYS01A12	Cypress Swamp	5.16 MILES
5A	VAT-K36R_DKS01A10	Ducks Swamp	0.65 MILES
5A	VAT-K36R_WAC01A08	Washole Creek	0.55 MILES
5A	VAT-K36R_XGI01A08	Unsegmented Tributary to Blackwater	2.75 MILES
5A	VAT-K36R_ZZZ01A00	Unsegmented rivers in K36R (not PWS area)	314.10 MILES
5A	VAT-K36R_ZZZ01B00	Unsegmented rivers in K36R (PWS area)	75.88 MILES
5A	VAT-K38R_CHP01A04	Chapel Swamp	8.28 MILES
5A	VAT-K38R_JNS01A14	Jones Swamp - Lower	1.80 MILES
5A	VAT-K38R_MAR01A06	March Swamp	7.71 MILES
5A	VAT-K38R_STN01A00	Somerton Creek	9.38 MILES
5A	VAT-K39L_LKD01A06	Lake Drummond	3,241.96 ACRES
5A	VAT-K39R_XCK01A00	Dismal Swamp Canal & Feeder Ditch to Lake Drummond	13.21 MILES
5A	VAT-K39R_ZZZ01B08	Unsegmented rivers in K39R	15.28 MILES
5A	VAT-K41R_BKW01A00	Blackwater Creek	4.47 MILES
5A	VAT-K41R_XAT01A12	Unnamed Trib to Milldam Creek	0.66 MILES
5C	VAC-K17R_HCK01A16	Hickory Run	4.94 MILES
5C	VAP-K05R_HAY01A10	Hays Creek	6.39 MILES
5C	VAP-K10R_BDD01A10	Beddingfield Creek	4.18 MILES
5C	VAP-K10R_FON01A04	Fontaine Creek	4.60 MILES
5C	VAP-K10R_RCY01A10	Rocky Run	0.86 MILES
5C	VAP-K10R_RSK01A00	Rattlesnake Creek	17.18 MILES
5C	VAP-K11R_BVC01A04	Beaverpond Creek	3.35 MILES
5C	VAP-K11R_XGU01A10	XGU - Fontaine Creek, UT	1.82 MILES
5C	VAP-K11R_XGV01A10	XGV - Fontaine Creek, UT	1.95 MILES
5C	VAP-K18R_STG01B14	Sturgeon Creek	12.96 MILES
5C	VAP-K19R_XAD01A12	XAD - Buckskin Creek, UT	2.90 MILES
5C	VAP-K21R_CBC01A16	Chamberlains Bed	1.32 MILES
5C	VAP-K21R_CBC03A16	Chamberlains Bed	2.82 MILES
5C	VAT-K28R_NTT01A12	Nottoway Swamp	8.12 MILES
5D	VAC-K01R_MMR02A08	Middle Meherrin River	11.25 MILES
5D	VAC-K02R_CHS01A08	Couches Creek	7.37 MILES
5D	VAC-K02R_LDB01A10	Ledbetter Creek	9.08 MILES
5D	VAC-K02R_NMR01A98	North Meherrin River	7.54 MILES
5D	VAC-K03R_FRC01A98	Flat Rock Creek	10.36 MILES
5D	VAC-K03R_FRC02A06	Flat Rock Creek	5.63 MILES
5D	VAC-K15R_LZT01A10	Lazaretto Creek	4.97 MILES
5D	VAP-K07R_RYR01A08	Rocky Run	21.27 MILES
5D	VAP-K10R_QRL01A10	Quarrel Creek	3.34 MILES
5D	VAP-K11R_FON04A00	Fontaine Creek (aka Fountains Creek)	14.48 MILES
5D	VAP-K26R_TRE02B98	Three Creek	5.43 MILES
5D	VAP-K31R_BKR01A98	Blackwater Swamp	22.90 MILES
5D	VAP-K31R_BNF01A10	North Fork Blackwater Swamp	6.11 MILES
5D	VAP-K31R_SEC01A04	Second Swamp	9.52 MILES
5D	VAP-K31R_WKS01A00	Warwick Swamp	13.21 MILES
5D	VAP-K31R_WKS03A10	Warwick Swamp	3.02 MILES
5D	VAP-K31R_XGX01A12	XGX - Warwick Swamp, UT	2.22 MILES
5D	VAP-K31R_XHO01A12	XHO - Warwick Swamp, UT	2.42 MILES
5D	VAP-K32R_BLW01B98	Blackwater River	18.55 MILES
5D	VAP-K32R_BLW02B98	Blackwater River	5.39 MILES
5D	VAP-K32R_CPP01A98	Cypress Swamp	17.06 MILES
5D	VAP-K32R_CPP01B06	Cypress Swamp Tributaries	143.62 MILES
5D	VAP-K32R_OTR02A00	Otterdam Swamp	5.86 MILES
5D	VAP-K32R_SRN01A94	Spring Branch	4.15 MILES
5D	VAP-K32R_XAL01A08	Spring Branch, UT	0.72 MILES
5D	VAP-K32R_XAW01A08	Spring Branch, UT	1.07 MILES
5D	VAP-K32R_XDR01A06	UT to Otterdam Swamp	2.61 MILES
5D	VAP-K32R_XDT01A08	Coppahaunk Swamp, UT	0.91 MILES
5D	VAT-K27R_TRE01A00	Three Creek - Upper	9.17 MILES
5D	VAT-K27R_TRE02A00	Three Creek - Lower	10.67 MILES
5D	VAT-K28R_MSP01A06	Mill Swamp	10.49 MILES
5D	VAT-K30R_DMR01A02	Darden Mill Run	10.72 MILES
5D	VAT-K32R_BLW01A08	Blackwater River - Lower K32	2.32 MILES
5D	VAT-K34R_MSW01A00	Mill Swamp	8.44 MILES
5D	VAT-K34R_RKN01A02	Rattlesnake Swamp K34	6.42 MILES
5D	VAT-K40R_IND01A02	Indian Creek tributary to Northwest River	3.46 MILES
5D	VAT-K40R_NTW02A00	Northwest River - Middle (PWS)	6.33 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAT-K40R_NTW03A08	Northwest River - Lower (PWS)	1.70 MILES
5D	VAT-K41R_PCT01A02	Pocaty River	7.43 MILES
5D	VAT-K41R_WNC01A00	West Neck Creek - Middle	2.74 MILES
5D	VAT-K42E_ASH01A06	Ashville Bridge Creek - Lower	0.02 SQUARE MILES
5D	VAT-K42E_BBC01A04	Beggars Bridge Creek	0.04 SQUARE MILES
5F	VAP-K11R_FON01A02	Fontaine Creek	12.04 MILES
5F	VAP-K11R_FON03A98	Fontaine Creek (aka Fountains Creek)	7.30 MILES
5F	VAP-K23R_HRA01A04	Hatcher Run	3.89 MILES
5F	VAP-K29R_ASM01A98	Assamoosick Swamp	15.41 MILES
5F	VAP-K31R_SEC01B10	Second Swamp	6.91 MILES

Tennessee and Big Sandy River Basins

Overall Category	305(b) ID	Waterbody Name	Size
2A	VAS-O01R_CMR01A02	Comers Creek	7.35 MILES
2A	VAS-O01R_CRS01B04	Cressy Creek	1.62 MILES
2A	VAS-O01R_HUR01A02	Hurricane Creek	3.90 MILES
2A	VAS-O01R_PRK01A02	Parks Creek	2.33 MILES
2A	VAS-O01R_ROW02A02	Rowland Creek	3.29 MILES
2A	VAS-O01R_SFH02A00	South Fork Holston River	4.80 MILES
2A	VAS-O01R_SLM01A06	Slemp Creek	1.22 MILES
2A	VAS-O02R_BLC02A04	Big Laurel Creek	4.22 MILES
2A	VAS-O02R_FEA01A02	Feathercamp Branch	1.92 MILES
2A	VAS-O02R_GRE01A02	Green Cove Creek	6.26 MILES
2A	VAS-O02R_LAL01A04	Laurel Creek	6.09 MILES
2A	VAS-O02R_SGT02A04	Straight Branch	2.57 MILES
2A	VAS-O02R_STU01A02	Sturgill Branch	2.66 MILES
2A	VAS-O02R_WLC01A06	Whitetop Laurel Creek	3.19 MILES
2A	VAS-O02R_WLC02A12	Whitetop Laurel Creek	3.49 MILES
2A	VAS-O02R_WLC02B12	Whitetop Laurel Creek	3.34 MILES
2A	VAS-O03R_BER02A04	Bear Creek	4.15 MILES
2A	VAS-O03R_ENI01A02	East Fork Nicks Creek	2.91 MILES
2A	VAS-O03R_HUT01A10	Hutton Branch	1.78 MILES
2A	VAS-O04R_HUN02B04	Hungry Mother Creek & tributaries	24.49 MILES
2A	VAS-O09R_NFH01A98	North Fork Holston River	1.74 MILES
2A	VAS-O10R_CVB01A04	Cove Branch	2.70 MILES
2A	VAS-O10R_LAE02B02	Laurel Creek	7.69 MILES
2A	VAS-O10R_LAE02C04	Laurel Creek	3.65 MILES
2A	VAS-O10R_LTC01B04	Little Tumbling Creek	5.21 MILES
2A	VAS-O10R_NFH03A98	North Fork Holston River	4.22 MILES
2A	VAS-O10R_ROA01A02	Roaring Fork	5.94 MILES
2A	VAS-O11R_BNN01A16	Barnett Hollow	2.29 MILES
2A	VAS-O11R_BRU01A00	Brumley Creek	8.90 MILES
2A	VAS-O11R_LAU01A04	Laurel Bed Creek	1.77 MILES
2A	VAS-O11R_LAU02A16	Laurel Bed Creek	5.41 MILES
2A	VAS-O11R_RED01A04	Red Creek	3.48 MILES
2A	VAS-O11R_TUM01A00	Tumbling Creek	1.59 MILES
2A	VAS-O11R_TUM02A04	Tumbling Creek	5.54 MILES
2A	VAS-O11R_WOL01A02	Wolf Creek	0.95 MILES
2A	VAS-O12R_NOR01A02	Nordyke Creek	6.14 MILES
2A	VAS-O12R_XEO01A12	Rich Valley unnamed tributary	0.85 MILES
2A	VAS-O12R_XFB01A16	North Fork Holston tributary	2.37 MILES
2A	VAS-O14R_BMC02A00	Big Moccasin Creek	0.66 MILES
2A	VAS-O14R_BMC03A00	Big Moccasin Creek	5.11 MILES
2A	VAS-O14R_BMC04A02	Big Moccasin Creek	10.21 MILES
2A	VAS-P01R_JNN01A04	Johnson Branch	3.47 MILES
2A	VAS-P02R_LOW01A10	Lowe Branch	0.59 MILES
2A	VAS-P02R_PON01A10	Pounding Mill Branch	4.34 MILES
2A	VAS-P04R_BLC01A10	Big Lick Creek	5.21 MILES
2A	VAS-P05R_HOG01A10	Hogwallow Branch	3.58 MILES
2A	VAS-P05R_IDN02A10	Indian Creek	0.90 MILES
2A	VAS-P05R_KAT01A10	Katie Branch	3.54 MILES
2A	VAS-P05R_LTR01A00	Little River	14.03 MILES
2A	VAS-P05R_LTR03A10	Little River	8.11 MILES
2A	VAS-P05R_MSC01B04	Maiden Spring Creek	6.83 MILES
2A	VAS-P06R_LTL01A10	Little Cedar Creek	6.04 MILES
2A	VAS-P07R_BRE01A10	Breezers Branch & tributaries	5.27 MILES
2A	VAS-P07R_MIF02A14	Mill Creek	2.68 MILES
2A	VAS-P09R_CAT01A10	Castle Run	2.93 MILES
2A	VAS-P09R_COC01A02	Cowan Creek	4.15 MILES
2A	VAS-P09R_LSR01A02	Little Stony Creek	2.73 MILES
2A	VAS-P09R_LSR02A02	Little Stony Creek	5.38 MILES
2A	VAS-P09R_SNK01A00	Sinking Creek	10.96 MILES
2A	VAS-P09R_XDJ01A04	Beaver Hollow	2.36 MILES
2A	VAS-P10R_HON01A14	Honey Branch	2.89 MILES
2A	VAS-P11L_XAR01A02	Wise Reservoir	46.11 ACRES
2A	VAS-P11R_BUC01A02	Burns Creek & tributaries	4.55 MILES
2A	VAS-P11R_CRC01A02	Clear Creek	3.77 MILES
2A	VAS-P11R_CRC01B10	Clear Creek	0.58 MILES
2A	VAS-P11R_JAY01A02	Jaybird Branch	2.52 MILES
2A	VAS-P11R_MAH01A00	Machine Creek	2.24 MILES
2A	VAS-P11R_MAH02A14	Machine Creek	1.02 MILES
2A	VAS-P12R_SNY01A00	Stony Creek	2.74 MILES
2A	VAS-P12R_SNY01A04	Stony Creek	5.25 MILES
2A	VAS-P13R_RIC01A14	Richmond Branch	1.98 MILES
2A	VAS-P13R_STO03A00	Stock Creek	5.32 MILES
2A	VAS-P14R_AMO01A02	Amos Branch	3.29 MILES
2A	VAS-P14R_COP01A02	Copper Creek	9.81 MILES
2A	VAS-P14R_COP01B04	Copper Creek	4.11 MILES
2A	VAS-P14R_CUL01A10	Culbertson Creek & tributaries	5.91 MILES
2A	VAS-P14R_GSY01A10	Grassy Creek & tributaries	7.74 MILES
2A	VAS-P14R_PLC01A10	Plank Camp Creek & tributaries	4.74 MILES
2A	VAS-P14R_VAL02A02	Valley Creek	6.79 MILES
2A	VAS-P15R_NFC01A00	North Fork Clinch River	4.55 MILES
2A	VAS-P15R_NFC02A10	North Fork Clinch River	2.77 MILES
2A	VAS-P15R_PAT01A10	Pattonsville Branch	3.30 MILES
2A	VAS-P17R_BLK01B14	Black Creek headwaters	0.23 MILES
2A	VAS-P17R_BLU01A10	Bluff Spur	1.20 MILES
2A	VAS-P17R_KEL01A14	Kelly Branch	2.32 MILES
2A	VAS-P17R_LAF01A14	Laurel Fork	2.74 MILES
2A	VAS-P17R_LOC01B14	Looney Creek & tributaries	1.67 MILES
2A	VAS-P17R_MRB01A14	Miller Branch	1.37 MILES
2A	VAS-P17R_PRE01A06	Preacher Creek	4.12 MILES
2A	VAS-P17R_WHT01A14	Whitley Fork	2.17 MILES
2A	VAS-P17R_XHP01A14	Callahan Creek tributary	1.13 MILES
2A	VAS-P17R_XHQ01A14	Kelly Creek tributary	1.24 MILES
2A	VAS-P17R_XHU01A14	Unnamed tributary to Powell River	1.71 MILES
2A	VAS-P17R_XHX01A14	Powell River tributary	0.28 MILES
2A	VAS-P18R_BEV01A10	Beaverdam Creek	4.03 MILES
2A	VAS-P20R_BUY01A12	Bundy Creek	1.23 MILES
2A	VAS-P20R_GIN01A00	Gin Creek	2.59 MILES
2A	VAS-P20R_PWL03A02	North Fork Powell River	6.84 MILES
2A	VAS-P21R_SIM01A02	Sims Creek	1.08 MILES
2A	VAS-P22R_WAL01A00	Wallen Creek	2.04 MILES
2A	VAS-P23R_POW01A00	Powell River	3.69 MILES
2A	VAS-Q01R_DRK01A98	Dry Fork	11.61 MILES
2A	VAS-Q04R_CNT01A10	Contrary Creek	1.47 MILES

Overall Category	305(b) ID	Waterbody Name	Size
2A	VAS-Q04R_GOO01A10	Grassy Creek	5.06 MILES
2A	VAS-Q04R_LEV01B06	Levisa Fork	6.30 MILES
2A	VAS-Q06R_BIP01A98	Big Prater Creek	1.10 MILES
2A	VAS-Q07R_SAT01B02	Slate Creek	9.37 MILES
2A	VAS-Q08R_CNW02B14	Tributaries to Conaway Creek	1.79 MILES
2A	VAS-Q09R_ABR01A10	Abner Branch	1.87 MILES
2A	VAS-Q09R_FOX01A06	Fox Creek	3.53 MILES
2A	VAS-Q10R_FRY01A04	Fryingpan Creek	0.89 MILES
2A	VAS-Q10R_FRY01A14	Fryingpan Creek	2.01 MILES
2A	VAS-Q10R_LAF01A06	Lick Creek	1.24 MILES
2A	VAS-Q10R_LLF01A06	Left Fork Lick Creek	2.14 MILES
2A	VAS-Q10R_PAW01A12	Pawpaw Creek	2.24 MILES
2A	VAS-Q11R_CEY01A04	Caney Creek	5.15 MILES
2A	VAS-Q11R_HAT01A08	Hatchet Creek	1.45 MILES
2A	VAS-Q11R_HNE01A14	Honey Branch	2.76 MILES
2A	VAS-Q11R_MCR01A00	McClure River	3.99 MILES
2A	VAS-Q11R_OMF01A14	Middle Fork	3.24 MILES
2A	VAS-Q11R_OPF01A02	Open Fork	2.33 MILES
2A	VAS-Q11R_SPK01A08	Spring Fork	1.01 MILES
2A	VAS-Q12R_BAI01A08	Barts Lick Creek	5.91 MILES
2A	VAS-Q13L_PNK01A02	North Fork Pound Reservoir	115.60 ACRES
2A	VAS-Q13R_BAR01A02	Bad Creek	1.64 MILES
2A	VAS-Q13R_PLL01A02	Phillips Creek	1.98 MILES
2A	VAS-Q13R_PNR02B02	Pound River	3.22 MILES
2A	VAS-Q13R_PNR02C02	Pound River	1.35 MILES
2A	VAS-Q13R_XRM01A16	Unnamed tributary	0.45 MILES
2A	VAS-Q13R_XRN01A16	South Fork Pound River tributary	0.91 MILES
2A	VAS-Q13R_XRP01A16	South Fork Pound River tributary	0.82 MILES
2A	VAS-Q14R_RLF01A14	Left Fork Rush Creek	2.41 MILES
2B	VAS-P02R_CLN02A02	Clinch River, headwaters	9.21 MILES
2B	VAS-P02R_CLN02B02	Clinch River	6.82 MILES
2B	VAS-P04R_CLN01A00	Clinch River	11.84 MILES
2B	VAS-P04R_CLN02A02	Clinch River	5.89 MILES
2B	VAS-P09R_CLN02A02	Clinch River	4.73 MILES
2B	VAS-P11R_MIA01A08	Mill Creek	2.24 MILES
2B	VAS-P13R_CLN03A02	Clinch River	3.45 MILES
2B	VAS-P15R_COB01A10	Cox Branch	2.23 MILES
3A	VAS-O01R_BCK01A02	Bark Camp Branch	1.49 MILES
3A	VAS-O01R_BEL01A06	Bell Hollow	0.89 MILES
3A	VAS-O01R_BSH01A10	Bishop Branch	2.29 MILES
3A	VAS-O01R_COL01A02	Cold Branch	0.96 MILES
3A	VAS-O01R_CRS01A02	Cressy Creek	2.36 MILES
3A	VAS-O01R_DFK01A02	Dry Fork	3.87 MILES
3A	VAS-O01R_DIC01A02	Dickey Creek	4.60 MILES
3A	VAS-O01R_DIC01A04	Dickey Creek	0.68 MILES
3A	VAS-O01R_DNS01A04	Deans Branch	2.20 MILES
3A	VAS-O01R_HOP01A02	Hopkins Branch	6.24 MILES
3A	VAS-O01R_HOU01A02	Houndshell Branch	2.62 MILES
3A	VAS-O01R_HTN01A06	Hutton Branch	1.14 MILES
3A	VAS-O01R_JER01A02	Jerrys Creek	1.82 MILES
3A	VAS-O01R_JER01A04	Jerrys Creek	4.03 MILES
3A	VAS-O01R_QRT01A02	Quarter Branch	1.85 MILES
3A	VAS-O01R_RAC01A02	Raccoon Branch	3.07 MILES
3A	VAS-O01R_ROC01A04	Rocky Hollow	1.66 MILES
3A	VAS-O01R_ROW01A02	Rowland Creek	2.59 MILES
3A	VAS-O01R_SCO01A02	Scott Branch	1.28 MILES
3A	VAS-O01R_STC02A04	Saint Clair Creek	1.64 MILES
3A	VAS-O01R_TMR01A04	Tramroad Hollow	1.10 MILES
3A	VAS-O01R_XCI01A02	Incline Hollow	1.32 MILES
3A	VAS-O01R_XCJ01A02	Cressy Creek tributary	1.17 MILES
3A	VAS-O01R_ZZZ01A00	Unsegmented rivers in TH01	55.58 MILES
3A	VAS-O01R_ZZZ02A00	Unsegmented rivers in TH02	50.15 MILES
3A	VAS-O02R_BEA01A02	Bear Branch	1.79 MILES
3A	VAS-O02R_BIG01A02	Big Branch	1.94 MILES
3A	VAS-O02R_BKE01A04	Buckeye Branch	2.13 MILES
3A	VAS-O02R_BLC01A02	Big Laurel Creek and tributaries	3.72 MILES
3A	VAS-O02R_BRS01A02	Brush Creek	1.89 MILES
3A	VAS-O02R_BUZ01A02	Buzzard Den Branch	3.17 MILES
3A	VAS-O02R_CHR01A06	Charlies Branch	1.47 MILES
3A	VAS-O02R_DAV01A04	Daves Branch	2.04 MILES
3A	VAS-O02R_DEL01A04	Dell's Branch	1.95 MILES
3A	VAS-O02R_GIM01A02	Gimlet Branch	2.28 MILES
3A	VAS-O02R_GRD01A04	Grindstone Branch	1.08 MILES
3A	VAS-O02R_GRS01A04	Grassy Branch	1.71 MILES
3A	VAS-O02R_HNR01A02	Henry Widener Branch	3.28 MILES
3A	VAS-O02R_HTB01A06	High Trestle Branch	1.37 MILES
3A	VAS-O02R_KET01A02	Ketchum Branch	2.35 MILES
3A	VAS-O02R_LLC01A04	Little Laurel Creek	4.59 MILES
3A	VAS-O02R_LND01A02	London Bridge Branch	0.59 MILES
3A	VAS-O02R_LOU01A02	Louse Creek	4.30 MILES
3A	VAS-O02R_MLC01A02	Mill Creek	5.78 MILES
3A	VAS-O02R_RUS01A02	Rush Creek	2.29 MILES
3A	VAS-O02R_RUS02A02	Rush Creek	4.74 MILES
3A	VAS-O02R_SFH01A00	South Fork Holston River	1.85 MILES
3A	VAS-O02R_SGT01A02	Straight Branch	6.94 MILES
3A	VAS-O02R_STR01A04	Star Hill Branch	1.86 MILES
3A	VAS-O02R_SUG01A02	Sugarcamp Branch	1.31 MILES
3A	VAS-O02R_VAL01A02	Valley Creek	2.48 MILES
3A	VAS-O02R_ZZZ01A00	Unsegmented rivers in TH03	102.03 MILES
3A	VAS-O02R_ZZZ02A00	Unsegmented rivers in O02	59.86 MILES
3A	VAS-O02R_ZZZ03A00	Unsegmented rivers in TH05	1.52 MILES
3A	VAS-O02R_ZZZ04A00	Unsegmented rivers inTH06	33.16 MILES
3A	VAS-O02R_ZZZ05A00	Unsegmented rivers in TH07	33.82 MILES
3A	VAS-O03R_DRN01A02	Tributaries to Middle Fork Holston	9.09 MILES
3A	VAS-O03R_DRU01A04	Dry Run	1.73 MILES
3A	VAS-O03R_DUT01A04	Dulton Branch	3.31 MILES
3A	VAS-O03R_DVS01A06	Davis Hollow	1.68 MILES
3A	VAS-O03R_NIK01A02	Nicks Creek	1.95 MILES
3A	VAS-O03R_NIK02A02	Nicks Creek	3.35 MILES
3A	VAS-O03R_STA02A04	Staley Creek	1.45 MILES
3A	VAS-O03R_XDM01A02	Waddle Hollow	2.43 MILES
3A	VAS-O03R_XDN01A02	Overbay Hollow	1.97 MILES
3A	VAS-O03R_ZZZ01A00	Unsegmented rivers in TH08	53.34 MILES
3A	VAS-O03R_ZZZ02A00	Unsegmented rivers in TH09	13.11 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAS-O03R_ZZZ03A00	Unsegmented rivers in TH10	36.59 MILES
3A	VAS-O04R_CAR01A02	Carlock Creek & tributaries	6.34 MILES
3A	VAS-O04R_MTV01A06	Mitchell Valley	2.21 MILES
3A	VAS-O04R_PRS01A04	Preston Hollow	2.09 MILES
3A	VAS-O04R_ZZZ01A00	Unsegmented rivers in TH11	8.91 MILES
3A	VAS-O04R_ZZZ02A00	Unsegmented rivers in TH12	87.40 MILES
3A	VAS-O05R_IDR01A02	Indian Run	2.90 MILES
3A	VAS-O05R_MFH01B10	Middle Fork Holston River	5.17 MILES
3A	VAS-O05R_MFH02A00	Middle Fork Holston River	5.00 MILES
3A	VAS-O05R_RIC01A02	Richardson Branch	2.18 MILES
3A	VAS-O05R_WCF01A02	West Fork Hall Creek	1.18 MILES
3A	VAS-O05R_WFH01A02	East Fork Hall Creek	3.17 MILES
3A	VAS-O05R_XCB01A02	Hutton tributary	1.80 MILES
3A	VAS-O05R_XCC01A02	Plum Creek tributary	0.57 MILES
3A	VAS-O05R_ZZZ01A00	Unsegmented rivers in TH13	80.06 MILES
3A	VAS-O05R_ZZZ01B00	Unsegmented PWS in TH14, BVUB	8.16 MILES
3A	VAS-O05R_ZZZ02A00	Unsegmented rivers inTH14	80.83 MILES
3A	VAS-O05R_ZZZ02B00	Unsegmented PWS in TH14, WCWA	25.41 MILES
3A	VAS-O06R_BRR01A02	Berry Creek	1.99 MILES
3A	VAS-O06R_CXC01A02	Cox Mill Creek & tributaries	10.26 MILES
3A	VAS-O06R_SFH01A00	South Fork Holston Reservoir tributaries	22.16 MILES
3A	VAS-O06R_SPR02A10	Spring Creek	6.91 MILES
3A	VAS-O06R_ZZZ01A00	Unsegmented rivers in TH15	28.88 MILES
3A	VAS-O06R_ZZZ02A00	Unsegmented rivers in TH16	21.52 MILES
3A	VAS-O06R_ZZZ02B00	Unsegmented rivers in TH16	31.65 MILES
3A	VAS-O06R_ZZZ03A00	Unsegmented rivers in TH17	6.98 MILES
3A	VAS-O06R_ZZZ04A00	Unsegmented rivers in TH18	31.28 MILES
3A	VAS-O06R_ZZZ05A00	Unsegmented rivers in TH19	3.92 MILES
3A	VAS-O07R_CLE01A02	Clear Creek	2.88 MILES
3A	VAS-O07R_GOS01A06	Goose Creek	3.31 MILES
3A	VAS-O07R_XEC01A06	Unnamed tributary to Beaver Creek	0.21 MILES
3A	VAS-O07R_ZZZ01A00	Unsegmented rivers in TH20	33.16 MILES
3A	VAS-O07R_ZZZ02A00	Unsegmented rivers in TH21	92.19 MILES
3A	VAS-O07R_ZZZ03A00	Unsegmented rivers in TH22	12.32 MILES
3A	VAS-O08R_ZZZ01A00	Unsegmented rivers in TH23	37.35 MILES
3A	VAS-O09R_BTO01A04	Beartown Branch	2.14 MILES
3A	VAS-O09R_CAM01A02	Campbell Creek	1.19 MILES
3A	VAS-O09R_CAM02A02	Campbell Creek	0.80 MILES
3A	VAS-O09R_HEN01A02	Heninger Branch	1.31 MILES
3A	VAS-O09R_HSW01A06	Henshaw Branch	1.00 MILES
3A	VAS-O09R_LIB02A00	Lick Creek	11.26 MILES
3A	VAS-O09R_LSR01A04	Little Sprouts Creek & tributaries	5.43 MILES
3A	VAS-O09R_LYN01A02	Lynn Camp Creek	5.42 MILES
3A	VAS-O09R_PSM01A02	Possum Creek	5.21 MILES
3A	VAS-O09R_SRU01A02	Sprouts Creek & tributaries	5.43 MILES
3A	VAS-O09R_ZZZ01A00	Unsegmented rivers in TH24	54.58 MILES
3A	VAS-O09R_ZZZ02A00	Unsegmented rivers in TH25	31.02 MILES
3A	VAS-O09R_ZZZ03A00	Unsegmented rivers in TH26	52.65 MILES
3A	VAS-O10R_BKC01A04	Barkcamp Branch & tributaries	3.92 MILES
3A	VAS-O10R_CON01A04	Coon Branch	1.92 MILES
3A	VAS-O10R_PJC01A04	Punch And Judy Creek	3.28 MILES
3A	VAS-O10R_ZZZ01A00	Unsegmented rivers in TH27	38.62 MILES
3A	VAS-O10R_ZZZ02A00	Unsegmented rivers in TH28	73.19 MILES
3A	VAS-O10R_ZZZ03A00	Unsegmented rivers in TH29	52.51 MILES
3A	VAS-O11R_BRI01A06	Brier Cove	2.69 MILES
3A	VAS-O11R_LTU01A04	Little Tumbling Creek	3.32 MILES
3A	VAS-O11R_MCH01A02	McHenry Creek	3.17 MILES
3A	VAS-O11R_STM01A02	Stonemill Creek	7.17 MILES
3A	VAS-O11R_TUM01B00	Tumbling Creek	10.79 MILES
3A	VAS-O11R_ZZZ01A00	Unsegmented rivers in TH30	25.52 MILES
3A	VAS-O11R_ZZZ02A00	Unsegmented rivers in TH31	139.98 MILES
3A	VAS-O11R_ZZZ03A00	Unsegmented rivers in TH32	89.59 MILES
3A	VAS-O11R_ZZZ04A00	Unsegmented rivers in TH33	111.05 MILES
3A	VAS-O11R_ZZZ05A00	Unsegmented rivers in TH34	91.79 MILES
3A	VAS-O11R_ZZZ06A00	Unsegmented rivers in TH35 (O11)	31.30 MILES
3A	VAS-O12R_LIT01A00	Little Creek	4.03 MILES
3A	VAS-O12R_XCH01A04	Tributary to North Fork Holston River	1.67 MILES
3A	VAS-O12R_ZZZ01A00	Unsegmented rivers in TH35 (O12)	124.75 MILES
3A	VAS-O12R_ZZZ02A00	Unsegmented rivers in TH36	35.91 MILES
3A	VAS-O12R_ZZZ03A00	Unsegmented rivers in TH37	85.44 MILES
3A	VAS-O12R_ZZZ04A00	Unsegmented rivers in TH38	67.64 MILES
3A	VAS-O12R_ZZZ05A00	Unsegmented rivers in TH39	99.07 MILES
3A	VAS-O12R_ZZZ06A00	Unsegmented rivers in TH40	74.86 MILES
3A	VAS-O13R_HIL01A00	Hilton Creek	0.89 MILES
3A	VAS-O13R_PSM02B06	Possum Creek	6.03 MILES
3A	VAS-O13R_ZZZ01A00	Unsegmented rivers in TH41	147.21 MILES
3A	VAS-O13R_ZZZ02A00	Unsegmented rivers in TH44	78.84 MILES
3A	VAS-O13R_ZZZ03A00	Unsegmented rivers in TH45	15.36 MILES
3A	VAS-O14R_LMC01A00	Little Moccasin Creek	1.40 MILES
3A	VAS-O14R_ZZZ01A00	Unsegmented rivers in TH42	172.68 MILES
3A	VAS-O14R_ZZZ02A00	Unsegmented rivers in TH43	182.98 MILES
3A	VAS-O14R_ZZZ02B00	Unsegmented PWS rivers in TH43	32.35 MILES
3A	VAS-P01R_CAV01A02	Cavitts Creek	1.53 MILES
3A	VAS-P01R_CAV02A02	Cavitts Creek	1.36 MILES
3A	VAS-P01R_DIV01A02	Divides PWS	0.03 MILES
3A	VAS-P01R_LIN01A10	Lincolnshire Branch & tributaries	5.52 MILES
3A	VAS-P01R_NCL01B04	North Fork Clinch River	3.26 MILES
3A	VAS-P01R_SFK01B10	South Fork Clinch River tributaries	3.71 MILES
3A	VAS-P01R_ZZZ01A00	Unsegmented rivers in TC01	59.16 MILES
3A	VAS-P01R_ZZZ01B00	Unsegmented PWS in TC01-Tazewell PWS	34.40 MILES
3A	VAS-P02R_ZZZ01A00	Unsegmented rivers in TC02	54.30 MILES
3A	VAS-P02R_ZZZ01B00	Unsegmented PWS in TC02	1.33 MILES
3A	VAS-P02R_ZZZ02A00	Unsegmented rivers in TC03	63.94 MILES
3A	VAS-P03R_MID02A98	Middle Creek	8.12 MILES
3A	VAS-P03R_THC02A16	Town Hill Creek	10.72 MILES
3A	VAS-P03R_XAS01A00	Murry Hollow	1.43 MILES
3A	VAS-P03R_XAZ01A10	Unnamed tributary, Jewell Ridge PWS	0.42 MILES
3A	VAS-P03R_ZZZ01A00	Unsegmented rivers in TC04	89.37 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAS-P03R_ZZZ02B00	Unsegmented rivers in P03, PWS	5.52 MILES
3A	VAS-P04R_HES02A16	Hess Creek	6.43 MILES
3A	VAS-P04R_LUR01A08	Laurel Branch	1.51 MILES
3A	VAS-P04R_LWS02A16	Lewis Creek	2.54 MILES
3A	VAS-P04R_MLG01A02	Mill Creek	2.20 MILES
3A	VAS-P04R_SUL01A16	Sulpher Spring Branch	4.87 MILES
3A	VAS-P04R_WPH01A16	Wolfpen Hollow	0.73 MILES
3A	VAS-P04R_XRC01A16	Hess Creek tributary	2.69 MILES
3A	VAS-P04R_XRE01A16	Strow Creek tributary	0.48 MILES
3A	VAS-P04R_XRF01A16	Lewis Creek tributary	0.40 MILES
3A	VAS-P04R_XRO01A16	Hess Creek tributary	0.50 MILES
3A	VAS-P04R_ZZZ01A00	Unsegmented rivers in TC05	61.71 MILES
3A	VAS-P04R_ZZZ02A00	Unsegmented rivers in TC10	44.13 MILES
3A	VAS-P04R_ZZZ03A00	Unsegmented rivers in TC11	41.25 MILES
3A	VAS-P05R_LIB01A02	Liberty Creek	1.88 MILES
3A	VAS-P05R_LIB02A04	Liberty Creek	1.89 MILES
3A	VAS-P05R_ZZZ01A00	Unsegmented rivers in TC06	93.49 MILES
3A	VAS-P05R_ZZZ02A00	Unsegmented rivers in TC07	46.21 MILES
3A	VAS-P05R_ZZZ02B00	Unsegmented rivers in TC07, PWS	5.33 MILES
3A	VAS-P05R_ZZZ03A00	Unsegmented rivers in TC08	23.17 MILES
3A	VAS-P05R_ZZZ04A00	Unsegmented rivers in TC09	42.55 MILES
3A	VAS-P06R_MOU01A06	Mountain Branch	2.41 MILES
3A	VAS-P06R_ZZZ01A00	Unsegmented rivers in TC12	87.22 MILES
3A	VAS-P06R_ZZZ02A00	Unsegmented rivers in TC13	119.09 MILES
3A	VAS-P07R_ZZZ01A00	Unsegmented rivers in TC14	101.95 MILES
3A	VAS-P08R_DUM02A16	Dumps Creek	1.88 MILES
3A	VAS-P08R_DUM02B16	Dumps Creek	2.95 MILES
3A	VAS-P08R_HRI01A16	Hurricane Fork	1.12 MILES
3A	VAS-P08R_MDF01A16	Middle Fork	3.81 MILES
3A	VAS-P08R_ZZZ01A00	Unsegmented rivers in TC15	70.60 MILES
3A	VAS-P09R_DAV01A02	Davey Land Branch	1.70 MILES
3A	VAS-P09R_DRL02B16	Dry Fork	1.39 MILES
3A	VAS-P09R_GRY01A00	Gray Branch	1.40 MILES
3A	VAS-P09R_HAG01A02	Hagan Spring Branch	1.51 MILES
3A	VAS-P09R_JOE01A02	Joel Branch	1.36 MILES
3A	VAS-P09R_LSR01B02	Little Stony Creek	1.62 MILES
3A	VAS-P09R_LSR01C02	Little Stony Creek tributaries	3.48 MILES
3A	VAS-P09R_LSR03A06	Little Stony Creek tributaries	11.60 MILES
3A	VAS-P09R_LSR03B10	Little Stony Creek	0.67 MILES
3A	VAS-P09R_MCH01A02	McGhee Creek	3.36 MILES
3A	VAS-P09R_MIC01A04	Mill Creek	1.94 MILES
3A	VAS-P09R_RBF01A02	Robinson Branch	1.01 MILES
3A	VAS-P09R_ROB01A04	Robinette Branch	1.21 MILES
3A	VAS-P09R_XRG01A16	Hall Hollow tributary	0.34 MILES
3A	VAS-P09R_XRH01A16	Dry Fork tributary	0.59 MILES
3A	VAS-P09R_ZZZ01A00	Unsegmented rivers in TC16	31.45 MILES
3A	VAS-P09R_ZZZ01B00	Unsegmented PWS in TC16	19.78 MILES
3A	VAS-P09R_ZZZ02A00	Unsegmented rivers in TC18	11.34 MILES
3A	VAS-P09R_ZZZ02B00	Unsegmented PWS tributaries in TC18	53.52 MILES
3A	VAS-P09R_ZZZ03A00	Unsegmented rivers in TC22	29.66 MILES
3A	VAS-P09R_ZZZ04A00	Unsegmented rivers in TC23	64.40 MILES
3A	VAS-P10R_ZZZ01A00	Unsegmented rivers in TC17	48.82 MILES
3A	VAS-P11R_BER03A00	Bear Creek	3.14 MILES
3A	VAS-P11R_LST01A06	Lost Creek	2.00 MILES
3A	VAS-P11R_PCC01A98	Pine Camp Creek	2.77 MILES
3A	VAS-P11R_SEP01A98	Sepulcher Creek	2.92 MILES
3A	VAS-P11R_XCD01A16	Guest River tributary	1.41 MILES
3A	VAS-P11R_ZZZ01A00	Unsegmented rivers in TC19	49.52 MILES
3A	VAS-P11R_ZZZ02A00	Unsegmented rivers in TC20	11.14 MILES
3A	VAS-P11R_ZZZ02B00	Unsegmented PWS in TC20	3.53 MILES
3A	VAS-P11R_ZZZ03A00	Unsegmented rivers in TC21	83.74 MILES
3A	VAS-P12R_CHI01A02	Chimney Rock Fork	2.10 MILES
3A	VAS-P12R_MHG01A02	Mahogany Spring Branch & tributaries	2.80 MILES
3A	VAS-P12R_SNY02A00	Stony Creek	6.71 MILES
3A	VAS-P12R_ZZZ01A00	Unsegmented rivers in TC24	78.76 MILES
3A	VAS-P13R_COV01A02	Cove Creek	5.63 MILES
3A	VAS-P13R_DRY01A02	Dry Creek	3.12 MILES
3A	VAS-P13R_LUF01A00	Laurel Fork	3.61 MILES
3A	VAS-P13R_PAL01A06	Palmer Branch	1.37 MILES
3A	VAS-P13R_PWR01A02	Powers Branch	2.49 MILES
3A	VAS-P13R_PWR02A10	Powers Branch	0.81 MILES
3A	VAS-P13R_RNT01A10	Robinette Valley	3.52 MILES
3A	VAS-P13R_STK01A02	Stinking Creek	1.78 MILES
3A	VAS-P13R_STO03B04	Stock Creek	0.10 MILES
3A	VAS-P13R_STO03B10	Stock Creek	0.37 MILES
3A	VAS-P13R_STO04B10	Stock Creek	2.79 MILES
3A	VAS-P13R_WLF01A02	Wolf Creek	1.82 MILES
3A	VAS-P13R_ZZZ01A00	Unsegmented rivers in TC25	31.77 MILES
3A	VAS-P13R_ZZZ02A00	Unsegmented rivers in TC26	52.19 MILES
3A	VAS-P13R_ZZZ03A00	Unsegmented rivers in TC27	101.39 MILES
3A	VAS-P13R_ZZZ04A00	Unsegmented rivers in TC33	65.93 MILES
3A	VAS-P14R_AMO02A02	Amos Branch	1.34 MILES
3A	VAS-P14R_GIL01A02	Gillinswater Branch	3.01 MILES
3A	VAS-P14R_JES01A02	Jessee Branch	2.06 MILES
3A	VAS-P14R_LAR01A02	Lark Creek	3.31 MILES
3A	VAS-P14R_OBE01A02	Obeys Creek	2.55 MILES
3A	VAS-P14R_OBE02A02	Obeys Creek	5.50 MILES
3A	VAS-P14R_PET01A02	Peters Branch	2.74 MILES
3A	VAS-P14R_SRG01A02	Strong Branch	2.43 MILES
3A	VAS-P14R_ZZZ01A00	Unsegmented rivers in TC28	97.06 MILES
3A	VAS-P14R_ZZZ02A00	Unsegmented rivers in TC29	37.17 MILES
3A	VAS-P14R_ZZZ03A00	Unsegmented rivers in TC30	110.41 MILES
3A	VAS-P15R_CLL01A02	Collier Hollow	3.60 MILES
3A	VAS-P15R_DRA01A08	Dry Branch	3.22 MILES
3A	VAS-P15R_LOV01A02	Lovelady Creek & tributaries	4.81 MILES
3A	VAS-P15R_NFC01B10	North Fork Clinch River tributaries	2.58 MILES
3A	VAS-P15R_SPU01A10	Spurlock Branch	1.30 MILES
3A	VAS-P15R_ZZZ01A00	Unsegmented rivers in TC31	60.40 MILES
3A	VAS-P15R_ZZZ02A00	Unsegmented rivers in TC32	77.81 MILES
3A	VAS-P16R_ZZZ01A00	Unsegmented rivers in TC34	51.80 MILES
3A	VAS-P16R_ZZZ02A00	Unsegmented rivers in TC35	0.55 MILES
3A	VAS-P17R_BEN01A00	Benges Branch	1.72 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAS-P17R_BEN02A00	Benges Branch & tributaries	2.67 MILES
3A	VAS-P17R_BNS01A04	Bens Branch	1.83 MILES
3A	VAS-P17R_LIK01A16	Lick Branch	3.14 MILES
3A	VAS-P17R_POM01A16	Pounding Mill Branch	1.93 MILES
3A	VAS-P17R_POT01B16	Potcamp Branch	2.50 MILES
3A	VAS-P17R_RBT01A14	Benges Branch	1.09 MILES
3A	VAS-P17R_RRN01A00	Roaring Branch	2.91 MILES
3A	VAS-P17R_XRJ01A16	Looney Creek tributary	0.49 MILES
3A	VAS-P17R_XRK01A16	Looney Creek tributary	0.53 MILES
3A	VAS-P17R_XRM01A16	Looney Creek tributary	0.53 MILES
3A	VAS-P17R_ZZZ01A00	Unsegmented rivers in TP01	13.84 MILES
3A	VAS-P17R_ZZZ02A00	Unsegmented rivers in TP02	51.33 MILES
3A	VAS-P17R_ZZZ03A00	Unsegmented rivers in TP04	18.28 MILES
3A	VAS-P17R_ZZZ04A00	Unsegmented rivers in TP03	28.18 MILES
3A	VAS-P18R_PLL03A00	South Fork Powell River & tributaries	6.32 MILES
3A	VAS-P18R_ZZZ01A00	Unsegmented rivers in TP05	55.56 MILES
3A	VAS-P19R_POW01A00	Powell River	0.30 MILES
3A	VAS-P19R_POW02A00	Powell River & tributaries	16.65 MILES
3A	VAS-P19R_POW04A00	Powell River	10.27 MILES
3A	VAS-P19R_ZZZ01A00	Unsegmented rivers in TP06	65.70 MILES
3A	VAS-P20R_CLC01A16	Colliers Cove	1.13 MILES
3A	VAS-P20R_CRB01A16	Craborchard Creek	1.09 MILES
3A	VAS-P20R_JOR01A16	Jordan Branch	1.36 MILES
3A	VAS-P20R_MAR01A16	Marcum Hollow	0.90 MILES
3A	VAS-P20R_PAY01A02	Payne Branch	1.58 MILES
3A	VAS-P20R_REE01A16	Reeds Creek	2.41 MILES
3A	VAS-P20R_WEL01A16	Wells Branch	2.86 MILES
3A	VAS-P20R_XRN01A16	Cox Creek unnamed tributary	2.36 MILES
3A	VAS-P20R_ZZZ01A00	Unsegmented rivers in TP07	79.59 MILES
3A	VAS-P20R_ZZZ02A00	Unsegmented rivers in TP08	28.89 MILES
3A	VAS-P20R_ZZZ03A00	Unsegmented rivers in TP09	36.51 MILES
3A	VAS-P21R_BTW01A98	Batie Creek	0.77 MILES
3A	VAS-P21R_CHC01A08	Chance Window	0.06 MILES
3A	VAS-P21R_FTB01A00	Fleenortown Creek & tributaries	3.91 MILES
3A	VAS-P21R_LYB01A02	Little Yellow Branch & tributaries	4.22 MILES
3A	VAS-P21R_POW01A00	Powell River	10.65 MILES
3A	VAS-P21R_STN01A02	Station Creek	2.72 MILES
3A	VAS-P21R_SUG01A02	Sugar Run	4.50 MILES
3A	VAS-P21R_TRA01A02	Trading Creek tributaries	5.55 MILES
3A	VAS-P21R_TRA01A12	Trading Creek	4.95 MILES
3A	VAS-P21R_ZZZ01A00	Unsegmented rivers in TP10	43.91 MILES
3A	VAS-P21R_ZZZ02A00	Unsegmented rivers in TP12	23.07 MILES
3A	VAS-P22R_LON01A10	Lone Branch	3.90 MILES
3A	VAS-P22R_WAL03A02	Wallen Creek	8.28 MILES
3A	VAS-P22R_WAL03B02	Wallen Creek	1.52 MILES
3A	VAS-P22R_ZZZ01A00	Unsegmented rivers in TP11	48.89 MILES
3A	VAS-P23R_MTN02A02	Martin Creek tributaries	4.64 MILES
3A	VAS-P23R_POO01A02	Poor Valley Branch	2.57 MILES
3A	VAS-P23R_WHI01A02	White Branch	0.77 MILES
3A	VAS-P23R_WHI02A02	White Branch, headwaters	1.54 MILES
3A	VAS-P23R_ZZZ01A00	Unsegmented rivers in TP14	22.38 MILES
3A	VAS-P23R_ZZZ02A00	Unsegmented rivers in TP13 & TP15	21.88 MILES
3A	VAS-P23R_ZZZ03A00	Unsegmented rivers in TP16	8.85 MILES
3A	VAS-P24R_GAP01A16	Gap Creek	0.14 MILES
3A	VAS-P24R_LIC01A02	Lick Branch	1.31 MILES
3A	VAS-P24R_STT01A14	Station Creek	3.11 MILES
3A	VAS-P24R_ZZZ01A00	Unsegmented rivers in TP18	116.86 MILES
3A	VAS-P24R_ZZZ02A00	Unsegmented rivers in TP17	2.33 MILES
3A	VAS-Q01R_DCD02A16	Dick Creek tributary	0.81 MILES
3A	VAS-Q01R_HRP01A98	Horsepen Creek	2.91 MILES
3A	VAS-Q01R_LAB01A16	Laurel Fork	1.18 MILES
3A	VAS-Q01R_XAP01A00	Crockett's Cove	4.06 MILES
3A	VAS-Q01R_ZZZ01A00	Unsegmented rivers in BS01	20.53 MILES
3A	VAS-Q01R_ZZZ02A00	Unsegmented rivers in BS02	65.90 MILES
3A	VAS-Q02R_LBJ01A04	Long Branch	3.18 MILES
3A	VAS-Q02R_ZZZ01A00	Unsegmented rivers in BS03	13.38 MILES
3A	VAS-Q03R_ZZZ01A00	Unsegmented rivers in BS07	15.63 MILES
3A	VAS-Q04R_WBB01A12	Webb Branch	1.14 MILES
3A	VAS-Q04R_ZZZ01A00	Unsegmented rivers in BS08	58.90 MILES
3A	VAS-Q04R_ZZZ02A00	Unsegmented rivers in BS09	56.35 MILES
3A	VAS-Q05R_HPR02A16	Harper Creek	2.55 MILES
3A	VAS-Q05R_XRB02A16	Dismal Creek tributary	1.52 MILES
3A	VAS-Q05R_XRU01A16	Dismal Creek tributary	0.37 MILES
3A	VAS-Q05R_ZZZ01A00	Unsegmented rivers in BS10	99.50 MILES
3A	VAS-Q05R_ZZZ02A00	Unsegmented rivers in BS11	95.70 MILES
3A	VAS-Q06R_DYF01A04	Dry Fork	4.77 MILES
3A	VAS-Q06R_LRA01A12	Little Prater Creek	3.23 MILES
3A	VAS-Q06R_WTK01A12	Watkins Branch	4.33 MILES
3A	VAS-Q06R_ZZZ01A00	Unsegmented rivers in BS12	95.63 MILES
3A	VAS-Q07R_DTB01A16	Dry Tripe Branch	2.18 MILES
3A	VAS-Q07R_PAY01A16	Payne Branch	1.37 MILES
3A	VAS-Q07R_XRC01A16	Slate Creek tributary	0.77 MILES
3A	VAS-Q07R_ZZZ01A00	Unsegmented rivers in BS13	87.25 MILES
3A	VAS-Q08R_HME01C14	Home Creek	2.26 MILES
3A	VAS-Q08R_HPE01A16	Harper Branch	1.35 MILES
3A	VAS-Q08R_LOB01A12	Left Fork Looney Creek	1.31 MILES
3A	VAS-Q08R_RCK01A12	Rocklick Creek	0.75 MILES
3A	VAS-Q08R_WLF02A16	Wes Lee Fork	0.22 MILES
3A	VAS-Q08R_ZZZ01A00	Unsegmented rivers in BS14	68.73 MILES
3A	VAS-Q08R_ZZZ02A00	Unsegmented rivers in BS15	30.14 MILES
3A	VAS-Q09R_CNB01A16	Cane Branch	0.97 MILES
3A	VAS-Q09R_XRE02A16	Cane Creek tributary	0.42 MILES
3A	VAS-Q09R_XRF01A16	Indian Creek tributary	0.59 MILES
3A	VAS-Q09R_ZZZ01A00	Unsegmented rivers in BS16	81.76 MILES
3A	VAS-Q09R_ZZZ02A00	Unsegmented rivers in BS17	42.94 MILES
3A	VAS-Q09R_ZZZ03A00	Unsegmented rivers in BS18	42.76 MILES
3A	VAS-Q10R_BIR01A16	Big Spruce Pine Branch	2.42 MILES
3A	VAS-Q10R_LSE01A16	Little Spruce Pine Branch	0.79 MILES
3A	VAS-Q10R_ZZZ01A00	Unsegmented rivers in BS19	51.30 MILES
3A	VAS-Q10R_ZZZ02A00	Unsegmented rivers in BS20	74.33 MILES
3A	VAS-Q10R_ZZZ03A00	Unsegmented rivers in BS21	39.76 MILES
3A	VAS-Q11R_CEY02A14	Caney Creek	5.47 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAS-Q11R_CNO01A16	Coon Branch	2.19 MILES
3A	VAS-Q11R_CRO01A08	Crooked Creek	1.39 MILES
3A	VAS-Q11R_ERV01A10	Ervinton School Branch	0.47 MILES
3A	VAS-Q11R_MAC01A16	Mill Creek	1.57 MILES
3A	VAS-Q11R_MCR01C14	Closed Loop of McClure River	0.53 MILES
3A	VAS-Q11R_ZZZ01A00	Unsegmented rivers in BS22	25.82 MILES
3A	VAS-Q11R_ZZZ02A00	Unsegmented rivers in BS23	36.35 MILES
3A	VAS-Q11R_ZZZ03A00	Unsegmented rivers in BS24	54.78 MILES
3A	VAS-Q11R_ZZZ04A00	Unsegmented rivers in BS25	49.62 MILES
3A	VAS-Q12R_DOE01A16	Doe Branch	1.64 MILES
3A	VAS-Q12R_GBC01A16	Greenbrier Creek	4.13 MILES
3A	VAS-Q12R_GSS01A12	Grassy Creek	2.08 MILES
3A	VAS-Q12R_RSS01A00	Russell Fork	4.25 MILES
3A	VAS-Q12R_RSS02A00	Laurel Branch & tributaries	1.55 MILES
3A	VAS-Q12R_RSS04A00	Russell Fork	0.18 MILES
3A	VAS-Q12R_SGG01A02	Skegg Branch & tributaries	3.01 MILES
3A	VAS-Q12R_WPR01A16	Wolfpen Branch	1.40 MILES
3A	VAS-Q12R_XBF01A04	Jappa's Fork	1.61 MILES
3A	VAS-Q12R_XRI01A16	Butcherknife Fork	0.63 MILES
3A	VAS-Q12R_XRK01A16	War Fork tributary	0.49 MILES
3A	VAS-Q12R_XRL01A16	Barts Lick tributary	1.01 MILES
3A	VAS-Q12R_ZZZ01A00	Unsegmented rivers in BS26	38.07 MILES
3A	VAS-Q12R_ZZZ02A00	Unsegmented rivers in BS27	23.74 MILES
3A	VAS-Q12R_ZZZ03A00	Unsegmented rivers in BS35	29.77 MILES
3A	VAS-Q13R_BAC01A02	Bad Creek	2.71 MILES
3A	VAS-Q13R_CLA02A16	Cavenger Hollow	0.39 MILES
3A	VAS-Q13R_DAD01A04	Donald Branch	0.31 MILES
3A	VAS-Q13R_DOO01A16	Dotson Fork	2.35 MILES
3A	VAS-Q13R_DOO01B16	Dotson Fork	1.35 MILES
3A	VAS-Q13R_GRE01A16	Georges Fork	5.52 MILES
3A	VAS-Q13R_IAC01A16	Indian Creek	3.22 MILES
3A	VAS-Q13R_LRR01A02	Laurel Fork	2.29 MILES
3A	VAS-Q13R_MEA01A16	Meade Fork	2.68 MILES
3A	VAS-Q13R_MLL01A16	Mill Branch	1.52 MILES
3A	VAS-Q13R_MUE01A16	Mullins Fork	3.16 MILES
3A	VAS-Q13R_PNK01B16	North Fork Pound River	1.00 MILES
3A	VAS-Q13R_PNR01A02	Pound River	0.51 MILES
3A	VAS-Q13R_PNR01B00	Pound River PWS tributaries	6.09 MILES
3A	VAS-Q13R_RAE01A16	Rat Creek	2.12 MILES
3A	VAS-Q13R_SEE01A02	Skeet Rock Branch	2.01 MILES
3A	VAS-Q13R_XCA03A16	Georges Fork tributary	0.41 MILES
3A	VAS-Q13R_XRO01A16	South Fork Pound River tributary	0.74 MILES
3A	VAS-Q13R_XRQ01A16	Rat Creek tributary	0.30 MILES
3A	VAS-Q13R_ZZZ01A00	Unsegmented rivers in BS28	30.37 MILES
3A	VAS-Q13R_ZZZ02A00	Unsegmented rivers in BS29	38.14 MILES
3A	VAS-Q13R_ZZZ03A00	Unsegmented rivers in BS30	114.35 MILES
3A	VAS-Q13R_ZZZ04A00	Unsegmented rivers in BS34	16.95 MILES
3A	VAS-Q14R_AMB01A16	Ambrose Branch	2.68 MILES
3A	VAS-Q14R_BLD02A16	Birchfield Creek	2.52 MILES
3A	VAS-Q14R_HLY01A04	Holly Creek	4.10 MILES
3A	VAS-Q14R_LFK03A16	Left Fork	1.48 MILES
3A	VAS-Q14R_LMA01A02	Lick Fork	4.20 MILES
3A	VAS-Q14R_MDW02A16	Meadow Branch	0.17 MILES
3A	VAS-Q14R_POW03A16	Powers Branch	0.97 MILES
3A	VAS-Q14R_WGH01A16	Wolfpen Branch	0.75 MILES
3A	VAS-Q14R_ZZZ01A00	Unsegmented rivers in BS31	35.80 MILES
3A	VAS-Q14R_ZZZ02A00	Unsegmented rivers in BS32	32.77 MILES
3A	VAS-Q14R_ZZZ03A00	Unsegmented rivers in BS33	78.68 MILES
3B	VAS-O02R_PNN01A04	Pennington Branch	2.33 MILES
3B	VAS-P17R_XHV01A14	Preacher Creek tributary	0.53 MILES
3B	VAS-P20R_LIT01A14	Little Bundy Creek	0.99 MILES
3B	VAS-P20R_MRF01A14	Right Fork Mud Creek	1.35 MILES
3B	VAS-P20R_RLB01A14	Rocklick Branch	2.04 MILES
3B	VAS-P20R_WHB01A14	Wolf Harbor Branch	1.17 MILES
3B	VAS-Q08R_LOC01A08	Looney Creek	4.82 MILES
3B	VAS-Q08R_LYB01A12	Lynn Camp Creek	3.01 MILES
3B	VAS-Q08R_STI01A12	Stiltner Creek	1.21 MILES
3B	VAS-Q11R_ACB01A14	Austin Gap Branch	2.47 MILES
3B	VAS-Q11R_NEE01A14	Neece Creek	2.86 MILES
3B	VAS-Q12R_LTH01A14	Locust Thicket	0.80 MILES
3C	VAS-O05R_XCE01A02	East Fork Cedar Creek	1.40 MILES
3C	VAS-P04R_CLN01B02	Clinch River	14.23 MILES
3C	VAS-Q12R_CBC01A12	Camp Branch Creek	2.17 MILES
3C	VAS-Q12R_HUB01A12	Hunts Creek	3.78 MILES
3C	VAS-Q12R_HUB01B12	Hunts Creek	1.19 MILES
3C	VAS-Q12R_LEH01A12	Little Lick Creek	2.11 MILES
3D	VAS-P12R_SHT01A02	Straight Fork	5.46 MILES
4A	VAS-O03R_MFH01A00	Middle Fork Holston River	5.50 MILES
4A	VAS-O03R_MFH02A00	Middle Fork Holston River	5.15 MILES
4A	VAS-O03R_MFH04A98	Middle Fork Holston River	4.25 MILES
4A	VAS-O04R_HUN02A02	Hungry Mother Creek	4.83 MILES
4A	VAS-O04R_LRL01A04	Laurel Springs Creek	2.12 MILES
4A	VAS-O04R_MFH01A00	Middle Fork Holston River	12.59 MILES
4A	VAS-O04R_SUL01A12	Sulphur Spring Creek and tributaries	11.28 MILES
4A	VAS-O04R_WAL01A02	Walker Creek & tributaries	13.52 MILES
4A	VAS-O05R_BYS01A94	Byers Creek	0.49 MILES
4A	VAS-O05R_CED01A94	Cedar Creek	5.61 MILES
4A	VAS-O05R_CWF01A02	West Fork Cedar Creek	1.54 MILES
4A	VAS-O05R_ECE01A02	Cedar Creek	1.10 MILES
4A	VAS-O05R_HAL01A94	Hall Creek	6.91 MILES
4A	VAS-O05R_HTO01A94	Hutton Creek	5.15 MILES
4A	VAS-O05R_MFH03A00	Middle Fork Holston River	3.87 MILES
4A	VAS-O05R_MFH04A00	Middle Fork Holston River	9.19 MILES
4A	VAS-O05R_MFH05A04	Middle Fork Holston River	3.80 MILES
4A	VAS-O05R_PLU01A02	Plum Creek	2.32 MILES
4A	VAS-O05R_TAT01A02	Tattle Branch	2.77 MILES
4A	VAS-O05R_XCD01A02	Tributary to Hutton Creek	4.11 MILES
4A	VAS-O05R_XCG01A02	Hall Creek tributary	1.71 MILES
4A	VAS-O05R_XDY01A08	Middle Fork Holston tributary	0.88 MILES
4A	VAS-O06R_SPO01A16	Spoon Gap Creek	2.66 MILES
4A	VAS-O06R_TOW01A00	Town Creek	4.75 MILES
4A	VAS-O06R_WLF02B08	Wolf Creek	2.36 MILES
4A	VAS-O07R_MUM01A06	Mumpower Creek	2.90 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAS-O07R_XDR01A06	Little Creek	2.80 MILES
4A	VAS-O09R_LIB01A02	Lick Creek	5.73 MILES
4A	VAS-O09R_NFH01A02	North Fork Holston River	13.77 MILES
4A	VAS-O09R_NFH01B02	North Fork Holston River	12.58 MILES
4A	VAS-O09R_NFH01C02	North Fork Holston River	12.23 MILES
4A	VAS-O10R_BVR01A02	Beaver Creek	1.92 MILES
4A	VAS-O10R_BVR01B04	Beaver Creek	2.82 MILES
4A	VAS-O10R_LAE02A02	Laurel Creek, middle	6.48 MILES
4A	VAS-O10R_LOC01A02	Locust Cove Creek	8.88 MILES
4A	VAS-O10R_NFH02A00	North Fork Holston River	8.51 MILES
4A	VAS-O10R_RRB01A02	Robertson Branch	3.26 MILES
4A	VAS-O10R_TUR01A10	Turkey Run Creek	3.71 MILES
4A	VAS-O11R_BRU01B04	Brumley Creek	4.17 MILES
4A	VAS-O11R_EWF01A12	East Fork Wolf Creek	3.47 MILES
4A	VAS-O11R_FIN01A12	Finley Creek	1.90 MILES
4A	VAS-O11R_LOG01A02	Logan Creek	5.42 MILES
4A	VAS-O11R_NFH01A00	North Fork Holston River	1.87 MILES
4A	VAS-O11R_NFH02A94	North Fork Holston River	6.29 MILES
4A	VAS-O11R_TOO01A98	Toole Creek	5.85 MILES
4A	VAS-O11R_WOC01A12	West Fork Wolf Creek	3.16 MILES
4A	VAS-O12R_ABR01A00	Abrams Creek	11.77 MILES
4A	VAS-O12R_COV01A00	Cove Creek	13.36 MILES
4A	VAS-O12R_GAS01A16	Gaspard Creek	1.37 MILES
4A	VAS-O12R_LMC01A02	Little Moccasin Creek	5.02 MILES
4A	VAS-O12R_NFH01B02	North Fork Holston River	4.28 MILES
4A	VAS-O12R_NFH01C02	North Fork Holston River	8.17 MILES
4A	VAS-O12R_NFH02A00	North Fork Holston River	2.84 MILES
4A	VAS-O12R_NFH02C04	North Fork Holston River	10.80 MILES
4A	VAS-O12R_NFH03C04	North Fork Holston River	8.43 MILES
4A	VAS-O12R_SMI01A02	Smith Creek	8.12 MILES
4A	VAS-O13R_BLU01A08	Blue Springs Branch & tributaries	3.73 MILES
4A	VAS-O13R_DOW01A08	Dowell Branch	1.78 MILES
4A	VAS-O13R_HIL01A08	Hilton Creek	1.85 MILES
4A	VAS-O13R_NFH01A94	North Fork Holston River	5.32 MILES
4A	VAS-O13R_NFH02A94	North Fork Holston River	18.72 MILES
4A	VAS-O13R_PSM01A02	Possum Creek	15.89 MILES
4A	VAS-O13R_XBV01A08	Unnamed tributary at Owen Corner	1.37 MILES
4A	VAS-O14R_BMC01A98	Big Moccasin Creek	2.87 MILES
4A	VAS-O14R_BMC04A00	Big Moccasin Creek	8.24 MILES
4A	VAS-O14R_BMC05A02	Big Moccasin Creek	10.55 MILES
4A	VAS-O14R_BMC06A02	Big Moccasin Creek	9.69 MILES
4A	VAS-O14R_BMC07A02	Big Moccasin Creek	8.24 MILES
4A	VAS-P01R_CAV01A00	Cavitts Creek	2.40 MILES
4A	VAS-P01R_CLN01A98	Clinch River	6.14 MILES
4A	VAS-P01R_NCL01A04	North Fork Clinch River	2.61 MILES
4A	VAS-P01R_SFK01A10	South Fork Clinch River	4.17 MILES
4A	VAS-P02R_CLN01A98	Clinch River	6.11 MILES
4A	VAS-P02R_DES01A10	Deskin Branch	0.53 MILES
4A	VAS-P02R_IDI01A00	Indian Creek	9.07 MILES
4A	VAS-P02R_IDI02A04	North Branch Indian Creek	4.61 MILES
4A	VAS-P02R_LRF01A10	Laurel Fork	4.57 MILES
4A	VAS-P03R_CLN02A00	Clinch River	3.01 MILES
4A	VAS-P03R_MID01A98	Middle Creek	3.05 MILES
4A	VAS-P04R_HES01A10	Hess Creek	1.04 MILES
4A	VAS-P04R_LWS01A10	Lewis Creek	3.45 MILES
4A	VAS-P04R_LWS01A98	Lewis Creek	4.98 MILES
4A	VAS-P05R_IDN01A04	Indian Creek	4.10 MILES
4A	VAS-P05R_LTR02A00	Little River	5.25 MILES
4A	VAS-P05R_LTR02A02	Little River	4.12 MILES
4A	VAS-P05R_LUC01A10	Laurel Creek	3.41 MILES
4A	VAS-P05R_MSC01A02	Maiden Spring Creek	6.70 MILES
4A	VAS-P05R_MSC01C04	Maiden Spring Creek	9.51 MILES
4A	VAS-P06R_BCD02A00	Big Cedar Creek	2.79 MILES
4A	VAS-P06R_BCD02A02	Big Cedar Creek	1.10 MILES
4A	VAS-P06R_BCD03A00	Big Cedar Creek	3.29 MILES
4A	VAS-P06R_BUG01A06	Burgess Creek	1.55 MILES
4A	VAS-P06R_EKG01A06	Elk Garden Creek	3.49 MILES
4A	VAS-P06R_EKG01A10	Elk Garden Creek	8.08 MILES
4A	VAS-P06R_LOO01A06	Loop Creek	2.59 MILES
4A	VAS-P06R_LOO01B12	Loop Creek	3.98 MILES
4A	VAS-P06R_LTL01A12	Little Cedar Creek	2.19 MILES
4A	VAS-P07R_CLN01A00	Clinch River	14.10 MILES
4A	VAS-P07R_TMP01A06	Thompson Creek	4.45 MILES
4A	VAS-P07R_TMP02A10	Thompson Creek	3.40 MILES
4A	VAS-P07R_WEA01A06	Weaver Creek	9.50 MILES
4A	VAS-P08R_DUM01A94	Dumps Creek	3.54 MILES
4A	VAS-P09R_BUL01A06	Bull Run	3.99 MILES
4A	VAS-P09R_CLN01A00	Clinch River	5.99 MILES
4A	VAS-P09R_CLN01A08	Clinch River	3.31 MILES
4A	VAS-P09R_CLN01B00	Clinch River	4.93 MILES
4A	VAS-P09R_CLN02B00	Clinch River	2.04 MILES
4A	VAS-P09R_CLN02B08	Clinch River	5.45 MILES
4A	VAS-P09R_FLC01A02	Fall Creek	3.01 MILES
4A	VAS-P09R_RUS01A06	Russell Creek	5.23 MILES
4A	VAS-P09R_SUT01A02	Staunton Creek & tributaries	9.73 MILES
4A	VAS-P10R_GRV01A10	Gravel Lick Creek	2.49 MILES
4A	VAS-P10R_LCC01A98	Lick Creek	4.92 MILES
4A	VAS-P10R_LCC02A02	Lick Creek	4.69 MILES
4A	VAS-P10R_LCR01A98	Right Fork Lick Creek	3.04 MILES
4A	VAS-P10R_LEL01A98	Laurel Branch	5.52 MILES
4A	VAS-P10R_XBM01A98	Cigarette Hollow	1.14 MILES
4A	VAS-P11R_BER02A00	Bear Creek	3.09 MILES
4A	VAS-P11R_CRA01A98	Crab Orchard (Branch) Creek	2.75 MILES
4A	VAS-P11R_CRI01A14	Critical Fork	1.30 MILES
4A	VAS-P11R_GLA01A14	Glade Creek	1.90 MILES
4A	VAS-P11R_GUE03A06	Guest River	2.62 MILES
4A	VAS-P11R_GUE04A96	Guest River	8.94 MILES
4A	VAS-P11R_LTF01A98	Little Tom's Creek	4.79 MILES
4A	VAS-P11R_SEL01A14	Selcer Branch	2.05 MILES
4A	VAS-P11R_TMS01A98	Toms Creek	6.35 MILES
4A	VAS-P11R_TMS02A00	Toms Creek & tributaries	6.25 MILES
4A	VAS-P11R_XHW01A14	Bear Creek tributary	1.21 MILES
4A	VAS-P11R_YLO01A98	Yellow Creek	3.16 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAS-P13R_CLN01A02	Clinch River	9.63 MILES
4A	VAS-P13R_CLN02A02	Clinch River	13.01 MILES
4A	VAS-P13R_COV01B08	Cove Creek	7.13 MILES
4A	VAS-P13R_STO02A98	Stock Creek	0.54 MILES
4A	VAS-P14R_COP02A02	Copper Creek	21.25 MILES
4A	VAS-P14R_COP02B08	Copper Creek	10.01 MILES
4A	VAS-P14R_COP03A02	Copper Creek	4.53 MILES
4A	VAS-P14R_COP03A08	Copper Creek	7.71 MILES
4A	VAS-P14R_MOL01A08	Moll Creek & tributaries	2.78 MILES
4A	VAS-P14R_MOL01B10	Moll Creek & tributaries	9.61 MILES
4A	VAS-P14R_PTR01A14	Porter Hollow	1.84 MILES
4A	VAS-P14R_VAL01A02	Valley Creek, lower	1.04 MILES
4A	VAS-P15R_DAK01A10	Drakes Branch	2.46 MILES
4A	VAS-P15R_NFC01B00	North Fork Clinch River	7.89 MILES
4A	VAS-P15R_NFC01B08	North Fork Clinch River	3.51 MILES
4A	VAS-P15R_NFC01C02	North Fork Clinch River	5.73 MILES
4A	VAS-P16R_BCE01A00	East Fork Blackwater Creek	1.93 MILES
4A	VAS-P16R_BKW01A02	Blackwater Creek	2.09 MILES
4A	VAS-P17R_BLK01A96	Black Creek	3.11 MILES
4A	VAS-P17R_CAL01A98	Callahan Creek	1.68 MILES
4A	VAS-P17R_CAL01B04	Callahan Creek	3.63 MILES
4A	VAS-P17R_CAL01C14	Callahan Creek	3.80 MILES
4A	VAS-P17R_CLA01A14	West Fork Callahan Creek	2.53 MILES
4A	VAS-P17R_HLS01A14	Halls Branch	1.93 MILES
4A	VAS-P17R_MIK01A06	Mud Lick Creek	2.90 MILES
4A	VAS-P17R_MIK02A14	Mud Lick Creek	3.13 MILES
4A	VAS-P17R_PIG01B12	Pigeon Creek	3.42 MILES
4A	VAS-P17R_POW01A94	Powell River	2.71 MILES
4A	VAS-P17R_POW01B02	Powell River	5.46 MILES
4A	VAS-P17R_POW01C02	Powell River	9.02 MILES
4A	VAS-P17R_POW02B06	Powell River	5.70 MILES
4A	VAS-P17R_POW03C14	Powell River	1.57 MILES
4A	VAS-P18R_BUH01A04	Butcher Fork	4.96 MILES
4A	VAS-P18R_PLL01A02	South Fork Powell River	1.97 MILES
4A	VAS-P18R_PLL02A00	South Fork Powell River	6.45 MILES
4A	VAS-P19R_MDC01A10	Mud Creek	1.81 MILES
4A	VAS-P19R_POW03A00	Powell River	6.62 MILES
4A	VAS-P20R_BAI01A00	Bailey's Trace & tributaries	4.69 MILES
4A	VAS-P20R_ELC01A00	Ely Creek & tributaries	3.28 MILES
4A	VAS-P20R_LCK01A00	Lick Branch	0.74 MILES
4A	VAS-P20R_PCK01A00	Puckett Creek & tributaries	5.37 MILES
4A	VAS-P20R_PWL01A00	North Fork Powell River	6.05 MILES
4A	VAS-P20R_REE01A12	Reeds Creek	1.35 MILES
4A	VAS-P20R_SRA01A94	Straight Creek	6.81 MILES
4A	VAS-P20R_STC01A96	Stone Creek & tributaries	3.33 MILES
4A	VAS-P20R_STC02A00	Stone Creek & tributaries	7.21 MILES
4A	VAS-P21R_POW02A02	Powell River	12.74 MILES
4A	VAS-P21R_POW03A02	Powell River	6.46 MILES
4A	VAS-P21R_STN01A12	Station Creek	2.31 MILES
4A	VAS-P23R_POW02A00	Powell River	8.47 MILES
4A	VAS-Q04R_GAR01A98	Garden Creek	1.84 MILES
4A	VAS-Q04R_GAR01B02	Garden Creek	6.01 MILES
4A	VAS-Q04R_GRF01A02	Right Fork Garden Creek	10.39 MILES
4A	VAS-Q04R_LEV01A94	Levisa Fork	3.95 MILES
4A	VAS-Q04R_LEV01B02	Levisa Fork	3.94 MILES
4A	VAS-Q05R_DIS01B02	Dismal Creek	12.44 MILES
4A	VAS-Q05R_DIS02A00	Dismal Creek	9.14 MILES
4A	VAS-Q06R_LEV01A98	Levisa Fork	8.26 MILES
4A	VAS-Q07R_SAT01A00	Slate Creek	9.36 MILES
4A	VAS-Q08R_BLC01A98	Bull Creek & tributaries	28.45 MILES
4A	VAS-Q08R_HME01A04	Home Creek	4.79 MILES
4A	VAS-Q08R_LEV01A00	Levisa Fork	2.68 MILES
4A	VAS-Q08R_LEV02A00	Levisa Fork	4.72 MILES
4A	VAS-Q08R_LEV03A02	Levisa Fork	6.31 MILES
4A	VAS-Q08R_PLR01A14	Poplar Creek	0.19 MILES
4A	VAS-Q13R_GLD01A14	Glady Fork	1.91 MILES
4A	VAS-Q13R_HAY01A14	Hays Branch	0.86 MILES
4A	VAS-Q13R_PNS02A02	Phillips Creek (no longer exists)	1.70 MILES
4C	VAS-O10R_LTC01A02	Little Tumbling Creek	5.79 MILES
4C	VAS-P19R_PVC01A02	Poor Valley Creek	2.82 MILES
5A	VAS-O01R_BSC01A02	Bishop Branch	0.48 MILES
5A	VAS-O01R_GRC01A00	Grosses Creek	4.00 MILES
5A	VAS-O01R_SFH01A00	South Fork Holston River	8.73 MILES
5A	VAS-O01R_SFH03A00	South Fork Holston River	9.58 MILES
5A	VAS-O01R_SLM01A02	Slemp Creek	3.85 MILES
5A	VAS-O01R_STC01A02	Saint Clair Creek	3.68 MILES
5A	VAS-O01R_XEE01A08	Hurricane Creek tributary	1.12 MILES
5A	VAS-O02R_BVD01A00	Beaverdam Creek	2.01 MILES
5A	VAS-O02R_SFH01B02	South Fork Holston River	6.14 MILES
5A	VAS-O02R_SFH02A00	South Fork Holston River	12.98 MILES
5A	VAS-O02R_WLC01A00	Whitetop Laurel Creek	3.80 MILES
5A	VAS-O03R_BER01A02	Bear Creek & tributaries	6.51 MILES
5A	VAS-O03R_STA01A02	Staley Creek	5.58 MILES
5A	VAS-O03R_STA01B10	Staley Creek	1.01 MILES
5A	VAS-O04L_HUN01A02	Hungry Mother Lake	103.23 ACRES
5A	VAS-O06L_SFH01A00	South Holston Reservoir	1,699.97 ACRES
5A	VAS-O06R_FIF01A02	Fifteenmile Creek & tributaries	8.99 MILES
5A	VAS-O06R_FIF02A08	Fifteenmile Creek	3.94 MILES
5A	VAS-O06R_SPR01A02	Spring Creek	4.43 MILES
5A	VAS-O07R_SNK01A02	Sinking Creek	3.79 MILES
5A	VAS-O07R_STO01A12	Stoffel Creek & tributaries	5.22 MILES
5A	VAS-O08R_BOO01A12	Boozy Creek	2.53 MILES
5A	VAS-O12R_GRN01A00	Greendale Creek	5.03 MILES
5A	VAS-P01L_CAV01A10	Lake Witten	53.17 ACRES
5A	VAS-P04R_MLG01A00	Mill Creek	3.22 MILES
5A	VAS-P07R_MIF01A10	Mill Creek	1.84 MILES
5A	VAS-P09L_LSR01A02	Bark Camp Lake	41.06 ACRES
5A	VAS-P09R_CLN01C00	Clinch River	4.21 MILES
5A	VAS-P09R_CLN01C14	Clinch River	7.75 MILES
5A	VAS-P11R_EAS01A06	Eastland Creek	2.00 MILES
5A	VAS-P12R_BAR01A02	Bark Camp Branch & tributaries	3.07 MILES
5A	VAS-P12R_DEV01A02	Devil Fork	4.40 MILES
5A	VAS-P14R_XGD01A12	Blackoak Branch tributary	0.76 MILES
5A	VAS-P17R_CPH01A14	Canepatch Creek	8.72 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5A	VAS-P17R_DAR01A02	Dark Hollow	1.40 MILES
5A	VAS-P17R_LOC01A12	Looney Creek	6.04 MILES
5A	VAS-P17R_PIG01A06	Pigeon Creek	2.50 MILES
5A	VAS-P17R_POT01A14	Potcamp Fork	2.86 MILES
5A	VAS-P17R_RIN01A00	Roaring Fork	5.04 MILES
5A	VAS-P17R_RIN01B14	Roaring Fork	10.15 MILES
5A	VAS-P17R_XHO01A14	Unnamed tributary to Callahan Creek.	0.58 MILES
5A	VAS-P18L_PLL01L02	Big Cherry Reservoir	104.00 ACRES
5A	VAS-P20L_PWL01L02	Lake Keokee	96.21 ACRES
5A	VAS-P20R_BUY01B14	Bundy Creek	1.53 MILES
5A	VAS-P20R_CXR01A14	Cox Creek	1.89 MILES
5A	VAS-P20R_JON01A12	Jones Creek	2.93 MILES
5A	VAS-P20R_JON01A14	Jones Creek	1.88 MILES
5A	VAS-P20R_PWL02A02	North Fork Powell River	7.67 MILES
5A	VAS-P20R_PWL03B02	North Fork Powell River	2.98 MILES
5A	VAS-P21R_DBR01A02	Dry Creek	8.87 MILES
5A	VAS-P21R_HAR01A02	Hardy Creek & tributaries	12.52 MILES
5A	VAS-P21R_TOW01A06	Town Creek	2.69 MILES
5A	VAS-P21R_TOW01B12	Town Creek	3.73 MILES
5A	VAS-P23R_FOU01A14	Fourmile Creek	2.36 MILES
5A	VAS-P23R_MTN01A00	Martin Creek	9.66 MILES
5A	VAS-P24R_IND01A00	Indian Creek	8.18 MILES
5A	VAS-P24R_IND02A14	Indian Creek	4.44 MILES
5A	VAS-Q01R_JBF01A10	Jacobs Fork & tributaries	2.34 MILES
5A	VAS-Q03R_BBB01A10	Big Butt Branch & tributaries	6.00 MILES
5A	VAS-Q03R_CED01A16	Cedar Branch	2.80 MILES
5A	VAS-Q03R_LBT01A10	Long Bottom Branch	1.41 MILES
5A	VAS-Q03R_PUM01A16	Pumpkin Branch	1.64 MILES
5A	VAS-Q03R_RAC02A16	Race Fork	7.04 MILES
5A	VAS-Q03R_VDH01A05	Unsegmented rivers in BS04	49.72 MILES
5A	VAS-Q03R_VDH02A05	Unsegmented rivers in BS05	71.55 MILES
5A	VAS-Q03R_VDH03A05	Unsegmented rivers in BS06	25.24 MILES
5A	VAS-Q03R_VDH04A05	Unsegmented rivers in BS07	5.14 MILES
5A	VAS-Q05R_DIS01A00	Dismal Creek	5.38 MILES
5A	VAS-Q08R_CNW02A14	Conaway Creek and tributaries	6.99 MILES
5A	VAS-Q08R_HME01B14	Home Creek	0.80 MILES
5A	VAS-Q08R_SLB01A14	State Line Branch	1.35 MILES
5A	VAS-Q09R_HUR01A02	Hurricane Creek	0.85 MILES
5A	VAS-Q09R_IND01A10	Indian Creek	2.69 MILES
5A	VAS-Q09R_RSS01A00	Russell Fork	7.46 MILES
5A	VAS-Q09R_RSS02A00	Russell Fork headwaters	8.87 MILES
5A	VAS-Q09R_SLV01A08	Sullivan Branch	1.62 MILES
5A	VAS-Q10R_FRY02A04	Fryingpan Creek	9.45 MILES
5A	VAS-Q10R_RSS01A00	Russell Fork	4.34 MILES
5A	VAS-Q10R_RSS02A00	Russell Fork	4.12 MILES
5A	VAS-Q11R_BFF01A08	Buffalo Creek	3.25 MILES
5A	VAS-Q11R_BSB01A10	Big Spraddle Branch	2.31 MILES
5A	VAS-Q11R_CRC01A14	Cowan Rose Branch	3.30 MILES
5A	VAS-Q11R_DIL01A14	Dismal Fork	4.51 MILES
5A	VAS-Q11R_MCR02A00	McClure River	9.68 MILES
5A	VAS-Q11R_MCR03A06	McClure River	3.38 MILES
5A	VAS-Q11R_MCR04A06	McClure River	8.70 MILES
5A	VAS-Q11R_ROR01A14	Roaring Fork	1.08 MILES
5A	VAS-Q11R_WAK01A14	Wakenva Branch	1.80 MILES
5A	VAS-Q12R_RSS02A04	Russell Fork	2.25 MILES
5A	VAS-Q12R_RSS03A02	Russell Fork	3.90 MILES
5A	VAS-Q12R_XGN01A12	Middle Fork (Hunts Creek)	2.93 MILES
5A	VAS-Q13L_PNR01A02	John Flannagan Reservoir	1,177.21 ACRES
5A	VAS-Q13R_BEP01A16	Bearpen Branch	3.30 MILES
5A	VAS-Q13R_BID01A14	Big Branch	1.46 MILES
5A	VAS-Q13R_IAC01A10	Indian Creek	2.98 MILES
5A	VAS-Q13R_PNK01A00	North Fork Pound River tributaries	10.25 MILES
5A	VAS-Q13R_PNK01A06	North Fork Pound River	4.29 MILES
5A	VAS-Q13R_PNR01A00	Pound River	16.94 MILES
5A	VAS-Q14R_BLD01A10	Birchfield Creek	2.52 MILES
5A	VAS-Q14R_CNR01A00	Cranesnest River	12.93 MILES
5A	VAS-Q14R_CNR02A02	Cranesnest River	7.52 MILES
5A	VAS-Q14R_DOT01A12	Dotson Creek	3.81 MILES
5C	VAS-O11L_BRU01A02	Hidden Valley Lake	61.10 ACRES
5C	VAS-O11L_LAU01A02	Laurel Bed Lake	359.43 ACRES
5D	VAS-O03R_MFH05A04	Middle Fork Holston River	3.42 MILES
5D	VAS-O05R_GRW01A02	Greenway Creek	5.02 MILES
5D	VAS-O06R_WLF01A98	Wolf Creek	3.33 MILES
5D	VAS-O06R_WLF02B06	Wolf Creek	0.41 MILES
5D	VAS-O06R_WLF03A06	Wolf Creek	2.93 MILES
5D	VAS-O07R_BEV01A94	Beaver Creek	7.27 MILES
5D	VAS-O07R_BEV02A94	Beaver Creek	7.77 MILES
5D	VAS-O07R_LTL01A96	Little Creek	2.29 MILES
5D	VAS-O10R_LAE01A02	Laurel Creek	2.65 MILES
5D	VAS-O10R_NFH01A94	North Fork Holston River	1.83 MILES
5D	VAS-O11R_NFH02B10	North Fork Holston River	8.52 MILES
5D	VAS-O11R_NFH03A94	North Fork Holston River	4.92 MILES
5D	VAS-P01R_PLU01A04	Plum Creek	2.88 MILES
5D	VAS-P03R_BIG01A10	Big Creek	1.39 MILES
5D	VAS-P03R_CLN01A98	Clinch River	5.55 MILES
5D	VAS-P03R_COL01A04	Coal Creek	3.12 MILES
5D	VAS-P03R_MCK01A10	Mudlick Creek	2.11 MILES
5D	VAS-P03R_THC01A10	Town Hill Creek	0.25 MILES
5D	VAS-P04R_SWD01A00	Swords Creek	2.91 MILES
5D	VAS-P06R_BCD01A98	Big Cedar Creek	4.20 MILES
5D	VAS-P11R_BER01A98	Bear Creek	1.94 MILES
5D	VAS-P11R_GUE01A00	Guest River	4.15 MILES
5D	VAS-P11R_GUE02A98	Guest River	3.09 MILES
5D	VAS-P11R_GUE03A98	Guest River	16.78 MILES
5D	VAS-P13R_STO01A00	Stock Creek	4.78 MILES
5D	VAS-P17R_POW02C06	Powell River	1.00 MILES
5D	VAS-P18R_PLL01A98	South Fork Powell River	3.83 MILES
5D	VAS-P22R_WAL02A02	Wallen Creek, headwaters and tributaries	29.71 MILES
5D	VAS-P22R_WAL02B02	Wallen Creek	13.19 MILES
5D	VAS-Q03R_GIE01A04	Guess Fork	8.70 MILES
5D	VAS-Q03R_KOX01A00	Knox Creek	7.75 MILES
5D	VAS-Q03R_KOX02A98	Knox Creek	9.53 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAS-Q03R_PPW01A94	Pawpaw Creek	4.23 MILES
5D	VAS-Q08R_CNW01A08	Conaway Creek	2.62 MILES
5D	VAS-Q08R_PLR01A08	Poplar Creek	3.03 MILES
5D	VAS-Q12R_RPC01A96	Russell Prater Creek	11.72 MILES
5D	VAS-Q13R_PNK01A96	North Fork Pound River	1.29 MILES
5D	VAS-Q13R_PNS01A02	South Fork Pound River	3.44 MILES
5D	VAS-Q13R_PNS01A94	South Fork Pound River	3.59 MILES
5D	VAS-Q13R_PNS02B04	South Fork Pound River	2.21 MILES

Chesapeake Bay/Atlantic/Small Coastal Basins

Overall Category	305(b) ID	Waterbody Name	Size
2A	VAP-C01R_XCY01A00	Bush Mill Stream, UT	3.14 MILES
2A	VAP-C02R_XEQ01A14	XEQ - Dragon Swamp, UT	1.86 MILES
2A	VAP-C03R_CAV01A02	Carvers Creek	5.55 MILES
2A	VAP-C04R_BUR01A12	Burke Mill Stream	4.34 MILES
2A	VAP-C05R_XEF01A10	Fox Mill Run, UT	2.67 MILES
2A	VAT-AO05_ATL01A06	Assateague Island - Ocean Beach	0.57 SQUARE MILES
2A	VAT-AO25_ATL01A08	Atlantic Ocean Beaches - Dam Neck North	2.53 SQUARE MILES
2A	VAT-AO25_ATL01B10	Atlantic Ocean Beaches - South [Admin]	3.50 SQUARE MILES
2A	VAT-C07R_ZZZ01B14	Unnamed stream segment flowing to Lyons Creek	0.45 MILES
2A	VAT-C10R_LMB01A16	Lee Mont Branch	3.54 MILES
2A	VAT-D01E_BSC01A00	Big Simoneaston Creek	0.02 SQUARE MILES
2A	VAT-D01E_CHN01A08	Chincoteague Inlet	4.54 SQUARE MILES
2A	VAT-D01E_CHT01A08	Chincoteague Bay	28.18 SQUARE MILES
2A	VAT-D01E_JEN01A02	Jennys Gut	0.02 SQUARE MILES
2A	VAT-D01E_ORN01A08	Old Root Narrows	0.16 SQUARE MILES
2A	VAT-D01E_QSC01A08	Queen Sound Channel	2.23 SQUARE MILES
2A	VAT-D01E_SGT02A08	Swans Gut Creek	0.04 SQUARE MILES
2A	VAT-D01E_TMC01A08	Toms Cove	3.54 SQUARE MILES
2A	VAT-D01E_WTB01A08	Watts Bay	0.85 SQUARE MILES
2A	VAT-D01E_ZZZ01B10	Unsegmented estuaries in D01E	0.02 SQUARE MILES
2A	VAT-D02E_ARB01A06	Arbuckle Creek	0.04 SQUARE MILES
2A	VAT-D02E_WMB01A06	Womans Bay	0.20 SQUARE MILES
2A	VAT-D02E_ZZZ01A00	Unsegmented estuaries in D02E	0.62 SQUARE MILES
2A	VAT-D02R_ASW01A16	Assawoman Creek	1.02 MILES
2A	VAT-D03E_BTB01A06	Burtons Bay	6.56 SQUARE MILES
2A	VAT-D03E_BUN01A06	Bundick Creek	0.02 SQUARE MILES
2A	VAT-D03E_FLL03A08	Folly Creek - Lower	0.09 SQUARE MILES
2A	VAT-D03E_FNC02A06	Finney Creek - Lower	0.25 SQUARE MILES
2A	VAT-D03E_FNC03A10	Finney Creek - Lower	0.10 SQUARE MILES
2A	VAT-D03E_MET01A08	Metompkin Bay	4.97 SQUARE MILES
2A	VAT-D03E_NCK01A16	Nickawampus Creek	0.03 SQUARE MILES
2A	VAT-D03E_SHC01A16	Shipping Creek	0.01 SQUARE MILES
2A	VAT-D03E_WAI01A08	Wachapreague Inlet	0.80 SQUARE MILES
2A	VAT-D03E_WAS04A08	Wachapreague Channel	0.01 SQUARE MILES
2A	VAT-D03E_ZZZ01A00	Unsegmented estuaries in D03E	5.43 SQUARE MILES
2A	VAT-D04E_RBC02A08	Red Bank Creek - Middle & Lower	0.03 SQUARE MILES
2A	VAT-D04E_SID01A10	Sandy Island Channel	0.28 SQUARE MILES
2A	VAT-D04E_SLP01A08	Sloop Channel	0.21 SQUARE MILES
2A	VAT-D04E_WAS04A14	Wachapreague Channel	0.01 SQUARE MILES
2A	VAT-D04E_ZZZ01A00	Unsegmented estuaries in D04E	68.34 SQUARE MILES
2A	VAT-D04R_GRS01A00	Greens Creek	1.58 MILES
2A	VAT-D05E_OSS02A08	Oyster Slip (Harbor) - Lower	0.01 SQUARE MILES
2A	VAT-D05E_SSC01A08	Sand Shoal Channel	1.54 SQUARE MILES
2A	VAT-D05E_ZZZ01A00	Unsegmented estuaries in D05E	38.19 SQUARE MILES
2A	VAT-D06E_FII01A16	Fisherman Inlet	0.13 SQUARE MILES
2A	VAT-D06E_MAG02A08	Magothy Bay - Middle	6.91 SQUARE MILES
2A	VAT-D06E_SMI01A08	Smith Island Inlet	0.78 SQUARE MILES
2A	VAT-D06E_SSC01A12	Sand Shoal Channel	1.03 SQUARE MILES
2A	VAT-D06E_ZZZ01A00	Unsegmented estuaries in D06E	42.46 SQUARE MILES
2B	VAP-C05L_BEA01A06	Beaverdam Swamp Reservoir	647.98 ACRES
2B	VAT-AO23_ATL01A06	Atlantic Ocean Beaches - South	15.60 SQUARE MILES
2B	VAT-AO23_ATL01B08	Atlantic Ocean Beaches - 63rd Street	0.37 SQUARE MILES
2B	VAT-AO25_ATL01C16	Atlantic Ocean Beaches - South Beaches	16.10 SQUARE MILES
2B	VAT-D01E_ASC01A06	Assateague Channel	4.96 SQUARE MILES
2B	VAT-D01E_CHI01A06	Chincoteague Channel	0.47 SQUARE MILES
2B	VAT-D01E_CHI01B08	Chincoteague Channel	1.65 SQUARE MILES
2B	VAT-D01E_GBV02A08	Greenbackville Harbor - DSS	0.05 SQUARE MILES
2B	VAT-D01E_ZZZ01A00	Unsegmented estuaries in D01E	4.01 SQUARE MILES
2B	VAT-D03E_WAS03A08	Wachapreague Channel	0.04 SQUARE MILES
2B	VAT-D04E_PRT01A08	Parting Creek - Upper & Middle	0.48 SQUARE MILES
2B	VAT-D04E_PRT03A08	Parting Creek - Middle	0.28 SQUARE MILES
2B	VAT-D04E_PRT04A08	Parting Creek - Lower	0.09 SQUARE MILES
2B	VAT-D04E_UPS01A06	Quinby Harbor-Upshur Bay	3.39 SQUARE MILES
2B	VAT-D04E_ZZZ01B10	Unsegmented estuaries in D04E	0.04 SQUARE MILES
3A	VAP-C01R_BLA01A10	Blackwells Creek	1.19 MILES
3A	VAP-C01R_BMS01A98	Bush Mill Stream	6.53 MILES
3A	VAP-C01R_HRB01A00	Head River Branch	4.49 MILES
3A	VAP-C01R_KNR01A00	Knights Run	2.93 MILES
3A	VAP-C01R_XBF01A00	Crabbe Mill Stream, UT	1.83 MILES
3A	VAP-C01R_ZZZ01A14	Unsegmented rivers in C01	90.57 MILES
3A	VAP-C01R_ZZZ01B14	Unsegmented rivers in C01	0.49 MILES
3A	VAP-C01R_ZZZ01C14	Unsegmented rivers in C01	27.98 MILES
3A	VAP-C01R_ZZZ01D14	Unsegmented rivers in C01	13.93 MILES
3A	VAP-C02R_XAY01A06	UT to Dragon Swamp	1.92 MILES
3A	VAP-C02R_XCT01A06	UT to Dragon Swamp	0.29 MILES
3A	VAP-C02R_XDM01A06	UT to Dragon Swamp	1.04 MILES
3A	VAP-C02R_XDO01A06	XDO - Dragon Swamp, UT	5.04 MILES
3A	VAP-C02R_XDX01A10	XDX - Dragon Swamp, UT	2.67 MILES
3A	VAP-C02R_ZZZ01A14	Unsegmented rivers in C02	58.40 MILES
3A	VAP-C02R_ZZZ01B14	Unsegmented rivers in C02	35.10 MILES
3A	VAP-C02R_ZZZ01C14	Unsegmented rivers in C02	43.05 MILES
3A	VAP-C02R_ZZZ01D14	Unsegmented rivers in C02	76.07 MILES
3A	VAP-C03R_HRP01A98	Harper Creek, Foxes Creek, Gallaman Swamp	8.14 MILES
3A	VAP-C03R_MLS01A00	My Ladys Swamp	4.16 MILES
3A	VAP-C03R_WLT01A00	Wilton Creek	0.48 MILES
3A	VAP-C03R_XCZ01A00	Piankatank River, UT	1.29 MILES
3A	VAP-C03R_XDA01A00	My Ladys Swamp, UT	0.44 MILES
3A	VAP-C03R_ZZZ01A14	Unsegmented rivers in C03	79.92 MILES
3A	VAP-C03R_ZZZ01B14	Unsegmented rivers in C03	12.41 MILES
3A	VAP-C04R_ZZZ01A14	Unsegmented rivers in C04	18.73 MILES
3A	VAP-C04R_ZZZ01B14	Unsegmented rivers in C04	29.01 MILES
3A	VAP-C04R_ZZZ01C14	Unsegmented rivers in C04	11.66 MILES
3A	VAP-C04R_ZZZ01D14	Unsegmented rivers in C04	9.95 MILES
3A	VAP-C05R_BEA01A06	Beaverdam Swamp	2.45 MILES
3A	VAP-C05R_ZZZ01A14	Unsegmented rivers in C05	29.81 MILES
3A	VAP-C05R_ZZZ01B14	Unsegmented rivers in C05	20.18 MILES

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3A	VAP-C05R_ZZZ01C14	Unsegmented rivers in C05	12.93 MILES
3A	VAP-C05R_ZZZ02A06	Unsegmented rivers in C05	30.54 MILES
3A	VAP-C06R_ZZZ01A00	Unsegmented rivers in C06	20.98 MILES
3A	VAT-C07R_POQ01A00	Poquoson riverine upstream of Harwoods Mill Res (PWS)	2.84 MILES
3A	VAT-C07R_ZZZ01A00	Unsegmented rivers in C07R [Non-PWS]	161.94 MILES
3A	VAT-C08L_LAK01A08	Lake Lawson	74.33 ACRES
3A	VAT-C08R_ZZZ01A00	Unsegmented rivers in C08R	71.34 MILES
3A	VAT-C09R_ZZZ01A00	Unsegmented rivers in C09R	78.20 MILES
3A	VAT-C11R_ZZZ01A00	Unsegmented rivers in C11R	57.21 MILES
3A	VAT-C12R_ZZZ01A00	Unsegmented rivers in C12R	49.37 MILES
3A	VAT-C13R_ZZZ01A00	Unsegmented rivers in C13R	114.66 MILES
3A	VAT-C14R_ZZZ01A00	Unsegmented rivers in C14R	43.27 MILES
3A	VAT-C15R_ZZZ01A00	Unsegmented rivers in C15R	22.86 MILES
3A	VAT-C16R_ZZZ01A00	Unsegmented rivers in C16R	10.22 MILES
3A	VAT-D01E_ASC01B06	Assateague Channel	0.24 SQUARE MILES
3A	VAT-D01E_TCA01A06	The Canal	0.02 SQUARE MILES
3A	VAT-D01E_ZZZ01C12	Unsegmented estuaries in D01E	0.05 SQUARE MILES
3A	VAT-D01R_ZZZ01A00	Unsegmented rivers in D01R	45.76 MILES
3A	VAT-D02R_ZZZ01A00	Unsegmented rivers in D02R	19.26 MILES
3A	VAT-D03E_ZZZ01B10	Unsegmented estuaries in D03E	0.17 SQUARE MILES
3A	VAT-D03R_ZZZ01A00	Unsegmented rivers in D03R	89.58 MILES
3A	VAT-D04R_ZZZ01A00	Unsegmented rivers in D04R	64.08 MILES
3A	VAT-D05R_ZZZ01A00	Unsegmented rivers in D05R	12.58 MILES
3A	VAT-D06R_ZZZ01A00	Unsegmented rivers in D06R	15.68 MILES
3A	VAT-D07R_ZZZ01A14	Unsegmented Rivers in D07R	5.54 MILES
3B	VAT-AO05_ATL01B12	Atlantic Ocean - Assateague Island	36.83 SQUARE MILES
3B	VAT-AO06_ATL01A12	Atlantic Ocean-Deep	31.97 SQUARE MILES
3B	VAT-AO07_ATL01A12	Atlantic Ocean - off of Toms Cove	9.25 SQUARE MILES
3B	VAT-AO12_ATL01A12	Atlantic Ocean-Metompkin Island	36.99 SQUARE MILES
3B	VAT-AO16_ATL01A12	Atlantic Ocean- Paramore Island	39.93 SQUARE MILES
3B	VAT-AO17_ATL01A12	Atlantic Ocean- Deep	49.24 SQUARE MILES
3B	VAT-AO22_ATL01A12	Atlantic Ocean- Lower Eastern Shore	95.19 SQUARE MILES
3B	VAT-AO24_ATL01A12	Atlantic Ocean - Deep	54.42 SQUARE MILES
3B	VAT-AO26_ATL01A12	Atlantic Ocean Deep- Sand Bridge	44.05 SQUARE MILES
3B	VAT-C08L_CHB01A14	Chub Lake	29.76 ACRES
3B	VAT-C08L_LAJ01A14	Lake Joyce	73.63 ACRES
3B	VAT-C08L_LKB01A14	Lake Bradford	95.70 ACRES
3B	VAT-C08L_MTL02A06	Lake Trashmore - Eastern Pond	27.60 ACRES
3B	VAT-C08L_PLH01A14	Pleasure House Lake	6.70 ACRES
3B	VAT-C10R_ZZZ01A00	Unsegmented rivers in C10R	175.70 MILES
3C	VAT-C07R_ZZZ01C14	Newmarket Creek segment in C07R [Non-PWS]	1.94 MILES
4A	VAP-C02R_EXE01A06	Exol Swamp	11.34 MILES
4A	VAP-C05R_CNY01A10	Crany Creek	3.90 MILES
4A	VAP-C05R_FOX01A00	Fox Mill Run	6.96 MILES
4A	VAP-C05R_XEG01A10	Fox Mill Run, UT	1.71 MILES
4A	VAP-C06R_SEN01A00	Northwest Branch Severn River	2.16 MILES
4A	VAT-C10R_SBB01A00	Sandy Bottom Branch	1.29 MILES
4A	VAT-C10R_XAZ01A00	Unnamed tributary to Sandy Bottom Branch	1.13 MILES
4A	VAT-C10R_XCX01A08	Unnamed tributary from Tyson Foods	1.40 MILES
4A	VAT-D01E_GBV01A06	Greenbackville Harbor - DSS	0.01 SQUARE MILES
4A	VAT-D01E_SGT01B16	Swans Gut Creek	0.01 SQUARE MILES
4A	VAT-D02E_ZZZ01B10	Unsegmented estuaries in D02E	0.01 SQUARE MILES
4A	VAT-D02R_PET01A00	Pettit Branch	1.88 MILES
4A	VAT-D03E_FLL01A08	Folly Creek - Upper & Middle	0.38 SQUARE MILES
4A	VAT-D03E_FNC01A04	Finney Creek - Upper	0.01 SQUARE MILES
4A	VAT-D03E_GAR01A04	Gargathy Creek - Upper	0.12 SQUARE MILES
4A	VAT-D03E_GAR02A04	Gargathy Creek - Lower	0.01 SQUARE MILES
4A	VAT-D03E_PAR01A06	Parker Creek - Middle	0.02 SQUARE MILES
4A	VAT-D03E_PAR02A06	Parker Creek - Lower	0.03 SQUARE MILES
4A	VAT-D03R_GAR01A02	Gargathy Creek	2.83 MILES
4A	VAT-D03R_PAR01A00	Parker Creek	2.02 MILES
4A	VAT-D04E_MAC01A00	Machipongo River	0.31 SQUARE MILES
4C	VAP-C02R_BRE01A04	Briery Swamp	3.17 MILES
4C	VAP-C02R_DGN01A06	Dragon Run	6.53 MILES
4C	VAP-C02R_HLM01A10	Holmes Swamp	4.02 MILES
4C	VAP-C02R_TIM01A06	Timber Branch Swamp	5.45 MILES
4C	VAP-C02R_WHE01A10	White Marsh	2.51 MILES
4C	VAP-C02R_YOR01A10	Yorkers Swamp	3.32 MILES
5A	VAP-C01R_CMS01A00	Crabbe Mill Stream	3.90 MILES
5A	VAP-C01R_DYM01A14	Dymer Creek	2.06 MILES
5A	VAP-C02R_DRN02A04	Dragon Swamp	19.26 MILES
5A	VAP-C02R_DRN03A10	Dragon Swamp	0.34 MILES
5A	VAT-AO23_ATL02A16	Atlantic Ocean Beaches - Croatan	0.41 SQUARE MILES
5A	VAT-C07L_POQ01A04	Harwoods Mill Reservoir (PWS)	257.68 ACRES
5A	VAT-C08L_LAR01A06	Lake Wright	15.62 ACRES
5A	VAT-C08L_LAS01A08	Lake Smith (PWS)	184.89 ACRES
5A	VAT-C08L_LAW01A08	Lake Whitehurst (PWS)	482.28 ACRES
5A	VAT-C08L_LTR01A08	Little Creek Reservoir - (PWS)	199.79 ACRES
5A	VAT-C08L_MTL01A06	Lake Trashmore - Western Pond	54.39 ACRES
5A	VAT-C09E_PTT01B10	Pitts Creek - Upper [Admin Cond]	0.07 SQUARE MILES
5A	VAT-C10E_HLD02A06	Holdens Creek - Lower	0.05 SQUARE MILES
5A	VAT-C10R_GLF01A08	Guilford Creek	0.85 MILES
5A	VAT-C11R_JOY01A08	Joynes Branch	2.37 MILES
5A	VAT-C12R_BBR01A08	Bull Branch	2.25 MILES
5A	VAT-C12R_TAY01A04	Taylor Creek	0.90 MILES
5A	VAT-C13R_TLR01A08	Taylor Branch - Occohannock Cr.	2.31 MILES
5A	VAT-D01E_PWB01A06	Powells Bay	0.60 SQUARE MILES
5A	VAT-D03E_NOT01A08	Northam Creek	0.03 SQUARE MILES
5A	VAT-D03E_WAS01A08	Wachapreague Channel	0.03 SQUARE MILES
5A	VAT-D03R_CUS01A16	Custis Creek	1.22 MILES
5A	VAT-D03R_PNF01A14	North Fork	3.13 MILES
5A	VAT-D03R_RSS01A02	Ross Branch	3.20 MILES
5A	VAT-D03R_RTT01A12	Rattrap Creek	2.73 MILES
5A	VAT-D03R_XDE01A02	Unnamed tributary to Folly Creek	1.53 MILES
5A	VAT-D04E_RBC01A08	Red Bank Creek - Upper	0.01 SQUARE MILES
5A	VAT-D04E_WAS02A14	Wachapreague Channel	0.03 SQUARE MILES

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5A	VAT-D04E_XDF01A04	Unnamed tributary to Red Bank Creek	0.01 SQUARE MILES
5A	VAT-D04R_FRB01A12	Frogstool Branch	4.27 MILES
5A	VAT-D04R_XER01A14	UT to Mill Creek	1.48 MILES
5A	VAT-D05R_HLT01A04	Holt Creek	1.74 MILES
5A	VAT-D05R_TAL01A02	Taylor Creek	1.26 MILES
5A	VAT-D05R_XDI01A04	Holt Creek Unnamed Tributary	1.42 MILES
5A	VAT-D06E_MAG01A04	Magothy Bay - Lower	0.04 SQUARE MILES
5A	VAT-D06E_RAC01A08	Raccoon Creek	0.01 SQUARE MILES
5A	VAT-D06R_NCB01A04	Narrow Channel Branch	1.84 MILES
5A	VAT-D06R_TOM01A08	Tommy's Ditch	1.44 MILES
5A	VAT-D07E_LAI01A06	Lake Rudee - Upper	0.10 SQUARE MILES
5A	VAT-D07E_OWL01A02	Owl Creek- Upper	0.01 SQUARE MILES
5A	VAT-D07E_OWL02A02	Owl Creek - Lower	0.02 SQUARE MILES
5B	VAT-D02E_LIC01A10	Little Cat Creek	0.10 SQUARE MILES
5B	VAT-D07E_LAE01A06	Lake Wesley - Upstream Branches	0.03 SQUARE MILES
5B	VAT-D07E_LAI02A06	Lake Rudee - Lower (Rudee Inlet Canal)	0.03 SQUARE MILES
5C	VAT-D04R_RBC01A04	Red Bank Creek	1.36 MILES
5D	VACB-C10E_TNN01A06	Tangier North Channel and Adjacent Waters, DSS Area A and B.	1.37 SQUARE MILES
5D	VACB-C10E_TNN01B06	Tangier North Channel and Adjacent Waters, DSS Area C.	0.04 SQUARE MILES
5D	VACB-C10E_TNN01C16	Tangier North Channel and Adjacent Waters, Open waters	0.20 SQUARE MILES
5D	VACB-C10E-POC	Chesapeake Bay - VA portion of CBP segment POCMH	46.87 SQUARE MILES
5D	VACB-C10E-TAN	Chesapeake Bay - VA portion of CBP Segment TANMH	121.15 SQUARE MILES
5D	VACB-R01E-04CE	Chesapeake Bay - Cape Charles BSS #089-011, Section A.	0.31 SQUARE MILES
5D	VACB-R01E-04DE	Chesapeake Bay - S. Thimble Island BSS Condemnation #163	0.03 SQUARE MILES
5D	VACB-R01E-04EE	Chesapeake Bay - Off Little Creek BSS #068-017, Section C.	0.54 SQUARE MILES
5D	VACB-R01E-04GE	Chesapeake Bay - Off Little Creek BSS #068-017, Areas A & B	1.36 SQUARE MILES
5D	VACB-R01E-CB5	Chesapeake Bay - VA portion of CBP Segment CB5MH	185.85 SQUARE MILES
5D	VACB-R01E-CB6N	Chesapeake Bay - Northern portion of CBP Segment CB6PH	127.20 SQUARE MILES
5D	VACB-R01E-CB6S	Chesapeake Bay - Southern portion of CBP Segment CB6PH	160.31 SQUARE MILES
5D	VACB-R01E-CB7N	Chesapeake Bay - Northern portion of CBP Segment CB7PH	168.63 SQUARE MILES
5D	VACB-R01E-CB7S	Chesapeake Bay - Southern portion of CBP Segment CB7PH	372.81 SQUARE MILES
5D	VACB-R01E-CB8	Chesapeake Bay - CBP Segment CB8PH	141.80 SQUARE MILES
5D	VACB-R01E-MOB	Chesapeake Bay - CBP Segment MOBPH	92.95 SQUARE MILES
5D	VACB-R01E-MOB	Chesapeake Bay - CBP Segment MOBPH	92.95 SQUARE MILES
5D	VACB-R01E-MOB	Chesapeake Bay - CBP Segment MOBPH	92.95 SQUARE MILES
5D	VACB-R01E-MOB	Chesapeake Bay - CBP Segment MOBPH	92.95 SQUARE MILES

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5D	VAP-C01E_ANT01A98	Antipoison Creek	0.04 SQUARE MILES
5D	VAP-C01E_ANT01B08	Antipoison Creek, UT	0.01 SQUARE MILES
5D	VAP-C01E_ANT01C08	Antipoison Creek, UT	0.01 SQUARE MILES
5D	VAP-C01E_ANT02A08	Antipoison Creek	0.36 SQUARE MILES
5D	VAP-C01E_ANT02B12	Antipoison Creek	0.01 SQUARE MILES
5D	VAP-C01E_ASH01A10	Ashleys Cove	0.06 SQUARE MILES
5D	VAP-C01E_BAI01A16	Bailey Prong	0.05 SQUARE MILES
5D	VAP-C01E_BAL01A02	Ball Creek	0.08 SQUARE MILES
5D	VAP-C01E_BAL02A02	Ball Creek	0.13 SQUARE MILES
5D	VAP-C01E_BAR01A98	Barrett Creek	0.04 SQUARE MILES
5D	VAP-C01E_BAR02A08	Barrett Creek	0.01 SQUARE MILES
5D	VAP-C01E_BEL01A08	Bells Creek	0.04 SQUARE MILES
5D	VAP-C01E_BLS01A02	Balls Creek	0.06 SQUARE MILES
5D	VAP-C01E_BLS02A08	Balls Creek	0.11 SQUARE MILES
5D	VAP-C01E_BMC01A04	Betts Mill Creek	0.08 SQUARE MILES
5D	VAP-C01E_BMS01A12	Bush Mill Stream	0.09 SQUARE MILES
5D	VAP-C01E_BRS01A08	Barnes Creek	0.33 SQUARE MILES
5D	VAP-C01E_CHA01A08	Chases Cove	0.02 SQUARE MILES
5D	VAP-C01E_CHA01B12	Chases Cove	0.02 SQUARE MILES
5D	VAP-C01E_CLE01A98	Cloverdale Creek	0.02 SQUARE MILES
5D	VAP-C01E_CLE02A06	Cloverdale Creek	0.06 SQUARE MILES
5D	VAP-C01E_COC01A98	Cockrell Creek	0.61 SQUARE MILES
5D	VAP-C01E_COC03A98	Cockrell Creek	0.03 SQUARE MILES
5D	VAP-C01E_COC04B10	Cockrell Creek	0.47 SQUARE MILES
5D	VAP-C01E_COC05A06	Cockrell Creek	0.15 SQUARE MILES
5D	VAP-C01E_COL01A08	Coles Creek	0.02 SQUARE MILES
5D	VAP-C01E_CRN01A06	Cranes Creek	0.02 SQUARE MILES
5D	VAP-C01E_CRN01B06	Cranes Creek	0.02 SQUARE MILES
5D	VAP-C01E_DIV01A98	Dividing Creek	0.07 SQUARE MILES
5D	VAP-C01E_DIV01B12	Dividing Creek	0.21 SQUARE MILES
5D	VAP-C01E_DIV01C14	Dividing Creek, UT	0.01 SQUARE MILES
5D	VAP-C01E_DIV03A00	Dividing Creek	0.82 SQUARE MILES
5D	VAP-C01E_DVN01A04	Davenport Creek	0.02 SQUARE MILES
5D	VAP-C01E_DYM01A98	Dymer Creek	0.18 SQUARE MILES
5D	VAP-C01E_DYM02A00	Dymer Creek	0.60 SQUARE MILES
5D	VAP-C01E_DYM02B14	Dymer Creek	0.10 SQUARE MILES
5D	VAP-C01E_DYM03A06	Dymer Creek	0.09 SQUARE MILES
5D	VAP-C01E_FLB01A00	Fleets Bay	5.19 SQUARE MILES
5D	VAP-C01E_GEO01A98	Georges Cove	0.03 SQUARE MILES
5D	VAP-C01E_GOU01A06	Gougher Creek	0.04 SQUARE MILES
5D	VAP-C01E_GSK01A10	Gaskin Pond	0.11 SQUARE MILES
5D	VAP-C01E_GWR01A98	Great Wicomico River	0.27 SQUARE MILES
5D	VAP-C01E_GWR01B08	Great Wicomico River / Blackwells Creek	0.12 SQUARE MILES
5D	VAP-C01E_GWR01C10	Great Wicomico River	0.06 SQUARE MILES
5D	VAP-C01E_GWR02A00	Great Wicomico River	2.06 SQUARE MILES
5D	VAP-C01E_GWR02B06	Great Wicomico River	0.02 SQUARE MILES
5D	VAP-C01E_GWR02C06	Great Wicomico River at Coles Creek	0.01 SQUARE MILES
5D	VAP-C01E_GWR02D12	Great Wicomico River	0.01 SQUARE MILES
5D	VAP-C01E_GWR02E16	Great Wicomico River, UT	0.03 SQUARE MILES
5D	VAP-C01E_GWR03A06	Great Wicomico River	5.80 SQUARE MILES
5D	VAP-C01E_GWR03B16	Great Wicomico River	0.01 SQUARE MILES

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5D	VAP-C01E_HAP01B10	Harpers Creek	0.02 SQUARE MILES
5D	VAP-C01E_HAV01A08	Harveys Creek	0.04 SQUARE MILES
5D	VAP-C01E_HEN01A00	Henrys Creek	0.04 SQUARE MILES
5D	VAP-C01E_HEN01B14	Henrys Creek	0.03 SQUARE MILES
5D	VAP-C01E_HEN02A14	Henrys Creek	0.10 SQUARE MILES
5D	VAP-C01E_HHB01A98	Horn Harbor	0.07 SQUARE MILES
5D	VAP-C01E_HNT01A98	Hunts Cove	0.04 SQUARE MILES
5D	VAP-C01E_HRB01A12	Head River Branch	0.02 SQUARE MILES
5D	VAP-C01E_IND01A98	Indian Creek	0.15 SQUARE MILES
5D	VAP-C01E_IND01B10	Indian Creek	0.04 SQUARE MILES
5D	VAP-C01E_IND01C10	Indian Creek	0.14 SQUARE MILES
5D	VAP-C01E_IND01D14	Indian Creek	0.01 SQUARE MILES
5D	VAP-C01E_IND01E16	Indian Creek	0.04 SQUARE MILES
5D	VAP-C01E_IND02A98	Indian Creek	0.02 SQUARE MILES
5D	VAP-C01E_IND03A00	Indian Creek	0.60 SQUARE MILES
5D	VAP-C01E_IND03B06	Indian Creek	0.02 SQUARE MILES
5D	VAP-C01E_JAR01A02	Jarvis Creek, UT	0.03 SQUARE MILES
5D	VAP-C01E_JAR01B08	Jarvis Creek	0.02 SQUARE MILES
5D	VAP-C01E_JAR02A10	Jarvis Creek	0.20 SQUARE MILES
5D	VAP-C01E_JOH01A06	Johnson Creek	0.03 SQUARE MILES
5D	VAP-C01E_LEE01A02	Lees Cove	0.02 SQUARE MILES
5D	VAP-C01E_LEE02A12	Lees Cove	0.01 SQUARE MILES
5D	VAP-C01E_LOC01A08	Long Creek	0.02 SQUARE MILES
5D	VAP-C01E_LRC01A12	Lawrence Cove	0.09 SQUARE MILES
5D	VAP-C01E_LTB01A02	Little Bay	1.18 SQUARE MILES
5D	VAP-C01E_LTM01A98	Little Taskmakers Creek	0.05 SQUARE MILES
5D	VAP-C01E_MIL01A98	Mill Creek	0.24 SQUARE MILES
5D	VAP-C01E_MIL01B06	Mill Creek	1.17 SQUARE MILES
5D	VAP-C01E_MIL02A08	Mill Creek	0.14 SQUARE MILES
5D	VAP-C01E_MIL03A08	Mill Creek	0.36 SQUARE MILES
5D	VAP-C01E_NPC01A16	Natty Point Cove	0.02 SQUARE MILES
5D	VAP-C01E_OHC01A08	Old House Cove	0.02 SQUARE MILES
5D	VAP-C01E_OWP01A98	Owens Pond	0.08 SQUARE MILES
5D	VAP-C01E_OWP02B12	Owens Pond	0.04 SQUARE MILES
5D	VAP-C01E_OWP02C12	Owens Pond	0.07 SQUARE MILES
5D	VAP-C01E_OYS01A08	Oyster Creek	0.10 SQUARE MILES
5D	VAP-C01E_PEN01A12	Penny Creek	0.01 SQUARE MILES
5D	VAP-C01E_PIT01A14	Pitmans Cove	0.03 SQUARE MILES
5D	VAP-C01E_PNT02A02	Prentice Creek	0.16 SQUARE MILES
5D	VAP-C01E_PNT02B10	Prentice Creek	0.01 SQUARE MILES
5D	VAP-C01E_PNT03A02	Prentice Creek	0.01 SQUARE MILES
5D	VAP-C01E_REA01A10	Reason Creek	0.02 SQUARE MILES
5D	VAP-C01E_TBS01A14	Tabbs Creek	0.02 SQUARE MILES
5D	VAP-C01E_TBS01A98	Tabbs Creek	0.09 SQUARE MILES
5D	VAP-C01E_TBS01B10	Tabbs Creek	0.12 SQUARE MILES
5D	VAP-C01E_TBS02A00	Tabbs Creek	0.17 SQUARE MILES
5D	VAP-C01E_TIP01A98	Tipers Creek	0.08 SQUARE MILES
5D	VAP-C01E_TIP02A08	Tipers Creek	0.04 SQUARE MILES
5D	VAP-C01E_TOW01A06	Towles Creek	0.03 SQUARE MILES
5D	VAP-C01E_TSK01A14	Taskmakers Creek	0.02 SQUARE MILES
5D	VAP-C01E_WCO01A98	Warehouse Creek	0.07 SQUARE MILES
5D	VAP-C01E_WCO02A08	Warehouse Creek	0.01 SQUARE MILES
5D	VAP-C01E_WHY01A98	Whays Creek	0.04 SQUARE MILES
5D	VAP-C01E_WHY03A10	Whays Creek	0.10 SQUARE MILES
5D	VAP-C01E_XDL01A02	XDL - Chesapeake Bay, UT (aka Big Fleets Pond)	0.02 SQUARE MILES
5D	VAP-C01E_XDZ01A10	XDZ - Mill Creek, UT (Gascony Cove)	0.03 SQUARE MILES
5D	VAP-C01E_XEO01A10	XEO - Reason Creek, UT	0.01 SQUARE MILES
5D	VAP-C01E_XES01A12	XES - Dividing Creek, UT	0.03 SQUARE MILES
5D	VAP-C01E_XEU01A02	XEU - Prentice Creek, UT	0.01 SQUARE MILES
5D	VAP-C01E_XEV01A12	XEV - Mill Creek, UT	0.01 SQUARE MILES
5D	VAP-C01E_XEW01A14	XEW - Chesapeake Bay, UT	0.02 SQUARE MILES
5D	VAP-C01E_XFC02C12	XFC - Antipoison Creek, UT	0.01 SQUARE MILES
5D	VAP-C01E_XUC01A98	Unnamed Cove of Dividing Creek	0.01 SQUARE MILES
5D	VAP-C01E_ZZZ01B14	Unsegmented estuaries in C01	0.06 SQUARE MILES
5D	VAP-C01E_ZZZ01C14	Unsegmented estuaries in C01	0.82 SQUARE MILES
5D	VAP-C01E_ZZZ01D14	Unsegmented estuaries in C01	0.03 SQUARE MILES
5D	VAP-C02E_DRN01A02	Dragon Swamp	0.82 SQUARE MILES
5D	VAP-C02R_DRN01A98	Dragon Swamp	12.37 MILES
5D	VAP-C03E_COB02C10	Cobbs Creek	0.09 SQUARE MILES
5D	VAP-C03E_COR01A08	Cores Creek	0.02 SQUARE MILES
5D	VAP-C03E_DAN01A08	Dancing Creek	0.03 SQUARE MILES
5D	VAP-C03E_FER01A98	Ferry Creek	0.08 SQUARE MILES
5D	VAP-C03E_FRE01A02	Frenchs Creek	0.01 SQUARE MILES
5D	VAP-C03E_HEA01A02	Healy Creek	0.07 SQUARE MILES
5D	VAP-C03E_HRP01A98	Harper Creek	0.06 SQUARE MILES
5D	VAP-C03E_JCK01A98	Jackson Creek	0.02 SQUARE MILES
5D	VAP-C03E_JCK01B08	Jackson Creek	0.01 SQUARE MILES
5D	VAP-C03E_JCK01B14	Jackson Creek	0.01 SQUARE MILES
5D	VAP-C03E_JCK01C08	Jackson Creek	0.01 SQUARE MILES
5D	VAP-C03E_JCK01C14	Jackson Creek, UT	0.03 SQUARE MILES
5D	VAP-C03E_JCK02B16	Jackson Creek	0.01 SQUARE MILES
5D	VAP-C03E_JCK02C10	Jackson Creek	0.21 SQUARE MILES
5D	VAP-C03E_JCK03C10	Jackson Creek	0.01 SQUARE MILES
5D	VAP-C03E_MRE01A02	Moore Creek	0.07 SQUARE MILES
5D	VAP-C03E_PNK01A02	Piankatank River	0.40 SQUARE MILES
5D	VAP-C03E_PNK01A98	Piankatank River	1.28 SQUARE MILES
5D	VAP-C03E_PNK01B14	Piankatank River	0.16 SQUARE MILES
5D	VAP-C03E_PNK02A00	Piankatank River	4.01 SQUARE MILES
5D	VAP-C03E_PNK02B08	Piankatank River	0.79 SQUARE MILES
5D	VAP-C03E_PNK03A00	Piankatank River	1.17 SQUARE MILES
5D	VAP-C03E_PNK04A00	Piankatank River	3.53 SQUARE MILES
5D	VAP-C03E_PNK04B06	Piankatank River	0.04 SQUARE MILES
5D	VAP-C03E_PNK04C06	Piankatank River, Fishing Bay	0.08 SQUARE MILES
5D	VAP-C03E_PNK04D08	Porpoise Cove	0.01 SQUARE MILES
5D	VAP-C03E_PNK05A02	Piankatank River	4.94 SQUARE MILES
5D	VAP-C03E_PNK07B08	Piankatank River, UT	0.01 SQUARE MILES
5D	VAP-C03E_PNK08B08	Piankatank River, UT	0.01 SQUARE MILES
5D	VAP-C03E_WLT01A98	Wilton Creek	0.13 SQUARE MILES
5D	VAP-C03E_ZZZ01A14	Unsegmented estuaries in C03	0.04 SQUARE MILES
5D	VAP-C03E_ZZZ01B14	Unsegmented estuaries in C03	0.15 SQUARE MILES
5D	VAP-C04E_BEV01A08	Belleville Creek	0.04 SQUARE MILES
5D	VAP-C04E_BKA01A98	Back Creek	0.07 SQUARE MILES
5D	VAP-C04E_BKA01B12	Back Creek	0.01 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAP-C04E_BLL01A16	Billups Creek	0.02 SQUARE MILES
5D	VAP-C04E_BLL01A98	Billups Creek	0.03 SQUARE MILES
5D	VAP-C04E_BLL01B10	Billups Creek	0.01 SQUARE MILES
5D	VAP-C04E_BLL02A16	Billups Creek	0.31 SQUARE MILES
5D	VAP-C04E_BLL02C12	Billups Creek	0.01 SQUARE MILES
5D	VAP-C04E_BLW01A98	Blackwater Creek	0.10 SQUARE MILES
5D	VAP-C04E_BRN01A04	Barn Creek	0.02 SQUARE MILES
5D	VAP-C04E_BUR01A00	Burke Mill Stream	0.02 SQUARE MILES
5D	VAP-C04E_DAV01A98	Davis Creek	0.04 SQUARE MILES
5D	VAP-C04E_DAV02A14	Davis Creek, UT	0.02 SQUARE MILES
5D	VAP-C04E_DOC01A98	Doctors Creek	0.01 SQUARE MILES
5D	VAP-C04E_DOC01B14	Doctors Creek	0.01 SQUARE MILES
5D	VAP-C04E_DVS01A98	Davis Creek	0.01 SQUARE MILES
5D	VAP-C04E_DVS01B08	Davis Creek	0.01 SQUARE MILES
5D	VAP-C04E_DVS02A12	Davis Creek	0.01 SQUARE MILES
5D	VAP-C04E_DVS03A12	Davis Creek	0.01 SQUARE MILES
5D	VAP-C04E_DYE01A08	Dyer Creek	0.01 SQUARE MILES
5D	VAP-C04E_DYE02A04	Dyer Creek	0.27 SQUARE MILES
5D	VAP-C04E_EDW01A98	Edwards Creek	0.03 SQUARE MILES
5D	VAP-C04E_EDW02A98	Edwards Creek	0.05 SQUARE MILES
5D	VAP-C04E_ELM01A98	Elmington Creek	0.02 SQUARE MILES
5D	VAP-C04E_ELM01B08	Elmington Creek	0.01 SQUARE MILES
5D	VAP-C04E_EST01A98	East River	0.20 SQUARE MILES
5D	VAP-C04E_EST01B10	East River	0.10 SQUARE MILES
5D	VAP-C04E_EST01D10	East River, UT	0.02 SQUARE MILES
5D	VAP-C04E_EST02A00	East River	2.46 SQUARE MILES
5D	VAP-C04E_EST03A06	East River, UT	0.02 SQUARE MILES
5D	VAP-C04E_EST04A02	East River, UT	0.03 SQUARE MILES
5D	VAP-C04E_EST05A06	East River, UT	0.01 SQUARE MILES
5D	VAP-C04E_EST06A08	East River, UT	0.02 SQUARE MILES
5D	VAP-C04E_EST07A08	East River, UT	0.01 SQUARE MILES
5D	VAP-C04E_EST08A08	East River, UT	0.01 SQUARE MILES
5D	VAP-C04E_GDN01A06	Garden Creek	0.37 SQUARE MILES
5D	VAP-C04E_GRE01A08	Greenmansion Cove	0.03 SQUARE MILES
5D	VAP-C04E_GRE01B10	Greenmansion Cove	0.03 SQUARE MILES
5D	VAP-C04E_HAH01A98	Horn Harbor	0.04 SQUARE MILES
5D	VAP-C04E_HAH02A02	Horn Harbor	1.51 SQUARE MILES
5D	VAP-C04E_HAH02B12	Horn Harbor	0.01 SQUARE MILES
5D	VAP-C04E_HAH02C12	Horn Harbor	0.10 SQUARE MILES
5D	VAP-C04E_HAH03A06	Horn Harbor	0.09 SQUARE MILES
5D	VAP-C04E_HAH04A06	Horn Harbor, UT (Jacks Creek)	0.02 SQUARE MILES
5D	VAP-C04E_HKC01A08	Hickorynut Cove	0.02 SQUARE MILES
5D	VAP-C04E_HUD01A08	Hudgins Creek	0.02 SQUARE MILES
5D	VAP-C04E_LAN01A02	Lanes Creek	0.02 SQUARE MILES
5D	VAP-C04E_LAN01B08	Lanes Creek, UT	0.01 SQUARE MILES
5D	VAP-C04E_MID01A02	Winder Creek	0.03 SQUARE MILES
5D	VAP-C04E_MIS01A04	Miles Creek	0.03 SQUARE MILES
5D	VAP-C04E_MLF01A98	Milford Haven	0.03 SQUARE MILES
5D	VAP-C04E_MLF02A98	Milford Haven	0.03 SQUARE MILES
5D	VAP-C04E_MLF03A00	Milford Haven	1.41 SQUARE MILES
5D	VAP-C04E_MLF04A06	Milford Haven	2.28 SQUARE MILES
5D	VAP-C04E_MLF05A06	Milford Haven	0.04 SQUARE MILES
5D	VAP-C04E_MRC01A98	Morris Creek	0.03 SQUARE MILES
5D	VAP-C04E_NOR01A02	North River	0.32 SQUARE MILES
5D	VAP-C04E_NOR01B08	North River	0.14 SQUARE MILES
5D	VAP-C04E_NOR02A02	North River	5.37 SQUARE MILES
5D	VAP-C04E_OAK01A08	Oakland Creek	0.03 SQUARE MILES
5D	VAP-C04E_PEP01A06	Pepper Creek	0.03 SQUARE MILES
5D	VAP-C04E_PUT01A98	Put In Creek	0.08 SQUARE MILES
5D	VAP-C04E_PUT01C10	Put In Creek	0.05 SQUARE MILES
5D	VAP-C04E_PUT01D16	Put In Creek	0.01 SQUARE MILES
5D	VAP-C04E_PUT02A98	Put In Creek	0.02 SQUARE MILES
5D	VAP-C04E_QUE01A98	Queens Creek	0.12 SQUARE MILES
5D	VAP-C04E_QUE01B10	Queens Creek	0.03 SQUARE MILES
5D	VAP-C04E_QUE01C10	Queens Creek	0.06 SQUARE MILES
5D	VAP-C04E_QUE01D12	Queens Creek	0.04 SQUARE MILES
5D	VAP-C04E_QUE02A12	Queens Creek, UT	0.02 SQUARE MILES
5D	VAP-C04E_RAN01A08	Raines Creek	0.04 SQUARE MILES
5D	VAP-C04E_RAY01A12	Raymond Creek	0.03 SQUARE MILES
5D	VAP-C04E_SLO01A08	Sloop Creek	0.05 SQUARE MILES
5D	VAP-C04E_STO01A08	Stoakes Creek	0.01 SQUARE MILES
5D	VAP-C04E_STO01B14	Stoakes Creek	0.29 SQUARE MILES
5D	VAP-C04E_STT01A14	Stutts Creek	0.01 SQUARE MILES
5D	VAP-C04E_STT01A98	Stutts Creek	0.08 SQUARE MILES
5D	VAP-C04E_STT01B06	Stutts Creek, UT (Hole in the Wall)	0.02 SQUARE MILES
5D	VAP-C04E_STT01B10	Stutts Creek/Morris Creek	0.05 SQUARE MILES
5D	VAP-C04E_STT01C14	Stutts Creek	0.01 SQUARE MILES
5D	VAP-C04E_STT02A00	Stutts Creek / Morris Creek	0.23 SQUARE MILES
5D	VAP-C04E_STT04A06	Stutts Creek	0.03 SQUARE MILES
5D	VAP-C04E_STT05A10	Stutts Creek (Hole in the Wall)	1.04 SQUARE MILES
5D	VAP-C04E_TAB01A08	Tabbs Creek	0.08 SQUARE MILES
5D	VAP-C04E_THO01A08	Thomas Creek	0.01 SQUARE MILES
5D	VAP-C04E_WHA01A06	Wharf Creek	0.02 SQUARE MILES
5D	VAP-C04E_WHI01A08	Whites Creek	0.05 SQUARE MILES
5D	VAP-C04E_WHI01B12	Whites Creek	0.27 SQUARE MILES
5D	VAP-C04E_WIN01A06	Winter Harbor, UT	0.04 SQUARE MILES
5D	VAP-C04E_WIN01B00	Winter Harbor	0.61 SQUARE MILES
5D	VAP-C04E_WIN02B06	Winter Harbor	0.04 SQUARE MILES
5D	VAP-C04E_WIN03A06	Winter Harbor	0.74 SQUARE MILES
5D	VAP-C04E_WON01A08	Weston Creek	0.02 SQUARE MILES
5D	VAP-C04E_WOO01A10	Woodas Creek	0.04 SQUARE MILES
5D	VAP-C04E_WTS01A08	Whites Creek	0.02 SQUARE MILES
5D	VAP-C04E_XFA03A14	XFA - North River, UT	0.02 SQUARE MILES
5D	VAP-C04E_XFE01A16	Piankatank River, UT - aka Kibble Pond	0.02 SQUARE MILES
5D	VAP-C04E_ZZZ01A00	Unsegmented estuaries in C04	0.77 SQUARE MILES
5D	VAP-C04E_ZZZ02A06	Unsegmented estuaries in C04	0.08 SQUARE MILES
5D	VAP-C04E_ZZZ03A06	Unsegmented estuaries in C04	0.41 SQUARE MILES
5D	VAP-C04R_EST01A12	East River	0.59 MILES
5D	VAP-C05E_FOX01A08	Fox Mill Run	0.09 SQUARE MILES
5D	VAP-C05E_OLD01A12	Oldhouse Creek	0.10 SQUARE MILES
5D	VAP-C05E_WAR01A02	Ware River	0.26 SQUARE MILES
5D	VAP-C05E_WAR01B08	Ware River	0.41 SQUARE MILES
5D	VAP-C05E_WAR02A02	Ware River	6.17 SQUARE MILES

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5D	VAP-C05E_WIL01A98	Wilson Creek	0.03 SQUARE MILES
5D	VAP-C05E_WIL01B08	Wilson Creek	0.16 SQUARE MILES
5D	VAP-C05E_XDJ01A08	Wilson Creek, UT	0.01 SQUARE MILES
5D	VAP-C05E_ZZZ01A00	Unsegmented estuaries in C05	0.23 SQUARE MILES
5D	VAP-C06E_BRB01A08	Browns Bay	0.02 SQUARE MILES
5D	VAP-C06E_BRB01B12	Browns Bay	0.02 SQUARE MILES
5D	VAP-C06E_FSC01A98	Free School Creek	0.05 SQUARE MILES
5D	VAP-C06E_FSC01B12	Free School Creek	0.01 SQUARE MILES
5D	VAP-C06E_HEY01A98	Heywood Creek	0.08 SQUARE MILES
5D	VAP-C06E_HEY01B10	Heywood Creek	0.09 SQUARE MILES
5D	VAP-C06E_MNC01A98	Monday Creek	0.08 SQUARE MILES
5D	VAP-C06E_ROW01A06	Rowes Creek	0.07 SQUARE MILES
5D	VAP-C06E_SEN01A02	Northwest Branch Severn River	0.09 SQUARE MILES
5D	VAP-C06E_SEN01B16	Northwest Branch Severn River, UT	0.03 SQUARE MILES
5D	VAP-C06E_SEN01C10	Northwest Branch Severn River	0.20 SQUARE MILES
5D	VAP-C06E_SEN02A06	Northwest Branch Severn River	0.44 SQUARE MILES
5D	VAP-C06E_SES01A00	Southwest Branch Severn River	0.63 SQUARE MILES
5D	VAP-C06E_SEV02A00	Severn River	3.26 SQUARE MILES
5D	VAP-C06E_STR01A08	Sterling Creek	0.02 SQUARE MILES
5D	VAP-C06E_THC01A98	Thorntons Creek	0.05 SQUARE MILES
5D	VAP-C06E_THC01B10	Thorntons Creek	0.03 SQUARE MILES
5D	VAP-C06E_VGH01A98	Vaughans Creek	0.10 SQUARE MILES
5D	VAP-C06E_VGH01B10	Vaughans Creek	0.02 SQUARE MILES
5D	VAP-C06E_WET01A06	Willetts Creek	0.03 SQUARE MILES
5D	VAP-C06E_WET01B08	Willetts Creek	0.13 SQUARE MILES
5D	VAP-C06E_WTT01A08	Whitaker Creek	0.07 SQUARE MILES
5D	VAP-C06E_XEE01A10	Northwest Branch Severn River, UT	0.01 SQUARE MILES
5D	VAP-C06E_ZZZ01A00	Unsegmented estuaries in C06	1.35 SQUARE MILES
5D	VAT-C07E_BAK01A00	Mainstem Back River	3.34 SQUARE MILES
5D	VAT-C07E_BAK01B08	Mainstem Back River-South Shore at Mouth Wallace Cr.	0.09 SQUARE MILES
5D	VAT-C07E_BAK02A14	Back Creek - Inlet near Dandy Point [TMDL]	0.03 SQUARE MILES
5D	VAT-C07E_BCB01A06	Buckroe Beaches	0.22 SQUARE MILES
5D	VAT-C07E_BCK01A00	Back Creek - Upper	0.22 SQUARE MILES
5D	VAT-C07E_BCK02A06	Back Creek - Middle (DSS-marina area)	0.14 SQUARE MILES
5D	VAT-C07E_BCK03A06	Back Creek - Lower	0.41 SQUARE MILES
5D	VAT-C07E_BEN01A06	Bennett Creek - Upper (DSS_06-IR)	0.04 SQUARE MILES
5D	VAT-C07E_BEN02A08	Bennet Creek - Lower Middle	0.21 SQUARE MILES
5D	VAT-C07E_BEN03A16	Bennett Creek-Mouth	0.37 SQUARE MILES
5D	VAT-C07E_BRK01A06	Brick Kiln Creek	0.09 SQUARE MILES
5D	VAT-C07E_BTC01A08	Bay Tree Creek	0.13 SQUARE MILES
5D	VAT-C07E_BTH01A08	Boathouse Creek	0.08 SQUARE MILES
5D	VAT-C07E_CAB01A08	Cabin Creek	0.08 SQUARE MILES
5D	VAT-C07E_CCR01A06	Cedar & Topping Creeks	0.11 SQUARE MILES
5D	VAT-C07E_CHS01A06	Chisman Creek-Upper	0.31 SQUARE MILES
5D	VAT-C07E_CHS02A06	Chisman Creek-Lower North Shore (Marina)	0.09 SQUARE MILES
5D	VAT-C07E_CHS02B06	Chisman Creek - Lower	0.54 SQUARE MILES
5D	VAT-C07E_EAS01A06	Easton Cove	0.06 SQUARE MILES
5D	VAT-C07E_FLY01A06	Floyds Bay- Upper	0.04 SQUARE MILES
5D	VAT-C07E_FLY02A16	Floyds Bay- mouth	0.01 SQUARE MILES
5D	VAT-C07E_FMB01A12	Fort Monroe Beaches	0.33 SQUARE MILES
5D	VAT-C07E_FRT01A06	Front Cove - Upper	0.04 SQUARE MILES
5D	VAT-C07E_FRT02A08	Front Cove - Lower	0.04 SQUARE MILES
5D	VAT-C07E_GLD01A10	Grunland Creek - Mouth	0.05 SQUARE MILES
5D	VAT-C07E_GOO01A14	Goose Creek- Upper	0.06 SQUARE MILES
5D	VAT-C07E_GOO02A14	Goose Creek- Lower	0.04 SQUARE MILES
5D	VAT-C07E_GRV01A06	Grandview Pier & Saltponds Beaches	0.24 SQUARE MILES
5D	VAT-C07E_GRV02A10	Grandview Pier & Saltponds Beaches [No TMDL]	0.12 SQUARE MILES
5D	VAT-C07E_HAR01A06	Harris River - Upper	0.17 SQUARE MILES
5D	VAT-C07E_HAR02A10	Harris River - Mouth	0.19 SQUARE MILES
5D	VAT-C07E_HAR02B10	Harris River - Lower Marina Area	0.05 SQUARE MILES
5D	VAT-C07E_HOD01A08	Hodges Creek - Upper	0.06 SQUARE MILES
5D	VAT-C07E_IN101A08	DSS Inlet #1 - Unnamed Inlet at Mouth of SW Branch	0.02 SQUARE MILES
5D	VAT-C07E_INB01A04	DSS Inlet #2 - Unnamed Inlet S. Shore of SW Br. Back River	0.01 SQUARE MILES
5D	VAT-C07E_LMC01A04	Lambs Creek - Poquoson River	0.14 SQUARE MILES
5D	VAT-C07E_LMC02A16	Lambs Creek - Mouth	0.03 SQUARE MILES
5D	VAT-C07E_LON01A06	Long & Grunland Creeks - Back River	0.10 SQUARE MILES
5D	VAT-C07E_LON01B12	Long & Grunland Creeks - Back River	0.06 SQUARE MILES
5D	VAT-C07E_LON02A10	Long & Grunland Creeks - DSS Admin Area	0.09 SQUARE MILES
5D	VAT-C07E_LYO01A06	Lyons Creek - Upper	0.03 SQUARE MILES
5D	VAT-C07E_LYO02A06	Lyons Creek - Middle and Lower	0.09 SQUARE MILES
5D	VAT-C07E_NEW01A02	Newmarket Creek - Upper	0.07 SQUARE MILES
5D	VAT-C07E_NEW02A02	Newmarket Creek - Lower	0.08 SQUARE MILES
5D	VAT-C07E_NWB01A06	Northwest Br. Back River - Upper [TMDL-CD]	0.22 SQUARE MILES
5D	VAT-C07E_NWB01B08	Northwest Br. Back River - Upper [TMDL not CD]	0.25 SQUARE MILES
5D	VAT-C07E_NWB02A06	Northwest Br. Back River - Lower [DSS OPEN]	0.96 SQUARE MILES
5D	VAT-C07E_POQ01A06	Poquoson River - Upper [TMDL-CD]	0.43 SQUARE MILES
5D	VAT-C07E_POQ02A06	Poquoson River - Lower [DSS-OPEN]	0.91 SQUARE MILES
5D	VAT-C07E_POQ03A08	Poquoson River - Mouth	1.49 SQUARE MILES
5D	VAT-C07E_PTC01A04	Patricks Creek - Poquoson River	0.12 SQUARE MILES
5D	VAT-C07E_ROB01A04	Roberts Creek - Upper	0.10 SQUARE MILES
5D	VAT-C07E_ROB02A08	Roberts Creek - Lower [DSS-OPEN]	0.01 SQUARE MILES
5D	VAT-C07E_SWB01A08	SW Br Back River - Incl Tides Mill Cr [TMDL area]	0.99 SQUARE MILES
5D	VAT-C07E_SWB01B08	SW Br Back River - Outside DSS Inlet #1 & #2 [TMDL area]	0.04 SQUARE MILES
5D	VAT-C07E_SWB02A08	Southwest Br. Back River - Mouth [DSS OPEN -No TMDL]	0.23 SQUARE MILES
5D	VAT-C07E_SWB02B10	SW Br Back R - DSS OPEN [TMDL]	0.42 SQUARE MILES
5D	VAT-C07E_TBC01A04	Tabbs Creek - NW Br Back River	0.05 SQUARE MILES
5D	VAT-C07E_TBC02A10	Tabbs Creek Mouth - NW Br Back River	0.04 SQUARE MILES
5D	VAT-C07E_TBC02B14	Tabbs Creek Mouth - NW Br Back River	0.02 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAT-C07E_THR01A10	Sandbox Area NW Thorofare	0.01 SQUARE MILES
5D	VAT-C07E_WAL01A06	Wallace Creek - Upper (Back River)	0.04 SQUARE MILES
5D	VAT-C07E_WAT01A06	Watts Creek - (NW Br. Back River)	0.06 SQUARE MILES
5D	VAT-C07E_WHH01A06	White House Cove - Bennet Cr. Area	0.15 SQUARE MILES
5D	VAT-C07E_ZZZ01A00	Unsegmented estuaries in Back River	1.04 SQUARE MILES
5D	VAT-C07E_ZZZ01B12	Unsegmented estuaries in Back River - DSS	0.10 SQUARE MILES
5D	VAT-C07R_NEW01A06	Newmarket Creek - Lower Riverine	2.01 MILES
5D	VAT-C08E_BBY01A14	Broad Bay	1.21 SQUARE MILES
5D	VAT-C08E_BBY01B10	Broad Bay - Upper, UTs W. Shore [Admin Cond]	0.02 SQUARE MILES
5D	VAT-C08E_BBY02B10	UT South Shore Broad Bay [Admin Cond]	0.01 SQUARE MILES
5D	VAT-C08E_BBY03B10	Unnamed Inlet S.W. Shore Broad Bay	0.01 SQUARE MILES
5D	VAT-C08E_CBB01A06	13th View Beach	0.35 SQUARE MILES
5D	VAT-C08E_CBB01B14	Sara Constance Park and Ocean View Park Beaches	0.14 SQUARE MILES
5D	VAT-C08E_CBB01C16	10th View Beach	0.15 SQUARE MILES
5D	VAT-C08E_CBB02A16	Ches Bay Beaches	0.67 SQUARE MILES
5D	VAT-C08E_CBB03A16	Chicks Beach	0.43 SQUARE MILES
5D	VAT-C08E_CBB04A16	Shore Drive Beaches -East	1.04 SQUARE MILES
5D	VAT-C08E_CRY01A00	Crystal Lake	0.13 SQUARE MILES
5D	VAT-C08E_DEY01A00	Dey Cove/Mill Dam Creek	0.09 SQUARE MILES
5D	VAT-C08E_EBL01A06	Eastern Branch - Upper, Lynnhaven River	0.23 SQUARE MILES
5D	VAT-C08E_EBL01B10	Eastern Branch - Lower Upper, Lynnhaven River	0.26 SQUARE MILES
5D	VAT-C08E_EBL02A08	Eastern Branch - Lower, Lynnhaven River	0.39 SQUARE MILES
5D	VAT-C08E_LCC01A08	Little Creek & Harbor	1.06 SQUARE MILES
5D	VAT-C08E_LKN01A00	Linkhorn Bay - Upper	0.10 SQUARE MILES
5D	VAT-C08E_LKN01B14	Linkhorn Bay - Upper	0.07 SQUARE MILES
5D	VAT-C08E_LKN02A10	Linkhorn Bay - Lower	0.60 SQUARE MILES
5D	VAT-C08E_LKN02B10	Linkhorn Bay - Coves [Admin Condem]	0.18 SQUARE MILES
5D	VAT-C08E_LNC01A00	Little Neck Creek - Upper	0.08 SQUARE MILES
5D	VAT-C08E_LNC01B16	Little Neck Creek-Lower	0.04 SQUARE MILES
5D	VAT-C08E_LNC02A12	Little Neck Creek-Lower	0.15 SQUARE MILES
5D	VAT-C08E_LNC02B12	Little Neck Creek-Lower (DSS ADMIN)	0.07 SQUARE MILES
5D	VAT-C08E_LOB01A00	London Bridge Creek	0.06 SQUARE MILES
5D	VAT-C08E_LON01A00	Long Creek	0.32 SQUARE MILES
5D	VAT-C08E_LYN01A06	Lynnhaven River & Bay - Mainstem	0.85 SQUARE MILES
5D	VAT-C08E_LYN01B10	Lynnhaven River & Bay Coves [Admin Cond]	0.56 SQUARE MILES
5D	VAT-C08E_LYN01C12	Lynnhaven River & Bay - DSS Cond	0.33 SQUARE MILES
5D	VAT-C08E_THA01A02	Thalia Creek, Thurston Branch & Buchanan Creek	0.29 SQUARE MILES
5D	VAT-C08E_WES01A06	Western Branch - Upper, Lynnhaven River	0.15 SQUARE MILES
5D	VAT-C08E_WES01B16	Western Branch - Middle, Lynnhaven River	0.17 SQUARE MILES
5D	VAT-C08E_WES02A06	Western Branch - Middle, Lynnhaven River	0.16 SQUARE MILES
5D	VAT-C08E_WES03A10	Western Branch - Lower, Lynnhaven River	0.17 SQUARE MILES
5D	VAT-C08E_WNC01A00	West Neck Creek (Upper) to London Bridge Creek	0.08 SQUARE MILES
5D	VAT-C08E_XBO01A00	Canal No. 2	0.04 SQUARE MILES
5D	VAT-C08E_ZZZ01A00	Unsegmented tidal tributaries in C08E-LYNPH	0.96 SQUARE MILES
5D	VAT-C08E_ZZZ01B10	Unsegmented tidal tributary to Lynnhaven R. & Linkhorn Bay	0.21 SQUARE MILES
5D	VAT-C09E_BLB01A06	Bulbeggar Creek	0.13 SQUARE MILES
5D	VAT-C09E_POC01A06	Pocomoke River	0.24 SQUARE MILES
5D	VAT-C09E_POC02A08	Pocomoke Sound [C09 portion]	0.73 SQUARE MILES
5D	VAT-C09E_PTT01A06	Pitts Creek	0.13 SQUARE MILES
5D	VAT-C09E_ZZZ01A06	Unsegmented tidal tributaries in C09E-POCOH	0.01 SQUARE MILES
5D	VAT-C09R_XAE01A00	Unnamed tributary to Pitts Creek	7.50 MILES
5D	VAT-C10E_BAG01A00	Bagwell Creek	0.10 SQUARE MILES
5D	VAT-C10E_BAG02A10	Bagwell Creek - Lower	0.11 SQUARE MILES
5D	VAT-C10E_DEP01A06	Deep Creek - Middle	0.16 SQUARE MILES
5D	VAT-C10E_DEP01B10	Deep Creek - Upper [DSS ADMIN]	0.11 SQUARE MILES
5D	VAT-C10E_DEP02A06	Deep Creek - Lower	0.42 SQUARE MILES
5D	VAT-C10E_DEP03A08	Deep Creek - Lower [No DSS]	0.22 SQUARE MILES
5D	VAT-C10E_DIX01A08	Dix Cove	0.04 SQUARE MILES
5D	VAT-C10E_GLF01A06	Guilford Creek - Upper [TMDL]	0.12 SQUARE MILES
5D	VAT-C10E_GLF01B08	Guilford Creek - Upper [NEST]	0.03 SQUARE MILES
5D	VAT-C10E_GLF02A06	Guilford Creek - Lower	0.11 SQUARE MILES
5D	VAT-C10E_GLF03A08	Guilford Creek - Lower [No DSS]	0.46 SQUARE MILES
5D	VAT-C10E_GSH01A06	Guard Shore Beach	0.03 SQUARE MILES
5D	VAT-C10E_HLD01A06	Holdens Creek - Upper	0.03 SQUARE MILES
5D	VAT-C10E_HUN01A00	Hunting Creek - Upper	0.17 SQUARE MILES
5D	VAT-C10E_HUN02A06	Hunting Creek - Lower	0.67 SQUARE MILES
5D	VAT-C10E_ISB01A06	Island Bay - [No DSS]	0.95 SQUARE MILES
5D	VAT-C10E_MES01A06	Messongo Creek - Upper	0.05 SQUARE MILES
5D	VAT-C10E_MES02A06	Messongo Creek - Middle [TMDL-06]	0.11 SQUARE MILES
5D	VAT-C10E_MES02B08	Messongo Creek - Middle [No TMDL]	0.04 SQUARE MILES
5D	VAT-C10E_MES02C10	Messongo Creek - Middle Upper	0.08 SQUARE MILES
5D	VAT-C10E_MES03A06	Messongo Creek - Lower	1.11 SQUARE MILES
5D	VAT-C10E_MUD01A04	Muddy Creek - Upper	0.21 SQUARE MILES
5D	VAT-C10E_MUD02A06	Muddy Creek - Lower	0.13 SQUARE MILES
5D	VAT-C10E_MUD03A08	Muddy Creek - Lower [No DSS]	0.06 SQUARE MILES
5D	VAT-C10E_POC01A08	Pocomoke Sound - Lower [C10 portion]	1.45 SQUARE MILES
5D	VAT-C10E_STR01A08	Starling Creek	0.09 SQUARE MILES
5D	VAT-C10E_YOU01A06	Young Creek	0.24 SQUARE MILES
5D	VAT-C10E_ZZZ01A06	Unsegmented Bay Waters in C10E-CB7PH.	1.41 SQUARE MILES
5D	VAT-C10E_ZZZ02A06	Unsegmented estuaries in C10E-POCMH [No DSS]	2.98 SQUARE MILES
5D	VAT-C10E_ZZZ02B10	Unsegmented Bay Waters in C10E-POCMH - Doe Cr	0.37 SQUARE MILES
5D	VAT-C11E_CED01A00	Cedar Creek	0.06 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAT-C11E_CSX01A00	Chesconessex Creek - South Br. - Upper	0.14 SQUARE MILES
5D	VAT-C11E_CSX01B10	Chesconessex Creek - South Br. - Middle	0.06 SQUARE MILES
5D	VAT-C11E_CSX02A06	Chesconessex Creek - N. Branch	1.83 SQUARE MILES
5D	VAT-C11E_CSX02B10	Chesconessex Creek - N. Branch	0.03 SQUARE MILES
5D	VAT-C11E_FNN01A00	Finneys Creek - Upper	0.07 SQUARE MILES
5D	VAT-C11E_FNN02A00	Finneys Creek - Lower	0.12 SQUARE MILES
5D	VAT-C11E_LTH01A00	Leatherberry Creek	0.07 SQUARE MILES
5D	VAT-C11E_MTC01A06	Matchotank Creek - Upper	0.07 SQUARE MILES
5D	VAT-C11E_MTC02A06	Matchotank Creek - Lower	0.12 SQUARE MILES
5D	VAT-C11E_OCB01A00	Central Branch, Onancock Creek	0.02 SQUARE MILES
5D	VAT-C11E_OCN01A04	Onancock Creek Mainstem - Upper [Admin Cond]	0.03 SQUARE MILES
5D	VAT-C11E_OCN01B10	Onancock Creek Mainstem - Middle Upper [Admin Cond]	0.09 SQUARE MILES
5D	VAT-C11E_OCN01C10	Onancock Creek Mainstem - Upper	0.03 SQUARE MILES
5D	VAT-C11E_OCN02A04	Onancock Creek Mainstem - Lower	2.02 SQUARE MILES
5D	VAT-C11E_OCN02B08	Onancock Creek Mainstem - Poplar Cove	0.02 SQUARE MILES
5D	VAT-C11E_ONB01A02	North Branch, Onancock Creek	0.02 SQUARE MILES
5D	VAT-C11E_OSB01A02	Southern Branch, Onancock Creek	0.06 SQUARE MILES
5D	VAT-C11E_PRK01A08	Parkers Creek - Upper	0.03 SQUARE MILES
5D	VAT-C11E_PRK02A08	Parkers Creek - Middle	0.04 SQUARE MILES
5D	VAT-C11E_PRK03A08	Parkers Creek - Lower	0.09 SQUARE MILES
5D	VAT-C11E_TAR01A06	Tarkill Creek	0.19 SQUARE MILES
5D	VAT-C11E_ZZZ01A00	Unsegmented estuaries in C11E.	1.54 SQUARE MILES
5D	VAT-C12E_PUN01A06	Pungoteague Creek - Upper	0.19 SQUARE MILES
5D	VAT-C12E_PUN01B16	Pungoteague Creek - Middle-Upper	0.31 SQUARE MILES
5D	VAT-C12E_PUN02A06	Pungoteague Creek - Lower	1.19 SQUARE MILES
5D	VAT-C12E_TAY01A06	Taylor Creek	0.13 SQUARE MILES
5D	VAT-C12E_TAY02A14	Taylor Creek- Mouth	0.03 SQUARE MILES
5D	VAT-C12E_UNR01A06	Underhill Creek	0.07 SQUARE MILES
5D	VAT-C12E_WRP01A06	Warehouse Prong - Upper	0.04 SQUARE MILES
5D	VAT-C12E_WRP02A06	Warehouse Prong - Lower	0.05 SQUARE MILES
5D	VAT-C12E_ZZZ01A00	Unsegmented Bay Waters in C12E.	0.01 SQUARE MILES
5D	VAT-C13E_BCE01A08	Back Creek	0.14 SQUARE MILES
5D	VAT-C13E_BOS01A08	Boggs Gut	0.03 SQUARE MILES
5D	VAT-C13E_CHC01A00	Church Creek	0.43 SQUARE MILES
5D	VAT-C13E_CHC01B16	Church Creek -Upper	0.11 SQUARE MILES
5D	VAT-C13E_CHC01C10	Church Creek - Middle- UT North Cove	0.06 SQUARE MILES
5D	VAT-C13E_CRA01A06	Craddock Creek - Upper [TMDL-bact.]	0.08 SQUARE MILES
5D	VAT-C13E_CRA02A08	Craddock Creek - Lower and UT	0.91 SQUARE MILES
5D	VAT-C13E_CRR01A08	Curratuck Creek	0.28 SQUARE MILES
5D	VAT-C13E_HGC01A06	Holly Grove Cove- Upper	0.11 SQUARE MILES
5D	VAT-C13E_HGC01B12	Holly Grove Cove- Lower	0.04 SQUARE MILES
5D	VAT-C13E_KLL01A06	Kelley Cove	0.03 SQUARE MILES
5D	VAT-C13E_MAG01A08	McLean Gut - Upper	0.04 SQUARE MILES
5D	VAT-C13E_MAG02A08	McLean Gut - Lower	0.03 SQUARE MILES
5D	VAT-C13E_NAN01A00	Nandua Creek - Upper [TMDL-bact.]	0.14 SQUARE MILES
5D	VAT-C13E_NAN01B08	Nandua Creek - Lower Upper	0.22 SQUARE MILES
5D	VAT-C13E_NAN02A06	Nandua Creek - Lower	3.15 SQUARE MILES
5D	VAT-C13E_NSS01A06	Nassawadox Creek - Upper [TMDL-bact.]	0.24 SQUARE MILES
5D	VAT-C13E_NSS01B08	Nassawadox Creek - Upper [No TMDL-bact]	0.13 SQUARE MILES
5D	VAT-C13E_NSS02A06	Nassawadox Creek - Lower	2.11 SQUARE MILES
5D	VAT-C13E_NSS03A08	Nassawadox Creek - Middle, N. Shore Tribs	0.14 SQUARE MILES
5D	VAT-C13E_OCH01A06	Occohannock Creek - Upper	0.38 SQUARE MILES
5D	VAT-C13E_OCH02A06	Occohannock Creek - Lower	2.66 SQUARE MILES
5D	VAT-C13E_OCH02B08	Occohannock Creek - Middle Marina Area	0.03 SQUARE MILES
5D	VAT-C13E_OCH03A08	Shields Cove & Fisher Cove	0.05 SQUARE MILES
5D	VAT-C13E_WHC01A06	Warehouse Creek - Upper	0.03 SQUARE MILES
5D	VAT-C13E_WHC01B10	Warehouse Creek - Upper Middle (Admin Cond)	0.17 SQUARE MILES
5D	VAT-C13E_WHC02A06	Warehouse Creek - Lower	0.25 SQUARE MILES
5D	VAT-C13E_ZZZ01A00	Unsegmented estuaries in C13E.	0.75 SQUARE MILES
5D	VAT-C14E_BRL01A06	Barlow Creek	0.05 SQUARE MILES
5D	VAT-C14E_HUG01A00	Hungars Creek - Upper	0.14 SQUARE MILES
5D	VAT-C14E_HUG02A00	Hungars Creek - Lower	1.19 SQUARE MILES
5D	VAT-C14E_HUG02B12	UT to Hungars Creek	0.04 SQUARE MILES
5D	VAT-C14E_HUG02C14	Hungars Creek - Northern Trib	0.07 SQUARE MILES
5D	VAT-C14E_JAC01A06	Jacobus Creek - Upper South	0.03 SQUARE MILES
5D	VAT-C14E_JAC02A06	Jacobus Creek - Upper Forks	0.15 SQUARE MILES
5D	VAT-C14E_JAC03A06	Jacobus Creek - Lower	0.19 SQUARE MILES
5D	VAT-C14E_MAT01A06	Mattawoman Creek - Upper	0.18 SQUARE MILES
5D	VAT-C14E_MAT02A10	Mattawoman Creek - Lower	0.34 SQUARE MILES
5D	VAT-C14E_THG01A06	The Gulf - Upper	0.14 SQUARE MILES
5D	VAT-C14E_THG02A06	The Gulf - Lower	0.15 SQUARE MILES
5D	VAT-C14E_WHS01A06	Westerhouse Creek - North Branch [TMDL]	0.03 SQUARE MILES
5D	VAT-C14E_WHS02A06	Westerhouse Creek - Upper South Branch [TMDL]	0.04 SQUARE MILES
5D	VAT-C14E_WHS03A06	Westerhouse Creek - Upper and Middle	0.19 SQUARE MILES
5D	VAT-C14E_ZZZ01A00	Unsegmented estuaries in C14E.	0.84 SQUARE MILES
5D	VAT-C15E_CCB01A06	Cape Charles Beach	0.08 SQUARE MILES
5D	VAT-C15E_CRS01A06	Cherrystone Inlet - Upper	2.48 SQUARE MILES
5D	VAT-C15E_KNS01A00	Kings Creek - Upper Forks and Middle	0.13 SQUARE MILES
5D	VAT-C15E_KNS03A08	Kings Creek - Lower Middle	0.21 SQUARE MILES
5D	VAT-C15E_ZZZ01A08	Unsegmented estuaries in C15E.	0.59 SQUARE MILES
5D	VAT-C16E_CCH01A04	Cape Charles Harbor - Upper	0.06 SQUARE MILES
5D	VAT-C16E_CCH02A00	Cape Charles Harbor - Lower	0.06 SQUARE MILES
5D	VAT-C16E_KPT01A06	Kiptopeke Beach	0.04 SQUARE MILES
5D	VAT-C16E_OPC01A06	Old Plantation Creek - Upper [TMDL-bact]	0.04 SQUARE MILES
5D	VAT-C16E_OPC01B08	Old Plantation Creek - Upper [No TMDL-bact]	0.15 SQUARE MILES
5D	VAT-C16E_OPC02A00	Old Plantation Creek - Lower	0.93 SQUARE MILES
5D	VAT-C16E_ZZZ01A00	Unsegmented estuaries in C16E.	0.15 SQUARE MILES
5D	VAT-D01E_LTM01A06	Little Mosquito Creek - Upper	0.07 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
5D	VAT-D01E_LTM02A04	Little Mosquito Creek - Lower	0.14 SQUARE MILES
5D	VAT-D01E_SGT01A04	Swans Gut Creek	0.10 SQUARE MILES
5D	VAT-D02E_ASW01A00	Assawoman Creek - Upper	0.07 SQUARE MILES
5D	VAT-D02E_ASW02A00	Assawoman Creek - Lower	0.05 SQUARE MILES
5D	VAT-D02E_ASW02B12	Assawoman Creek - Lower	0.01 SQUARE MILES
5D	VAT-D05E_OSS01A00	Oyster Slip (Harbor) - Upper	0.03 SQUARE MILES
5D	VAT-D06R_MCR01A00	Mill Creek	2.23 MILES

York River Basin

Overall Category	305(b) ID	Waterbody Name	Size
1	VAN-F09R_NST02A98	Northeast Creek	1.09 MILES
2A	VAN-F02R_NTH01A10	Northeast Creek	3.96 MILES
2A	VAN-F03R_MIC01A14	Mill Creek	2.25 MILES
2A	VAN-F03R_SAR01A16	South Anna River	2.30 MILES
2A	VAN-F03R_SAR02A02	South Anna River	7.09 MILES
2A	VAN-F03R_SAR02B10	South Anna River	6.44 MILES
2A	VAN-F03R_SHP01A16	Shop Creek	5.52 MILES
2A	VAN-F06R_HCN01A02	North Fork Hickory Creek	5.18 MILES
2A	VAN-F06R_HIK02A16	Hickory Creek	0.20 MILES
2A	VAN-F06R_HIK03A16	Hickory Creek	0.68 MILES
2A	VAN-F07R_HSP01A14	Horsepen Branch	1.87 MILES
2A	VAN-F07R_PGN01A06	Pigeon Run	1.59 MILES
2A	VAN-F08R_XIJ01A10	Unnamed tributary to Contrary Creek	0.45 MILES
2A	VAN-F09R_ARN01A06	Arnolds Creek	4.75 MILES
2A	VAN-F09R_NST01A08	Northeast Creek	2.86 MILES
2A	VAN-F09R_XHZ01A06	Unnamed tributary to unnamed tributary to Northeast Creek	2.19 MILES
2A	VAN-F09R_XJF01A14	Unnamed tributary to Northeast Creek	2.81 MILES
2A	VAN-F11R_XJE01A14	Unnamed tributary to Locust Creek.	2.00 MILES
2A	VAN-F15L_NIR01A02	Ni River Reservoir	234.31 ACRES
2A	VAN-F15L_NIR02A02	Ni River Reservoir	138.90 ACRES
2A	VAN-F15L_PNB01A02	Ni River Reservoir	34.47 ACRES
2A	VAN-F15R_NIR02A02	Ni River	7.60 MILES
2A	VAN-F15R_XJK01A12	Unnamed tributary to Ni River	1.41 MILES
2A	VAN-F15R_XJL01A12	Unnamed tributary to Ni River	0.56 MILES
2A	VAN-F15R_XJN01A12	Unnamed tributary to Ni River	2.84 MILES
2A	VAN-F16R_POR01B02	Po River	7.70 MILES
2A	VAN-F16R_POR02A02	Po River	2.29 MILES
2A	VAN-F16R_POR02B10	Po River	2.54 MILES
2A	VAN-F17R_MPN02A02	Mattaponi River	6.07 MILES
2A	VAN-F19R_STH01A00	South River	3.39 MILES
2A	VAN-F19R_STH02A08	South River	2.58 MILES
2A	VAN-F19R_STH03A08	South River	9.09 MILES
2A	VAN-F21R_BRB01A12	Beaver Branch	1.45 MILES
2A	VAN-F21R_MPN02A02	Mattaponi River	8.87 MILES
2A	VAN-F21R_XJB01A12	Unnamed tributary to Mattaponi River	1.72 MILES
2A	VAN-F22R_BEV01A08	Beverly Run	4.86 MILES
2A	VAN-F22R_MAR02A02	Maracossic Creek	4.52 MILES
2A	VAN-F22R_MAR03A08	Maracossic Creek	5.13 MILES
2A	VAN-F22R_MAR04A08	Maracossic Creek	6.77 MILES
2A	VAP-F04R_SHC01A12	Stone Horse Creek	4.39 MILES
2A	VAP-F09R_NAR04B08	North Anna River	6.29 MILES
2A	VAP-F12R_PMK01A00	Pamunkey River	9.17 MILES
2A	VAP-F13R_ACA01A14	Academy Creek	2.39 MILES
2A	VAP-F13R_BLC01A00	Black Creek	1.95 MILES
2A	VAP-F13R_BLC01B12	Black Creek	9.43 MILES
2A	VAP-F13R_HMR01A14	Hawes Millrace	2.65 MILES
2A	VAP-F13R_OPP01A14	Opossum Creek	2.49 MILES
2A	VAP-F13R_PON01A02	Pony Swamp	2.16 MILES
2A	VAP-F13R_XBS01A14	XBS - Totopotomoy Creek, UT	1.13 MILES
2A	VAP-F14L_CMC01A14	Cohoke Millpond	85.27 ACRES
2A	VAP-F14R_XDM01A00	Cohoke Mill Creek, UT	2.23 MILES
2A	VAP-F23R_WKN02A12	Walkerton Branch	0.17 MILES
2A	VAP-F24R_BRS01A12	Brooks Creek	2.90 MILES
2A	VAP-F24R_MIL01A00	Mill Creek	0.40 MILES
2A	VAT-F26R_FRS01A00	France Swamp (Upper)	3.18 MILES
2A	VAT-F26R_FRS02A10	France Swamp (Middle Downstream)	0.88 MILES
2B	VAN-F01R_SAR01A02	South Anna River	7.95 MILES
2B	VAN-F02L_NTH01A06	Northeast Creek Reservoir	183.79 ACRES
2B	VAN-F07L_CLC01A06	Lake Orange	124.85 ACRES
2B	VAN-F16R_POR01C06	Po River	5.18 MILES
2B	VAN-F17R_XJV01A16	Unnamed Tributary to Poni River	2.93 MILES
2C	VAN-F03R_OWN01A04	Owens Creek	2.71 MILES
2C	VAP-F13E_ZZZ01C14	Unsegmented estuaries in F13	0.01 SQUARE MILES
2C	VAP-F13E_ZZZ01D14	Unsegmented estuaries in F13	0.02 SQUARE MILES
2C	VAP-F13E_ZZZ01E14	Unsegmented estuaries in F13	0.01 SQUARE MILES
2C	VAP-F13E_ZZZ01F14	Unsegmented estuaries in F13	0.21 SQUARE MILES
2C	VAP-F13E_ZZZ01G14	Unsegmented estuaries in F13	0.05 SQUARE MILES
2C	VAP-F14E_CMC01A06	Cohoke Mill Creek	0.03 SQUARE MILES
2C	VAP-F14E_ZZZ01A00	Unsegmented estuaries in F14	0.70 SQUARE MILES
2C	VAP-F14E_ZZZ02A06	Unsegmented estuaries in F14	0.26 SQUARE MILES
2C	VAP-F14E_ZZZ02B06	Unsegmented estuaries in F14	0.06 SQUARE MILES
2C	VAP-F23E_ZZZ01A14	Unsegmented estuaries in F23	0.03 SQUARE MILES
2C	VAP-F23E_ZZZ01B14	Unsegmented estuaries in F23	0.03 SQUARE MILES
2C	VAP-F24E_ZZZ01A00	Unsegmented estuaries in F24	0.06 SQUARE MILES
3A	VAN-F01R_ZZZ01A00	South Anna River/Dove Fork	105.00 MILES
3A	VAN-F01R_ZZZ02A00	Wheeler Creek	61.82 MILES
3A	VAN-F02R_BVR01A02	Beaver Creek	6.65 MILES
3A	VAN-F02R_TYD01A00	Tanyard Branch	2.39 MILES
3A	VAN-F02R_ZZZ03A00	South Anna River/Roundabout Creek	131.57 MILES
3A	VAN-F02R_ZZZ04A00	South Anna River/Harris Creek	84.17 MILES
3A	VAN-F03R_SAR01C02	South Anna River	6.90 MILES
3A	VAN-F03R_ZZZ05A00	South Anna River/Fork Creek	116.72 MILES
3A	VAN-F03R_ZZZ06A00	Cub Creek	48.76 MILES
3A	VAN-F03R_ZZZ07A00	South Anna River/Owens Creek	102.64 MILES
3A	VAN-F03R_ZZZ08A00	Taylors Creek	99.91 MILES
3A	VAN-F03R_ZZZ09A00	South Anna River/Turkey Creek	75.65 MILES
3A	VAN-F06R_BRC02A04	Beaver Creek	2.39 MILES
3A	VAN-F06R_ZZZ12A00	North Anna River/Mountain Run	132.93 MILES
3A	VAN-F06R_ZZZ13A00	Hickory Creek	35.33 MILES
3A	VAN-F06R_ZZZ14A00	Gold Mine Creek	46.45 MILES
3A	VAN-F06R_ZZZ15A00	North Anna River/Lake Anna/Christopher Creek	67.19 MILES
3A	VAN-F07R_ELK01A00	Elk Creek	3.03 MILES
3A	VAN-F07R_RCK01A02	Rock Creek	1.19 MILES
3A	VAN-F07R_ZZZ16A00	Pamunkey Creek/Lake Anna/Clear Creek	101.39 MILES
3A	VAN-F07R_ZZZ17A00	Terrys Run/Lake Anna	76.55 MILES
3A	VAN-F07R_ZZZ18A00	Pamunkey Creek/Lake Anna/Plentiful Creek	36.46 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAN-F07R_ZZZ20A00	North Anna River/Lake Anna/Pigeon Run	33.08 MILES
3A	VAN-F07R_ZZZ21A00	North Anna River/Lake Anna/Elk Creek	47.03 MILES
3A	VAN-F08R_FRC01A04	Freshwater Creek	5.06 MILES
3A	VAN-F08R_ZZZ19A00	Contrary Creek/Lake Anna	44.46 MILES
3A	VAN-F09R_ZZZ22A00	Northeast Creek	82.66 MILES
3A	VAN-F10R_ZZZ24A00	Upper Little River	117.57 MILES
3A	VAN-F11R_ZZZ24A00	Upper Little River	26.67 MILES
3A	VAN-F15R_ZZZ38A00	Ni River	147.97 MILES
3A	VAN-F16R_ZZZ39A00	Po River/Robertson Run	130.29 MILES
3A	VAN-F16R_ZZZ40A00	Glady Run	37.56 MILES
3A	VAN-F16R_ZZZ41A00	Po River/Lake Pocahontas	53.15 MILES
3A	VAN-F17R_MPN03A02	Mattaponi River	3.40 MILES
3A	VAN-F17R_ZZZ42A00	Poni River	67.95 MILES
3A	VAN-F17R_ZZZ47A00	Mattaponi River/Campbell Creek	153.41 MILES
3A	VAN-F18R_ZZZ43A00	Mat River	44.33 MILES
3A	VAN-F18R_ZZZ44A00	Ta River	65.90 MILES
3A	VAN-F18R_ZZZ45A00	Matta River	54.12 MILES
3A	VAN-F19R_HBS01A00	Hobby Swamp	1.27 MILES
3A	VAN-F19R_XEB01A02	Unnamed tributary to Mays Run	1.60 MILES
3A	VAN-F19R_ZZZ46A00	South River	153.59 MILES
3A	VAN-F20L_SMR01A06	Lake Caroline	273.21 ACRES
3A	VAN-F20R_PCT01B06	Polecat Creek	2.61 MILES
3A	VAN-F20R_ZZZ48A00	Polecat Creek	121.64 MILES
3A	VAN-F21R_BRB02A04	Beaver Branch	4.87 MILES
3A	VAN-F21R_HER01C08	Herring Creek	6.92 MILES
3A	VAN-F21R_XEC01A02	Unnamed tributary to Reedy Creek	2.79 MILES
3A	VAN-F21R_ZZZ49A00	Reedy Creek	62.20 MILES
3A	VAN-F21R_ZZZ50A00	Mattaponi River/Union Swamp	114.06 MILES
3A	VAN-F21R_ZZZ54A00	Chapel Creek	77.25 MILES
3A	VAN-F21R_ZZZ55A00	Mattaponi River/Gravel Run	52.02 MILES
3A	VAN-F21R_ZZZ56A00	Herring Creek	89.58 MILES
3A	VAN-F22L_MAR01A06	Broaddus Pond	48.96 ACRES
3A	VAN-F22L_TRD01A06	Greens Pond	15.83 ACRES
3A	VAN-F22L_TRD02A06	Unnamed pond near Tanyard Swamp	27.15 ACRES
3A	VAN-F22R_XED01A02	Unnamed tributary to Maracossic Creek	1.23 MILES
3A	VAN-F22R_XEE01A02	Unnamed tributary to King and Queen Swamp	2.50 MILES
3A	VAN-F22R_ZZZ51A00	Maracossic Creek/Jacks Creek	119.56 MILES
3A	VAN-F22R_ZZZ52A00	Beverly Run	134.04 MILES
3A	VAN-F22R_ZZZ53A00	Maracossic Creek/Doctors Creek	57.92 MILES
3A	VAP-F04R_FLG01A06	Falling Creek	6.43 MILES
3A	VAP-F04R_ZZZ01A00	Unsegmented rivers in F04	76.69 MILES
3A	VAP-F04R_ZZZ01B10	Unsegmented rivers in F04	48.85 MILES
3A	VAP-F05R_ZZZ01A00	Unsegmented rivers in F05	102.24 MILES
3A	VAP-F09R_LRK01A10	Little Rocky Creek	5.07 MILES
3A	VAP-F09R_NAR03A00	North Anna River	1.86 MILES
3A	VAP-F09R_NAR04A02	North Anna River	4.28 MILES
3A	VAP-F09R_NAR05A04	North Anna River	3.30 MILES
3A	VAP-F09R_ZZZ01A14	Unsegmented rivers in F09	88.12 MILES
3A	VAP-F09R_ZZZ01B14	Unsegmented rivers in F09	98.23 MILES
3A	VAP-F09R_ZZZ02A00	Unsegmented rivers in F09	28.58 MILES
3A	VAP-F11R_ZZZ01A00	Unsegmented rivers in F11	125.53 MILES
3A	VAP-F12R_CBL01A04	Campbell Creek	3.91 MILES
3A	VAP-F12R_CDY01A08	Cady Creek	2.67 MILES
3A	VAP-F12R_XEF01A06	UT to Mechumps Creek	1.97 MILES
3A	VAP-F12R_XEM01A08	Mechumps Creek, UT	2.72 MILES
3A	VAP-F12R_XFK01A08	Mechumps Creek, UT	0.71 MILES
3A	VAP-F12R_ZZZ01A14	Unsegmented rivers in F12	113.06 MILES
3A	VAP-F12R_ZZZ01B14	Unsegmented rivers in F12	31.25 MILES
3A	VAP-F13R_JPN01A06	Jackpen Creek	2.92 MILES
3A	VAP-F13R_MDQ01B06	Unnamed Tributaries to Matadequin Creek	44.44 MILES
3A	VAP-F13R_MDQ02A04	Matadequin Creek	4.81 MILES
3A	VAP-F13R_MDQ03A06	Matadequin Creek	2.30 MILES
3A	VAP-F13R_PRS01A04	Parsleys Creek	6.38 MILES
3A	VAP-F13R_SOB01A08	Southern Branch	3.93 MILES
3A	VAP-F13R_SVC01A04	Sandy Valley Creek	4.16 MILES
3A	VAP-F13R_XIK01A08	UT to Governor Swamp	0.96 MILES
3A	VAP-F13R_ZZZ01A14	Unsegmented rivers in F13	42.96 MILES
3A	VAP-F13R_ZZZ01B14	Unsegmented rivers in F13	43.60 MILES
3A	VAP-F13R_ZZZ01C14	Unsegmented rivers in F13	38.39 MILES
3A	VAP-F13R_ZZZ01D14	Unsegmented rivers in F13	48.12 MILES
3A	VAP-F13R_ZZZ01E14	Unsegmented rivers in F13	70.62 MILES
3A	VAP-F13R_ZZZ01F14	Unsegmented rivers in F13	57.51 MILES
3A	VAP-F13R_ZZZ01G14	Unsegmented rivers in F13	43.97 MILES
3A	VAP-F14R_MCR01A98	Mill Creek	0.77 MILES
3A	VAP-F14R_ZZZ01A14	Unsegmented rivers in F14	124.59 MILES
3A	VAP-F14R_ZZZ01B14	Unsegmented rivers in F14	108.62 MILES
3A	VAP-F23R_CLK01A00	Clark Swamp	5.48 MILES
3A	VAP-F23R_LDN01A00	London Swamp	2.38 MILES
3A	VAP-F23R_XID01A08	UT to Dickeys Swamp	1.25 MILES
3A	VAP-F23R_ZZZ01A14	Unsegmented rivers in F23	120.38 MILES
3A	VAP-F23R_ZZZ01B14	Unsegmented rivers in F23	62.79 MILES
3A	VAP-F24R_GRS01A00	Grass Creek	1.19 MILES
3A	VAP-F24R_MHC01A00	Mitchell Hill Creek	2.54 MILES
3A	VAP-F24R_MPK01A00	Mantapike Creek	3.73 MILES
3A	VAP-F24R_PLY01A00	Plymouth Swamp	3.90 MILES
3A	VAP-F24R_XAV01A00	Bull Swamp, UT	2.68 MILES
3A	VAP-F24R_XDL01A00	Mattaponi River, UT	3.08 MILES
3A	VAP-F24R_ZZZ01A14	Unsegmented rivers in F24	59.59 MILES
3A	VAP-F24R_ZZZ01B14	Unsegmented rivers in F24	103.33 MILES
3A	VAP-F25R_BMC01A00	Burnt Mill Creek	0.97 MILES
3A	VAP-F25R_XIO01A10	Tastine Swamp, UT	2.06 MILES
3A	VAP-F25R_ZZZ01A00	Unsegmented Rivers in F25	132.37 MILES
3A	VAT-F26L_QEN01B06	Queens Lake	70.76 ACRES
3A	VAT-F26R_FRS03A10	France Swamp (Lower)	0.45 MILES
3A	VAT-F26R_PTK01A00	Poropotank River	7.77 MILES
3A	VAT-F26R_QEN01A00	Queens Creek	1.32 MILES
3A	VAT-F26R_XCY01A00	Queens Creek, UT	0.71 MILES
3A	VAT-F26R_ZZZ01A00	Unsegmented rivers in F26R	339.11 MILES
3A	VAT-F27R_ZZZ01A00	Unsegmented rivers in F27R	86.05 MILES
3B	VAN-F07R_BVL01A12	Beverly Run	2.45 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3B	VAN-F07R_FMT01A12	Foremost Run	5.49 MILES
3B	VAN-F07R_PLS01A12	Pleasant Run	4.43 MILES
3B	VAN-F07R_XJA01A12	Unnamed tributary to Tomahawk Creek	1.92 MILES
3C	VAP-F12R_MCP02A04	Mechumps Creek	3.57 MILES
3C	VAP-F12R_XJW01A14	XJW - Mechumps Creek, UT	0.17 MILES
3D	VAP-F12R_SLD01A04	Slayden Creek and tributaries	7.34 MILES
4A	VAN-F01R_HUD01A04	Hudson Creek	3.61 MILES
4A	VAN-F01R_SAR02B10	South Anna River	5.20 MILES
4A	VAN-F01R_WLR01A04	Wheeler Creek	0.24 MILES
4A	VAN-F02R_FOS01A06	Fosters Creek	4.91 MILES
4A	VAN-F02R_HRS01A16	Harris Creek	6.97 MILES
4A	VAN-F02R_RDB01A04	Roundabout Creek	3.84 MILES
4A	VAN-F02R_RKC01A16	Rock Creek	2.72 MILES
4A	VAN-F02R_SAR01A00	South Anna River	5.98 MILES
4A	VAN-F02R_SAR02A00	South Anna River	3.98 MILES
4A	VAN-F02R_XIE01A08	Unnamed tributary to South Anna River	1.34 MILES
4A	VAN-F03R_DEP01A12	Deep Creek	5.79 MILES
4A	VAN-F03R_FRK01A08	Fork Creek	1.79 MILES
4A	VAN-F03R_FRK02A16	Fork Creek	5.83 MILES
4A	VAN-F03R_SAR01B06	South Anna River	8.74 MILES
4A	VAN-F03R_SAR03A06	South Anna River	1.76 MILES
4A	VAN-F06R_BRC01A02	Beaver Creek	2.83 MILES
4A	VAN-F06R_MTN01A00	Mountain Run	2.64 MILES
4A	VAN-F06R_WHT01A14	White Creek	6.05 MILES
4A	VAN-F07R_BRY01A06	Berry Run	2.34 MILES
4A	VAN-F07R_BRY02A14	Berry Run	2.96 MILES
4A	VAN-F07R_CHR01A14	Church Run	0.71 MILES
4A	VAN-F07R_CLC01A12	Clear Creek	2.44 MILES
4A	VAN-F07R_LIT01A14	Little Creek	2.14 MILES
4A	VAN-F07R_PHC01A14	Poor House Run	3.51 MILES
4A	VAN-F07R_PLT01A00	Plentiful Creek	3.30 MILES
4A	VAN-F07R_PMC01A00	Pamunkey Creek	5.49 MILES
4A	VAN-F07R_RIG01A02	Riga Run	7.36 MILES
4A	VAN-F07R_ROC01A10	Rocky Run	2.40 MILES
4A	VAN-F07R_THK01A02	Tomahawk Creek	3.84 MILES
4A	VAN-F09R_MUS01A06	Music Branch	3.56 MILES
4A	VAN-F09R_NST03A08	Northeast Creek	6.36 MILES
4A	VAN-F09R_NST04A08	Northeast Creek	3.52 MILES
4A	VAN-F09R_XIA01A06	Unnamed tributary to Northeast Creek	3.00 MILES
4A	VAN-F16R_GDY01A10	Glady Run	9.30 MILES
4A	VAN-F16R_POR01A10	Po River	7.21 MILES
4A	VAN-F17R_MPN01A02	Mattaponi River	3.20 MILES
4A	VAN-F17R_PNI01A10	Poni River	3.21 MILES
4A	VAN-F18R_MAT01A12	Mat River	2.30 MILES
4A	VAN-F18R_MTA01A00	Matta River	11.89 MILES
4A	VAN-F19R_MOT01A04	Motto River	1.80 MILES
4A	VAN-F22R_BEV01B00	Beverly Run	3.07 MILES
4A	VAN-F22R_MAR01A02	Maracossic Creek	4.21 MILES
4A	VAP-F04R_SAR01A98	South Anna River	2.77 MILES
4A	VAP-F04R_SAR02A98	South Anna River	5.04 MILES
4A	VAP-F04R_SAR03A02	South Anna River	0.54 MILES
4A	VAP-F04R_SAR03A98	South Anna River	4.76 MILES
4A	VAP-F04R_SAR03B06	South Anna River	8.90 MILES
4A	VAP-F05R_NFD01A00	Newfound River	10.95 MILES
4A	VAP-F09R_NAR01A00	North Anna River	1.73 MILES
4A	VAP-F09R_NAR02A00	North Anna River	2.42 MILES
4A	VAP-F11R_LTL01A98	Little River	18.28 MILES
4A	VAP-F11R_LTL02B14	Little River	4.21 MILES
4A	VAP-F12R_MCP01A94	Mechumps Creek	5.78 MILES
4A	VAP-F12R_PMK01B08	Pamunkey River	12.27 MILES
4A	VAP-F12R_XEG01A06	UT to Mechumps Creek (aka Middle Branch)	0.48 MILES
4A	VAP-F13R_ACQ01A14	Acquinton Creek	9.65 MILES
4A	VAP-F13R_JKC01A98	Jacks Creek	7.51 MILES
4A	VAP-F13R_MDQ01A98	Matadequin Creek	4.91 MILES
4A	VAP-F13R_MLY01A12	Mallory Creek	4.02 MILES
4A	VAP-F13R_TPT01A98	Totopotomoy Creek	10.26 MILES
4A	VAP-F13R_XIW01A12	Jacks Creek, UT	2.28 MILES
4A	VAP-F14E_HSN01A12	Harrison Creek	0.04 SQUARE MILES
4A	VAP-F14E_ZZZ03A06	Unsegmented estuaries in F14	0.08 SQUARE MILES
4A	VAP-F24E_ZZZ02A06	Unsegmented estuaries in F24	0.10 SQUARE MILES
4A	VAP-F24R_HTQ01A00	Heartquake Creek	2.27 MILES
4A	VAP-F25E_BMC01A08	Burnt Mill Creek	0.05 SQUARE MILES
4A	VAP-F25E_CBN01A00	Corbin Creek	0.04 SQUARE MILES
4A	VAP-F25E_ZZZ01A00	Unsegmented estuaries in F25	0.07 SQUARE MILES
4A	VAP-F25E_ZZZ02A06	Unsegmented estuaries in F25	0.01 SQUARE MILES
4A	VAP-F25E_ZZZ03A06	Unsegmented estuaries in F25	0.03 SQUARE MILES
4A	VAP-F25R_XIN01A10	Tastine Swamp, UT	2.40 MILES
4A	VAT-F26E_ABD01A00	Aberdeen Creek - Upper	0.11 SQUARE MILES
4A	VAT-F26E_ABD01B08	Aberdeen Creek - Mouth	0.01 SQUARE MILES
4A	VAT-F26E_ADM01A00	Adams Creek-Upper	0.06 SQUARE MILES
4A	VAT-F26E_ADM01B12	Adams Creek	0.08 SQUARE MILES
4A	VAT-F26E_ADM01C12	Adams Creek	0.05 SQUARE MILES
4A	VAT-F26E_BAK01A00	Bakers Creek	0.04 SQUARE MILES
4A	VAT-F26E_BKS01A08	Baker Creek	0.02 SQUARE MILES
4A	VAT-F26E_BND01A06	Bland Creek	0.05 SQUARE MILES
4A	VAT-F26E_FER01A08	Ferry Creek	0.01 SQUARE MILES
4A	VAT-F26E_HCK01A04	Hockley Creek	0.05 SQUARE MILES
4A	VAT-F26E_JNS01A00	Jones Creek	0.02 SQUARE MILES
4A	VAT-F26E_JNS01B16	Jones Creek	0.03 SQUARE MILES
4A	VAT-F26E_PHB01A00	Philbates Creek	0.01 SQUARE MILES
4A	VAT-F26E_PTK01A00	Poropotank River	0.45 SQUARE MILES
4A	VAT-F26E_PTK01B12	Poropotank River	0.20 SQUARE MILES
4A	VAT-F26E_PTK02A08	Morris Bay at mouth of Poropotank River	0.41 SQUARE MILES
4A	VAT-F26E_PTN01A08	Purtan & Leigh Creeks	0.19 SQUARE MILES
4A	VAT-F26E_RBN01A08	Robinson Creek	0.01 SQUARE MILES
4A	VAT-F26E_SKM01A00	Skimino Creek	0.17 SQUARE MILES
4A	VAT-F26E_SND01A08	Sandy Creek	0.01 SQUARE MILES
4A	VAT-F26E_TSK01A00	Taskinas Creek	0.03 SQUARE MILES
4A	VAT-F26E_WRE01A00	Ware Creek	0.09 SQUARE MILES
4A	VAT-F26E_ZZZ01A00	Unsegmented estuaries in F26E	0.01 SQUARE MILES
4A	VAT-F26E_ZZZ01B06	Unsegmented estuaries in F26E	0.07 SQUARE MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAT-F26E_ZZZ02A06	Unsegmented estuaries in F26E	0.08 SQUARE MILES
4A	VAT-F27E_CDB01A00	Cedarbush Creek - Upper [TMDL-bact]	0.08 SQUARE MILES
4A	VAT-F27E_CDB02A00	Cedarbush Creek - Mouth	0.01 SQUARE MILES
4A	VAT-F27E_CDB03A16	Cedarbush Creek (Mouth)	0.12 SQUARE MILES
4A	VAT-F27E_CRT01A00	Carter Cr. (Gloucester Co.) - Upper portion [TMDL-bact]	0.18 SQUARE MILES
4A	VAT-F27E_CRT01B08	Carter Cr. (Gloucester Co.) - Middle [No TMDL-bact]	0.11 SQUARE MILES
4A	VAT-F27E_CRT02A00	Carter Cr. (Gloucester Co.) - Mouth	0.07 SQUARE MILES
4A	VAT-F27E_FEL01A00	Felgates Creek	0.24 SQUARE MILES
4A	VAT-F27E_IFC01A00	Indian Field Creek	0.11 SQUARE MILES
4A	VAT-F27E_POP01A16	Poplar Creek	0.15 SQUARE MILES
4A	VAT-F27E_PRN01A00	Perrin River - Upper	0.05 SQUARE MILES
4A	VAT-F27E_PRN01C12	Perrin River - Upper	0.02 SQUARE MILES
4A	VAT-F27E_PRN02A00	Perrin River - Lower	0.06 SQUARE MILES
4A	VAT-F27E_PRN02B12	Perrin River - Lower	0.05 SQUARE MILES
4A	VAT-F27E_SRH01A00	Sarah Creek - Northeast Branch	0.05 SQUARE MILES
4A	VAT-F27E_SRH01B10	Sarah Creek - Northeast Branch, Upper	0.03 SQUARE MILES
4A	VAT-F27E_SRH01C10	Sarah Creek - Northeast Branch, Middle	0.07 SQUARE MILES
4A	VAT-F27E_SRH01D14	Sarah Creek	0.06 SQUARE MILES
4A	VAT-F27E_SRH02A08	Sarah Creek - Lower	0.03 SQUARE MILES
4A	VAT-F27E_SRH02B16	Sarah Creek - Northeast Branch, Middle	0.02 SQUARE MILES
4A	VAT-F27E_SRW01A14	Northwest Branch Sarah Creek	0.19 SQUARE MILES
4A	VAT-F27E_TMB01A00	Timberneck Creek - Upper [TMDL-bact]	0.13 SQUARE MILES
4A	VAT-F27E_TMB01B12	Timberneck Creek - Upper [TMDL-bact]	0.09 SQUARE MILES
4A	VAT-F27E_TMB02A08	Timberneck Creek - Middle	0.03 SQUARE MILES
4A	VAT-F27E_TMB03A08	Timberneck Creek - Mouth	0.19 SQUARE MILES
4A	VAT-F27E_ZZZ01A00	Unsegmented estuaries in F27E	0.11 SQUARE MILES
4C	VAP-F12R_HQT01A00	Hornquarter Creek	6.77 MILES
4C	VAP-F13R_GOV01A10	Governor Swamp	3.32 MILES
4C	VAP-F13R_TPT02A14	Totopotomoy Creek	7.49 MILES
4C	VAP-F23R_DKW01A00	Dickeys Swamp	3.99 MILES
4C	VAP-F23R_DKW01C98	Dickeys Swamp	0.07 MILES
4C	VAP-F23R_FTS01A10	Fleets Creek	5.01 MILES
4C	VAP-F23R_MKT01A00	Market Swamp / Walker Coleman Pond	3.12 MILES
5A	VAN-F01L_DOV01A06	Lake Gordonsville	77.31 ACRES
5A	VAN-F06R_CRC01A10	Christopher Creek	1.98 MILES
5A	VAN-F06R_DKH01A04	Duckinghoe Creek	6.98 MILES
5A	VAN-F06R_HCS01A00	South Fork Hickory Creek	4.63 MILES
5A	VAN-F06R_HIK01A12	Hickory Creek	1.72 MILES
5A	VAN-F06R_NAR01A02	North Anna River	3.78 MILES
5A	VAN-F06R_NAR02A04	North Anna River	2.79 MILES
5A	VAN-F07L_CON01A02	Lake Anna/Contrary Creek	445.19 ACRES
5A	VAN-F07L_CON02A08	Lake Anna/Contrary Creek	27.87 ACRES
5A	VAN-F07L_FRC01A04	Lake Anna/Freshwater Creek	50.67 ACRES
5A	VAN-F07L_GMC01A02	Lake Anna/Gold Mine Creek	91.62 ACRES
5A	VAN-F07L_NAR01A02	Lake Anna	1,563.36 ACRES
5A	VAN-F07L_NAR02A02	Lake Anna	3,039.18 ACRES
5A	VAN-F07L_NAR03A02	Lake Anna	1,141.85 ACRES
5A	VAN-F07L_NAR04A06	Lake Anna	1,422.31 ACRES
5A	VAN-F07L_PLT01A04	Lake Anna/Plentiful Creek	109.04 ACRES
5A	VAN-F07L_PMC01A04	Lake Anna/Pamunkey Creek	802.74 ACRES
5A	VAN-F07L_PMC02A02	Lake Anna/Pamunkey Creek	471.89 ACRES
5A	VAN-F07L_TRY01A04	Terrys Run/Lake Anna	431.09 ACRES
5A	VAN-F08R_CON01A00	Contrary Creek	5.52 MILES
5A	VAN-F10R_LNG01A14	Long Creek	5.15 MILES
5A	VAN-F10R_LTL01A02	Little River	4.17 MILES
5A	VAN-F10R_LTL02A04	Little River	1.29 MILES
5A	VAN-F11R_LOC01A06	Locust Creek	6.59 MILES
5A	VAN-F15R_BRK01B12	Brock Run	3.21 MILES
5A	VAN-F15R_LWS01A12	Lewis Run	1.46 MILES
5A	VAN-F15R_NIR01A00	Ni River	5.68 MILES
5A	VAN-F15R_XJM01A12	Unnamed tributary to Cool Spring Lake	1.29 MILES
5A	VAN-F17L_CAM01A06	Bowies Pond	25.71 ACRES
5A	VAN-F18R_MTA02A04	Matta River	1.24 MILES
5A	VAN-F20R_PCT01A00	Polecat Creek	6.97 MILES
5A	VAN-F21L_RDY01A06	Reedy Millpond	41.25 ACRES
5A	VAN-F21R_HER01A06	Herring Creek	2.14 MILES
5A	VAN-F21R_HER01B02	Herring Creek	5.09 MILES
5A	VAN-F21R_HER02A04	Herring Creek	4.75 MILES
5A	VAN-F21R_MPN01A06	Mattaponi River	6.07 MILES
5A	VAN-F21R_MPN01B02	Mattaponi River	4.91 MILES
5A	VAN-F21R_MPN01C02	Mattaponi River	3.09 MILES
5A	VAN-F21R_RDY01A10	Reedy Creek	0.13 MILES
5A	VAN-F22L_DOC01A06	Collins Pond	63.93 ACRES
5A	VAP-F09R_XHS01A08	North Anna River, UT (XHS)	1.09 MILES
5A	VAP-F13R_PMK01A98	Pamunkey River	11.55 MILES
5A	VAP-F23R_AYL01A12	Aylett Creek	6.83 MILES
5A	VAP-F23R_DKW01B00	Dickeys Swamp	4.33 MILES
5A	VAP-F23R_DWD01A00	Dogwood Fork	2.91 MILES
5A	VAP-F23R_GNT01A00	Garnetts Creek	2.83 MILES
5A	VAP-F23R_MKT01B00	Market Swamp	2.01 MILES
5A	VAP-F23R_MPN01A00	Mattaponi River	4.72 MILES
5A	VAP-F23R_XDN01A00	Garnetts Creek, UT	2.53 MILES
5A	VAP-F23R_XJG01A14	XJG - Dickeys Swamp, UT	1.99 MILES
5A	VAP-F24R_CTH01A00	Courthouse Creek	0.72 MILES
5A	VAT-F26L_QEN01A06	Waller Mill Reservoir (PWS)	287.70 ACRES
5A	VAT-F26R_BRD01A12	Bird Swamp	2.47 MILES
5A	VAT-F26R_CTC01A04	Carter Creek	3.38 MILES
5A	VAT-F26R_XEA01A08	Unnamed Tributary to Bland Creek	1.23 MILES
5C	VAN-F18R_TAR01A00	Ta River	3.76 MILES
5C	VAN-F22R_BEV02A08	Beverly Run	3.31 MILES
5C	VAN-F22R_XDY01A06	Unnamed tributary to Root Swamp	0.70 MILES
5C	VAP-F09R_XIM01A10	North Anna, UT	0.70 MILES
5C	VAP-F09R_XJP01A14	North Anna River, UT - XJP	1.01 MILES
5C	VAP-F12R_MLP01A00	Millpond Creek	3.02 MILES
5C	VAP-F13R_JDY01A02	Judy Swamp	3.33 MILES
5C	VAP-F13R_MHX01A12	Mehixen Creek and tributary XIV	6.44 MILES
5C	VAP-F13R_SLN01A00	Sullens Creek	4.60 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5C	VAP-F14R_CMC01A00	Cohoke Mill Creek	7.38 MILES
5C	VAP-F23R_WKN01A00	Walkerton Branch	4.62 MILES
5C	VAP-F25R_TST01B10	Tastine Swamp	2.15 MILES
5D	VAN-F01R_CMP01A12	Camp Creek	2.01 MILES
5D	VAN-F01R_SAR02A02	South Anna River	1.90 MILES
5D	VAN-F01R_WLR01B10	Wheeler Creek	6.00 MILES
5D	VAN-F03R_CUB01A08	Cub Creek	3.10 MILES
5D	VAN-F03R_TLR01A00	Taylors Creek	16.54 MILES
5D	VAN-F06R_GMC01A00	Gold Mine Creek	7.53 MILES
5D	VAN-F07R_PMC02A02	Pamunkey Creek	7.21 MILES
5D	VAN-F07R_TRY01A00	Terrys Run	1.98 MILES
5D	VAN-F07R_TRY02A02	Terrys Run	3.67 MILES
5D	VAN-F07R_TRY03A08	Terrys Run	4.36 MILES
5D	VAN-F15R_BRK01A06	Brock Run	2.56 MILES
5D	VAN-F20R_PCT02A02	Polecat Creek	5.31 MILES
5D	VAN-F21R_CPL01A06	Chapel Creek	4.64 MILES
5D	VAN-F21R_RDY02A10	Reedy Creek	3.30 MILES
5D	VAN-F21R_RDY02B10	Reedy Creek	9.39 MILES
5D	VAN-F22R_DOC01A08	Doctors Creek	2.32 MILES
5D	VAN-F22R_ROT01A06	Root Swamp	7.83 MILES
5D	VAP-F04R_STG01A06	Stagg Creek	6.56 MILES
5D	VAP-F09R_MLL01A12	Mill Creek	4.37 MILES
5D	VAP-F11R_BDC01A12	Beaverdam Creek	8.47 MILES
5D	VAP-F11R_LTL01B08	Little River	6.29 MILES
5D	VAP-F12R_CRU01A02	Crump Creek	10.00 MILES
5D	VAP-F12R_KER01A12	Kersey Creek	3.32 MILES
5D	VAP-F12R_MCP03A06	Mechumps Creek	1.05 MILES
5D	VAP-F12R_PLD01A12	Pollard Creek	4.20 MILES
5D	VAP-F12R_XJC01A12	XJC - Crump Creek, UT	1.96 MILES
5D	VAP-F13E_PMK01A98	Pamunkey River	0.31 SQUARE MILES
5D	VAP-F13E_PMK02A98	Pamunkey River	0.78 SQUARE MILES
5D	VAP-F13E_PMK03A06	Pamunkey River	0.12 SQUARE MILES
5D	VAP-F13R_MNQ01A98	Monquin Creek / Webb Creek	12.12 MILES
5D	VAP-F13R_XDW01A08	UT to Pamunkey River	5.51 MILES
5D	VAP-F13R_XDX01A04	UT(XDX) to UT (XDW) to Pamunkey River	3.85 MILES
5D	VAP-F14E_PMK02A00	Pamunkey River	3.64 SQUARE MILES
5D	VAP-F14E_PMK05B00	Pamunkey River	1.31 SQUARE MILES
5D	VAP-F14E_PMK06A00	Pamunkey River	3.38 SQUARE MILES
5D	VAP-F14E_PMK06B06	Pamunkey River	0.58 SQUARE MILES
5D	VAP-F14E_PMK07A04	Pamunkey River	0.40 SQUARE MILES
5D	VAP-F14R_HSN01A00	Harrison Creek and Tributary	2.80 MILES
5D	VAP-F14R_XJD01A12	XJD - Harrison Creek, UT	0.16 MILES
5D	VAP-F23E_MPN02A98	Mattaponi River	0.16 SQUARE MILES
5D	VAP-F23E_MPN03A06	Mattaponi River	1.76 SQUARE MILES
5D	VAP-F24E_MPN03A98	Mattaponi River	1.38 SQUARE MILES
5D	VAP-F24E_MPN03B02	Mattaponi River	0.42 SQUARE MILES
5D	VAP-F24E_MPN03C06	Mattaponi River	0.72 SQUARE MILES
5D	VAP-F25E_MPN05A00	Mattaponi River	1.29 SQUARE MILES
5D	VAP-F25E_MPN05B06	Mattaponi River	0.38 SQUARE MILES
5D	VAP-F25E_MPN06A04	Mattaponi River	0.21 SQUARE MILES
5D	VAP-F25E_MPN06B06	Mattaponi River	0.64 SQUARE MILES
5D	VAP-F25R_TST01A98	Tastine Swamp, Little Tastine Swamp	6.25 MILES
5D	VAT-F26E_CTC01A06	Carter Creek	0.02 SQUARE MILES
5D	VAT-F26E_FOX01A06	Fox Creek	0.02 SQUARE MILES
5D	VAT-F26E_QEN01A02	Queen Creek	0.30 SQUARE MILES
5D	VAT-F26E_QEN01B12	Queen Creek	0.14 SQUARE MILES
5D	VAT-F26E_YRK01A04	York River	5.73 SQUARE MILES
5D	VAT-F26E_YRK01B10	York River	1.09 SQUARE MILES
5D	VAT-F26E_YRK01C12	York River-at Hockley Cr	0.03 SQUARE MILES
5D	VAT-F26E_YRK01D12	York River	0.04 SQUARE MILES
5D	VAT-F26E_YRK01E14	York River	0.87 SQUARE MILES
5D	VAT-F26E_YRK02A14	York River (Lower Middle MSN)	2.68 SQUARE MILES
5D	VAT-F26E_YRK03A00	York River (Lower Middle)	20.37 SQUARE MILES
5D	VAT-F26E_YRK03B12	York River (Lower Middle)	0.02 SQUARE MILES
5D	VAT-F27E_KNG01A02	King Creek - Upper	0.20 SQUARE MILES
5D	VAT-F27E_KNG02A02	King Creek - Mouth	0.22 SQUARE MILES
5D	VAT-F27E_WOR01A08	Wormley Creek	0.28 SQUARE MILES
5D	VAT-F27E_YRK01A00	York River - Lower Middle	10.39 SQUARE MILES
5D	VAT-F27E_YRK01B00	York R - DSS AdminCond @ Cheatham Annex/Camp Peary	0.26 SQUARE MILES
5D	VAT-F27E_YRK01C00	York R - DSS AdminCond @ Naval Weapons Station	0.24 SQUARE MILES
5D	VAT-F27E_YRK01D06	York River - Yorktown Beach	0.02 SQUARE MILES
5D	VAT-F27E_YRK01E06	York River - Gloucester Point Beach	0.02 SQUARE MILES
5D	VAT-F27E_YRK02A00	York River - Lower	11.66 SQUARE MILES
5D	VAT-F27E_YRK02B00	York R - DSS AdminCond @ HRSD York STP/Amoco	0.51 SQUARE MILES
5D	VAT-F27E_YRK02C00	York River - DSS AdminCond @ Wormley to USCG	2.70 SQUARE MILES
5D	VAT-F27E_YRK02D12	York River - Lower	0.14 SQUARE MILES

New River Basin

Overall Category	305(b) ID	Waterbody Name	Size
2A	VAS-N01R_CAB01A02	Cabin Creek	4.84 MILES
2A	VAS-N01R_HTN01A98	Helton Creek	8.07 MILES
2A	VAS-N02R_BWC01A02	Big Wilson Creek	1.56 MILES
2A	VAS-N02R_LWN01A02	Little Wilson Creek	2.50 MILES
2A	VAS-N02R_WLS01A04	Wilson Creek	4.62 MILES
2A	VAS-N03R_FXC01B02	Fox Creek	11.58 MILES
2A	VAS-N03R_LWS02A02	Lewis Fork	2.83 MILES
2A	VAS-N04R_FRS01A10	Farmers Branch	1.14 MILES
2A	VAS-N04R_XDP01A06	Rock Creek tributary	1.03 MILES
2A	VAS-N04R_XFH01A14	Intermittent tributary to Peach Bottom Creek	1.10 MILES
2A	VAS-N05R_ECN01A02	North Branch Elk Creek	4.63 MILES
2A	VAS-N05R_ECS01A02	South Branch Elk Creek	4.30 MILES
2A	VAS-N05R_KNB02A10	Knob Fork	1.82 MILES
2A	VAS-N05R_TKY01A02	Turkey Fork	2.83 MILES
2A	VAS-N06R_BOU01A02	Bournes Branch	3.60 MILES
2A	VAS-N06R_CEF01A02	Chestnut Creek East Fork	5.44 MILES
2A	VAS-N08R_LPR01A12	Little Pine Run	4.58 MILES
2A	VAS-N08R_NEW01L98	New River at Byllesby	3.06 MILES
2A	VAS-N08R_NEW02A02	New River	2.33 MILES
2A	VAS-N08R_PMB01A04	Powder Mill Branch	2.11 MILES
2A	VAS-N08R_PNR01A12	Pine Run	6.22 MILES
2A	VAS-N09R_BBR01A12	Big Branch	3.12 MILES
2A	VAS-N09R_CPL01A04	Cripple Creek	5.13 MILES
2A	VAS-N09R_CPL01A98	Cripple Creek	11.68 MILES
2A	VAS-N09R_DEF01A02	East Fork Dry Run	3.83 MILES
2A	VAS-N09R_DWF01A02	West Fork Dry Run	2.77 MILES
2A	VAS-N09R_DYR01A04	Dry Run	3.19 MILES
2A	VAS-N09R_FMC01A02	Francis Mill Creek & tributaries	7.67 MILES
2A	VAS-N09R_KLN01A00	Killenger Creek	4.18 MILES
2A	VAS-N09R_KNS01A02	Kinser Creek	3.99 MILES
2A	VAS-N10L_XBL01A02	Rural Retreat Lake	85.75 ACRES
2A	VAS-N10R_GLN01A04	Gullion Fork	3.54 MILES
2A	VAS-N10R_VNK02A04	Venrick Run & tributaries	5.71 MILES
2A	VAS-N13R_LLK01A04	Laurel Fork	11.45 MILES
2A	VAS-N13R_RIC01A00	Big Reed Island Creek	6.64 MILES
2A	VAS-N13R_XEO01A10	Laurel Fork tributary	1.90 MILES
2A	VAS-N14R_BRF01A04	Burkes Fork	13.07 MILES
2A	VAS-N14R_DPW01A10	Deepwater Creek	4.40 MILES
2A	VAS-N15R_ROC01A14	Rock Creek	2.18 MILES
2A	VAS-N26R_DML01A00	Dismal Creek & tributaries	9.35 MILES
2A	VAS-N26R_KBL03A00	Kimberling Creek	4.24 MILES
2A	VAS-N26R_NBS01A00	Nobusiness Creek	5.46 MILES
2A	VAS-N26R_WPN01A10	Wolfpen Branch	0.27 MILES
2A	VAS-N30R_XFE01A12	Wolf Creek tributary	1.39 MILES
2A	VAS-N31R_LWC01A04	Little Wolf Creek	3.42 MILES
2A	VAS-N33R_LAC01B04	Laurel Creek	8.25 MILES
2A	VAS-N36R_BST03A00	Bluestone River	6.78 MILES
2A	VAS-N36R_MFK01A06	Mud Fork	2.98 MILES
2A	VAS-N36R_WVC01A06	Wrights Valley Creek	2.30 MILES
2A	VAW-N17L_PKC01A02	Gatewood Reservoir	176.14 ACRES
2A	VAW-N17R_PLK01A04	Pondlick Branch	3.41 MILES
2A	VAW-N17R_VLY01A16	Valley Branch and Tributaries	3.09 MILES
2A	VAW-N20R_XEM01A08	Unnamed Tributary (XEM)	0.71 MILES
2A	VAW-N22R_PTY01A00	Poverty Creek	1.46 MILES
2A	VAW-N22R_PTY02A00	Poverty Creek	5.78 MILES
2A	VAW-N22R_SLT01A08	Slate Branch	6.79 MILES
2A	VAW-N24R_LRY01A00	Little Stony Creek	2.08 MILES
2A	VAW-N24R_LRY02A00	Little Stony Creek	2.32 MILES
2A	VAW-N25R_SGG01A14	Sugar Run	2.30 MILES
2A	VAW-N28R_LLB01A04	Laurel Branch	3.47 MILES
2A	VAW-N28R_SNC05A00	Stony Creek	6.63 MILES
2A	VAW-N28R_XFJ01A12	Stony Creek, UT (XFJ)	0.53 MILES
2A	VAW-N32R_MLL01A00	Mill Creek	0.72 MILES
2A	VAW-N32R_MLL02A00	Mill Creek	1.75 MILES
2B	VAW-N25R_WLK02A00	Walker Creek	8.68 MILES
2B	VAW-N25R_WLK03A00	Walker Creek	18.00 MILES
3A	VAS-N01R_BDW01A02	Baldwin Branch & tributaries	2.61 MILES
3A	VAS-N01R_BYR01A02	Byars Creek & tributaries	2.36 MILES
3A	VAS-N01R_CAB01A04	Cabin Creek	1.30 MILES
3A	VAS-N01R_HMF01A02	Middle Fork Helton Creek	2.03 MILES
3A	VAS-N01R_HMF01A04	Middle Fork Helton Creek	2.26 MILES
3A	VAS-N01R_WTP01A02	Whitetop Creek & tributaries	4.87 MILES
3A	VAS-N01R_ZZZ01A00	Unsegmented rivers in NE01	3.43 MILES
3A	VAS-N01R_ZZZ02A00	Unsegmented rivers in NE02	20.24 MILES
3A	VAS-N02R_BRR01A02	Brier Run	1.40 MILES
3A	VAS-N02R_PEG01A02	Peggies Branch	3.83 MILES
3A	VAS-N02R_PIE01A02	Piney Creek	0.84 MILES
3A	VAS-N02R_QBC01A02	Quebec Branch	1.14 MILES
3A	VAS-N02R_WLB01A02	Wilburn Branch	1.74 MILES
3A	VAS-N02R_ZZZ01A00	Unsegmented rivers in NE03	53.92 MILES
3A	VAS-N02R_ZZZ02A00	Unsegmented rivers in NE04	21.35 MILES
3A	VAS-N02R_ZZZ03A00	Unsegmented rivers in NE07	39.68 MILES
3A	VAS-N03R_GUF01A02	Guffey Creek	4.65 MILES
3A	VAS-N03R_LLL01A02	Laurel Creek	6.35 MILES
3A	VAS-N03R_MFX01A02	Middle Fox Creek	7.39 MILES
3A	VAS-N03R_PTR01A98	Panther Creek	3.92 MILES
3A	VAS-N03R_XFR01A16	Fox Creek unnamed tributary	1.04 MILES
3A	VAS-N03R_XFS01A16	Ripshin Creek tributary	1.97 MILES
3A	VAS-N03R_ZZZ01A00	Unsegmented rivers in NE05	118.84 MILES
3A	VAS-N03R_ZZZ02A00	Unsegmented rivers in NE06	46.18 MILES
3A	VAS-N04R_LRO01A12	Little Rock Creek	2.23 MILES
3A	VAS-N04R_NEW02B08	New River	3.34 MILES
3A	VAS-N04R_NEW02C06	New River	4.47 MILES
3A	VAS-N04R_ZZZ01A00	Unsegmented rivers in NE08	42.56 MILES
3A	VAS-N04R_ZZZ02A00	Unsegmented rivers in NE09	47.36 MILES
3A	VAS-N04R_ZZZ03A00	Unsegmented rivers in NE10	35.22 MILES
3A	VAS-N04R_ZZZ04A00	Unsegmented rivers in NE11	20.92 MILES
3A	VAS-N04R_ZZZ05A00	Unsegmented rivers in NE12	57.32 MILES
3A	VAS-N05R_EKC04A16	Elk Creek	1.58 MILES
3A	VAS-N05R_SUG01A02	Sugarcamp Hollow	1.59 MILES
3A	VAS-N05R_WCR01A02	West Fork Comers Rock Branch	3.03 MILES
3A	VAS-N05R_ZZZ01A00	Unsegmented rivers in NE13	83.90 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAS-N05R_ZZZ02A00	Unsegmented rivers in N14	86.70 MILES
3A	VAS-N06R_BEV01A02	Beaver Creek	2.93 MILES
3A	VAS-N06R_CCR01A02	Coal Creek	6.02 MILES
3A	VAS-N06R_CEF01A00	Chestnut Creek East Fork	1.79 MILES
3A	VAS-N06R_CLR01A10	Clear Fork	2.30 MILES
3A	VAS-N06R_EGB01A02	Eagle Bottom Creek	4.15 MILES
3A	VAS-N06R_KNG01A02	Kings Branch	2.32 MILES
3A	VAS-N06R_LCK01A02	Lick Creek	2.97 MILES
3A	VAS-N06R_LIN01A02	Linard Creek	1.78 MILES
3A	VAS-N06R_LIT01A02	Little Brush Creek	2.66 MILES
3A	VAS-N06R_NEW03A00	New River	5.81 MILES
3A	VAS-N06R_NEW03B06	New River	2.15 MILES
3A	VAS-N06R_WMB01A04	Ward's Mill Branch	2.25 MILES
3A	VAS-N06R_XCR01A00	Hanks Branch	4.12 MILES
3A	VAS-N06R_XFT01A16	Chestnut Creek unnamed tributary in NE17	3.09 MILES
3A	VAS-N06R_ZZZ01A00	Unsegmented rivers in NE15	49.73 MILES
3A	VAS-N06R_ZZZ02A00	Unsegmented rivers in NE16	25.64 MILES
3A	VAS-N06R_ZZZ02B00	PWS tributaries to New River in NE16	39.64 MILES
3A	VAS-N06R_ZZZ03A00	Unsegmented rivers in NE17	34.48 MILES
3A	VAS-N06R_ZZZ03B00	Unsegmented PWS tributaries in NE17	37.32 MILES
3A	VAS-N06R_ZZZ03C00	Unsegmented PWS tributaries in NE17	23.59 MILES
3A	VAS-N06R_ZZZ04A00	Unsegmented rivers in NE18	53.30 MILES
3A	VAS-N07R_COK01A04	East Fork Crooked Creek	11.07 MILES
3A	VAS-N07R_EKN01A04	Elkhorn Creek	4.35 MILES
3A	VAS-N07R_GDC01A04	Glade Creek	4.19 MILES
3A	VAS-N07R_ZZZ01B00	Unsegmented rivers in NE19	39.17 MILES
3A	VAS-N07R_ZZZ02A00	Unsegmented rivers in NE20	39.04 MILES
3A	VAS-N07R_ZZZ02B00	Unsegmented rivers in NE20	64.76 MILES
3A	VAS-N08R_BOB01A02	Big Branch	2.36 MILES
3A	VAS-N08R_PMB01A00	Powder Mill Branch and tributaries	3.28 MILES
3A	VAS-N08R_PMB02A16	Powder Mill Branch	0.67 MILES
3A	VAS-N08R_ZZZ01A00	Unsegmented rivers in NE21	29.09 MILES
3A	VAS-N08R_ZZZ01B00	Unsegmented rivers in NE21, PWS	19.33 MILES
3A	VAS-N08R_ZZZ02A00	Unsegmented rivers in NE25	84.71 MILES
3A	VAS-N08R_ZZZ02B00	Unsegmented rivers in NE25, PWS	18.78 MILES
3A	VAS-N08R_ZZZ03A00	Unsegmented rivers in NE32	45.08 MILES
3A	VAS-N09R_BLU01A04	Blue Spring Creek	8.39 MILES
3A	VAS-N09R_CGG01A02	Crigger Creek	2.83 MILES
3A	VAS-N09R_CGG01B04	Crigger Creek	4.20 MILES
3A	VAS-N09R_DRC01A02	Dry Creek	3.11 MILES
3A	VAS-N09R_JNC01A02	Jones Creek	3.06 MILES
3A	VAS-N09R_LDR01A02	Little Dry Run & tributaries	3.31 MILES
3A	VAS-N09R_LRH01A02	Laurel Hollow & tributaries	3.27 MILES
3A	VAS-N09R_MID01A02	Middle Creek	2.20 MILES
3A	VAS-N09R_RCN01A04	Raccoon Branch	1.80 MILES
3A	VAS-N09R_WRC01A04	White Rock Creek	6.40 MILES
3A	VAS-N09R_ZZZ01A00	Unsegmented rivers in NE22	71.89 MILES
3A	VAS-N09R_ZZZ02A00	Unsegmented rivers in NE23	96.41 MILES
3A	VAS-N09R_ZZZ03A00	Unsegmented rivers in NE24	74.56 MILES
3A	VAS-N10R_GLN01A00	Gullion Fork	1.23 MILES
3A	VAS-N10R_SEF01A04	East Fork Stony Fork	4.12 MILES
3A	VAS-N10R_VNK01A04	Venrick Run & tributaries	12.21 MILES
3A	VAS-N10R_XAO01A10	South Fork Reed Creek tributary	3.05 MILES
3A	VAS-N10R_ZZZ01A00	Unsegmented rivers in NE26	95.65 MILES
3A	VAS-N10R_ZZZ02A00	Unsegmented rivers in NE27	77.27 MILES
3A	VAS-N10R_ZZZ03A00	Unsegmented rivers in NE28	89.84 MILES
3A	VAS-N11R_GLD01A02	Glade Creek	4.26 MILES
3A	VAS-N11R_RDC01A00	Reed Creek	3.58 MILES
3A	VAS-N11R_RDC01A10	Reed Creek tributaries	2.69 MILES
3A	VAS-N11R_XCZ01A04	Muskrat Creek tributary	0.51 MILES
3A	VAS-N11R_ZZZ01A00	Unsegmented rivers in NE29	51.37 MILES
3A	VAS-N11R_ZZZ01B00	Unsegmented rivers in NE29, PWS	1.59 MILES
3A	VAS-N11R_ZZZ02A00	Unsegmented rivers in NE31	135.99 MILES
3A	VAS-N12R_CVR02A02	Cove Creek	8.99 MILES
3A	VAS-N12R_MLK01A02	Mudlick Branch	3.52 MILES
3A	VAS-N12R_SLK01A02	St. Lukes Fork	1.41 MILES
3A	VAS-N12R_ZZZ01A00	Unsegmented rivers in NE30	83.27 MILES
3A	VAS-N13R_BFL01A04	Buffalo Branch & tributaries	5.31 MILES
3A	VAS-N13R_BLL01A04	Big Laurel Creek & tributaries	2.91 MILES
3A	VAS-N13R_BRC01A04	Bear Creek & tributaries	3.49 MILES
3A	VAS-N13R_CHS01A04	Chisholm Creek & tributaries	4.70 MILES
3A	VAS-N13R_GRE01A04	Greens Creek & tributaries	5.22 MILES
3A	VAS-N13R_GRS01A04	Grassy Creek & tributaries	13.55 MILES
3A	VAS-N13R_LLK01B04	Laurel Fork & tributaries	32.86 MILES
3A	VAS-N13R_LMC01A04	Long Mountain Creek & tributaries	6.43 MILES
3A	VAS-N13R_OFD01A04	Oldfield Creek & tributaries	5.61 MILES
3A	VAS-N13R_PCR01A06	Pine Creek & tributaries	12.05 MILES
3A	VAS-N13R_PNE01A04	Pine Creek & tributaries	3.53 MILES
3A	VAS-N13R_PSM01A04	Pipestem Branch	1.77 MILES
3A	VAS-N13R_ROA01A04	Roads Creek & tributaries	7.18 MILES
3A	VAS-N13R_SKE01B04	Snake Creek	6.58 MILES
3A	VAS-N13R_SMC01A04	Stone Mountain Creek & tributaries	13.63 MILES
3A	VAS-N13R_SSB01A04	Sulphur Spring Branch & tributaries	3.12 MILES
3A	VAS-N13R_STR01A04	Straight Branch	1.25 MILES
3A	VAS-N13R_TOR01A04	Tory Creek & tributaries	8.63 MILES
3A	VAS-N13R_ZZZ01A00	Unsegmented rivers in NE35	19.58 MILES
3A	VAS-N13R_ZZZ02A00	Unsegmented rivers in NE36	33.35 MILES
3A	VAS-N13R_ZZZ03A00	Unsegmented rivers in NE37	40.16 MILES
3A	VAS-N14R_BIB01A04	Big Branch & tributaries	3.60 MILES
3A	VAS-N14R_BNP01A04	North Prong Buckhorn Creek & tributaries	4.48 MILES
3A	VAS-N14R_BON01A04	Brannon Branch & tributaries	4.68 MILES
3A	VAS-N14R_BRF01B04	Burks Fork	13.37 MILES
3A	VAS-N14R_CHE01A04	Cherry Creek & tributaries	2.47 MILES
3A	VAS-N14R_GSC01A04	Greasy Creek & tributaries	51.63 MILES
3A	VAS-N14R_GSN01A02	North Fork Greasy Creek	5.83 MILES
3A	VAS-N14R_LSC01A04	Little Snake Creek & tributaries	14.74 MILES
3A	VAS-N14R_MRA01A04	Mira Fork & tributaries	23.40 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAS-N14R_PYF01A02	Piney Fork	3.35 MILES
3A	VAS-N14R_RCR01A04	Rock Creek & tributaries	13.08 MILES
3A	VAS-N14R_ROD01A04	Road Creek & tributaries	17.54 MILES
3A	VAS-N14R_SHD01A02	Shady Branch	2.16 MILES
3A	VAS-N14R_ZZZ01A00	Unsegmented rivers in NE38	83.29 MILES
3A	VAS-N14R_ZZZ02A00	Unsegmented rivers in NE39	51.76 MILES
3A	VAS-N14R_ZZZ03A00	Unsegmented rivers in NE40	43.37 MILES
3A	VAS-N14R_ZZZ04A00	Unsegmented rivers in NE41	34.95 MILES
3A	VAS-N15R_GSY01A04	Grassy Creek & tributaries	7.68 MILES
3A	VAS-N15R_LEF01A02	Unsegmented PWS rivers in NE33	38.49 MILES
3A	VAS-N15R_LEF01A08	East Fork Little Reed Island Creek	4.78 MILES
3A	VAS-N15R_LEW01A04	West Fork Little Reed Island Creek & tributaries	4.96 MILES
3A	VAS-N15R_MCK01A04	Mill Creek & tributaries	22.44 MILES
3A	VAS-N15R_TRT01A04	Trout Branch & tributaries	5.66 MILES
3A	VAS-N15R_ZZZ01A00	Unsegmented rivers in NE34	48.01 MILES
3A	VAS-N15R_ZZZ02A00	Unsegmented rivers in NE33	34.67 MILES
3A	VAS-N25R_WLK05A00	Walker Creek	6.93 MILES
3A	VAS-N25R_ZZZ01A00	Unsegmented rivers in NE66	94.84 MILES
3A	VAS-N25R_ZZZ02A00	Unsegmented rivers in NE67	102.61 MILES
3A	VAS-N26R_DML01A06	Unsegmented rivers in NE70	27.95 MILES
3A	VAS-N26R_DNG01A04	Ding Branch & tributaries	13.42 MILES
3A	VAS-N26R_KBL02A02	Unsegmented PWS tributaries in NE70	16.13 MILES
3A	VAS-N26R_KBL03B06	Kimberling Creek	8.15 MILES
3A	VAS-N26R_NBS01A06	Unsegmented rivers in NE69	33.53 MILES
3A	VAS-N26R_PDB01A04	Panther Den Branch	1.34 MILES
3A	VAS-N26R_PTB01A00	Pearis Thompson Branch & tributaries	2.95 MILES
3A	VAS-N26R_SDR01A00	Standrock Branch	1.52 MILES
3A	VAS-N26R_SDR02A00	Standrock Branch & tributaries	3.36 MILES
3A	VAS-N26R_ZZZ01A00	Unsegmented rivers in NE68	118.15 MILES
3A	VAS-N26R_ZZZ02A00	Unsegmented rivers in NE70	11.59 MILES
3A	VAS-N30R_LTL01A04	Little Creek & tributaries	6.66 MILES
3A	VAS-N30R_XFE02A16	Wolf Creek tributaries	12.32 MILES
3A	VAS-N30R_ZZZ01A00	Burkes Garden Creek & tributaries	68.02 MILES
3A	VAS-N30R_ZZZ02A00	Unsegmented rivers in NE78	74.33 MILES
3A	VAS-N31R_HCC01B04	Hunting Camp Creek	5.32 MILES
3A	VAS-N31R_LAC01A04	Laurel Creek need to correct to LFK	4.21 MILES
3A	VAS-N31R_XFG01A12	Hunting Camp Creek tributary	1.56 MILES
3A	VAS-N31R_ZZZ01A00	Unsegmented rivers in NE77	74.09 MILES
3A	VAS-N32R_CLF01A06	Clear Fork	12.63 MILES
3A	VAS-N32R_COX01A10	Cox Branch	2.07 MILES
3A	VAS-N32R_COX02A10	Cox Branch	1.69 MILES
3A	VAS-N32R_CVC01A10	Cove Creek & tributaries	32.49 MILES
3A	VAS-N32R_ZZZ01A00	Unsegmented in NE79	56.37 MILES
3A	VAS-N33R_DYF01A04	Dry Fork	4.02 MILES
3A	VAS-N33R_ZZZ01A00	Unsegmented rivers in NE80	44.54 MILES
3A	VAS-N36R_WHI01A08	Whitley Creek	0.70 MILES
3A	VAS-N36R_XRD01A08	Neal Hollow	0.43 MILES
3A	VAS-N36R_ZZZ01A00	Unsegmented rivers in NE86	23.44 MILES
3A	VAS-N36R_ZZZ01B00	Unsegmented PWS rivers in NE86,	36.27 MILES
3A	VAS-N36R_ZZZ02A00	Unsegmented rivers in NE87	40.37 MILES
3A	VAS-N37R_BPR01A10	Big Spring Branch	0.08 MILES
3A	VAS-N37R_RDH01A04	Reedsville Hollow Branch	0.22 MILES
3A	VAS-N37R_ZZZ01A00	Unsegmented rivers in NE88	24.18 MILES
3A	VAW-N16R_CMN01A02	Chimney Branch & Tributaries	5.13 MILES
3A	VAW-N16R_XAF01A06	New River, UT (XAF)	3.44 MILES
3A	VAW-N16R_ZZZ01A00	New River/Claytor Lake/Macks Creek	45.02 MILES
3A	VAW-N16R_ZZZ02A02	New River Tributaries	30.47 MILES
3A	VAW-N16R_ZZZ03A14	New River Tributaries	38.80 MILES
3A	VAW-N16R_ZZZ04A14	New River Tributaries	14.65 MILES
3A	VAW-N16R_ZZZ04B14	New River/Claytor Lake/Macks Creek	4.91 MILES
3A	VAW-N17L_HGN01A02	Hogan Lake	34.22 ACRES
3A	VAW-N17R_PKC05A00	Peak Creek & Hogan Creek Tributaries	41.32 MILES
3A	VAW-N17R_PKC05A06	Peak Creek	1.58 MILES
3A	VAW-N17R_PKC06A00	Peak Creek/Gatewood Drainage	17.86 MILES
3A	VAW-N17R_PKC07A00	Peak Creek & Tributaries	28.57 MILES
3A	VAW-N17R_TCK02A00	Tract Fork	7.04 MILES
3A	VAW-N17R_XFQ01A16	Peak Creek, UT (XFQ)	0.88 MILES
3A	VAW-N17R_ZZZ01A00	Peak Creek Tributaries	54.08 MILES
3A	VAW-N17R_ZZZ02A02	Peak Creek Tributaries	5.00 MILES
3A	VAW-N17R_ZZZ03A14	Peak Creek Tributaries	60.74 MILES
3A	VAW-N17R_ZZZ04A14	Peak Creek Tributaries	1.67 MILES
3A	VAW-N18R_ZZZ01A00	New River/Crab Creek Tributaries	45.85 MILES
3A	VAW-N18R_ZZZ02A02	New River Tributaries	16.39 MILES
3A	VAW-N18R_ZZZ03A14	Crab Creek Tributaries	9.82 MILES
3A	VAW-N18R_ZZZ04A14	Crab Creek Tributaries	28.00 MILES
3A	VAW-N19R_BVD01A02	Beaverdam Creek	8.18 MILES
3A	VAW-N19R_CAM01A02	Camp Creek	4.70 MILES
3A	VAW-N19R_MID01A02	Middle Creek	4.10 MILES
3A	VAW-N19R_MWC01A02	Meadow Creek & Tributaries	5.80 MILES
3A	VAW-N19R_OLD01A02	Oldfield Creek	6.42 MILES
3A	VAW-N19R_XDM01A04	Little River UT (XDM)	3.01 MILES
3A	VAW-N19R_ZZZ01A00	Little River & Oldfield Creek Tributaries	92.22 MILES
3A	VAW-N19R_ZZZ02A14	Little River Tributaries	104.26 MILES
3A	VAW-N20R_REE01A02	Reeds Creek	2.37 MILES
3A	VAW-N20R_XDA01A02	West Fork Dodd Creek, UT (XDA)	0.81 MILES
3A	VAW-N20R_XDD01A02	Dodd Creek, UT (XDD)	1.11 MILES
3A	VAW-N20R_XEL01A08	Dodd Creek, UT (XEL)	2.15 MILES
3A	VAW-N20R_ZZZ02A14	West Fork Little River Tributaries	41.34 MILES
3A	VAW-N21R_BIC02A02	Big Indian Creek	5.69 MILES
3A	VAW-N21R_BIF01A02	West Fork Big Indian Creek	4.01 MILES
3A	VAW-N21R_BSH02A04	Brush Creek	5.64 MILES
3A	VAW-N21R_LBC01A02	Lost Bent Creek	3.04 MILES
3A	VAW-N21R_LIC01A04	Little Indian Creek	4.14 MILES
3A	VAW-N21R_LIC02A04	Little Indian Creek	4.73 MILES
3A	VAW-N21R_MDW02A00	Meadow Creek	6.15 MILES
3A	VAW-N21R_MDW30A00	Meadow Creek & Mill Creek Tributaries	52.16 MILES
3A	VAW-N21R_ZZZ01A00	Little River Tributaries	8.77 MILES
3A	VAW-N21R_ZZZ02A14	Little River Tributaries	81.73 MILES

Overall Category	305(b) ID	Waterbody Name	Size
3A	VAW-N21R_ZZZ03A14	Little River Tributaries	60.81 MILES
3A	VAW-N21R_ZZZ04A14	Little River Tributaries	62.03 MILES
3A	VAW-N21R_ZZZ05A14	Little River Tributaries	120.06 MILES
3A	VAW-N22R_SRL01A02	Straley Branch	1.05 MILES
3A	VAW-N22R_STE01A00	Stroubles Creek	0.48 MILES
3A	VAW-N22R_STE05A02	Stroubles Creek	2.03 MILES
3A	VAW-N22R_TOM20A02	Toms Creek Tributaries	18.80 MILES
3A	VAW-N22R_ZZZ01A00	New River Tributaries	20.76 MILES
3A	VAW-N22R_ZZZ02A14	New River Tributaries	2.37 MILES
3A	VAW-N22R_ZZZ03A14	New River Tributaries	8.13 MILES
3A	VAW-N22R_ZZZ04A14	Stroubles Creek Tributaries	36.85 MILES
3A	VAW-N22R_ZZZ05A14	Toms Creek Tributaries	77.68 MILES
3A	VAW-N22R_ZZZ06A14	Back Creek Tributaries	104.36 MILES
3A	VAW-N23R_BSB01A02	Bear Spring Branch & Tributaries	9.86 MILES
3A	VAW-N23R_LAU01A02	Laurel Creek & Tributaries	2.53 MILES
3A	VAW-N23R_SNK01A00	Sinking Creek	5.04 MILES
3A	VAW-N23R_SNK03A00	Sinking Creek	12.66 MILES
3A	VAW-N23R_ZZZ01A00	New River & Sinking Creek Tributaries	26.98 MILES
3A	VAW-N23R_ZZZ02A14	Sinking Creek Tributaries	41.46 MILES
3A	VAW-N23R_ZZZ03A14	Sinking Creek Tributaries	82.93 MILES
3A	VAW-N24R_DOE01A00	Doe Creek	6.93 MILES
3A	VAW-N24R_HNB01A04	Hunters Branch	2.20 MILES
3A	VAW-N24R_LRY03A06	Little Stony Creek	1.72 MILES
3A	VAW-N24R_PDD01A04	Pond Drain	2.41 MILES
3A	VAW-N24R_ZZZ01A00	New River/Little Stony Creek Tributaries	24.52 MILES
3A	VAW-N24R_ZZZ02A02	Little Stony Creek Tributaries	9.68 MILES
3A	VAW-N25R_ZZZ01A00	Walker Creek Tributaries	89.80 MILES
3A	VAW-N25R_ZZZ02A14	Walker Creek Tributaries	36.51 MILES
3A	VAW-N27R_LWK02A02	Little Walker Creek	14.24 MILES
3A	VAW-N27R_SBR01A00	Spur Branch	6.67 MILES
3A	VAW-N27R_ZZZ01A00	Little Walker Creek	174.60 MILES
3A	VAW-N28R_ISB01A02	Iron Springs Branch	1.14 MILES
3A	VAW-N28R_KMB01A02	Kimballton Branch	2.55 MILES
3A	VAW-N28R_MUD01A04	Mud Branch	1.61 MILES
3A	VAW-N28R_SNC05B04	Stony Creek	1.71 MILES
3A	VAW-N28R_SNC21A00	Stony Creek Tributaries	9.40 MILES
3A	VAW-N28R_SNC30A00	Stony Creek Tributaries	8.34 MILES
3A	VAW-N28R_XDI01A02	Stony Creek, UT (XDI)	0.67 MILES
3A	VAW-N28R_XDW01A04	Mud Branch, UT (XDW)	0.48 MILES
3A	VAW-N29R_CDN01A00	Clendennin Creek	3.82 MILES
3A	VAW-N29R_EST01A14	East River	0.66 MILES
3A	VAW-N29R_PNY01A00	Piney Creek	4.08 MILES
3A	VAW-N29R_ZZZ01A00	New River Tributaries	24.52 MILES
3A	VAW-N32R_WFC30A00	Wolf Creek Tributaries	75.34 MILES
3A	VAW-N32R_ZZZ01A00	Wolf Creek Tributaries	24.94 MILES
3A	VAW-N34R_ZZZ01A14	Rich Creek Tributaries	1.51 MILES
3A	VAW-N35R_ZZZ01A00	New River & Adair Run Tributaries	7.79 MILES
3B	VAS-N10R_GRP01A14	Grippy Branch	1.45 MILES
3B	VAW-N20R_XDB01A02	West Fork Dodd Creek, UT (XDB)	1.34 MILES
3B	VAW-N20R_XEK01A08	Dodd Creek, UT (XEK)	0.25 MILES
3B	VAW-N20R_XEK02A08	Dodd Creek, UT (XEK)	0.80 MILES
3B	VAW-N20R_XEN01A08	Unnamed Tributary (XEN)	0.37 MILES
3B	VAW-N21R_SMN01A08	Simmons Creek	2.19 MILES
3B	VAW-N22R_STE02A00	Stroubles Creek	2.01 MILES
3B	VAW-N24R_LRY02B16	Little Stony Creek	6.53 MILES
3B	VAW-N25R_WAB01A12	Wabash Creek	3.49 MILES
3B	VAW-N27R_XFP01A16	Little Walker Creek, UT to UT (XFP)	0.66 MILES
3B	VAW-N28R_XDH01A02	Laurel Branch, UT (XDH)	1.38 MILES
3B	VAW-N28R_XDU01A04	White Rock Branch, UT (XDU)	1.18 MILES
3B	VAW-N28R_XDV01A04	Stony Creek, UT (XDV)	1.20 MILES
3B	VAW-N34R_RHC02A00	Rich Creek & Tributaries	4.58 MILES
3C	VAS-N02R_WLS02A02	Wilson Creek	1.30 MILES
3C	VAS-N03R_JER01A02	Jerry Creek	4.81 MILES
3C	VAW-N16R_BMK02A02	Big Macks Creek Upper & Tributaries	7.39 MILES
3C	VAW-N17R_TSB01A12	Thorne Springs Branch	1.27 MILES
3C	VAW-N23R_LAU02A02	Laurel Creek & Tributaries	3.83 MILES
3C	VAW-N24R_LCR01A00	Laurel Creek	3.14 MILES
3C	VAW-N24R_LRY03B04	Little Stony Tributaries	20.66 MILES
3C	VAW-N28R_PSB01A16	Pine Swamp Branch and tributaries	1.71 MILES
3C	VAW-N28R_SNC20A14	Stony Creek Tributaries	46.79 MILES
3C	VAW-N28R_SNF01A04	North Fork Stony Creek	6.34 MILES
3C	VAW-N28R_XFV01A16	Stony Creek, UT (XFV)	1.23 MILES
3C	VAW-N29R_CRV01A02	Curve Branch	2.36 MILES
3C	VAW-N32R_MLL03A00	Mill Creek	3.60 MILES
3C	VAW-N32R_MRC01A00	Mercy Branch	2.71 MILES
3D	VAS-N03R_OPM01A02	Opossum Creek	2.02 MILES
3D	VAS-N03R_RPK01A02	Ripshin Creek	3.54 MILES
3D	VAS-N03R_SLM01A02	Solomon Branch	2.01 MILES
3D	VAS-N11R_XFD01A12	Reed Creek tributary	2.80 MILES
3D	VAW-N16R_LMK01A02	Little Macks Creek & Tributaries	3.08 MILES
3D	VAW-N17R_PKC08A04	Peak Creek	5.52 MILES
3D	VAW-N17R_TCK03A00	Tract Fork	5.06 MILES
3D	VAW-N20R_ZZZ01A00	West Fork Little River Tributaries	118.74 MILES
3D	VAW-N28R_WRB01A04	White Rock Branch	2.29 MILES
3D	VAW-N28R_XFI01A12	Stony Creek, UT (XFI)	1.17 MILES
4A	VAS-N05R_ECM01A14	Middle Branch Elk Creek	3.06 MILES
4A	VAS-N05R_EKC01A00	Elk Creek	3.32 MILES
4A	VAS-N05R_EKC02A00	Elk Creek	7.59 MILES
4A	VAS-N05R_KNB01A06	Knob Fork	4.60 MILES
4A	VAS-N06R_CST01A94	Chestnut Creek	8.68 MILES
4A	VAS-N06R_CST02A94	Chestnut Creek	5.68 MILES
4A	VAS-N06R_CST03A94	Chestnut Creek	1.09 MILES
4A	VAS-N06R_CST04A98	Chestnut Creek	2.10 MILES
4A	VAS-N09R_CPL01B04	Cripple Creek	3.17 MILES
4A	VAS-N09R_CPL02A98	Cripple Creek	6.49 MILES
4A	VAS-N09R_CPL02B04	Cripple Creek	6.43 MILES
4A	VAS-N09R_SPB01A04	Slate Spring Branch	6.14 MILES
4A	VAS-N10R_HOL01A12	Huddle Branch	1.48 MILES
4A	VAS-N10R_MCE01A02	Mill Creek	6.39 MILES
4A	VAS-N10R_PRN01A12	Pine Run	4.13 MILES
4A	VAS-N10R_RDC01A02	Reed Creek	5.23 MILES

Overall Category	305(b) ID	Waterbody Name	Size
4A	VAS-N10R_RDC01B00	Reed Creek	9.85 MILES
4A	VAS-N10R_RDC01C02	Reed Creek	6.83 MILES
4A	VAS-N10R_RSF01A00	South Fork Reed Creek	6.77 MILES
4A	VAS-N10R_RSF01A02	South Fork Reed Creek	13.35 MILES
4A	VAS-N10R_SFK01A02	Stony Fork	1.90 MILES
4A	VAS-N10R_SFK01A12	Stony Fork	4.73 MILES
4A	VAS-N10R_TAT01A06	Tate Run	0.56 MILES
4A	VAS-N11R_MER01A06	Miller Creek	0.42 MILES
4A	VAS-N11R_MER02A10	Miller Creek	3.64 MILES
4A	VAS-N11R_MGV01A12	McGavock Creek	2.58 MILES
4A	VAS-N11R_RDC01C02	Reed Creek	6.21 MILES
4A	VAS-N12R_CVR01A00	Cove Creek	9.92 MILES
4A	VAS-N12R_SLK01A04	St. Lukes Fork	1.77 MILES
4A	VAS-N31R_HCC01A00	Hunting Camp Creek	8.93 MILES
4A	VAS-N37R_BIG01A10	Big Branch	3.33 MILES
4A	VAS-N37R_LRR01A94	Laurel Fork	4.70 MILES
4A	VAW-N17R_PKC03A06	Peak Creek	0.39 MILES
4A	VAW-N17R_PKC04A00	Peak Creek	2.10 MILES
4A	VAW-N17R_TCK01A00	Tract Fork	1.24 MILES
4A	VAW-N18R_CBC01A00	Crab Creek	2.15 MILES
4A	VAW-N18R_CBC02A00	Crab Creek	1.18 MILES
4A	VAW-N18R_CBC03A00	Crab Creek	1.10 MILES
4A	VAW-N18R_CBC04A00	Crab Creek	7.93 MILES
4A	VAW-N19R_LRV01A00	Little River	8.73 MILES
4A	VAW-N19R_LRV02A00	Little River	7.59 MILES
4A	VAW-N19R_LRV03A00	Little River	18.35 MILES
4A	VAW-N19R_MDR01A04	Meadow Run	4.00 MILES
4A	VAW-N19R_PNC01A06	Pine Creek	3.91 MILES
4A	VAW-N20R_DDD01A00	Dodd Creek	3.84 MILES
4A	VAW-N20R_DDD02A00	Dodd Creek	2.60 MILES
4A	VAW-N20R_DDD03A02	Dodd Creek	2.46 MILES
4A	VAW-N20R_DDW01A02	West Fork Dodd Creek	1.31 MILES
4A	VAW-N20R_DDW02A02	West Fork Dodd Creek	5.73 MILES
4A	VAW-N20R_LWF01A00	West Fork Little River	4.53 MILES
4A	VAW-N20R_XDC01A02	West Fork Dodd Creek, UT (XDC)	0.53 MILES
4A	VAW-N21L_LRV01A02	Little River Reservoir	60.44 ACRES
4A	VAW-N21R_BIC01A02	Big Indian Creek	7.83 MILES
4A	VAW-N21R_BSH01A04	Brush Creek	5.94 MILES
4A	VAW-N21R_LLL01A04	Laurel Creek	3.44 MILES
4A	VAW-N21R_LRV01A00	Little River	0.49 MILES
4A	VAW-N21R_LRV03A00	Little River	0.69 MILES
4A	VAW-N21R_LRV04A00	Little River	0.70 MILES
4A	VAW-N21R_LRV05A00	Little River	12.33 MILES
4A	VAW-N21R_LRV06A00	Little River	8.37 MILES
4A	VAW-N21R_LRV06A04	Little River	8.79 MILES
4A	VAW-N21R_LRV06A14	Little River	4.62 MILES
4A	VAW-N21R_LRV07A00	Little River	3.70 MILES
4A	VAW-N21R_MDW01A00	Meadow Creek	4.64 MILES
4A	VAW-N21R_MLC01A00	Mill Creek	5.49 MILES
4A	VAW-N21R_MLC02A00	Mill Creek	2.11 MILES
4A	VAW-N21R_PPL01A02	Poplar Branch & Tributaries	4.62 MILES
4A	VAW-N21R_XDE01A02	Mill Creek, UT (XDE)	1.75 MILES
4A	VAW-N21R_XDF01A02	Mill Creek, UT (XDF)	1.95 MILES
4A	VAW-N22R_BCK01A00	Back Creek	5.76 MILES
4A	VAW-N22R_BCK02A08	Back Creek	11.77 MILES
5A	VAS-N01R_BHO01A02	Big Horse Creek & tributaries	7.90 MILES
5A	VAS-N01R_LHC01A02	Little Helton Creek & tributaries	6.30 MILES
5A	VAS-N02R_BRL01A10	Bridle Creek	1.13 MILES
5A	VAS-N02R_GRA01A10	Grassy Creek	3.64 MILES
5A	VAS-N02R_NEW01A98	New River	0.73 MILES
5A	VAS-N02R_NEW02A98	New River	2.50 MILES
5A	VAS-N02R_NEW03C04	New River	4.22 MILES
5A	VAS-N02R_WLS01A98	Wilson Creek	8.90 MILES
5A	VAS-N03R_FXC01A98	Fox Creek	7.65 MILES
5A	VAS-N03R_LFX01A10	Little Fox Creek	2.28 MILES
5A	VAS-N03R_MFX02A02	Middle Fox Creek	4.61 MILES
5A	VAS-N03R_MIR01A02	Mill Creek	4.57 MILES
5A	VAS-N04R_LVR01A98	Little River	6.55 MILES
5A	VAS-N04R_NEW01A98	New River	5.98 MILES
5A	VAS-N04R_NEW01B02	New River	1.47 MILES
5A	VAS-N04R_NEW01C02	New River	4.68 MILES
5A	VAS-N04R_NEW02A06	New River	3.61 MILES
5A	VAS-N04R_NEW02B06	New River	0.42 MILES
5A	VAS-N04R_PBC01A98	Peach Bottom Creek	2.81 MILES
5A	VAS-N04R_PBC01B02	Peach Bottom Creek	8.86 MILES
5A	VAS-N04R_PBC01C04	Peach Bottom Creek	5.34 MILES
5A	VAS-N04R_RCK01A12	Rock Creek	5.00 MILES
5A	VAS-N04R_SDL01A06	Saddle Creek	3.17 MILES
5A	VAS-N06R_BRU01A08	Brush Creek	7.29 MILES
5A	VAS-N06R_MCR01A02	Meadow Creek & tributaries	10.53 MILES
5A	VAS-N06R_NEW01A00	New River	5.38 MILES
5A	VAS-N06R_NEW02A02	New River	5.03 MILES
5A	VAS-N07R_CRK01A04	Crooked Creek	11.45 MILES
5A	VAS-N07R_CRK01A98	Crooked Creek	12.09 MILES
5A	VAS-N07R_CRK02A04	Crooked Creek	4.36 MILES
5A	VAS-N08R_MRN01A04	Mill Creek	4.37 MILES
5A	VAS-N08R_NEW01A02	New River	5.71 MILES
5A	VAS-N08R_NEW01B98	New River	1.44 MILES
5A	VAS-N08R_NEW02B00	New River	5.01 MILES
5A	VAS-N08R_NEW03A06	New River	6.51 MILES
5A	VAS-N08R_NEW03B98	New River	0.92 MILES
5A	VAS-N08R_PNR01A10	Pine Run	1.43 MILES
5A	VAS-N08R_SRT01A04	Shorts Creek	3.31 MILES
5A	VAS-N08R_SRT01B04	Shorts Creek	7.07 MILES
5A	VAS-N08R_XEE01A06	Shorts Creek unnamed tributary	3.88 MILES
5A	VAS-N11R_RDC01B06	Reed Creek	0.60 MILES
5A	VAS-N11R_RDC02B02	Reed Creek	6.08 MILES
5A	VAS-N11R_RDC03B04	Reed Creek	9.87 MILES
5A	VAS-N11R_XES01A10	Reed Creek tributaries	2.67 MILES
5A	VAS-N13R_RIC01B04	Big Reed Island Creek	19.85 MILES
5A	VAS-N13R_SKE01A04	Snake Creek	3.54 MILES
5A	VAS-N14R_GSC01A08	Greasy Creek	13.63 MILES
5A	VAS-N14R_ISL01A12	Island Creek & tributaries	13.35 MILES
5A	VAS-N14R_RIC01A00	Big Reed Island Creek	7.55 MILES

Overall Category	305(b) ID	Waterbody Name	Size
5A	VAS-N14R_RIC01B04	Big Reed Island Creek	13.81 MILES
5A	VAS-N14R_RIC01B98	Big Reed Island Creek	9.85 MILES
5A	VAS-N15R_LRI01A98	Little Reed Island Creek	11.00 MILES
5A	VAS-N15R_LRI01B98	East Fork Little Reed Island Creek	5.28 MILES
5A	VAS-N15R_LRI02A08	Little Reed Island Creek	19.70 MILES
5A	VAS-N25R_TNC01A10	Town Creek	4.40 MILES
5A	VAS-N25R_WLK04A00	Walker Creek	14.48 MILES
5A	VAS-N25R_WLK04A12	Walker Creek	8.46 MILES
5A	VAS-N25R_WLK04B12	Walker Creek	10.59 MILES
5A	VAS-N26R_EWL01A10	East Wilderness Creek	3.51 MILES
5A	VAS-N26R_KBL01A00	Kimberling Creek	2.53 MILES
5A	VAS-N26R_KBL02A00	Kimberling Creek	6.83 MILES
5A	VAS-N26R_NBS01B04	Nobusiness Creek	6.72 MILES
5A	VAS-N30R_LTL02A10	Little Creek	1.89 MILES
5A	VAS-N30R_WFC01A00	Wolf Creek	9.11 MILES
5A	VAS-N30R_WFC01A04	Wolf Creek	7.97 MILES
5A	VAS-N30R_WFC01A06	Wolf Creek, headwaters	3.80 MILES
5A	VAS-N30R_WFC01B06	Wolf Creek	6.39 MILES
5A	VAS-N32R_CLF01A08	Clear Fork	8.94 MILES
5A	VAS-N32R_WFC01A10	Wolf Creek	1.89 MILES
5A	VAS-N33R_DYF01A12	Dry Fork	5.24 MILES
5A	VAS-N33R_LAC01A00	Laurel Creek	1.64 MILES
5A	VAS-N33R_LAC01A04	Laurel Creek	1.32 MILES
5A	VAS-N36R_BFK01A06	Brush Fork	1.48 MILES
5A	VAS-N36R_BPB01A06	Beaverpond Creek	2.99 MILES
5A	VAW-N16L_NEW01A02	Claytor Lake (New River)	1,196.91 ACRES
5A	VAW-N16L_NEW01B14	Claytor Lake (New River)	602.03 ACRES
5A	VAW-N16L_NEW02A02	Claytor Lake (New River)	278.51 ACRES
5A	VAW-N16L_NEW03A02	Claytor Lake (New River)	671.89 ACRES
5A	VAW-N16L_NEW04A02	Claytor Lake (New River)	447.80 ACRES
5A	VAW-N16L_NEW05A02	Claytor Lake (New River)	660.27 ACRES
5A	VAW-N16L_NEW06A02	Claytor Lake (New River)	152.13 ACRES
5A	VAW-N16R_BMK01A02	Big Macks Creek	3.78 MILES
5A	VAW-N16R_NEW01A00	New River	0.61 MILES
5A	VAW-N17L_PKC01A10	Claytor Lake (Peak Creek)	216.86 ACRES
5A	VAW-N17L_PKC02A10	Claytor Lake (Peak Creek)	78.16 ACRES
5A	VAW-N17R_XAG01A02	Peak Creek, UT (XAG)	3.20 MILES
5A	VAW-N18R_CNL01A02	Connellys Run	1.60 MILES
5A	VAW-N18R_CNL02A02	Connellys Run	1.25 MILES
5A	VAW-N18R_NEW01A00	New River	3.33 MILES
5A	VAW-N18R_NEW02A00	New River	3.72 MILES
5A	VAW-N18R_NEW03A00	New River	2.14 MILES
5A	VAW-N18R_NEW04A00	New River	0.60 MILES
5A	VAW-N18R_PLM01A00	Plum Creek	1.83 MILES
5A	VAW-N18R_PLM02A02	Plum Creek	2.89 MILES
5A	VAW-N22R_NEW01A00	New River	3.44 MILES
5A	VAW-N22R_NEW02A00	New River	2.86 MILES
5A	VAW-N22R_NEW02B14	New River	0.51 MILES
5A	VAW-N22R_NEW03A00	New River	4.09 MILES
5A	VAW-N22R_NEW04A00	New River	2.32 MILES
5A	VAW-N22R_NEW05A00	New River	1.76 MILES
5A	VAW-N22R_NEW06A00	New River	1.72 MILES
5A	VAW-N22R_STE03A00	Stroubles Creek	2.11 MILES
5A	VAW-N22R_TOM03A08	Toms Creek	6.13 MILES
5A	VAW-N22R_XEH01A08	Slate Branch, UT (XEH)	1.68 MILES
5A	VAW-N22R_XEJ01A08	Unnamed Trib. XEJ to XEH	0.83 MILES
5A	VAW-N23R_NEW01A00	New River	5.47 MILES
5A	VAW-N23R_SNK01B10	Sinking Creek	3.03 MILES
5A	VAW-N23R_SNK01C14	Sinking Creek	2.74 MILES
5A	VAW-N23R_SNK02A00	Sinking Creek	15.26 MILES
5A	VAW-N24R_NEW01A00	New River	3.87 MILES
5A	VAW-N24R_NEW02A00	New River	2.00 MILES
5A	VAW-N24R_NEW03A00	New River	3.87 MILES
5A	VAW-N25R_WLK01A00	Walker Creek	8.39 MILES
5A	VAW-N27R_LWK01A00	Little Walker Creek	17.48 MILES
5A	VAW-N28R_SNC01A00	Stony Creek	1.36 MILES
5A	VAW-N28R_SNC02A00	Stony Creek	0.63 MILES
5A	VAW-N28R_SNC03A00	Stony Creek	1.69 MILES
5A	VAW-N28R_SNC04A00	Stony Creek	4.69 MILES
5A	VAW-N29R_NEW01A02	New River	3.20 MILES
5A	VAW-N29R_NEW02A02	New River	3.55 MILES
5A	VAW-N29R_NEW03A02	New River	2.79 MILES
5A	VAW-N29R_NEW04A02	New River	5.78 MILES
5A	VAW-N32R_WFC01A00	Wolf Creek	0.39 MILES
5A	VAW-N32R_WFC02A00	Wolf Creek	5.22 MILES
5A	VAW-N32R_WFC03A00	Wolf Creek	8.80 MILES
5A	VAW-N32R_WFC04A00	Wolf Creek	7.91 MILES
5A	VAW-N34R_RHC01A00	Rich Creek	2.85 MILES
5A	VAW-N35R_ADR01A00	Adair Run	0.37 MILES
5A	VAW-N35R_NEW01A00	New River	6.92 MILES
5C	VAW-N22R_TOM01A00	Toms Creek	4.56 MILES
5C	VAW-N22R_TOM02A00	Toms Creek	5.71 MILES
5D	VAS-N05R_EKC03A02	Elk Creek	9.38 MILES
5D	VAS-N09R_DEN01A10	Dean Branch	1.92 MILES
5D	VAS-N10R_RDC01A00	Reed Creek	1.43 MILES
5D	VAS-N11R_RDC01B00	Reed Creek	5.85 MILES
5D	VAS-N36R_BST04A02	Bluestone River	6.23 MILES
5D	VAS-N36R_BST04B02	Bluestone River	1.72 MILES
5D	VAS-N36R_BST05A02	Bluestone River	5.05 MILES
5D	VAS-N37R_BST01A96	Bluestone River	0.62 MILES
5D	VAS-N37R_LRR02A02	Laurel Fork	8.30 MILES
5D	VAW-N17R_PKC01A00	Peak Creek	1.83 MILES
5D	VAW-N17R_PKC02A00	Peak Creek	1.66 MILES
5D	VAW-N17R_PKC03A00	Peak Creek	0.51 MILES
5D	VAW-N22R_STE04A00	Stroubles Creek	5.08 MILES

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A02R-02-BEN	North Fork Catoctin Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.42	2008	H, 2yr
A02R-04-BEN	North Fork Catoctin Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.54	2014	L
A03R-02-BAC	Clarks Run						
Recreation	Escherichia coli	5A			5.46	2008	L
A05R-01-BEN	Wancopin Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.44	2008	L
A05R-02-BEN	Jeffries Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.19	2012	L
A06R-01-BEN	North Fork Goose Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.69	2010	L
A07R-02-BEN	North Fork Beaverdam Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.81	2008	L
A08R-01-PCB	Broad Run, Difficult Run, Goose Creek						
Fish Consumption	PCB in Fish Tissue	5A		39.63	15.34	2006	L
A08R-04-BEN	Tuscarora Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.89	2014	L
A08R-05-BEN	Dry Mill Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.97	2016	L
A09R-01-BAC	Unnamed tributary to the Potomac River						
Recreation	Escherichia coli	5A			1.74	2010	M
A09R-01-BEN	Broad Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.93	2006	M
	Benthic-Macroinvertebrate Bioassessments	5A			5.49	2008	M
A09R-01-HG	Broad Run						
Fish Consumption	Mercury in Fish Tissue	5A			2.93	2010	L
A09R-02-BAC	Broad Run						
Recreation	Escherichia coli	5A			3.22	2010	M
	Escherichia coli	5A			2.93	2014	M
A09R-02-BEN	Broad Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.42	2008	M
A09R-03-BAC	Broad Run						
Recreation	Escherichia coli	5A			1.42	2012	M
A09R-03-BEN	Horsepen Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.17	2016	M
A09R-04-BAC	South Fork Broad Run						
Recreation	Escherichia coli	5A			5.28	2014	M

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A09R-04-BEN	South Fork Broad Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.28	2014	M
A09R-05-BAC	Beaverdam Run						
Recreation	Escherichia coli	5A			3.85	2014	M
A09R-05-BEN	Beaverdam Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.85	2016	L
A09R-06-BAC	Indian Creek						
Recreation	Escherichia coli	5A			3.48	2014	M
A09R-07-BAC	Horsepen Run						
Recreation	Escherichia coli	5A			8.17	2016	L
A10R-01-BEN	Sugarland Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.71	2012	L
A11R-01-HEPOXID	Difficult Run						
Fish Consumption	Heptachlor epoxide	5A			3.17	2006	L
A11R-02-BEN	Captain Hickory Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.27	2008	L
A11R-03-BEN	Difficult Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.37	2008	L
A11R-04-BEN	Colvin Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.09	2010	L
A11R-05-BEN	Snakeden Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.97	2010	L
A11R-06-BEN	Little Difficult Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.75	2010	L
A11R-07-BEN	Old Courthouse Spring Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.11	2010	L
A11R-08-BAC	Nichols Run						
Recreation	Escherichia coli	5A			4.56	2012	L
A11R-08-BEN	Turkey Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.34	2012	L
A11R-09-BEN	Dead Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.82	2012	L
A12E-01-CDANE	Four Mile Run						
Fish Consumption	Chlordane	5A	0.050			2010	L
A12R-01-BEN	Pimmit Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.76	2012	L
A12R-03-CDANE	Pimmit Run						
Fish Consumption	Chlordane	5A			1.64	2006	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A12R-03-HEPOXID	Pimmit Run						
Fish Consumption	Heptachlor epoxide	5A			1.64	2006	L
A13R-01-PCB	Indian Run						
Fish Consumption	PCB in Fish Tissue	5A			3.18	2006	L
A13R-03-BEN	Holmes Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.09	2004	M
A13R-04-BEN	Tripps Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.70	2004	M
A14R-01-BAC	Paul Springs Branch						
Recreation	Escherichia coli	5A			3.38	2010	L
A14R-01-BEN	Paul Springs Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.38	2010	L
A14R-01-DO	Paul Springs Branch						
Aquatic Life	Oxygen, Dissolved	5A			3.38	2014	L
A14R-02-BAC	Dogue Creek						
Recreation	Escherichia coli	5A			1.41	2014	L
A15E-01-PH	Pohick Bay						
Aquatic Life	pH	5A	0.619			2012	L
A15L-01-HG	Lake Accotink						
Fish Consumption	Mercury in Fish Tissue	5A		73.93		2010	L
A15L-01-PCB	Lake Accotink						
Fish Consumption	PCB in Fish Tissue	5A		73.93		2010	L
A15R-01-BEN	Accotink Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.47	1996	H
	Benthic-Macroinvertebrate Bioassessments	5A			2.62	2010	H
A15R-01-CHLR	Accotink Creek						
Aquatic Life	Chloride	5A			5.22	2016	L
Wildlife	Chloride	5A			5.22	2016	L
A15R-01-PCB	Accotink Creek						
Fish Consumption	PCB in Fish Tissue	5A			10.09	2010	L
A15R-04-BEN	Accotink Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.34	2008	H
	Benthic-Macroinvertebrate Bioassessments	5A			8.25	2010	H
A15R-05-BEN	Long Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.37	2008	H
A16E-01-BZOKFL	Pohick Creek						
Fish Consumption	Benzo[k]fluoranthene	5A	0.292			2002	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A16R-01-BAC	Pohick Creek						
Recreation	Escherichia coli	5A			3.78	2006	M
A16R-01-BEN	Pohick Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.61	2014	M
A16R-02-BAC	Pohick Creek						
Recreation	Escherichia coli	5A			1.77	2006	M
	Escherichia coli	5A			5.41	2012	M
	Escherichia coli	5A			2.61	2016	M
A16R-03-BAC	South Run						
Recreation	Escherichia coli	5A			4.16	2016	L
A16R-04-BAC	Middle Run						
Recreation	Escherichia coli	5A			2.85	2016	L
A18R-02-BEN	Lucky Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.48	2008	L
A21R-01-BEN	Catharpin Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.80	2012	M
A21R-01-PCB	Bull Run						
Fish Consumption	PCB in Fish Tissue	5A			5.81	2004	L
	PCB in Fish Tissue	5A		63.12	5.72	2006	L
A21R-02-BEN	Bull Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.66	2016	L
A22R-01-BEN	Flatlick Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.22	2008	M
A22R-02-BEN	Big Rocky Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.34	2010	M
A22R-03-BEN	Cub Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.89	2012	M
	Benthic-Macroinvertebrate Bioassessments	5A			6.34	2016	M
A22R-04-BEN	Elklick Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.27	2014	M
A23R-03-BEN	Little Rocky Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.23	2010	M
A24R-01-BAC	Wolf Run						
Recreation	Escherichia coli	5A			2.50	2006	L
A24R-02-BAC	Sandy Run						
Recreation	Escherichia coli	5A			6.08	2008	L
A24R-03-BAC	Hooes Run						
Recreation	Escherichia coli	5A			0.98	2012	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A25E-02-BAC	Neabsco Creek						
Recreation	Escherichia coli	5A	0.545			2004	L
A25E-03-BAC	Occoquan River						
Recreation	Escherichia coli	5A	0.074			2014	L
A25E-04-BAC	Marumsco Creek						
Recreation	Escherichia coli	5A	0.025			2012	L
A25E-04-EBEN	Occoquan River						
Aquatic Life	Estuarine Bioassessments	5A	0.286			2006	L
A25R-01-BEN	Giles Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.48	2012	L
A25R-02-BAC	Mills Branch						
Recreation	Escherichia coli	5A			1.72	2014	L
A25R-03-BAC	Giles Run						
Recreation	Escherichia coli	5A			6.48	2014	L
A25R-04-BAC	Marumsco Creek						
Recreation	Escherichia coli	5A			0.53	2014	L
A25R-05-BAC	Unnamed Tributary to Occoquan River						
Recreation	Escherichia coli	5A			1.11	2016	L
A26E-01-BZOKFL	Powells Creek						
Fish Consumption	Benzo[k]fluoranthene	5A	0.402			2002	L
A26E-03-EBEN	Quantico Creek						
Aquatic Life	Estuarine Bioassessments	5A	0.419			2006	L
A26E-03-EBTOX	Quantico Creek						
Aquatic Life	Sediment Bioassays for Estuarine and Marine Water	5A	0.419			2006	L
A26L-01-HG	Lake Montclair						
Fish Consumption	Mercury in Fish Tissue	5A		103.54		2010	L
A26R-02-PH	Unnamed tributary to Potomac River						
Aquatic Life	pH	5A			3.67	2014	L
A27R-01-BAC	Aquia Creek						
Recreation	Escherichia coli	5A			6.36	2006	L
A27R-01-DO	Unnamed tributary to Aquia Creek						
Aquatic Life	Oxygen, Dissolved	5A			2.25	2010	L
A27R-02-BAC	Aquia Creek						
Recreation	Escherichia coli	5A			8.81	2012	L
A29E-01-PH	Potomac Creek						
Aquatic Life	pH	5A	0.587			2014	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A29E-02-BAC	Fairview Beach (Potomac River)						
Recreation	Enterococcus	5R	0.005			2006	L
A29E-03-BAC	Chotank Creek						
Recreation	Enterococcus	5A	0.054			2012	L
A29R-01-BEN	Unnamed tributary to Long Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.30	2016	L
A29R-03-DO	Potomac Run						
Aquatic Life	Oxygen, Dissolved	5A			6.59	2014	L
A30R-01-DO	Pepper Mill Creek						
Aquatic Life	Oxygen, Dissolved	5C			8.66	2010	L
A30R-01-PH	Pepper Mill Creek						
Aquatic Life	pH	5C			8.66	2010	L
A30R-02-DO	Gambo Creek						
Aquatic Life	Oxygen, Dissolved	5C			0.50	2016	L
A30R-02-PH	Gambo Creek						
Aquatic Life	pH	5C	0.177		0.50	2016	L
A31E-01-BAC	Rosier Creek						
Recreation	Enterococcus	5A	0.274			2010	L
A31E-11-BAC	Bridges Creek						
Recreation	Enterococcus	5A	0.182			2012	L
A31R-01-BAC	Pine Hill Creek Watershed						
Recreation	Escherichia coli	5A			34.91	2014	L
A32E-09-EBEN	Lower Machodoc Creek						
Aquatic Life	Estuarine Bioassessments	5A	0.687			2016	L
A32R-01-DO	Thompson Branch						
Aquatic Life	Oxygen, Dissolved	5C			1.60	2006	L
A32R-01-PH	Thompson Branch						
Aquatic Life	pH	5C			1.60	2006	L
A32R-03-PH	XLK - Nomini Creek, UT						
Aquatic Life	pH	5C			1.45	2010	L
A32R-05-PH	Tavern Run						
Aquatic Life	pH	5C			3.27	2012	L
A32R-06-PH	Nontidal Nomini Creek Tributaries						
Aquatic Life	pH	5C			16.36	2014	L
A32R-07-DO	Marshall Creek						
Aquatic Life	Oxygen, Dissolved	5C			2.88	2014	L
A32R-08-DO	Barnes Creek						
Aquatic Life	Oxygen, Dissolved	5C			1.94	2014	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A32R-08-PH	Barnes Creek						
Aquatic Life	pH	5C			1.94	2014	L
A32R-09-DO	Mount Pleasant Creek						
Aquatic Life	Oxygen, Dissolved	5C			2.26	2014	L
A32R-09-PH	Mount Pleasant Creek						
Aquatic Life	pH	5C			2.26	2014	L
A33E-04-BAC	Lodge Creek						
Recreation	Enterococcus	5A	0.301			2006	L
A33L-01-DO	Hampton Hall, Gardy Millpond						
Aquatic Life	Oxygen, Dissolved	5C		45.86		2016	L
A33R-02-BAC	Lodge Creek						
Recreation	Escherichia coli	5A			3.44	2014	L
A33R-02-DO	Lodge Creek						
Aquatic Life	Oxygen, Dissolved	5C			3.44	2010	L
A33R-03-DO	Gardner Creek						
Aquatic Life	Oxygen, Dissolved	5C			1.40	2010	L
A33R-03-PH	Gardner Creek						
Aquatic Life	pH	5C			1.40	2010	L
A33R-04-DO	XMB - Hampton Hall Creek, UT						
Aquatic Life	Oxygen, Dissolved	5C			3.48	2014	L
A33R-04-PH	XMB - Hampton Hall Creek, UT						
Aquatic Life	pH	5C			3.48	2014	L
A33R-05-PH	XLZ - Hampton Hall Creek, UT						
Aquatic Life	pH	5C			3.13	2014	L
A33R-07-BAC	XMC - Lodge Creek, UT						
Recreation	Escherichia coli	5A			1.69	2014	L
A34R-02-PH	Little Wicomico River						
Aquatic Life	pH	5C			2.33	2006	L
A34R-03-DO	XLL - Coan Mill Stream, UT						
Aquatic Life	Oxygen, Dissolved	5C			2.10	2010	L
B02R-01-BAC	West Strait Creek						
Recreation	Escherichia coli	5A			0.87	2010	L
B02R-06-BAC	Strait Creek						
Recreation	Escherichia coli	5A			2.77	2006	L
B03R-03-BAC	South Fork South Branch Potomac River						
Recreation	Escherichia coli	5A			2.71	2012	L
B04R-01-BAC	Middle Fork Sleepy Creek						
Recreation	Escherichia coli	5A			2.93	2014	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B04R-02-BAC	Sleepy Creek						
Recreation	Escherichia coli	5A			7.72	2016	L
B05R-01-BAC	Back Creek						
Recreation	Escherichia coli	5A			17.61	2010	L
B05R-02-BAC	Little Isaacs Creek						
Recreation	Escherichia coli	5A			9.93	2008	L
B05R-03-BAC	Isaacs Creek						
Recreation	Escherichia coli	5A			2.84	2016	L
B12R-01-PCB	Lewis Creek						
Fish Consumption	PCB in Fish Tissue	5A			10.06	2004	H
B14R-03-TEMP	Long Meadow Run						
Aquatic Life	Temperature, water	5C			11.06	2006	L
B16L-01-TEMP	Elkhorn Lake						
Aquatic Life	Temperature, water	5A		52.66		2010	L
B16R-01-PH	North River						
Aquatic Life	pH	5A			4.46	2002	L
B18R-01-BEN	Wolf Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.18	2002	L
	Benthic-Macroinvertebrate Bioassessments	5A			2.11	2004	L
B18R-01-PH	Wolf Run						
Aquatic Life	pH	5A			3.29	2006	L
B18R-02-PH	Briery Branch						
Aquatic Life	pH	5C			7.18	2002	L
B18R-06-PH	Rocky Run						
Aquatic Life	pH	5A			1.93	2006	L
B18R-07-PH	Union Springs Run						
Aquatic Life	pH	5A			3.73	2006	L
B20L-01-TEMP	Switzer Lake						
Aquatic Life	Temperature, water	5A		100.81		2006	L
B20R-01-PH	Dry River						
Aquatic Life	pH	5A			9.54	2002	L
	pH	5A			0.64	2008	L
B30R-02-PH	Loves Run						
Aquatic Life	pH	5A			5.63	2006	M
B30R-03-BEN	Pine Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			20.38	2014	L
B31L-01-PH	Coles Run Reservoir						
Aquatic Life	pH	5A		10.84		2008	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B31R-01-BAC	Back Creek						
Recreation	Escherichia coli	5A			12.85	2012	L
B31R-01-BEN	Back Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			12.85	2002	L
B31R-02-BEN	Mills Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.12	2002	L
B31R-04-PH	Coles Run						
Aquatic Life	pH	5A			6.88	2006	M
B31R-05-PH	Johns Run						
Aquatic Life	pH	5A			5.45	2006	M
B31R-06-PH	Kennedy Creek						
Aquatic Life	pH	5A			15.47	2006	M
B31R-07-PH	Orebank Creek						
Aquatic Life	pH	5A			3.55	2006	M
B32R-02-PCB	South River						
Fish Consumption	PCB in Fish Tissue	5A			5.37	2008	L
B32R-03-PH	Paine Run						
Aquatic Life	pH	5A			6.73	2004	M
B32R-04-PH	Meadow Run						
Aquatic Life	pH	5A			8.82	2004	M
B33R-02-PH	Deep Run						
Aquatic Life	pH	5A			4.49	2004	M
B33R-03-PH	Lower Lewis Run						
Aquatic Life	pH	5A			3.93	2006	M
B35R-01-BAC	Boone Run						
Recreation	Fecal Coliform	5A			13.81	2002	L
	Escherichia coli	5A			13.81	2010	L
B35R-02-BAC	Quail Run						
Recreation	Fecal Coliform	5A			5.12	2004	L
	Escherichia coli	5A			5.12	2008	L
	Escherichia coli	5A			1.46	2010	L
B35R-03-BEN	Quail Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5C			1.46	2002	L
B35R-04-PH	Two Mile Run						
Aquatic Life	pH	5A			5.05	2006	M
B35R-05-PH	One Mile Run						
Aquatic Life	pH	5A			9.16	2010	M

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B37R-01-PCB	South Fork Shenandoah River						
Fish Consumption	PCB in Fish Tissue	5A			19.12	2010	L
B37R-02-BAC	Line Run						
Recreation	Escherichia coli	5A			4.93	2006	L
B37R-03-BAC	Honey Run						
Recreation	Escherichia coli	5A			5.10	2008	L
B37R-04-TEMP	Cub Run						
Aquatic Life	Temperature, water	5A			9.79	2012	L
B38R-02-BAC	Big Run						
Recreation	Escherichia coli	5A			6.40	2006	L
B39R-03-BEN	East Hawksbill Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.38	2008	L
B39R-03-PH	Rocky Branch						
Aquatic Life	pH	5A			4.25	2004	L
B39R-03-TEMP	Pass Run						
Aquatic Life	Temperature, water	5A			9.47	2010	L
B39R-04-BEN	Dry Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.52	2012	L
B40R-01-BAC	Jeremys Run						
Recreation	Escherichia coli	5A			11.69	2012	H
B40R-02-BAC	Flint Run						
Recreation	Fecal Coliform	5A			12.58	2004	H
	Escherichia coli	5A			12.58	2016	H
B40R-03-BAC	Gooney Run						
Recreation	Escherichia coli	5A			20.17	2010	H
B40R-04-TEMP	Flint Run						
Aquatic Life	Temperature, water	5A			4.10	2010	L
B41R-04-BAC	South Fork Shenandoah River						
Recreation	Escherichia coli	5A			4.47	2010	H
	Escherichia coli	5A			5.84	2012	H
B42R-01-BAC	Crab Run						
Recreation	Escherichia coli	5A			3.93	2010	L
B42R-01-BEN	North Fork Shenandoah River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.59	2010	L
B45R-01-BEN	Long Meadow Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.85	2002	H
B45R-02-BEN	Turley Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.03	2002	H

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B45R-05-BEN	North Fork Shenandoah River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			11.54	2008	L
	Benthic-Macroinvertebrate Bioassessments	5A			1.98	2012	L
B47R-01-BEN	Fridley Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.38	2002	L
B47R-01-PH	Fridley Run						
Aquatic Life	pH	5A			2.38	2006	L
B47R-07-BEN	Dry Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			10.85	2006	L
B48R-02-BEN	Crooked Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.07	2008	L
B49R-01-BEN	Stony Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.85	2008	L
	Benthic-Macroinvertebrate Bioassessments	5A			3.43	2016	L
B49R-05-TEMP	Little Stony Creek						
Aquatic Life	Temperature, water	5A			4.91	2012	L
B49R-07-TEMP	Stony Creek						
Aquatic Life	Temperature, water	5A			4.70	2002	L
	Temperature, water	5A			4.68	2004	L
	Temperature, water	5A			9.46	2006	L
B50R-03-BAC	Pughs Run						
Recreation	Fecal Coliform	5A			7.00	2004	L
	Escherichia coli	5A			7.00	2008	L
B50R-03-BEN	Pughs Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.00	2012	L
B51R-01-BAC	Tumbling Run						
Recreation	Fecal Coliform	5A			4.24	2004	H
	Escherichia coli	5A			4.24	2008	H
B51R-02-BAC	North Fork Shenandoah River						
Recreation	Escherichia coli	5A			5.42	2008	H
	Escherichia coli	5A			6.27	2010	H
B52R-01-PH	Cedar Creek						
Aquatic Life	pH	5A			4.82	2014	M
	pH	5A			3.45	2016	M
B52R-04-BAC	Cedar Creek						
Recreation	Escherichia coli	5A			7.58	2012	H
	Escherichia coli	5A			9.22	2014	H
B52R-05-BAC	Fall Run						
Recreation	Escherichia coli	5A			15.17	2014	H

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B52R-06-BAC	Gravel Springs						
Recreation	Escherichia coli	5A			3.29	2016	L
B53R-01-BAC	Cedar Creek						
Recreation	Escherichia coli	5A			3.75	2014	H
B54R-01-BAC	Passage Creek						
Recreation	Fecal Coliform	5A			10.42	2006	H
	Escherichia coli	5A			10.42	2008	H
B54R-01-PH	Passage Creek						
Aquatic Life	pH	5A			5.44	2010	L
B56R-01-DO	Crooked Run						
Aquatic Life	Oxygen, Dissolved	5A			2.32	2008	L
B56R-02-BEN	Stephens Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.99	2016	L
B57R-03-BAC	Chapel Run						
Recreation	Escherichia coli	5A			11.74	2008	H
B57R-03-BEN	Chapel Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			11.74	2006	L
B57R-05-BAC	Shenandoah River						
Recreation	Escherichia coli	5A			5.40	2014	L
B58R-02-BAC	Dog Run						
Recreation	Escherichia coli	5A			6.13	2008	H
B58R-03-BAC	Wheat Spring Branch						
Recreation	Escherichia coli	5A			4.69	2008	H
B58R-04-BAC	Long Marsh Run						
Recreation	Escherichia coli	5A			7.09	2012	L
B58R-05-BAC	Shenandoah River						
Recreation	Escherichia coli	5A			7.90	2012	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

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James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
G01E-02-EBEN	James River						
Aquatic Life	Estuarine Bioassessments	5A	31.358			2012	L
G01E-03-PCB	James River and Various Tributaries						
Fish Consumption	PCB in Fish Tissue	5A	62.904			2002	H, 2yr
	PCB in Fish Tissue	5A	1.914			2004	H, 2yr
	PCB in Fish Tissue	5A	183.259		7.51	2006	H, 2yr
	PCB in Fish Tissue	5A	0.002			2008	H, 2yr
G01L-01-DO	Falling Creek Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		88.37		2012	L
G01R-01-PCB	Goode Creek						
Fish Consumption	PCB in Water Column	5A			1.21	2012	H, 2yr
G01R-02-PCB	Almond Creek						
Fish Consumption	PCB in Water Column	5A			2.10	2012	H, 2yr
G01R-02-PH	XVO and XVP - Almond Creek, UT						
Aquatic Life	pH	5A			0.82	2004	L
G01R-04-DO	Falling Creek						
Aquatic Life	Oxygen, Dissolved	5A			0.98	2008	L
G01R-05-PH	Kingsland Creek						
Aquatic Life	pH	5C			8.54	2006	L
G01R-06-PCB	Gillies Creek						
Fish Consumption	PCB in Water Column	5A			5.88	2012	H, 2yr
G01R-06-PH	Gillies Creek						
Aquatic Life	pH	5A			5.88	2004	L
G01R-07-DO	Redwater Creek						
Aquatic Life	Oxygen, Dissolved	5C			2.96	2010	L
G01R-09-DO	UT to James River - XPF						
Aquatic Life	Oxygen, Dissolved	5C			0.39	2004	L
G01R-09-PH	UT to James River - XPF						
Aquatic Life	pH	5C			0.39	2004	L
G01R-12-PH	XYI - Coles Run, UT						
Aquatic Life	pH	5C			0.94	2006	L
G01R-15-BEN	Proctors Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.26	2010	L
G01R-21-DO	Great Branch						
Aquatic Life	Oxygen, Dissolved	5C			4.38	2014	L
G01R-22-CU	XVP - Almond Creek, UT						
Aquatic Life	Copper	5A			0.36	2012	L
Wildlife	Copper	5A			0.36	2012	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
G01R-22-ZN	XVP - Almond Creek, UT						
Aquatic Life	Zinc	5A			0.36	2012	L
Wildlife	Zinc	5A			0.36	2012	L
G01R-23-PH	XFU - Pocoshock Creek, UT						
Aquatic Life	pH	5A			3.83	2016	L
G02E-04-PCB	James River						
Fish Consumption	PCB in Water Column	5A	3.972			2012	L
Public Water Supply	PCB in Water Column	5A	3.972			2012	L
G02R-03-DO	Johnson Creek Watershed						
Aquatic Life	Oxygen, Dissolved	5C			16.27	2004	L
G02R-03-PH	Johnson Creek Watershed						
Aquatic Life	pH	5C			16.27	2004	L
G02R-05-DO	Crewes Channel						
Aquatic Life	Oxygen, Dissolved	5C			3.24	2012	L
G02R-09-DO	Roundabout Creek						
Aquatic Life	Oxygen, Dissolved	5C			3.96	2014	L
G02R-09-PH	Roundabout Creek						
Aquatic Life	pH	5C			3.96	2014	L
G02R-10-PH	XBE - Roundabout Creek, UT						
Aquatic Life	pH	5C			1.43	2014	L
G02R-11-PH	Turkey Island Creek						
Aquatic Life	pH	5C			7.03	2016	L
G03E-01-PCB	Bailey Creek (tidal), Cattail Creek (tidal)						
Fish Consumption	PCB in Water Column	5A	0.114			2012	L
G03E-01-PH	Bailey Creek (tidal), Cattail Creek (tidal)						
Aquatic Life	pH	5A	0.114			2004	L
G03E-03-PH	James River						
Aquatic Life	pH	5A	10.194			2014	L
G03L-01-DO	Harrison Lake						
Aquatic Life	Oxygen, Dissolved	5A		60.16		2006	L
G03L-01-HG	Harrison Lake						
Fish Consumption	Mercury in Fish Tissue	5A		60.16		2008	L
G03L-01-PH	Harrison Lake						
Aquatic Life	pH	5A		60.16		2006	L
G03R-02-ALD	Bailey Creek						
Fish Consumption	Aldrin	5A			6.47	2002	L
G03R-02-BEN	Bailey Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.47	2014	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
G03R-02-PCB	Bailey Creek						
Fish Consumption	PCB in Fish Tissue	5A			6.47	2002	H, 2yr
G03R-03-PCB	Poythress Run						
Aquatic Life	PCB in Water Column	5A			0.70	2012	H, 2yr
Fish Consumption	PCB in Water Column	5A			0.70	2012	H, 2yr
Wildlife	PCB in Water Column	5A			0.70	2012	H, 2yr
G03R-04-PH	West Run						
Aquatic Life	pH	5C			1.86	2004	L
G03R-05-PCB	XYO - Cattail Creek, UT						
Fish Consumption	PCB in Water Column	5A			0.34	2012	H, 2yr
G03R-06-BEN	XUD - West Run, UT						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.57	2008	L
G03R-06-DO	Upper West Run / East Run Watershed						
Aquatic Life	Oxygen, Dissolved	5C			45.27	2016	L
G03R-06-PH	Upper West Run / East Run Watershed						
Aquatic Life	pH	5C			1.57	2006	L
	pH	5C			43.70	2016	L
G04E-02-EBEN	James River						
Aquatic Life	Estuarine Bioassessments	5A	20.409			2004	L
G04L-01-BAC	Sunken Meadow Pond						
Recreation	Escherichia coli	5A		172.85		2016	L
G04L-01-DO	Sunken Meadow Pond						
Aquatic Life	Oxygen, Dissolved	5C		172.85		2010	L
G04R-03-MIREX	Bailey Branch						
Aquatic Life	Mirex	5A			5.69	2010	L
Wildlife	Mirex	5A			5.69	2010	L
G05R-01-NH3	Chickahominy River, UT - Unnamed Tributary						
Aquatic Life	Ammonia (Un-ionized)	5A			1.17	2008	L
Wildlife	Ammonia (Un-ionized)	5A			1.17	2008	L
G05R-04-PH	Chickahominy River						
Aquatic Life	pH	5C			2.30	2012	L
G05R-06-DO	Grassy Swamp Creek						
Aquatic Life	Oxygen, Dissolved	5C			1.02	2008	L
G05R-07-DO	Chickahominy River, UT (XDD)						
Aquatic Life	Oxygen, Dissolved	5C			0.56	2006	L
G05R-07-PH	Chickahominy River, UT (XDD)						
Aquatic Life	pH	5C			0.56	2006	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
G05R-09-BEN	North Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.66	2008	M
	Benthic-Macroinvertebrate Bioassessments	5A			4.24	2014	M
G05R-09-PH	North Run						
Aquatic Life	pH	5A			3.66	2006	L
G05R-10-DO	Upham Brook						
Aquatic Life	Oxygen, Dissolved	5A			1.16	2008	L
G05R-11-DO	Upham Brook, UT (XXP)						
Aquatic Life	Oxygen, Dissolved	5C			1.46	2008	L
G05R-14-BEN	Jordans Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.19	2016	L
G05R-15-DO	XCJ - North Run, UT						
Aquatic Life	Oxygen, Dissolved	5A			0.42	2016	L
G05R-15-PH	XCJ - North Run, UT						
Aquatic Life	pH	5A			0.42	2016	L
G05R-16-BEN	Upham Brook						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			12.15	2016	L
G06L-04-TEMP	Westhaven Lake						
Aquatic Life	Temperature, water	5A		15.12		2014	L
G06R-01-HG	Chickahominy River						
Fish Consumption	Mercury in Fish Tissue	5A			7.45	2010	L
G06R-05-DO	Powhite Creek						
Aquatic Life	Oxygen, Dissolved	5C			2.14	2014	L
G06R-06-PH	Beaverdam Creek						
Aquatic Life	pH	5C			2.67	2004	L
G06R-07-DO	Boatswain Creek						
Aquatic Life	Oxygen, Dissolved	5C			3.75	2016	L
G06R-07-PH	Boatswain Creek						
Aquatic Life	pH	5C			3.75	2004	L
G06R-11-PH	Bloody Run						
Aquatic Life	pH	5C			1.16	2004	L
G07L-01-DO	Chickahominy Lake						
Aquatic Life	Oxygen, Dissolved	5A		1,050.46		2002	L
G07L-01-HG	Chickahominy Lake						
Fish Consumption	Mercury in Fish Tissue	5A		1,050.46		2008	L
G07R-01-DO	Collins Run						
Aquatic Life	Oxygen, Dissolved	5C			4.49	2010	L

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G07R-01-PH	Collins Run						
Aquatic Life	pH	5C			4.49	2012	L
G07R-02-DO	Rumley Marsh						
Aquatic Life	Oxygen, Dissolved	5A			1.31	2002	L
G07R-02-PH	Rumley Marsh						
Aquatic Life	pH	5A			1.31	2010	L
G07R-04-DO	Schiminoe Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.22	2012	L
G07R-04-PH	Schiminoe Creek						
Aquatic Life	pH	5C			6.22	2012	L
G07R-06-DO	XWS - Rumley Marsh, UT						
Aquatic Life	Oxygen, Dissolved	5A			2.17	2012	L
G07R-06-PH	XWS - Rumley Marsh, UT						
Aquatic Life	pH	5A			2.17	2012	L
G07R-07-PH	XAB - Collins Run, UT						
Aquatic Life	pH	5C			1.72	2012	L
G08E-03-BAC	Diascund Creek						
Recreation	Enterococcus	5A	0.271			2010	H
G08E-07-EBEN	XAC - Chickahominy River, UT						
Aquatic Life	Estuarine Bioassessments	5A	0.017			2010	L
G08R-02-BAC	Mill Creek						
Recreation	Escherichia coli	5A			4.81	2012	H
G08R-04-DO	Yarmouth Creek						
Aquatic Life	Oxygen, Dissolved	5C			4.09	2012	L
G08R-05-BAC	Barrows Creek						
Recreation	Escherichia coli	5A			6.93	2014	H
G08R-05-DO	Barrows Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.93	2014	L
G09L-01-HG	Diascund Creek Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		1,056.13		2010	L
G09R-01-BAC	Beaverdam Creek						
Recreation	Escherichia coli	5A			4.34	2012	H
G09R-01-DO	Beaverdam Creek						
Aquatic Life	Oxygen, Dissolved	5A			4.34	2002	L
G09R-01-PH	Beaverdam Creek						
Aquatic Life	pH	5A			4.34	2012	L
G09R-02-DO	Diascund Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.88	2008	L

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G09R-02-PH	Diascund Creek						
Aquatic Life	pH	5C			6.88	2012	L
G09R-03-DO	XAL - Diascund Creek, UT						
Aquatic Life	Oxygen, Dissolved	5C			1.22	2012	L
G09R-03-PH	XAL - Diascund Creek, UT						
Aquatic Life	pH	5C			1.22	2012	L
G09R-04-DO	XAK - Diascund Creek, UT						
Aquatic Life	Oxygen, Dissolved	5C			2.91	2012	L
G09R-05-DO	XAJ - Diascund Creek, UT						
Aquatic Life	Oxygen, Dissolved	5C			2.93	2012	L
G09R-06-BAC	XAH - Beaverdam Creek, UT						
Recreation	Escherichia coli	5A			2.23	2012	H
G09R-06-DO	XAH - Beaverdam Creek, UT						
Aquatic Life	Oxygen, Dissolved	5A			2.23	2012	L
G09R-07-DO	Wahrani Swamp						
Aquatic Life	Oxygen, Dissolved	5C			3.66	2014	L
G09R-08-DO	XBY - Beaverdam Creek, UT						
Aquatic Life	Oxygen, Dissolved	5A			1.08	2016	L
G10E-05-EBEN	James River (Oligohaline)						
Aquatic Life	Estuarine Bioassessments	5A	26.412			2004	L
	Estuarine Bioassessments	5A	0.578			2012	L
	Estuarine Bioassessments	5A	1.129			2016	L
G10R-01-BAC	College Run						
Recreation	Fecal Coliform	5A			2.61	2002	L
G10R-02-BEN	Powhatan Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.36	2002	L
G10R-03-BAC	Dark Swamp, UT (XHC)						
Recreation	Escherichia coli	5A			1.30	2012	L
G10R-03-DO	Dark Swamp, UT (XHC)						
Aquatic Life	Oxygen, Dissolved	5A			1.30	2010	L
G10R-04-BAC	Unnamed tributary to Mill Creek						
Recreation	Escherichia coli	5A			1.22	2012	L
G10R-05-BAC	Dark Swamp						
Recreation	Escherichia coli	5A			3.15	2014	L
G11E-20-BAC	James River - Hilton Beach Area						
Recreation	Enterococcus	5A	0.110			2012	L
G11E-21-BAC	James River - Huntington Beach Area						
Recreation	Enterococcus	5A	0.008			2006	L

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G11L-01-CU	Lee Hall Reservoir						
Aquatic Life	Copper	5A		292.14		2004	L
Wildlife	Copper	5A		292.14		2004	L
G11L-01-HG	Lee Hall Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		292.14		2010	L
G11L-01-PCB	Lee Hall Reservoir						
Fish Consumption	PCB in Fish Tissue	5A		292.14		2010	L
G11L-05-DO	Lee Hall Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		292.14		2008	L
G11L-06-DO	Scotts Factory Pond						
Aquatic Life	Oxygen, Dissolved	5A		14.83		2016	L
G11R-02-BEN	Chuckatuck Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.53	2004	L
G11R-03-BAC	Champion Swamp						
Recreation	Escherichia coli	5A			3.16	2010	L
G11R-04-BAC	Pagan River (including Wrenns Millpond)						
Recreation	Escherichia coli	5A			1.35	2012	L
G12L-01-DO	Lake Cahoon						
Aquatic Life	Oxygen, Dissolved	5A		454.16		2006	L
G12L-02-DO	Lake Meade						
Aquatic Life	Oxygen, Dissolved	5A		489.49		2006	L
G12L-02-TP	Lake Meade						
Aquatic Life	Phosphorus (Total)	5A		489.49		2012	L
G12L-03-CHLA	Speights Run Lake						
Aquatic Life	Chlorophyll-a	5A		120.87		2010	L
G12L-03-DO	Speights Run Lake						
Aquatic Life	Oxygen, Dissolved	5A		120.87		2006	L
G12L-04-DO	Lake Kilby						
Aquatic Life	Oxygen, Dissolved	5A		200.03		2006	L
G12L-04-TP	Lake Kilby						
Aquatic Life	Phosphorus (Total)	5A		200.03		2014	L
G13E-07-PH	Shingle Creek - Tributary to Nansemond R.						
Aquatic Life	pH	5A	0.040			2002	L
G14L-01-DO	Lake Burnt Mills						
Aquatic Life	Oxygen, Dissolved	5A		637.99		2006	L
G14L-01-PH	Lake Burnt Mills						
Aquatic Life	pH	5A		637.99		2016	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
G14L-02-DO	Western Branch Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		1,209.67		2006	L
G14L-02-TP	Western Branch Reservoir						
Aquatic Life	Phosphorus (Total)	5A		1,209.67		2012	L
G14L-03-DO	Lake Prince Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		715.37		2006	L
G14R-01-PH	Carbell Swamp - Upper						
Aquatic Life	pH	5C			2.95	2002	L
G14R-02-BAC	Carbell Swamp - Lower						
Recreation	Escherichia coli	5A			2.88	2010	L
G14R-02-DO	Carbell Swamp - Lower						
Aquatic Life	Oxygen, Dissolved	5A			2.88	2008	L
G15E-01-01-TCDD	Elizabeth River Southern Branch and its tidal tributaries. CBP segment SBEMH.						
Fish Consumption	Dioxin (including 2,3,7,8-TCDD)	5A	3.147			2010	L
G15E-02-04-EBEN	Eastern Branch Elizabeth River, Broad Creek and Unsegmented estuaries in EBEMH						
Aquatic Life	Estuarine Bioassessments	5A	1.764			2004	L
	Estuarine Bioassessments	5A	0.587			2006	L
G15E-03-01-EBEN	Elizabeth River Mainstem						
Aquatic Life	Estuarine Bioassessments	5A	4.473			2004	L
	Estuarine Bioassessments	5A	3.445			2010	L
G15E-03-03-EBEN	Scott Creek						
Aquatic Life	Estuarine Bioassessments	5A	0.194			2016	L
G15E-04-02-EBEN	Western Branch Elizabeth River and Unsegmented estuaries in WBEMH						
Aquatic Life	Estuarine Bioassessments	5A	0.561			2006	L
	Estuarine Bioassessments	5A	2.164			2010	L
G15E-06-01-BAC	James River - King/Lincoln Park Beach Area						
Recreation	Enterococcus	5A	0.009			2006	L
G15E-06-02-BAC	James River - Anderson Park Beach Area						
Recreation	Enterococcus	5A	0.011			2012	L
G15E-06-04-BAC	Willoughby Bay - Beach Area						
Recreation	Enterococcus	5A	0.142			2014	M
H01R-01-HG	James River						
Fish Consumption	Mercury in Fish Tissue	5A			15.83	2010	L
H01R-02-BAC	James River						
Recreation	Escherichia coli	5A			7.42	2014	L
H01R-03-BAC	James River						
Recreation	Escherichia coli	5A			5.36	2016	L

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H03R-01-BEN	Blackwater Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			10.54	2010	L
H03R-03-BEN	Ivy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			21.44	2010	L
H03R-04-PCB	James River						
Fish Consumption	PCB in Fish Tissue	5A			10.74	2004	H
	PCB in Fish Tissue	5A			158.36	2006	H
	PCB in Fish Tissue	5A			3.89	2008	H
	PCB in Fish Tissue	5A			23.24	2008	H
	PCB in Fish Tissue	5A			3.05	2014	H
H03R-05-BEN	Burton Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.47	2010	L
H03R-06-BEN	Judith Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			11.08	2010	L
H03R-07-BEN	Tomahawk Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.06	2010	L
H05R-01-BAC	James River						
Recreation	Escherichia coli	5A			15.93	2010	L
H05R-03-BAC	Beaver Creek						
Recreation	Escherichia coli	5A			8.67	2004	H
H05R-06-BAC	Little Beaver Creek						
Recreation	Escherichia coli	5A			7.13	2010	L
H05R-08-BAC	Beck Creek						
Recreation	Escherichia coli	5A			6.28	2012	L
H05R-09-BAC	Partridge Creek						
Recreation	Escherichia coli	5A			10.40	2012	L
H05R-10-BAC	Archer Creek						
Recreation	Escherichia coli	5A			7.46	2016	L
H05R-11-BAC	Allens Creek						
Recreation	Escherichia coli	5A			7.18	2016	L
H08R-01-BAC	Davids Creek						
Recreation	Escherichia coli	5A			5.18	2012	L
H09R-01-PH	Montebello Spring Branch						
Aquatic Life	pH	5A			0.13	2004	L
H09R-02-BEN	Hat Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.51	2012	H
H09R-04-BEN	Tye River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.70	2012	H

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H09R-05-BEN	Black Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.95	2014	H
H11L-01-DO	Stonehouse Creek Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		33.53		2008	L
H11L-01-PH	Stonehouse Creek Reservoir						
Aquatic Life	pH	5A		33.53		2006	L
H11L-02-CHLA	Thrashers Creek Reservoir						
Aquatic Life	Chlorophyll-a	5A		31.95		2014	L
H11L-02-PH	Thrashers Creek Reservoir						
Aquatic Life	pH	5A		31.95		2006	L
H11L-03-PH	Mill Creek Reservoir						
Aquatic Life	pH	5A		186.40		2014	L
H12R-01-BEN	Rutledge Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.32	2010	L
H13L-01-DO	Lake Nelson						
Aquatic Life	Oxygen, Dissolved	5A		40.62		2016	L
H14R-01-BEN	Mallorys Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.75	2016	L
H14R-01-HG	James River						
Fish Consumption	Mercury in Fish Tissue	5A			18.57	2010	L
H15R-03-BEN	Taylor Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.99	2008	L
H16R-02-BAC	Beaver Creek						
Recreation	Escherichia coli	5A			7.41	2012	L
H16R-03-BAC	Cove Creek						
Recreation	Escherichia coli	5A			10.46	2012	L
H16R-04-BAC	Rockfish River						
Recreation	Escherichia coli	5A			17.28	2012	L
H16R-05-BAC	Rockfish River UT						
Recreation	Escherichia coli	5A			2.69	2016	L
H17L-01-DO	Totier Creek Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		37.23		2012	L
H17R-02-BAC	James River						
Recreation	Escherichia coli	5A			18.69	2008	L
	Escherichia coli	5A			16.32	2012	L
H17R-05-BEN	Totier Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.71	2006	L

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H20R-02-BAC	South Creek						
Recreation	Escherichia coli	5A			6.66	2014	L
H21L-01-DO	Troublesome Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		52.68		2010	L
H21R-01-BEN	Horsepen Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.86	2014	L
H21R-02-BEN	Walton Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.99	2016	L
H23L-01-CHLA	Lake Albemarle						
Aquatic Life	Chlorophyll-a	5A		37.01		2016	L
H23L-01-DO	Lake Albemarle						
Aquatic Life	Oxygen, Dissolved	5A		37.01		2016	L
H23R-01-BEN	Broad Axe Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.31	2004	H
H23R-02-BEN	Lickinghole Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.93	2010	H
H23R-03-BEN	Mechums River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			15.16	2004	H
H23R-04-BEN	Slabtown Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.92	2010	H
H23R-06-BEN	Parrott Branch X-trib						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.15	2010	H
H23R-07-BEN	Spring Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.48	2012	H
H23R-08-BAC	Stockton Creek						
Recreation	Escherichia coli	5A			12.06	2014	L
H24R-01-TEMP	Moormans River North Fork/Pond Ridge Branch						
Aquatic Life	Temperature, water	5A			21.10	2014	L
H24R-02-BEN	X-trib to Doyles River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.74	2012	H
H25R-01-BAC	Buck Mountain Creek						
Recreation	Escherichia coli	5A			10.59	2010	L
H25R-02-BEN	Piney Creek X-trib						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.22	2012	H
H26R-01-BAC	Ivy Creek						
Recreation	Escherichia coli	5A			9.51	2014	H
H26R-02-PH	Ivy Creek						
Aquatic Life	pH	5A			5.49	2006	L

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H26R-03-BEN	Ivy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.58	2008	H
	Benthic-Macroinvertebrate Bioassessments	5A			5.49	2010	H
H26R-04-BEN	South Fork Rivanna River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.47	2010	H
H26R-05-BEN	Powell Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			10.36	2010	H
H26R-06-BEN	Naked Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.82	2010	H
H26R-07-BEN	South Fork Rivanna River X-trib						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.20	2010	H
H26R-08-BEN	Fishing Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			12.53	2012	H
H26R-09-BEN	Little Ivy Creek X-trib						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.44	2016	L
H27R-01-BEN	Flat Branch X-trib						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.03	2010	H
H27R-02-BAC	Swift Run						
Recreation	Escherichia coli	5A			1.91	2010	H
H27R-02-BEN	Swift Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.91	2012	H, 2yr
H27R-03-BEN	Preddy Creek North Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.24	2010	H, 2yr
H27R-05-BEN	Marsh Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.65	2010	H
H27R-06-BEN	Blue Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.72	2012	H
H27R-07-BEN	Stanardsville Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.70	2014	H
H27R-08-BEN	Preddy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.48	2016	L
H27R-09-BEN	North Fork Rivanna River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.33	2016	L
H27R-10-BEN	Quarter Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.58	2016	L
H28R-02-BEN	Moores Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.32	2008	H

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H28R-04-BEN	Moores Creek X-trib						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.66	2006	H
H28R-05-BEN	Meadow Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.98	2006	H
H28R-07-BAC	Schenks Branch						
Recreation	Escherichia coli	5A			2.91	2010	L
H28R-07-BEN	Schenks Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.91	2008	H
H28R-08-BEN	Biscuit Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.59	2010	L
H28R-09-BEN	Morey Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.93	2010	L
H28R-10-BEN	Town Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.19	2010	L
H28R-11-BEN	Meadow Creek X-trib						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.78	2010	L
H28R-12-BEN	X-trib to Moores Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.23	2012	L
H29R-03-BAC	Buck Island Creek						
Recreation	Escherichia coli	5A			9.16	2008	L
H29R-03-BEN	Buck Island Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.65	2010	L
H29R-04-BEN	Carroll Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			18.45	2010	L
H30R-01-BEN	Mechunk Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			12.60	2012	L
H30R-02-BEN	East Prong Beaverdam Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.69	2012	L
H30R-03-BEN	Jacks Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.16	2012	L
H31R-02-BEN	Carys Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.79	2010	L
H31R-03-BEN	X-trib to Boston Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.29	2010	L
H31R-04-BEN	X-trib to Rivanna River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.00	2010	L
H31R-05-BAC	Rivanna River						
Recreation	Escherichia coli	5A			8.38	2016	L

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H32L-01-DO	Fluvanna Ruritan Lake						
Aquatic Life	Oxygen, Dissolved	5A		51.13		2012	L
H32R-01-BEN	Middle Fork Cunningham Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5C			4.02	2004	H, 2yr
H32R-02-BAC	Middle Fork Cunningham Creek						
Recreation	Escherichia coli	5A			3.40	2006	H, 2yr
	Escherichia coli	5A			4.02	2008	H, 2yr
H32R-02-BEN	Middle Fork Cunningham Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.40	2010	H, 2yr
H32R-03-BAC	Middle Fork Cunningham Creek X-trib						
Recreation	Escherichia coli	5A			3.77	2008	H, 2yr
H32R-04-BEN	X-trib to North Fork Cunningham Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.59	2010	L
H32R-05-BEN	Cunningham Creek North Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.18	2012	L
H32R-06-BEN	Cunningham Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.62	2012	L
H33L-01-CHLA	Powhatan Lake						
Aquatic Life	Chlorophyll-a	5A		61.36		2014	L
H33L-01-DO	Powhatan Lake						
Aquatic Life	Oxygen, Dissolved	5A		61.36		2012	L
H33R-02-DO	Deep Creek						
Aquatic Life	Oxygen, Dissolved	5C			0.37	2008	L
H34R-04-BEN	Phils Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.69	2016	L
H36R-02-BEN	Randolph Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			11.80	2008	L
H36R-03-BEN	Buffalo Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.10	2016	L
H36R-05-BEN	Reynolds Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.84	2014	L
H36R-06-BEN	Bigger Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.43	2016	L
H38R-01-PH	Little Creek						
Aquatic Life	pH	5C			0.65	2012	L
H38R-07-DO	Branch Creek						
Aquatic Life	Oxygen, Dissolved	5C			5.51	2008	L

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H39R-01-PH	Broad Branch						
Aquatic Life	pH	5A			2.63	2006	L
H39R-05-BEN	Powhite Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.13	2008	L
H39R-06-PH	Reedy Creek						
Aquatic Life	pH	5A			0.35	2010	L
H39R-07-DO	XZE - James River, UT						
Aquatic Life	Oxygen, Dissolved	5A			1.30	2010	L
H39R-08-DO	XAB - Salles Creek, UT						
Aquatic Life	Oxygen, Dissolved	5A			0.10	2010	L
H39R-08-PH	XAB - Salles Creek, UT						
Aquatic Life	pH	5A			0.10	2010	L
H39R-09-DO	James River - South Channel						
Aquatic Life	Oxygen, Dissolved	5A			0.94	2012	L
H39R-10-DO	Bernards Creek						
Aquatic Life	Oxygen, Dissolved	5A			8.12	2014	L
H39R-11-HG	James River						
Fish Consumption	Mercury in Fish Tissue	5A			4.37	2010	L
H39R-13-BEN	Stony Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.01	2008	M
H39R-14-BEN	Jones Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.19	2008	L
H39R-15-BEN	Stony Run, UT (XYT)						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.27	2008	M
H39R-16-HG	James River						
Fish Consumption	Mercury in Fish Tissue	5A			3.88	2010	L
H39R-17-CDANE	James River						
Fish Consumption	Chlordane	5A			3.88	2010	L
H39R-17-DDE	James River						
Fish Consumption	DDE	5A			3.88	2010	L
H39R-17-DDT	James River						
Fish Consumption	DDT	5A			3.88	2010	L
H39R-19-DO	Deep Run						
Aquatic Life	Oxygen, Dissolved	5C			1.49	2012	L
H39R-24-DO	Little Tuckahoe Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.02	2014	L
H39R-27-BEN	Deep Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.16	2016	L

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H39R-28-BEN	Stony Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.35	2016	L
H39R-29-DO	XBH - Reedy Creek, UT						
Aquatic Life	Oxygen, Dissolved	5A			0.11	2016	L
I01R-01-TEMP	Jackson River						
Aquatic Life	Temperature, water	5C			13.49	2004	L
	Temperature, water	5C			15.37	2010	L
I01R-02-TEMP	Bolar Run						
Aquatic Life	Temperature, water	5C			2.09	2006	L
I02R-02-BAC	Back Creek						
Recreation	Escherichia coli	5A			15.05	2010	L
I04R-01-BAC	Falling Spring						
Recreation	Escherichia coli	5A			5.10	2008	H
I09R-01-BAC	Smith Creek						
Recreation	Fecal Coliform	5A			1.21	2004	H
I09R-01-DO	Jackson River						
Aquatic Life	Oxygen, Dissolved	5A			11.36	1996	H
I09R-01-PCB	Jackson River						
Fish Consumption	PCB in Fish Tissue	5A			12.63	2008	L
I09R-02-BAC	Jackson River						
Recreation	Escherichia coli	5A			3.40	2008	H
	Escherichia coli	5A			9.23	2010	H
I09R-02-TEMP	Wilson Creek						
Aquatic Life	Temperature, water	5C			6.74	2004	L
I10R-01-TEMP	Potts Creek						
Aquatic Life	Temperature, water	5C			5.66	2006	L
I12R-01-BAC	Cowpasture River						
Recreation	Escherichia coli	5A			8.30	2016	L
I13R-01-BAC	Bullpasture River						
Recreation	Escherichia coli	5A			11.94	2006	H, 2yr
I13R-02-TEMP	Bullpasture River						
Aquatic Life	Temperature, water	5A			24.56	2012	L
I14R-04-PH	Laurel Run						
Aquatic Life	pH	5A			2.03	2006	L
I16R-01-PH	Porters Mill Creek						
Aquatic Life	pH	5A			4.85	2006	L
I18R-01-BAC	James River						
Recreation	Escherichia coli	5A			7.63	2014	H, 2yr

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I18R-03-BAC	Sinking Creek						
Recreation	Escherichia coli	5A			6.42	2014	H, 2yr
I19R-01-BAC	Craig Creek						
Recreation	Escherichia coli	5A			7.90	2004	H, 2yr
I22R-01-BAC	Barbours Creek						
Recreation	Fecal Coliform	5A			7.15	2004	H, 2yr
I22R-01-PH	Mill Creek						
Aquatic Life	pH	5A			4.24	2012	L
I22R-01-TEMP	Barbours Creek						
Aquatic Life	Temperature, water	5C			7.15	2002	L
I22R-02-BAC	Craig Creek						
Recreation	Escherichia coli	5A			11.43	2012	H, 2yr
I22R-04-BAC	Little Patterson Creek						
Recreation	Escherichia coli	5A			4.24	2012	H, 2yr
I22R-05-BAC	Craig Creek						
Recreation	Escherichia coli	5A			10.70	2016	L
	Escherichia coli	5A			16.86	2016	L
I24R-01-BAC	Lapsley Run						
Recreation	Escherichia coli	5A			9.01	2008	H, 2yr
I25R-01-BAC	Catawba Creek						
Recreation	Escherichia coli	5A			13.46	2010	H, 2yr
I25R-01-BEN	Catawba Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.23	2008	H, 2yr
I26R-01-BEN	Mill Creek, UT (XUL)						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.37	2010	L
I27R-01-BAC	James River						
Recreation	Escherichia coli	5A			7.15	2014	L
	Escherichia coli	5A			9.52	2016	L
I28R-02-BAC	Elk Creek						
Recreation	Escherichia coli	5A			3.98	2014	L
I29R-01-TEMP	Ramseys Draft						
Aquatic Life	Temperature, water	5A			10.29	2016	L
I30R-01-BAC	Calfpasture River						
Recreation	Escherichia coli	5A			2.83	2006	L
I30R-03-BAC	Hamilton Branch						
Recreation	Escherichia coli	5A			6.28	2016	L
I30R-03-PH	Piney Branch						
Aquatic Life	pH	5A			2.33	2006	L

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I32R-03-BAC	Little Calfpasture River						
Recreation	Fecal Coliform	5A			12.35	2004	L
	Escherichia coli	5A			12.35	2010	L
I33R-01-BAC	Cedar Grove Branch						
Recreation	Fecal Coliform	5A			4.62	2004	L
	Escherichia coli	5A			4.62	2008	L
I33R-03-BAC	Kerrs Creek						
Recreation	Escherichia coli	5A			11.86	2012	L
I35R-02-BAC	Mill Creek						
Recreation	Fecal Coliform	5A			9.13	2006	L
	Escherichia coli	5A			9.13	2008	L
I35R-02-BEN	Mill Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.13	2016	L
I35R-03-BAC	Woods Creek						
Recreation	Escherichia coli	5A			6.05	2012	H
I35R-03-BEN	Woods Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.05	2008	H
I36R-02-BEN	Moores Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.09	2006	L
I36R-03-PH	Saint Marys River						
Aquatic Life	pH	5A			1.97	2006	L
I36R-03-TEMP	Saint Marys River						
Aquatic Life	Temperature, water	5A			1.97	2010	L
I36R-05-BEN	Marl Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.74	2012	L
I36R-06-BAC	South River						
Recreation	Escherichia coli	5A			7.95	2012	L
I37R-02-PCB	Maury River						
Fish Consumption	PCB in Fish Tissue	5A			4.58	2004	H
	PCB in Fish Tissue	5A			12.34	2006	H
I37R-03-BAC	Poague Run						
Recreation	Escherichia coli	5A			17.12	2014	L
I38L-01-PH	Lexington Reservoir						
Aquatic Life	pH	5A		22.60		2010	L
J01R-02-BEN	Horsepen Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.00	2016	L
J01R-09-BEN	Crane Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.18	2010	M, 2yr

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J03R-06-BEN	Sandy River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.08	2014	L
J04R-01-BEN	Bush River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			11.48	2010	L
J04R-02-BEN	Mountain Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.97	2010	M, 2yr
J05R-01-BEN	Briery Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			10.48	2008	M, 2yr
J05R-03-BEN	Rice Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.59	2014	L
J06R-03-BEN	Horsepen Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.99	2014	L
J07L-01-PH	Amelia Lake						
Aquatic Life	pH	5C		98.31		2014	L
J09R-04-BEN	Nibbs Creek South Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.86	2014	L
J10R-01-BEN	UT to Appomattox River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.49	2008	L
J10R-02-DO	Goodes Creek						
Aquatic Life	Oxygen, Dissolved	5C			2.91	2010	L
J10R-03-DO	Smacks Creek						
Aquatic Life	Oxygen, Dissolved	5C			9.06	2012	L
J11R-03-DO	Bland Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.51	2010	L
J11R-04-DO	Cellar Creek						
Aquatic Life	Oxygen, Dissolved	5C			2.70	2012	L
J11R-05-DO	Woody Creek						
Aquatic Life	Oxygen, Dissolved	5C			7.97	2014	L
J12R-01-BEN	Winticomack Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.07	2010	L
J12R-06-PH	Horsepen Branch						
Aquatic Life	pH	5C			4.44	2006	L
J13R-01-DO	Namozine Creek						
Aquatic Life	Oxygen, Dissolved	5C			12.91	2016	L
J14R-02-PH	Stoney Creek						
Aquatic Life	pH	5C			2.59	2010	L
J14R-03-DO	Whipponock Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.82	2016	L

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J15E-01-EBTOX	Appomattox River						
Aquatic Life	Sediment Bioassays for Estuarine and Marine Water	5A	0.113			2010	L
	Sediment Bioassays for Estuarine and Marine Water	5A	1.361			2012	L
J15R-01-BEN	Appomattox River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.57	2012	L
J15R-02-BEN	Oldtown Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.22	2010	M
J15R-05-BEN	Rohoic Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			13.45	2012	L
J15R-08-PH	Oldtown Creek						
Aquatic Life	pH	5C			6.22	2010	L
J16R-02-DO	Blackman Creek						
Aquatic Life	Oxygen, Dissolved	5C			4.56	2004	L
J17L-01-DO	Swift Creek Lake						
Aquatic Life	Oxygen, Dissolved	5A		107.74		2006	L
J17R-01-BEN	Swift Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.25	2010	L
J17R-01-DO	Swift Creek						
Aquatic Life	Oxygen, Dissolved	5A			7.25	2002	L
J17R-05-PH	Church Branch						
Aquatic Life	pH	5C			2.64	2010	L
J17R-06-BEN	Nuttree Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.58	2012	L
J17R-06-DO	Nuttree Branch						
Aquatic Life	Oxygen, Dissolved	5C			5.58	2010	L
J17R-06-PH	Nuttree Branch						
Aquatic Life	pH	5C			5.58	2010	L
J17R-07-PH	Second Branch						
Aquatic Life	pH	5C			6.22	2010	L
J17R-08-DO	Swift Creek						
Aquatic Life	Oxygen, Dissolved	5A			3.78	2010	L
J17R-09-BEN	Swift Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.88	2010	L
J17R-11-DO	Long Swamp						
Aquatic Life	Oxygen, Dissolved	5C			3.72	2016	L
J17R-11-PH	Long Swamp						
Aquatic Life	pH	5C			3.72	2010	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E01R-01-BEN	Thumb Run, East Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.59	2012	L
E01R-02-BEN	Unnamed Tributary to Thumb Run, West Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.80	2014	L
E02R-01-BEN	Great Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.38	2010	L
	Benthic-Macroinvertebrate Bioassessments	5A			2.81	2012	L
E03R-01-TEMP	Hughes River						
Aquatic Life	Temperature, water	5A			3.20	2008	L
E04R-01-TEMP	Hazel River						
Aquatic Life	Temperature, water	5A			3.63	2016	L
E05R-01-BEN	Thornton River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.86	2010	L
E08R-01-BEN	Marsh Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.01	2012	L
E09R-01-BEN	Mountain Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			19.90	2008	M
E09R-01-PCB	Mountain Run						
Fish Consumption	PCB in Fish Tissue	5A			19.90	2006	H, 2yr
E09R-02-BEN	Jonas Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.78	2012	M
E09R-02-PCB	Mountain Run						
Fish Consumption	PCB in Fish Tissue	5A			4.63	2016	L
E10R-01-BEN	Sumerduck Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.85	2012	M
E10R-04-BAC	Sumerduck Run						
Recreation	Escherichia coli	5A			1.85	2016	L
E11R-01-BEN	Conway River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.98	2010	L
E12R-01-BEN	Rippin Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.60	2012	L
E13R-01-BEN	Beautiful Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.50	2012	L
E14R-01-TEMP	Robinson River						
Aquatic Life	Temperature, water	5A			3.00	2004	L
E14R-02-TEMP	Rose River						
Aquatic Life	Temperature, water	5A			2.58	2006	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E17R-01-BEN	Brook Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.51	2012	L
E18R-01-HG	Rapidan River						
Fish Consumption	Mercury in Fish Tissue	5A			9.79	2010	L
E19L-01-HG	Motts Run Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		137.17		2008	L
E19R-01-BAC	Horsepen Run						
Recreation	Escherichia coli	5A			5.70	2014	L
E19R-02-BAC	Mine Run						
Recreation	Escherichia coli	5A			4.01	2014	L
E20E-03-PCB	Rappahannock River						
Fish Consumption	PCB in Fish Tissue	5A	0.139			2002	L
	PCB in Fish Tissue	5A	3.782			2004	L
	PCB in Fish Tissue	5A	124.983		9.24	2006	L
	PCB in Fish Tissue	5A	0.042			2008	L
E20R-01-BEN	Falls Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.35	2012	L
E20R-02-BEN	Hazel Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.72	2012	L
E20R-03-BEN	Little Falls Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.92	2016	L
E20R-03-PH	Massaponax Creek						
Aquatic Life	pH	5A			5.19	2006	L
E20R-04-PH	Deep Run						
Aquatic Life	pH	5A			1.56	2012	L
E20R-05-PH	Unnamed tributary to Massaponax Creek						
Aquatic Life	pH	5A			1.27	2016	L
E21R-01-BEN	Muddy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.58	2010	L
E21R-02-BEN	Ware Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.06	2008	L
E21R-02-PH	Ware Creek						
Aquatic Life	pH	5C			3.06	2004	L
	pH	5C			4.50	2008	L
E21R-03-BAC	Gingoteague Creek						
Recreation	Escherichia coli	5A			1.49	2008	L
E21R-03-BEN	Gingoteague Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.49	2012	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E21R-03-PH	Gingoteague Creek						
Aquatic Life	pH	5C			1.49	2008	L
E21R-04-BEN	Mill Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.59	2008	L
E21R-05-BEN	White Oak Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.51	2014	L
E21R-05-PH	Mount Creek						
Aquatic Life	pH	5C			4.46	2008	L
E21R-07-BAC	Mill Creek						
Recreation	Escherichia coli	5A			4.58	2008	L
E21R-07-PH	Mill Creek						
Aquatic Life	pH	5C			4.58	2008	L
E21R-08-PH	Goldenvale Creek						
Aquatic Life	pH	5C			5.31	2008	L
E21R-09-PH	Hugh Run						
Aquatic Life	pH	5C			2.45	2010	L
E21R-10-BAC	Jetts Creek						
Recreation	Escherichia coli	5A			1.85	2010	L
E21R-10-PH	White Oak Run						
Aquatic Life	pH	5C			6.51	2014	L
E21R-11-BAC	Portobago Creek						
Recreation	Escherichia coli	5A			7.00	2010	L
E21R-11-DO	Portobago Creek						
Aquatic Life	Oxygen, Dissolved	5C			7.00	2010	L
E22E-01-EBEN	Rappahannock River						
Aquatic Life	Estuarine Bioassessments	5A	6.302			2010	L
E22E-02-EBEN	Rappahannock River						
Aquatic Life	Estuarine Bioassessments	5A	110.178			2006	L
	Estuarine Bioassessments	5A	0.014			2008	L
	Estuarine Bioassessments	5A	0.028			2008	L
E22E-03-BAC	Peedee Creek						
Recreation	Enterococcus	5A	0.150			2014	L
E22E-05-BAC	Rappahannock River						
Recreation	Enterococcus	5A	1.344			2014	L
E22E-08-CHLR	Rappahannock River						
Aquatic Life	Chloride	5C	5.133			2004	L
Wildlife	Chloride	5C	5.133			2004	L

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Category 5 - Waters needing Total Maximum Daily Load Study

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E22R-02-DO	Farmers Hall Creek						
Aquatic Life	Oxygen, Dissolved	5C			4.00	2012	L
E22R-02-PH	Farmers Hall Creek						
Aquatic Life	pH	5C			4.00	2006	L
E22R-03-MIREX	Occupacia Creek and Tributaries						
Aquatic Life	Mirex	5A			74.69	2010	L
Wildlife	Mirex	5A			74.69	2010	L
E22R-04-BAC	Elmwood Creek and Tributary XHY						
Recreation	Escherichia coli	5A			9.07	2014	M, 2yr
E22R-04-DO	Elmwood Creek and Tributary XHY						
Aquatic Life	Oxygen, Dissolved	5C			9.07	2014	L
E22R-04-PH	Elmwood Creek and Tributary XHY						
Aquatic Life	pH	5C			9.07	2006	L
E22R-05-BAC	Baylors Creek						
Recreation	Escherichia coli	5A			5.89	2008	M, 2yr
E22R-05-PH	Baylors Creek						
Aquatic Life	pH	5C			5.89	2008	L
E22R-06-BAC	Peedee Creek						
Recreation	Escherichia coli	5A			3.29	2008	L
E22R-06-DO	Peedee Creek						
Aquatic Life	Oxygen, Dissolved	5C			3.29	2010	L
E22R-06-PH	Peedee Creek						
Aquatic Life	pH	5C			3.29	2008	L
E22R-08-BAC	Stillwater Creek						
Recreation	Escherichia coli	5A			3.52	2014	M, 2yr
E22R-08-DO	Stillwater Creek						
Aquatic Life	Oxygen, Dissolved	5C			3.52	2014	L
E22R-08-PH	Stillwater Creek						
Aquatic Life	pH	5C			3.52	2014	L
E22R-09-BAC	XHW - UT to Peedee Creek, UT (XHV)						
Recreation	Escherichia coli	5A			0.47	2014	L
E22R-10-PH	Mill Swamp						
Aquatic Life	pH	5C			0.72	2014	L
E22R-11-DO	Smoots Mill Run, UT						
Aquatic Life	Oxygen, Dissolved	5C			1.67	2014	L
E22R-11-PH	Smoots Mill Run, UT						
Aquatic Life	pH	5C			1.67	2014	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E23L-01-HG	Chandlers Millpond						
Fish Consumption	Mercury in Fish Tissue	5A		47.99		2008	L
E23R-04-DO	Hoskins Creek						
Aquatic Life	Oxygen, Dissolved	5C			13.16	2014	L
E23R-07-BEN	Ruin Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.53	2014	L
E23R-12-DO	Mussell Swamp						
Aquatic Life	Oxygen, Dissolved	5C			5.13	2006	L
E23R-16-BEN	Church Swamp						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.24	2008	L
E23R-20-DO	Scates Millstream						
Aquatic Life	Oxygen, Dissolved	5C			2.89	2014	L
E23R-20-PH	Scates Millstream						
Aquatic Life	pH	5C			2.89	2014	L
E24E-02-EBTOX	Totuskey Creek						
Aquatic Life	Sediment Bioassays for Estuarine and Marine Water	5A	1.068			2006	L
E24E-05-PH	Little Totuskey Creek						
Aquatic Life	pH	5C	0.055			2012	L
E24R-01-DO	Bookers Mill Stream						
Aquatic Life	Oxygen, Dissolved	5C			6.53	2012	L
E24R-03-PH	Muddy Gut						
Aquatic Life	pH	5C			2.63	2008	L
E24R-05-PH	Branham Mill Swamp						
Aquatic Life	pH	5C			3.66	2012	L
E24R-06-DO	Richardson Creek and Tributaries						
Aquatic Life	Oxygen, Dissolved	5C			17.21	2012	L
E24R-06-PH	Richardson Creek and Tributaries						
Aquatic Life	pH	5C			17.21	2012	L
E24R-08-PH	XHL - Bookers Mill Stream, UT						
Aquatic Life	pH	5C			2.01	2012	L
E24R-09-DO	Marshy Swamp						
Aquatic Life	Oxygen, Dissolved	5C			9.53	2012	L
E25R-02-DO	Lagrange Creek						
Aquatic Life	Oxygen, Dissolved	5C			2.49	2010	L
E25R-04-DO	South Branch Lagrange Creek						
Aquatic Life	Oxygen, Dissolved	5A			0.40	2012	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E25R-17-DO	Masons Mill Swamp						
Aquatic Life	Oxygen, Dissolved	5C			3.37	2008	L
E26E-04-EBEN	Corrotoman River						
Aquatic Life	Estuarine Bioassessments	5A	6.954			2014	L
E26E-24-BAC	Whiting Creek						
Recreation	Enterococcus	5A	0.195			2012	L
E26R-03-DO	Norris Prong						
Aquatic Life	Oxygen, Dissolved	5C			2.47	2008	L
E26R-04-DO	Browns Creek						
Aquatic Life	Oxygen, Dissolved	5C			2.58	2008	L

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2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L01R-01-TEMP	Roanoke River, South Fork						
Aquatic Life	Temperature, water	5C			6.27	2004	L
	Temperature, water	5C			6.43	2010	L
	Temperature, water	5C			4.61	2012	L
L01R-02-TEMP	Bottom Creek						
Aquatic Life	Temperature, water	5C			4.49	2008	L
L02R-01-PH	Bradshaw Creek						
Aquatic Life	pH	5C			10.36	2010	L
L03R-01-TEMP	Roanoke River						
Aquatic Life	Temperature, water	5C			13.09	2002	L
L04R-01-HG	Roanoke River						
Fish Consumption	Mercury in Fish Tissue	5A			10.28	2010	L
L04R-03-BEN	Roanoke River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.16	2008	H, 2yr
L05R-01-BEN	Tinker Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.37	2010	H, 2yr
L05R-01-TEMP	Tinker Creek						
Aquatic Life	Temperature, water	5C			11.87	2002	L
L05R-02-BEN	Deer Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.38	2014	H, 2yr
L06R-01-BEN	Back Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.92	2014	H, 2yr
L07L-01-PH	Beaverdam Reservoir						
Aquatic Life	pH	5C		66.93		2012	L
L07R-01-BEN	Beaverdam Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			10.33	2010	M
L07R-02-BEN	Merriman Run, UT (XUO)						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.88	2010	M
L08R-01-TEMP	Green Creek						
Aquatic Life	Temperature, water	5C			4.09	2012	L
L08R-02-TEMP	Blackwater River, South Fork						
Aquatic Life	Temperature, water	5C			6.20	2016	L
L08R-05-BEN	Little Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.85	2002	M
L08R-06-BEN	Teels Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.76	2002	M
L08R-07-BEN	Buck Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.77	2008	M

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L09R-01-BEN	Maggodee Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.47	2002	M
L09R-01-TEMP	Maggodee Creek						
Aquatic Life	Temperature, water	5C			4.43	2008	L
L09R-02-BEN	Maggodee Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.42	2016	L
L10L-01-HG	Blackwater River						
Fish Consumption	Mercury in Fish Tissue	5A		524.78	8.21	2010	L
L10L-05-BAC	Smith Mountain Lake - Crazy Horse Camp Ground						
Recreation	Escherichia coli	5A		30.27		2004	L
L10R-01-BEN	Blackwater River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.21	2008	M
L11R-01-BEN	North Fork Gills Creek, UT (XML)						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.43	2008	M
L12L-01-HG	Smith Mountain Lake						
Fish Consumption	Mercury in Fish Tissue	5A		6,480.10		2010	L
L12R-01-BAC	Craddock Creek (XME)						
Recreation	Escherichia coli	5A			1.23	2012	M
L14R-01-BEN	Pigg River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.43	2012	M
L14R-02-BEN	Storey Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.82	2016	L
L17R-01-BEN	Poplar Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.56	2008	M
L18R-01-BEN	Fryingpan Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.56	2006	M
L19R-01-HG	Roanoke (Staunton) River, Cub Creek, Kerr Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		31,884.59	102.09	2008	L
L19R-02-BEN	Lynch Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.90	2010	M
L19R-03-BEN	Reed Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.90	2010	M
L19R-04-BEN	Roanoke (Staunton) River, Unnamed tributary						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.10	2010	M
L21R-01-BEN	Wolf Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.13	2012	M
L21R-02-BEN	Bore Auger Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.56	2014	M

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Category 5 - Waters needing Total Maximum Daily Load Study

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L26R-01-BEN	Little Otter River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.90	2002	L
	Benthic-Macroinvertebrate Bioassessments	5A			7.44	2008	L
	Benthic-Macroinvertebrate Bioassessments	5A			8.71	2010	L
L26R-01-HG	Little Otter River						
Fish Consumption	Mercury in Fish Tissue	5A			14.61	2010	L
L26R-02-BEN	Johns Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.24	2002	L
L26R-03-BEN	Wells Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.93	2008	L
L29R-01-BEN	Flat Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.21	2010	L
L31R-01-BEN	East Little Seneca Creek, Unnamed Tributary						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.50	2008	L
L34R-04-PH	Entry Creek						
Aquatic Life	pH	5A			4.73	2008	L
L34R-07-BEN	Entry Creek, Unnamed Tributary						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.69	2012	L
L35R-01-BEN	Mollys Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.99	2010	L
L36R-04-BEN	Armistead Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.20	2014	L
L38L-01-DO	Conner Lake						
Aquatic Life	Oxygen, Dissolved	5A		101.92		2016	L
L38L-01-HG	Conner Lake						
Fish Consumption	Mercury in Fish Tissue	5A		101.92		2010	L
L39R-03-BEN	Horsepen Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.32	2008	M
L39R-05-HG	Roanoke Creek						
Fish Consumption	Mercury in Fish Tissue	5A			10.50	2010	L
L39R-07-BEN	Little Roanoke Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			10.15	2010	M
L39R-08-BEN	Bush Ford Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.09	2010	M
L39R-09-BEN	UT, Spencer Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.90	2014	M
L40R-01-BEN	Berles Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.28	2016	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L40R-06-BEN	Buffalo Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.35	2014	L
L42L-01-HG	Talbott Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		140.51		2010	L
L42R-01-TEMP	Dan River						
Aquatic Life	Temperature, water	5C			9.66	2002	L
	Temperature, water	5C			5.81	2008	L
L43R-01-TEMP	South Mayo River						
Aquatic Life	Temperature, water	5C			4.73	2010	L
L45R-01-HG	South Mayo River						
Fish Consumption	Mercury in Fish Tissue	5A			10.97	2010	L
L47R-01-BEN	Horse Pasture Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.44	2010	L
L50R-01-TEMP	Smith River						
Aquatic Life	Temperature, water	5C			9.48	2002	L
L51L-01-HG	Philpott Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		2,813.52		2010	L
L51R-01-HG	Goblintown Creek						
Fish Consumption	Mercury in Fish Tissue	5A			6.80	2010	L
L51R-01-TEMP	Rennet Bag Creek						
Aquatic Life	Temperature, water	5C			11.54	2002	L
L51R-02-TEMP	Shooting Creek						
Aquatic Life	Temperature, water	5C			7.32	2008	L
L51R-03-TEMP	Smith River						
Aquatic Life	Temperature, water	5C			2.55	2016	L
	Temperature, water	5C			6.43	2016	L
L53R-01-TEMP	Smith River						
Aquatic Life	Temperature, water	5A			6.50	2016	L
L53R-03-BEN	Beaver Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.97	2008	L
L53R-04-BEN	Jones Creek, UT (XMP)						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.00	2006	L
L53R-05-BEN	Beaver Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.30	2016	L
L53R-06-BEN	Daniels Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.99	2016	L
L53R-07-BEN	Jones Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.36	2016	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L54R-02-BEN	Machine Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.68	2010	L
L54R-03-BEN	Mulberry Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.60	2010	L
L60R-01-HG	Dan River, Banister River and Hyco River						
Fish Consumption	Mercury in Fish Tissue	5A		1,655.18	57.41	2008	L
	Mercury in Fish Tissue	5A			5.44	2010	L
L60R-01-PCB	Dan River, Banister River and Hyco River						
Fish Consumption	PCB in Fish Tissue	5A		1,655.18	34.13	2002	L
	PCB in Fish Tissue	5A			2.33	2004	L
	PCB in Fish Tissue	5A			12.44	2004	L
	PCB in Fish Tissue	5A			8.51	2006	L
	PCB in Fish Tissue	5A			4.27	2010	L
	PCB in Fish Tissue	5A			1.17	2010	L
L60R-02-BEN	Pumpkin Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.28	2012	L
L60R-03-BEN	Cane Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			12.25	2012	L
L60R-04-BEN	Rutledge Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.37	2012	L
L61R-01-BEN	Fall Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			11.97	2014	L
L61R-01-HG	Fall Creek						
Fish Consumption	Mercury in Fish Tissue	5A			11.97	2010	L
L62R-07-BEN	Wolfe Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.86	2008	L
L62R-10-BEN	Sandy Creek, Unnamed Tributary						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.29	2016	L
L63R-01-BEN	Birch Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			20.15	2016	L
L64R-01-DO	Lawsons Creek						
Aquatic Life	Oxygen, Dissolved	5A			8.26	2010	L
L64R-03-BEN	Grassy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.83	2008	M
L64R-04-BEN	Poplar Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.04	2010	M
L64R-05-BEN	Reedy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.92	2010	M

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L65R-02-BEN	Bearskin Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.57	2010	L
L65R-04-BEN	Strawberry Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.96	2014	L
L66L-01-DO	Cherrystone Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		104.27		2010	L
L66L-02-DO	Roaring Fork Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		19.58		2008	L
L66L-02-PH	Roaring Fork Reservoir						
Aquatic Life	pH	5A		19.58		2016	L
L67R-03-BEN	Elkhorn Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			12.90	2010	L
L67R-04-BEN	Bradley Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.46	2016	L
L68R-01-BEN	Whitehorn Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			15.10	2016	L
L70R-02-BEN	Sweden Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.63	2014	L
L70R-03-BEN	Bar Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.03	2016	L
L71R-05-BEN	Polecat Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.70	2016	L
L71R-07-DO	Gibson Creek						
Aquatic Life	Oxygen, Dissolved	5A			5.38	2008	L
L72R-01-BAC	Terrible Creek						
Recreation	Escherichia coli	5A			4.82	2014	L
L72R-01-BEN	Terrible Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.82	2014	L
L73R-03-DO	Peter Creek						
Aquatic Life	Oxygen, Dissolved	5A			6.61	2016	L
L74R-03-DO	Coleman Creek						
Aquatic Life	Oxygen, Dissolved	5A			8.48	2014	L
L74R-04-DO	Big Bluewing Creek						
Aquatic Life	Oxygen, Dissolved	5A			11.23	2008	L
L74R-05-BEN	Bowes Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.44	2008	L
L75L-01-PCB	Kerr Reservoir						
Fish Consumption	PCB in Fish Tissue	5A		31,884.59		2002	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L75R-03-BEN	Beech Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.69	2016	L
L76R-01-BAC	Little Buffalo Creek						
Recreation	Escherichia coli	5A			2.51	2004	L
L76R-01-BEN	Little Buffalo Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.51	2012	L
L77R-01-BAC	Little Bluestone Creek						
Recreation	Escherichia coli	5A			9.38	2006	H
L77R-02-BAC	Bluestone Creek						
Recreation	Escherichia coli	5A			8.25	2006	H
L77R-02-BEN	Bluestone Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			13.73	2014	L
L78R-02-BAC	Unnamed Tributary to Allen Creek						
Recreation	Fecal Coliform	5A			1.27	2004	H
L78R-03-BAC	Allen Creek						
Recreation	Escherichia coli	5A			8.97	2006	H
	Escherichia coli	5A			15.27	2012	H
L78R-03-BEN	Allen Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			15.27	2016	L
L78R-04-BEN	Cox Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			10.80	2008	M
L78R-04-DO	Cox Creek						
Aquatic Life	Oxygen, Dissolved	5A			10.80	2004	M
L78R-04-PH	Cox Creek						
Aquatic Life	pH	5A			10.80	2006	M
L78R-05-BAC	Cotton Creek						
Recreation	Escherichia coli	5A			4.39	2008	H
L78R-06-BAC	Layton Creek						
Recreation	Escherichia coli	5A			8.64	2012	H
L78R-06-BEN	Layton Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.64	2012	M
L78R-07-BAC	Kettles Creek						
Recreation	Escherichia coli	5A			5.48	2012	H
L78R-07-DO	Kettles Creek						
Aquatic Life	Oxygen, Dissolved	5A			5.48	2012	M
L79L-02-CHLA	Lake Gordon						
Aquatic Life	Chlorophyll-a	5A		107.48		2016	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L79L-02-HG	Lake Gordon						
Fish Consumption	Mercury in Fish Tissue	5A		107.48		2010	L
L79R-01-DO	Flat Creek						
Aquatic Life	Oxygen, Dissolved	5A			1.69	2006	L
L79R-02-BAC	Smith Creek						
Recreation	Escherichia coli	5A			1.90	2008	H
L79R-03-BAC	Miles Creek						
Recreation	Escherichia coli	5A			5.97	2016	L
L80L-01-PCB	Lake Gaston						
Fish Consumption	PCB in Fish Tissue	5A		4,440.93	5.69	2004	L
L81R-02-BAC	Lizard Creek						
Recreation	Escherichia coli	5A			2.73	2010	H
L81R-03-BAC	Little Poplar Creek						
Recreation	Escherichia coli	5A			6.51	2016	L
L82R-01-BAC	Pea Hill Creek						
Recreation	Escherichia coli	5A			4.86	2016	L
M02L-01-DDD	Lovills Creek Lake						
Fish Consumption	DDD	5A		42.46		2010	L
M02L-01-DDE	Lovills Creek Lake						
Fish Consumption	DDE	5A		42.46		2010	L
M02L-01-DDT	Lovills Creek Lake						
Fish Consumption	DDT in Fish Tissue	5A		42.46		2010	L
M02L-01-HG	Lovills Creek Lake						
Fish Consumption	Mercury in Fish Tissue	5A		42.46		2010	L
M02R-01-BAC	Lovills Creek						
Recreation	Escherichia coli	5A			2.15	2008	M
M02R-01-DDE	Lovills Creek						
Fish Consumption	DDE	5A			2.15	2010	L
M02R-01-DDT	Lovills Creek						
Fish Consumption	DDT in Fish Tissue	5A			2.15	2010	L
M02R-01-TEMP	Lovills Creek and Stewarts Creek						
Aquatic Life	Temperature, water	5A			2.15	2008	M
	Temperature, water	5A			2.05	2016	M
M03R-01-BAC	Ararat River						
Recreation	Escherichia coli	5A			6.13	2010	H
M03R-01-HG	Ararat River						
Fish Consumption	Mercury in Fish Tissue	5A			6.13	2010	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
M03R-01-TEMP	Johnson Creek						
Aquatic Life	Temperature, water	5C			9.15	2008	L
M03R-02-BAC	Johnson Creek						
Recreation	Escherichia coli	5A			9.15	2014	H

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

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Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K01R-01-BEN	Middle Meherrin River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			11.25	2014	M
K01R-03-BEN	Finneywood Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.11	2008	M
K02R-01-BEN	North Meherrin River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.54	2010	L
	Benthic-Macroinvertebrate Bioassessments	5A			2.63	2014	L
K02R-03-BEN	Kits Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.82	2008	H
K02R-04-BEN	Couches Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.37	2010	L
K02R-04-PH	Couches Creek						
Aquatic Life	pH	5A			7.37	2014	L
K02R-05-DO	Ledbetter Creek						
Aquatic Life	Oxygen, Dissolved	5A			9.08	2010	L
K03R-01-BEN	Flat Rock Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			15.99	2014	L
K03R-06-BEN	Mason Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.05	2014	L
K05R-05-DO	Hays Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.39	2010	L
K05R-06-BEN	Little Genito Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			12.05	2010	L
K07R-03-BEN	Rocky Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			21.27	2008	L
K08L-01-HG	Emporia Lake (Meherrin Reservoir)						
Fish Consumption	Mercury in Fish Tissue	5A		263.68		2014	L
K08L-02-CHLA	Brunswick Lake						
Aquatic Life	Chlorophyll-a	5A		160.33		2016	L
K08L-02-DO	Brunswick Lake						
Aquatic Life	Oxygen, Dissolved	5A		160.33		2006	L
K08R-03-BAC	Wilson Creek						
Recreation	Escherichia coli	5A			2.74	2012	M, 2yr
K08R-03-BEN	Wilson Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.74	2010	L
K08R-04-BAC	UT to Dukes Branch						
Recreation	Escherichia coli	5A			1.71	2016	L

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Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K08R-05-BAC	Dukes Branch						
Recreation	Escherichia coli	5A			2.41	2016	L
K09R-01-BAC	Meherrin River						
Recreation	Escherichia coli	5A			26.75	2016	L
K09R-01-HG	Meherrin River, Fontaine Creek, Mill Swamp						
Fish Consumption	Mercury in Fish Tissue	5A			67.74	2010	L
K09R-01-PCB	Meherrin River						
Fish Consumption	PCB in Fish Tissue	5A			26.75	2004	L
K10R-01-DO	Rattlesnake Creek						
Aquatic Life	Oxygen, Dissolved	5C			17.18	2010	L
K10R-02-DO	Fontaine Creek (Fountains Creek)(Partial delist16 .56 miles)						
Aquatic Life	Oxygen, Dissolved	5C			16.64	2010	L
K10R-03-DO	Quarrel Creek						
Aquatic Life	Oxygen, Dissolved	5C			3.34	2010	L
K10R-03-PH	Quarrel Creek						
Aquatic Life	pH	5C			3.34	2016	L
K10R-04-DO	Beddingfield Creek						
Aquatic Life	Oxygen, Dissolved	5C			4.18	2010	L
K10R-06-PH	Rocky Run						
Aquatic Life	pH	5C			0.86	2010	L
K11R-04-DO	Fontaine Creek						
Aquatic Life	Oxygen, Dissolved	5C			7.30	2012	L
K11R-05-DO	Beaverpond Creek						
Aquatic Life	Oxygen, Dissolved	5C			3.35	2010	L
K11R-06-PH	XGV - Fontaine Creek, UT						
Aquatic Life	pH	5C			1.95	2010	L
K11R-08-DO	XGU - Fontaine Creek, UT						
Aquatic Life	Oxygen, Dissolved	5C			1.82	2010	L
K11R-08-PH	XGU - Fontaine Creek, UT						
Aquatic Life	pH	5C			1.82	2010	L
K13R-04-BAC	Flat Swamp						
Recreation	Escherichia coli	5A			8.48	2016	L
K14L-02-BAC	Nottoway Falls Lake						
Recreation	Escherichia coli	5A		32.19		2014	L
K14L-02-DO	Nottoway Falls Lake						
Aquatic Life	Oxygen, Dissolved	5A		32.19		2004	L
K14L-02-HG	Nottoway Falls Lake						
Fish Consumption	Mercury in Fish Tissue	5A		32.19		2010	L

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Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K14R-01-BEN	Nottoway River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.26	2010	M
K15L-01-HG	Nottoway Pond						
Fish Consumption	Mercury in Fish Tissue	5A		50.70		2010	L
K15R-03-DO	Lazaretto Creek						
Aquatic Life	Oxygen, Dissolved	5A			4.97	2010	L
K15R-04-BEN	Mallorys Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.11	2014	L
K16L-01-TP	Fort Pickett Reservoir						
Aquatic Life	Phosphorus (Total)	5A		318.95		2012	L
K16R-04-BAC	Nottoway River						
Recreation	Escherichia coli	5A			3.39	2006	H, 2yr
K16R-06-BAC	Tommeheton Creek						
Recreation	Escherichia coli	5A			7.84	2016	L
K16R-06-DO	Tommeheton Creek						
Aquatic Life	Oxygen, Dissolved	5A			7.84	2010	M
K16R-07-BEN	Seay Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.48	2014	M
K17R-01-BAC	Nottoway River						
Recreation	Escherichia coli	5A			9.99	2010	M, 2yr
K17R-02-BAC	Waqua Creek						
Recreation	Escherichia coli	5A			3.57	2012	M, 2yr
K17R-03-BAC	Waqua Creek						
Recreation	Escherichia coli	5A			5.59	2016	L
K17R-04-BAC	Great Creek						
Recreation	Escherichia coli	5A			5.45	2016	L
K17R-05-BAC	Reedy Creek						
Recreation	Escherichia coli	5A			6.02	2016	L
K17R-05-DO	Reedy Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.02	2016	L
K17R-06-BAC	Turkey Egg Creek						
Recreation	Escherichia coli	5A			5.64	2016	L
K17R-07-BAC	Waqua Creek						
Recreation	Escherichia coli	5A			1.09	2016	L
K17R-07-DO	Hickory Run						
Aquatic Life	Oxygen, Dissolved	5C			4.94	2016	L
K17R-07-PH	Hickory Run						
Aquatic Life	pH	5C			4.94	2016	L

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Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K18R-01-DO	Sturgeon Creek						
Aquatic Life	Oxygen, Dissolved	5C			12.96	2014	L
K19R-01-BAC	Masons Branch						
Recreation	Escherichia coli	5A			4.89	2012	M, 2yr
K19R-03-BAC	Buckskin Creek						
Recreation	Escherichia coli	5A			11.90	2010	M, 2yr
K19R-03-DO	Buckskin Creek						
Aquatic Life	Oxygen, Dissolved	5A			1.96	2012	L
K19R-04-HG	Nottoway River and Tributaries						
Fish Consumption	Mercury in Fish Tissue	5A			113.57	2008	L
	Mercury in Fish Tissue	5A			19.84	2010	L
	Mercury in Fish Tissue	5A			53.09	2010	L
K19R-05-BEN	XEJ - Nottoway River, UT						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.88	2008	L
K19R-06-BEN	Nottoway River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.04	2008	L
K19R-07-DO	XAD - Buckskin Creek, UT						
Aquatic Life	Oxygen, Dissolved	5C			2.90	2012	L
K19R-08-DO	XHW - Buckskin Creek, UT						
Aquatic Life	Oxygen, Dissolved	5A			1.63	2012	L
K19R-09-BAC	XHX - Buckskin Creek, UT						
Recreation	Escherichia coli	5A			2.66	2012	M, 2yr
K19R-10-BAC	XHY - Buckskin Creek, UT						
Recreation	Escherichia coli	5A			1.61	2012	M, 2yr
K19R-11-BAC	Moores Swamp						
Recreation	Escherichia coli	5A			5.08	2016	L
K21R-03-HG	Stony Creek						
Fish Consumption	Mercury in Fish Tissue	5A			8.35	2010	L
K21R-05-BAC	Mortar Branch						
Recreation	Escherichia coli	5A			6.12	2014	M, 2yr
K21R-05-DO	Mortar Branch						
Aquatic Life	Oxygen, Dissolved	5C			6.12	2014	L
K21R-05-PH	Mortar Branch						
Aquatic Life	pH	5C			6.12	2014	L
K21R-06-BAC	Stony Creek						
Recreation	Escherichia coli	5A			2.60	2016	L
K21R-07-PH	Chamberlains Bed						
Aquatic Life	pH	5C			1.32	2016	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K21R-08-DO	Chamberlains Bed						
Aquatic Life	Oxygen, Dissolved	5C			2.82	2016	L
K21R-08-PH	Chamberlains Bed						
Aquatic Life	pH	5C			2.82	2016	L
K22R-03-BAC	Sappony Creek (partial Delist 9.18mi(upper portion)						
Recreation	Escherichia coli	5A			11.86	2006	M, 2yr
K22R-04-BAC	Sappony Creek						
Recreation	Escherichia coli	5A			4.35	2016	L
K23R-01-BAC	Arthur Swamp						
Recreation	Escherichia coli	5A			8.38	2008	L
K23R-02-BAC	Joseph Swamp						
Recreation	Escherichia coli	5A			11.22	2010	M, 2yr
K23R-04-BAC	Jones Hole Sw/Moores Sw and all tribs(ptl Delist 4.2&9.11mi)						
Recreation	Escherichia coli	5A			70.67	2010	M, 2yr
K23R-05-BAC	Gosee Swamp and Tributaries						
Recreation	Escherichia coli	5A			27.71	2014	M, 2yr
K23R-10-BAC	Rowanty Creek						
Recreation	Escherichia coli	5A			14.07	2012	M, 2yr
K24R-03-BAC	Hunting Quarter Swamp						
Recreation	Escherichia coli	5A			16.67	2008	L
K24R-04-BAC	Nottoway River						
Recreation	Escherichia coli	5A			15.61	2016	L
K24R-05-BAC	Thweatt Branch Tributaries						
Recreation	Escherichia coli	5A			7.26	2016	L
K27R-03-BEN	Applewhite Swamp						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.16	2008	L
K27R-05-BEN	Three Creek - Upper						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.17	2006	L
K28R-01-DO	Mill Swamp						
Aquatic Life	Oxygen, Dissolved	5C			10.49	2006	L
K28R-02-BEN	Buckhorn Swamp						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.68	2008	L
K28R-04-BEN	Unnamed Tributary to Mill Swamp						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.85	2014	L
K28R-05-BAC	Buckhorn Swamp						
Recreation	Escherichia coli	5A			4.22	2012	H
K28R-05-DO	Buckhorn Swamp						
Aquatic Life	Oxygen, Dissolved	5C			4.22	2014	M

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K28R-05-PH	Buckhorn Swamp						
Aquatic Life	pH	5C			4.22	2016	L
K28R-06-DO	Nottoway Swamp						
Aquatic Life	Oxygen, Dissolved	5C			8.12	2012	L
K28R-06-PH	Nottoway Swamp						
Aquatic Life	pH	5C			8.12	2012	L
K29R-02-BAC	Assamoosick Swamp						
Recreation	Escherichia coli	5A			2.46	2010	L
K29R-03-BAC	XGT - Assamoosick Swamp, UT						
Recreation	Escherichia coli	5A			1.93	2010	L
K30R-01-DO	Darden Mill Run						
Aquatic Life	Oxygen, Dissolved	5C			10.72	2002	L
K30R-01-PH	Darden Mill Run						
Aquatic Life	pH	5C			10.72	2004	L
K30R-02-DO	Nottoway River - Lower						
Aquatic Life	Oxygen, Dissolved	5A			4.54	2014	L
K30R-04-BAC	Nottoway River - Upper						
Recreation	Escherichia coli	5A			0.45	2008	L
K32R-01-BEN	Blackwater River - Lower						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.32	2008	L
K32R-13-HG	Blackwater River Basin						
Fish Consumption	Mercury in Fish Tissue	5A			36.91	2004	L
	Mercury in Fish Tissue	5A			26.81	2006	L
	Mercury in Fish Tissue	5A			611.63	2008	L
	Mercury in Fish Tissue	5A			701.67	2008	L
	Mercury in Fish Tissue	5A			417.95	2010	L
	Mercury in Fish Tissue	5A			1.45	2010	L
	Mercury in Fish Tissue	5A			3.98	2012	L
K32R-18-BEN	Blackwater River, UT						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.13	2008	L
K33R-02-BAC	Blackwater River - Middle						
Recreation	Escherichia coli	5A			1.04	2012	H
K33R-02-BEN	Blackwater River - Upper						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			19.10	2008	L
K33R-03-BEN	Blackwater River - Lower and Burnt Mills Swamp						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.18	2008	L
	Benthic-Macroinvertebrate Bioassessments	5A			5.16	2012	L
K35L-01-DO	Airfield Pond						
Aquatic Life	Oxygen, Dissolved	5C		120.07		2008	L

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Category 5 - Waters needing Total Maximum Daily Load Study

Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K35L-01-HG	Airfield Pond						
Fish Consumption	Mercury in Fish Tissue	5A		120.07		2010	L
K35L-01-PH	Airfield Pond						
Aquatic Life	pH	5C		120.07		2008	L
K35R-02-BAC	Seacock Swamp - Lower						
Recreation	Fecal Coliform	5A			2.59	2004	L
K35R-02-BEN	Seacock Swamp - Lower						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.59	2008	L
K35R-03-BAC	UT Seacock Swamp						
Recreation	Fecal Coliform	5A			1.02	2004	L
K35R-04-BAC	UT Airfield Pond - Lower						
Recreation	Escherichia coli	5A			0.71	2004	L
K35R-05-BAC	UT Airfield Pond - Upper						
Recreation	Escherichia coli	5A			0.68	2004	L
K35R-06-BAC	Seacock Swamp - Upper and Lower						
Recreation	Fecal Coliform	5A			0.84	2006	L
	Escherichia coli	5A			2.50	2012	L
K35R-08-BEN	Round Hill Swamp						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.64	2008	L
K36R-02-BAC	Blackwater River - Lower Middle						
Recreation	Escherichia coli	5A			2.83	2006	L
K36R-02-BEN	Black Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.95	2008	L
K36R-04-BAC	Cypress Swamp						
Recreation	Escherichia coli	5A			5.16	2012	L
K36R-04-BEN	Unsegmented Tributary to Blackwater						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.75	2008	L
K36R-05-BAC	Washole Creek						
Recreation	Escherichia coli	5A			0.55	2014	L
K36R-06-BAC	Blackwater River - Lower Middle						
Recreation	Escherichia coli	5A			0.77	2014	L
K36R-07-BAC	Blackwater River - Upper						
Recreation	Escherichia coli	5A			2.47	2016	L
K38R-01-BEN	Somerton Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.38	2006	L
K38R-02-BAC	March Swamp						
Recreation	Escherichia coli	5A			7.71	2008	L

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Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K38R-02-DO	March Swamp						
Aquatic Life	Oxygen, Dissolved	5C			7.71	2004	L
K38R-02-PH	March Swamp						
Aquatic Life	pH	5C			7.71	2004	L
K38R-03-DO	Chapel Swamp						
Aquatic Life	Oxygen, Dissolved	5C			8.28	2004	L
K38R-03-PH	Chapel Swamp						
Aquatic Life	pH	5C			8.28	2004	L
K38R-04-BAC	Unsegmented rivers in K38R						
Recreation	Escherichia coli	5A			1.80	2014	L
K38R-05-BAC	Chapel Swamp						
Recreation	Escherichia coli	5A			8.28	2014	L
K38R-06-BAC	Somerton Creek						
Recreation	Escherichia coli	5A			9.38	2016	L
K39L-01-HG	Lake Drummond						
Fish Consumption	Mercury in Fish Tissue	5A		3,241.96		2006	L
K39L-01-PH	Lake Drummond						
Aquatic Life	pH	5C		3,241.96		2008	L
K39R-01-HG	Dismal Swamp Canal & Feeder Ditch to Lake Drummond						
Fish Consumption	Mercury in Fish Tissue	5A			13.21	2004	L
K39R-02-HG	Unsegmented rivers in K39R						
Fish Consumption	Mercury in Fish Tissue	5A			15.28	2010	L
K40R-02-BAC	Northwest River - Middle (PWS)						
Recreation	Escherichia coli	5A			6.33	2006	L
K40R-04-BAC	Northwest River - Lower (PWS)						
Recreation	Escherichia coli	5A			1.70	2016	L
K40R-04-HG	Northwest River - Middle						
Fish Consumption	Mercury in Fish Tissue	5A			6.33	2010	L
K40R-09-BAC	Indian Creek tributary to Northwest River						
Recreation	Escherichia coli	5A			3.46	2006	L
K41R-01-BEN	Pocaty River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.43	2010	L
K41R-05-PCB	West Neck Creek - Middle						
Fish Consumption	PCB in Fish Tissue	5A			2.74	2010	L
K41R-12-BEN	Unnamed Trib to Milldam Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.66	2012	L
K41R-12-DO	Unnamed Trib to Milldam Creek						
Aquatic Life	Oxygen, Dissolved	5A			0.66	2014	L

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Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K41R-13-DO	Blackwater Creek						
Aquatic Life	Oxygen, Dissolved	5A			4.47	2008	L
K42E-06-PH	Ashville Bridge Creek - Lower						
Aquatic Life	pH	5C	0.016			2010	L
K42E-07-DO	Beggars Bridge Creek						
Aquatic Life	Oxygen, Dissolved	5A	0.042			2010	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

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Category 5 - Waters needing Total Maximum Daily Load Study

Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
O01R-01-BAC	South Fork Holston River and Tributaries						
Recreation	Escherichia coli	5A			8.73	2002	H
	Escherichia coli	5A			12.98	2004	H
	Fecal Coliform	5A			9.58	2004	H
	Escherichia coli	5A			9.58	2010	H
	Escherichia coli	5A			8.33	2010	H
	Escherichia coli	5A			3.68	2016	H
O01R-02-PH	Hurricane Creek Tributary						
Aquatic Life	pH	5A			1.12	2010	M
O02R-01-HG	South Fork Holston River						
Fish Consumption	Mercury in Fish Tissue	5A			6.14	2010	L
O02R-03-HG	Beaverdam Creek						
Fish Consumption	Mercury in Fish Tissue	5A			2.01	2010	L
O02R-05-BAC	Whitetop Laurel Creek						
Recreation	Escherichia coli	5A			3.80	2012	M
O03R-01-BEN	Middle Fork Holston River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.42	2010	L
O03R-02-BAC	Bear Creek						
Recreation	Escherichia coli	5A			6.51	2010	M
O03R-03-BAC	Staley Creek						
Recreation	Escherichia coli	5A			6.59	2010	M
O04L-01-HG	Hungry Mother Lake						
Fish Consumption	Mercury in Fish Tissue	5A		103.23		2010	L
O05R-02-BEN	Greenway Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.02	2010	H
O06L-01-HG	South Holston Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		1,699.97		2010	L
O06L-01-PCB	South Holston Reservoir						
Fish Consumption	PCB in Fish Tissue	5A		1,699.97		2010	L
O06R-01-PCB	Wolf Creek						
Fish Consumption	PCB in Fish Tissue	5A			6.67	2006	L
O06R-02-BAC	Fifteen Mile Creek						
Recreation	Escherichia coli	5A			12.93	2008	M
O06R-03-BAC	Spring Creek						
Recreation	Escherichia coli	5A			4.43	2008	M
O07R-01-PCB	Beaver Creek and Little Creek						
Fish Consumption	PCB in Fish Tissue	5A			2.29	2006	L
	PCB in Fish Tissue	5A			15.04	2006	L

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
O07R-04-BAC	Sinking Creek						
Recreation	Escherichia coli	5A			3.79	2012	M
O07R-05-BAC	Stoffel Creek						
Recreation	Escherichia coli	5A			5.22	2012	M
O08R-01-BAC	Boozy Creek						
Recreation	Escherichia coli	5A			2.53	2012	M
O10R-01-PCB	North Fork Holston River						
Fish Consumption	PCB in Fish Tissue	5A			15.27	1996	L
O10R-05-BEN	Laurel Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.65	2002	L
O11L-01-TEMP	Hidden Valley Lake						
Aquatic Life	Temperature, water	5C		61.10		2010	L
O11L-02-PH	Laurel Bed Lake						
Aquatic Life	pH	5C		359.43		2006	L
O11L-02-TEMP	Laurel Bed Lake						
Aquatic Life	Temperature, water	5C		359.43		2010	L
O12R-03-BEN	Greendale Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.03	2010	M
P01L-03-HG	Lake Witten						
Fish Consumption	Mercury in Fish Tissue	5A		53.17		2010	L
P01R-02-BEN	Plum Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.88	2010	L
P03R-01-BEN	Clinch River Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.12	2008	L
	Benthic-Macroinvertebrate Bioassessments	5A			3.75	2010	L
P03R-02-HG	Clinch River						
Fish Consumption	Mercury in Fish Tissue	5A			5.55	2010	L
P04R-02-BEN	Swords Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.91	2006	L
P04R-03-BEN	Mill Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.22	2014	M
P06R-01-BEN	Big Cedar Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.20	2016	L
P07R-02-BEN	Mill Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.84	2014	M
P09L-01-HG	Bark Camp Lake						
Fish Consumption	Mercury in Fish Tissue	5A		41.06		2010	L

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Category 5 - Waters needing Total Maximum Daily Load Study

Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
P09R-02-BAC	Clinch River						
Recreation	Escherichia coli	5A			11.96	2012	M
P11R-03-PCB	Guest River and Bear Creek						
Fish Consumption	PCB in Fish Tissue	5A			4.15	2004	L
	PCB in Fish Tissue	5A			1.94	2004	L
	PCB in Fish Tissue	5A			19.87	2006	L
P11R-05-BEN	Eastland Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.00	2010	L
P12R-01-BEN	Bark Camp Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.07	2004	M
P12R-01-PH	Bark Camp Branch						
Aquatic Life	pH	5A			3.07	2010	M
P12R-02-BEN	Devil Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.40	2006	M
P12R-02-pH	Devil Fork						
Aquatic Life	pH	5A			4.40	2014	M
P13R-02-PCB	Stock Creek						
Fish Consumption	PCB in Fish Tissue	5A			4.78	2004	L
P14R-02-BEN	Blackoak Branch Tributary						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.76	2012	M
P17R-00-PH	Dark Hollow						
Aquatic Life	pH	5A			1.40	2012	H
P17R-04-BEN	Unnamed tributary to Callahan Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.58	2016	L
P17R-09-BEN	Roaring Fork and Potcamp Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.04	2010	H
	Benthic-Macroinvertebrate Bioassessments	5A			21.73	2014	H
P17R-12-BEN	Powell River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.00	2010	L
P17R-13-BEN	Looney Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.54	2014	H
P18L-01-HG	Big Cherry Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		104.00		2010	L
P18L-01-PH	Big Cherry Reservoir						
Aquatic Life	pH	5C		104.00		2002	M
P18R-01-PH	South Fork Powell River						
Aquatic Life	pH	5A			3.83	2016	L

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
P20L-01-HG	Lake Keokee						
Fish Consumption	Mercury in Fish Tissue	5A		96.21		2010	L
P20R-01-TEMP	North Fork Powell River						
Aquatic Life	Temperature, water	5A			2.98	2014	M
	Temperature, water	5A			7.67	2016	M
P20R-04-BEN	North Fork Powell River Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.23	2014	L
P21R-02-BAC	Hardy Creek						
Recreation	Escherichia coli	5A			12.52	2006	M
P21R-03-BAC	Powell River and Town Creek						
Recreation	Escherichia coli	5A			2.69	2006	M
	Escherichia coli	5A			3.73	2012	M
P21R-04-BAC	Dry Creek						
Recreation	Escherichia coli	5A			8.87	2012	M
P22R-01-TEMP	Wallen Creek						
Aquatic Life	Temperature, water	5A			42.90	2012	M
P23R-02-BAC	Martin Creek						
Recreation	Escherichia coli	5A			9.66	2008	M
P23R-03-BAC	Fourmile Creek						
Recreation	Escherichia coli	5A			2.36	2014	M
P24R-01-BAC	Indian Creek						
Recreation	Escherichia coli	5A			8.18	2008	M
	Escherichia coli	5A			4.44	2014	M
Q03R-02-PCB	Knox Creek and Tributaries						
Fish Consumption	PCB in Fish Tissue	5A			186.05	2004	L
	PCB in Fish Tissue	5A			8.70	2006	L
	PCB in Fish Tissue	5A			6.00	2006	L
Q03R-03-BAC	Pawpaw Creek and Jacobs Fork						
Recreation	Escherichia coli	5A			6.57	2010	M
Q05R-00-TEMP	Dismal Creek						
Aquatic Life	Temperature, water	5A			5.38	2008	M
Q08R-05-BEN	Conaway Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.62	2014	L
Q08R-06-BEN	State Line Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.35	2014	M
Q08R-07-BEN	Home Creek Headwaters						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.80	2014	M

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
Q08R-08-BEN	Conaway Creek and Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.99	2014	M
Q08R-09-BEN	Poplar Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.03	2014	L
Q09R-01-BAC	Russell Fork						
Recreation	Escherichia coli	5A			8.87	2004	H, 2yr
	Escherichia coli	5A			2.25	2006	H, 2yr
	Escherichia coli	5A			15.34	2010	H, 2yr
	Escherichia coli	5A			3.90	2012	H, 2yr
	Escherichia coli	5A			4.12	2016	H, 2yr
Q09R-01-BEN	Indian Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.69	2012	M
Q09R-02-BEN	Sullivan Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.62	2008	M
Q10R-01-BEN	Fryingpan Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.45	2012	H
Q11R-02-BAC	McClure River and Tributaries						
Recreation	Escherichia coli	5A			9.68	2006	H
	Escherichia coli	5A			3.38	2006	H
	Escherichia coli	5A			3.25	2008	H
	Escherichia coli	5A			11.01	2012	H
	Escherichia coli	5A			1.08	2014	H
Q11R-02-BEN	McClure River and Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.80	2014	M
Q11R-04-BEN	Cowan Rose Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.30	2014	M
Q11R-05-BEN	Dismal Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.51	2014	M
Q12R-01-BAC	Russell Prater Creek						
Recreation	Escherichia coli	5A			11.72	2008	L
Q12R-05-BEN	Middle Fork (Hunts Creek)						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.93	2014	M
Q13L-01-HG	John Flannagan Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		1,177.21		2010	L
Q13R-02-TEMP	North Fork Pound River						
Aquatic Life	Temperature, water	5C			10.25	2012	H
Q13R-03-BAC	Pound River						
Recreation	Escherichia coli	5A			16.94	2008	H

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
Q13R-03-TEMP	North Fork Pound River						
Aquatic Life	Temperature, water	5C			1.29	2010	L
Q13R-04-BEN	Indian Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.98	2012	H
Q13R-06-BEN	Pound River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			16.94	2004	H
Q13R-07-BEN	Bear Pen Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.30	2010	M
Q13R-09-BAC	Big Branch						
Recreation	Escherichia coli	5A			1.46	2014	M
Q13R-09-BEN	North Fork Pound River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.29	2010	H
Q13R-10-BAC	South Fork Pound River						
Recreation	Escherichia coli	5A			5.80	2014	L
	Escherichia coli	5A			3.44	2016	L
Q14R-01-BAC	Cranesnest River						
Recreation	Escherichia coli	5A			7.52	2004	H, 2yr
	Escherichia coli	5A			12.93	2010	H, 2yr
Q14R-01-BEN	Birchfield Creek and Cranesnest River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			15.45	2010	H, 2yr
Q14R-02-BEN	Dotson Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.81	2012	H, 2yr

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
AO23-01-BAC	Atlantic Ocean Beaches - Croatan						
Recreation	Enterococcus	5A	0.410			2016	L
C01E-17-PCB	Chesapeake Bay and Tidal Tributaries						
Fish Consumption	PCB in Fish Tissue	5A	1,825.564			2006	L
	PCB in Fish Tissue	5A	0.025			2010	L
	PCB in Fish Tissue	5A	0.003			2012	L
C01R-01-BAC	Crabbe Mill Stream						
Recreation	Escherichia coli	5A			3.90	2012	L
C01R-01-DO	Crabbe Mill Stream						
Aquatic Life	Oxygen, Dissolved	5C			3.90	2012	L
C01R-01-PH	Crabbe Mill Stream						
Aquatic Life	pH	5C			3.90	2012	L
C01R-02-BEN	Dymer Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.06	2014	L
C02R-03-HG	Dragon Swamp/Piankatank River						
Fish Consumption	Mercury in Fish Tissue	5A	2.661			2004	L
	Mercury in Fish Tissue	5A			31.97	2006	L
	Mercury in Fish Tissue	5A	0.062			2008	L
C03E-10-EBEN	Piankatank River						
Aquatic Life	Estuarine Bioassessments	5A	1.167			2006	L
	Estuarine Bioassessments	5A	0.785			2008	L
	Estuarine Bioassessments	5A	17.545			2014	L
C03E-16-BAC	Piankatank River						
Recreation	Enterococcus	5A	0.785			2014	L
C03E-17-BAC	Piankatank River						
Recreation	Escherichia coli	5A	1.167			2016	L
C04E-53-BAC	Whites Creek - Festival Beach						
Recreation	Enterococcus	5A	0.046			2012	L
C04R-01-DO	East River						
Aquatic Life	Oxygen, Dissolved	5C			0.59	2012	L
C04R-01-PH	East River						
Aquatic Life	pH	5C			0.59	2012	L
C07E-01-PCB	Chesapeake Bay & Tidal Tributaries VDH Fish Consumption Advisory for PCBs						
Fish Consumption	PCB in Fish Tissue	5A	16.028			2006	L
C07E-33-EBEN	Northwest Br. Back River - Upper near Marsh Point						
Aquatic Life	Estuarine Bioassessments	5A	0.248			2010	L
C07E-38-SF	Bennett Creek - Upper (DSS_06-IR)						
Shellfishing	Fecal Coliform	5B	0.039			2012	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C07E-41-SF	Unsegmented estuaries in Back River - DSS						
Shellfishing	Fecal Coliform	5B	0.097			2012	L
C07E-43-BAC	Buckroe Beaches						
Recreation	Enterococcus	5A	0.224			2016	L
C07L-01-CU	Harwood Mills Reservoir						
Aquatic Life	Copper	5A		257.68		2004	L
Wildlife	Copper	5A		257.68		2004	L
C07L-02-DO	Harwoods Mill Reservoir (PWS)						
Aquatic Life	Oxygen, Dissolved	5A		257.68		2004	L
C07R-01-DO	Newmarket Creek - Lower Riverine						
Aquatic Life	Oxygen, Dissolved	5A			2.01	2006	L
C08E-01-EBEN	London Bridge Creek						
Aquatic Life	Estuarine Bioassessments	5A	7.976			2008	L
C08E-01-PCB	Eastern Branch -Lynnhaven River System VDH Fish Consumption Advisory						
Fish Consumption	PCB in Fish Tissue	5A	3.833			2006	L
C08E-14-BAC	Sara Constance Park, East End						
Recreation	Enterococcus	5A	0.140			2014	M
C08E-15-BAC	13th View Beach						
Recreation	Enterococcus	5A	0.353			2016	L
C08E-16-BAC	Chicks Beach						
Recreation	Enterococcus	5A	0.433			2016	L
C08L-01-CHLA	Lake Whitehurst						
Aquatic Life	Chlorophyll-a	5A		482.28		2010	L
C08L-01-DO	Lake Whitehurst						
Aquatic Life	Oxygen, Dissolved	5A		482.28		2008	L
C08L-01-HG	Lake Whitehurst						
Fish Consumption	Mercury in Fish Tissue	5A		482.28		2008	L
C08L-01-PCB	Lake Whitehurst VDH Fish Consumption Advisory						
Fish Consumption	PCB in Fish Tissue	5A		482.28		2006	L
C08L-01-TP	Lake Whitehurst						
Aquatic Life	Phosphorus (Total)	5A		482.28		2010	L
C08L-03-CHLA	Little Creek Reservoir						
Aquatic Life	Chlorophyll-a	5A		199.79		2010	L
C08L-03-PCB	Little Creek Reservoir VDH Fish Consumption Advisory						
Fish Consumption	PCB in Fish Tissue	5A		199.79		2008	L
C08L-03-TP	Little Creek Reservoir						
Aquatic Life	Phosphorus (Total)	5A		199.79		2010	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C08L-04-CHLA	Lake Smith						
Aquatic Life	Chlorophyll-a	5A		184.89		2010	L
C08L-04-DO	Lake Smith						
Aquatic Life	Oxygen, Dissolved	5A		184.89		2002	L
C08L-04-TP	Lake Smith						
Aquatic Life	Phosphorus (Total)	5A		184.89		2010	L
C08L-06-HG	Lake Trashmore - Western Pond VDH Fish Consumption Advisory for Mercury						
Fish Consumption	Mercury in Fish Tissue	5A		54.39		2006	L
C08L-06-PCB	Lake Trashmore - Western Pond VDH Fish Consumption Advisory for PCBs						
Fish Consumption	PCB in Fish Tissue	5A		54.39		2006	L
C08L-07-DO	Lake Wright						
Aquatic Life	Oxygen, Dissolved	5A		15.62		2014	L
C09R-02-PH	Unnamed tributary to Pitts Creek						
Aquatic Life	pH	5A			7.50	2006	L
C10E-02-BAC	Muddy Creek - Upper						
Recreation	Enterococcus	5A	0.214			2006	L
C10R-03-BEN	Guilford Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.85	2008	L
C11E-15-SF	Matchotank Creek - Upper						
Shellfishing	Fecal Coliform	5B	0.069			2006	H
C11R-01-BAC	Joynes Branch						
Recreation	Escherichia coli	5A			2.37	2008	H
C12R-01-BEN	Taylor Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.90	2004	L
C12R-02-BEN	Bull Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.25	2008	L
C13E-02-BAC	Nassawadox Creek - Lower						
Recreation	Enterococcus	5A	2.108			2008	H
C13E-11-SF2	Church Creek - Middle, UT North Cove [No TMDL]						
Shellfishing	Fecal Coliform	5B	0.059			2004	H
C13E-20-SF	Nassawadox Creek - Middle, N. Shore Tribs						
Shellfishing	Fecal Coliform	5B	0.140			2008	H
C13R-01-BEN	Taylor Branch - Occohannock Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.31	2008	L
D01E-02-DO	Little Mosquito Creek						
Aquatic Life	Oxygen, Dissolved	5A	0.138			2004	H
	Oxygen, Dissolved	5A	0.071			2008	H

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
D01E-03-BAC	Powells Bay						
Recreation	Enterococcus	5A	0.596			2006	H
D01E-04-DO	Swan Gut Creek						
Aquatic Life	Oxygen, Dissolved	5A	0.100			2004	L
D02E-01-DO	Assawoman Creek						
Aquatic Life	Oxygen, Dissolved	5A	0.063			2004	H
	Oxygen, Dissolved	5A	0.073			2008	H
D02E-11-SF	Little Cat Creek						
Shellfishing	Fecal Coliform	5B	0.096			2006	L
D03E-07-BAC	Wachapreague Channel						
Recreation	Enterococcus	5A	0.055			2008	L
D03E-08-DO	Northam Creek						
Aquatic Life	Oxygen, Dissolved	5A	0.028			2004	L
D03R-03-BEN	Ross Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.20	2002	L
D03R-04-BEN	Unnamed tributary to Folly Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.53	2002	L
D03R-05-BEN	Rattrap Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.73	2012	L
D03R-06-BEN	North Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.13	2016	L
D03R-07-BEN	Custis Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.22	2016	L
D04E-01-DO	Red Bank Creek						
Aquatic Life	Oxygen, Dissolved	5A	0.003			2004	L
D04E-02-DO	Unnamed tributary to Red Bank Creek						
Aquatic Life	Oxygen, Dissolved	5A	0.009			2004	L
D04R-01-DO	Red Bank Creek						
Aquatic Life	Oxygen, Dissolved	5C			1.36	2016	L
D04R-03-BEN	Frogstool Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.27	2012	L
D04R-04-BEN	UT to Mill Creek□						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.48	2014	L
D05E-01-HG	Oyster Slip (Harbor) - Upper						
Fish Consumption	Mercury in Fish Tissue	5A	0.034			2010	L
D05R-01-BAC	Taylor Creek						
Recreation	Fecal Coliform	5A			1.26	2002	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
D05R-02-BAC	Holt Creek						
Recreation	Escherichia coli	5A			1.74	2004	L
D05R-03-BAC	Holt Creek Unnamed Tributary						
Recreation	Escherichia coli	5A			1.42	2004	L
D05R-03-BEN	Holt Creek Unnamed Tributary						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.42	2012	L
D06E-01-DO	Magothy Bay - Lower						
Aquatic Life	Oxygen, Dissolved	5A	0.037			2004	L
D06E-02-PCB	Raccoon Creek						
Fish Consumption	PCB in Fish Tissue	5A	0.004			2010	L
D06R-01-PH	Mill Creek						
Aquatic Life	pH	5A			2.23	1998	L
D06R-02-BAC	Narrow Channel Branch						
Recreation	Escherichia coli	5A			1.84	2004	L
D06R-02-BEN	Narrow Channel Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.84	2004	L
D06R-02-DO	Narrow Channel Branch						
Aquatic Life	Oxygen, Dissolved	5A			1.84	2014	L
D06R-03-BAC	Tommy's Ditch						
Recreation	Escherichia coli	5A			1.44	2008	L
D07E-02-BAC	Lake Rudee - Upper						
Recreation	Enterococcus	5A	0.099			2004	H, 2yr
D07E-02-SF	Lake Rudee - Upper						
Shellfishing	Fecal Coliform	5B	0.099			2006	H, 2yr
D07E-04-BAC	Owl Creek - Upper & Lower						
Recreation	Enterococcus	5A	0.005			2002	H, 2yr
	Enterococcus	5A	0.019			2008	H, 2yr
D07E-04-DO	Owl Creek - Upper						
Aquatic Life	Oxygen, Dissolved	5A	0.005			2006	M, 2yr
D07E-04-SF	Owl Creek - Upper & Lower						
Shellfishing	Fecal Coliform	5B	0.025			2006	H, 2yr
D07E-10-SF	Lake Rudee - Lower and Lake Wesley						
Shellfishing	Fecal Coliform	5B	0.060			2006	H, 2yr

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F01L-01-HG	Lake Gordonsville						
Fish Consumption	Mercury in Fish Tissue	5A		77.31		2006	L
F01R-01-BEN	South Anna River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.90	2010	L
F01R-02-BEN	Wheeler Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.00	2008	L
F01R-03-BEN	Camp Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.01	2012	L
F03R-01-BEN	Cub Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.10	2014	L
F03R-02-BEN	Taylors Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			16.54	2016	L
F03R-03-DO	Cub Creek						
Aquatic Life	Oxygen, Dissolved	5A			3.10	2008	L
F04R-03-DO	Stagg Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.56	2008	L
F04R-03-PH	Stagg Creek						
Aquatic Life	pH	5C			6.56	2016	L
F06R-04-BAC	North Anna River						
Recreation	Escherichia coli	5A			3.78	2006	H, 2yr
	Escherichia coli	5A			2.79	2010	H, 2yr
F06R-05-BAC	Christopher Creek						
Recreation	Escherichia coli	5A			1.98	2010	H, 2yr
F06R-06-BAC	Hickory Creek						
Recreation	Escherichia coli	5A			1.72	2012	H, 2yr
F06R-08-BAC	Duckinghoe Creek						
Recreation	Escherichia coli	5A			6.98	2016	L
F06R-09-BAC	South Fork Hickory Creek						
Recreation	Escherichia coli	5A			4.63	2016	L
F07L-01-BAC	Goldmine Creek/Lake Anna						
Recreation	Escherichia coli	5A		91.62		2008	L
F07L-01-BZOKFL	Gold Mine Creek						
Fish Consumption	Benzo[k]fluoranthene	5A		91.62	7.53	2010	L
F07L-01-HG	Lake Anna						
Fish Consumption	Mercury in Fish Tissue	5A		1,563.36		2010	L
F07L-01-PAHHMW	Gold Mine Creek						
Fish Consumption	Benzo(a)pyrene (PAHs)	5A		91.62	7.53	2010	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F07L-01-PCB	Lake Anna and Contrary Creek, Goldmine Creek, and Terrys Run tributaries						
Fish Consumption	PCB in Fish Tissue	5A		2,128.04		2002	L
	PCB in Fish Tissue	5A		7,468.77	23.06	2006	L
	PCB in Water Column	5A		1,233.83		2010	L
F07L-02-HG	Terrys Run/Lake Anna						
Fish Consumption	Mercury in Fish Tissue	5A		431.09		2010	L
F07L-02-PAHHMW	Gold Mine Creek						
Fish Consumption	Benzo[b]fluoranthene	5A		91.62	7.53	2010	L
F07R-01-BEN	Pamunkey Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.21	2012	L
F08R-01-CD	Contrary Creek						
Aquatic Life	Cadmium	5A		27.87	5.52	2008	M
Wildlife	Cadmium	5A		27.87	5.52	2008	M
F08R-01-CU	Contrary Creek						
Aquatic Life	Copper	5A		27.87	5.52	2008	M
Wildlife	Copper	5A		27.87	5.52	2008	M
F08R-01-PH	Contrary Creek						
Aquatic Life	pH	5A			5.52	2002	M
	pH	5A		27.87		2008	M
F08R-01-TEMP	Contrary Creek						
Aquatic Life	Temperature, water	5A			5.52	2016	L
F08R-01-ZN	Contrary Creek						
Aquatic Life	Zinc	5A		27.87	5.52	2008	M
Wildlife	Zinc	5A		27.87	5.52	2008	M
F09R-02-BEN	North Anna River, UT (XHS)						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.09	2008	L
F09R-03-PH	North Anna River, UT (XIM)						
Aquatic Life	pH	5C			0.70	2010	L
F09R-04-PH	Mill Creek						
Aquatic Life	pH	5C			4.37	2012	L
F09R-05-PH	North Anna River, UT - XJP						
Aquatic Life	pH	5C			1.01	2016	L
F10R-01-BAC	Little River						
Recreation	Escherichia coli	5A			4.17	2006	L
F10R-02-BAC	Little River						
Recreation	Escherichia coli	5A			1.29	2014	L
F10R-02-DO	Long Creek						
Aquatic Life	Oxygen, Dissolved	5C			5.15	2014	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F10R-03-BAC	Long Creek						
Recreation	Escherichia coli	5A			5.15	2014	L
F11R-01-BEN	Locust Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.59	2010	L
F11R-01-DO	Little River						
Aquatic Life	Oxygen, Dissolved	5A			6.29	2008	L
F11R-02-PH	Beaverdam Creek						
Aquatic Life	pH	5A			8.47	2012	L
F12R-05-DO	Mechumps Creek						
Aquatic Life	Oxygen, Dissolved	5A			1.05	2010	L
F12R-05-PH	Mechumps Creek						
Aquatic Life	pH	5A			1.05	2006	L
F12R-07-PH	Crump Creek						
Aquatic Life	pH	5C			10.00	2010	L
F12R-10-PH	Millpond Creek						
Aquatic Life	pH	5C			3.02	2012	L
F12R-11-PH	Kersey Creek						
Aquatic Life	pH	5C			3.32	2012	L
F12R-12-PH	XJC - Crump Creek, UT						
Aquatic Life	pH	5C			1.96	2012	L
F12R-13-PH	Pollard Creek						
Aquatic Life	pH	5C			4.20	2012	L
F13R-04-PCB	Moncuin Creek, Webb Creek						
Fish Consumption	PCB in Fish Tissue	5A			12.12	2010	L
F13R-06-DO	Sullens Creek						
Aquatic Life	Oxygen, Dissolved	5C			4.60	2012	L
F13R-06-PH	Sullens Creek						
Aquatic Life	pH	5C			4.60	2004	L
F13R-09-PH	XDX - UT to XDW (Pamunkey River, UT)						
Aquatic Life	pH	5C			3.85	2012	L
F13R-11-PH	XDW - UT to Pamunkey River						
Aquatic Life	pH	5C			5.51	2012	L
F13R-12-PH	Judy Swamp						
Aquatic Life	pH	5C			3.33	2012	L
F13R-13-HG	Pamunkey River						
Fish Consumption	Mercury in Fish Tissue	5A	1.090		11.55	2006	L
	Mercury in Fish Tissue	5A	9.424			2010	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F13R-13-PCB	Pamunkey River						
Fish Consumption	PCB in Fish Tissue	5A	10.513		11.55	2010	L
F13R-14-PH	Mehixen Creek and tributary XIV						
Aquatic Life	pH	5C			6.44	2012	L
F14E-05-EBEN	Pamunkey River						
Aquatic Life	Estuarine Bioassessments	5A	5.272			2010	L
F14R-01-DO	Cohoke Mill Creek						
Aquatic Life	Oxygen, Dissolved	5C			7.38	2010	L
F14R-02-DO	Harrison Creek						
Aquatic Life	Oxygen, Dissolved	5C			2.80	2014	L
F14R-04-PH	XJD - Harrison Creek, UT						
Aquatic Life	pH	5C			0.16	2012	L
F15R-01-BEN	Ni River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.68	2010	L
F15R-01-DO	Brock Run						
Aquatic Life	Oxygen, Dissolved	5A			2.56	2012	L
F15R-01-PH	Brock Run						
Aquatic Life	pH	5A			3.21	2014	L
F15R-02-DO	Lewis Run						
Aquatic Life	Oxygen, Dissolved	5A			1.46	2012	L
F15R-02-PH	Unnamed tributary to Cool Spring Lake						
Aquatic Life	pH	5A			1.29	2016	L
F15R-03-DO	Unnamed tributary to Cool Spring Lake						
Aquatic Life	Oxygen, Dissolved	5A			1.29	2012	L
F17L-01-HG	Bowies Pond						
Fish Consumption	Mercury in Fish Tissue	5A		25.71		2008	L
F18R-01-DO	Ta River						
Aquatic Life	Oxygen, Dissolved	5C			3.76	2010	L
F18R-02-PH	Ta River						
Aquatic Life	pH	5C			3.76	2010	L
F18R-03-BEN	Matta River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.24	2008	L
F20R-01-BEN	Polecat Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.97	2014	L
F20R-01-DO	Polecat Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.97	2010	L
F20R-02-PH	Polecat Creek						
Aquatic Life	pH	5C			5.31	2014	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F21R-01-BEN	Herring Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.75	2008	L
F21R-01-HG	Herring Creek						
Fish Consumption	Mercury in Fish Tissue	5A			7.23	2006	L
F21R-02-BEN	Reedy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			12.69	2014	L
F21R-02-HG	Mattaponi River						
Fish Consumption	Mercury in Fish Tissue	5A	3.723		15.70	2006	L
	Mercury in Fish Tissue	5A	3.242			2010	L
F21R-03-HG	Reedy Creek and Reedy Millpond						
Fish Consumption	Mercury in Fish Tissue	5A		41.25	12.82	2010	L
F21R-04-PH	Chapel Creek						
Aquatic Life	pH	5C			4.64	2008	L
F21R-05-BAC	Herring Creek						
Recreation	Escherichia coli	5A			5.09	2016	L
F21R-06-BAC	Mattaponi River						
Recreation	Escherichia coli	5A			8.00	2016	L
F22L-01-HG	Collins Pond						
Fish Consumption	Mercury in Fish Tissue	5A		63.93		2010	L
F22R-02-PH	Root Swamp						
Aquatic Life	pH	5C			7.83	2006	L
F22R-03-DO	Unnamed tributary to Root Swamp						
Aquatic Life	Oxygen, Dissolved	5C			0.70	2006	L
F22R-03-PH	Unnamed tributary to Root Swamp						
Aquatic Life	pH	5C			0.70	2006	L
F22R-04-PH	Beverly Run						
Aquatic Life	pH	5C			3.31	2008	L
F22R-05-PH	Doctors Creek						
Aquatic Life	pH	5C			2.32	2008	L
F23E-02-BAC	Mattaponi River						
Recreation	Escherichia coli	5A	1.756			2016	L
F23R-01-BAC	Garnetts Creek						
Recreation	Escherichia coli	5A			2.83	2010	M, 2yr
F23R-03-DO	Walkerton Branch						
Aquatic Life	Oxygen, Dissolved	5C			4.62	2006	L
F23R-03-PH	Walkerton Branch						
Aquatic Life	pH	5C			4.62	2004	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F23R-04-BAC	Aylett Creek						
Recreation	Escherichia coli	5A			6.83	2012	M, 2yr
F23R-04-PH	Aylett Creek						
Aquatic Life	pH	5C			6.83	2012	L
F23R-06-PCB	Mattaponi River						
Fish Consumption	PCB in Fish Tissue	5A	0.159		4.72	2006	L
	PCB in Fish Tissue	5A	6.806			2010	L
	PCB in Fish Tissue	5A			10.98	2010	L
F23R-08-BAC	Dickeys Swamp						
Recreation	Escherichia coli	5A			4.33	2014	L
F23R-09-BAC	Market Swamp						
Recreation	Escherichia coli	5A			2.01	2014	L
F23R-10-BAC	XJG - Dickeys Swamp, UT						
Recreation	Escherichia coli	5A			1.99	2014	L
F23R-11-BAC	Dogwood Fork						
Recreation	Escherichia coli	5A			2.91	2014	L
F23R-12-BAC	XDN - Garnetts Creek, UT						
Recreation	Escherichia coli	5A			2.53	2016	L
F24R-03-BAC	Courthouse Creek						
Recreation	Escherichia coli	5A			0.72	2016	L
F24R-03-DO	Courthouse Creek						
Aquatic Life	Oxygen, Dissolved	5A			0.72	2014	L
F25R-01-DO	Tastine Swamp and Little Tastine Swamp						
Aquatic Life	Oxygen, Dissolved	5C			6.25	2016	L
F25R-02-DO	Tastine Swamp						
Aquatic Life	Oxygen, Dissolved	5C			2.15	2010	L
F26E-01-PCB	York River, Queens Creek, Kings Creek						
Fish Consumption	PCB in Fish Tissue	5A	0.503			2002	L
	PCB in Fish Tissue	5A	57.392			2006	L
F26E-06-SF	Fox Creek						
Shellfishing	Fecal Coliform	5B	0.016			2006	L
F26E-10-SF	Carter Creek						
Shellfishing	Fecal Coliform	5B	0.025			2004	L
	Fecal Coliform	5B	0.023			2012	L
F26L-01-DO	Waller Mill Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		287.70		2006	L
F26R-01-BAC	Carter Creek						
Recreation	Fecal Coliform	5A			3.38	2004	L

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F26R-01-BEN	Carter Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.38	2004	L
F26R-02-BEN	XEA - Bland Creek, UT						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.23	2008	L
F26R-04-BEN	Bird Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.47	2012	L
F27E-06-BAC	York River - Yorktown Beach						
Recreation	Enterococcus	5A	0.024			2016	L
F27E-07-BAC	York River - Gloucester Point Beach						
Recreation	Enterococcus	5A	0.018			2016	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

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2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N01R-01-BAC	Big Horse Creek						
Recreation	Escherichia coli	5A			7.90	2004	M
	Fecal Coliform	5A			7.90	2004	M
N01R-02-BAC	Little Helton Creek						
Recreation	Fecal Coliform	5A			6.30	2004	M
	Escherichia coli	5A			6.30	2010	M
N02R-02-BAC	New River and Grassy Creek						
Recreation	Fecal Coliform	5A			8.92	2004	M
	Escherichia coli	5A			12.56	2010	M
	Escherichia coli	5A			5.98	2012	M
	Escherichia coli	5A			1.13	2014	M
N02R-02-HG	New River						
Fish Consumption	Mercury in Fish Tissue	5A			25.04	2006	L
	Mercury in Fish Tissue	5A			1.47	2008	L
	Mercury in Fish Tissue	5A			3.61	2010	L
N02R-03-BAC	Wilson Creek						
Recreation	Fecal Coliform	5A			8.90	2004	M
	Escherichia coli	5A			8.90	2010	M
N03R-01-BAC	Fox Creek						
Recreation	Fecal Coliform	5A			7.65	2004	M
	Escherichia coli	5A			19.11	2010	M
N04R-02-BAC	Little River						
Recreation	Escherichia coli	5A			6.55	2012	M
N04R-03-BAC	Peach Bottom Creek						
Recreation	Fecal Coliform	5A			2.81	2004	M
	Escherichia coli	5A			2.81	2006	M
	Escherichia coli	5A			13.86	2012	M
	Escherichia coli	5A			5.34	2016	M
N04R-07-BAC	Saddle Creek						
Recreation	Escherichia coli	5A			3.17	2006	M
N05R-01-BEN	Elk Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.38	2008	L
N06R-03-BAC	Meadow Creek & New River						
Recreation	Escherichia coli	5A			5.38	2004	M
	Escherichia coli	5A			10.53	2010	M
	Escherichia coli	5A			5.03	2014	M
N06R-04-BAC	Brush Creek						
Recreation	Escherichia coli	5A			7.29	2014	M

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N07R-01-BAC	Crooked Creek						
Recreation	Fecal Coliform	5A			23.54	2004	M
	Escherichia coli	5A			27.90	2010	M
N07R-01-TEMP	Crooked Creek						
Aquatic Life	Temperature, water	5A			4.36	2010	M
N08R-01-BAC	New River						
Recreation	Fecal Coliform	5A			4.37	2004	M
	Escherichia coli	5A			0.61	2006	M
	Escherichia coli	5A			4.37	2010	M
	Escherichia coli	5A			1.43	2010	M
	Escherichia coli	5A			13.08	2016	M
N08R-03-BAC	Shorts Creek and Unnamed Tributary						
Recreation	Fecal Coliform	5A			7.07	2004	M
	Fecal Coliform	5A			3.88	2006	M
	Escherichia coli	5A			10.95	2010	M
	Escherichia coli	5A			3.31	2012	M
N09R-03-BEN	Dean Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.92	2016	L
N10R-01-TEMP	Reed Creek						
Aquatic Life	Temperature, water	5A			1.43	2012	L
N11R-02-BEN	Reed Creek tributary						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.67	2010	M
N13R-01-BAC	Big Reed Island Creek						
Recreation	Escherichia coli	5A			19.85	2008	M, 2yr
N13R-01-BEN	Big Reed Island Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			19.85	2008	H, 2yr
N13R-02-BAC	Snake Creek						
Recreation	Escherichia coli	5A			3.54	2014	M, 2yr
N14R-01-BAC	Big Reed Island Creek						
Recreation	Fecal Coliform	5A			7.55	2004	H, 2yr
	Escherichia coli	5A			13.81	2010	H, 2yr
	Fecal Coliform	5A			13.81	2014	H, 2yr
N14R-02-BAC	Greasy Creek						
Recreation	Escherichia coli	5A			13.63	2008	H, 2yr
N14R-03-BAC	Big Reed Island Creek						
Recreation	Escherichia coli	5A			9.85	2008	L
N14R-03-BEN	Island Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			13.35	2012	H, 2yr

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N15R-01-BAC	Little Reed Island Creek						
Recreation	Escherichia coli	5A			35.98	2008	H, 2yr
N15R-01-TEMP	Little Reed Island Creek						
Aquatic Life	Temperature, water	5A			19.70	2008	H, 2yr
N16R-01-BAC	Big Macks Creek						
Recreation	Escherichia coli	5A			3.78	2014	H, 2yr
N18R-02-BAC	Connellys Run						
Recreation	Escherichia coli	5A			2.85	2010	H, 2yr
N18R-03-BAC	Plum Creek						
Recreation	Escherichia coli	5A			4.72	2010	H, 2yr
N22R-02-BAC	Stroubles Creek						
Recreation	Escherichia coli	5A			5.08	2006	H, 2yr
	Escherichia coli	5A			2.11	2010	H, 2yr
N22R-04-BAC	Toms Creek						
Recreation	Escherichia coli	5A			6.13	2014	H, 2yr
N22R-04-TEMP	Toms Creek						
Aquatic Life	Temperature, water	5C			5.71	2008	L
	Temperature, water	5C			6.13	2012	L
	Temperature, water	5C			4.56	2014	L
N22R-05-BAC	New River						
Recreation	Escherichia coli	5A			9.78	2016	L
N22R-06-BEN	Unnamed Tributaries XEJ and XEH to Slate Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.51	2008	M
N23R-01-BAC	Sinking Creek						
Recreation	Escherichia coli	5A			21.03	2010	H, 2yr
N25R-01-BAC	Walker Creek						
Recreation	Escherichia coli	5A			33.53	2006	H
	Fecal Coliform	5A			25.07	2006	H
	Escherichia coli	5A			4.40	2010	H
N26R-01-BAC	East Wilderness Creek, Nobusiness Creek and Kimberling Creek						
Recreation	Fecal Coliform	5A			6.83	2002	H
	Escherichia coli	5A			10.23	2010	H
	Escherichia coli	5A			6.83	2014	H
	Escherichia coli	5A			2.53	2016	H
N27R-01-BAC	Little Walker Creek						
Recreation	Escherichia coli	5A			17.48	2006	H, 2yr
N29R-01-BAC	New River						
Recreation	Escherichia coli	5A			13.67	2014	H, 2yr

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N29R-01-PCB	New River, Reed Creek, Claytor Lake, Peak Creek, Stony Creek, Walker Creek, And Unknown Tributary XAG.						
Fish Consumption	PCB in Fish Tissue	5A		295.02	55.92	2002	H
	PCB in Fish Tissue	5A			0.51	2006	H
	PCB in Fish Tissue	5A		4,009.54	34.38	2006	H
	PCB in Fish Tissue	5A			8.37	2010	H
	PCB in Water Column	5A			8.39	2014	H
	PCB in Water Column	5A			3.20	2016	H
	PCB in Water Column	5A			3.49	2016	H
	PCB in Fish Tissue	5A			5.85	2016	H
N30R-01-BAC	Wolf Creek and Tributaries						
Recreation	Fecal Coliform	5A			9.11	2002	H
	Escherichia coli	5A			14.36	2006	H
	Escherichia coli	5A			3.80	2006	H
	Escherichia coli	5A			9.11	2006	H
	Escherichia coli	5A			1.89	2010	H
	Escherichia coli	5A			1.89	2014	H
N30R-01-BEN	Little Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.89	2010	M
N32R-00-BAC	Clear Fork						
Recreation	Escherichia coli	5A			8.94	2012	M
N32R-01-BAC	Wolf Creek						
Recreation	Escherichia coli	5A			5.61	2006	H
	Escherichia coli	5A			16.71	2006	H
N32R-01-TEMP	Wolf Creek						
Aquatic Life	Temperature, water	5C			7.91	2014	M
N33R-01-BAC	Laurel Creek						
Recreation	Fecal Coliform	5A			1.64	2002	H
	Escherichia coli	5A			1.64	2006	H
	Escherichia coli	5A			6.56	2012	H
N33R-01-TEMP	Dry Fork						
Aquatic Life	Temperature, water	5A			5.24	2012	M
N34R-01-BAC	Rich Creek						
Recreation	Escherichia coli	5A			2.85	2008	H, 2yr
N35R-01-BAC	Adair Run						
Recreation	Escherichia coli	5A			0.37	2010	H, 2yr
N36R-01-CDANE	Bluestone River						
Fish Consumption	Chlordane	5A			0.62	2004	L
N36R-01-PCB	Bluestone River						
Fish Consumption	PCB in Fish Tissue	5A			13.62	2002	H, 2yr
	PCB in Water Column	5A			1.48	2010	H, 2yr
	PCB in Water Column	5A			2.99	2012	H, 2yr

2016 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N37R-02-BEN	Laurel Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5C			8.30	2014	L
N37R-02-DO	Laurel Fork						
Aquatic Life	Oxygen, Dissolved	5C			8.30	2010	L

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2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A08R-05-BEN	Dry Mill Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.97	2016	L
A09R-03-BEN	Horsepen Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.17	2016	M
A09R-05-BEN	Beaverdam Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.85	2016	L
A09R-07-BAC	Horsepen Run						
Recreation	Escherichia coli	5A			8.17	2016	L
A15R-01-CHLR	Accotink Creek						
Aquatic Life	Chloride	5A			5.22	2016	L
Wildlife	Chloride	5A			5.22	2016	L
A16R-02-BAC	Pohick Creek						
Recreation	Escherichia coli	5A			2.61	2016	M
A16R-03-BAC	South Run						
Recreation	Escherichia coli	5A			4.16	2016	L
A16R-04-BAC	Middle Run						
Recreation	Escherichia coli	5A			2.85	2016	L
A21R-02-BEN	Bull Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.66	2016	L
A22R-03-BEN	Cub Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.34	2016	M
A25R-05-BAC	Unnamed Tributary to Occoquan River						
Recreation	Escherichia coli	5A			1.11	2016	L
A29R-01-BEN	Unnamed tributary to Long Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.30	2016	L
A32E-09-EBEN	Lower Machodoc Creek						
Aquatic Life	Estuarine Bioassessments	5A	0.687			2016	L
B04R-02-BAC	Sleepy Creek						
Recreation	Escherichia coli	5A			7.72	2016	L
B05R-03-BAC	Isaacs Creek						
Recreation	Escherichia coli	5A			2.84	2016	L
B40R-02-BAC	Flint Run						
Recreation	Escherichia coli	5A			12.58	2016	H
B49R-01-BEN	Stony Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.43	2016	L
B52R-01-PH	Cedar Creek						
Aquatic Life	pH	5A			3.45	2016	M

2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B52R-06-BAC	Gravel Springs						
Recreation	Escherichia coli	5A			3.29	2016	L
B56R-02-BEN	Stephens Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.99	2016	L

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2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
G01R-23-PH	XFU - Pocoshock Creek, UT						
Aquatic Life	pH	5A			3.83	2016	L
G04L-01-BAC	Sunken Meadow Pond						
Recreation	Escherichia coli	5A		172.85		2016	L
G05R-14-BEN	Jordans Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.19	2016	L
G05R-15-DO	XCJ - North Run, UT						
Aquatic Life	Oxygen, Dissolved	5A			0.42	2016	L
G05R-15-PH	XCJ - North Run, UT						
Aquatic Life	pH	5A			0.42	2016	L
G05R-16-BEN	Upham Brook						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			12.15	2016	L
G09R-08-DO	XBY - Beaverdam Creek, UT						
Aquatic Life	Oxygen, Dissolved	5A			1.08	2016	L
G10E-05-EBEN	James River (Oligohaline)						
Aquatic Life	Estuarine Bioassessments	5A	1.129			2016	L
G11L-06-DO	Scotts Factory Pond						
Aquatic Life	Oxygen, Dissolved	5A		14.83		2016	L
G14L-01-PH	Lake Burnt Mills						
Aquatic Life	pH	5A		637.99		2016	L
G15E-03-03-EBEN	Scott Creek						
Aquatic Life	Estuarine Bioassessments	5A	0.194			2016	L
H01R-03-BAC	James River						
Recreation	Escherichia coli	5A			5.36	2016	L
H05R-10-BAC	Archer Creek						
Recreation	Escherichia coli	5A			7.46	2016	L
H05R-11-BAC	Allens Creek						
Recreation	Escherichia coli	5A			7.18	2016	L
H13L-01-DO	Lake Nelson						
Aquatic Life	Oxygen, Dissolved	5A		40.62		2016	L
H14R-01-BEN	Mallorys Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			8.75	2016	L
H16R-05-BAC	Rockfish River UT						
Recreation	Escherichia coli	5A			2.69	2016	L
H21R-02-BEN	Walton Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.99	2016	L

2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
H23L-01-CHLA	Lake Albemarle						
Aquatic Life	Chlorophyll-a	5A		37.01		2016	L
H23L-01-DO	Lake Albemarle						
Aquatic Life	Oxygen, Dissolved	5A		37.01		2016	L
H26R-09-BEN	Little Ivy Creek X-trib						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.44	2016	L
H27R-08-BEN	Preddy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.48	2016	L
H27R-09-BEN	North Fork Rivanna River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.33	2016	L
H27R-10-BEN	Quarter Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.58	2016	L
H31R-05-BAC	Rivanna River						
Recreation	Escherichia coli	5A			8.38	2016	L
H34R-04-BEN	Phils Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.69	2016	L
H36R-03-BEN	Buffalo Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.10	2016	L
H36R-06-BEN	Bigger Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.43	2016	L
H39R-27-BEN	Deep Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.16	2016	L
H39R-28-BEN	Stony Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.35	2016	L
H39R-29-DO	XBH - Reedy Creek, UT						
Aquatic Life	Oxygen, Dissolved	5A			0.11	2016	L
I12R-01-BAC	Cowpasture River						
Recreation	Escherichia coli	5A			8.30	2016	L
I22R-05-BAC	Craig Creek						
Recreation	Escherichia coli	5A			10.70	2016	L
	Escherichia coli	5A			16.86	2016	L
I27R-01-BAC	James River						
Recreation	Escherichia coli	5A			9.52	2016	L
I29R-01-TEMP	Ramseys Draft						
Aquatic Life	Temperature, water	5A			10.29	2016	L
I30R-03-BAC	Hamilton Branch						
Recreation	Escherichia coli	5A			6.28	2016	L

2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
I35R-02-BEN	Mill Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.13	2016	L
J01R-02-BEN	Horsepen Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.00	2016	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E04R-01-TEMP	Hazel River						
Aquatic Life	Temperature, water	5A			3.63	2016	L
E09R-02-PCB	Mountain Run						
Fish Consumption	PCB in Fish Tissue	5A			4.63	2016	L
E10R-04-BAC	Sumerduck Run						
Recreation	Escherichia coli	5A			1.85	2016	L
E20R-03-BEN	Little Falls Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.92	2016	L
E20R-05-PH	Unnamed tributary to Massaponax Creek						
Aquatic Life	pH	5A			1.27	2016	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

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2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L09R-02-BEN	Maggodee Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.42	2016	L
L14R-02-BEN	Storey Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.82	2016	L
L38L-01-DO	Conner Lake						
Aquatic Life	Oxygen, Dissolved	5A		101.92		2016	L
L40R-01-BEN	Berles Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.28	2016	L
L53R-01-TEMP	Smith River						
Aquatic Life	Temperature, water	5A			6.50	2016	L
L53R-05-BEN	Beaver Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.30	2016	L
L53R-06-BEN	Daniels Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.99	2016	L
L53R-07-BEN	Jones Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.36	2016	L
L62R-10-BEN	Sandy Creek, Unnamed Tributary						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.29	2016	L
L63R-01-BEN	Birch Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			20.15	2016	L
L66L-02-PH	Roaring Fork Reservoir						
Aquatic Life	pH	5A		19.58		2016	L
L67R-04-BEN	Bradley Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			6.46	2016	L
L68R-01-BEN	Whitehorn Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			15.10	2016	L
L70R-03-BEN	Bar Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.03	2016	L
L71R-05-BEN	Polecat Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			9.70	2016	L
L73R-03-DO	Peter Creek						
Aquatic Life	Oxygen, Dissolved	5A			6.61	2016	L
L75R-03-BEN	Beech Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.69	2016	L
L78R-03-BEN	Allen Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			15.27	2016	L

2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L79L-02-CHLA	Lake Gordon						
Aquatic Life	Chlorophyll-a	5A		107.48		2016	L
L79R-03-BAC	Miles Creek						
Recreation	Escherichia coli	5A			5.97	2016	L
L81R-03-BAC	Little Poplar Creek						
Recreation	Escherichia coli	5A			6.51	2016	L
L82R-01-BAC	Pea Hill Creek						
Recreation	Escherichia coli	5A			4.86	2016	L
M02R-01-TEMP	Lovills Creek and Stewarts Creek						
Aquatic Life	Temperature, water	5A			2.05	2016	M

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

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2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K08L-02-CHLA	Brunswick Lake						
Aquatic Life	Chlorophyll-a	5A		160.33		2016	L
K08R-04-BAC	UT to Dukes Branch						
Recreation	Escherichia coli	5A			1.71	2016	L
K08R-05-BAC	Dukes Branch						
Recreation	Escherichia coli	5A			2.41	2016	L
K09R-01-BAC	Meherrin River						
Recreation	Escherichia coli	5A			26.75	2016	L
K13R-04-BAC	Flat Swamp						
Recreation	Escherichia coli	5A			8.48	2016	L
K16R-06-BAC	Tommeheton Creek						
Recreation	Escherichia coli	5A			7.84	2016	L
K17R-03-BAC	Waqua Creek						
Recreation	Escherichia coli	5A			5.59	2016	L
K17R-04-BAC	Great Creek						
Recreation	Escherichia coli	5A			5.45	2016	L
K17R-05-BAC	Reedy Creek						
Recreation	Escherichia coli	5A			6.02	2016	L
K17R-06-BAC	Turkey Egg Creek						
Recreation	Escherichia coli	5A			5.64	2016	L
K17R-07-BAC	Waqua Creek						
Recreation	Escherichia coli	5A			1.09	2016	L
K19R-11-BAC	Moores Swamp						
Recreation	Escherichia coli	5A			5.08	2016	L
K21R-06-BAC	Stony Creek						
Recreation	Escherichia coli	5A			2.60	2016	L
K22R-04-BAC	Sappony Creek						
Recreation	Escherichia coli	5A			4.35	2016	L
K24R-04-BAC	Nottoway River						
Recreation	Escherichia coli	5A			15.61	2016	L
K24R-05-BAC	Thweatt Branch Tributaries						
Recreation	Escherichia coli	5A			7.26	2016	L
K36R-07-BAC	Blackwater River - Upper						
Recreation	Escherichia coli	5A			2.47	2016	L
K38R-06-BAC	Somerton Creek						
Recreation	Escherichia coli	5A			9.38	2016	L

2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K40R-04-BAC	Northwest River - Lower (PWS)						
Recreation	Escherichia coli	5A			1.70	2016	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
O01R-01-BAC	South Fork Holston River and Tributaries						
Recreation	Escherichia coli	5A			3.68	2016	H
P06R-01-BEN	Big Cedar Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			4.20	2016	L
P17R-04-BEN	Unnamed tributary to Callahan Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			0.58	2016	L
P18R-01-PH	South Fork Powell River						
Aquatic Life	pH	5A			3.83	2016	L
P20R-01-TEMP	North Fork Powell River						
Aquatic Life	Temperature, water	5A			7.67	2016	M
Q09R-01-BAC	Russell Fork						
Recreation	Escherichia coli	5A			4.12	2016	H, 2yr
Q13R-10-BAC	South Fork Pound River						
Recreation	Escherichia coli	5A			3.44	2016	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

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2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
AO23-01-BAC	Atlantic Ocean Beaches - Croatan						
Recreation	Enterococcus	5A	0.410			2016	L
C03E-17-BAC	Piankatank River						
Recreation	Escherichia coli	5A	1.167			2016	L
C07E-43-BAC	Buckroe Beaches						
Recreation	Enterococcus	5A	0.224			2016	L
C08E-15-BAC	13th View Beach						
Recreation	Enterococcus	5A	0.353			2016	L
C08E-16-BAC	Chicks Beach						
Recreation	Enterococcus	5A	0.433			2016	L
D03R-06-BEN	North Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			3.13	2016	L
D03R-07-BEN	Custis Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.22	2016	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

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2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F03R-02-BEN	Taylors Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			16.54	2016	L
F06R-08-BAC	Duckinghoe Creek						
Recreation	Escherichia coli	5A			6.98	2016	L
F06R-09-BAC	South Fork Hickory Creek						
Recreation	Escherichia coli	5A			4.63	2016	L
F08R-01-TEMP	Contrary Creek						
Aquatic Life	Temperature, water	5A			5.52	2016	L
F15R-02-PH	Unnamed tributary to Cool Spring Lake						
Aquatic Life	pH	5A			1.29	2016	L
F21R-05-BAC	Herring Creek						
Recreation	Escherichia coli	5A			5.09	2016	L
F21R-06-BAC	Mattaponi River						
Recreation	Escherichia coli	5A			8.00	2016	L
F23E-02-BAC	Mattaponi River						
Recreation	Escherichia coli	5A	1.756			2016	L
F23R-12-BAC	XDN - Garnetts Creek, UT						
Recreation	Escherichia coli	5A			2.53	2016	L
F24R-03-BAC	Courthouse Creek						
Recreation	Escherichia coli	5A			0.72	2016	L
F27E-06-BAC	York River - Yorktown Beach						
Recreation	Enterococcus	5A	0.024			2016	L
F27E-07-BAC	York River - Gloucester Point Beach						
Recreation	Enterococcus	5A	0.018			2016	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

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Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters - 303(d) List

Supplemental List of New Impairments in 2016*

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N04R-03-BAC	Peach Bottom Creek						
Recreation	Escherichia coli	5A			5.34	2016	M
N08R-01-BAC	New River						
Recreation	Escherichia coli	5A			13.08	2016	M
N09R-03-BEN	Dean Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			1.92	2016	L
N22R-05-BAC	New River						
Recreation	Escherichia coli	5A			9.78	2016	L
N26R-01-BAC	East Wilderness Creek, Nobusiness Creek and Kimberling Creek						
Recreation	Escherichia coli	5A			2.53	2016	H
N29R-01-PCB	New River, Reed Creek, Claytor Lake, Peak Creek, Stony Creek, Walker Creek, And Unknown Tributary XAG.						
Fish Consumption	PCB in Water Column	5A			3.49	2016	H
	PCB in Fish Tissue	5A			5.85	2016	H
	PCB in Water Column	5A			3.20	2016	H

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

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2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A01R-01-BAC	Piney Run						
Recreation	Escherichia coli	4A			3.94	2006	L
A02R-01-BAC	Catoctin Creek						
Recreation	Escherichia coli	4A			7.49	2006	L
A02R-02-BAC	North Fork Catoctin Creek						
Recreation	Escherichia coli	4A			2.54	2004	L
	Escherichia coli	4A			3.43	2008	L
	Escherichia coli	4A			4.42	2010	L
A02R-03-BAC	South Fork Catoctin Creek						
Recreation	Escherichia coli	4A			11.67	1996	L
	Escherichia coli	4A			3.23	2002	L
	Escherichia coli	4A			3.59	2004	L
A02R-05-BAC	Milltown Creek						
Recreation	Escherichia coli	4A			3.90	2006	L
A02R-06-BAC	Unnamed tributary to Catoctin Creek						
Recreation	Escherichia coli	4A			4.35	2006	L
A03R-01-BAC	Limestone Branch						
Recreation	Escherichia coli	4A			4.92	2002	L
A03R-03-BAC	Unnamed tributary to Limestone Branch						
Recreation	Escherichia coli	4A			1.93	2006	L
A03R-04-BAC	Unnamed tributary to Limestone Branch						
Recreation	Escherichia coli	4A			5.14	2014	L
A04R-01-BAC	Goose Creek						
Recreation	Escherichia coli	4A			4.31	2004	L
A04R-02-BAC	Gap Run						
Recreation	Escherichia coli	4A			3.21	2004	L
A04R-03-BAC	Crooked Run						
Recreation	Escherichia coli	4A			1.85	2010	L
A04R-04-BAC	Bolling Branch						
Recreation	Escherichia coli	4A			3.64	2006	L
A04R-05-BAC	Unnamed tributary to Goose Creek						
Recreation	Escherichia coli	4A			5.91	2014	L
A05R-01-BAC	Cromwells Run						
Recreation	Escherichia coli	4A			6.76	2012	L
	Escherichia coli	4A			3.81	2016	L
A05R-03-BAC	Goose Creek						
Recreation	Escherichia coli	4A			5.42	2006	L
	Escherichia coli	4A			3.27	2016	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A05R-04-BAC	Panther Skin Creek						
Recreation	Escherichia coli	4A			5.27	2006	L
	Escherichia coli	4A			3.91	2012	L
A05R-05-BAC	Jeffries Branch						
Recreation	Escherichia coli	4A			6.19	2016	L
A06R-01-BAC	North Fork Goose Creek						
Recreation	Escherichia coli	4A			4.69	1998	L
	Escherichia coli	4A			2.96	2008	L
A06R-02-BAC	Crooked Run						
Recreation	Escherichia coli	4A			2.16	2014	L
A07R-01-BAC	Beaverdam Creek						
Recreation	Escherichia coli	4A			6.50	2006	L
A07R-02-BAC	North Fork Beaverdam Creek						
Recreation	Escherichia coli	4A			2.60	2006	L
	Escherichia coli	4A			3.15	2012	L
A07R-03-BAC	Beaverdam Creek						
Recreation	Escherichia coli	4A			1.26	2006	L
	Escherichia coli	4A			4.37	2012	L
A08R-01-BAC	Goose Creek						
Recreation	Escherichia coli	4A			4.81	2006	L
A08R-01-BEN	Goose Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.81	1998	L
A08R-02-BAC	Little River						
Recreation	Escherichia coli	4A			2.48	2006	L
	Escherichia coli	4A			10.77	2016	L
A08R-03-BAC	Sycolin Creek						
Recreation	Escherichia coli	4A			3.09	1998	L
	Fecal Coliform	4A			7.98	1998	L
A08R-04-BAC	South Fork Sycolin Creek						
Recreation	Escherichia coli	4A			3.76	2002	L
A08R-05-BAC	Tuscarora Creek						
Recreation	Escherichia coli	4A			3.89	2004	L
A08R-07-BAC	Howsers Branch						
Recreation	Escherichia coli	4A			5.10	2008	L
A08R-08-BAC	Big Branch						
Recreation	Escherichia coli	4A			2.61	2014	L
A08R-09-BAC	Goose Creek						
Recreation	Escherichia coli	4A			2.54	2006	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A10R-01-BAC	Sugarland Run						
Recreation	Escherichia coli	4A			4.88	2002	L
	Escherichia coli	4A			1.06	2006	L
A11R-01-BAC	Difficult Run						
Recreation	Escherichia coli	4A			3.17	2004	L
A11R-01-BEN	Difficult Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.17	1998	L
A11R-02-BAC	Mine Run						
Recreation	Escherichia coli	4A			1.02	2006	L
A11R-03-BAC	Difficult Run						
Recreation	Escherichia coli	4A			3.55	2006	L
	Escherichia coli	4A			2.82	2010	L
A11R-04-BAC	Snakeden Branch						
Recreation	Escherichia coli	4A			0.97	2006	L
A11R-05-BAC	Little Difficult Run						
Recreation	Escherichia coli	4A			1.75	2008	L
A11R-06-BAC	Wolftrap Creek						
Recreation	Escherichia coli	4A			2.72	2008	L
A11R-07-BAC	Captain Hickory Run						
Recreation	Escherichia coli	4A			3.27	2010	L
A12E-01-BAC	Four Mile Run						
Recreation	Escherichia coli	4A	0.050			1996	L
A12E-01-PCB	Potomac River Embayments (FOU downstream until POM)						
Fish Consumption	PCB in Fish Tissue	4A	17.489			2002	L
	PCB in Fish Tissue	4A	1.811			2004	L
	PCB in Fish Tissue	4A	3.919			2006	L
	PCB in Fish Tissue	4A	0.265			2008	L
	PCB in Fish Tissue	4A	0.633			2010	L
	PCB in Water Column	4A	0.529			2010	L
	PCB in Fish Tissue	4A	0.076			2016	L
A12R-01-BAC	Four Mile Run						
Recreation	Escherichia coli	4A			7.96	1994	L
A12R-01-PCB	Pimmit Run						
Fish Consumption	PCB in Fish Tissue	4A			4.40	2006	L
A12R-02-BAC	Pimmit Run						
Recreation	Escherichia coli	4A			7.73	2010	L
A12R-03-BAC	Long Branch						
Recreation	Escherichia coli	4A			1.97	2012	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A12R-04-BAC	Little Pimmit Run						
Recreation	Escherichia coli	4A			2.35	2012	L
A13R-02-BAC	Holmes Run						
Recreation	Escherichia coli	4A			3.58	2004	L
A13R-03-BAC	Hunting Creek						
Recreation	Escherichia coli	4A	0.529			1998	L
A13R-04-BAC	Holmes Run						
Recreation	Escherichia coli	4A			6.09	2012	L
A13R-05-BAC	Backlick Run						
Recreation	Escherichia coli	4A			6.68	2012	L
A13R-06-BAC	Tripps Run						
Recreation	Escherichia coli	4A			3.70	2012	L
A14R-01-PCB	Little Hunting Creek						
Fish Consumption	PCB in Water Column	4A			1.09	2010	L
A15R-01-BAC	Accotink Creek						
Recreation	Escherichia coli	4A			7.47	2004	L
A15R-02-BAC	Accotink Creek						
Recreation	Escherichia coli	4A			5.22	1998	L
A15R-03-BAC	Accotink Creek						
Recreation	Escherichia coli	4A			2.05	2002	L
A15R-06-BAC	Long Branch						
Recreation	Escherichia coli	4A			4.47	2008	L
A17R-01-BAC	Cedar Run						
Recreation	Escherichia coli	4A			15.09	1996	L
	Escherichia coli	4A			13.17	1998	L
A17R-02-BAC	Licking Run						
Recreation	Escherichia coli	4A			6.40	1998	L
A17R-03-BAC	Licking Run						
Recreation	Escherichia coli	4A			7.01	2006	L
A17R-04-BAC	Turkey Run						
Recreation	Escherichia coli	4A			3.61	2006	L
A17R-05-BAC	Cedar Run						
Recreation	Escherichia coli	4A			2.49	2008	L
	Escherichia coli	4A			2.41	2012	L
A17R-06-BAC	Walnut Branch						
Recreation	Escherichia coli	4A			1.69	2008	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A17R-07-BAC	Owl Run						
Recreation	Escherichia coli	4A			5.85	2014	L
A18R-01-BAC	Elk Run						
Recreation	Escherichia coli	4A			2.27	2008	L
A18R-02-BAC	Town Run						
Recreation	Escherichia coli	4A			2.51	2008	L
A18R-03-BAC	Slate Run						
Recreation	Escherichia coli	4A			6.97	2010	L
A19R-01-BAC	Broad Run						
Recreation	Escherichia coli	4A			7.59	2002	L
A19R-02-BAC	Broad Run						
Recreation	Escherichia coli	4A			1.54	2002	L
A19R-03-BAC	Kettle Run						
Recreation	Escherichia coli	4A			7.76	2002	L
A19R-04-BAC	South Run						
Recreation	Escherichia coli	4A			2.34	2012	L
A19R-04-BEN	South Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			2.34	1998	L
A19R-05-BAC	Broad Run						
Recreation	Escherichia coli	4A			1.16	2004	L
	Escherichia coli	4A			1.15	2006	L
A19R-06-BAC	Broad Run						
Recreation	Escherichia coli	4A			2.40	2006	L
A19R-07-BAC	Trapp Branch						
Recreation	Escherichia coli	4A			1.78	2006	L
A19R-08-BAC	Kettle Run						
Recreation	Escherichia coli	4A			3.61	2006	L
	Escherichia coli	4A			2.45	2014	L
A19R-09-BAC	Broad Run						
Recreation	Escherichia coli	4A			4.17	2010	L
A19R-10-BAC	North Fork Broad Run						
Recreation	Escherichia coli	4A			3.66	2016	L
A20R-01-BAC	Occoquan River						
Recreation	Fecal Coliform	4A			1.63	2004	L
	Escherichia coli	4A			3.35	2006	L
A20R-02-BAC	Purcell Branch						
Recreation	Escherichia coli	4A			3.85	2006	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A21R-03-BAC	Catharpin Creek						
Recreation	Escherichia coli	4A			6.80	2008	L
A21R-04-BAC	Youngs Branch						
Recreation	Escherichia coli	4A			6.05	2012	L
A21R-05-BAC	Bull Run						
Recreation	Escherichia coli	4A			4.02	2016	L
A22R-01-BAC	Cub Run						
Recreation	Escherichia coli	4A			6.89	2006	L
A22R-02-BAC	Elklick Run						
Recreation	Escherichia coli	4A			2.27	2006	L
A22R-03-BAC	Flatlick Branch						
Recreation	Escherichia coli	4A			3.22	2014	L
A22R-04-BAC	Big Rocky Run						
Recreation	Escherichia coli	4A			4.34	2014	L
A23R-01-BEN	Bull Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.86	1996	L
A23R-02-BAC	Popes Head Creek						
Recreation	Escherichia coli	4A			5.63	2004	L
A23R-02-BEN	Popes Head Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			5.63	1998	L
A23R-03-BAC	Little Rocky Run						
Recreation	Escherichia coli	4A			5.23	2008	L
A25R-01-PCB	Giles Run						
Fish Consumption	PCB in Water Column	4A			6.48	2010	L
A25R-02-PCB	Mills Branch						
Fish Consumption	PCB in Water Column	4A			1.72	2010	L
A26L-01-PCB	Lake Montclair						
Fish Consumption	PCB in Fish Tissue	4A		103.54		2010	L
A26R-02-BAC	Powells Creek						
Recreation	Escherichia coli	4A			5.37	2006	L
	Escherichia coli	4A			3.91	2014	L
A26R-03-BAC	Quantico Creek						
Recreation	Escherichia coli	4A			1.47	2004	L
A26R-04-BAC	North Branch Chopawamsic Creek						
Recreation	Escherichia coli	4A			7.26	2004	L
A26R-05-BAC	South Fork Quantico Creek						
Recreation	Escherichia coli	4A			4.82	2004	L

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A26R-07-BAC	Unnamed tributary to Potomac River						
Recreation	Escherichia coli	4A			3.67	2010	L
A28R-01-BAC	Austin Run						
Recreation	Escherichia coli	4A			0.85	2004	L
	Escherichia coli	4A			0.69	2014	L
A29R-01-BAC	Accokeek Creek						
Recreation	Escherichia coli	4A			4.48	2002	L
A29R-02-BAC	Potomac Creek						
Recreation	Escherichia coli	4A			2.18	2004	L
	Escherichia coli	4A			1.91	2014	L
A29R-03-BAC	Potomac Run						
Recreation	Escherichia coli	4A			6.59	2006	L
A30E-01-BAC	Williams Creek						
Recreation	Enterococcus	4A	0.135			2010	L
A30E-01-PCB	Coan River, Monroe Creek, Upper Machodoc Creek						
Fish Consumption	PCB in Fish Tissue	4A	2.531			2004	L
	PCB in Fish Tissue	4A	3.453			2006	L
A30E-03-SF	Upper Machodoc Creek						
Shellfishing	Fecal Coliform	4A	0.705			1998	L
	Fecal Coliform	4A	0.135			2012	L
A30E-06-SF	Deep Creek						
Shellfishing	Fecal Coliform	4A	0.030			2002	L
	Fecal Coliform	4A	0.038			2008	L
A30E-07-SF	Upper Machodoc Creek						
Shellfishing	Fecal Coliform	4A	0.049			2014	L
A31E-01-SF	Rosier Creek						
Shellfishing	Fecal Coliform	4A	0.206			1998	L
A31E-01-SF2	Rosier Creek						
Shellfishing	Fecal Coliform	4A	0.274			2006	L
A31E-02-SF	Goldman Creek						
Shellfishing	Fecal Coliform	4A	0.043			2014	L
A31E-03-SF	Monroe Creek						
Shellfishing	Fecal Coliform	4A	0.172			2014	L
A31E-06-BAC	Mattox Creek						
Recreation	Enterococcus	4A	0.706			2006	L
A31E-06-SF	Mattox Creek						
Shellfishing	Fecal Coliform	4A	0.340			1996	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A31E-07-BAC	Popes Creek						
Recreation	Enterococcus	4A	0.576			2006	L
A31E-07-SF	Popes Creek						
Shellfishing	Fecal Coliform	4A	0.576			1998	L
A31R-03-BAC	Popes Creek Watershed						
Recreation	Escherichia coli	4A			29.88	2014	L
A32E-01-SF	Cold Harbor Creek						
Shellfishing	Fecal Coliform	4A	0.083			2004	L
A32E-02-SF	Currioman Creek						
Shellfishing	Fecal Coliform	4A	0.052			1998	L
A32E-04-SF	Nomini Creek, Peirce Creek						
Shellfishing	Fecal Coliform	4A	0.682			1998	L
A32E-04-SF2	Nomini Creek, Peirce Creek						
Shellfishing	Fecal Coliform	4A	0.347			2004	L
A32E-05-SF	Buckner Creek - PARTIAL DELIST						
Shellfishing	Fecal Coliform	4A	0.109			1998	L
A32E-06-SF	North Prong Buckner Creek						
Shellfishing	Fecal Coliform	4A	0.023			1998	L
A32E-08-SF	Lower Machodoc Creek						
Shellfishing	Fecal Coliform	4A	0.457			1998	L
A32E-10-SF	Weatherall Creek						
Shellfishing	Fecal Coliform	4A	0.055			2016	L
A32E-11-SF	Cabin Point Creek						
Shellfishing	Fecal Coliform	4A	0.123			2008	L
A32E-12-SF	Glebe Creek and Aimes Creek						
Shellfishing	Fecal Coliform	4A	0.135			2008	L
A32E-13-SF	Currioman Creek						
Shellfishing	Fecal Coliform	4A	0.020			2008	L
A32E-14-SF	Poor Jack Creek						
Shellfishing	Fecal Coliform	4A	0.147			2008	L
A32E-15-SF	Davis Creek						
Shellfishing	Fecal Coliform	4A	0.026			2008	L
A32E-16-SF	Jules Creek						
Shellfishing	Fecal Coliform	4A	0.045			2008	L
A32E-17-SF	Matthews Cove						
Shellfishing	Fecal Coliform	4A	0.019			2008	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A32E-19-SF	Barnes Creek						
Shellfishing	Fecal Coliform	4A	0.057			2008	L
A32E-21-SF	North Prong Buckner Creek						
Shellfishing	Fecal Coliform	4A	0.032			2008	L
A32R-02-BAC	Lee Creek						
Recreation	Escherichia coli	4A			1.35	2012	L
A32R-04-BAC	XCJ - Jones Branch, UT						
Recreation	Escherichia coli	4A			1.02	2012	L
A32R-05-BAC	Tavern Run						
Recreation	Escherichia coli	4A			3.27	2012	L
A32R-06-BAC	Nontidal Nomini Creek Tributaries						
Recreation	Escherichia coli	4A			9.13	2014	L
A32R-08-BAC	Barnes Creek						
Recreation	Escherichia coli	4A			1.94	2014	L
A33E-01-SF	Gardner Creek						
Shellfishing	Fecal Coliform	4A	0.131			1998	L
A33E-02-BAC	Jackson Creek						
Recreation	Enterococcus	4A	0.137			2012	L
A33E-02-SF	Jackson Creek						
Shellfishing	Fecal Coliform	4A	0.137			1998	L
A33E-03-BAC	Bonum Creek						
Recreation	Enterococcus	4A	0.200			2012	L
A33E-03-SF	Bonum Creek						
Shellfishing	Fecal Coliform	4A	0.200			1998	L
A33E-07-BAC	Hampton Hall Branch						
Recreation	Enterococcus	4A	0.274			2012	L
A33E-07-SF	Hampton Hall Branch, Kinsale Branch						
Shellfishing	Fecal Coliform	4A	0.382			1998	L
	Fecal Coliform	4A	0.052			2016	L
A33E-09-SF	Mill Creek						
Shellfishing	Fecal Coliform	4A	0.119			1998	L
A33E-10-SF	Lodge Creek						
Shellfishing	Fecal Coliform	4A	0.147			1998	L
A33E-12-SF	Shannon Branch						
Shellfishing	Fecal Coliform	4A	0.036			2006	L
A33R-01-BAC	Mill Creek						
Recreation	Escherichia coli	4A			5.00	2010	L

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Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
A33R-03-BAC	Gardner Creek						
Recreation	Escherichia coli	4A			1.40	2012	L
A33R-06-BAC	XMA - Hampton Hall Creek, UT						
Recreation	Escherichia coli	4A			2.07	2014	L
A34E-01-SF	The Glebe						
Shellfishing	Fecal Coliform	4A	0.132			1998	L
A34E-01-SF2	The Glebe						
Shellfishing	Fecal Coliform	4A	0.045			2004	L
A34E-02-SF	Killneck Creek						
Shellfishing	Fecal Coliform	4A	0.027			2014	L
A34E-04-SF	XFJ - Coan River, UT (Cellars Cove)						
Shellfishing	Fecal Coliform	4A	0.032			1998	L
A34E-05-BAC	Coan River						
Recreation	Enterococcus	4A	0.349			2012	L
A34E-05-SF	Headly Cove						
Shellfishing	Fecal Coliform	4A	0.026			1998	L
A34E-05-SF2	Mill Creek and the Coan River - PARTIAL DELIST						
Shellfishing	Fecal Coliform	4A	0.426			1998	L
A34E-07-SF	Cod Creek						
Shellfishing	Fecal Coliform	4A	0.049			1998	L
A34E-08-SF	Cod Creek, UT						
Shellfishing	Fecal Coliform	4A	0.054			1998	L
A34E-09-BAC	Presley Creek						
Recreation	Enterococcus	4A	0.332			2012	L
A34E-09-SF	Presley Creek						
Shellfishing	Fecal Coliform	4A	0.332			1998	L
A34E-11-SF	Cod Creek, Tributary to Little Wicomico River						
Shellfishing	Fecal Coliform	4A	0.012			2014	L
A34E-12-SF	Hull Creek						
Shellfishing	Fecal Coliform	4A	0.252			1998	L
A34E-13-SF	Rogers Creek - PARTIAL DELIST						
Shellfishing	Fecal Coliform	4A	0.035			1998	L
A34E-14-SF	Cubitt Creek						
Shellfishing	Fecal Coliform	4A	0.225			1998	L
A34E-15-SF	Cod Creek, Tributary to Little Wicomico River						
Shellfishing	Fecal Coliform	4A	0.078			1998	L

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A34E-16-SF	Little Wicomico River						
Shellfishing	Fecal Coliform	4A	0.203			1998	L
A34E-16-SF2	Little Wicomico River						
Shellfishing	Fecal Coliform	4A	0.366			2004	L
A34E-17-SF	Bridge Creek						
Shellfishing	Fecal Coliform	4A	0.129			2006	L
A34E-18-SF	Bridge Creek						
Shellfishing	Fecal Coliform	4A	0.089			2006	L
A34E-21-SF	Kingscote Creek						
Shellfishing	Fecal Coliform	4A	0.009			2006	L
A34E-23-SF	Wrights Cove, UT						
Shellfishing	Fecal Coliform	4A	0.046			2014	L
A34E-24-BAC	Spring Cove						
Recreation	Enterococcus	4A	0.010			2010	L
A34E-29-SF	Ellyson Creek						
Shellfishing	Fecal Coliform	4A	0.098			2016	L
A34E-31-BAC	Little Wicomico River						
Recreation	Enterococcus	4A	0.569			2006	L
A34E-33-SF	Bridgemans Back Creek						
Shellfishing	Fecal Coliform	4A	0.055			2008	L
A34E-34-SF	Back Creek						
Shellfishing	Fecal Coliform	4A	0.038			2008	L
A34E-35-SF	Little Wicomico River, UT						
Shellfishing	Fecal Coliform	4A	0.024			2012	L
A34E-36-BAC	Hack Creek						
Recreation	Enterococcus	4A	0.224			2012	L
A34E-36-SF	Hack Creek						
Shellfishing	Fecal Coliform	4A	0.224			2008	L
A34R-04-BAC	Coan Mill Stream						
Recreation	Escherichia coli	4A			2.93	2012	L
B02R-01-BEN	West Strait Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			0.36	1996	L
	Benthic-Macroinvertebrate Bioassessments	4A			0.87	2004	L
B02R-01-DO	West Strait Creek						
Aquatic Life	Oxygen, Dissolved	4A			0.36	2010	L
B02R-02-BEN	Strait Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.29	2002	L

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B06R-02-BAC	Hogue Creek						
Recreation	Fecal Coliform	4A			17.24	2002	L
	Escherichia coli	4A			17.24	2008	L
B08R-01-BAC	Opequon Creek						
Recreation	Escherichia coli	4A			23.21	2004	L
B08R-01-BEN	Opequon Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			23.21	2010	L
B09R-01-BAC	Abrams Creek						
Recreation	Fecal Coliform	4A			11.18	1996	L
	Escherichia coli	4A			11.18	2008	L
B09R-01-BEN	Abrams Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			11.18	1996	L
B09R-02-BAC	Opequon Creek						
Recreation	Fecal Coliform	4A			9.04	1996	L
	Escherichia coli	4A			9.04	2008	L
B09R-02-BEN	Opequon Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			9.04	2004	L
B09R-03-BAC	Lick Run						
Recreation	Escherichia coli	4A			8.21	2006	L
B09R-04-BAC	Redbud Run						
Recreation	Fecal Coliform	4A			8.05	2004	L
	Escherichia coli	4A			8.05	2008	L
B09R-04-BEN	Redbud Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			8.05	2004	L
B10R-01-BEN	Cockran Spring Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			0.58	1996	L
B10R-02-BAC	Middle River						
Recreation	Escherichia coli	4A			17.05	2004	L
	Fecal Coliform	4A			6.86	2006	L
	Escherichia coli	4A			3.49	2008	L
	Escherichia coli	4A			3.37	2010	L
B10R-02-BEN	Middle River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			17.05	1998	L
B10R-03-BAC	Back Creek						
Recreation	Fecal Coliform	4A			9.40	2004	L
	Escherichia coli	4A			9.40	2008	L
B10R-04-BAC	Eidson Creek						
Recreation	Fecal Coliform	4A			8.84	2004	L
	Escherichia coli	4A			8.84	2008	L

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B12R-01-BAC	Lewis Creek						
Recreation	Escherichia coli	4A			10.06	2004	L
B12R-01-BEN	Lewis Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			10.06	1996	L
B13R-01-BAC	Moffett Creek						
Recreation	Fecal Coliform	4A			9.91	1996	L
	Escherichia coli	4A			9.91	2008	L
B13R-01-BEN	Moffett Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			9.91	1996	L
B13R-02-BAC	Elk Run						
Recreation	Fecal Coliform	4A			4.13	2004	L
	Escherichia coli	4A			4.13	2008	L
B14R-01-BAC	Christians Creek						
Recreation	Fecal Coliform	4A			32.95	1996	L
	Escherichia coli	4A			32.95	2004	L
B14R-01-BEN	Christians Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			32.95	2004	L
B14R-02-BAC	Folly Mills Creek						
Recreation	Fecal Coliform	4A			14.14	2004	L
	Escherichia coli	4A			14.14	2012	L
B14R-03-BAC	Long Meadow Run						
Recreation	Escherichia coli	4A			11.06	2006	L
B15R-01-BAC	Middle River						
Recreation	Fecal Coliform	4A			17.85	1996	L
	Escherichia coli	4A			17.85	2008	L
B15R-02-BAC	Polecat Draft						
Recreation	Fecal Coliform	4A			7.90	1996	L
	Escherichia coli	4A			7.90	2004	L
B17R-01-BAC	North River						
Recreation	Fecal Coliform	4A			21.37	1996	L
	Fecal Coliform	4A			3.48	2002	L
	Escherichia coli	4A			15.82	2004	L
	Escherichia coli	4A			7.08	2012	L
	Escherichia coli	4A			5.55	2012	L
	Escherichia coli	4A			3.48	2014	L
B17R-02-BAC	Thorny Branch						
Recreation	Fecal Coliform	4A			7.76	2004	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B18R-04-BAC	Beaver Creek						
Recreation	Fecal Coliform	4A			6.28	2002	L
	Escherichia coli	4A			2.65	2008	L
	Escherichia coli	4A			3.63	2008	L
B18R-05-BAC	Briery Branch						
Recreation	Fecal Coliform	4A			1.47	2004	L
	Escherichia coli	4A			1.47	2014	L
B19R-01-BAC	Mossy Creek						
Recreation	Fecal Coliform	4A			10.46	1996	L
	Escherichia coli	4A			10.46	2004	L
B19R-01-BEN	Mossy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			10.46	1998	L
B21R-01-BAC	Dry River						
Recreation	Fecal Coliform	4A			6.55	1998	L
	Escherichia coli	4A			6.55	2004	L
B21R-02-BAC	Honey Run						
Recreation	Fecal Coliform	4A			4.25	2004	L
B22R-01-BAC	Muddy Creek						
Recreation	Fecal Coliform	4A			11.13	1996	L
	Escherichia coli	4A			11.13	2004	L
B22R-01-BEN	Muddy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			11.13	1996	M
B23R-01-BEN	North River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			15.82	1998	L
B24R-01-BAC	Long Glade Creek						
Recreation	Fecal Coliform	4A			11.22	1998	L
	Escherichia coli	4A			11.22	2008	L
B25R-01-BAC	Cooks Creek						
Recreation	Fecal Coliform	4A			14.37	1996	L
	Escherichia coli	4A			14.37	2004	L
B25R-01-BEN	Cooks Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			14.37	1996	M, 2yr
B25R-02-BAC	Silver Creek						
Recreation	Fecal Coliform	4A			0.20	2002	L
B25R-03-BAC	Sunset Heights Branch						
Recreation	Fecal Coliform	4A			4.74	2004	L
B26R-01-BAC	Blacks Run						
Recreation	Fecal Coliform	4A			11.64	1996	L
	Escherichia coli	4A			11.64	2004	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B26R-01-BEN	Blacks Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			11.64	1996	M, 2yr
B27R-01-BAC	Pleasant Run						
Recreation	Fecal Coliform	4A			6.73	1996	L
	Escherichia coli	4A			6.73	2004	L
B27R-01-BEN	Pleasant Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			6.73	1996	M
B28R-01-BAC	Naked Creek						
Recreation	Fecal Coliform	4A			7.12	1996	L
	Escherichia coli	4A			7.12	2004	L
B28R-02-BAC	North Fork Naked Creek						
Recreation	Escherichia coli	4A			5.24	2012	L
B29R-01-BAC	Congers Creek/Duck Run/Mill Creek						
Recreation	Fecal Coliform	4A			9.11	1996	L
	Escherichia coli	4A			6.24	2004	L
	Fecal Coliform	4A			5.99	2004	L
B29R-01-BEN	Mill Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			6.24	1996	M
B30R-01-BAC	South River						
Recreation	Fecal Coliform	4A			12.42	1996	L
	Escherichia coli	4A			12.42	2008	L
B30R-03-BAC	Pine Run						
Recreation	Escherichia coli	4A			20.38	2006	L
B32R-01-BEN	South River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			7.44	1996	L
	Benthic-Macroinvertebrate Bioassessments	4A			11.55	2008	L
	Benthic-Macroinvertebrate Bioassessments	4A			10.30	2012	L
B32R-02-BAC	South River						
Recreation	Fecal Coliform	4A			24.36	1996	L
	Escherichia coli	4A			14.37	2006	L
	Escherichia coli	4A			2.11	2010	L
	Escherichia coli	4A			18.22	2012	L
	Escherichia coli	4A			5.37	2014	L
B32R-02-HG	South River/South Fork Shenandoah River/North Fork Shenandoah River/Shenandoah River						
Fish Consumption	Mercury in Fish Tissue	4A			118.23	1998	L
	Mercury in Fish Tissue	4A			5.01	2002	L
	Mercury in Fish Tissue	4A			6.60	2006	L
	Mercury in Fish Tissue	4A			24.36	2008	L
B32R-05-BAC	Steele Run						
Recreation	Escherichia coli	4A			3.78	2016	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B33R-01-BAC	South Fork Shenandoah River						
Recreation	Fecal Coliform	4A			16.44	2002	L
	Escherichia coli	4A			16.44	2008	L
B33R-01-BEN	South Fork Shenandoah River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			58.11	1998	L
B34R-01-BAC	Cub Run						
Recreation	Fecal Coliform	4A			14.89	1998	L
	Escherichia coli	4A			14.89	2004	L
B35R-02-BEN	Quail Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			5.12	1998	L
B38R-01-BAC	Mill Creek						
Recreation	Fecal Coliform	4A			7.06	1998	L
	Escherichia coli	4A			7.06	2008	L
B39R-01-BAC	Pass Run						
Recreation	Fecal Coliform	4A			9.47	2002	L
	Escherichia coli	4A			9.47	2004	L
B39R-02-BAC	Hawksbill Creek						
Recreation	Fecal Coliform	4A			12.53	2002	L
	Escherichia coli	4A			12.53	2004	L
	Escherichia coli	4A			7.35	2006	L
B39R-03-BAC	East Hawksbill Creek						
Recreation	Escherichia coli	4A			9.38	2006	L
B41R-01-BAC	Happy Creek						
Recreation	Fecal Coliform	4A			8.54	2004	L
	Escherichia coli	4A			8.54	2014	L
B41R-02-PCB	South Fork Shenandoah River/North Fork Shenandoah River/Shenandoah River						
Fish Consumption	PCB in Fish Tissue	4A			45.64	1998	L
B41R-03-BEN	Happy Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			8.54	2008	L
B44R-01-BAC	Runions Creek						
Recreation	Escherichia coli	4A			14.80	2010	L
B45R-01-BAC	Long Meadow Run						
Recreation	Escherichia coli	4A			9.85	2008	L
B45R-02-BAC	Turley Creek						
Recreation	Fecal Coliform	4A			4.03	2002	L
	Escherichia coli	4A			4.03	2010	L
B45R-03-BAC	Holmans Creek						
Recreation	Fecal Coliform	4A			11.09	1996	L
	Escherichia coli	4A			11.09	2008	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B45R-03-BEN	Holmans Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			11.09	1996	L
B45R-04-BAC	North Fork Shenandoah River						
Recreation	Fecal Coliform	4A			30.31	1996	L
	Escherichia coli	4A			23.79	2008	L
	Fecal Coliform	4A			1.98	2008	L
	Escherichia coli	4A			10.81	2012	L
B46R-01-BAC	Linville Creek						
Recreation	Fecal Coliform	4A			5.38	1996	L
	Fecal Coliform	4A			9.00	1996	L
	Escherichia coli	4A			5.38	2004	L
	Escherichia coli	4A			9.00	2004	L
B46R-01-BEN	Linville Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			5.38	1996	L
	Benthic-Macroinvertebrate Bioassessments	4A			9.00	1996	L
B47R-02-BAC	Mountain Run/Smith Creek/War Branch						
Recreation	Fecal Coliform	4A			35.63	1996	L
	Escherichia coli	4A			6.63	2006	L
	Escherichia coli	4A			33.51	2008	L
	Escherichia coli	4A			10.38	2012	L
B47R-03-BAC	Lacey Spring Branch						
Recreation	Escherichia coli	4A			0.59	2014	L
B47R-03-BEN	Lacey Spring Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			0.59	1998	L
B47R-05-BEN	Smith Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			14.09	1998	L
	Benthic-Macroinvertebrate Bioassessments	4A			6.88	2004	L
	Benthic-Macroinvertebrate Bioassessments	4A			5.44	2006	L
B47R-06-BAC	Dry Fork						
Recreation	Fecal Coliform	4A			10.85	2004	L
	Escherichia coli	4A			10.85	2012	L
B48R-01-BAC	Mill Creek						
Recreation	Fecal Coliform	4A			15.65	2002	L
	Escherichia coli	4A			4.54	2012	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B49R-01-BAC	Stony Creek						
Recreation	Fecal Coliform	4A			1.27	1998	L
	Fecal Coliform	4A			4.58	2002	L
	Fecal Coliform	4A			4.68	2004	L
	Fecal Coliform	4A			3.43	2006	L
	Escherichia coli	4A			10.53	2008	L
	Escherichia coli	4A			3.43	2012	L
B49R-08-BAC	Orkney Springs Run						
Recreation	Escherichia coli	4A			2.19	2012	L
B49R-09-BAC	Stony Creek						
Recreation	Escherichia coli	4A			3.50	2014	L
B50R-02-BAC	Narrow Passage Creek						
Recreation	Fecal Coliform	4A			11.61	2002	L
	Escherichia coli	4A			11.61	2008	L
B50R-04-BAC	North Fork Shenandoah River						
Recreation	Escherichia coli	4A			12.31	2012	L
B50R-05-BAC	Spring Hollow						
Recreation	Escherichia coli	4A			6.39	2012	L
B52R-02-BEN	Orndorff Spring Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			0.23	1998	L
B55R-01-BAC	Manassas Run						
Recreation	Fecal Coliform	4A			15.09	2004	L
	Escherichia coli	4A			15.09	2014	L
B55R-02-BAC	Borden Marsh Run						
Recreation	Escherichia coli	4A			15.68	2006	L
B55R-03-BAC	Willow Brook						
Recreation	Escherichia coli	4A			4.09	2006	L
B56R-01-BAC	Crooked Run						
Recreation	Fecal Coliform	4A			9.22	2002	L
	Escherichia coli	4A			9.22	2008	L
B56R-02-BAC	Stephens Run						
Recreation	Escherichia coli	4A			0.99	2010	L
B56R-03-BAC	West Run						
Recreation	Escherichia coli	4A			8.08	2010	L
B57R-01-BAC	Page Brook Run/Spout Run						
Recreation	Fecal Coliform	4A			4.12	1998	L
	Fecal Coliform	4A			10.97	2004	L
	Escherichia coli	4A			10.97	2004	L
	Escherichia coli	4A			4.12	2010	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
B57R-01-BEN	Spout Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.12	1998	L
B57R-02-BAC	Long Branch						
Recreation	Fecal Coliform	4A			3.87	2004	L
	Escherichia coli	4A			3.87	2008	L
B57R-04-BAC	Roseville Run						
Recreation	Escherichia coli	4A			6.39	2010	L
CB5MH-DO-BAY	Chesapeake Bay segment CB5MH						
Aquatic Life	Oxygen, Dissolved	4A	1.532			2016	L
Deep-Water Aquatic Life	Oxygen, Dissolved	4A	1.532			2016	L
CB5MH-SAV-BAY	Chesapeake Bay segment CB5MH						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	2.708			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	2.708			2006	L
POTMH-DO-BAY	Potomac Mesohaline Embayments						
Aquatic Life	Oxygen, Dissolved	4A	0.176			2002	L
	Oxygen, Dissolved	4A	1.954			2006	L
	Oxygen, Dissolved	4A	0.038			2008	L
	Oxygen, Dissolved	4A	29.687			2014	L
	Oxygen, Dissolved	4A	0.135			2014	L
Deep-Water Aquatic Life	Oxygen, Dissolved	4A	0.448			2006	L
	Oxygen, Dissolved	4A	4.644			2014	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	0.176			2002	L
	Oxygen, Dissolved	4A	1.954			2006	L
	Oxygen, Dissolved	4A	0.038			2008	L
	Oxygen, Dissolved	4A	0.135			2014	L
	Oxygen, Dissolved	4A	29.687			2014	L
POTMH-SAV-BAY	Potomac Mesohaline Embayments						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	31.989			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	31.989			2006	L
POTOH-DO-BAY	Potomac Oligohaline Embayments						
Aquatic Life	Oxygen, Dissolved	4A	0.923			2006	L
	Oxygen, Dissolved	4A	3.389			2006	L
	Oxygen, Dissolved	4A	0.449			2016	L
	Oxygen, Dissolved	4A	3.012			2016	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	3.389			2006	L
	Oxygen, Dissolved	4A	0.923			2006	L
	Oxygen, Dissolved	4A	3.012			2016	L
	Oxygen, Dissolved	4A	0.449			2016	L

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Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
POTTF-DO-BAY	Potomac Tidal Fresh Embayments						
Aquatic Life	Oxygen, Dissolved	4A	16.783			2014	L
	Oxygen, Dissolved	4A	0.076			2016	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	16.783			2014	L
	Oxygen, Dissolved	4A	0.076			2016	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
APPTF-SAV-BAY	Appomattox River						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	2.708			2006	L
	Aquatic Plants (Macrophytes)	4A	0.032			2014	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	2.708			2006	L
	Aquatic Plants (Macrophytes)	4A	0.032			2014	L
EBEMH-DO-BAY	Eastern Branch, Elizabeth River and Indian River						
Aquatic Life	Oxygen, Dissolved	4A	2.292			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	2.292			2006	L
ELIPH-DO-BAY	Chesapeake Bay segment ELIPH (Elizabeth River Mainstem)						
Aquatic Life	Oxygen, Dissolved	4A	8.112			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	8.112			2006	L
G01E-01-BAC	James River						
Recreation	Escherichia coli	4A	1.484			1996	L
	Escherichia coli	4A	4.605			2006	L
	Escherichia coli	4A	0.078			2008	L
G01E-02-CHLA	James River						
Aquatic Life	Chlorophyll-a	4A	5.534			2008	L
Open-Water Aquatic Life	Chlorophyll-a	4A	5.534			2008	L
G01R-01-BAC	Goode Creek						
Recreation	Escherichia coli	4A			1.21	2006	L
G01R-02-BAC	Almond Creek						
Recreation	Escherichia coli	4A			2.10	2006	L
G01R-04-BAC	Falling Creek						
Recreation	Escherichia coli	4A			16.97	2006	L
G01R-05-BAC	Kingsland Creek						
Recreation	Escherichia coli	4A			8.54	2006	L
G01R-06-BAC	Gillies Creek						
Recreation	Escherichia coli	4A			5.88	2008	L
G01R-08-BAC	XSZ - James River, UT (aka No Name Creek)						
Recreation	Escherichia coli	4A			2.22	2008	L
G01R-10-BAC	Pocoshock Creek						
Recreation	Escherichia coli	4A			8.70	2008	L
G01R-11-BAC	Broad Rock Creek						
Recreation	Escherichia coli	4A			3.12	2006	L
G01R-13-BAC	XYA - Almond Creek, UT						
Recreation	Escherichia coli	4A			1.14	2008	L
G01R-14-BAC	Cornelius Creek						
Recreation	Escherichia coli	4A			7.22	2008	L

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James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
G01R-15-BAC	Proctors Creek						
Recreation	Escherichia coli	4A			8.26	2008	L
G01R-16-BAC	Horners Run						
Recreation	Escherichia coli	4A			2.43	2008	L
G01R-17-BAC	Falling Creek, UT						
Recreation	Escherichia coli	4A			2.32	2008	L
G01R-18-BAC	Licking Creek						
Recreation	Escherichia coli	4A			3.24	2008	L
G01R-19-BAC	Stony Run						
Recreation	Escherichia coli	4A			3.16	2008	L
G01R-20-BAC	Reedy Creek						
Recreation	Escherichia coli	4A			3.42	2012	L
G01R-21-BAC	Great Branch						
Recreation	Escherichia coli	4A			4.38	2016	L
G02E-02-CHLA	James River						
Aquatic Life	Chlorophyll-a	4A	25.824			2008	L
Open-Water Aquatic Life	Chlorophyll-a	4A	0.633			2008	L
G02R-01-BAC	Fourmile Creek						
Recreation	Escherichia coli	4A			37.00	2006	L
	Escherichia coli	4A			9.91	2006	L
G02R-05-BAC	Crewes Channel						
Recreation	Escherichia coli	4A			3.24	2008	L
G02R-07-BAC	Western Run						
Recreation	Escherichia coli	4A			1.84	2006	L
G02R-08-BAC	Turkey Island Creek						
Recreation	Escherichia coli	4A			8.85	2014	L
G03E-01-BAC	Bailey Creek (tidal), Cattail Creek (tidal)						
Recreation	Escherichia coli	4A	0.114			1994	L
G03E-04-BAC	James River						
Recreation	Escherichia coli	4A	10.194			2006	L
G03R-02-BAC	Bailey Creek						
Recreation	Escherichia coli	4A			6.47	2008	L
G03R-04-BAC	West Run						
Recreation	Escherichia coli	4A			1.86	2010	L
G03R-07-BAC	Walls Run						
Recreation	Escherichia coli	4A			5.85	2006	L

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James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
G03R-08-BAC	Cattail Creek						
Recreation	Escherichia coli	4A			1.67	2008	L
G03R-09-BAC	Southerly Run						
Recreation	Escherichia coli	4A			2.84	2008	L
G03R-10-BAC	Powell Creek, UT						
Recreation	Escherichia coli	4A			1.72	2008	L
G03R-11-BAC	Courthouse Creek						
Recreation	Escherichia coli	4A			4.39	2014	L
G04R-02-BAC	Upper Chippokes Creek						
Recreation	Escherichia coli	4A			5.61	2008	L
G04R-04-BAC	XBB - Upper Chippokes Creek, UT						
Recreation	Escherichia coli	4A			7.09	2014	L
G04R-05-BAC	Flowerdew Hundred Creek						
Recreation	Escherichia coli	4A			3.68	2016	L
G05R-01-BEN	Chickahominy River, UT - Unnamed Tributary						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			1.17	1996	L
	pH	4A			1.17	2006	L
G05R-02-BAC	Upham Brook Watershed						
Recreation	Escherichia coli	4A			65.30	2006	L
G05R-03-BAC	Chickahominy River						
Recreation	Escherichia coli	4A			14.25	2012	L
	Escherichia coli	4A			2.30	2014	L
G05R-04-BEN	Chickahominy River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			7.08	2010	L
G05R-05-BAC	Stony Run						
Recreation	Escherichia coli	4A			0.21	2010	L
G05R-12-BAC	Upper Stony Run and Tributaries						
Recreation	Escherichia coli	4A			39.87	2012	L
G05R-13-BEN	Allens Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.32	2016	L
G06R-03-BAC	White Oak Swamp						
Recreation	Escherichia coli	4A			6.68	2006	L
G06R-12-BAC	Beaverdam Creek						
Recreation	Escherichia coli	4A			7.64	2006	L
G06R-13-BAC	Boatswain Creek						
Recreation	Escherichia coli	4A			3.75	2006	L

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G06R-14-BAC	Chickahominy River						
Recreation	Escherichia coli	4A			7.45	2008	L
G06R-15-BAC	Chickahominy River						
Recreation	Escherichia coli	4A			11.78	2016	L
G07R-01-BAC	Collins Run						
Recreation	Escherichia coli	4A			4.49	2010	L
G07R-04-BAC	Schiminoe Creek						
Recreation	Escherichia coli	4A			6.22	2012	L
G07R-08-BAC	Chickahominy River						
Recreation	Escherichia coli	4A			11.03	2016	L
G08E-01-BAC	Morris Creek						
Recreation	Enterococcus	4A	0.394			2010	L
G10E-01-BAC	Powhatan Creek/Sandy Bay						
Recreation	Enterococcus	4A	0.204			1998	L
G10E-03-BAC	Mill Creek						
Recreation	Enterococcus	4A	0.075			1998	L
G10E-04-CHLA	James River (Mesohaline and Polyhaline)						
Aquatic Life	Chlorophyll-a	4A	123.068			2008	L
	Chlorophyll-a	4A	0.404			2008	L
	Chlorophyll-a	4A	0.156			2010	L
	Chlorophyll-a	4A	0.060			2016	L
Open-Water Aquatic Life	Chlorophyll-a	4A	0.404			2008	L
	Chlorophyll-a	4A	123.068			2008	L
	Chlorophyll-a	4A	0.156			2010	L
	Chlorophyll-a	4A	0.060			2016	L
G11E-01-BAC	Warwick River - Middle Tidal Portion						
Recreation	Enterococcus	4A	0.075			2008	L
G11E-01-SF	Chuckatuck Creek System						
Shellfishing	Fecal Coliform	4A	0.560			1998	L
G11E-03-BAC	Deep Creek - Lower						
Recreation	Enterococcus	4A	0.100			2006	L
G11E-05-BAC	Pagan River - Upstream of Chalmers Point						
Recreation	Enterococcus	4A	0.300			1998	L
G11E-06-BAC	Lawnes Creek (Tributary to James River)						
Recreation	Enterococcus	4A	0.291			2010	L
G11E-06-SF	Lawnes Creek						
Shellfishing	Fecal Coliform	4A	0.291			1998	L

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G11E-10-SF	Pagan River - Middle						
Shellfishing	Fecal Coliform	4A	1.394			2008	L
G11E-16-SF	Pagan River, Cypress & Jones Creeks & Brewers Creeks						
Shellfishing	Fecal Coliform	4A	0.263			1998	L
G11E-16-SF2	Pagan River - Upstream of Chalmers Point						
Shellfishing	Fecal Coliform	4A	0.300			2008	L
G11E-17-SF	Ballard Creek & Bay, James River - Ballard Swamp Area and Kings Creek & Bay - James River South Shore Tributary						
Shellfishing	Fecal Coliform	4A	0.056			1998	L
G11E-20-SF	Jones Creek - Tributary to Pagan River						
Shellfishing	Fecal Coliform	4A	0.102			2008	L
G11E-22-BAC	Pagan River - Middle						
Recreation	Enterococcus	4A	0.246			2014	L
G11R-01-BAC	Baptist Run						
Recreation	Fecal Coliform	4A			3.15	2004	L
G13E-12-BAC	Bennett Creek, Tributary to Nansemond River						
Recreation	Enterococcus	4A	0.542			2004	L
G13E-12-SF	Bennett, Bleakhorn and Knotts Creek						
Shellfishing	Fecal Coliform	4A	0.677			1998	L
G13E-13-BAC	Nansemond River - Upper						
Recreation	Enterococcus	4A	0.310			1994	L
G13E-13-SF	Burnetts Mill Creek - Tributary to Upper Nansemond R.						
Shellfishing	Fecal Coliform	4A	3.352			1994	L
	Fecal Coliform	4A	0.278			1998	L
G13E-14-SF	Nansemond River Mainstem - Upper, at mouth of Knotts Creek						
Shellfishing	Fecal Coliform	4A	0.467			2010	L
G13E-15-BAC	Knotts Creek - Tributary to E. shore Nansemond R.						
Recreation	Enterococcus	4A	0.122			2014	L
G13E-16-BAC	Nansemond River - Upper Middle						
Recreation	Enterococcus	4A	0.209			2014	L
G13E-17-BAC	Nansemond River - Lower Middle						
Recreation	Enterococcus	4A	2.833			2014	L
G13E-18-BAC	Western Branch - Tributary to Nansemond R.						
Recreation	Enterococcus	4A	0.106			2014	L
G15E-02-02-BAC	Elizabeth River Upper Mainstem, Eastern Branch, Broad Creek, Southern Branch and Paradise Creek Recreation Impairment						
Recreation	Enterococcus	4A	0.916			1998	L
	Enterococcus	4A	0.053			2006	L

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G15E-02-03-BAC	Southern Branch, Elizabeth R. - Middle						
Recreation	Enterococcus	4A	1.074			2016	L
G15E-02-05-BAC	Indian River, tributary of Eastern Branch, Elizabeth River						
Recreation	Enterococcus	4A	0.268			2002	L
G15E-02-06-BAC	Eastern Branch, Elizabeth R. - Lower						
Recreation	Enterococcus	4A	1.015			2006	L
G15E-04-02-BAC	Western Branch, Elizabeth R. - Lower						
Recreation	Enterococcus	4A	1.457			2006	L
G15E-05-02-BAC	Knitting Mill Creek						
Recreation	Enterococcus	4A	0.027			2002	L
G15E-06-03-BAC	Hoffler Creek						
Recreation	Enterococcus	4A	0.053			2008	L
H01R-01-BAC	Reed Creek						
Recreation	Escherichia coli	4A			8.83	2004	L
H02R-01-BAC	Pedlar River						
Recreation	Escherichia coli	4A			9.52	2006	H
	Escherichia coli	4A			1.33	2014	H
	Escherichia coli	4A			5.53	2016	H
H02R-02-BAC	Pedlar River, Upper						
Recreation	Escherichia coli	4A			8.94	2016	L
H03R-01-BAC	Blackwater Creek						
Recreation	Escherichia coli	4A			10.54	2006	H
H03R-02-BAC	Fishing Creek						
Recreation	Escherichia coli	4A			6.32	2008	H
H03R-03-BAC	Ivy Creek						
Recreation	Escherichia coli	4A			21.44	2008	H
H03R-04-BAC	James River						
Recreation	Escherichia coli	4A			10.74	2008	H
	Escherichia coli	4A			8.25	2014	H
H03R-05-BAC	Burton Creek						
Recreation	Escherichia coli	4A			3.47	2006	H
H03R-06-BAC	Judith Creek						
Recreation	Escherichia coli	4A			11.08	2006	H
H03R-07-BAC	Tomahawk Creek						
Recreation	Escherichia coli	4A			6.06	2006	H
H03R-08-BAC	Williams Run						
Recreation	Escherichia coli	4A			6.49	2006	H

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H03R-09-BAC	Dreaming Creek						
Recreation	Escherichia coli	4A			5.04	2008	H
H03R-10-BAC	Burton Creek, Unnamed Tributary						
Recreation	Escherichia coli	4A			3.46	2008	H
H04R-01-BAC	Graham Creek						
Recreation	Fecal Coliform	4A			5.59	2002	H
H04R-02-BAC	Harris Creek						
Recreation	Escherichia coli	4A			8.33	2008	H
H05R-04-BAC	Opossum Creek						
Recreation	Escherichia coli	4A			3.17	2010	H
H05R-05-BAC	Stonewall Creek						
Recreation	Escherichia coli	4A			9.39	2008	L
H06R-01-BAC	Wreck Island Creek						
Recreation	Escherichia coli	4A			9.77	2008	L
	Escherichia coli	4A			9.77	2010	L
H06R-01-BEN	Phelps Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			2.21	2010	L
H06R-02-BAC	North Creek						
Recreation	Escherichia coli	4A			5.87	2010	L
H07R-01-BAC	Bent Creek						
Recreation	Escherichia coli	4A			13.82	2008	L
H09R-01-BEN	Montebello Spring Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			0.13	1998	L
H09R-02-BAC	Hat Creek						
Recreation	Fecal Coliform	4A			9.51	2004	L
	Escherichia coli	4A			9.51	2010	L
H09R-03-BAC	Tye River						
Recreation	Escherichia coli	4A			8.40	2006	L
	Escherichia coli	4A			8.24	2008	L
H10R-01-BAC	Piney River						
Recreation	Escherichia coli	4A			6.89	2008	L
	Escherichia coli	4A			6.50	2010	L
H11R-01-BAC	Buffalo River						
Recreation	Escherichia coli	4A			3.66	2006	L
	Escherichia coli	4A			9.85	2010	L
	Escherichia coli	4A			4.26	2014	L
H11R-01-BEN	Long Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.59	2008	L

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H11R-02-BAC	Mill Creek						
Recreation	Escherichia coli	4A			4.15	2008	L
H11R-02-BEN	Buffalo River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			2.09	2008	L
H12R-01-BAC	Rutledge Creek						
Recreation	Escherichia coli	4A			3.32	2012	L
H12R-03-BAC	Buffalo River						
Recreation	Escherichia coli	4A			2.34	2008	L
	Escherichia coli	4A			5.46	2008	L
H12R-04-BAC	Turner Creek						
Recreation	Escherichia coli	4A			4.49	2008	L
H12R-05-BAC	Rutledge Creek						
Recreation	Escherichia coli	4A			4.16	2014	L
H13R-01-BAC	Rucker Run						
Recreation	Fecal Coliform	4A			18.35	2004	L
	Escherichia coli	4A			18.35	2012	L
H13R-02-BAC	Bobs Creek						
Recreation	Escherichia coli	4A			4.34	2014	L
H15R-01-BAC	South Fork Rockfish River						
Recreation	Fecal Coliform	4A			11.55	2004	L
	Escherichia coli	4A			11.55	2008	L
H15R-02-BAC	North Fork Rockfish River						
Recreation	Escherichia coli	4A			7.18	2006	L
H15R-03-BAC	Taylor Creek						
Recreation	Escherichia coli	4A			4.99	2012	L
H15R-04-BAC	Goodwin Creek						
Recreation	Escherichia coli	4A			2.55	2016	L
H16R-01-BAC	Rockfish River						
Recreation	Escherichia coli	4A			5.77	2006	L
H17R-01-BAC	Totier Creek						
Recreation	Fecal Coliform	4A			10.31	2002	L
	Escherichia coli	4A			9.60	2008	L
H17R-03-BAC	Ballinger Creek						
Recreation	Escherichia coli	4A			10.08	2008	L
H18R-01-BAC	North Fork Hardware River						
Recreation	Fecal Coliform	4A			11.34	2004	H
	Escherichia coli	4A			11.34	2008	H

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H18R-02-BAC	South Branch North Fork Hardware River & Tributaries						
Recreation	Escherichia coli	4A			24.01	2008	H
	Escherichia coli	4A			1.76	2012	H
H19R-01-BAC	Hardware River						
Recreation	Fecal Coliform	4A			23.24	2002	H
	Escherichia coli	4A			23.24	2008	H
H20R-01-BAC	Bear Garden Creek						
Recreation	Escherichia coli	4A			9.58	2010	L
H20R-02-BEN	North Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.32	2008	L
H21R-01-BAC	Horsepen Creek						
Recreation	Escherichia coli	4A			5.86	2016	L
H21R-03-BAC	North River						
Recreation	Escherichia coli	4A			5.43	2008	L
H21R-04-BAC	Slate River						
Recreation	Escherichia coli	4A			6.69	2008	L
	Escherichia coli	4A			6.25	2012	L
H21R-06-BAC	Grease Creek						
Recreation	Escherichia coli	4A			10.73	2008	L
H22R-01-BAC	Slate River						
Recreation	Escherichia coli	4A			9.04	2008	L
	Escherichia coli	4A			7.15	2012	L
H22R-02-BAC	Muddy Creek						
Recreation	Escherichia coli	4A			6.76	2008	L
H22R-03-BAC	Turpin Creek						
Recreation	Escherichia coli	4A			7.30	2008	L
H22R-04-BAC	Hunts Creek						
Recreation	Escherichia coli	4A			11.48	2014	L
H23R-03-BAC	Mechums River						
Recreation	Escherichia coli	4A			11.18	2006	L
	Escherichia coli	4A			15.16	2012	L
H27R-03-BAC	Preddy Creek						
Recreation	Escherichia coli	4A			7.48	2006	L
	Escherichia coli	4A			6.24	2010	L
H27R-04-BAC	North Fork Rivanna River						
Recreation	Escherichia coli	4A			10.54	2006	L
	Escherichia coli	4A			7.33	2010	L

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H28R-01-BEN	Rivanna River/Moores Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			5.48	1996	L
	Benthic-Macroinvertebrate Bioassessments	4A			5.91	2006	L
	Benthic-Macroinvertebrate Bioassessments	4A			0.54	2008	L
H28R-02-BAC	Moores Creek						
Recreation	Fecal Coliform	4A			6.86	2002	L
	Escherichia coli	4A			6.86	2008	L
H28R-03-BAC	Meadow Creek						
Recreation	Fecal Coliform	4A			4.98	2002	L
	Escherichia coli	4A			4.98	2008	L
H28R-06-BAC	Rivanna River						
Recreation	Escherichia coli	4A			5.48	2006	L
H33R-01-BAC	Solomons Creek						
Recreation	Escherichia coli	4A			4.05	2010	L
H33R-03-BAC	Sallee Creek						
Recreation	Escherichia coli	4A			7.08	2014	L
H33R-04-BAC	XAQ - Deep Creek, UT						
Recreation	Escherichia coli	4A			3.18	2016	L
H33R-05-BAC	Davis Creek						
Recreation	Escherichia coli	4A			7.68	2012	L
H33R-06-BAC	James River						
Recreation	Escherichia coli	4A			23.08	2016	L
H34R-01-BAC	Byrd Creek						
Recreation	Escherichia coli	4A			19.36	2008	L
H34R-03-BAC	Venable Creek						
Recreation	Escherichia coli	4A			8.06	2008	L
H34R-04-BAC	Phils Creek						
Recreation	Escherichia coli	4A			6.69	2008	L
H34R-05-BAC	Mill Creek						
Recreation	Escherichia coli	4A			5.99	2008	L
H35R-01-BAC	Willis River						
Recreation	Fecal Coliform	4A			12.25	2004	L
	Escherichia coli	4A			10.34	2012	L
	Escherichia coli	4A			12.25	2016	L
H35R-02-BAC	Willis River, Unnamed Tributary						
Recreation	Fecal Coliform	4A			1.68	2004	L
H35R-03-BAC	Little Willis River						
Recreation	Escherichia coli	4A			6.13	2008	L

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H35R-04-BAC	Whispering Creek						
Recreation	Escherichia coli	4A			13.46	2014	L
H36R-01-BAC	Willis River						
Recreation	Escherichia coli	4A			4.83	2006	L
	Escherichia coli	4A			12.97	2006	L
	Escherichia coli	4A			15.20	2010	L
H36R-02-BAC	Randolph Creek						
Recreation	Escherichia coli	4A			11.80	2006	L
H36R-04-BAC	Hatcher Creek						
Recreation	Escherichia coli	4A			10.18	2010	L
H36R-05-BAC	Reynolds Creek						
Recreation	Escherichia coli	4A			6.84	2012	L
H37R-01-BAC	Big Lickinghole, Little Lickinghole, & White Hall Creeks						
Recreation	Escherichia coli	4A			22.53	2008	L
H37R-02-BAC	Tarred Rat Creek						
Recreation	Escherichia coli	4A			3.30	2008	L
H38R-01-BAC	Little Creek						
Recreation	Escherichia coli	4A			0.65	2012	L
H38R-02-BAC	Mohawk Creek						
Recreation	Escherichia coli	4A			4.69	2012	L
H38R-03-BAC	Beaverdam Creek						
Recreation	Escherichia coli	4A			8.74	2008	L
H38R-05-BAC	XVV - UT to XNH (James River, UT)						
Recreation	Fecal Coliform	4A			0.41	2004	L
H38R-06-BAC	Courthouse Creek						
Recreation	Escherichia coli	4A			10.33	2006	L
H39R-02-BAC	Tuckahoe Creek and Major Tributaries						
Recreation	Escherichia coli	4A			10.18	2002	L
	Fecal Coliform	4A			5.05	2004	L
	Escherichia coli	4A			7.70	2006	L
	Escherichia coli	4A			1.49	2012	L
	Escherichia coli	4A			8.97	2014	L
H39R-04-BAC	Rattlesnake Creek						
Recreation	Escherichia coli	4A			2.23	2010	L
H39R-06-BAC	Reedy Creek						
Recreation	Escherichia coli	4A			3.80	2006	L
H39R-07-BAC	XZE - James River, UT						
Recreation	Escherichia coli	4A			1.30	2010	L

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H39R-08-BAC	James River						
Recreation	Escherichia coli	4A			3.88	2006	L
H39R-10-BAC	Bernards Creek						
Recreation	Escherichia coli	4A			8.12	2008	L
H39R-12-BAC	Salles Creek						
Recreation	Escherichia coli	4A			1.96	2010	L
H39R-13-BAC	Genito Creek						
Recreation	Escherichia coli	4A			6.81	2008	L
H39R-14-BAC	Jones Creek						
Recreation	Escherichia coli	4A			8.19	2012	L
H39R-18-BAC	XHP - Tuckahoe Creek, UT						
Recreation	Escherichia coli	4A			1.73	2006	L
H39R-20-BAC	Norwood Creek						
Recreation	Escherichia coli	4A			6.36	2012	L
H39R-21-BAC	XAB - Salles Creek, UT						
Recreation	Escherichia coli	4A			0.10	2012	L
H39R-22-BAC	Manchester Canal						
Recreation	Escherichia coli	4A			0.85	2012	L
H39R-23-BAC	Michauk Creek						
Recreation	Escherichia coli	4A			4.48	2012	L
H39R-25-BAC	XCK - Reedy Creek, UT (aka Crooked Branch)						
Recreation	Escherichia coli	4A			1.25	2014	L
H39R-29-BAC	XBH - Reedy Creek, UT						
Recreation	Escherichia coli	4A			0.11	2016	L
I09R-01-BEN	Jackson River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			14.73	1996	L
I14R-01-BEN	Pheasanty Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			0.41	1998	L
I26R-01-BAC	Looney Creek Drainage						
Recreation	Escherichia coli	4A			2.66	1998	L
I26R-02-BAC	Ellis Run and Mill Creek						
Recreation	Escherichia coli	4A			10.58	2004	L
I28R-01-BAC	Cedar Creek						
Recreation	Fecal Coliform	4A			12.10	2002	L
	Escherichia coli	4A			12.10	2010	L
I32R-01-BEN	Wallace Mill Stream						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			0.91	1998	L

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I32R-02-BEN	Little Calfpasture River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			0.80	1996	L
I34R-01-BAC	Hays Creek/Moffatts Creek						
Recreation	Fecal Coliform	4A			11.94	1998	L
	Fecal Coliform	4A			8.85	2004	L
	Escherichia coli	4A			20.79	2008	L
I34R-03-BAC	Walker Creek						
Recreation	Escherichia coli	4A			8.79	2006	L
I34R-04-BAC	Otts Creek						
Recreation	Escherichia coli	4A			5.39	2006	L
I38R-01-BAC	Buffalo Creek						
Recreation	Fecal Coliform	4A			3.96	2004	L
	Fecal Coliform	4A			12.13	2006	L
	Escherichia coli	4A			3.96	2008	L
	Escherichia coli	4A			12.13	2010	L
I38R-02-BAC	Colliers Creek						
Recreation	Fecal Coliform	4A			15.11	2006	L
	Escherichia coli	4A			15.11	2010	L
I38R-02-BEN	Colliers Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			15.11	2010	L
I38R-03-BAC	South Fork Buffalo Creek						
Recreation	Escherichia coli	4A			14.47	2010	L
I38R-04-BAC	North Fork Buffalo Creek						
Recreation	Escherichia coli	4A			7.57	2012	L
J01R-01-BAC	Appomattox River						
Recreation	Fecal Coliform	4A			4.72	2004	L
	Escherichia coli	4A			39.00	2006	L
	Escherichia coli	4A			35.55	2006	L
	Escherichia coli	4A			12.09	2006	L
	Escherichia coli	4A			6.55	2014	L
J01R-02-BAC	Horsepen Creek						
Recreation	Escherichia coli	4A			4.00	2010	L
J01R-03-BAC	Suanee Creek						
Recreation	Escherichia coli	4A			6.31	2006	L
J01R-04-BAC	Vaughans Creek						
Recreation	Escherichia coli	4A			4.31	2006	L
	Escherichia coli	4A			8.60	2010	L
J01R-05-BAC	Gross Creek						
Recreation	Escherichia coli	4A			1.91	2008	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
J01R-06-BAC	Gross Creek, UT						
Recreation	Escherichia coli	4A			0.64	2008	L
J01R-07-BAC	Plum Creek						
Recreation	Escherichia coli	4A			3.75	2008	L
J01R-08-BAC	South Fork Appomattox River						
Recreation	Escherichia coli	4A			5.79	2010	L
J01R-09-BAC	Crane Creek						
Recreation	Escherichia coli	4A			5.18	2010	L
J01R-10-BAC	Fishpond Creek						
Recreation	Escherichia coli	4A			9.49	2010	L
J01R-11-BAC	Rough Creek						
Recreation	Escherichia coli	4A			6.50	2010	L
J01R-12-BAC	Ducker Creek						
Recreation	Escherichia coli	4A			5.74	2012	L
J01R-13-BAC	Appomattox River						
Recreation	Escherichia coli	4A			7.90	2014	L
J02R-01-BAC	Spring Creek						
Recreation	Escherichia coli	4A			7.86	2006	L
J02R-02-BAC	Buffalo Creek						
Recreation	Escherichia coli	4A			11.03	2006	L
	Escherichia coli	4A			5.22	2014	L
J03R-01-BAC	Little Sandy Creek						
Recreation	Escherichia coli	4A			3.27	2006	L
J03R-05-BAC	Sandy River						
Recreation	Escherichia coli	4A			3.43	2008	L
J04R-01-BAC	Bush River						
Recreation	Escherichia coli	4A			4.40	2006	L
	Escherichia coli	4A			0.80	2008	L
J04R-02-BAC	Bush River, Upper						
Recreation	Escherichia coli	4A			11.48	2016	L
J05R-01-BAC	Briery Creek						
Recreation	Escherichia coli	4A			10.48	2006	L
J05R-02-BAC	Tanyard Branch						
Recreation	Escherichia coli	4A			0.46	2006	L
J06R-01-BAC	Angola Creek						
Recreation	Escherichia coli	4A			6.97	2006	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
J06R-03-BAC	Horsepen Creek						
Recreation	Escherichia coli	4A			3.99	2006	L
J06R-04-BAC	Saylers Creek						
Recreation	Escherichia coli	4A			5.13	2004	L
J06R-05-BAC	Big Guinea Creek						
Recreation	Escherichia coli	4A			8.72	2006	L
J06R-06-BAC	Little Saylers Creek						
Recreation	Escherichia coli	4A			6.78	2006	L
J06R-07-BAC	Stock Creek						
Recreation	Escherichia coli	4A			8.69	2006	L
J06R-08-BAC	Green Creek						
Recreation	Escherichia coli	4A			5.14	2008	L
J06R-09-BAC	Sandy Creek						
Recreation	Escherichia coli	4A			8.29	2016	L
J07R-02-BAC	Rocky Ford Creek(NESTED)						
Recreation	Escherichia coli	4A			5.72	2008	L
J07R-03-BAC	Butterwood Creek(NESTED)						
Recreation	Escherichia coli	4A			5.62	2010	L
J08R-01-BAC	Flat Creek						
Recreation	Escherichia coli	4A			4.09	2006	L
J08R-02-BAC	Flat Creek						
Recreation	Escherichia coli	4A			29.89	2008	L
J09R-01-BAC	Nibbs Creek						
Recreation	Escherichia coli	4A			5.46	2006	L
J09R-02-BAC	Nibbs Creek(NESTED)						
Recreation	Escherichia coli	4A			0.63	2010	L
J09R-03-BAC	Nibbs Creek						
Recreation	Escherichia coli	4A			5.86	2012	L
J10R-03-BAC	Smacks Creek						
Recreation	Escherichia coli	4A			9.06	2010	L
J11R-03-BAC	Bland Creek(NESTED)						
Recreation	Escherichia coli	4A			6.51	2012	L
J11R-04-BAC	Cellar Creek(NESTED)						
Recreation	Escherichia coli	4A			10.96	2010	L
	Escherichia coli	4A			2.70	2016	L
J11R-05-BAC	Woody Creek(NESTED)						
Recreation	Escherichia coli	4A			7.97	2010	L

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James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
J11R-06-BAC	Lees Creek(NESTED)						
Recreation	Escherichia coli	4A			3.31	2010	L
J11R-07-BAC	UT to Winningham Creek(easternmost)(NESTED)						
Recreation	Escherichia coli	4A			2.16	2010	L
J11R-08-BAC	Beaverpond Creek(NESTED)						
Recreation	Escherichia coli	4A			6.47	2012	L
J11R-09-BAC	Sweathouse Creek(NESTED)						
Recreation	Escherichia coli	4A			11.41	2012	L
J11R-10-BAC	Winningham Creek(NESTED)						
Recreation	Escherichia coli	4A			5.93	2012	L
J11R-11-BAC	UT to Winningham Creek(West)(NESTED)						
Recreation	Escherichia coli	4A			2.07	2012	L
J11R-12-BAC	Deep Creek(NESTED)						
Recreation	Escherichia coli	4A			1.65	2010	L
J11R-13-BAC	Rocky Run						
Recreation	Escherichia coli	4A			3.42	2012	L
J11R-14-BAC	West Creek(NESTED)						
Recreation	Escherichia coli	4A			7.36	2006	L
J12R-01-BAC	Winticomack Creek(NESTED)						
Recreation	Escherichia coli	4A			4.07	2010	L
J12R-08-BAC	Appomattox River						
Recreation	Escherichia coli	4A			8.77	2008	L
J14R-03-BAC	Whipponock Creek(NESTED)						
Recreation	Escherichia coli	4A			6.82	2010	L
J15E-01-BAC	Appomattox River						
Recreation	Escherichia coli	4A	0.113			1998	L
	Escherichia coli	4A	2.064			2008	L
	Escherichia coli	4A	0.507			2016	L
J15R-02-BAC	Oldtown Creek(NESTED)						
Recreation	Fecal Coliform	4A			4.22	2006	L
J15R-03-BAC	Harrison Creek(NESTED)						
Recreation	Escherichia coli	4A			3.22	2006	L
J15R-04-BAC	Poor Creek(NESTED)						
Recreation	Fecal Coliform	4A			3.13	2004	L
J15R-06-BAC	Lieutenant Run(NESTED)						
Recreation	Escherichia coli	4A			3.50	2008	L

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James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
J15R-07-BAC	Ashton Creek(NESTED)						
Recreation	Escherichia coli	4A			7.80	2006	L
J15R-09-BAC	Cattail Run						
Recreation	Escherichia coli	4A			4.26	2012	L
J16R-01-BAC	Swift Creek						
Recreation	Escherichia coli	4A			1.80	2006	L
J17E-01-BAC	Swift Creek						
Recreation	Escherichia coli	4A	0.087			2006	L
J17L-02-BAC	Lakeview Reservoir (NESTED)						
Recreation	Escherichia coli	4A		43.50		2016	L
J17R-04-BAC	Swift Creek						
Recreation	Escherichia coli	4A			5.12	2006	L
J17R-12-BAC	Licking Creek(NESTED)						
Recreation	Escherichia coli	4A			0.46	2010	L
JMSMH-SAV-BAY	Chesapeake Bay segment JMSMH						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	106.784			2006	L
	Aquatic Plants (Macrophytes)	4A	11.726			2014	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	106.784			2006	L
	Aquatic Plants (Macrophytes)	4A	11.726			2014	L
JMSTFL-SAV-BAY	James River Tidal Freshwater (Lower) Estuary						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	29.026			2006	L
	Aquatic Plants (Macrophytes)	4A	0.042			2008	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	29.026			2006	L
	Aquatic Plants (Macrophytes)	4A	0.042			2008	L
JMSTFU-SAV-BAY	James River Tidal Freshwater (Upper) Estuary						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	7.746			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	7.746			2006	L
LAFMH-DO-BAY	Chesapeake Bay segment LAFMH (Lafayette River)						
Aquatic Life	Oxygen, Dissolved	4A	2.174			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	2.174			2006	L
SBEMH-DO-BAY	Chesapeake Bay segment SBEMH (Southern Branch, Elizabeth River)						
Aquatic Life	Oxygen, Dissolved	4A	3.205			2006	L
Deep-Water Aquatic Life	Oxygen, Dissolved	4A	2.443			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	3.205			2006	L
WBEMH-DO-BAY	Chesapeake Bay segment WBEMH (Western Branch, Elizabeth River)						
Aquatic Life	Oxygen, Dissolved	4A	2.814			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	2.814			2006	L

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James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
CRRMH-DO-BAY	Corrotoman River Mesohaline Estuary (CRRMH)						
Aquatic Life	Oxygen, Dissolved	4A	3.769			1998	L
	Oxygen, Dissolved	4A	5.434			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	3.769			1998	L
	Oxygen, Dissolved	4A	5.434			2006	L
CRRMH-SAV-BAY	Corrotoman River Mesohaline Estuary (CRRMH)						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	9.203			2012	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	9.203			2012	L
E01R-01-BAC	Thumb Run						
Recreation	Escherichia coli	4A			7.67	2010	L
E01R-02-BAC	Thumb Run, West Branch						
Recreation	Escherichia coli	4A			12.08	2002	L
E01R-03-BAC	Rappahannock River						
Recreation	Escherichia coli	4A			2.27	2002	L
E01R-04-BAC	Thumb Run, East Branch						
Recreation	Escherichia coli	4A			6.59	2004	L
E01R-05-BAC	Fiery Run						
Recreation	Escherichia coli	4A			9.38	2010	L
E01R-06-BAC	Jordan River						
Recreation	Escherichia coli	4A			7.05	2012	L
E01R-07-BAC	Buck Run						
Recreation	Escherichia coli	4A			9.76	2016	L
E02R-01-BAC	Carter Run						
Recreation	Escherichia coli	4A			3.62	1998	L
	Escherichia coli	4A			8.76	2006	L
E02R-02-BAC	Great Run						
Recreation	Escherichia coli	4A			16.65	2004	L
E02R-03-BAC	Rappahannock River						
Recreation	Escherichia coli	4A			7.04	2006	L
E02R-04-BAC	Barrows Run						
Recreation	Escherichia coli	4A			4.52	2006	L
E02R-05-BAC	South Run						
Recreation	Escherichia coli	4A			4.09	2006	L
E02R-06-BAC	Carter Run						
Recreation	Escherichia coli	4A			1.63	2006	L
E02R-07-BAC	Glascock Run						
Recreation	Escherichia coli	4A			3.81	2012	L

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Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E02R-08-BAC	Rappahannock River						
Recreation	Escherichia coli	4A			1.42	2016	L
E03R-01-BAC	Hughes River						
Recreation	Escherichia coli	4A			3.84	2004	L
E03R-02-BAC	Popham Run						
Recreation	Escherichia coli	4A			2.21	2012	L
E04R-01-BAC	Hazel River						
Recreation	Escherichia coli	4A			5.77	2002	L
	Escherichia coli	4A			10.12	2006	L
	Fecal Coliform	4A			0.83	2006	L
	Escherichia coli	4A			3.63	2016	L
E04R-02-BAC	Blackwater Creek						
Recreation	Escherichia coli	4A			8.97	2010	L
E05R-01-BAC	Rush River						
Recreation	Escherichia coli	4A			5.86	2002	L
E05R-02-BAC	Thornton River						
Recreation	Escherichia coli	4A			3.45	2006	L
E05R-03-BAC	Big Branch						
Recreation	Escherichia coli	4A			3.04	2010	L
E05R-04-BAC	Rush River						
Recreation	Escherichia coli	4A			3.35	2014	L
E06R-01-BAC	Thornton River						
Recreation	Escherichia coli	4A			5.52	2006	L
E06R-02-BAC	Battle Run						
Recreation	Escherichia coli	4A			2.23	2008	L
E06R-03-BAC	Unnamed tributary to Thornton River						
Recreation	Escherichia coli	4A			5.02	2012	L
E07R-01-BAC	Muddy Run						
Recreation	Escherichia coli	4A			6.09	1996	L
	Escherichia coli	4A			8.25	2002	L
E07R-02-BAC	Hazel River						
Recreation	Escherichia coli	4A			3.36	2006	L
E08R-01-BAC	Marsh Run						
Recreation	Escherichia coli	4A			2.32	1996	L
	Escherichia coli	4A			6.01	2012	L
E08R-02-BAC	Browns Run						
Recreation	Escherichia coli	4A			2.54	2002	L

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Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E08R-03-BAC	Craig Run						
Recreation	Escherichia coli	4A			3.72	2004	L
E08R-04-BAC	Rappahannock River						
Recreation	Escherichia coli	4A			2.11	2004	L
E08R-05-BAC	Rappahannock River						
Recreation	Escherichia coli	4A			2.85	2006	L
E08R-06-BAC	Tinpot Run						
Recreation	Escherichia coli	4A			1.28	2008	L
E08R-07-BAC	Marsh Run						
Recreation	Escherichia coli	4A			3.87	2008	L
E09R-01-BAC	Mountain Run						
Recreation	Escherichia coli	4A			7.58	1996	L
E09R-02-BAC	Mountain Run						
Recreation	Escherichia coli	4A			6.65	2010	L
	Escherichia coli	4A			4.63	2016	L
E09R-03-BAC	Mountain Run						
Recreation	Escherichia coli	4A			1.63	2006	L
E09R-04-BAC	Jonas Run						
Recreation	Escherichia coli	4A			3.78	2008	L
E09R-05-BAC	Flat Run						
Recreation	Escherichia coli	4A			6.23	2014	L
E10R-01-BAC	Deep Run						
Recreation	Escherichia coli	4A			4.93	1996	L
	Fecal Coliform	4A			3.02	2006	L
	Escherichia coli	4A			3.75	2014	L
E10R-03-BAC	Alcotti Run						
Recreation	Escherichia coli	4A			5.16	2012	L
E11R-01-BAC	Garth Run						
Recreation	Escherichia coli	4A			1.61	2014	L
E12R-02-BAC	Rippin Run						
Recreation	Escherichia coli	4A			0.60	2012	L
E13R-01-BAC	Blue Run						
Recreation	Escherichia coli	4A			4.34	2002	L
	Escherichia coli	4A			8.38	2006	L
E13R-02-BAC	Rapidan River						
Recreation	Escherichia coli	4A			7.63	2002	L
E13R-04-BAC	Unnamed tributary to the Rapidan River						
Recreation	Escherichia coli	4A			2.67	2004	L

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Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E13R-05-BAC	Beautiful Run						
Recreation	Escherichia coli	4A			1.18	2006	L
	Escherichia coli	4A			2.50	2012	L
	Escherichia coli	4A			8.45	2016	L
E13R-06-BAC	Rapidan River						
Recreation	Escherichia coli	4A			4.33	2006	L
E13R-07-BAC	Unnamed tributary to Rapidan River						
Recreation	Escherichia coli	4A			3.11	2006	L
E13R-08-BAC	Marsh Run						
Recreation	Escherichia coli	4A			5.64	2014	L
E13R-09-BAC	Poplar Run						
Recreation	Escherichia coli	4A			4.14	2014	L
E14R-02-BAC	Finks Run						
Recreation	Escherichia coli	4A			3.16	2006	L
E14R-03-BAC	White Oak Run						
Recreation	Escherichia coli	4A			3.19	2006	L
E14R-04-BAC	Leathers Run						
Recreation	Escherichia coli	4A			2.17	2006	L
E15R-01-BAC	Little Dark Run						
Recreation	Escherichia coli	4A			2.11	1998	L
	Escherichia coli	4A			2.42	2008	L
E15R-02-BAC	Robinson River						
Recreation	Escherichia coli	4A			5.31	2004	L
E15R-03-BAC	Deep Run						
Recreation	Escherichia coli	4A			2.47	2008	L
E15R-04-BAC	Crooked Run						
Recreation	Escherichia coli	4A			7.89	2008	L
E15R-05-BAC	Great Run						
Recreation	Escherichia coli	4A			9.31	2008	L
E15R-06-BAC	Dark Run						
Recreation	Escherichia coli	4A			8.59	2010	L
E16R-01-BAC	Cedar Run						
Recreation	Escherichia coli	4A			3.53	2006	L
E16R-02-BAC	Rapidan River						
Recreation	Escherichia coli	4A			4.66	2006	L
E16R-03-BAC	Rapidan River						
Recreation	Escherichia coli	4A			3.39	2008	L

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Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E17R-01-BAC	Mine Run						
Recreation	Escherichia coli	4A			10.50	2002	L
E17R-02-BAC	Mountain Run						
Recreation	Escherichia coli	4A			10.10	2002	L
	Escherichia coli	4A			7.46	2006	L
E17R-03-BAC	Black Walnut Run						
Recreation	Escherichia coli	4A			6.48	2006	L
E17R-04-BAC	Sumerduck Run						
Recreation	Escherichia coli	4A			6.20	2014	L
E17R-05-BAC	Potato Run						
Recreation	Escherichia coli	4A			6.83	2014	L
E18R-02-BAC	Wilderness Run						
Recreation	Escherichia coli	4A			5.56	2008	L
E18R-03-BAC	Rapidan River						
Recreation	Escherichia coli	4A			3.51	2008	L
E18R-04-BAC	Hazel Run						
Recreation	Escherichia coli	4A			4.06	2012	L
E20E-01-BAC	Rappahannock River						
Recreation	Escherichia coli	4A	0.443			2002	L
	Escherichia coli	4A	0.188			2006	L
E20R-01-BAC	Claiborne Run						
Recreation	Escherichia coli	4A			4.52	2004	L
E20R-02-BAC	Hazel Run						
Recreation	Escherichia coli	4A			4.72	2004	L
E20R-03-BAC	Massaponax Creek						
Recreation	Escherichia coli	4A			5.19	2004	L
	Escherichia coli	4A			1.67	2010	L
E20R-04-BAC	Massaponax Creek						
Recreation	Escherichia coli	4A			2.17	2008	L
E20R-05-BAC	Unnamed Tributary to Hazel Run						
Recreation	Escherichia coli	4A			1.53	2014	L
E20R-06-BAC	Unnamed tributary to Hazel Run						
Recreation	Escherichia coli	4A			2.23	2014	L
E20R-07-BAC	Little Falls Run						
Recreation	Escherichia coli	4A			4.92	2016	L
E21R-01-BAC	Muddy Creek						
Recreation	Escherichia coli	4A			3.58	2008	L

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Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E21R-02-BAC	Ware Creek						
Recreation	Escherichia coli	4A			4.50	2010	L
E21R-05-BAC	Mount Creek						
Recreation	Escherichia coli	4A			4.46	2008	L
E21R-06-BAC	Lambs Creek						
Recreation	Escherichia coli	4A			0.54	2008	L
E21R-12-BAC	White Oak Run						
Recreation	Escherichia coli	4A			6.51	2014	L
E22E-04-BAC	Occupacia Creek						
Recreation	Enterococcus	4A	0.668			2014	L
E22E-06-BAC	Rappahannock River						
Recreation	Enterococcus	4A	6.958			2014	L
E22E-07-BAC	Rappahannock River						
Recreation	Enterococcus	4A	2.003			2014	L
E22R-01-BAC	Occupacia Creek						
Recreation	Escherichia coli	4A			2.34	2006	L
E22R-02-BAC	Farmers Hall Creek						
Recreation	Fecal Coliform	4A			4.00	2004	L
E23E-01-SF	Upper Rappahannock River, Little Carter Creek, Jugs Creek						
Shellfishing	Fecal Coliform	4A	7.703			1998	L
	Fecal Coliform	4A	0.046			2006	L
E23E-02-BAC	Cat Point Creek						
Recreation	Enterococcus	4A	1.280			2010	L
E23E-03-BAC	Hoskins Creek						
Recreation	Enterococcus	4A	0.084			2006	L
E23E-03-BAC2	Hoskins Creek, Church Swamp						
Recreation	Enterococcus	4A	0.016			2006	L
	Enterococcus	4A	0.052			2006	L
	Enterococcus	4A	0.002			2008	L
E23E-05-BAC	Little Carter Creek & Jugs Creek						
Recreation	Enterococcus	4A	0.419			2012	L
E23E-06-BAC	Piscataway Creek						
Recreation	Enterococcus	4A	0.589			2016	L
E23R-04-BAC	Hoskins Creek						
Recreation	Escherichia coli	4A			13.16	2014	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E23R-06-BAC	Cat Point Creek and Tributaries						
Recreation	Escherichia coli	4A			5.33	2010	L
	Escherichia coli	4A			3.58	2012	L
	Escherichia coli	4A			109.40	2014	L
E23R-08-BAC	Muddy Run						
Recreation	Escherichia coli	4A			4.65	2014	L
E23R-19-BAC	Clarks Run						
Recreation	Escherichia coli	4A			3.82	2014	L
E23R-21-BAC	Piscataway Creek						
Recreation	Escherichia coli	4A			3.17	2014	L
E24E-01-SF	Richardson Creek						
Shellfishing	Fecal Coliform	4A	0.174			1998	L
E24E-02-BAC	Totuskey Creek						
Recreation	Enterococcus	4A	1.068			2006	L
E24R-01-BAC	Bookers Mill Stream						
Recreation	Escherichia coli	4A			6.53	2012	L
E24R-02-BAC	Totuskey Creek						
Recreation	Escherichia coli	4A			8.04	2006	L
E24R-03-BAC	Muddy Gut						
Recreation	Escherichia coli	4A			2.63	2008	L
E24R-04-BAC	Little Totuskey Creek						
Recreation	Escherichia coli	4A			1.90	2012	L
E24R-06-BAC	Richardson Creek and Tributaries						
Recreation	Escherichia coli	4A			17.21	2012	L
E24R-07-BAC	Totuskey Creek Tributaries						
Recreation	Escherichia coli	4A			75.27	2012	L
E24R-09-BAC	Marshy Swamp						
Recreation	Escherichia coli	4A			9.53	2012	L
E25E-01-BAC	Lagrange Creek						
Recreation	Enterococcus	4A	0.590			2012	L
E25E-01-SF	Lagrange Creek						
Shellfishing	Fecal Coliform	4A	0.590			1998	L
E25E-02-BAC	Robinson Creek						
Recreation	Fecal Coliform	4A	0.165			1998	L
E25E-02-SF	Robinson Creek						
Shellfishing	Fecal Coliform	4A	0.165			1998	L

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Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E25E-04-SF	Harry George Creek						
Shellfishing	Fecal Coliform	4A	0.095			2016	L
E25E-05-BAC	Farnham Creek						
Recreation	Enterococcus	4A	0.427			2010	L
E25E-05-SF	Farnham Creek						
Shellfishing	Fecal Coliform	4A	0.360			1998	L
E25E-06-SF	Lagrange Creek						
Shellfishing	Fecal Coliform	4A	0.048			2016	L
E25E-07-SF	Parrotts Creek						
Shellfishing	Fecal Coliform	4A	0.153			1998	L
E25E-09-SF	Weeks Creek						
Shellfishing	Fecal Coliform	4A	0.123			2014	L
E25E-10-SF	Deep Creek						
Shellfishing	Fecal Coliform	4A	0.049			1998	L
E25E-10-SF2	Deep Creek						
Shellfishing	Fecal Coliform	4A	0.074			2002	L
E25E-11-SF	Lancaster Creek						
Shellfishing	Fecal Coliform	4A	0.270			1998	L
E25E-11-SF2	Lancaster Creek						
Shellfishing	Fecal Coliform	4A	0.196			2002	L
E25E-12-SF	Morattico Creek						
Shellfishing	Fecal Coliform	4A	0.138			2002	L
E25E-13-SF	Mulberry Creek						
Shellfishing	Fecal Coliform	4A	0.136			1998	L
E25E-14-SF	Beach Creek						
Shellfishing	Fecal Coliform	4A	0.083			2016	L
E25E-15-BAC	Greenvale Creek						
Recreation	Enterococcus	4A	0.087			2012	L
E25E-15-SF	Greenvale Creek						
Shellfishing	Fecal Coliform	4A	0.087			1998	L
E25E-22-SF	Robinson Creek						
Shellfishing	Fecal Coliform	4A	0.039			2006	L
E25E-27-SF	Parrotts Creek						
Shellfishing	Fecal Coliform	4A	0.031			2008	L
E25E-28-SF	Paynes Creek						
Shellfishing	Fecal Coliform	4A	0.049			2008	L

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Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E25E-29-SF	Greenvale Creek						
Shellfishing	Fecal Coliform	4A	0.012			2012	L
E25E-30-BAC	Town Bridge Swamp						
Recreation	Enterococcus	4A	0.002			2012	L
E25R-01-BAC	Laton Swamp						
Recreation	Escherichia coli	4A			4.86	2014	L
E25R-03-BAC	Nickleberry Swamp						
Recreation	Escherichia coli	4A			1.86	2012	L
E25R-04-BAC	South Branch Lagrange Creek						
Recreation	Escherichia coli	4A			0.40	2012	L
E26E-01-SF	Meachim Creek						
Shellfishing	Fecal Coliform	4A	0.075			1998	L
E26E-02-SF	Meachim Creek						
Shellfishing	Fecal Coliform	4A	0.027			1998	L
E26E-03-SF	Taylor Creek						
Shellfishing	Fecal Coliform	4A	0.078			2012	L
E26E-05-SF	Myer Creek						
Shellfishing	Fecal Coliform	4A	0.055			1998	L
E26E-06-SF	Ewells Prong						
Shellfishing	Fecal Coliform	4A	0.034			1998	L
E26E-08-SF	Senior Creek						
Shellfishing	Fecal Coliform	4A	0.070			1998	L
E26E-09-SF	Western Branch Corrotoman River						
Shellfishing	Fecal Coliform	4A	0.503			1998	L
	Fecal Coliform	4A	0.009			2002	L
E26E-10-SF	Bush Park Creek						
Shellfishing	Fecal Coliform	4A	0.103			1998	L
E26E-11-SF	Mill Creek						
Shellfishing	Fecal Coliform	4A	0.111			1998	L
E26E-12-SF	Sturgeon Creek						
Shellfishing	Fecal Coliform	4A	0.066			1998	L
E26E-13-BAC	Locklies Creek						
Recreation	Enterococcus	4A	0.101			2012	L
E26E-13-SF	Locklies Creek						
Shellfishing	Fecal Coliform	4A	0.073			1998	L
E26E-14-SF	Hills Creek						
Shellfishing	Fecal Coliform	4A	0.061			1998	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E26E-15-SF	Bells Creek						
Shellfishing	Fecal Coliform	4A	0.055			1998	L
E26E-16-SF	Eastern Branch Corrotoman River						
Shellfishing	Fecal Coliform	4A	0.388			1998	L
E26E-17-SF	Eastern Branch Carter Creek						
Shellfishing	Fecal Coliform	4A	0.084			1998	L
E26E-20-SF	Mosquito Creek						
Shellfishing	Fecal Coliform	4A	0.023			2016	L
E26E-26-BAC	Little Branch						
Recreation	Enterococcus	4A	0.114			2006	L
E26E-27-BAC	Belwood Swamp						
Recreation	Enterococcus	4A	0.009			2012	L
E26E-28-BAC	Western Branch Corrotoman River						
Recreation	Enterococcus	4A	0.389			2012	L
E26E-30-SF	Carter Cove						
Shellfishing	Fecal Coliform	4A	0.039			2002	L
E26E-33-SF	Whitehouse Creek						
Shellfishing	Fecal Coliform	4A	0.050			2002	L
E26E-35-SF	Davis Creek						
Shellfishing	Fecal Coliform	4A	0.029			2002	L
E26E-39-SF	Roane Cove of Locklies Creek						
Shellfishing	Fecal Coliform	4A	0.034			2014	L
E26E-42-SF	Hunting Creek						
Shellfishing	Fecal Coliform	4A	0.020			2008	L
E26E-46-SF	Eastern Branch Carter Creek						
Shellfishing	Fecal Coliform	4A	0.031			2002	L
E26E-48-SF	Taylor Creek						
Shellfishing	Fecal Coliform	4A	0.024			2008	L
E26E-49-SF	Moran Creek						
Shellfishing	Fecal Coliform	4A	0.049			2008	L
E26E-51-SF	Eastern Branch Corrotoman River, UT						
Shellfishing	Fecal Coliform	4A	0.010			2008	L
E26E-53-SF	John Creek						
Shellfishing	Fecal Coliform	4A	0.036			2008	L
E26E-54-SF	Lowrey Creek						
Shellfishing	Fecal Coliform	4A	0.028			2008	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
E26R-01-BAC	Belwood Swamp and Tributaries						
Recreation	Escherichia coli	4A			24.54	2012	L
E26R-04-BAC	Browns Creek						
Recreation	Escherichia coli	4A			2.58	2008	L
E26R-05-BAC	Little Branch						
Recreation	Escherichia coli	4A			0.63	2014	L
RPPMH-DO-BAY	Rappahannock River						
Aquatic Life	Oxygen, Dissolved	4D	19.284			1998	L
	Oxygen, Dissolved	4A	75.146			1998	L
Deep-Channel Seasonal Refuge	Oxygen, Dissolved	4A	75.146			1998	L
Deep-Water Aquatic Life	Oxygen, Dissolved	4D	82.465			1998	L
Open-Water Aquatic Life	Oxygen, Dissolved	4D	94.430			1998	L
RPPMH-SAV-BAY	Rappahannock River						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	0.504			2006	L
	Aquatic Plants (Macrophytes)	4A	0.020			2010	L
	Aquatic Plants (Macrophytes)	4A	123.051			2014	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	0.504			2006	L
	Aquatic Plants (Macrophytes)	4A	0.020			2010	L
	Aquatic Plants (Macrophytes)	4A	123.051			2014	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L01R-01-BAC	Roanoke River, South Fork and Goose Creek						
Recreation	Escherichia coli	4A			11.04	2012	L
	Escherichia coli	4A			2.30	2012	L
	Escherichia coli	4A			3.27	2016	L
	Escherichia coli	4A			3.00	2016	L
L01R-01-BEN	Smith Creek, UT (XMV)						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			1.61	2010	L
L02R-01-BAC	Roanoke River, North Fork						
Recreation	Escherichia coli	4A			6.93	2006	L
	Escherichia coli	4A			9.16	2012	L
L02R-02-BAC	Wilson Creek and Wilson Creek, UT						
Recreation	Escherichia coli	4A			6.99	2004	L
L02R-03-BAC	Bradshaw Creek						
Recreation	Escherichia coli	4A			10.36	2010	L
L04R-01-BAC	Roanoke River and Smith Mountain Lake						
Recreation	Escherichia coli	4A		165.29	15.27	2006	L
	Escherichia coli	4A			14.29	2006	L
L04R-01-BEN	Roanoke River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.34	1996	L
	Benthic-Macroinvertebrate Bioassessments	4A			1.47	1996	L
L04R-02-BAC	Mud Lick Creek						
Recreation	Escherichia coli	4A			7.61	2006	L
L04R-02-BEN	Mud Lick Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			7.61	2008	L
L04R-04-BAC	Ore Branch						
Recreation	Escherichia coli	4A			2.55	2006	L
L04R-04-BEN	Ore Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			2.55	2014	L
L04R-05-BAC	Mason Creek						
Recreation	Escherichia coli	4A			7.72	2006	L
L04R-05-BEN	Mason Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			7.72	2008	L
L04R-06-BAC	Peters Creek						
Recreation	Escherichia coli	4A			7.20	2006	L
L04R-06-BEN	Barnhardt Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			5.31	2012	L
L04R-07-BAC	Murray Run						
Recreation	Fecal Coliform	4A			3.57	2004	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L04R-07-BEN	Murray Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.57	2012	L
L04R-08-BEN	Gish Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			2.40	2014	L
L04R-09-BEN	Peters Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			7.20	2016	L
L05R-01-BAC	Tinker Creek						
Recreation	Escherichia coli	4A			19.58	2006	L
L05R-02-BAC	Carvin Creek						
Recreation	Escherichia coli	4A			1.83	2004	L
	Escherichia coli	4A			3.62	2006	L
L05R-03-BAC	Glade Creek						
Recreation	Escherichia coli	4A			12.95	2006	L
L05R-04-BAC	Lick Run						
Recreation	Escherichia coli	4A			9.64	2004	L
L05R-05-BAC	Laymantown Creek						
Recreation	Escherichia coli	4A			2.11	2006	L
L07R-01-BAC	Beaverdam Creek						
Recreation	Escherichia coli	4A			4.98	2006	L
L08R-01-BAC	Green Creek						
Recreation	Escherichia coli	4A			4.09	2008	L
L08R-02-BAC	Blackwater River, South Fork						
Recreation	Escherichia coli	4A			6.20	2004	L
L08R-03-BAC	Blackwater River, North Fork						
Recreation	Escherichia coli	4A			3.21	2004	L
	Escherichia coli	4A			9.23	2006	L
L08R-03-BEN	Blackwater River, North Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.21	1996	L
L08R-04-BAC	Blackwater River (Upper)						
Recreation	Escherichia coli	4A			28.26	2004	L
L08R-04-BEN	Blackwater River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			5.61	1996	L
L08R-05-BAC	Little Creek and Little Creek, UT (XKF)						
Recreation	Escherichia coli	4A			7.85	2004	L
	Escherichia coli	4A			1.04	2006	L
L08R-06-BAC	Teels Creek						
Recreation	Escherichia coli	4A			4.76	2004	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L08R-07-BAC	Buck Run						
Recreation	Escherichia coli	4A			3.77	2014	L
L09R-01-BAC	Maggodee Creek						
Recreation	Escherichia coli	4A			15.16	2004	L
	Escherichia coli	4A			0.99	2006	L
	Escherichia coli	4A			4.43	2012	L
L09R-02-BAC	Mollie Branch						
Recreation	Escherichia coli	4A			0.91	2004	L
	Escherichia coli	4A			1.83	2006	L
L10R-01-BAC	Blackwater River (Lower), Foul Ground Creek and Smith Mountain Lake (Blackwater Riverine)						
Recreation	Escherichia coli	4A			3.02	2004	L
	Fecal Coliform	4A			4.19	2004	L
	Escherichia coli	4A		114.22	8.21	2006	L
L11R-01-BAC	Gills Creek						
Recreation	Escherichia coli	4A		197.42	9.24	2004	L
	Escherichia coli	4A			11.22	2010	L
L12L-01-PCB	Roanoke River, Tinker Creek and Peters Creek.						
Fish Consumption	PCB in Fish Tissue	4A			28.61	2002	L
	PCB in Fish Tissue	4A			2.58	2004	L
	PCB in Fish Tissue	4A			5.37	2006	L
	PCB in Water Column	4A			12.11	2010	L
Public Water Supply	PCB in Water Column	4A			1.63	2010	L
Wildlife	PCB in Water Column	4A			12.11	2010	L
L12L-02-PCB	Roanoke River, Blackwater River and Smith Mountain Lake.						
Fish Consumption	PCB in Fish Tissue	4A		2,710.00	3.16	2002	L
	PCB in Fish Tissue	4A		17,104.24	11.23	2006	L
	PCB in Water Column	4A			3.16	2010	L
Public Water Supply	PCB in Water Column	4A			3.16	2010	L
Wildlife	PCB in Water Column	4A			3.16	2010	L
L13L-02-BAC	Leesville Lake (Pigg River)						
Recreation	Escherichia coli	4A		158.36		2006	L
L13R-01-BAC	Old Womans Creek						
Recreation	Escherichia coli	4A			4.90	2006	L
L14R-01-BAC	Pigg River and Doe Run						
Recreation	Fecal Coliform	4A			5.68	2006	L
	Escherichia coli	4A			23.89	2006	L
	Escherichia coli	4A			10.92	2008	L
	Escherichia coli	4A			1.01	2016	L
	Escherichia coli	4A			1.94	2016	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L14R-02-BAC	Storey Creek						
Recreation	Escherichia coli	4A			11.86	2006	L
L15R-01-BAC	Big Chestnut Creek						
Recreation	Escherichia coli	4A			12.43	2006	L
	Escherichia coli	4A			6.77	2016	L
L17R-01-BAC	Snow Creek and Turkeycock Creek						
Recreation	Escherichia coli	4A			10.95	2006	L
	Escherichia coli	4A			6.50	2008	L
	Escherichia coli	4A			6.49	2012	L
L17R-02-BAC	Poplar Branch						
Recreation	Escherichia coli	4A			2.56	2016	L
L18R-01-BAC	Pigg River						
Recreation	Escherichia coli	4A			13.36	2006	L
	Escherichia coli	4A			15.59	2006	L
L18R-02-BAC	Harpen Creek						
Recreation	Escherichia coli	4A			5.35	2006	L
L18R-03-BAC	Tomahawk Creek						
Recreation	Escherichia coli	4A			4.58	2006	L
L18R-04-BAC	Fryingpan Creek						
Recreation	Escherichia coli	4A			2.56	2016	L
L19R-01-BAC	Roanoke (Staunton) River						
Recreation	Escherichia coli	4A			3.82	2006	L
	Escherichia coli	4A			39.35	2006	L
	Escherichia coli	4A			3.15	2008	L
L19R-01-PCB	Roanoke (Staunton) River, Cub Creek						
Fish Consumption	PCB in Fish Tissue	4A			24.54	1998	L
	PCB in Fish Tissue	4A			63.17	2002	L
	PCB in Fish Tissue	4A			14.38	2008	L
	PCB in Water Column	4A			73.72	2010	L
Public Water Supply	PCB in Water Column	4A			73.72	2010	L
L19R-02-BAC	Lynch Creek						
Recreation	Escherichia coli	4A			3.53	2008	L
	Escherichia coli	4A			0.37	2010	L
L20R-01-BAC	Goose Creek						
Recreation	Escherichia coli	4A			6.93	2006	L
L21R-01-BAC	Goose Creek						
Recreation	Escherichia coli	4A			7.24	2008	L
L21R-02-BAC	Wolf Creek						
Recreation	Escherichia coli	4A			7.13	2008	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L21R-03-BAC	Bore Auger Creek						
Recreation	Escherichia coli	4A			9.56	2012	L
L21R-04-BAC	Stony Fork						
Recreation	Escherichia coli	4A			13.17	2012	L
L22R-01-BAC	Goose Creek						
Recreation	Escherichia coli	4A			11.11	2012	L
L22R-02-BAC	Mill Creek						
Recreation	Escherichia coli	4A			5.26	2010	L
L22R-03-BAC	Hunting Creek						
Recreation	Escherichia coli	4A			2.63	2010	L
L22R-04-BAC	Carter Mill Creek						
Recreation	Escherichia coli	4A			7.26	2012	L
L23R-01-BAC	Big Otter River and Sheeps Creek						
Recreation	Escherichia coli	4A			9.62	2006	L
	Escherichia coli	4A			8.13	2010	L
L23R-02-BAC	Stony Creek						
Recreation	Escherichia coli	4A			4.37	2010	L
L25R-01-BAC	Big Otter River, Elk Creek and North Otter Creek						
Recreation	Fecal Coliform	4A			7.33	2004	L
	Escherichia coli	4A			20.35	2008	L
	Escherichia coli	4A			4.49	2008	L
	Escherichia coli	4A			6.80	2010	L
L26R-01-BAC	Little Otter River and Machine Creek						
Recreation	Escherichia coli	4A			7.44	2008	L
	Escherichia coli	4A			31.78	2010	L
L26R-01-PCB	Little Otter River						
Fish Consumption	PCB in Fish Tissue	4A			14.61	2002	L
L26R-02-BAC	Johns Creek						
Recreation	Escherichia coli	4A			2.24	2014	L
L26R-03-BAC	Wells Creek						
Recreation	Escherichia coli	4A			3.93	2014	L
L27R-01-BAC	Big Otter River and Falling Creek						
Recreation	Fecal Coliform	4A			5.92	2004	L
	Escherichia coli	4A			5.37	2010	L
L27R-01-BEN	Buffalo Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			8.53	2008	L
L27R-02-BAC	Buffalo Creek						
Recreation	Escherichia coli	4A			8.53	2006	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L28R-01-BAC	Big Otter River						
Recreation	Escherichia coli	4A			9.45	2010	L
	Escherichia coli	4A			4.56	2016	L
L30R-01-BAC	Buffalo Creek						
Recreation	Escherichia coli	4A			10.23	2008	L
L30R-02-BAC	Childrey Creek						
Recreation	Escherichia coli	4A			14.53	2006	L
L30R-03-BAC	Straightstone Creek						
Recreation	Escherichia coli	4A			8.75	2006	L
L30R-04-BAC	Whipping Creek						
Recreation	Escherichia coli	4A			13.90	2006	L
L30R-05-BAC	Little Straightstone Creek						
Recreation	Escherichia coli	4A			7.57	2006	L
L32R-01-BAC	Falling River						
Recreation	Escherichia coli	4A			18.17	2006	L
L33R-01-BAC	Button Creek						
Recreation	Escherichia coli	4A			7.86	2006	L
L33R-02-BAC	South Fork Falling River						
Recreation	Escherichia coli	4A			16.78	2006	L
L34R-01-BAC	Falling River						
Recreation	Escherichia coli	4A			7.36	2006	L
	Escherichia coli	4A			2.85	2006	L
	Escherichia coli	4A			7.64	2006	L
L34R-02-BAC	Little Falling River						
Recreation	Escherichia coli	4A			9.71	2006	L
	Escherichia coli	4A			4.41	2012	L
	Escherichia coli	4A			1.81	2014	L
L34R-03-BAC	Suck Creek						
Recreation	Escherichia coli	4A			8.49	2006	L
L34R-04-BAC	Entry Creek						
Recreation	Escherichia coli	4A			4.73	2008	L
L34R-05-BAC	Hickory Creek						
Recreation	Escherichia coli	4A			2.76	2010	L
L34R-06-BAC	Dog Creek						
Recreation	Escherichia coli	4A			2.66	2010	L
L35R-01-BAC	Mollys Creek						
Recreation	Escherichia coli	4A			17.58	2006	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L36R-01-BAC	Turnip Creek						
Recreation	Escherichia coli	4A			2.61	2006	L
	Escherichia coli	4A			17.13	2006	L
L36R-03-BAC	Buckskin Creek						
Recreation	Escherichia coli	4A			7.65	2008	L
L36R-04-BAC	Armistead Branch						
Recreation	Escherichia coli	4A			3.20	2010	L
	Escherichia coli	4A			1.92	2014	L
L37R-01-BAC	Cub Creek						
Recreation	Escherichia coli	4A			8.80	2006	L
	Escherichia coli	4A			5.58	2008	L
L37R-02-BAC	Louse Creek						
Recreation	Escherichia coli	4A			8.70	2006	L
L37R-03-BAC	Big Cub Creek						
Recreation	Escherichia coli	4A			33.68	2006	L
L37R-05-BAC	Terrys Creek						
Recreation	Escherichia coli	4A			7.14	2008	L
L38R-02-BAC	Black Walnut Creek						
Recreation	Escherichia coli	4A			6.39	2014	L
L38R-03-BAC	Hunting Creek						
Recreation	Escherichia coli	4A			3.24	2014	L
L39R-01-BAC	Ash Camp Creek						
Recreation	Fecal Coliform	4A			8.18	2004	L
L39R-01-BEN	Ash Camp Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			8.18	1998	L
L39R-02-BAC	Twittys Creek						
Recreation	Escherichia coli	4A			14.79	2012	L
L39R-02-BEN	Twittys Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			14.79	1998	L
L39R-03-BAC	Horsepen Creek						
Recreation	Escherichia coli	4A			1.86	2012	L
L39R-04-BAC	Wards Fork Creek						
Recreation	Escherichia coli	4A			5.30	2008	L
L39R-05-BAC	Roanoke Creek						
Recreation	Escherichia coli	4A			2.65	2006	L
	Escherichia coli	4A			7.85	2010	L
L39R-06-BAC	Middle Branch Wards Fork Creek						
Recreation	Escherichia coli	4A			7.39	2008	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L40R-01-BAC	Berles Creek						
Recreation	Escherichia coli	4A			2.28	2006	L
L40R-04-BAC	Sandy Creek						
Recreation	Escherichia coli	4A			5.41	2012	L
L40R-05-BAC	Unnamed Tributary to Buffalo Creek						
Recreation	Escherichia coli	4A			1.49	2002	L
L40R-06-BAC	Buffalo Creek						
Recreation	Escherichia coli	4A			2.35	2006	L
L40R-07-BAC	Cargills Creek						
Recreation	Escherichia coli	4A			4.27	2008	L
L41R-01-BAC	Difficult Creek						
Recreation	Escherichia coli	4A			7.00	2008	L
L42R-01-BAC	Little Dan River						
Recreation	Escherichia coli	4A			7.26	2008	L
L42R-02-BAC	Dan River						
Recreation	Escherichia coli	4A			8.45	2012	L
L42R-03-BAC	Elk Creek						
Recreation	Escherichia coli	4A			7.78	2012	L
L42R-04-BAC	Peters Creek						
Recreation	Escherichia coli	4A			5.96	2012	L
L42R-05-BAC	Dan River						
Recreation	Escherichia coli	4A			15.47	2014	L
L43R-01-BAC	South Mayo River						
Recreation	Escherichia coli	4A			16.80	2008	L
	Escherichia coli	4A			20.67	2010	L
L43R-02-BAC	Russell Creek						
Recreation	Escherichia coli	4A			8.53	2012	L
L44R-01-BAC	Spoon Creek						
Recreation	Escherichia coli	4A			8.17	2006	L
L46R-01-BAC	North Mayo River						
Recreation	Fecal Coliform	4A			12.58	2004	L
	Escherichia coli	4A			10.34	2008	L
L47R-01-BAC	Horse Pasture Creek						
Recreation	Escherichia coli	4A			7.44	2006	L
L48R-01-BAC	Mayo River						
Recreation	Escherichia coli	4A			4.02	2016	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L50R-01-BAC	Smith River and Sycamore Creek						
Recreation	Escherichia coli	4A			15.63	2012	L
L51R-01-BAC	Goblintown Creek						
Recreation	Escherichia coli	4A			6.80	2014	L
L51R-02-BAC	Shooting Creek						
Recreation	Escherichia coli	4A			7.32	2014	L
L51R-03-BAC	Nicholas Creek						
Recreation	Escherichia coli	4A			5.40	2016	L
L51R-04-BAC	Rennet Bag Creek						
Recreation	Escherichia coli	4A			11.54	2016	L
L52R-01-BAC	Smith River						
Recreation	Escherichia coli	4A			3.31	2006	L
	Escherichia coli	4A			6.99	2008	L
L52R-02-BAC	Blackberry Creek and Blackberry, UTs						
Recreation	Escherichia coli	4A			8.80	2004	L
	Escherichia coli	4A			6.69	2004	L
L52R-03-BAC	Town Creek						
Recreation	Escherichia coli	4A			1.88	2012	L
L53L-01-BAC	Martinsville (Beaver Creek) Reservoir						
Recreation	Escherichia coli	4A		182.28		2010	L
L53R-01-BEN	Smith River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.74	2008	L
	Benthic-Macroinvertebrate Bioassessments	4A			2.25	2014	L
L53R-02-BAC	Jordan Creek						
Recreation	Escherichia coli	4A			6.00	2006	L
L53R-03-BAC	Beaver Creek						
Recreation	Escherichia coli	4A			5.30	2006	L
	Escherichia coli	4A			6.97	2016	L
L53R-04-BAC	Reed Creek						
Recreation	Escherichia coli	4A			4.13	2008	L
L53R-05-BAC	Daniels Creek						
Recreation	Escherichia coli	4A			3.99	2016	L
L53R-06-BAC	Jones Creek, UT (XMP)						
Recreation	Escherichia coli	4A			2.00	2016	L
L54R-01-BAC	Smith River						
Recreation	Escherichia coli	4A			3.65	2008	L
	Escherichia coli	4A			10.07	2008	L
	Escherichia coli	4A			6.30	2008	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L54R-01-BEN	Smith River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			10.07	1998	L
	Benthic-Macroinvertebrate Bioassessments	4A			3.65	2004	L
L54R-02-BAC	Mulberry Creek						
Recreation	Escherichia coli	4A			2.60	2016	L
L54R-03-BAC	Machine Branch						
Recreation	Escherichia coli	4A			0.68	2016	L
L55R-01-BAC	Marrowbone Creek						
Recreation	Escherichia coli	4A			4.47	2008	L
L56R-01-BAC	Leatherwood Creek and Headwater Tributaries						
Recreation	Escherichia coli	4A			25.33	2006	L
	Escherichia coli	4A			8.45	2008	L
L56R-02-BAC	West Fork Leatherwood Creek						
Recreation	Escherichia coli	4A			23.45	2012	L
L57R-01-BAC	Dan River						
Recreation	Escherichia coli	4A			7.36	2006	L
L57R-04-BAC	Cascade Creek						
Recreation	Escherichia coli	4A			11.81	2006	L
L58R-01-BAC	Sandy River						
Recreation	Escherichia coli	4A			7.22	2010	L
L58R-02-BAC	Tanyard Creek						
Recreation	Escherichia coli	4A			2.85	2006	L
L58R-04-BAC	Sandy River						
Recreation	Escherichia coli	4A			10.78	2006	L
L58R-05-BAC	Sugartree Creek						
Recreation	Escherichia coli	4A			6.96	2008	L
L58R-06-BAC	Stewart Creek						
Recreation	Escherichia coli	4A			7.34	2008	L
L59R-01-BAC	Sandy Creek						
Recreation	Escherichia coli	4A			9.48	2008	L
L60R-01-BAC	Dan River						
Recreation	Escherichia coli	4A			35.10	1998	L
	Escherichia coli	4A			1.83	2004	L
L60R-02-BAC	Pumpkin Creek						
Recreation	Escherichia coli	4A			4.28	2006	L
L60R-03-BAC	Cane Creek						
Recreation	Escherichia coli	4A			12.25	2008	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L61R-01-BAC	Fall Creek						
Recreation	Escherichia coli	4A			11.97	2008	L
L61R-02-BAC	Lawless Creek						
Recreation	Escherichia coli	4A			4.71	2014	L
L62R-03-BAC	Double Creek						
Recreation	Escherichia coli	4A			8.88	2008	L
L62R-04-BAC	Byrds Branch						
Recreation	Escherichia coli	4A			3.76	2008	L
L62R-05-BAC	Big Toby Creek						
Recreation	Escherichia coli	4A			7.56	2008	L
L62R-06-BAC	Powells Creek						
Recreation	Escherichia coli	4A			4.63	2008	L
L62R-08-BAC	Sandy Creek						
Recreation	Escherichia coli	4A			9.41	2012	L
L62R-09-BAC	Winns Creek						
Recreation	Escherichia coli	4A			7.11	2016	L
L62R-10-BAC	Sandy Creek, Unnamed Tributary						
Recreation	Escherichia coli	4A			2.29	2016	L
L63R-01-BAC	Birch Creek						
Recreation	Escherichia coli	4A			20.15	2004	L
L63R-02-BAC	Unnamed Tributary to Birch Creek						
Recreation	Escherichia coli	4A			5.35	2006	L
L63R-03-BAC	Germy Creek						
Recreation	Escherichia coli	4A			5.36	2014	L
L64R-01-BAC	Lawsons Creek						
Recreation	Escherichia coli	4A			8.26	2008	L
	Escherichia coli	4A			7.27	2012	L
L64R-02-BAC	Miry Creek						
Recreation	Escherichia coli	4A			1.11	2006	L
L64R-06-BAC	Stokes Creek						
Recreation	Escherichia coli	4A			6.35	2014	L
L65R-01-BAC	Banister River						
Recreation	Escherichia coli	4A			6.79	2008	L
	Escherichia coli	4A			5.09	2010	L
L65R-02-BAC	Bearskin Creek						
Recreation	Escherichia coli	4A			9.57	2006	L

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Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L65R-03-BAC	White Oak Creek						
Recreation	Escherichia coli	4A			6.36	2010	L
L66R-01-BAC	Cherrystone Creek						
Recreation	Escherichia coli	4A			5.96	2008	L
L66R-02-BAC	Little Cherrystone Creek						
Recreation	Escherichia coli	4A			4.83	2008	L
L66R-03-BAC	Pole Bridge Branch						
Recreation	Escherichia coli	4A			5.01	2010	L
L67R-01-BAC	Banister River						
Recreation	Escherichia coli	4A			13.09	2004	L
	Escherichia coli	4A			9.30	2012	L
	Escherichia coli	4A			16.87	2016	L
L67R-02-BAC	Allen Creek						
Recreation	Escherichia coli	4A			6.02	2008	L
L67R-04-BAC	Bradley Creek						
Recreation	Escherichia coli	4A			6.46	2014	L
L67R-05-BAC	Bye Creek						
Recreation	Escherichia coli	4A			7.29	2014	L
L68R-01-BAC	Whitehorn Creek						
Recreation	Escherichia coli	4A			15.10	2006	L
	Escherichia coli	4A			0.78	2006	L
L69R-01-BAC	Stinking River						
Recreation	Escherichia coli	4A			14.15	2008	L
L70R-01-BAC	Sandy Creek						
Recreation	Escherichia coli	4A			5.89	2010	L
	Escherichia coli	4A			14.56	2014	L
L71R-04-BAC	Banister River						
Recreation	Escherichia coli	4A			2.33	2008	L
	Escherichia coli	4A			9.64	2012	L
L71R-05-BAC	Polecat Creek						
Recreation	Escherichia coli	4A			9.70	2010	L
L71R-06-BAC	Winn Creek						
Recreation	Escherichia coli	4A			7.09	2008	L
L71R-07-BAC	Gibson Creek						
Recreation	Escherichia coli	4A			5.38	2014	L
L73R-01-BAC	Aarons Creek						
Recreation	Escherichia coli	4A			9.40	2016	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
L73R-02-BAC	North Fork Aarons Creek						
Recreation	Escherichia coli	4A			9.75	2012	L
L73R-03-BAC	Peter Creek						
Recreation	Escherichia coli	4A			6.61	2016	L
L74R-01-BAC	Hyco River						
Recreation	Escherichia coli	4A			17.48	2006	L
	Escherichia coli	4A			6.12	2008	L
L74R-03-BAC	Coleman Creek						
Recreation	Escherichia coli	4A			8.48	2008	L
L74R-03-BEN	Coleman Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			8.48	2008	L
L74R-04-BAC	Big Bluewing Creek						
Recreation	Escherichia coli	4A			11.23	2008	L
L74R-06-BAC	Mayo Creek						
Recreation	Escherichia coli	4A			4.93	2016	L
L74R-07-BAC	Powells Creek						
Recreation	Escherichia coli	4A			4.65	2016	L
L75R-03-BAC	Beech Creek						
Recreation	Escherichia coli	4A			4.69	2008	L
L79R-01-BAC	Flat Creek						
Recreation	Escherichia coli	4A			6.23	2006	L
	Escherichia coli	4A			1.69	2006	L
	Escherichia coli	4A			1.41	2016	L
L79R-01-BEN	Flat Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			7.64	1996	L
	Benthic-Macroinvertebrate Bioassessments	4A			1.69	2008	L
L80R-01-BAC	Great Creek						
Recreation	Escherichia coli	4A			6.68	2006	L
L80R-02-BAC	Hagood Creek						
Recreation	Escherichia coli	4A			6.80	2008	L
L80R-03-BAC	Long Branch						
Recreation	Escherichia coli	4A			2.08	2008	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

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Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K01R-01-BAC	Middle Meherrin River						
Recreation	Escherichia coli	4A			7.15	2010	L
	Escherichia coli	4A			11.25	2014	L
K01R-02-BAC	South Meherrin River						
Recreation	Escherichia coli	4A			7.10	2006	L
K02R-01-BAC	North Meherrin River						
Recreation	Escherichia coli	4A			7.54	2006	L
K02R-02-BAC	Big Juniper Creek						
Recreation	Escherichia coli	4A			6.68	2006	L
K02R-04-BAC	Reedy Creek						
Recreation	Escherichia coli	4A			10.40	2008	L
K02R-05-BAC	Ledbetter Creek						
Recreation	Escherichia coli	4A			9.08	2010	L
K02R-06-BAC	Couches Creek						
Recreation	Escherichia coli	4A			7.37	2014	L
K03R-01-BAC	Flat Rock Creek						
Recreation	Escherichia coli	4A			5.63	2006	L
	Escherichia coli	4A			10.36	2010	L
K03R-03-BAC	Broad Branch						
Recreation	Escherichia coli	4A			3.53	2006	L
K03R-04-BAC	Meherrin River						
Recreation	Escherichia coli	4A			3.17	2008	L
	Escherichia coli	4A			8.26	2012	L
K03R-05-BAC	Flat Rock Creek, UT						
Recreation	Escherichia coli	4A			3.44	2008	L
K04R-01-BAC	Stony Creek						
Recreation	Escherichia coli	4A			14.24	2010	L
K04R-02-BAC	Shining Creek						
Recreation	Escherichia coli	4A			7.74	2010	L
K04R-03-BAC	Taylors Creek						
Recreation	Escherichia coli	4A			10.35	2010	L
K04R-04-BAC	Meherrin River						
Recreation	Escherichia coli	4A			6.95	2010	L
K05R-01-BAC	Genito Creek						
Recreation	Escherichia coli	4A			8.13	2006	L
K05R-02-BAC	Meherrin River						
Recreation	Escherichia coli	4A			26.20	2006	L

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Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K05R-03-BAC	Briery Branch						
Recreation	Escherichia coli	4A			4.01	2010	L
K05R-04-BAC	Hicks Creek						
Recreation	Escherichia coli	4A			7.37	2010	L
K05R-07-BAC	Evans Creek						
Recreation	Escherichia coli	4A			11.72	2010	L
K05R-08-BAC	Totaro Creek						
Recreation	Escherichia coli	4A			5.33	2010	L
K05R-09-BAC	Allen Creek						
Recreation	Escherichia coli	4A			6.96	2016	L
K06R-02-BAC	Great Creek						
Recreation	Escherichia coli	4A			8.62	2006	L
	Escherichia coli	4A			2.82	2008	L
K06R-03-BAC	Stevens Branch						
Recreation	Escherichia coli	4A			4.30	2010	L
K06R-04-BAC	Tea Branch						
Recreation	Escherichia coli	4A			3.24	2010	L
K06R-05-BAC	Great Creek, UT (XHQ)						
Recreation	Escherichia coli	4A			2.12	2010	L
K07R-02-BAC	Roses Creek						
Recreation	Escherichia coli	4A			9.85	2006	L
K07R-03-BAC	Rocky Run						
Recreation	Escherichia coli	4A			21.27	2010	L
K07R-04-BAC	Roses Creek						
Recreation	Escherichia coli	4A			1.95	2010	L
K08R-02-BAC	Robinson Creek						
Recreation	Escherichia coli	4A			6.07	2010	L
K10R-02-BAC	Fontaine Creek (Fountains Creek)						
Recreation	Escherichia coli	4A			0.56	2010	L
K10R-03-BAC	Quarrel Creek (Nested)						
Recreation	Escherichia coli	4A			3.34	2016	L
K11R-03-BAC	Cattail Creek						
Recreation	Escherichia coli	4A			5.33	2010	L
K12R-01-BAC	Fontaine Creek						
Recreation	Escherichia coli	4A			14.48	2006	L
K13R-01-BAC	Tarrara Creek						
Recreation	Escherichia coli	4A			14.49	2008	L

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Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K14R-01-BAC	Nottoway River						
Recreation	Escherichia coli	4A			13.35	2006	L
	Escherichia coli	4A			4.19	2006	L
K14R-02-BAC	Big Hounds Creek						
Recreation	Escherichia coli	4A			10.34	2006	L
K15R-01-BAC	Little Nottoway River						
Recreation	Escherichia coli	4A			9.97	2006	L
K15R-02-BAC	Carys Creek						
Recreation	Escherichia coli	4A			6.34	2006	L
K15R-03-BAC	Lazaretto Creek						
Recreation	Escherichia coli	4A			4.97	2010	L
K15R-05-BAC	Whetstone Creek						
Recreation	Escherichia coli	4A			8.41	2014	L
K16R-01-BEN	Unnamed Tributary to Hurricane Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			1.07	1994	L
	Benthic-Macroinvertebrate Bioassessments	4A			2.10	2008	L
K16R-02-BAC	Beaver Pond Creek						
Recreation	Escherichia coli	4A			7.43	2004	L
K23R-03-BAC	Nebletts Mill Run, UT (XDV)						
Recreation	Escherichia coli	4A			1.78	2006	L
K25R-02-BAC	Raccoon Creek						
Recreation	Escherichia coli	4A			19.90	2008	L
K26R-02-BAC	Three Creek						
Recreation	Escherichia coli	4A			5.43	2006	L
K26R-04-BAC	Maclins Creek						
Recreation	Escherichia coli	4A			8.80	2012	L
K27R-02-BAC	Three Creek - Lower & Upper						
Recreation	Escherichia coli	4A			10.67	2002	L
	Escherichia coli	4A			9.17	2006	L
K28R-01-BAC	Mill Swamp						
Recreation	Escherichia coli	4A			10.49	2006	L
K29R-01-BAC	Seacorrie, German, XDW and XDX						
Recreation	Escherichia coli	4A			10.54	2006	L
	Escherichia coli	4A			2.62	2010	L
K29R-04-BAC	XGS - Assamoosick Swamp, UT						
Recreation	Escherichia coli	4A			2.36	2010	L
K30R-01-BAC	Darden Mill Run						
Recreation	Escherichia coli	4A			10.72	2006	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K31R-01-BAC	Blackwater Swamp, Warwick Swamp						
Recreation	Escherichia coli	4A			22.90	2006	L
	Escherichia coli	4A			13.21	2008	L
K31R-02-BAC	Second Swamp						
Recreation	Escherichia coli	4A			9.52	2010	L
K31R-04-BAC	Warwick Swamp						
Recreation	Escherichia coli	4A			3.02	2010	L
K31R-05-BAC	North Fork Blackwater Swamp						
Recreation	Escherichia coli	4A			6.11	2010	L
K31R-08-BAC	XHO - Warwick Swamp, UT						
Recreation	Escherichia coli	4A			2.42	2012	L
K31R-09-BAC	XGX - Warwick Swamp, UT						
Recreation	Escherichia coli	4A			2.22	2012	L
K32R-01-BAC	Blackwater River						
Recreation	Escherichia coli	4A			23.94	2006	L
	Escherichia coli	4A			2.32	2008	L
K32R-02-BAC	Spring Branch						
Recreation	Escherichia coli	4A			4.15	2012	L
K32R-02-BEN	Spring Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.15	1998	L
K32R-02-PH	Spring Branch						
Aquatic Life	pH	4A			4.15	2008	L
K32R-04-BAC	Otterdam Swamp						
Recreation	Escherichia coli	4A			5.86	2006	L
	Escherichia coli	4A			7.44	2016	L
K32R-05-BAC	Coppahaunk Swamp, UT - XDT						
Recreation	Escherichia coli	4A			0.91	2006	L
K32R-07-BAC	Cypress Swamp Tributaries						
Recreation	Escherichia coli	4A			143.62	2006	L
K32R-08-BAC	Cypress Swamp						
Recreation	Escherichia coli	4A			17.06	2006	L
K32R-11-BAC	XDR - UT to Otterdam Swamp						
Recreation	Escherichia coli	4A			2.61	2010	L
K32R-15-BAC	Spring Branch, UT (XAW)						
Recreation	Escherichia coli	4A			1.07	2010	L
K32R-16-BAC	Spring Branch, UT (XAL)						
Recreation	Escherichia coli	4A			0.72	2012	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K34R-01-BAC	Mill Swamp						
Recreation	Escherichia coli	4A			8.44	2010	L
K34R-02-BAC	Rattlesnake Swamp						
Recreation	Escherichia coli	4A			6.42	2010	L
K40R-01-DO	Unnamed tributary to Northwest River						
Aquatic Life	Oxygen, Dissolved	4A			4.06	2002	L
K40R-02-DO	Northwest River (Upper, Middle, Lower & Mouth)						
Aquatic Life	Oxygen, Dissolved	4A			15.71	1998	L
	Oxygen, Dissolved	4A			0.70	2010	L
K40R-06-DO	Indian Creek tributary to Northwest River						
Aquatic Life	Oxygen, Dissolved	4A			3.46	2002	L
K41R-01-DO	Pocaty River						
Aquatic Life	Oxygen, Dissolved	4A			7.43	2002	L
K41R-02-BAC	Milldam Creek - Lower						
Recreation	Escherichia coli	4A			2.54	1998	M
K41R-03-DO	Albemarle Canal & North Landing River - Middle						
Aquatic Life	Oxygen, Dissolved	4A			8.55	2002	L
	Oxygen, Dissolved	4A			2.15	2006	L
K41R-04-BAC	North Landing River - Middle						
Recreation	Escherichia coli	4A			1.38	2008	L
K41R-05-BAC	West Neck Creek - Middle						
Recreation	Escherichia coli	4A			2.74	2002	M
K41R-09-BAC	Pocaty River						
Recreation	Escherichia coli	4A			7.43	2012	L
K42E-01-BAC	Nawney Creek - Upper						
Recreation	Enterococcus	4A	0.016			2004	M
K42E-02-BAC	Nawney Creek - Lower						
Recreation	Enterococcus	4A	0.017			2006	M
K42E-04-BAC	Muddy Creek						
Recreation	Enterococcus	4A	0.026			2004	L
K42E-05-BAC	Beggars Bridge Creek						
Recreation	Enterococcus	4A	0.042			2004	L
K42E-06-BAC	Ashville Bridge Creek - Lower						
Recreation	Enterococcus	4A	0.016			2006	L
K42E-06-DO	Ashville Bridge Creek - Lower						
Aquatic Life	Oxygen, Dissolved	4A	0.016			2006	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
K42E-10-BAC	Hell Point Creek - Upper						
Recreation	Enterococcus	4A	0.030			2006	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
O03R-01-BAC	Middle Fork Holston River						
Recreation	Fecal Coliform	4A			24.09	2002	M
	Escherichia coli	4A			12.59	2004	M
	Escherichia coli	4A			3.87	2006	M
	Fecal Coliform	4A			3.80	2006	M
	Escherichia coli	4A			0.88	2008	M
	Escherichia coli	4A			10.65	2010	M
	Escherichia coli	4A			3.42	2010	M
	Escherichia coli	4A			4.25	2014	M
O04R-01-BAC	Hungry Mother Creek						
Recreation	Escherichia coli	4A			4.83	2006	M
O04R-03-BAC	Laurel Springs Creek						
Recreation	Escherichia coli	4A			2.12	2006	M
O04R-04-BAC	Walker Creek						
Recreation	Escherichia coli	4A			13.52	2006	M
O04R-05-BAC	Sulphur Spring Branch and Tributaries						
Recreation	Escherichia coli	4A			11.28	2012	M
O05R-01-BAC	Three Creeks						
Recreation	Escherichia coli	4A			0.49	1996	H, 2yr
	Fecal Coliform	4A			18.92	2002	H, 2yr
	Fecal Coliform	4A			1.54	2002	H, 2yr
	Escherichia coli	4A			10.76	2006	H, 2yr
O05R-01-BEN	Three Creeks						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			0.49	2004	H, 2yr
	Benthic-Macroinvertebrate Bioassessments	4A			26.07	2004	H, 2yr
	Sedimentation/Siltation	4A			23.75	2010	H, 2yr
O05R-02-BAC	Greenway Creek						
Recreation	Escherichia coli	4A			5.02	2008	H
O05R-05-BEN	Middle Fork Holston River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.80	2006	L
	Benthic-Macroinvertebrate Bioassessments	4A			9.19	2008	L
O06R-01-BAC	Wolf Creek						
Recreation	Fecal Coliform	4A			6.26	2004	M
	Fecal Coliform	4A			0.41	2006	M
	Escherichia coli	4A			3.33	2008	M
	Escherichia coli	4A			2.36	2010	M
	Escherichia coli	4A			3.34	2010	M
	Escherichia coli	4A			2.66	2016	M

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
O06R-01-BEN	Wolf Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.33	2002	M
	Benthic-Macroinvertebrate Bioassessments	4A			3.34	2006	M
	Sedimentation/Siltation	4A			3.34	2012	M
O06R-04-BAC	Town Creek						
Recreation	Escherichia coli	4A			4.75	2012	L
O07R-01-BAC	Beaver Creek and Tributaries						
Recreation	Fecal Coliform	4A			2.29	2004	M
	Escherichia coli	4A			5.09	2006	M
	Escherichia coli	4A			7.77	2006	M
	Escherichia coli	4A			7.27	2006	M
	Escherichia coli	4A			2.90	2006	M
O07R-01-BEN	Beaver Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			15.04	1998	M
	Sedimentation/Siltation	4A			15.04	2010	M
O09R-01-BAC	Lick Creek						
Recreation	Escherichia coli	4A			5.73	2006	L
O09R-03-BAC	North Fork Holston River						
Recreation	Fecal Coliform	4A			12.23	2006	L
	Escherichia coli	4A			12.23	2010	L
	Escherichia coli	4A			13.77	2010	L
	Escherichia coli	4A			12.58	2014	L
O10R-01-BAC	North Fork Holston River						
Recreation	Fecal Coliform	4A			5.32	2004	L
	Escherichia coli	4A			18.75	2006	L
	Fecal Coliform	4A			1.83	2006	L
	Escherichia coli	4A			1.83	2008	L
O10R-01-HG	North Fork Holston River						
Fish Consumption	Mercury in Fish Tissue	4A			81.99	1994	L
O10R-05-BAC	North Fork Holston River Tributaries						
Recreation	Fecal Coliform	4A			2.65	2004	L
	Fecal Coliform	4A			15.36	2006	L
	Escherichia coli	4A			8.88	2006	L
	Escherichia coli	4A			11.71	2010	L
	Escherichia coli	4A			2.65	2010	L
	Escherichia coli	4A			6.48	2010	L
O11R-03-BEN	North Fork Holston River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.92	2006	L
O11R-03-CHLR	North Fork Holston						
Aquatic Life	Chloride	4A			4.92	1996	L

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
O11R-04-BAC	Logan Creek						
Recreation	Escherichia coli	4A			5.42	2006	L
O11R-05-BAC	Toole Creek						
Recreation	Escherichia coli	4A			5.85	2006	L
O11R-08-BAC	Brumley Creek						
Recreation	Escherichia coli	4A			4.17	2008	L
O11R-09-BAC	East Fork Wolf Creek						
Recreation	Escherichia coli	4A			3.47	2012	L
O11R-11-BAC	Finley Creek						
Recreation	Escherichia coli	4A			1.90	2012	L
O11R-12-BAC	West Fork Wolf Creek						
Recreation	Escherichia coli	4A			3.16	2012	L
O12R-02-BAC	Abrams Creek						
Recreation	Escherichia coli	4A			11.77	2006	L
O12R-03-BAC	Cove Creek						
Recreation	Escherichia coli	4A			13.36	2006	L
O12R-04-BAC	Little Moccasin Creek						
Recreation	Escherichia coli	4A			5.02	2006	L
O12R-06-BAC	Smith Creek and Gaspard Creek						
Recreation	Escherichia coli	4A			8.12	2006	L
	Escherichia coli	4A			1.37	2016	L
O13R-03-BAC	North Fork Holston River Tributaries						
Recreation	Escherichia coli	4A			8.73	2008	L
	Escherichia coli	4A			15.89	2010	L
O14R-01-BAC	Big Moccasin Creek						
Recreation	Escherichia coli	4A			28.48	2008	L
	Escherichia coli	4A			8.24	2010	L
	Escherichia coli	4A			2.87	2012	L
P01R-01-BAC	Clinch River and Cavitts Creek						
Recreation	Fecal Coliform	4A			6.14	2004	L
	Fecal Coliform	4A			6.11	2006	L
	Escherichia coli	4A			12.25	2010	L
P01R-01-BEN	Clinch River and Cavitts Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			6.14	2002	L
	Sedimentation/Siltation	4A			6.14	2010	L
	Benthic-Macroinvertebrate Bioassessments	4A			2.40	2016	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
P01R-02-BAC	Plum Creek and North Fork Clinch River						
Recreation	Fecal Coliform	4A			2.88	2004	L
	Escherichia coli	4A			2.88	2010	L
	Escherichia coli	4A			2.61	2010	L
P01R-03-BAC	South Fork Clinch River and Cavitts Creek						
Recreation	Escherichia coli	4A			6.57	2010	M
P02R-02-BAC	Indian Creek						
Recreation	Fecal Coliform	4A			9.07	2004	L
	Escherichia coli	4A			9.07	2008	L
	Escherichia coli	4A			4.57	2012	L
	Escherichia coli	4A			4.61	2014	L
P03R-01-BAC	Clinch River Tributaries						
Recreation	Escherichia coli	4A			3.05	2006	L
	Escherichia coli	4A			7.40	2010	L
P03R-02-BAC	Clinch River						
Recreation	Fecal Coliform	4A			5.55	2002	L
	Escherichia coli	4A			3.01	2004	L
	Escherichia coli	4A			5.55	2010	L
P04R-01-BAC	Lewis Creek and Hess Creek						
Recreation	Fecal Coliform	4A			4.98	2006	L
	Escherichia coli	4A			4.98	2010	L
	Escherichia coli	4A			4.49	2010	L
P04R-01-BEN	Lewis Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.98	2002	L
	Sedimentation/Siltation	4A			4.98	2010	L
P04R-02-BAC	Swords Creek						
Recreation	Escherichia coli	4A			2.91	2010	L
P05R-01-BAC	Indian Creek						
Recreation	Fecal Coliform	4A			4.10	2004	L
	Escherichia coli	4A			4.10	2010	L
P05R-04-BAC	Little River						
Recreation	Fecal Coliform	4A			5.25	2004	L
	Fecal Coliform	4A			4.12	2008	L
	Escherichia coli	4A			5.25	2010	L
	Escherichia coli	4A			4.12	2012	L
P05R-05-BAC	Maiden Spring Creek						
Recreation	Fecal Coliform	4A			16.21	2004	L
	Escherichia coli	4A			9.51	2010	L
	Escherichia coli	4A			6.70	2016	L

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
P05R-07-BEN	Laurel Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.41	2012	L
P06R-01-BAC	Big Cedar Creek and Tributaries						
Recreation	Fecal Coliform	4A			1.10	2004	L
	Fecal Coliform	4A			4.20	2006	L
	Escherichia coli	4A			10.42	2006	L
	Escherichia coli	4A			7.49	2006	L
	Escherichia coli	4A			1.10	2008	L
	Escherichia coli	4A			12.06	2012	L
P06R-02-BAC	Little Cedar Creek						
Recreation	Escherichia coli	4A			2.19	2012	M
P07R-01-BAC	Clinch River and Tributaries						
Recreation	Escherichia coli	4A			28.05	2006	M
	Escherichia coli	4A			3.40	2012	M
P07R-01-BEN	Clinch River Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.40	2010	L
P08R-01-BAC	Dumps Creek						
Recreation	Escherichia coli	4A			3.54	2006	L
P09R-01-BAC	Clinch River						
Recreation	Fecal Coliform	4A			5.99	2004	M
	Escherichia coli	4A			5.99	2012	M
	Escherichia coli	4A			15.73	2014	M
P09R-03-BAC	Staunton Creek & Fall Creek						
Recreation	Escherichia coli	4A			12.74	2006	L
P09R-05-BAC	Russell Creek						
Recreation	Escherichia coli	4A			5.23	2008	L
P09R-06-BAC	Bull Run						
Recreation	Escherichia coli	4A			3.99	2012	M
P10R-01-BAC	Lick Creek and Tributaries						
Recreation	Fecal Coliform	4A			9.61	2002	L
	Fecal Coliform	4A			4.18	2004	L
	Escherichia coli	4A			9.61	2006	L
	Escherichia coli	4A			2.49	2012	L
P10R-01-BEN	Lick Creek and Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			9.61	2002	L
	Benthic-Macroinvertebrate Bioassessments	4A			5.52	2004	L
	Benthic-Macroinvertebrate Bioassessments	4A			4.18	2004	L
	Sedimentation/Siltation	4A			9.61	2010	L

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
P11R-01-BEN	Guest River and Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			31.43	2006	L
	Sedimentation/Siltation	4A			28.34	2010	L
	Sedimentation/Siltation	4A			3.09	2012	L
	Benthic-Macroinvertebrate Bioassessments	4A			11.80	2014	L
P11R-03-BAC	Guest River and Bear Creek						
Recreation	Fecal Coliform	4A			4.15	2002	M
	Escherichia coli	4A			4.15	2004	M
	Escherichia coli	4A			3.09	2006	M
	Escherichia coli	4A			1.94	2010	M
	Escherichia coli	4A			28.34	2012	M
	Escherichia coli	4A			5.06	2014	M
P11R-05-BAC	Crab Orchard Creek						
Recreation	Escherichia coli	4A			2.75	2006	L
P11R-06-BAC	Little Tom's Creek						
Recreation	Fecal Coliform	4A			4.79	2004	L
	Escherichia coli	4A			4.79	2006	L
P11R-08-BAC	Toms Creek						
Recreation	Escherichia coli	4A			12.60	2006	L
P13R-03-BAC	Clinch River, Cove Creek and Stock Creek						
Recreation	Escherichia coli	4A			11.91	2008	M
	Escherichia coli	4A			9.63	2008	M
	Escherichia coli	4A			13.55	2014	M
P14R-01-BAC	Copper Creek, Moll Creek and Valley Creek						
Recreation	Escherichia coli	4A			18.36	2008	M
	Escherichia coli	4A			40.41	2014	M
P15R-00-BAC	North Fork Clinch River						
Recreation	Fecal Coliform	4A			5.73	2002	M
	Escherichia coli	4A			11.40	2008	M
	Escherichia coli	4A			5.73	2010	M
	Escherichia coli	4A			2.46	2014	M
P16R-01-BAC	Blackwater Creek						
Recreation	Fecal Coliform	4A			2.09	2004	L
	Escherichia coli	4A			2.09	2008	L
	Escherichia coli	4A			1.93	2016	L
P17R-01-BAC	Callahan Creek						
Recreation	Fecal Coliform	4A			3.63	2004	L
	Escherichia coli	4A			3.63	2006	L

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
P17R-01-BEN	Callahan Creek and Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			1.68	2002	L
	Sedimentation/Siltation	4A			1.68	2010	L
	Total Dissolved Solids	4A			1.68	2010	L
	Total Dissolved Solids	4A			3.63	2012	L
	Sedimentation/Siltation	4A			3.63	2012	L
	Benthic-Macroinvertebrate Bioassessments	4A			3.63	2012	L
	Benthic-Macroinvertebrate Bioassessments	4A			14.29	2014	L
P17R-02-BAC	Powell River						
Recreation	Fecal Coliform	4A			5.46	2006	L
	Escherichia coli	4A			2.71	2006	L
	Escherichia coli	4A			1.00	2008	L
	Escherichia coli	4A			5.46	2010	L
P17R-02-BEN	Powell River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			2.71	2002	L
	Benthic-Macroinvertebrate Bioassessments	4A			5.70	2010	L
	Benthic-Macroinvertebrate Bioassessments	4A			10.59	2014	L
P17R-03-BEN	Black Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.11	2002	L
	Manganese	4A			3.11	2002	L
	Alkalinity, Carbonate as CaCO3	4A			3.11	2010	L
P17R-07-BEN	Pigeon Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.42	2012	H
P17R-11-BEN	Powell River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			5.46	2014	L
P18R-01-BAC	South Fork Powell River						
Recreation	Fecal Coliform	4A			6.45	2004	L
	Escherichia coli	4A			6.45	2012	L
P18R-01-BEN	South Fork Powell River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			5.80	2004	L
	Sedimentation/Siltation	4A			5.80	2012	L
P18R-02-BAC	Butcher Fork						
Recreation	Fecal Coliform	4A			4.96	2004	L
	Escherichia coli	4A			4.96	2012	L
P18R-03-BAC	South Fork Powell River						
Recreation	Escherichia coli	4A			5.80	2010	L
P19R-01-BAC	Mud Creek						
Recreation	Escherichia coli	4A			1.81	2010	M

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
P19R-01-BEN	Powell River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			6.62	2004	L
	Sedimentation/Siltation	4A			6.62	2012	L
P20R-00-BEN	Straight Creek and Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			28.10	1996	L
P20R-01-BAC	North Fork Powell River						
Recreation	Escherichia coli	4A			6.05	2004	L
P20R-01-BEN	North Fork Powell River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			6.05	1994	L
	Sedimentation/Siltation	4A			6.05	2012	L
P20R-02-BAC	Straight Creek and Tributaries						
Recreation	Escherichia coli	4A			6.81	2002	L
	Escherichia coli	4A			3.33	2016	L
P20R-03-BAC	Reeds Creek						
Recreation	Escherichia coli	4A			1.35	2012	M
P21R-03-BEN	Powell River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			6.46	2008	L
	Benthic-Macroinvertebrate Bioassessments	4A			12.74	2012	L
P21R-06-BAC	Station Creek						
Recreation	Escherichia coli	4A			2.31	2012	M
P22R-01-BAC	Wallen Creek						
Recreation	Escherichia coli	4A			42.90	2012	M
P23R-01-BEN	Powell River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			8.47	2002	L
Q03R-01-BEN	Pawpaw Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.23	1994	L
Q03R-02-BAC	Knox Creek						
Recreation	Escherichia coli	4A			9.53	2002	L
	Fecal Coliform	4A			7.75	2002	L
	Fecal Coliform	4A			8.70	2004	L
	Escherichia coli	4A			7.75	2006	L
	Escherichia coli	4A			8.70	2010	L
Q03R-02-BEN	Knox Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			17.28	1996	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
Q04R-01-BAC	Levisa Fork and Tributaries						
Recreation	Fecal Coliform	4A			9.36	2002	L
	Fecal Coliform	4A			7.89	2004	L
	Fecal Coliform	4A			8.26	2004	L
	Escherichia coli	4A			2.68	2006	L
	Escherichia coli	4A			4.72	2008	L
	Escherichia coli	4A			9.36	2008	L
	Escherichia coli	4A			7.89	2010	L
	Escherichia coli	4A			8.26	2010	L
Q04R-01-BEN	Levisa Fork and Slate Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			2.68	2002	L
	Benthic-Macroinvertebrate Bioassessments	4A			8.26	2002	L
	Benthic-Macroinvertebrate Bioassessments	4A			13.31	2004	L
	Benthic-Macroinvertebrate Bioassessments	4A			6.31	2006	L
	Benthic-Macroinvertebrate Bioassessments	4A			3.03	2014	L
Q04R-01-PCB	Levisa Fork and Garden Creek						
Fish Consumption	PCB in Fish Tissue	4A			1.84	2004	L
	PCB in Fish Tissue	4A			8.26	2006	L
	PCB in Fish Tissue	4A			17.66	2006	L
	PCB in Fish Tissue	4A			3.94	2006	L
Q04R-02-BAC	Garden Creek						
Recreation	Fecal Coliform	4A			1.84	2002	L
	Escherichia coli	4A			7.85	2008	L
	Escherichia coli	4A			10.39	2008	L
Q04R-02-BEN	Garden Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			1.84	1998	L
	Benthic-Macroinvertebrate Bioassessments	4A			6.01	2008	L
	Benthic-Macroinvertebrate Bioassessments	4A			10.39	2008	L
	Total Dissolved Solids	4A			6.01	2010	L
Q05R-00-BEN	Dismal Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			9.14	2016	L
Q05R-01-BAC	Dismal Creek						
Recreation	Escherichia coli	4A			12.44	2010	M
Q08R-01-BAC	Bull Creek, Poplar Creek, and Home Creek						
Recreation	Escherichia coli	4A			31.67	2008	M
	Escherichia coli	4A			4.79	2014	M
Q08R-01-BEN	Bull Creek and Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			28.45	1998	L
Q08R-02-BEN	Home Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.79	2010	M

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Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
Q08R-05-BAC	Conaway Creek						
Recreation	Escherichia coli	4A			2.62	2016	L
Q12R-01-BEN	Russell Prater Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			11.72	1996	L
	Sedimentation/Siltation	4A			11.72	2010	L
	Total Dissolved Solids	4A			11.72	2010	L
Q13R-01-BEN	South Fork Pound River and Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.59	2002	L
	Benthic-Macroinvertebrate Bioassessments	4A			1.70	2002	L
	Benthic-Macroinvertebrate Bioassessments	4A			2.21	2004	L
	Benthic-Macroinvertebrate Bioassessments	4A			3.44	2004	L
	Benthic-Macroinvertebrate Bioassessments	4A			2.77	2014	L
Q13R-02-BEN	North Fork Pound River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			1.29	2002	L
Q13R-08-BEN	North Fork Pound River Tributaries						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			10.25	2010	H

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C01E-01-SF	Great Wicomico River						
Shellfishing	Fecal Coliform	4A	0.382			1998	L
C01E-01-SF2	Great Wicomico River / Blackwells Creek						
Shellfishing	Fecal Coliform	4A	0.125			2004	L
C01E-02-SF	Balls Creek						
Shellfishing	Fecal Coliform	4A	0.064			1998	L
C01E-02-SF2	Balls Creek						
Shellfishing	Fecal Coliform	4A	0.113			2002	L
C01E-03-SF	Tipers Creek						
Shellfishing	Fecal Coliform	4A	0.083			1998	L
C01E-03-SF2	Tipers Creek						
Shellfishing	Fecal Coliform	4A	0.039			2002	L
C01E-05-SF	Whays Creek						
Shellfishing	Fecal Coliform	4A	0.041			1998	L
C01E-06-SF	Warehouse Creek						
Shellfishing	Fecal Coliform	4A	0.069			1998	L
C01E-06-SF2	Warehouse Creek						
Shellfishing	Fecal Coliform	4A	0.008			2006	L
C01E-07-SF	Horn Harbor						
Shellfishing	Fecal Coliform	4A	0.071			2002	L
C01E-08-BAC	Cockrell Creek						
Recreation	Enterococcus	4A	0.470			2008	L
C01E-09-SF	Prentice Creek						
Shellfishing	Fecal Coliform	4A	0.015			1998	L
C01E-09-SF2	Prentice Creek						
Shellfishing	Fecal Coliform	4A	0.014			2010	L
C01E-11-SF	Little Taskmakers Creek						
Shellfishing	Fecal Coliform	4A	0.049			2008	L
C01E-12-BAC	Mill Creek						
Recreation	Enterococcus	4A	0.241			2010	L
C01E-12-SF	Mill Creek						
Shellfishing	Fecal Coliform	4A	0.241			1998	L
C01E-12-SF2	Mill Creek						
Shellfishing	Fecal Coliform	4A	0.135			2004	L
C01E-14-SF	Gaskin Pond						
Shellfishing	Fecal Coliform	4A	0.115			2010	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C01E-15-SF	Dividing Creek, Lawrence Creek, Natty Point Cove						
Shellfishing	Fecal Coliform	4A	0.201			1998	L
	Fecal Coliform	4A	0.009			2014	L
C01E-16-SF	Great Wicomico River, UT						
Shellfishing	Fecal Coliform	4A	0.033			2016	L
C01E-18-SF	Gougher Creek						
Shellfishing	Fecal Coliform	4A	0.036			2016	L
C01E-19-SF	XEU - Prentice Creek, UT						
Shellfishing	Fecal Coliform	4A	0.011			1998	L
C01E-20-SF	Lees Cove						
Shellfishing	Fecal Coliform	4A	0.015			2002	L
C01E-21-SF	XDL - Chesapeake Bay, UT (Big Fleets Pond)						
Shellfishing	Fecal Coliform	4A	0.018			2002	L
C01E-22-SF	Indian Creek & Pitman Cove						
Shellfishing	Fecal Coliform	4A	0.182			1998	L
C01E-23-SF	Towles Creek						
Shellfishing	Fecal Coliform	4A	0.027			2014	L
C01E-24-SF	Dymer Creek						
Shellfishing	Fecal Coliform	4A	0.177			1998	L
C01E-25-SF	Bailey Prong						
Shellfishing	Fecal Coliform	4A	0.052			2016	L
C01E-26-SF	Johnson Creek						
Shellfishing	Fecal Coliform	4A	0.029			2014	L
C01E-27-BAC	Tabbs Creek						
Recreation	Enterococcus	4A	0.095			2012	L
C01E-27-SF	Tabbs Creek						
Shellfishing	Fecal Coliform	4A	0.111			1998	L
C01E-28-SF	Antipoison Creek						
Shellfishing	Fecal Coliform	4A	0.042			1998	L
C01E-29-BAC	Indian Creek						
Recreation	Enterococcus	4A	0.239			2014	L
C01E-30-SF	Dymer Creek, UT						
Shellfishing	Fecal Coliform	4A	0.018			2016	L
C01E-31-SF	Jarvis Creek						
Shellfishing	Fecal Coliform	4A	0.026			2010	L
C01E-33-SF	Betts Mill Creek						
Shellfishing	Fecal Coliform	4A	0.082			2004	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C01E-37-SF	Harveys Creek						
Shellfishing	Fecal Coliform	4A	0.045			2008	L
C01E-38-SF	Cranes Creek						
Shellfishing	Fecal Coliform	4A	0.019			2008	L
C01E-40-SF	Coles Creek						
Shellfishing	Fecal Coliform	4A	0.019			2008	L
C01E-42-SF	Jarvis Creek						
Shellfishing	Fecal Coliform	4A	0.016			2016	L
C01E-48-SF	Chases Cove						
Shellfishing	Fecal Coliform	4A	0.023			2006	L
C01E-50-SF	Antipoison Creek, UT						
Shellfishing	Fecal Coliform	4A	0.013			2006	L
C01E-51-SF	Antipoison Creek, UT						
Shellfishing	Fecal Coliform	4A	0.004			2006	L
C01E-53-SF	Owens Pond						
Shellfishing	Fecal Coliform	4A	0.037			2012	L
C01E-54-SF	Owens Pond						
Shellfishing	Fecal Coliform	4A	0.073			2012	L
C01E-55-BAC	Head River Branch						
Recreation	Enterococcus	4A	0.020			2012	L
C01E-56-SF	Penny Creek						
Shellfishing	Fecal Coliform	4A	0.009			2012	L
C01E-58-SF	XEV - Mill Creek, UT						
Shellfishing	Fecal Coliform	4A	0.007			2012	L
C01E-59-BAC	Dividing Creek and XDB - Dividing Creek, UT						
Recreation	Enterococcus	4A	0.068			2012	L
C01E-60-SF	Lees Cove						
Shellfishing	Fecal Coliform	4A	0.010			2012	L
C01E-64-BAC	Bush Mill Stream						
Recreation	Enterococcus	4A	0.095			2012	L
C02R-01-BAC	Dragon Swamp						
Recreation	Escherichia coli	4A			12.37	2014	L
C02R-04-BAC	Exol Swamp						
Recreation	Escherichia coli	4A			11.34	2016	L
C03E-01-BAC	Harpers Creek						
Recreation	Enterococcus	4A	0.062			2010	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C03E-02-SF	Piankatank River/Harpers Creek						
Shellfishing	Fecal Coliform	4A	2.165			1998	L
C03E-03-SF	Frenchs Creek						
Shellfishing	Fecal Coliform	4A	0.010			2002	L
C03E-04-BAC	Ferry Creek						
Recreation	Enterococcus	4A	0.084			2010	L
C03E-04-SF	Ferry Creek						
Shellfishing	Fecal Coliform	4A	0.084			2014	L
C03E-05-SF	Wilton Creek						
Shellfishing	Fecal Coliform	4A	0.134			1998	L
C03E-06-SF	Healy Creek						
Shellfishing	Fecal Coliform	4A	0.071			1998	L
C03E-07-SF	Moore Creek						
Shellfishing	Fecal Coliform	4A	0.069			2002	L
C03E-08-SF	Jackson Creek						
Shellfishing	Fecal Coliform	4A	0.019			1998	L
C03E-08-SF2	Jackson Creek						
Shellfishing	Fecal Coliform	4A	0.002			2006	L
C03E-09-SF	Piankatank River, UT						
Shellfishing	Fecal Coliform	4A	0.007			2016	L
C03E-11-SF	Jackson Creek						
Shellfishing	Fecal Coliform	4A	0.013			2014	L
C03E-12-SF	Cobbs Creek						
Shellfishing	Fecal Coliform	4A	0.086			2014	L
C03E-13-SF	Jackson Creek, UT						
Shellfishing	Fecal Coliform	4A	0.033			2014	L
C03E-15-SF	Dancing Creek						
Shellfishing	Fecal Coliform	4A	0.034			2008	L
C03E-18-SF	Cores Creek						
Shellfishing	Fecal Coliform	4A	0.018			2014	L
C03E-19-SF	Porpoise Cove						
Shellfishing	Fecal Coliform	4A	0.011			2008	L
C03E-20-SF	Piankatank River						
Shellfishing	Fecal Coliform	4A	0.401			2014	L
C03E-21-SF	Piankatank River, UT						
Shellfishing	Fecal Coliform	4A	0.003			2016	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C03E-22-SF	Jackson Creek, UT						
Shellfishing	Fecal Coliform	4A	0.011			2016	L
C04E-01-SF	Queens Creek						
Shellfishing	Fecal Coliform	4A	0.123			1998	L
C04E-01-SF2	Queens Creek, UT						
Shellfishing	Fecal Coliform	4A	0.019			2002	L
C04E-04-SF	Put In Creek						
Shellfishing	Fecal Coliform	4A	0.021			2016	L
C04E-05-SF	Stutts Creek and Morris Creek						
Shellfishing	Fecal Coliform	4A	0.111			1998	L
C04E-05-SF2	Stutts Creek and Morris Creek						
Shellfishing	Fecal Coliform	4A	0.054			2002	L
C04E-07-SF	Billups Creek						
Shellfishing	Fecal Coliform	4A	0.029			1998	L
C04E-08-SF	North River						
Shellfishing	Fecal Coliform	4A	0.317			1998	L
	Fecal Coliform	4A	0.025			2010	L
C04E-08-SF2	North River						
Shellfishing	Fecal Coliform	4A	0.135			2002	L
C04E-09-SF	Elmington Creek						
Shellfishing	Fecal Coliform	4A	0.023			2014	L
C04E-09-SF2	Elmington Creek						
Shellfishing	Fecal Coliform	4A	0.009			2014	L
C04E-10-SF	Back Creek						
Shellfishing	Fecal Coliform	4A	0.071			1998	L
C04E-11-SF	Greenmansion Cove						
Shellfishing	Fecal Coliform	4A	0.027			2014	L
C04E-12-SF	Davis Creek						
Shellfishing	Fecal Coliform	4A	0.037			2002	L
C04E-13-SF	East River						
Shellfishing	Fecal Coliform	4A	0.198			1998	L
C04E-14-SF	Put In Creek						
Shellfishing	Fecal Coliform	4A	0.079			1998	L
C04E-15-SF	Davis Creek						
Shellfishing	Fecal Coliform	4A	0.006			2012	L
C04E-16-SF	XFA - North River, UT						
Shellfishing	Fecal Coliform	4A	0.020			2014	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C04E-18-SF	Horn Harbor						
Shellfishing	Fecal Coliform	4A	0.036			1998	L
C04E-19-SF	Doctors Creek						
Shellfishing	Fecal Coliform	4A	0.005			1998	L
C04E-21-SF	Piankatank River, UT - aka Kibble Pond						
Shellfishing	Fecal Coliform	4A	0.016			2016	L
C04E-23-SF	Put In Creek, UT						
Shellfishing	Fecal Coliform	4A	0.005			2016	L
C04E-24-SF	Oakland Creek						
Shellfishing	Fecal Coliform	4A	0.030			2016	L
C04E-25-SF	Winder Creek						
Shellfishing	Fecal Coliform	4A	0.025			2002	L
C04E-28-SF	Barn Creek						
Shellfishing	Fecal Coliform	4A	0.020			2008	L
C04E-29-SF	Miles Creek						
Shellfishing	Fecal Coliform	4A	0.030			2016	L
C04E-30-SF	Lanes Creek, UT						
Shellfishing	Fecal Coliform	4A	0.002			2008	L
C04E-42-SF	Weston Creek						
Shellfishing	Fecal Coliform	4A	0.025			2008	L
C04E-44-SF	East River, UT						
Shellfishing	Fecal Coliform	4A	0.014			2014	L
C04E-47-SF	Belleville Creek						
Shellfishing	Fecal Coliform	4A	0.037			2008	L
C04E-48-SF	Woodas Creek						
Shellfishing	Fecal Coliform	4A	0.040			2008	L
C04E-49-SF	East River						
Shellfishing	Fecal Coliform	4A	0.101			2008	L
C04E-52-SF	Lanes Creek						
Shellfishing	Fecal Coliform	4A	0.020			2012	L
C04E-54-SF	Davis Creek						
Shellfishing	Fecal Coliform	4A	0.009			2012	L
C04E-55-SF	Raymond Creek						
Shellfishing	Fecal Coliform	4A	0.026			2012	L
C04R-01-BAC	East River						
Recreation	Escherichia coli	4A			0.59	2012	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C04R-02-BAC	Burke Mill Stream						
Recreation	Enterococcus	4A	0.025			2012	L
C05E-01-SF	Ware River / Fox Mill Run						
Shellfishing	Fecal Coliform	4A	0.342			1998	L
C05E-01-SF2	Ware River						
Shellfishing	Fecal Coliform	4A	0.410			2002	L
C05E-02-SF	Wilson Creek						
Shellfishing	Fecal Coliform	4A	0.033			1998	L
C05E-02-SF2	Wilson Creek						
Shellfishing	Fecal Coliform	4A	0.162			2002	L
C05R-01-BAC	Fox Mill Run						
Recreation	Escherichia coli	4A			6.96	2010	L
C05R-03-BAC	Crany Creek						
Recreation	Escherichia coli	4A			3.90	2010	L
C05R-04-BAC	XEG - Fox Mill Run, UT						
Recreation	Escherichia coli	4A			1.71	2012	L
C06E-01-BAC	Northwest Branch Severn River						
Recreation	Enterococcus	4A	0.092			2010	L
	Enterococcus	4A	0.644			2016	L
C06E-01-SF	Northwest Branch Severn River						
Shellfishing	Fecal Coliform	4A	0.094			2016	L
C06E-02-SF	Northwest Branch Severn River, UT						
Shellfishing	Fecal Coliform	4A	0.034			2016	L
C06E-03-SF	Vaughns Creek						
Shellfishing	Fecal Coliform	4A	0.102			2016	L
C06E-04-SF	Heywood Creek						
Shellfishing	Fecal Coliform	4A	0.081			1998	L
C06E-05-SF	Thorntons Creek						
Shellfishing	Fecal Coliform	4A	0.052			1998	L
C06E-06-SF	Sterling Creek						
Shellfishing	Fecal Coliform	4A	0.021			2016	L
C06E-08-SF	Free School Creek						
Shellfishing	Fecal Coliform	4A	0.054			2008	L
C06R-01-BAC	Northwest Branch of Severn River						
Recreation	Escherichia coli	4A			2.16	2008	L
C06R-02-BAC	Northwest Branch of Severn River, UT						
Recreation	Enterococcus	4A	0.003			2012	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C07E-01-BAC	Brick Kiln Creek						
Recreation	Enterococcus	4A	0.086			2004	H
C07E-01-SF	Brick Kiln Creek						
Shellfishing	Fecal Coliform	4A	0.086			1998	H
C07E-02-BAC	Newmarket Creek - Upper & Lower						
Recreation	Enterococcus	4A	0.152			2006	H
C07E-04-BAC	Poquoson River - Upper						
Recreation	Enterococcus	4A	0.431			1998	H
C07E-05-BAC	SW Br Back R - DSS OPEN [TMDL]						
Recreation	Fecal Coliform	4A	0.994			1998	H
	Fecal Coliform	4A	0.044			2002	H
	Fecal Coliform	4A	0.423			2002	H
C07E-05-BAC2	Southwest Br. Back River - Mouth						
Recreation	Fecal Coliform	4A	0.227			2002	H
C07E-06-SF	Lambs Creek - Poquoson River						
Shellfishing	Fecal Coliform	4A	0.135			1998	H
C07E-07-SF	Patricks Creek - Poquoson River						
Shellfishing	Fecal Coliform	4A	0.119			2004	H
C07E-09-SF	White House Cove						
Shellfishing	Fecal Coliform	4A	0.145			1998	H
C07E-10-SF	Upper Back Creek						
Shellfishing	Fecal Coliform	4A	0.222			1998	H
C07E-11-SF	Poquoson River - Upper [TMDL - CD]						
Shellfishing	Fecal Coliform	4A	0.431			1998	H
C07E-13-SF	Long & Grunland Creeks						
Shellfishing	Fecal Coliform	4A	0.097			2010	H
C07E-14-SF	Harris River - Upper						
Shellfishing	Fecal Coliform	4A	0.171			1998	H
C07E-15-SF	DSS Inlet #1 - Unnamed Inlet at Mouth of SW Branch						
Shellfishing	Fecal Coliform	4A	0.025			1998	H
C07E-17-SF	Cedar & Topping Creeks						
Shellfishing	Fecal Coliform	4A	0.109			1998	H
C07E-19-SF	Tabbs Creek Mouth - NW Br Back River						
Shellfishing	Fecal Coliform	4A	0.015			2014	L
C07E-20-SF	Back Creek - Inlet near Dandy Point						
Shellfishing	Fecal Coliform	4A	0.034			2014	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C07E-21-SF	Cedar & Topping Creeks and Northwest Br. Back River - Upper						
Shellfishing	Fecal Coliform	4A	0.220			1998	H
C07E-22-SF	Newmarket Creek trib and Southwest Branch - Back River						
Shellfishing	Fecal Coliform	4A	1.146			1998	H
C07E-23-SF	Chisman Creek - Upper & Goose Cr						
Shellfishing	Fecal Coliform	4A	0.371			1998	H
C07E-25-SF	Lyons Creek - Upper, Middle and Lower						
Shellfishing	Fecal Coliform	4A	0.034			2006	H
C07E-26-SF	Floyds Bay						
Shellfishing	Fecal Coliform	4A	0.042			2006	H
C07E-33-SF	Northwest Br. Back River - Upper						
Shellfishing	Fecal Coliform	4A	0.248			2006	H
C07E-40-SF	Grunland Creek - Mouth						
Shellfishing	Fecal Coliform	4A	0.048			2012	L
C07E-42-SF	Front Cove - Upper						
Shellfishing	Fecal Coliform	4A	0.042			2006	L
C07E-44-BAC	Chisman Creek - Lower						
Recreation	Enterococcus	4A	0.541			2006	L
C07R-02-BAC	Newmarket Creek - Lower Riverine						
Recreation	Fecal Coliform	4A			2.01	2006	H
C08E-03-BAC	Thalia Creek, Thurston Branch & Buchanan Creek						
Recreation	Enterococcus	4A	0.286			2006	L
C08E-04-BAC	Western Branch - Upper, Lynnhaven River						
Recreation	Enterococcus	4A	0.151			2006	L
C08E-05-BAC	London Bridge Creek						
Recreation	Enterococcus	4A	0.059			2006	L
C08E-07-BAC	West Neck Creek (Upper) and Canal No. 2						
Recreation	Enterococcus	4A	0.124			1998	L
C08E-10-SF	Dey Cove/Mill Dam Creek						
Shellfishing	Fecal Coliform	4A	0.095			1998	L
C08E-13-SF	Lynnhaven River System						
Shellfishing	Fecal Coliform	4A	0.541			1998	L
	Fecal Coliform	4A	0.328			2012	L
C08E-17-SF	Linkhorn Bay - Upper						
Shellfishing	Fecal Coliform	4A	0.067			2016	L
C08E-18-SF	Little Neck Creek-Lower [Condemned SF]						
Shellfishing	Fecal Coliform	4A	0.035			2016	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C09E-01-BAC	Bulbeggar Creek						
Recreation	Enterococcus	4A	0.134			2004	L
C09E-01-SF	Pitts Creek - Lower						
Shellfishing	Fecal Coliform	4A	0.127			1998	L
C09E-02-BAC	Pocomoke River						
Recreation	Enterococcus	4A	0.240			2006	L
C09E-10-BAC	Holdens Creek - Upper						
Recreation	Enterococcus	4A	0.034			1998	L
C09E-10-SF	Pocomoke River - Lower & Sound						
Shellfishing	Fecal Coliform	4A	1.452			1998	L
	Fecal Coliform	4A	0.966			2010	L
C09E-11-SF	Unsegmented tidal tributaries in C09E-POCOH						
Shellfishing	Fecal Coliform	4A	0.006			2006	L
C09R-01-DO	Unnamed tributary to Pitts Creek						
Aquatic Life	Oxygen, Dissolved	4A			7.50	1998	L
C09R-02-BAC	Unnamed tributary to Pitts Creek						
Recreation	Escherichia coli	4A			7.50	2004	L
C10E-05-BAC	Messongo Creek - Upper						
Recreation	Fecal Coliform	4A	0.052			1998	L
C10E-06-BAC	Deep Creek						
Recreation	Enterococcus	4A	0.693			2006	L
C10E-07-BAC	Hunting Creek - Upstream						
Recreation	Enterococcus	4A	0.842			2006	L
C10E-10-SF	Bagwell Creek and Dix Cove						
Shellfishing	Fecal Coliform	4A	0.102			1998	L
C10E-11-SF	Deep Creek - Middle						
Shellfishing	Fecal Coliform	4A	0.160			1998	L
C10E-12-SF	Guilford Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.119			1998	L
C10E-12-SF2	Guilford Creek - Upper [No TMDL]						
Shellfishing	Fecal Coliform	4A	0.033			2008	L
C10E-18-SF	Hunting Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.168			1998	L
C10R-01-BAC	Unnamed tributary to Sandy Bottom Branch						
Recreation	Escherichia coli	4A			1.13	2006	L
C10R-01-BAC2	Unnamed tributary from Tyson Foods						
Recreation	Escherichia coli	4A			1.40	2010	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C10R-01-BEN	Unnamed tributary to Sandy Bottom Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4B			1.13	1996	L
C10R-01-BEN2	Unnamed tributary from Tyson Foods						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4B			1.40	2008	L
C10R-02-BAC	Sandy Bottom Branch						
Recreation	Escherichia coli	4A			1.29	2004	L
C10R-02-BEN	Sandy Bottom Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4B			1.29	1996	L
C10R-02-CU	Sandy Bottom Branch						
Aquatic Life	Copper	4B			1.29	2002	L
Wildlife	Copper	4B			1.29	2002	L
C11E-04-BAC	North Branch, Onancock Creek						
Recreation	Enterococcus	4A	0.021			2002	H, 2yr
C11E-05-BAC	Central Branch, Onancock Creek						
Recreation	Enterococcus	4A	0.018			2008	H, 2yr
C11E-06-BAC	Southern Branch, Onancock Creek						
Recreation	Enterococcus	4A	0.058			1998	H, 2yr
C11E-07-BAC	Onancock Creek Mainstem - Upper						
Recreation	Enterococcus	4A	0.034			2006	H, 2yr
	Enterococcus	4A	0.028			2006	H, 2yr
	Enterococcus	4A	0.094			2008	H, 2yr
C11E-11-SF	Chesconessex Creek - South Br. - Upper						
Shellfishing	Fecal Coliform	4A	0.144			1998	L
C11E-12-SF	Finneys Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.069			1998	M, 2yr
C11E-13-SF	Cedar Creek						
Shellfishing	Fecal Coliform	4A	0.063			1998	H, 2yr
C12E-10-BAC	Pungoteague Creek - Upper						
Recreation	Enterococcus	4A	0.494			2006	L
C12E-10-SF	Pungoteague Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.187			1998	L
C12E-11-SF	Taylor Creek						
Shellfishing	Fecal Coliform	4A	0.130			1998	L
C12E-12-SF	Underhill Creek						
Shellfishing	Fecal Coliform	4A	0.070			2006	L
C13E-11-SF	Church Creek -Upper						
Shellfishing	Fecal Coliform	4A	0.108			2016	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
C13E-12-SF	Craddock Creek - Upper [TMDL-bact.]						
Shellfishing	Fecal Coliform	4A	0.082			1998	L
C13E-13-SF	Holly Grove Cove- Upper & Kelley Cove						
Shellfishing	Fecal Coliform	4A	0.132			1998	H
C13E-14-SF	Nassawadox Creek - Upper [TMDL-bact.]						
Shellfishing	Fecal Coliform	4A	0.242			1998	H
C13E-15-SF	Occohannock Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.380			1998	L
C13E-18-SF	McLean Gut - Upper						
Shellfishing	Fecal Coliform	4A	0.038			1998	L
C13E-19-SF	Nandua Creek - Upper [TMDL-bact.]						
Shellfishing	Fecal Coliform	4A	0.144			1998	L
C13E-22-SF	Shields Cove & Fisher Cove						
Shellfishing	Fecal Coliform	4A	0.053			2008	L
C14E-01-BAC	Hungars Creek - Upper						
Recreation	Fecal Coliform	4A	0.138			1998	L
C14E-11-SF	Hungars Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.138			1998	L
C14E-13-SF	Mattawoman Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.177			1998	L
C14E-14-SF	The Gulf - Upper						
Shellfishing	Fecal Coliform	4A	0.140			1998	L
C14E-16-SF	Westerhouse Creek - Upper and Middle South Branch [TMDL]						
Shellfishing	Fecal Coliform	4A	0.037			1998	H
C14E-18-SF	UT to Hungars Creek						
Shellfishing	Fecal Coliform	4A	0.039			2012	L
C14E-19-SF	Hungars Creek - Northern Trib						
Shellfishing	Fecal Coliform	4A	0.073			2014	L
C15E-10-SF	Kings Creek - Upper Forks						
Shellfishing	Fecal Coliform	4A	0.130			1998	L
C16E-10-SF	Old Plantation Creek - Upper [TMDL]						
Shellfishing	Fecal Coliform	4A	0.044			1998	L
C16E-10-SF2	Old Plantation Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.152			2008	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
CB5MH-DO-BAY	Chesapeake Bay segment CB5MH						
Aquatic Life	Oxygen, Dissolved	4A	5.846			2002	L
	Oxygen, Dissolved	4A	185.848			2004	L
	Oxygen, Dissolved	4A	10.560			2006	L
	Oxygen, Dissolved	4A	0.331			2008	L
	Oxygen, Dissolved	4A	1.531			2016	L
Deep-Water Aquatic Life	Oxygen, Dissolved	4A	5.846			2002	L
	Oxygen, Dissolved	4A	185.848			2004	L
	Oxygen, Dissolved	4A	10.527			2006	L
	Oxygen, Dissolved	4A	0.331			2008	L
	Oxygen, Dissolved	4A	1.531			2016	L
Open-Water Aquatic Life	Oxygen, Dissolved	4D	185.848			2004	L
CB5MH-SAV-BAY	Chesapeake Bay segment CB5MH						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	211.984			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	211.984			2006	L
CB6PH-DO-BAY	Chesapeake Bay segment CB6PH						
Aquatic Life	Oxygen, Dissolved	4A	291.427			2006	L
Deep-Water Aquatic Life	Oxygen, Dissolved	4A	127.195			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	291.427			2006	L
CB6PH-SAV-BAY	Chesapeake Bay segment CB6PH						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	287.502			2006	L
	Aquatic Plants (Macrophytes)	4A	3.925			2016	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	287.502			2006	L
	Aquatic Plants (Macrophytes)	4A	3.925			2016	L
CB7PH-DO-BAY	Chesapeake Bay segment CB7PH						
Aquatic Life	Oxygen, Dissolved	4A	541.440			1998	L
	Oxygen, Dissolved	4A	33.780			2006	L
Deep-Water Aquatic Life	Oxygen, Dissolved	4D	168.626			1998	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	541.440			1998	L
	Oxygen, Dissolved	4A	33.780			2006	L
CB7PH-SAV-BAY	Chesapeake Bay segment CB7PH						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	575.220			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	575.220			2006	L
CB8PH-SAV-BAY	Chesapeake Bay segment CB8PH						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	148.492			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	148.492			2006	L
D01E-02-BAC	Little Mosquito Creek						
Recreation	Enterococcus	4A	0.208			2004	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
D01E-04-BAC	Swans Gut Creek						
Recreation	Enterococcus	4A	0.100			2006	L
D01E-13-SF	Greenbackville Harbor						
Shellfishing	Fecal Coliform	4A	0.009			1998	L
D01E-17-SF	Swans Gut Creek-restricted SF						
Shellfishing	Fecal Coliform	4A	0.004			2016	L
D02E-01-BAC	Assawoman Creek						
Recreation	Enterococcus	4A	0.136			1998	L
D02E-01-SF	Assawoman Creek						
Shellfishing	Fecal Coliform	4A	0.122			1998	L
D02E-10-SF	Unsegmented estuaries in D02E						
Shellfishing	Fecal Coliform	4A	0.007			2010	L
D02R-01-BAC	Pettit Branch						
Recreation	Escherichia coli	4A			1.88	1998	L
D02R-01-BEN	Pettit Branch						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			1.88	1996	L
D03E-01-DO	Gargathy Creek - Upper & Lower						
Aquatic Life	Oxygen, Dissolved	4A	0.009			2004	L
	Oxygen, Dissolved	4A	0.122			2006	L
D03E-02-BAC	Finney Creek - Upper						
Recreation	Fecal Coliform	4A	0.002			2004	L
D03E-04-BAC	Folly Creek - Upper & Middle						
Recreation	Enterococcus	4A	0.376			2006	L
D03E-04-DO	Folly Creek - Upper & Middle						
Aquatic Life	Oxygen, Dissolved	4A	0.376			2006	L
D03E-05-BAC	Parker Creek - Middle & Lower						
Recreation	Enterococcus	4A	0.047			2006	L
D03R-01-BAC	Parker Creek						
Recreation	Escherichia coli	4A			2.02	1994	L
D03R-01-BEN	Parker Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			2.02	1994	L
D03R-02-BAC	Gargathy Creek						
Recreation	Escherichia coli	4A			2.83	2004	L
D04E-05-BAC	Machipongo River						
Recreation	Enterococcus	4A	0.314			2008	L
D04E-05-SF	Machipongo River						
Shellfishing	Fecal Coliform	4A	0.314			2008	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
D05E-01-BAC	Oyster Slip (Harbor) - Upper						
Recreation	Enterococcus	4A	0.034			2006	L
D06R-01-DO	Mill Creek						
Aquatic Life	Oxygen, Dissolved	4A			2.23	1998	L
LYNPH-DO-BAY	Lynnhaven River and Broad Bay System CBP segment LYNPH and Tributaries						
Aquatic Life	Oxygen, Dissolved	4A	7.976			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	7.976			2006	L
LYNPH-SAV-BAY	Lynnhaven River and Broad Bay System CBP segment LYNPH and Tributaries						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	4.981			2006	L
	Aquatic Plants (Macrophytes)	4A	0.385			2008	L
	Aquatic Plants (Macrophytes)	4A	2.020			2010	L
	Aquatic Plants (Macrophytes)	4A	0.590			2014	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	4.981			2006	L
	Aquatic Plants (Macrophytes)	4A	0.385			2008	L
	Aquatic Plants (Macrophytes)	4A	2.020			2010	L
	Aquatic Plants (Macrophytes)	4A	0.590			2014	L
MOBPH-SAV-BAY	Chesapeake Bay segment MOBPH (Mobjack Bay)						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	0.232			2006	L
	Aquatic Plants (Macrophytes)	4A	411.420			2006	L
	Aquatic Plants (Macrophytes)	4A	0.025			2010	L
	Aquatic Plants (Macrophytes)	4A	0.003			2012	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	411.420			2006	L
	Aquatic Plants (Macrophytes)	4A	0.232			2006	L
	Aquatic Plants (Macrophytes)	4A	0.025			2010	L
	Aquatic Plants (Macrophytes)	4A	0.003			2012	L
PIAMH-SAV-BAY	Piankatank Mesohaline Estuary						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	25.825			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	25.825			2006	L
POCMH-SAV-BAY	Chesapeake Bay segment POCMH (Pocomoke Sound)						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	54.196			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	54.196			2006	L
TANMH-DO-BAY	Chesapeake Bay segment TANMH (Tangier Sound)						
Aquatic Life	Oxygen, Dissolved	4A	122.751			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	122.751			2006	L
TANMH-SAV-BAY	Chesapeake Bay segment TANMH (Tangier Sound)						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	122.751			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	122.751			2006	L

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Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F01R-01-BAC	South Anna River						
Recreation	Escherichia coli	4A			7.10	2002	L
	Escherichia coli	4A			3.98	2006	L
F01R-02-BAC	Wheeler Creek						
Recreation	Escherichia coli	4A			0.24	2010	L
	Escherichia coli	4A			6.00	2012	L
F01R-03-BAC	Hudson Creek						
Recreation	Escherichia coli	4A			3.61	2012	L
F01R-04-BAC	Camp Creek						
Recreation	Escherichia coli	4A			2.01	2012	L
F02R-01-BAC	South Anna River						
Recreation	Escherichia coli	4A			5.98	2004	L
F02R-02-BAC	Unnamed tributary to the South Anna River						
Recreation	Escherichia coli	4A			1.34	2008	L
F02R-03-BAC	Fosters Creek						
Recreation	Escherichia coli	4A			4.91	2014	L
F02R-04-BAC	Roundabout Creek						
Recreation	Escherichia coli	4A			3.84	2014	L
F02R-05-BAC	Harris Creek						
Recreation	Escherichia coli	4A			6.97	2016	L
F02R-06-BAC	Rock Creek						
Recreation	Escherichia coli	4A			2.72	2016	L
F03R-02-BAC	Taylors Creek						
Recreation	Escherichia coli	4A			16.54	2008	L
F03R-04-BAC	Fork Creek						
Recreation	Escherichia coli	4A			1.79	2008	L
	Escherichia coli	4A			5.83	2016	L
F03R-06-BAC	Cub Creek						
Recreation	Escherichia coli	4A			3.10	2010	L
F03R-07-BAC	South Anna River						
Recreation	Escherichia coli	4A			1.76	2006	L
F03R-08-BAC	Deep Creek						
Recreation	Escherichia coli	4A			5.79	2012	L
F03R-09-BAC	South Anna River						
Recreation	Escherichia coli	4A			8.74	2012	L
F04R-01-BAC	South Anna River						
Recreation	Escherichia coli	4A			8.90	2008	L
	Escherichia coli	4A			8.35	2014	L

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York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F04R-02-BAC	South Anna River						
Recreation	Escherichia coli	4A			4.76	2012	L
F04R-03-BAC	Stagg Creek						
Recreation	Escherichia coli	4A			6.56	2006	L
F05R-01-BAC	Newfound River						
Recreation	Escherichia coli	4A			10.95	2008	L
F06R-01-BAC	Mountain Run						
Recreation	Escherichia coli	4A			2.64	1998	L
F06R-02-BAC	Beaver Creek						
Recreation	Escherichia coli	4A			2.83	1998	L
F06R-03-BAC	Gold Mine Creek						
Recreation	Escherichia coli	4A			7.53	2002	L
F06R-07-BAC	White Creek						
Recreation	Escherichia coli	4A			6.05	2014	L
F07R-01-BAC	Pamunkey Creek						
Recreation	Escherichia coli	4A			12.70	1998	L
F07R-02-BAC	Terrys Run						
Recreation	Escherichia coli	4A			1.98	1998	L
	Escherichia coli	4A			3.67	2006	L
F07R-03-BAC	Plentiful Creek						
Recreation	Escherichia coli	4A			3.30	1998	L
F07R-04-BAC	Tomahawk Creek						
Recreation	Escherichia coli	4A			3.84	2014	L
F07R-05-BAC	Berry Run						
Recreation	Escherichia coli	4A			2.34	2006	L
	Escherichia coli	4A			2.96	2014	L
F07R-06-BAC	Terrys Run						
Recreation	Escherichia coli	4A			4.36	2010	L
F07R-07-BAC	Clear Creek						
Recreation	Escherichia coli	4A			2.44	2014	L
F07R-08-BAC	Riga Run						
Recreation	Escherichia coli	4A			7.36	2014	L
F07R-09-BAC	Rocky Run						
Recreation	Escherichia coli	4A			2.40	2014	L
F07R-10-BAC	Church Run						
Recreation	Escherichia coli	4A			0.71	2014	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F07R-11-BAC	Little Creek						
Recreation	Escherichia coli	4A			2.14	2014	L
F07R-12-BAC	Poor House Run						
Recreation	Escherichia coli	4A			3.51	2014	L
F09R-01-BAC	Northeast Creek						
Recreation	Escherichia coli	4A			6.36	2006	L
	Escherichia coli	4A			3.52	2012	L
F09R-02-BAC	Music Branch						
Recreation	Escherichia coli	4A			3.56	2008	L
F09R-04-BAC	Mill Creek						
Recreation	Escherichia coli	4A			4.37	2012	L
F09R-06-BAC	North Anna River						
Recreation	Escherichia coli	4A			4.15	2016	L
F09R-07-BAC	Unnamed tributary to Northeast Creek						
Recreation	Escherichia coli	4A			3.00	2016	L
F11R-01-BAC	Little River						
Recreation	Escherichia coli	4A			10.50	2008	L
F11R-02-BAC	Beaverdam Creek						
Recreation	Escherichia coli	4A			8.47	2012	L
F11R-03-BAC	Little River						
Recreation	Escherichia coli	4A			18.28	2014	L
F12R-02-BAC	Mechumps Creek						
Recreation	Escherichia coli	4A			5.78	2006	L
F12R-05-BAC	Mechumps Creek						
Recreation	Escherichia coli	4A			1.05	2010	L
F12R-07-BAC	Crump Creek						
Recreation	Escherichia coli	4A			10.00	2008	L
F12R-08-BAC	Pamunkey River						
Recreation	Escherichia coli	4A			12.27	2016	L
F12R-09-BAC	XEG - Mechumps Creek, UT						
Recreation	Escherichia coli	4A			0.48	2010	L
F12R-11-BAC	Kersey Creek						
Recreation	Escherichia coli	4A			3.32	2012	L
F12R-12-BAC	XJC - Crump Creek, UT						
Recreation	Escherichia coli	4A			1.96	2012	L
F12R-13-BAC	Pollard Creek						
Recreation	Escherichia coli	4A			4.20	2012	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F13E-01-BAC	Pamunkey River						
Recreation	Escherichia coli	4A	0.307			2008	L
F13E-02-BAC	Pamunkey River						
Recreation	Escherichia coli	4A	0.898			2008	L
F13R-01-BAC	Matadequin Creek						
Recreation	Escherichia coli	4A			4.91	2006	L
F13R-02-BAC	Totopotomoy Creek						
Recreation	Escherichia coli	4A			10.26	2006	L
F13R-03-BAC	Jacks Creek and Major Tributaries						
Recreation	Escherichia coli	4A			21.18	2008	L
F13R-04-BAC	Moncuin Creek, Webb Creek						
Recreation	Escherichia coli	4A			12.12	2006	L
F13R-09-BAC	XDX - UT to XDW (Pamunkey River, UT)						
Recreation	Escherichia coli	4A			3.85	2012	L
F13R-11-BAC	XDW - UT to Pamunkey River						
Recreation	Escherichia coli	4A			5.51	2012	L
F13R-15-BAC	XIW - Jacks Creek, UT						
Recreation	Escherichia coli	4A			2.28	2014	L
F14E-01-BAC	Pamunkey River						
Recreation	Escherichia coli	4A	3.638			2010	L
F14E-03-BAC	Pamunkey River						
Recreation	Enterococcus	4A	4.364			2006	L
F14E-06-BAC	Harrison Creek						
Recreation	Escherichia coli	4A	0.044			2012	L
F14R-02-BAC	Harrison Creek						
Recreation	Escherichia coli	4A			2.80	2008	L
F14R-04-BAC	XJD - Harrison Creek, UT						
Recreation	Escherichia coli	4A			0.16	2012	L
F15R-02-BAC	Brock Run						
Recreation	Escherichia coli	4A			2.56	2008	H
F16R-01-BAC	Po River						
Recreation	Escherichia coli	4A			7.21	2010	H
F16R-02-BAC	Glady Run						
Recreation	Escherichia coli	4A			9.30	2010	H
F17R-02-BAC	Mattaponi River						
Recreation	Escherichia coli	4A			3.20	2008	H

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F17R-03-BAC	Poni River						
Recreation	Escherichia coli	4A			3.21	2010	H
F18R-02-BAC	Matta River						
Recreation	Escherichia coli	4A			11.89	2004	H
F18R-03-BAC	Mat River						
Recreation	Escherichia coli	4A			2.30	2014	H
F19R-02-BAC	Motto River						
Recreation	Escherichia coli	4A			1.80	2014	H
F20R-02-BAC	Polecat Creek						
Recreation	Escherichia coli	4A			5.31	2012	H
F21R-03-BAC	Reedy Creek						
Recreation	Escherichia coli	4A			12.69	2010	H
F21R-04-BAC	Chapel Creek						
Recreation	Escherichia coli	4A			4.64	2014	H
F22R-01-BAC	Maracossic Creek						
Recreation	Escherichia coli	4A			4.21	2006	H
F22R-02-BAC	Doctors Creek						
Recreation	Escherichia coli	4A			2.32	2014	H
F22R-03-BAC	Root Swamp						
Recreation	Escherichia coli	4A			7.83	2014	H
F22R-04-BAC	Beverly Run						
Recreation	Escherichia coli	4A			3.07	2016	L
F24R-01-BAC	Heartquake Creek						
Recreation	Escherichia coli	4A			2.27	2012	L
F25E-01-BAC	Mattaponi River						
Recreation	Enterococcus	4A	2.525			2006	L
F25R-01-BAC	Tastine Swamp and Little Tastine Swamp						
Recreation	Escherichia coli	4A			6.25	2010	L
F25R-03-BAC	XIN - Tastine Swamp, UT						
Recreation	Escherichia coli	4A			2.40	2010	L
F26E-03-BAC	Queen Creek						
Recreation	Enterococcus	4A	0.432			2002	L
F26E-05-BAC	York River						
Recreation	Enterococcus	4A	7.752			2006	L
F26E-12-SF	Adams Creek-Upper						
Shellfishing	Fecal Coliform	4A	0.060			1998	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F26E-14-SF	Poropotank River						
Shellfishing	Fecal Coliform	4A	0.447			1998	L
F26E-15-SF	Aberdeen Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.106			1998	L
F26E-16-SF	Queen Creek						
Shellfishing	Fecal Coliform	4A	0.296			1998	L
F26E-17-SF	Skimino Creek						
Shellfishing	Fecal Coliform	4A	0.174			1998	L
F26E-18-SF	Taskinas Creek						
Shellfishing	Fecal Coliform	4A	0.026			1998	L
F26E-19-SF	Ware Creek						
Shellfishing	Fecal Coliform	4A	0.086			1998	L
F26E-20-SF	Baker Creek						
Shellfishing	Fecal Coliform	4A	0.029			2002	L
	Fecal Coliform	4A	0.017			2008	L
F26E-22-SF	Hockley Creek						
Shellfishing	Fecal Coliform	4A	0.055			2002	L
F26E-29-SF	York River						
Shellfishing	Fecal Coliform	4A	0.870			2014	L
F27E-05-BAC	King Creek - Upper						
Recreation	Enterococcus	4A	0.420			1998	L
F27E-13-SF	King Creek - Upper						
Shellfishing	Fecal Coliform	4A	0.200			1998	L
F27E-15-SF	Northwest Branch Sarah Creek						
Shellfishing	Fecal Coliform	4A	0.222			1998	L
F27E-16-SF	Timberneck Creek - Upper [TMDL-bact]						
Shellfishing	Fecal Coliform	4A	0.130			1998	L
F27E-17-SF	Cedarbush Creek - Upper [TMDL-bact]						
Shellfishing	Fecal Coliform	4A	0.078			1998	L
F27E-18-SF	Carter Cr. (Gloucester Co.) - Upper portion [TMDL-bact]						
Shellfishing	Fecal Coliform	4A	0.180			1998	L
F27E-20-SF	Cedarbush Creek - Mouth						
Shellfishing	Fecal Coliform	4A	0.015			2010	L
F27E-28-SF	Jones Creek						
Shellfishing	Fecal Coliform	4A	0.034			2016	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
F27E-29-SF	Perrin River - Upper						
Shellfishing	Fecal Coliform	4A	0.052			2002	L
	Fecal Coliform	4A	0.025			2016	L
F27E-31-SF	Sarah Creek - Northeast Branch, Middle						
Shellfishing	Fecal Coliform	4A	0.021			2016	L
MPNOH-DO-BAY	Mattaponi River						
Aquatic Life	Oxygen, Dissolved	4A	3.081			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	3.081			2006	L
MPNTF-DO-BAY	Mattaponi River						
Aquatic Life	Oxygen, Dissolved	4D	3.300			1998	L
Open-Water Aquatic Life	Oxygen, Dissolved	4D	3.300			1998	L
PMKOH-DO-BAY	Pamunkey River						
Aquatic Life	Oxygen, Dissolved	4D	5.272			1998	L
Open-Water Aquatic Life	Oxygen, Dissolved	4D	5.272			1998	L
PMKTF-DO-BAY	Pamunkey River						
Aquatic Life	Oxygen, Dissolved	4D	4.843			1998	L
Open-Water Aquatic Life	Oxygen, Dissolved	4D	4.843			1998	L
YRKMH-DO-BAY	York Mesohaline						
Aquatic Life	Oxygen, Dissolved	4A	0.830			1998	L
	Oxygen, Dissolved	4A	34.058			2006	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	0.830			1998	L
	Oxygen, Dissolved	4A	34.058			2006	L
YRKMH-SAV-BAY	York Mesohaline						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	34.888			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	34.888			2006	L
YRKPH-DO-BAY	Chesapeake Bay segment YRKPH						
Aquatic Life	Oxygen, Dissolved	4A	11.796			2004	L
	Oxygen, Dissolved	4A	16.065			2006	L
	Oxygen, Dissolved	4A	0.642			2008	L
	Oxygen, Dissolved	4A	0.371			2010	L
Deep-Water Aquatic Life	Oxygen, Dissolved	4D	11.796			2004	L
	Oxygen, Dissolved	4D	14.137			2006	L
	Oxygen, Dissolved	4D	0.026			2008	L
Open-Water Aquatic Life	Oxygen, Dissolved	4A	11.796			2004	L
	Oxygen, Dissolved	4A	16.065			2006	L
	Oxygen, Dissolved	4A	0.642			2008	L
	Oxygen, Dissolved	4A	0.371			2010	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
YRKPH-SAV-BAY	Chesapeake Bay segment YRKPH						
Aquatic Life	Aquatic Plants (Macrophytes)	4A	28.874			2006	L
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	4A	28.874			2006	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N05R-01-BAC	Elk Creek						
Recreation	Fecal Coliform	4A			10.91	2002	L
	Escherichia coli	4A			20.29	2006	L
	Escherichia coli	4A			4.60	2006	L
	Escherichia coli	4A			3.06	2016	L
N06R-01-BAC	Chestnut Creek						
Recreation	Escherichia coli	4A			3.19	2004	L
	Escherichia coli	4A			8.68	2014	L
	Escherichia coli	4A			5.68	2016	L
N06R-01-BEN	Chestnut Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			8.68	2002	L
	Benthic-Macroinvertebrate Bioassessments	4A			5.68	2004	L
	Sedimentation/Siltation	4A			8.68	2010	L
N09R-01-BAC	Cripple Creek						
Recreation	Fecal Coliform	4A			9.66	2004	L
	Escherichia coli	4A			16.09	2010	L
N09R-03-BAC	Slate Spring Branch and Dean Branch						
Recreation	Fecal Coliform	4A			6.14	2004	M
	Escherichia coli	4A			6.14	2010	M
	Escherichia coli	4A			1.92	2010	M
N10R-02-BAC	South Fork Reed Creek and Mill Creek						
Recreation	Escherichia coli	4A			13.16	2006	L
	Escherichia coli	4A			14.83	2012	L
N10R-03-BAC	Stony Fork						
Recreation	Escherichia coli	4A			1.90	2006	L
	Escherichia coli	4A			4.73	2012	L
N10R-04-BAC	Tate Run						
Recreation	Escherichia coli	4A			0.56	2006	L
N11R-01-BAC	Reed Creek						
Recreation	Fecal Coliform	4A			1.43	2002	L
	Escherichia coli	4A			20.93	2006	L
	Escherichia coli	4A			1.43	2008	L
	Escherichia coli	4A			6.21	2010	L
	Escherichia coli	4A			10.96	2012	L
N11R-02-BAC	Miller Creek						
Recreation	Escherichia coli	4A			0.42	2006	L
	Escherichia coli	4A			3.64	2012	L
N11R-03-BAC	McGavock Creek						
Recreation	Escherichia coli	4A			2.58	2012	M

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N12R-01-BAC	Cove Creek and St. Lukes Fork						
Recreation	Escherichia coli	4A			9.92	2006	L
	Escherichia coli	4A			1.77	2016	L
N17R-01-BAC	Peak Creek and Tract Fork						
Recreation	Escherichia coli	4A			6.49	2006	L
	Escherichia coli	4A			1.24	2012	L
N17R-01-BEN	Peak Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			3.49	1996	L
N17R-01-CU	Peak Creek						
Aquatic Life	Copper	4A			3.49	2006	L
N17R-01-ZN	Peak Creek						
Aquatic Life	Zinc	4A			3.49	2006	L
N18R-01-BAC	Crab Creek						
Recreation	Escherichia coli	4A			12.36	2004	L
N18R-01-BEN	Crab Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			12.36	1996	L
N19R-01-BAC	Little River (Upper)						
Recreation	Escherichia coli	4A			34.67	2006	L
N19R-01-TEMP	Little River						
Aquatic Life	Temperature, water	4A			7.59	2002	L
	Temperature, water	4A			27.08	2008	L
N19R-02-BAC	Meadow Run						
Recreation	Escherichia coli	4A			4.00	2006	L
N19R-02-BEN	Meadow Run						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.00	2008	L
N19R-03-BAC	Pine Creek						
Recreation	Escherichia coli	4A			3.91	2006	L
N19R-03-TEMP	Pine Creek						
Aquatic Life	Temperature, water	4A			3.91	2008	L
N20R-01-BAC	Dodd Creek and West Fork Dodd Creek						
Recreation	Fecal Coliform	4A			8.19	1998	L
	Fecal Coliform	4A			0.53	2002	L
	Escherichia coli	4A			6.44	2008	L
	Escherichia coli	4A			1.31	2010	L
N20R-01-TEMP	West Fork Dodd Creek						
Aquatic Life	Temperature, water	4A			1.31	2002	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N20R-02-TEMP	Dodd Creek						
Aquatic Life	Temperature, water	4A			6.44	2008	L
	Temperature, water	4A			2.46	2010	L
N21R-01-BAC	Little River (Lower)						
Recreation	Fecal Coliform	4A			13.41	2004	L
	Escherichia coli	4A			3.70	2006	L
	Escherichia coli	4A		60.44		2008	L
	Escherichia coli	4A			0.49	2010	L
	Escherichia coli	4A			1.39	2012	L
	Escherichia coli	4A			20.70	2012	L
	Escherichia coli	4A			4.53	2012	L
N21R-02-BAC	Meadow Creek						
Recreation	Escherichia coli	4A			4.64	2010	L
N21R-03-BAC	Mill Creek, Poplar Branch, Mill Creek UTs (XDE & XDF)						
Recreation	Fecal Coliform	4A			8.32	2002	L
	Escherichia coli	4A			7.60	2010	L
N21R-05-BAC	Brush Creek						
Recreation	Escherichia coli	4A			5.94	2012	L
N21R-06-BAC	Laurel Creek						
Recreation	Escherichia coli	4A			3.44	2012	L
N21R-07-BAC	Big Indian Creek						
Recreation	Escherichia coli	4A			7.83	2010	L
N21R-07-TEMP	Big Indian Creek						
Aquatic Life	Temperature, water	4A			7.83	2004	L
N22R-02-BEN	Stroubles Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			5.08	1996	L
N22R-03-BAC	Back Creek						
Recreation	Escherichia coli	4A			17.53	2006	L
N22R-03-BEN	Back Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			17.53	2002	L
N31R-01-BAC	Hunting Camp Creek						
Recreation	Escherichia coli	4A			8.93	2006	L
N36R-01-BAC	Bluestone River and Big Branch						
Recreation	Fecal Coliform	4A			2.34	2002	L
	Escherichia coli	4A			6.23	2004	L
	Escherichia coli	4A			7.39	2006	L
	Escherichia coli	4A			3.33	2010	L

2016 Impaired Waters (Category 4A/4D) TMDL Approved and (Category 4B) Other Control Measures Present*

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Priority
N36R-01-BEN	Bluestone River						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			6.85	2002	L
	Sedimentation/Siltation	4A			6.85	2010	L
N37R-01-BAC	Laurel Fork						
Recreation	Escherichia coli	4A			4.70	2006	L
	Escherichia coli	4A			8.30	2016	L
N37R-01-BEN	Laurel Fork						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4A			4.70	1996	L
	Sedimentation/Siltation	4A			4.70	2010	L

VA DEQ is transitioning from Fecal Coliform bacteria to Escherichia coli (fresh water) and Enterococci (salt water) for assessing the Recreation Use.

TMDL Development Priorities are: H (High) = formal EPA priority to be addressed with a plan by 2022; M (Medium) = DEQ priority that may be addressed with a plan by 2022; or L (Low) = not prioritized to be addressed with a plan by 2022. Within the H or M priority there may be "2yr" noted which means the priority is to be addressed within the two next years.

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2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

Potomac and Shenandoah River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
A31E-04-PH	Monroe Creek				
Aquatic Life	pH	4C	0.176		
A31R-02-DO	Mattox Creek Watershed				
Aquatic Life	Oxygen, Dissolved	4C			68.45
A31R-02-PH	Mattox Creek Watershed				
Aquatic Life	pH	4C			68.45
A31R-03-DO	Popes Creek Watershed				
Aquatic Life	Oxygen, Dissolved	4C			29.88
A31R-03-PH	Popes Creek Watershed				
Aquatic Life	pH	4C			29.88
A31R-04-DO	Monroe Creek Watershed				
Aquatic Life	Oxygen, Dissolved	4C			12.27
A31R-04-PH	Monroe Creek Watershed				
Aquatic Life	pH	4C			12.27
A31R-05-DO	Canal Swamp Watershed				
Aquatic Life	Oxygen, Dissolved	4C			12.57
A31R-05-PH	Canal Swamp Watershed				
Aquatic Life	pH	4C			12.57
B13R-03-BEN	Tunnel Hollow X-trib				
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4C			0.58
B18R-04-TEMP	Beaver Creek				
Aquatic Life	Temperature, water	4C			6.28
B20R-02-BEN	Skidmore Fork				
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4C			5.44
B31R-03-BEN	Toms Branch				
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4C			3.49
B36R-01-BEN	Naked Creek				
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4C			12.81
B49L-01-DO	Lake Laura				
Aquatic Life	Oxygen, Dissolved	4C		46.25	

* Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
G05R-12-DO	Upper Stony Run and Tributaries				
Aquatic Life	Oxygen, Dissolved	4C			39.87
G05R-12-PH	Upper Stony Run and Tributaries				
Aquatic Life	pH	4C			39.87
G07R-02-DO	Rumley Marsh				
Aquatic Life	Oxygen, Dissolved	4C			4.59
G07R-02-PH	Rumley Marsh				
Aquatic Life	pH	4C			4.59
G07R-03-DO	Pelham Swamp				
Aquatic Life	Oxygen, Dissolved	4C			1.57
G07R-05-PH	XAA - Rumley Marsh, UT				
Aquatic Life	pH	4C			1.76
G08E-01-PH	Morris Creek				
Aquatic Life	pH	4C	0.394		
G12R-01-PH	Eley Swamp				
Aquatic Life	pH	4C			4.80
H39R-02-DO	Tuckahoe Creek Watershed				
Aquatic Life	Oxygen, Dissolved	4C			19.27
I22R-03-BEN	Crawford Branch				
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4C			1.87
I23R-01-BEN	Cove Branch				
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4C			6.04
I38L-01-DO	Lexington Reservoir				
Aquatic Life	Oxygen, Dissolved	4C		22.60	

* Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

Rappahannock River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
E22R-07-DO	Occupacia Creek, UT - XGI				
Aquatic Life	Oxygen, Dissolved	4C			1.96
E22R-07-PH	Occupacia Creek, UT - XGI				
Aquatic Life	pH	4C			1.96
E23E-03-PH	Hoskins Creek				
Aquatic Life	pH	4C	0.052		
E23R-03-PH	Piscataway Creek & Tribs Mill Creek and Mussell Swamp				
Aquatic Life	pH	4C			13.56
E23R-04-PH	Hoskins Creek				
Aquatic Life	pH	4C			13.16
E23R-09-PH	Church Swamp				
Aquatic Life	pH	4C			3.24
E23R-17-PH	Hoskins Creek UT (XGX)				
Aquatic Life	pH	4C			2.49
E23R-18-PH	Hoskins Creek UT (XGY)				
Aquatic Life	pH	4C			2.03
E25R-01-PH	Mud Creek				
Aquatic Life	pH	4C	0.204		

* Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

Roanoke and Yadkin River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
L71L-01-DO	Banister Lake				
Aquatic Life	Oxygen, Dissolved	4C		351.84	

* Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

Chowan River and Dismal Swamp Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
K11R-03-DO	Cattail Creek				
Aquatic Life	Oxygen, Dissolved	4C			7.38
K11R-03-PH	Cattail Creek				
Aquatic Life	pH	4C			5.33
K20R-01-DO	Butterwood Creek, White Oak Swamp(Partial delist16)				
Aquatic Life	Oxygen, Dissolved	4C			2.20
K20R-01-PH	White Oak Swamp				
Aquatic Life	pH	4C			2.20
K36R-01-DO	Blackwater - Lower Middle				
Aquatic Life	Oxygen, Dissolved	4C			10.49
K36R-02-DO	Blackwater River - Lower Middle				
Aquatic Life	Oxygen, Dissolved	4C			8.27
K36R-03-DO	Washole Creek				
Aquatic Life	Oxygen, Dissolved	4C			0.55
K37R-01-PH	Buckhorn Creek				
Aquatic Life	pH	4C			1.52
K41R-02-DO	Milldam Creek - Lower				
Aquatic Life	Oxygen, Dissolved	4C			2.54
K41R-05-DO	West Neck Creek - Middle				
Aquatic Life	Oxygen, Dissolved	4C			2.74
K42E-01-DO	Nawney Creek - Upper				
Aquatic Life	Oxygen, Dissolved	4C	0.016		
K42E-02-DO	Nawney Creek - Lower				
Aquatic Life	Oxygen, Dissolved	4C	0.017		

* Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

Tennessee and Big Sandy River Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
O10R-08-BEN	Little Tumbling Creek				
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4C			5.79
P19R-02-BEN	Poor Valley Creek				
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	4C			2.82

* Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
C02R-01-DO	Dragon Swamp				
Aquatic Life	Oxygen, Dissolved	4C			12.37
C02R-02-DO	Dragon Swamp				
Aquatic Life	Oxygen, Dissolved	4C			19.26
C02R-02-PH	Dragon Swamp				
Aquatic Life	pH	4C			19.26
C02R-04-DO	Exol Swamp				
Aquatic Life	Oxygen, Dissolved	4C			11.34
C02R-05-DO	Dragon Run				
Aquatic Life	Oxygen, Dissolved	4C			6.53
C02R-05-PH	Dragon Run				
Aquatic Life	pH	4C			6.53
C02R-06-DO	Briery Swamp				
Aquatic Life	Oxygen, Dissolved	4C			3.17
C02R-07-DO	Timber Branch Swamp				
Aquatic Life	Oxygen, Dissolved	4C			5.45
C02R-07-PH	Timber Branch Swamp				
Aquatic Life	pH	4C			5.45
C02R-08-DO	Holmes Swamp				
Aquatic Life	Oxygen, Dissolved	4C			4.02
C02R-08-PH	Holmes Swamp				
Aquatic Life	pH	4C			4.02
C02R-09-DO	White Marsh				
Aquatic Life	Oxygen, Dissolved	4C			2.51
C02R-09-PH	White Marsh				
Aquatic Life	pH	4C			2.51
C02R-10-PH	Yorkers Swamp				
Aquatic Life	pH	4C			3.32
C05R-01-DO	Fox Mill Run				
Aquatic Life	Oxygen, Dissolved	4C			6.96
C05R-03-DO	Crany Creek				
Aquatic Life	Oxygen, Dissolved	4C			3.90
C06R-01-DO	Northwest Branch of Severn River				
Aquatic Life	Oxygen, Dissolved	4C			2.16

2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

Chesapeake Bay/Atlantic/Small Coastal Basins

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
POCOH-DO-BAY	Pocomoke River System CBP segment POCOH (Pocomoke River)				
Aquatic Life	Oxygen, Dissolved	4C	2.839		
Open-Water Aquatic Life	Oxygen, Dissolved	4C	2.839		

* Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

York River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
F12R-03-DO	Hornquarter Creek				
Aquatic Life	Oxygen, Dissolved	4C			6.77
F12R-03-PH	Hornquarter Creek				
Aquatic Life	pH	4C			6.77
F13R-02-DO	Totopotomoy Creek				
Aquatic Life	Oxygen, Dissolved	4C			17.75
F13R-03-DO	Jacks Creek and Major Tributaries				
Aquatic Life	Oxygen, Dissolved	4C			21.18
F13R-04-PH	Moncuin Creek, Webb Creek				
Aquatic Life	pH	4C			12.12
F13R-05-DO	Governor Swamp				
Aquatic Life	Oxygen, Dissolved	4C			3.32
F13R-05-PH	Governor Swamp				
Aquatic Life	pH	4C			3.32
F13R-10-PH	Mallory Creek				
Aquatic Life	pH	4C			4.02
F23R-02-DO	Dickeys Swamp, Garnetts Creek, and Tributaries				
Aquatic Life	Oxygen, Dissolved	4C			24.27

* Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 List of Naturally Impaired Waters (Category 4C)*
No TMDL Needed

New River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
N16L-01-DO	Claytor Lake - New River				
Aquatic Life	Oxygen, Dissolved	4C		2,077.45	
N16L-02-DO	Claytor Lake - Peak Creek				
Aquatic Life	Oxygen, Dissolved	4C		216.86	

* Multiple listings are due to the same impairments for different uses and/or different initial listing dates for adjacent waters.

2016 Water Quality Based Limited Sources - Category 4B and 5E Waters

VPDES Permit	Stream Name	Parameter(s)	Outfall	Source	Cat	First Listing	Compliance Date	Details
Potomac River & Shenandoah River Basins								
VA0091421	UT to Lodge Creek	Copper, Total Recoverable	001	Callao WWTP	4B	2009	12/10/2018	Final limit not effective until 2018
VA0091421	UT to Lodge Creek	Zinc, Ammonia	001	Callao WWTP	4B	2009	12/10/2018	Final limit not effective until 2018
VA0089214	Duncan Run	Ammonia-N (Jun-Nov), (Dec-May)	003	Flying J Inc.	4B	2012	11/1/2013	11/1/13 compliance schedule for Ammonia-N. Facility did not meet compliance schedule. Consent Order issued 9/10/15. Compliance by 3/15/16.
VA0088226	Porterfield Run X Trib	Total Phosphorus	001	Cassell Elementary School	5E	2016	3/1/2017	3/1/17 compliance schedule for Total Phosphorus
VA0080080	Crooked Run	Chloride	001	Frederick-Winchester Service Authority-Crooked Run WWTP	5E	2016	7/1/2018	7/1/18 compliance schedule for Chloride
VA0024422	East Hawksbill Creek UT	Ammonia-N (Jan-May), Ammonia N (Jun-Dec)	001	Shenandoah National Park - Skyland STP	5E	2016	11/1/2019	11/1/19 compliance schedule for Ammonia-N (Jan-May), Ammonia-N (Jun-Dec)
VA0028037	South River UT	Total Phosphorus	001	Skyline Swannanoa	4B	2012	5/1/2015	5/1/15 compliance schedule for Total Phosphorus. Facility currently not discharging. Unable to determine compliance. Other upgrades ongoing.
James River Basin								
VA0003646	Jackson River	Whole Effluent Toxicity - Chronic	003	MeadWestvaco of Virginia Corporation	4B	2014	6/12/2016	2016 Listing Basis: The water is the mixing zone of the MeadWestvaco of Virginia, Inc., Covington Operations (VA0003646). The permit contains a water quality based effluent limit for Whole Effluent Toxicity - chronic. A schedule of compliance (6/12/2016) to meet the limit is in the permit.
VA0072397	Catawba Cr., UT	Ammonia (NH3-N)	007	Roanoke Cement Company LLC	5E	2014	10/31/2014	2016 Listing: The water is the mixing zone of the VPDES permitted Roanoke Cement Company LLC (VA0072397) outfall 007. The permit contains a water quality based effluent limit for ammonia (NH3-N) and a schedule of compliance to meet the ammonia limit by 10/31/2014. The limit is not being met and the facility has received Warning Letters from DEQ noting the excursions.
VA0063657	Fawn Creek, UT	Ammonia	001	Amherst Co Service Authority - Ivanhoe Forest Subdivision	4B	2016	5/1/2017	
VA0090727	UT to Dutoy Creek	Copper, Total Recoverable	001	Dutoy Creek WWTP	5E	2016	3/1/2017	permit was issued on 2/6/2013 with a 4 year compliance schedule due on 3/1/2017
VA0090727	UT to Dutoy Creek	Zinc, Total Recoverable	001	Dutoy Creek WWTP	5E	2016	3/1/2017	permit was issued on 2/6/2013 with a 4 year compliance schedule due on 3/1/2017
VA0090948	Rapidan River	Total Recoverable Copper, Chloride and Zinc	001	Rapidan WWTP - Greene County BOS	4B	2014	12/1/2016	12/1/16 compliance schedule for Total Recoverable Copper(.10 & .40 MGD flow tiers), Chloride(.40 MGD flow tier) and Zinc(All flow tiers)

2016 Water Quality Based Limited Sources - Category 4B and 5E Waters

VPDES Permit	Stream Name	Parameter(s)	Outfall	Source	Cat	First Listing	Compliance Date	Details
VA0023108	Horsepen Creek	Ammonia (Jun-Nov & Dec-May)	001	VDOT Interstate 64 Goochland Rest Area	5E	2010	6/30/2016	Permit issued on 7/1/2012 with a 4 year compliance schedule for ammonia.
VA0004383	Southern Branch Elizabeth River	TR Zinc	013	BAE Systems Norfolk Ship Repair	4B	2016	1/1/2020	Schedule not met yet; due 1/1/2020.
VA0085936	Morris Creek	Copper, Total Recoverable	001	Charles City County's Mt. Zion & Rustic WTP	5E	2013	8/1/2017	The permit was issued on 7/14/2013 with 4 year compliance schedules for TRC. The compliance schedule ends 8/14/2017.
VA0004880	James River	CL2, Total	001	El DuPont de Nemours & Co	4B	2012	4/1/2016	Permittee intends to reopen the permit to remove limitation following the ambient mixing zone study
VA0005312	James River	CL2, Total	001	Honeywell Resins and Chemicals LLC-Chesterfield	4B	2016	4/1/2016	permit was issued on 4/1/2013 with a 3 year compliance schedule
VA0004804	James River	TR Copper	006	Huntington Ingalls Incorporated - NN Shipbuilding Division	4B	2013	7/1/2017	Schedule not met yet; due 7/1/2017.
VA0004804	James River	TR Copper, TR Zinc	015	Huntington Ingalls Incorporated - NN Shipbuilding Division	4B	2013	7/1/2017	Schedule not met yet; due 7/1/2017.
VA0004804	James River	TR Copper, TR Zinc	016	Huntington Ingalls Incorporated - NN Shipbuilding Division	4B	2013	7/1/2017	Schedule not met yet; due 7/1/2017.
VA0004804	James River	TR Zinc	047	Huntington Ingalls Incorporated - NN Shipbuilding Division	4B	2013	7/1/2017	Schedule not met yet; due 7/1/2017.
VA0004804	James River	TR Zinc	048	Huntington Ingalls Incorporated - NN Shipbuilding Division	4B	2013	7/1/2017	Schedule not met yet; due 7/1/2017.
VA0004804	James River	TR Copper	094	Huntington Ingalls Incorporated - NN Shipbuilding Division	4B	2013	7/1/2017	Schedule not met yet; due 7/1/2017.
VA0004804	James River	TR Copper, TR Zinc	112	Huntington Ingalls Incorporated - NN Shipbuilding Division	4B	2013	7/1/2017	Schedule not met yet; due 7/1/2017.
VA0004804	James River	TR Zinc	160	Huntington Ingalls Incorporated - NN Shipbuilding Division	4B	2013	7/1/2017	Schedule not met yet; due 7/1/2017.
VA0061646	Dark Swamp, UT	Copper	001	Town of Surry WWTP	5E	2004	1/17/2010	The permit was previously issued with a 2/1/04 compliance schedule for total recoverable copper. The limit is in effect and the facility has not been able to consistently meet the limits. The permit was reissued on 1/17/2006 with another compliance schedule for more stringent copper limits due Jan 17, 2010.
VA0089206	Fighting Creek	Total Recoverable Copper, Total Recoverable Nickel	001	Fighting Creek WWTF	4B	2011	11/1/2015	The permit was issued 11/1/2011 with a 4-year compliance schedule for TR Copper and TR Zinc due 11/1/2015.
VA0005312	Appomattox River	CL2, Total	002	Honeywell Resins and Chemicals LLC-Chesterfield	4B	2016	4/1/2016	permit was issued on 4/1/2013 with a 3 year compliance schedule

2016 Water Quality Based Limited Sources - Category 4B and 5E Waters

VPDES Permit	Stream Name	Parameter(s)	Outfall	Source	Cat	First Listing	Compliance Date	Details
VA0025437	Lower Appomattox River	Toxicity, Final, Chronic	001	South Central Wastewater Authority WWTF	4B	2012	10/1/2016	4 year compliance schedule
Rappahannock River Basin								
VA0087173	Broad Creek	Dissolved Oxygen	001	Bay Marine, Ltd. STP	4B	2012	6/18/2016	The permit was issued 06/19/2012 with 4-year compliance schedules for dissolved oxygen.
VA0072729	Ruin Branch, Cat Point Creek	CL2, Total	001	Montross - Westmoreland WWTP	4B	2012	4/1/2016	4 year compliance schedule
VA0060569	Windmill Point Marine Resort Boat Basin	Dissolved Oxygen	001	Windmill Point Resort and Yacht Harbor	5E	2012	7/1/2016	The permit was issued on 7/1/2012 with a 4 year compliance schedule for DO, facility was in foreclosure and has not submitted DMR's since 2012, Enforcement order is about to go to the board.
VA0060569	Windmill Point Marine Resort Boat Basin	Enterococci	001	Windmill Point Resort and Yacht Harbor	5E	2010	5/3/2009	The permit was issued on 5/3/2006 with a 3 year compliance schedule for enterococci. Facility was in foreclosure and has not submitted DMR's since 2012, Enforcement order is about to go to the board.
Roanoke/Yadkin River Basins								
VA0091669	Hunting Creek	Zinc	001	Bedford County PSA - Moneta Regional WWTP	5E	2012	6/16/2014	2016 Listing: The water is the mixing zone of the Bedford County PSA - Moneta Regional WWTP. The permit VA0091669 contains water quality based effluent limits for total recoverable zinc (Zn). The facility is working with the enforcement section on a Consent Order which requires and upgrade to meet the Zn limits by 6/30/18.
VA0020168	Blue Creek/Kerr Reservoir	Ammonia	001	Clarksville WWTP	4B	2014	10/20/2016	
VA0069337	Flat Creek	Zinc	001	South Hill WWTP	4B	2014	9/5/2016	
VA0076830	UT, Wolfpit Run	Ammonia	001	Town of Virgilina STP	4B	2016	4/1/2017	
Chowan River and Dismal Swamp Basins								
VA0027014	Flatrock Branch, UT	Ammonia	001	Brunswick County - Sturgeon Elementary School	5E	2010	5/21/2011	Permit issued 5/21/2007 with a 4 year compliance schedule for ammonia. Not meeting the limit consecutively.
VA0081213	Tommeheton Creek	Acute WET	001	Cox Wood of Virginia LLC	5E	2012	10/1/2013	
VA0028916	Fontaine Creek	Chlorides	001	EconoLodge-Skippers	4B	2016	9/30/2017	Permit was issued on 9/30/2013 with a 4 year compliance schedule due on 9/30/2017
VA0028916	Fontaine Creek	Zinc, Total Recoverable	001	EconoLodge-Skippers	4B	2016	9/30/2017	Permit was issued on 9/30/2013 with a 4 year compliance schedule due on 9/30/2017
VA0020346	Meherrin River	TUa- Acute 48 HR STAT pimephales Promelas, TUa Acute 48 HR STAT Ceriodaphnia Dubia	001	Emporia WWTP	4B	2012	6/1/2016	4 year compliance schedule

2016 Water Quality Based Limited Sources - Category 4B and 5E Waters

VPDES Permit	Stream Name	Parameter(s)	Outfall	Source	Cat	First Listing	Compliance Date	Details
VA0059072	Fontaine Creek	Zinc, Total Recoverable	001	Georgia Pacific Wood Products LLC-Skippers	5E	2016	6/1/2017	Permit effective on 9/16/2013 with a 4 year compliance schedule for Zinc
VA0077259	Three Creek	Zinc, Copper	001	Greensville County - Three Creek STP	4B	2010	9/30/2016	The permit was issued 9/30/2012 with 4 year compliance schedules for total recoverable copper and total recoverable zinc due 9/30/2016.
VA0026239	Seay Creek	Ammonia	001	Kenbridge STP	4B	2014	6/10/2016	Seasonal limit only required Jan-Apr
VA0031356	Jones Hole Swamp	Copper, Total Recoverable	001	Prince George Sewage and Water Company	4B	2012	4/1/2016	4 year compliance schedule
VA0031356	Jones Hole Swamp	Thallium, Total (as TL)	001	Prince George Sewage and Water Company	4B	2012	4/1/2016	4 year compliance schedule
VA0031356	Jones Hole Swamp	Zinc, Total Recoverable	001	Prince George Sewage and Water Company	4B	2012	4/1/2016	4 year compliance schedule
VA0022934	Gravelly Run, UT	Ammonia	001	Southside Elementary School STP	4B	2010	4/30/2009	Permit issued 4/30/2007 with a 2 year compliance schedule for ammonia due 4/30/09. The Lagoon Discharge pipe has been closed and effluent is sent to a septic system, the facility is planning on letting their permit expire but still could potentially discharge from the lagoon.
VA0088463	Hazel Swamp	Ammonia, Zinc, Copper	001	Surry County WWTP	4B	2010	12/11/2011	The permit was issued 12/11/2007 with 4 year compliance schedules for ammonia, total recoverable zinc, and total recoverable copper compliance due date 12/11/2011. No data has been provided to determine compliance. in 2013 they have been in compliance but have not accepted the limits.
VA0020761	Hickory Swamp	ammonia	001	Town of Jarratt STP	4B	2010	7/28/2016	4 year compliance schedule issued 7/29/07 and due 7/29/11, extended to 7/28/2016
VA0020761	Hickory Swamp	Copper, Total as CU	001	Town of Jarratt STP	4B	2012	7/29/2016	4 year compliance schedule issued 7/29/12 and due to 7/29/2016
VA0020184	Big Hounds Creek, UT	Ammonia, Copper, Zinc	001	Victoria East Sewage Treatment Plant	4B	2016	7/1/2017	
VA0068209	ditch to Twelve Ft Ditch to NW Riv	Total Phosphorus	001	Chesapeake Regional Airport	4B	2014	12/1/2018	Schedule not met yet; due 12/1/2018.
VA0060526	UTRIB to Indian Creek to NW River	Total Phosphorus	001	VDOC - St Brides Correctional Center	4B	2014	5/1/2018	Schedule not met yet; due 5/1/2018.
Tennessee/Big Sandy River Basins								
VA0090531	Levisa Fork	Discharge of untreated sewage	001	Buchanan County PSA, Conaway WWTP	5E	2015	7/1/2020	Flood waters filled the sewage collection lines with debris, all requirements not complete
VA0061913	Pound River	TSS, CBOD5	001	Town of Pound, Pound WWTP	5E	2016	10/1/2019	All requirements not complete

2016 Water Quality Based Limited Sources - Category 4B and 5E Waters

VPDES Permit	Stream Name	Parameter(s)	Outfall	Source	Cat	First Listing	Compliance Date	Details
Chesapeake Bay/Atlantic/Small Coastal Basins								
VA0091294	Fishing Bay	Copper, Total Recoverable	001	Chesapeake Marine Railway	4B	2016	1/1/2015	permit was issued on 12/1/2014 with final limits effective on 1/1/2015
VA0091294	Fishing Bay	Zinc, Total Recoverable	001	Chesapeake Marine Railway	4B	2016	1/1/2015	permit was issued on 12/1/2014 with final limits effective on 1/1/2015
VA0092061	Crabbe Mill Stream, UT	Ammonia, as N	001	Northumberland Middle School and High School	4B	2012	4/10/2016	4 year compliance schedule
VA0060712	Cockrell Creek	Ammonia, As N	001	Reedville Sanitary District's Municipal STP	4B	2011	8/16/2014	3 year compliance schedule
York River Basin								
VA0091871	UT North Anna	Cadmium, Total Recoverable	202	Specialty Coating and Laminating LLC	4B	2016	4/12/2017	Permit issued on 4/12/2013 with a 4 year compliance schedule
VA0091871	UT North Anna	Chlorides	202	Specialty Coating and Laminating LLC	4B	2016	4/12/2017	Permit issued on 4/12/2013 with a 4 year compliance schedule
VA0091871	UT North Anna	Cyanide, Free	202	Specialty Coating and Laminating LLC	4B	2016	4/12/2017	Permit issued on 4/12/2013 with a 4 year compliance schedule
VA0091871	UT North Anna	Lead, Total Recoverable	202	Specialty Coating and Laminating LLC	4B	2016	4/12/2017	Permit issued on 4/12/2013 with a 4 year compliance schedule
VA0091871	UT North Anna	Selenium, Total Recoverable	202	Specialty Coating and Laminating LLC	4B	2016	4/12/2017	Permit issued on 4/12/2013 with a 4 year compliance schedule
VA0091871	UT North Anna	Silver, Total Recoverable	202	Specialty Coating and Laminating LLC	4B	2016	4/12/2017	Permit issued on 4/12/2013 with a 4 year compliance schedule
VA0091871	UT North Anna	Thallium, Total (as TL)	202	Specialty Coating and Laminating LLC	4B	2016	4/12/2017	Permit issued on 4/12/2013 with a 4 year compliance schedule

2016 Water Quality Based Limited Sources
Delisted Category 4B and 5E Waters

VPDES Permit	Stream Name	Outfall	Size	Parameter(s)	Source	First Listing
Potomac River & Shenandoah River Basins						
VA0001767	South River	001	0.43 - MZ Miles	Total Phosphorus	Reynolds Packaging LLC	2012
VA0020982	Meadow Brook	001	2.19-MZ Miles	Total Recoverable Zinc	Middletown	2014
VA0022322	Middle River X-Trib	001	2.48-MZ Miles	Whole Effluent Toxicity	ACSA - Mt Sidney STP	2014
VA0024121	Difficult Run, UT	001	0.2-MZ Miles	Copper	The Madeira School	2010
VA0065374	South River	001	0.45 - MZ Miles	Total Phosphorus	Town of Grottoes	2012
VA0088943	South River	001	0.27 - MZ Miles	Total Phosphorus	Blue Ridge Mobile Homes Inc.	2012
VA0088986	South River - X-trib	001	Unknown Miles	Total Phosphorus	Black Rock Mobile Home Park	2012
VA0088994	War Branch	001	4.45 - MZ Miles	DO, Ammonia-N (Jun-Dec)	John A. Hucul, Harrisonburg-Shenandoah Valley KOA (formerly) Mountain Valley KOA	2010
VA0089982	UT to Dancing Marsh	001	0.91 Miles	Copper, Total Recoverable	George Washington Birthplace National Monument	2009
VA0089982	UT to Dancing Marsh	001	0.91 Miles	Zinc, Total Recoverable	George Washington Birthplace National Monument	2009
VA0090271	N.F. Shenandoah River UT	001	Unknown Miles	Ammonia-N	Sheetz Incorporated	2012
James River Basin						
VA0002771	Indian Gap Run	001	0.038 - MZ Miles	Total Recoverable Copper	Modine Manufacturing Company	2012
VA0003077	Lower James River	001	2.0816 Sq. Miles	DO(JUN-OCT)(NOV-MAY)	DuPont Teijin Films	2013
VA0004642	Gravelly Run, UT	002	0.0179 Sq. Miles	CL2, Total	Rock Tenn CP LLC- Hopewell	2012
VA0004642	James River	001	10.202 Sq. Miles	CL2, Total	Rock Tenn CP LLC- Hopewell	2012
VA0004804	James River	049	4.56 MZ Sq. miles	Copper	Huntington Ingalls Incorporated - NN Shipbuilding Division	2010
VA0004804	James River	049	4.56 MZ Sq. miles	Zinc	Huntington Ingalls Incorporated - NN Shipbuilding Division	2010
VA0005215	Southern Branch, Elizabeth River	200	0.01 MZ Sq. miles	CL2	US NAVY Norfolk Naval Shipyard	2012
VA0005215	Southern Branch, Elizabeth River	400	0.01 MZ Sq. miles	CL2	US NAVY Norfolk Naval Shipyard	2012
VA0005215	Southern Branch, Elizabeth River	500	0.01 MZ Sq. miles	CL2	US NAVY Norfolk Naval Shipyard	2012
VA0023540	UT of Whipponock Creek	001	6.35 Miles	Ammonia	DOC Dinwiddie Field Unit 27 WWTP	2009
VA0054330	James River, UT	001	0.05 Miles	DO, total recoverable zinc, total recoverable copper, total recoverable lead	Hammaker East Limited	2010
VA0061042	Opossum Creek	001	4.83-MZ Miles	Ammonia	Bennies Mobile Home Park STP	2012

2016 Water Quality Based Limited Sources
Delisted Category 4B and 5E Waters

VPDES Permit	Stream Name	Outfall	Size	Parameter(s)	Source	First Listing
VA0072397	Catawba Cr., UT	005	0.00 Miles	Ammonia (NH3-N)	Roanoke Cement Company LLC	2014
Rappahannock River Basin						
VA0023469	Garland's Millpond, UT	001	0.05 Miles	Copper	Haynesville Correctional Center	2002
VA0023469	Garland's Millpond, UT	001	0.05 Miles	Zinc, Total Recoverable	Haynesville Correctional Center	2011
VA0024066	Rappahannock River, UT	001	0.05 Miles	TSS, Total Copper, Total Zinc, cBOD5, ammonia	Christchurch School STP	2010
VA0029343	Church Prong, UT	001	0.01 S	DO	The Tides Utilities LLC North WWTP	2012
VA0062880	Thornton River	001	22.15-MZ Miles	Copper	Sperryville Sewage Treatment Plant	2012
VA0073318	Urbanna Creek, UT	001	0.05 Miles	ammonia, total recoverable copper	HRSD Central Middlesex STP	2010
VA0091961	Flat Run, UT	001	0.11-MZ Miles	Total Kjeldahl Nitrogen	Locust Grove Town Center STP	2012
Roanoke/Yadkin River Basins						
VA0076015	Pigg River	001	57.24 - MZ Miles	Zinc (Zn)	Ronile, Inc.	2010
VA0089893	Poplar Creek	001	0.6 -MZ Miles	Copper	Halifax County Service Authority - Leigh Ave WTP	2010
VA0090280	Grassy Creek, UT	001	0.01 - MZ Miles	Dissolved Oxygen & Ammonia	Henry County PSA - Greenbriar Lagoon STP	2012
Chowan River and Dismal Swamp Basins						
VA0026816	Roses Creek	001	0.05 Miles	Copper	Town of Alberta	2009
VA0026816	Roses Creek	001	0.05 Miles	Zinc	Town of Alberta	2009
VA0088463	Hazel Swamp	001	0.05 Miles	pH	Surry County WWTP	2012
Chesapeake Bay/Atlantic/Small Coastal Basins						
VA0003867	Cockrell Creek	995	0.01 Sq. Miles	Fecal Coliform, Enterococci	Omega Protein	2013
VA0071641	Put In Creek	001	0.0205 Sq. Miles	CL2, Total	Riverside Convalescent Center Mathews	2013
York River Basin						
VA0088102	Moncuin Creek	001	12.39 Miles	Zinc, Total Recoverable	HRSD King William County Sewage Treatment Plant	2010
VA0090433	UT to Herrick Creek	001	0.16 Miles	Ammonia, As N	Augusta Lumber Division, West Point	2011
VA0090433	UT to Herrick Creek	001	0.16 Miles	Zinc, Total Recoverable	Augusta Lumber Division, West Point	2011
VA0092533	South Anna River, UT	001	0.26-MZ Miles	Copper, Zinc	Klockner Pentaplast of America	2012

APPENDIX 3 WATERS IDENTIFIED FOR DELISTING SINCE THE 2014 REPORT

Assessment is a process in which impaired and non-impaired waters are systematically identified. This is an iterative process, requiring that waters be investigated on an on-going basis as water quality standards are reviewed/refined, sampling and assessment methods are improved, and management activities are adaptively implemented. Additionally, assessment of water quality must factor in the variability inherent to the natural environment. For instance, poor water quality is often associated with unusually wet weather. A limited dataset for a given water may show violations of water quality standards that are not typical for that water due to unusual weather events, and subsequent monitoring may confirm this. Thus, given the dynamic aspects of both the environment and the assessment process, the revisiting of impaired waters sometimes results in the "delisting" of impairments for 303(d)-listed waters.

There are two types of delistings: partial and full. Waters are listed based on non-attainment of assessed designated uses, with the specific impairments (e.g., dissolved oxygen) broken out individually. A partial delist generally occurs when a water no longer has a specific impairment cause associated with it, but the water is still listed for other impairments. For instance, if a water was originally listed for violations of dissolved oxygen and temperature standards, and recent monitoring indicates that this water is now meeting only dissolved oxygen standards, then the water only qualifies for a partial delisting since the aquatic life use is still not attained. Most delistings are partial. A full delist occurs when a water is no longer impaired. If, in the above example, recent monitoring shows the water meets both dissolved oxygen and temperature standards, then it would qualify for a full delist. In the Assessment Database, partial and full delists are distinguished from each other.

Waters can be delisted for multiple reasons. Changes to assessment protocols can result in delistings, as can changes in water quality standards. Shellfish condemnation zones are developed through modeling of bacteria data and other variables, and the boundaries of these zones often change. The shellfishing use for a water that falls in a condemnation zone in the previous cycle can be delisted if it is no longer included in the zone this cycle. Similarly, data at a new monitoring station may indicate that an impairment, such as dissolved oxygen, has a smaller extent than what was assumed in previous assessments, resulting in delisting of dissolved oxygen for one or more segments. More commonly, analysis of recent station data may show little to no exceedences of water quality standards for parameters previously "failing" at that station. The underlying reasons for improved water quality are frequently unknown. In cases were specific management activities are known to have taken place, such as alterations in dam releases, details are provided in the delist rationale. Bacteria is the most common delisted cause.

The following is the list of water-quality limited waters that have full or partial delists for the 2016 assessment.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAN-A08R_LIV01A00 Little River 6.41 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Benthic Macroinvertebrates - A08R-02-BEN, VAN-A08R-02 (CFL 1998)

During the 2014 cycle, this segment was assessed as not supporting the aquatic life use because biological monitoring events in 2008 (spring and fall) at station 1aLIV004.78 resulted in VSCI scores indicating an impaired macroinvertebrate community. Subsequent biological monitoring events (2) took place in 2013 (spring and fall) 0.01 mile upstream from this location at station 1aLIV004.79. The 2013 events indicated a healthy aquatic community and support of the aquatic life use. The average VSCI score from the two most recent years of sampling also indicates support of the aquatic life use. It has been determined that this segment should be delisted for benthic macroinvertebrates based upon recent VSCI scores indicating a healthy benthic macroinvertebrate community.

VAN-A08R_LIV02B10 Little River 4.36 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Benthic Macroinvertebrates - A08R-03-BEN, VAN-A08R-02 (CFL 2010)

During the 2014 cycle, this segment was assessed as not supporting the aquatic life use because a biological monitoring event in 2008 (fall) at station 1aLIV012.12 resulted in VSCI scores indicating an impaired macroinvertebrate community. Subsequent biological monitoring events (2) took place in 2013 (spring and fall) at this location. The 2013 events indicated a healthy aquatic community and support of the aquatic life use. The average VSCI score from the two most recent years of sampling also indicate support of the aquatic life use. It has been determined that this segment should be delisted for benthic macroinvertebrates based upon recent VSCI scores indicating a healthy benthic macroinvertebrate community.

VAN-A21R_BUL02A00 Bull Run 4.66 Miles Recreation

Delisting Summary:

PARTIAL DELIST 2016 - E. coli - A21R-02-BAC, 60058 (CFL 2006)

During the 2014 cycle, this segment was assessed as not supporting the recreation use because of excursions from the maximum E. coli bacteria criterion (4 of 30 samples - 13.3%) recorded at DEQ's ambient water quality monitoring station 1aBUL025.94 at the Route 705 bridge crossing. Additional bacteria monitoring has been conducted and found that 3 of 32 samples (9.4%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for E. coli based upon an acceptable exceedance rate.

VAN-A24L_OCC01A02 Occoquan Reservoir 1250.03 Acres Aquatic Life

Delisting Summary:

DELIST 2016 - DO - A24L-01-DO (2002)

During each of the biennial cycles from 2002 through 2014, segments VAN-A24L_OCC01A02 and VAN-A24L_OCC02A06 were assessed as not supporting the aquatic life use because excursions from the minimum DO criterion (1130 of 6066 samples - 18.6% in the 2014 cycle) were recorded in pooled samples from all monitoring stations within the segments. Additional monitoring data pooled from all monitoring stations within these segments found that 924 in 9539 samples (9.7%) are less than the minimum DO criterion. It has been determined that these segments should be delisted for DO based upon an acceptable excursion rate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAN-A24L_OCC02A06 Occoquan Reservoir 63.12 Acres Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - A24L-01-DO (2002)

During each of the biennial cycles from 2002 through 2014, segments VAN-A24L_OCC01A02 and VAN-A24L_OCC02A06 were assessed as not supporting the aquatic life use because excursions from the minimum DO criterion (1130 of 6066 samples - 18.6% in the 2014 cycle) were recorded in pooled samples from all monitoring stations within the segments. Additional monitoring data pooled from all monitoring stations within these segments found that 924 in 9539 samples (9.7%) are less than the minimum DO criterion. It has been determined that these segments should be delisted for DO based upon an acceptable excursion rate.

VAN-A25R_NEA01A00 Neabsco Creek 9.42 Miles Recreation

Delisting Summary:

DELIST 2016 - E. coli - A25R-01-BAC, 00310, VAN-A25R-01 (CFL 2002)

During the 2014 cycle, this segment was assessed as not supporting the recreation use because of excursions from the maximum E. coli bacteria criterion (2 of 11 samples - 18.2%) recorded at DEQ's ambient water quality monitoring station 1aNEA002.89 at the Route 1 (Richmond Highway) bridge. Additional bacteria monitoring at this location found that 0 of 12 samples (0.0%) exceed the maximum E. coli bacteria criterion and additional bacteria monitoring at DEQ's ambient water quality monitoring station 1ANEA007.65 at Darbydale Avenue found that 0 of 12 samples (0.0%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for E. coli based upon an acceptable exceedance rate.

VAN-A30E_UMC04B06 Upper Machodoc Creek 0.4177 Square Miles Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - FECAL COLIFORM 0.1341 sq mi - A30E-03-SF (CFL 2012)

This is a partial delist for shellfishing due to an increase in open shellfish area. In 2014, this segment was categorized as impaired for the shellfishing use due to Section D of the Virginia Department of Health, Division of Shellfish Sanitation, Notice and Description of Shellfish Area Condemnation Number 001A-036, Upper Machodoc Creek, dated 05/15/12. In 2014, this segment was 0.2141 square miles in size. In 2016, approximately 0.1341 square miles of this segment are described as supporting the shellfishing use in the Virginia Department of Health, Division of Shellfish Sanitation, Notice and Description of Shellfish Area Condemnation Number 001A-036, Upper Machodoc Creek, dated May 7, 2013. The remaining portion of this segment that is included in Section D of the Virginia Department of Health, Division of Shellfish Sanitation, Notice and Description of Shellfish Area Condemnation Number 001A-036, Upper Machodoc Creek, dated May 7, 2013, was removed from this segment and was merged with segment VAN-A30E_UMC04C06.

A completed shellfish bacteria TMDL for Upper Machodoc Creek was approved by EPA on 12/18/2008 (36028).

VAP-A31E_MON03B16 Monroe Bay 0.063 Square Miles Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform 0.063 mi2 - A31E-03-SF (CFL 2014)

VDH-DSS Shellfish Condemnation 002-001M2, 9/20/2013

The area was seasonally condemned in the 2010 cycle, however condemnation 002-001A expanded in the 2014 cycle. The Shellfish TMDL for Monroe Creek was approved by the EPA on 6/8/2006 and by the SWCB on 7/27/2009. The area was addressed by the TMDL; therefore, it was considered Category 4A.

Condemnation A shrank slightly in the 2016 cycle and section M2 was split off; it will be considered partially delisted (Cat. 2C.)

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAP-A31R_PIN01A00	Pine Hill Creek Watershed	34.91	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - A31R-01-DO / 00908 / 00647 / VAP-A31R-01 (CFL 2002)

During the 2002 cycle, the segment was assessed as impaired of the Aquatic Life use support goals based on DO exceedances at the Route 208 bridge (1APIN000.57). The DO TMDL was due in 2014.

During the 2006 cycle, two Natural Condition studies were performed on Pine Hill Creek. The reports recommended reclassification as Class VII swampwaters.

The Water Quality Standards were revised during the 2010 cycle and Pine Hill Creek was reclassified.

Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence that the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed in the 2016 cycle.

VAP-A32E_BAN01A00	Barnes Creek	0.0189	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - A32E-20-SF (CFL 2014)

Portion of VDH condemnation 004-082D, 1/23/2012

The upper portion of Barnes Creek was assessed as impaired of the Shellfish Use during the 1998 cycle due to a VDH shellfish advisory (082C, 2/10/1997) and was addressed in the TMDL "Chesapeake Bay: Potomac River: Nomini Creek Watershed Total Maximum Daily Load (TMDL) Report for Shellfish Condemnation Areas Listed Due to Bacteria Contamination", which was approved by the EPA on 8/22/2007. This lower portion was listed in the 2014 cycle due to expansion of the Nomini Creek condemnation. It was considered nested in the Barnes Creek TMDL.

During the 2016 cycle, the condemnation shrank and lower Barnes Creek was reopened for harvest (004-082, 1/22/2014); therefore, the segment will be delisted.

VAP-A32E_BUB01A04	Buckner Creek	0.0736	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform 0.0737 mi2 - A32E-05-SF / TMDL 33108 (CFL 1998)

The upper portion of Buckner Creek was assessed as impaired of the Shellfish Use during the 1998 cycle due to VDH shellfish advisory 082D, 2/10/1997. Although the closure was expanded during the 2008 cycle (004-082B 1/27/2006), the 2007 TMDL "Chesapeake Bay: Potomac River: Nomini Creek Watershed Total Maximum Daily Load (TMDL) Report for Shellfish Condemnation Areas Listed Due to Bacteria Contamination" only addressed the original upstream impaired area, which is classified as Category 4A.

However, the impairment expanded during the 2014 cycle due to VDH Shellfish Condemnation 004-082B, 1/25/2010 (see A32E-05-SF2).

In the 2016 cycle, the condemnation shrank (004-082B, 1/22/2014); the condemned area will remain Category 4A and the lower portion will be partially delisted (Category 2C.)

2006 VAP-A32E-05 and 00910 / 2008 A32E-05-SF

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAP-A32E_BUB02B14	Buckner Creek	0.0213	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - A32E-05-SF2 (CFL 2014)

VDH Shellfish condemnation 004-082, 1/22/2014 - open

The upper portion of Buckner Creek was assessed as impaired of the Shellfish Use during the 1998 cycle due to VDH shellfish advisory 082D, 2/10/1997. The condemnation expanded during the 2014 cycle (portion of VDH Shellfish Condemnation 004-082B, 1/25/2010). However, the 2007 TMDL "Chesapeake Bay: Potomac River: Nomini Creek Watershed Total Maximum Daily Load (TMDL) Report for Shellfish Condemnation Areas Listed Due to Bacteria Contamination" only addressed the original upstream impaired area, which is classified as Category 4A. The expansion was considered nested in the Buckner Creek TMDL.

During the 2016 cycle, the shellfish condemnation shrank considerably and is now smaller than the 1997 condemnation. The expansion will be delisted.

VAP-A32E_NOM01A04	Nomini Creek, Pierce Creek	0.347	Square Miles	Recreation

Delisting Summary:

PARTIAL DELIST 2016 - Enterococci - A32E-04-BAC (CFL 2014)

During the 2014 cycle, Nomini Creek was impaired of the Recreation Use due to an enterococci exceedance rate of 4/34 at 1ANOM005.99, which is located at the Route 202 bridge.

The bacterial impairment is located within the boundary and tidal excursion of the Nomini Creek Shellfish TMDL, which was approved by the EPA on 8/22/2007 and by the SWCB on 7/31/2008. As the Shellfish Use bacterial WQS is lower than the Recreation Use standard, the impairment was considered nested.

The exceedance rate fell to 3/34 in the 2016 cycle; therefore, the segment will be delisted.

VAP-A32E_NOM01A98	Nomini Creek	0.5404	Square Miles	Recreation

Delisting Summary:

PARTIAL DELIST 2016 - Enterococci - A32E-04-BAC (CFL 2014)

During the 2014 cycle, Nomini Creek was impaired of the Recreation Use due to an enterococci exceedance rate of 4/34 at 1ANOM005.99, which is located at the Route 202 bridge.

The bacterial impairment is located within the boundary and tidal excursion of the Nomini Creek Shellfish TMDL, which was approved by the EPA on 8/22/2007 and by the SWCB on 7/31/2008. As the Shellfish Use bacterial WQS is lower than the Recreation Use standard, the impairment was considered nested.

The exceedance rate fell to 3/34 in the 2016 cycle; therefore, the segment will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAP-A32R_LEC01A10 Lee Creek 1.35 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - A32R-02-DO (CFL 2010)

During the 2010 cycle, Lee Creek was assessed as impaired of the Aquatic Life Use due to dissolved oxygen exceedances at 1ALEC001.18, which is located at the Rt. 675 bridge. The violation rate was 4/13 during the 2012 cycle.

Additional monitoring was conducted during the 2016 cycle. The exceedance rate was 2/20; therefore, the stream will be delisted.

VAP-A32R_NOM02A14 Nomini Creek 3.37 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - pH 3.37 Miles - A32R-06-PH (CFL 2014)

During the 2014 cycle, monitoring occurred throughout the upper Nomini Creek watershed. Multiple tributaries indicated low pH - including Nomini Creek, Marshall Creek, Buena Vista Branch, Oldham Creek, Newtons Mill Run, Antioch Branch, and Templeman Run.

4/5 at 1AANT001.31
3/12 at 1ABUV000.15
2/12 at 1AMAR000.62
2/12 at 1ANET001.77
2/12 at 1AOLD000.70
3/12 at 1ATEM003.54
2/12 at 1ANOM012.38

Note; Nomini Creek, UT (XLK) and Tavern Run were already listed for pH (see A32R-03-PH and A32R-05-PH).

Additional monitoring was conducted during the 2016 cycle at 1ANOM0012.38. The pH exceedance rate was acceptable 2/23 and Nomini Creek will be partially delisted.

VAP-A33E_WES01A06 West Yeocomico River 0.03 Square Miles Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - A33E-16-SF (CFL 2012)

VDH-DSS Condemnation 007-028M3, 8/7/2014

The area was impaired in the 2014 cycle due to VDH-DSS Condemnation 007-028D, 10/30/2012. The impairment was considered nested within the West Yeocomico River Shellfish TMDL. The TMDL was included in the Yeocomico River Watershed Shellfish TMDL Report, which was approved by the EPA on 6/8/2006.

During the 2016 cycle, the condemnation converted to seasonally condemned; therefore, the impairment will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAP-A33L_HAM01A12	Hampton Hall, Gardy Millpond	45.86 Acres	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- Temperature - A33L-01-TEMP (2014)

During the 2016 cycle an error was discovered from the 2014 cycle. The temperature impairment from 2014 cycle was actually a DO impairment. The violation rate for the DO impairment was 13/69 at station 1AHAM003.08. No new data has been collected since the 2014 cycle. The Temperature was partially delisted during the 2016 cycle due to this error.

VAP-A34E_BOT01A04	Boathouse Creek	0.0671 Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - A34E-25-SF / 00930 / VAP-A34E-25 (CFL 2004)

VDH Shellfish Condemnation 008-214D, 2/23/2012 - open 3/10/2014

Boathouse Creek was assessed as not supporting of the Shellfish Consumption Use during the 2008 cycle due to VDH-DSS condemnation 008-214E, 2/17/2005.

During the 2014 cycle, the impairment was considered nested in the Coan River Shellfish TMDL, which was approved by the EPA on 12/18/2003.

Boathouse Creek was open for harvest in 008-214, 3/10/2014; therefore, the impairment will be delisted.

VAP-A34E_BRD01A98	Bridgeman Creek	0.0447 Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - A34E-10-SF / 00931 / VAP-A34E-10 / Federal ID 380526 (CFL 1998)

VDH-DSS Condemnation Notice 009-142A, 3/30/2009 - open in 3/24/2014

Bridgeman Creek was included on the 1998 303(d) list due to VDH condemnation 142C, 1/31/1997. The Shellfish TMDL for Bridgeman Creek was developed during the 2010 cycle based on the maximum extent of the impairment (3/17/2008). The TMDL was approved by the EPA on 11/16/2009.

During the 2016 cycle, Bridgeman Creek was open for harvest (009-142, 3/26/2014); therefore, Bridgeman Creek will be delisted (Category 2C).

VAP-A34E_COA01A02	Coan River	0.009 Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - A34E-32-SF / 10068 / VAP-A34E-32 / 0069 / VAP-A34E-05 (CFL 2004)

Portion of VDH-DSS Condemnation Notice 008-214B, 2/23/2012 - open 3/10/2014

Headly Cove, Mill Creek and a portion of the Coan River were assessed as impaired of the Shellfish Use in 1998 because of VDH SFC 145H and 145I, 2/25/1997. During the 2004 cycle, the segments expanded and merged. However the 12/18/2003 Coan River Shellfish TMDL report only addressed the original impairments.

The impairment is considered nested within the Coan River Shellfish TMDL, which was approved by the EPA on 12/18/2003.

During the 2016 cycle, condemnation 008-214B, 3/10/2014 shrank considerably and the expansion will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAP-A34E_COA01B16	Coan River	0.0277	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform 0.0278 mi2 - A34E-05-SF2 / VAP-A34E-05 / 00069 / Federal ID 18429 (CFL 1998)

Portion of VDH-DSS Condemnation Notice 8-214B, 3/10/2016

Mill Creek and the upstream most portion of the Coan River were assessed as impaired of the Shellfish Use in 1998 because of VDH SFC 145I, 2/25/1997. The impairment has expanded in several assessment cycles. However only the original segment was included in "Coan River Watershed Total Maximum Daily Load (TMDL) Report for Six Shellfish Areas", which was completed during the 2006 cycle and approved by the EPA on 12/18/2003 and by the SWCB on 12/02/2004. The segment is classified as Category 4A for shellfish consumption.

During the 2016 cycle, the condemnation shrank significantly and is now smaller than the TMDL extent. The newly opened portion will be partially delisted (0.0284 mi2 Cat 2C).

VAP-A34E_ROG01B16	Rogers Creek	0.0229	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform 0.0229 mi2 - A34E-13-SF / 00942 / VAP-A34E-13 / Federal ID 38023 (CFL 1998)

VDH-DSS Condemnation Notice 009-142C, 3/20/2012 - open 3/26/2014

Rogers Creek was included on the 1998 303(d) list due to VDH condemnation 142B, 1/31/1997. The Shellfish TMDL for Rogers Creek was developed during the 2010 cycle based on the maximum extent of the impairment (3/17/2008). The TMDL was approved by the EPA on 11/16/2009. During the 2016 cycle, the Rogers Creek condemnation shrank. The upstream portion remains impaired (Category 4A); the downstream portion will be partially delisted (Category 2C.)

VAP-A34E_SLO05A98	Little Wicomico River: Slough Creek	0.0324	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - A34E-28-SF / 10064 / VAP-A34E-28 (CFL 2006)

Portion of VDH-DSS Condemnation 010-105M1. 6/9/2014 - seasonally condemned

Slough Creek has been impaired of the Shellfishing Use since the 2006 cycle. In the 2014 cycle, it was impaired due to VDH-DSS Condemnation Notice 010-105E, 5/15/2012. The impairment was considered nested in the nearby Bridge Creek Shellfish TMDL, which was approved by the EPA on 12/18/2003.

However, during the 2016 cycle, the area was opened for harvest (seasonally condemned); therefore, the impairment will be delisted.

VAV-B02R_STC01A00	Strait Creek	3.29	Miles	Recreation

Delisting Summary:

PARTIAL DELIST 2016 - Bacteria - 3.29 Miles - B02R-06-BAC (2006)

This section of Strait Creek was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2006 assessment period. During the 2006 assessment period 2 of 9 samples (22.22%) at station 1ASTC000.02 violated the State's water quality standard for e-coli bacteria. Data assessed during the 2016 assessment period show 1 violation of 12 samples (8.33%) for e-coli bacteria at station 1ASTC000.02. With this station indicating improvement in water quality below the 10.5% violation rate, the e-coli bacteria impairment on this portion of Strait Creek should be shortened by 3.29 miles and this portion of Strait Creek removed from the 303(d) list. The remaining impairment length is 2.77 miles.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Potomac and Shenandoah River Basins

VAV-B07R_BAB01A00	Babbs Run	11.83 Miles	Recreation	

Delisting Summary:

DELIST 2016 - Bacteria - B07R-01-BAC (2004)

Babbs Run was originally listed on the 303(d) list for violating the State's water quality standard for fecal coliform bacteria during the 2004 assessment period. During the 2004 assessment period 2 of 13 samples (15.38%) at station 1ABAB004.54 violated the State's water quality standard for fecal coliform bacteria. Data assessed during the 2016 assessment period show 0 violations of 12 samples (0.00%) for e-coli bacteria at station 1ABAB004.54. Based on this improvement in water quality below a 10.5% violation rate, Babbs Run should be removed from the 303(d) list.

VAV-B12R_MDL01A00	Middle River	23.15 Miles	Aquatic Life	Recreation

Delisting Summary:

DELIST 2016 - Benthic Macroinvertebrates - B12R-02-BEN (2010)

Middle River was originally listed on the 303(d) list for violating the State's water quality General Standard for benthic macroinvertebrates during the 2010 assessment period. This was based on an impaired benthic status (Virginia Stream Condition Index (VSCI) < 60) at 1BMDL026.58. Data during the 2016 assessment cycle show that station 1BMDL026.58 has improved and the last two monitoring events scored at 64.1 and 67.2 on the Virginia Stream Condition Index. In addition, the upstream station 1BMDL036.08 located in the same assessment unit indicate a fully supporting for VSCI status as well. Based on this improvement in the benthic macroinvertebrate community above the fully supporting VSCI score of 60, the benthic impairment on Middle River should be removed from the 303(d) list.

DELIST 2016 - Bacteria - 26.07 Miles - B15R-01-BAC (2008)

This section of Middle River was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2008 assessment period. During the 2008 assessment period 2 of 10 samples (20%) at station 1BMDL022.09 violated the State's water quality standard for e-coli bacteria. Data assessed during the 2016 assessment period show 0 violations of 12 samples (0.00%) for e-coli bacteria at station 1BMDL022.09. Additionally, data at an upstream station within the same assessment unit 1BMDL036.08 show 5 violations of 60 samples (8.33%) for e-coli bacteria. With these stations indicating improvement in water quality below the 10.5% violation rate, the e-coli bacteria impairment on this portion of Middle River should be shortened by 26.07 miles and this portion of Middle River removed from the 303(d) list. The remaining impairment length is 17.84 miles.

VAV-B12R_MDL01B10	Middle River	2.92 Miles	Recreation	

Delisting Summary:

DELIST 2016 - Bacteria - 26.07 Miles - B15R-01-BAC (2008)

This section of Middle River was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2008 assessment period. During the 2008 assessment period 2 of 10 samples (20%) at station 1BMDL022.09 violated the State's water quality standard for e-coli bacteria. Data assessed during the 2016 assessment period show 0 violations of 12 samples (0.00%) for e-coli bacteria at station 1BMDL022.09. Additionally, data at an upstream station within the same assessment unit 1BMDL036.08 show 5 violations of 60 samples (8.33%) for e-coli bacteria. With these stations indicating improvement in water quality below the 10.5% violation rate, the e-coli bacteria impairment on this portion of Middle River should be shortened by 26.07 miles and this portion of Middle River removed from the 303(d) list. The remaining impairment length is 17.84 miles.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAV-B40R_GNY01A00 Gooney Run 6.73 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Temperature - B40R-03-TEMP (2006)

Gooney Run was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2006 assessment period. This listing included three tributaries to Gooney Run (Lands Run, Greasy Run and Smith Creek). These three tributaries were segmented out of the Gooney Run during the 2010 assessment cycle however the temperature impairment was carried forward from the initial listing based off the station 1BGNY000.04 on Gooney Run. During the 2006 assessment period 3 violations of 12 samples (25%) at station 1BGNY000.04 violated the State's Stockable Trout temperature standard. Data assessed during the 2016 assessment period showed 0 violations of 12 samples (0.00%) of the State's Stockable Trout temperature standard at station 1BGNY000.04. Based on this improvement in water quality below a 10.5% violation rate, Gooney Run, Lands Run, Greasy Run and Smith Creek should be removed from the 303(d) list.

VAV-B40R_GNY02A10 Gooney Run 3.39 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Temperature - B40R-03-TEMP (2006)

Gooney Run was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2006 assessment period. This listing included three tributaries to Gooney Run (Lands Run, Greasy Run and Smith Creek). These three tributaries were segmented out of the Gooney Run during the 2010 assessment cycle however the temperature impairment was carried forward from the initial listing based off the station 1BGNY000.04 on Gooney Run. During the 2006 assessment period 3 violations of 12 samples (25%) at station 1BGNY000.04 violated the State's Stockable Trout temperature standard. Data assessed during the 2016 assessment period showed 0 violations of 12 samples (0.00%) of the State's Stockable Trout temperature standard at station 1BGNY000.04. Based on this improvement in water quality below a 10.5% violation rate, Gooney Run, Lands Run, Greasy Run and Smith Creek should be removed from the 303(d) list.

VAV-B40R_GRS01A10 Greasy Run 3.64 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Temperature - B40R-03-TEMP (2006)

Gooney Run was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2006 assessment period. This listing included three tributaries to Gooney Run (Lands Run, Greasy Run and Smith Creek). These three tributaries were segmented out of the Gooney Run during the 2010 assessment cycle however the temperature impairment was carried forward from the initial listing based off the station 1BGNY000.04 on Gooney Run. During the 2006 assessment period 3 violations of 12 samples (25%) at station 1BGNY000.04 violated the State's Stockable Trout temperature standard. Data assessed during the 2016 assessment period showed 0 violations of 12 samples (0.00%) of the State's Stockable Trout temperature standard at station 1BGNY000.04. Based on this improvement in water quality below a 10.5% violation rate, Gooney Run, Lands Run, Greasy Run and Smith Creek should be removed from the 303(d) list.

VAV-B40R_JER01A00 Jeremy's Run 4.54 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - B40R-01-PH - pH (2004)

Jeremy's Run was listed on the 303(d) list for violating the State's water quality standard for pH during the 2004 assessment period. During the 2004 assessment period 2 violations of 2 samples (100%) at station USGS 01630565 violated the pH water quality standard. Data assessed during the 2016 assessment period showed 0 violations of 24 samples (0.00%) of the State's pH water quality standard at station 1BJER000.62 and 0 violations of 12 (0.00%) of the State's pH water quality standard at station 1BJER004.48. Based on this improvement in water quality below a 10.5% violation rate, Jeremy's Run should be removed from the 303(d) list.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAV-B40R_JER02A10 Jeremy's Run 7.15 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - B40R-01-PH - pH (2004)

Jeremy's Run was listed on the 303(d) list for violating the State's water quality standard for pH during the 2004 assessment period. During the 2004 assessment period 2 violations of 2 samples (100%) at station USGS 01630565 violated the pH water quality standard. Data assessed during the 2016 assessment period showed 0 violations of 24 samples (0.00%) of the State's pH water quality standard at station 1BJER000.62 and 0 violations of 12 (0.00%) of the State's pH water quality standard at station 1BJER004.48. Based on this improvement in water quality below a 10.5% violation rate, Jeremy's Run should be removed from the 303(d) list.

VAV-B40R_LND01A10 Lands Run 3.97 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Temperature - B40R-03-TEMP (2006)

Gooney Run was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2006 assessment period. This listing included three tributaries to Gooney Run (Lands Run, Greasy Run and Smith Creek). These three tributaries were segmented out of the Gooney Run during the 2010 assessment cycle however the temperature impairment was carried forward from the initial listing based off the station 1BGNY000.04 on Gooney Run. During the 2006 assessment period 3 violations of 12 samples (25%) at station 1BGNY000.04 violated the State's Stockable Trout temperature standard. Data assessed during the 2016 assessment period showed 0 violations of 12 samples (0.00%) of the State's Stockable Trout temperature standard at station 1BGNY000.04. Based on this improvement in water quality below a 10.5% violation rate, Gooney Run, Lands Run, Greasy Run and Smith Creek should be removed from the 303(d) list.

VAV-B40R_SMC02A10 Smith Creek 2.44 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Temperature - B40R-03-TEMP (2006)

Gooney Run was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2006 assessment period. This listing included three tributaries to Gooney Run (Lands Run, Greasy Run and Smith Creek). These three tributaries were segmented out of the Gooney Run during the 2010 assessment cycle however the temperature impairment was carried forward from the initial listing based off the station 1BGNY000.04 on Gooney Run. During the 2006 assessment period 3 violations of 12 samples (25%) at station 1BGNY000.04 violated the State's Stockable Trout temperature standard. Data assessed during the 2016 assessment period showed 0 violations of 12 samples (0.00%) of the State's Stockable Trout temperature standard at station 1BGNY000.04. Based on this improvement in water quality below a 10.5% violation rate, Gooney Run, Lands Run, Greasy Run and Smith Creek should be removed from the 303(d) list.

VAV-B43R_BBL01A10 Bible Run 9.83 Miles Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B43R-01-BAC (2004)

Little Dry River was listed on the 303(d) list for violating the State's water quality standard for fecal coliform bacteria during the 2004 assessment period. This listing included four tributaries to Little Dry River (Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow). These four tributaries were segmented out of the Little Dry River during the 2010 assessment cycle however the fecal coliform impairment was carried forward from the initial listing based off the station 1BLTD001.15 on Little Dry River. During the 2004 assessment period 4 violations of 19 samples (21.05%) at station 1BLTD001.15 violated the State's fecal coliform bacteria standard. Data assessed during the 2016 assessment period showed 0 violations of 11 samples (0.00%) of the State's e-coli bacteria standard at station 1BLTD001.15. Based on this improvement in water quality below a 10.5% violation rate, Little Dry River, Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow should be removed from the 303(d) list.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAV-B43R_CRH01A10 Carr Run 3.02 Miles Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B43R-01-BAC (2004)

Little Dry River was listed on the 303(d) list for violating the State's water quality standard for fecal coliform bacteria during the 2004 assessment period. This listing included four tributaries to Little Dry River (Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow). These four tributaries were segmented out of the Little Dry River during the 2010 assessment cycle however the fecal coliform impairment was carried forward from the initial listing based off the station 1BLTD001.15 on Little Dry River. During the 2004 assessment period 4 violations of 19 samples (21.05%) at station 1BLTD001.15 violated the State's fecal coliform bacteria standard. Data assessed during the 2016 assessment period showed 0 violations of 11 samples (0.00%) of the State's e-coli bacteria standard at station 1BLTD001.15. Based on this improvement in water quality below a 10.5% violation rate, Little Dry River, Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow should be removed from the 303(d) list.

VAV-B43R_LTD01A00 Little Dry River 34.58 Miles Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B43R-01-BAC (2004)

Little Dry River was listed on the 303(d) list for violating the State's water quality standard for fecal coliform bacteria during the 2004 assessment period. This listing included four tributaries to Little Dry River (Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow). These four tributaries were segmented out of the Little Dry River during the 2010 assessment cycle however the fecal coliform impairment was carried forward from the initial listing based off the station 1BLTD001.15 on Little Dry River. During the 2004 assessment period 4 violations of 19 samples (21.05%) at station 1BLTD001.15 violated the State's fecal coliform bacteria standard. Data assessed during the 2016 assessment period showed 0 violations of 11 samples (0.00%) of the State's e-coli bacteria standard at station 1BLTD001.15. Based on this improvement in water quality below a 10.5% violation rate, Little Dry River, Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow should be removed from the 303(d) list.

VAV-B43R_NFS01A00 North Fork Shenandoah River 6.64 Miles Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B43R-03-BAC (2010)

This section of the North Fork Shenandoah River was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2010 assessment period. During the 2010 assessment period 2 of 11 samples (18.18%) at station 1BNFS098.22 and 4 of 35 samples (11.43%) at station 1BNFS093.53 violated the State's water quality standard for e-coli bacteria. Data assessed during the 2016 assessment period show 0 violations of 12 samples (0.00%) for e-coli bacteria at station 1BNFS098.22 and 3 violations of 41 samples (7.32 %) for e-coli bacteria at station 1BNFS093.53. Based on this improvement in water quality below a 10.5% violation rate, this section of the North Fork Shenandoah River should be removed from the 303(d) list.

VAV-B43R_SBL01A10 Seventy Buck Lick Run 2.04 Miles Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B43R-01-BAC (2004)

Little Dry River was listed on the 303(d) list for violating the State's water quality standard for fecal coliform bacteria during the 2004 assessment period. This listing included four tributaries to Little Dry River (Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow). These four tributaries were segmented out of the Little Dry River during the 2010 assessment cycle however the fecal coliform impairment was carried forward from the initial listing based off the station 1BLTD001.15 on Little Dry River. During the 2004 assessment period 4 violations of 19 samples (21.05%) at station 1BLTD001.15 violated the State's fecal coliform bacteria standard. Data assessed during the 2016 assessment period showed 0 violations of 11 samples (0.00%) of the State's e-coli bacteria standard at station 1BLTD001.15. Based on this improvement in water quality below a 10.5% violation rate, Little Dry River, Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow should be removed from the 303(d) list.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAV-B43R_XCL01A10	Clay Lick Hollow	2.95 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B43R-01-BAC (2004)

Little Dry River was listed on the 303(d) list for violating the State's water quality standard for fecal coliform bacteria during the 2004 assessment period. This listing included four tributaries to Little Dry River (Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow). These four tributaries were segmented out of the Little Dry River during the 2010 assessment cycle however the fecal coliform impairment was carried forward from the initial listing based off the station 1BLTD001.15 on Little Dry River. During the 2004 assessment period 4 violations of 19 samples (21.05%) at station 1BLTD001.15 violated the State's fecal coliform bacteria standard. Data assessed during the 2016 assessment period showed 0 violations of 11 samples (0.00%) of the State's e-coli bacteria standard at station 1BLTD001.15. Based on this improvement in water quality below a 10.5% violation rate, Little Dry River, Bible Run, Carr Run, Seventy Buck Lick Run and Clay Lick Hollow should be removed from the 303(d) list.

VAV-B44R_NFS01A00	North Fork Shenandoah River	4.21 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B43R-03-BAC (2010)

This section of the North Fork Shenandoah River was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2010 assessment period. During the 2010 assessment period 2 of 11 samples (18.18%) at station 1BNFS098.22 and 4 of 35 samples (11.43%) at station 1BNFS093.53 violated the State's water quality standard for e-coli bacteria. Data assessed during the 2016 assessment period show 0 violations of 12 samples (0.00%) for e-coli bacteria at station 1BNFS098.22 and 3 violations of 41 samples (7.32 %) for e-coli bacteria at station 1BNFS093.53. Based on this improvement in water quality below a 10.5% violation rate, this section of the North Fork Shenandoah River should be removed from the 303(d) list.

VAV-B44R_SMK01A00	Shoemaker River	1.87 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B44R-02-BAC (2010)

Shoemaker River was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2010 assessment period. During the 2010 assessment period 4 of 17 samples (17.39%) at station 1BSMK004.84 violated the State's water quality standard for e-coli bacteria. Data assessed during the 2016 assessment period show 0 violations of 10 samples (0.00%) for e-coli bacteria at station 1BSMK004.84. Based on this improvement in water quality below a 10.5% violation rate, Shoemaker River should be removed from the 303(d) list.

VAV-B44R_SMK02A10	Shoemaker River	3.36 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B44R-02-BAC (2010)

Shoemaker River was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2010 assessment period. During the 2010 assessment period 4 of 17 samples (17.39%) at station 1BSMK004.84 violated the State's water quality standard for e-coli bacteria. Data assessed during the 2016 assessment period show 0 violations of 10 samples (0.00%) for e-coli bacteria at station 1BSMK004.84. Based on this improvement in water quality below a 10.5% violation rate, Shoemaker River should be removed from the 303(d) list.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAV-B45R_NFS04A04	North Fork Shenandoah River	2.02 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria - B43R-03-BAC (2010)

This section of the North Fork Shenandoah River was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2010 assessment period. During the 2010 assessment period 2 of 11 samples (18.18%) at station 1BNFS098.22 and 4 of 35 samples (11.43%) at station 1BNFS093.53 violated the State's water quality standard for e-coli bacteria. Data assessed during the 2016 assessment period show 0 violations of 12 samples (0.00%) for e-coli bacteria at station 1BNFS098.22 and 3 violations of 41 samples (7.32 %) for e-coli bacteria at station 1BNFS093.53. Based on this improvement in water quality below a 10.5% violation rate, this section of the North Fork Shenandoah River should be removed from the 303(d) list.

VAV-B52R_CDR04A02	Cedar Creek	3.45 Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Benthic Macroinvertebrates - B52R-03-BEN (2002)

Cedar Creek was originally listed on the 303(d) list for violating the State's water quality General Standard for benthic macroinvertebrates during the 2002 assessment period. This was based on an impaired benthic status (USFS MAIS < 13) at station USFS 4003. Data during the 2016 assessment cycle show that station 1BCDR045.30 located in the same assessment unit has never scored below the Virginia Stream Condition Index Fully Supporting score of 60.
Based on this improvement in the benthic macroinvertebrate community above the fully supporting VSCI score of 60, the benthic impairment on Cedar Creek should be removed from the 303(d) list.

VAV-B53R_CDR02A00	Cedar Creek	9.77 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria -14.34 Miles - B53R-01-BAC (2008)

This section of Cedar Creek was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2008 assessment period. During the 2008 assessment period, 2 of 15 samples (13.33%) at station 1BCDR017.19 violated the State's water quality standard for e-coli bacteria. During the 2016 assessment period, 1 of 12 samples (8.33%) exceeded the State's water quality standard for e-coli at station 1BCDR008.29 and 3 of 36 samples (8.33%) violated the State's water quality standard for e-coli at station 1BCDR013.29. With these stations indicating improvement in water quality below the 10.5% violation rate, the e-coli bacteria impairment on this portion of Cedar Creek should be shortened by 14.34 miles and this portion of Cedar Creek removed from the 303(d) list. The remaining impairment length is 3.75 miles.

VAV-B53R_CDR03A10	Cedar Creek	4.57 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria -14.34 Miles - B53R-01-BAC (2008)

This section of Cedar Creek was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2008 assessment period. During the 2008 assessment period, 2 of 15 samples (13.33%) at station 1BCDR017.19 violated the State's water quality standard for e-coli bacteria. During the 2016 assessment period, 1 of 12 samples (8.33%) exceeded the State's water quality standard for e-coli at station 1BCDR008.29 and 3 of 36 samples (8.33%) violated the State's water quality standard for e-coli at station 1BCDR013.29. With these stations indicating improvement in water quality below the 10.5% violation rate, the e-coli bacteria impairment on this portion of Cedar Creek should be shortened by 14.34 miles and this portion of Cedar Creek removed from the 303(d) list. The remaining impairment length is 3.75 miles.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Potomac and Shenandoah River Basins

VAV-B54R_PSG01A00 Passage Creek 3.86 Miles Recreation

Delisting Summary:

DELIST 2016 - Bacteria - 8.66 Miles - B54R-01-BAC (2006)

This section of Passage Creek was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2006 assessment period. During the 2006 assessment period, 3 of 15 samples (20%) at station 1BPSG001.36 violated the State's water quality standard for e-coli bacteria. During the 2016 assessment period, 4 of 42 samples (9.52%) exceeded the State's water quality standard for e-coli at station 1BPSG001.36. Based on this improvement in water quality below the 10.5% violation rate, the e-coli bacteria impairment on this portion of Passage Creek should be shortened by 8.66 miles and this portion of Passage Creek removed from the 303(d) list. The remaining impairment length is 10.42 miles.

VAV-B54R_PSG01B10 Passage Creek 4.79 Miles Recreation

Delisting Summary:

DELIST 2016 - Bacteria - 8.66 Miles - B54R-01-BAC (2006)

This section of Passage Creek was originally listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2006 assessment period. During the 2006 assessment period, 3 of 15 samples (20%) at station 1BPSG001.36 violated the State's water quality standard for e-coli bacteria. During the 2016 assessment period, 4 of 42 samples (9.52%) exceeded the State's water quality standard for e-coli at station 1BPSG001.36. Based on this improvement in water quality below the 10.5% violation rate, the e-coli bacteria impairment on this portion of Passage Creek should be shortened by 8.66 miles and this portion of Passage Creek removed from the 303(d) list. The remaining impairment length is 10.42 miles.

VAV-B56R_CRO01A00 Crooked Run 6.9 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - B56R-01-DO (2008)

This section of Crooked Run was originally listed on the 303(d) list for violating the State's water quality standard for dissolved oxygen during the 2008 assessment period. During the 2008 assessment period, 2 of 9 samples (22.22%) at station 1BCRO-CRO1-FOSR violated the State's water quality standard for dissolved oxygen. This station continued to violate the dissolved oxygen standard in the 2010 assessment cycle and has since not been monitored by the Friends of the Shenandoah River (FOSR). However, additional monitoring by DEQ downstream indicate that this dissolved oxygen impairment does not extend the full length of Crooked Run due to changes in land use and stream morphology. During the 2016 assessment period, 0 of 70 samples (0.00%) exceeded the State's water quality standard for dissolved oxygen at station 1BCRO002.75 and 0 of 10 samples (0.00%) at station 1BCRO006.86. Based on this improvement in water quality below the 10.5% violation rate, the dissolved oxygen impairment on this portion of Crooked Run should be shortened by 6.90 miles and this portion of Crooked Run removed from the 303(d) list. The remaining impairment length is 2.33 miles.

VAV-B57R_RSC01A00 Roseville Run 6.39 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Temperature - B57R-04-TEMP (2010)

Roseville Run was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2006 assessment period. During the 2006 assessment period 4 violations of 24 samples (16.67%) at station 1BRSC001.42 violated the State's Natural Trout temperature standard. Data assessed during the 2016 assessment period showed 3 violations of 36 samples (8.33%) of the State's Natural Trout temperature standard at station 1BRSC001.42. Based on this improvement in water quality below a 10.5% violation rate, Roseville Run should be removed from the 303(d) list.

NOTE: Partial delists indicate at least one other pollutant exists on the Assessment Unit (AU). If "PARTIAL" is not specified in the delist statement, the AU is supporting all assessed Uses.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored
James River Basin				
VAC-H05R_WKF01A10	Walkers Ford Creek	4.27	Miles	Recreation
Delisting Summary:	DELIST 2016 - E. coli - H05R-07-BAC/VAC-H05R-01 (2010) Station ID: 2-WKF000.72 (Ambient) E. coli - 1/12 Violation Rate			
VAC-H17R_RKI01A00	Rock Island Creek	8.88	Miles	Recreation
Delisting Summary:	DELIST 2016 - E. coli - VAC-H17R-01/H17R-04-BAC (2008) Station ID: 2-RKI003.40 (TMDL) E. coli - 1/12 violation rate			
VAC-H35R_LWW01A08	Little Willis River	6.13	Miles	Aquatic Life
Delisting Summary:	PARTIAL DELIST 2016 - Dissolved Oxygen - H35R-03-DO/VAC-H36R-01 (2014) Station ID: 2-LWW004.14 (Ambient) DO - 2/23 violation rate			
VAC-J03L_XEP01A06	Goodwin Lake	12.28	Acres	Aquatic Life
Delisting Summary:	DELIST 2016 - Dissolved Oxygen - VAC-J01R-01/J03L-04-DO (2006) Station ID: 2-XEP000.44 (2013/2014 Goodwin Lake) Dissolved Oxygen - 1/35 Violation Rate Non-187 Lake - No nutrients assessed.			
VAP-G01L_FAC01A98	Falling Creek Reservoir	88.37	Acres	Recreation
Delisting Summary:	Partial Delist 2016- E.coli-VAP-G01L-01, G01L-01-BAC (2008) During the 2016 cycle the segment was fully supporting for E.coli with a violation rate of 0/13 at station at station 2-FAC003.85 and will be delisted.			

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAP-G01R_XYI01A06 XYI - Coles Run, UT 0.94 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - G01R-12-DO / 10094 / VAP-G01R-12 (CFL 2006)

The tributary has been assessed as impaired of the Aquatic Life Use based on a dissolved oxygen exceedance rate of 4/4 at USGS station 0203854210, which is located in the breastworks on the National Battlefield.

Additional data was collected during the 2016 cycle at station 2CXBX001.08. The exceedance rates were acceptable (0/4); therefore, the tributary will be delisted.

VAP-G02E_APP01A12 Appomattox River 0.1127 Square Miles Aquatic Life Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

The mainstem James River from the Appomattox River to the Chickahominy River was originally listed on the 1998 list as fully supporting but threatened of the Aquatic Life Use goal based on chlorophyll a exceedances. During the 1998 cycle, EPA extended the segment upstream to the fall line and downgraded the river to not supporting of the Aquatic Life Use, citing nutrient concerns.

Several tributaries within the James River system, including tidal Bailey Bay, had previously been listed for dissolved oxygen.

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G02E_JMS03A06 James River 0.633 Square Miles Aquatic Life Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

The mainstem James River from the Appomattox River to the Chickahominy River was originally listed on the 1998 list as fully supporting but threatened of the Aquatic Life Use goal based on chlorophyll a exceedances. During the 1998 cycle, EPA extended the segment upstream to the fall line and downgraded the river to not supporting of the Aquatic Life Use, citing nutrient concerns.

Several tributaries within the James River system, including tidal Bailey Bay, had previously been listed for dissolved oxygen.

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAP-G02E_XGJ01A06	Appomattox River, UT	0.0025	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G02E_XGK01A06	James River, UT	0.0021	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G02R_FOM02A06	Upper Fourmile Creek	9.91	Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - G02R-06-DO / 10030 / VAP-G02R-06 (CFL 2006)

During the 2006 cycle, the upstream portion of the Fourmile Creek watershed was considered impaired due to dissolved oxygen exceedance rates of 4/15 at 2-FOM006.87 (Darbytown Road) and 2/12 at 2-XTV001.69 (Strath Road).

No additional data has been collected. However, during the 2010 cycle, the Fourmile Creek watershed was reclassified as Class VII swampwaters. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAP-G03E_BLY01A98	Bailey Creek/Cattail Creek	0.1144 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 1994)

Tidal Bailey Creek was initially listed on the 1994 cycle 303(d) list because of excessive exceedances of the dissolved oxygen standards.

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G03E_GRV01A02	Gravelly Run	0.0094 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G03E_GUN01B00	Gunns Run	0.0421 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAP-G03E_JMS01A00	James River	10.1939	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

The mainstem James River from the Appomattox River to the Chickahominy River was originally listed on the 1998 list as fully supporting but threatened of the Aquatic Life Use goal based on chlorophyll a exceedances. During the 1998 cycle, EPA extended the segment upstream to the fall line and downgraded the river to not supporting of the Aquatic Life Use, citing nutrient concerns.

Several tributaries within the James River system, including tidal Bailey Bay, had previously been listed for dissolved oxygen.

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G03E_JMS01B10	James River	3.4854	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G03E_PTH01A00	Poythress Run	0.002	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAP-G03E_PWL01A02	Powell Creek	0.3955 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G03E_QEE01A06	Queens Creek	0.2256 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G03E_ZZZ01A14	Unsegmented estuaries in G03	0.2665 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAP-G03E_ZZZ01C14	Unsegmented estuaries in G03	0.3352	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G03R_BLY02A08	Bailey Creek	1.35	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - G03R-02-DO (CFL 2008)

During the 2008 cycle, monitoring was conducted at 2-BLY003.42, which is located at the Route 156 bridge. The segment of Bailey Creek from Manchester Run to the tidal limit was assessed as impaired of the Aquatic Life Use due to a dissolved oxygen violation rate of 2/14.

The exceedance rate was acceptable during the 2016 cycle (0/14); therefore, the segment will be delisted.

VAP-G03R_GUN01A00	Gunns Run and tributaries	19.75	Miles	Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - G03R-01 / 01143 / VAP-G03R-01 (CFL 2002)

In the 2002 cycle, the upper mainstem of Gunns Run was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances recorded at the Route 618 bridge (2-GUN004.00).

During the 2008 cycle, Gunns Run and its tributaries from the head of tide at river mile 2.64 upstream to its headwaters were recommended for reclassification as Class VII swampwaters. The segment was adjusted to correct the tidal extent and expanded to include the applicable tributaries.

The watershed was reclassified during the 2010 cycle.

Additional monitoring was conducted at 2-GUN004.00 during the 2016 cycle. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAP-G04E_BNG01A04	Brandon Gut	0.0053	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G04E_JMS01A02	James River	7.7555	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

The mainstem James River from the Appomattox River to the Chickahominy River was originally listed on the 1998 list as fully supporting but threatened of the Aquatic Life Use goal based on chlorophyll a exceedances. During the 1998 cycle, EPA extended the segment upstream to the fall line and downgraded the river to not supporting of the Aquatic Life Use, citing nutrient concerns.

Several tributaries within the James River system, including tidal Bailey Bay, had previously been listed for dissolved oxygen.

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAP-G04E_JMS02A02	James River	20.4085	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSOH-DO-BAY / VAP-G03E-02 / 10125 / Federal IDs 40824, 40825, and 40826 (CFL 1998)
The mainstem James River from the Appomattox River to the Chickahominy River was originally listed on the 1998 list as fully supporting but threatened of the Aquatic Life Use goal based on chlorophyll_ a exceedances. During the 1998 cycle, EPA extended the impairment upstream to the fall line and downgraded the river to not supporting the Aquatic Life Use, citing nutrient concerns.

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented. The entire Oligohaline James River estuary failed the 30-day Open Water summer dissolved oxygen criteria.

However, during the 2010 cycle, the segment passed all DO criteria which could be assessed. The mainstem James River remained impaired for the Aquatic Life Use due to policy at the time. The tributaries were delisted (partial).

During the 2014 cycle, the JMSOH estuary failed the Open Water 30-day mean summer dissolved oxygen criterion.

JMSOH meets both the summer and rest-of-year 30-day mean dissolved oxygen criteria in the 2016 cycle. There is insufficient information to assess the other dissolved oxygen criteria. The segment will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is Category 2C.

PARTIAL DELIST 2016 - Chlorophyll a - G04E-04-CHLA / Federal ID 40825 (CFL 2008)
The James River from the Appomattox River to the Chickahominy River was originally listed on the 1998 list as fully supporting but threatened of the Aquatic Life Use goal based on chlorophyll a exceedances. During the 1998 cycle, EPA extended the segment upstream to the fall line and downgraded the river to not supporting the Aquatic Life Use, citing nutrient concerns.

A special site-specific chlorophyll standard for the mainstem James River was adopted during the 2008 cycle. The oligohaline segment previously exceeded the spring seasonal mean. However, during the 2016 cycle, JMSOH meets both the spring and summer mean criteria and the segment will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is Category 2C.

VAP-G04E_JMS03A04	James River	3.7562	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

The mainstem James River from the Appomattox River to the Chickahominy River was originally listed on the 1998 list as fully supporting but threatened of the Aquatic Life Use goal based on chlorophyll a exceedances. During the 1998 cycle, EPA extended the segment upstream to the fall line and downgraded the river to not supporting of the Aquatic Life Use, citing nutrient concerns.

Several tributaries within the James River system, including tidal Bailey Bay, had previously been listed for dissolved oxygen.

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAP-G04E_KEN01A06	Kennon Creek	0.0537	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G04E_UCK01A06	Upper Chippokes Creek	1.0168	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G04E_ZZZ01A14	Unsegmented estuaries in G04	0.0819	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAP-G04E_ZZZ01B14	Unsegmented estuaries in G04	0.2308 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G04E_ZZZ01C14	Unsegmented estuaries in G04	0.3479 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - JMSTFL-DO-BAY / 01782 / VAP-G03E-02 / Federal IDs 40833, 40835, and 40837 (CFL 2006)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented.

During the 2016 cycle, the lower tidal freshwater James River estuary passes both of the Open Water Subuse's 30-day mean dissolved oxygen criteria. There is insufficient information to assess the other OW criteria or the Migratory Spawning Use. JMSTFL will be delisted for dissolved oxygen.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-G04E_ZZZ02A06	Unsegmented estuaries in G04	0.0001 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - JMSOH-DO-BAY / Federal IDs 40824, 40825, and 40826 (CFL 2014)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented. The JMSOH estuary failed the Open Water 30-day mean summer dissolved oxygen criterion in the 2014 cycle.

JMSOH meets both the summer and rest-of-year 30-day mean dissolved oxygen criteria in the 2016 cycle. There is insufficient information to assess the other dissolved oxygen criteria. The segment will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

James River Basin

VAP-G04R_WRD01A00 Wards Creek 8.1 Miles Recreation

Delisting Summary:

DELIST 2016 - E. coli - G04R-01-BAC / 10035 / VAP-G04R-01 (CFL 2006)

During the 2006 cycle, Wards Creek was assessed as not supporting of the Recreation Use support goal based on an E. coli exceedances at monitoring station 2-WRD005.40, which is located at the Route 10 bridge.

The impairment was addressed in the Turkey Island Creek and James River Westover Bacterial TMDL, which was approved by the SWCB on 10/1/2015 and by the EPA on 12/22/2015.

However, the exceedance rate was acceptable during the 2016 cycle (3/35) and the stream will be delisted (Category 2C.)

VAP-G05R_CHK02A04 Chickahominy River 8.27 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - G05R-03-DO (CFL 2012)

During the 2012 cycle, the segment of the Chickahominy from the confluence with Stony Run downstream to the Route 360 bridge was assessed as not supporting of the Aquatic Use due to a dissolved oxygen exceedance rate of 2/12 at 2-CHK067.30.

This segment of the river is classified as Class VII swampwater. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the dissolved oxygen impairment has been removed.

VAP-G06R_BEV01A00 Beaverdam Creek 4.97 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - pH 4.97 miles - G06R-06-PH / 01155 / VAP-G06R-06 (CFL 2004)

Beaverdam Creek was previously assessed as not supporting of the Aquatic Life Use based on a pH standard exceedance rate of 3/4 at USGS station 02042433.

During the 2008 cycle, monitoring at DEQ station 2-BEV002.00 at the Route 156 bridge, only slightly upstream of the USGS station, had an acceptable exceedance rate of 0/11; therefore continued monitoring was recommended.

During the 2014 cycle, monitoring was conducted at 2-BEV002.00 as well as 2-BEV-RICH01-NPS, which is a National Park Service station. The NPS station had an acceptable violation rate (0/31), however the DEQ station was 3/26; therefore, the segment remained impaired.

During the 2016 cycle, widespread monitoring was conducted by the DEQ and National Park Service. Although the majority of stations had acceptable pH, the upstream-most station, 2-BEV006.75 continues to have pH exceedances (7/13). The segment will be shortened to end at tributary XBT and the downstream portion will be partially delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

James River Basin

VAP-G06R_CHK01A98 Chickahominy River 7.45 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - G06R-01-DO / 00447 / VAP-G06R-01N (CFL 1996)

The Chickahominy River has been assessed as not supporting of the Aquatic Life use goal since 1996 due to dissolved oxygen exceedances at the Route 360 bridge (2-CHK062.57) and at the Route 156 bridge (2-CHK055.04).

A Natural Conditions Assessment for DO in the Chickahominy River was conducted during the 2008 cycle. The report recommended that the Chickahominy River from its confluence with Toe Ink Swamp at rivermile 43.07 upstream to the confluence with Stony Run at rivermile 71.03 be reclassified as Class VII swampwater.

The river was reclassified as Class VII swampwater during the 2010 cycle. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-G06R_DER01A04 Deep Run 2.35 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - G06R-10-DO / 10122 / VAP-G06R-10 (CFL 2006)

During the 2006 cycle, Deep Run was considered impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/15 at 2-DER000.65. No additional data has been collected.

The stream is classified as Class VII. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the dissolved oxygen impairment has been removed.

VAP-G06R_POS01A00 Possum Run 4.86 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - pH - G06R-14-PH (CFL 2008)

During the 2008 cycle, Possum Run was assessed as impaired of the Aquatic Life Use due to a pH violation rate of 2/3 at 2-POS002.62, which is a freshwater probabilistic monitoring station.

Additional monitoring was conducted in the 2016 cycle at station 2-POS000.47, which is located at the Route 609 bridge. The pH exceedance rate was acceptable (1/12); therefore, the segment will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

James River Basin

VAP-G06R_WOS02A02 White Oak Swamp 3.48 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - G06R-08-DO / 10040 / VAP-G06R-08 (CFL 2006)

During the 2006 cycle, the segment was considered impaired of the Aquatic Life Use due to dissolved oxygen exceedances at 2-WOS008.15.

The exceedance rates were 2/12 at 2-WOS006.92 and 5/12 at 2-WOS008.15 during the 2010 cycle.

The watershed was reclassified as Class VII swampwaters during the 2010 cycle. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-G06R_WSC01A04 White Oak Swamp Creek 3.81 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - G06R-09-DO / 10041 / VAP-G06R-09 (CFL 2006)

During the 2006 cycle, White Oak Swamp Creek was considered impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/15 at 2-WSC002.62. No additional data has been collected.

The watershed was reclassified as Class VII swampwaters during the 2010 cycle. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-G06R_XZS01A10 White Oak Swamp, UT 1.44 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - G06R-02-DO (CFL 2010)

During the 2010 cycle, the tributary was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/2 at probabilistic monitoring station 2-XZS000.38.

The White Oak Swamp watershed is classified as Class VII swampwaters. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

James River Basin

VAP-G08E_CHK02A00	Chickahominy River	5.9197	Square Miles	Recreation

Delisting Summary:

PARTIAL DELIST 2016 - Enterococci - G08E-04-BAC / 10098 / VAP-G08E-04 (CFL 2006)

The Chickahominy River below Diascund Creek was initially assessed as not supporting the Recreation Use due to enterococci exceedances at 2-CHK002.17.

During the 2012 cycle, the violation rate was acceptable (1/32). However, the violation rate was 6/46 at 2-CHK006.14 and 3/11 at 2-CHK014.33; therefore, the segment remained listed.

No additional monitoring was collected during the 2014 cycle at 2-CHK014.33. However, exceedance rates at the original listing station 2-CHK002.17 as well as at station 2-CHK006.14 were acceptable (1/35 and 7/69); therefore continued monitoring was recommended.

The Recreation Use was met at all three stations in the 2016 cycle and the Chickahominy River will be delisted.
0/33 at 2-CHK002.17
6/69 at 2-CHK006.14
0/12 at 2-CHK014.33

VAP-G08E_GOR01A06	Gordon Creek	0.2034	Square Miles	Recreation

Delisting Summary:

DELIST 2016 - Enterococci - G08E-05-BAC (CFL 2012)

During the 2012 cycle, tidal Gordon Creek was impaired of the Recreation Use due to an enterococci exceedance rate of 4/33 at 2-GOR000.35.

The exceedance rate was acceptable during the 2016 cycle (2/22); therefore, Gordon Creek will be delisted.

VAP-G08R_MCR01A04	Mill Creek	4.81	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - G08R-02-DO / 01166 / VAP-G08R-02 (CFL 2004)

Mill Creek was initially assessed as not supporting of the Aquatic Life use support (ALUS) goal in 2004 based on dissolved oxygen (DO) exceedances at the Route 603 bridge (2-MCR002.38).

During the 2012 cycle, the segment remained impaired for DO with an exceedance rate of 3/14.

The exceedance rate fell to 3/36 in the 2016 cycle and Mill Creek will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

James River Basin

VAP-G08R_MOC01A98 Morris Creek 6.93 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - G08R-01 / 00342 / 00343 / VAP-G08R-01 (CFL 1998)

Morris Creek was assessed as not supporting of the Aquatic Life use support (ALUS) goal based on water quality monitoring performed at the Route 623 bridge (2-MOC005.97). The segment was initially listed in 1998.

During the 2008 cycle, additional monitoring was conducted. The impairments were confirmed with the following violation rates:
DO 11/22 at 2-MOC005.97
DO 6/10 at 2-MOC010.97

A Natural Conditions Assessment recommended that Morris Creek and its tributaries from the head of tide at river mile 5.97 upstream to its headwaters be reclassified as Class VII swampwaters. The nontidal watershed above rivermile 5.97 was reclassified during the 2010 cycle. However, it was determined that the tidal limit is actually located at rivermile 6.67; therefore, the original listing station is no longer in this segment. The nontidal Morris Creek is assessed based on stations 2-MOC010.97 and 2-MOC006.67. The dissolved oxygen violation rate was 9/16 at 2-MOC010.97 during the 2010 cycle; therefore, the segment remained Category 4C for DO.

No additional data has been collected. However, per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed in the 2016 cycle.

VAP-G08R_XAF01A12 XAF - Morris Creek, UT 1.06 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - G08R-03-DO (CFL 2012)

During the 2012 cycle, XAF was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/2 at 2CXAF000.46.

However, XAF is classified as a Class VII waterbody in the Virginia Water Quality Standards. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed in the 2016 cycle.

VAP-G09R_DSC01A00 Diascund Creek 6.88 Miles Recreation

Delisting Summary:

PARTIAL DELIST 2016 - E. coli - G09R-02-BAC (2008)

During the 2008 cycle, Diascund Creek was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 4/24 at the Route 628 bridge (2-DSC012.67). The exceedance rate was 3/15 during the 2012 cycle.

However, Diascund Creek met the E. coli criterion during the 2016 cycle (0/12 at 2-DSC012.67). The segment will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAP-G10E_ZZZ01A14	Unsegmented estuaries in G10E	0.0186	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - JMSOH-DO-BAY / Federal IDs 40824, 40825, and 40826 (CFL 2014)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented. The JMSOH estuary failed the Open Water 30-day mean summer dissolved oxygen criterion in the 2014 cycle.

JMSOH meets both the summer and rest-of-year 30-day mean dissolved oxygen criteria in the 2016 cycle. There is insufficient information to assess the other dissolved oxygen criteria. The segment will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is Category 2C.

VAP-G10E_ZZZ01B14	Unsegmented estuaries in G10E	0.4843	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - JMSOH-DO-BAY / Federal IDs 40824, 40825, and 40826 (CFL 2014)

During the 2006 cycle, the Chesapeake Bay water quality standards were implemented. The JMSOH estuary failed the Open Water 30-day mean summer dissolved oxygen criterion in the 2014 cycle.

JMSOH meets both the summer and rest-of-year 30-day mean dissolved oxygen criteria in the 2016 cycle. There is insufficient information to assess the other dissolved oxygen criteria. The segment will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is Category 2C.

VAP-H33R_DCR01A98	Deep Creek	0.37	Miles	Recreation	

Delisting Summary:

PARTIAL DELIST 2016 - E. coli - H33R-02-BAC (CFL 2014)

During the 2014 cycle, the segment was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 2-DRC003.00, which is located on Deep Creek at the Route 684 bridge.

It was nested in the upper James River TMDL in the James River and Tributaries - Lower Piedmont report, which was approved by the EPA on 6/11/2008 and by the SWCB on 4/28/2009.

The exceedance rate was acceptable during the 2016 cycle (2/23); therefore, the impairment will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

James River Basin

VAP-H34R_LTP01A04 Little Byrd Creek 8.14 Miles Recreation

Delisting Summary:

DELIST 2016 - E. coli - H34R-02-BAC (CFL 2008)

During the 2008 cycle, Little Byrd Creek was assessed as impaired of the Recreation Use due to E. coli violation rates of 2/11 at the Route 667 bridge (2-LTP002.00) and 4/12 at the Route 610 bridge (2-LTP004.81).

Little Byrd Creek is a tributary of Byrd Creek, which is also impaired due to bacteria. The TMDL for Byrd Creek was approved by the EPA on 6/11/2008 and by the SWCB on 4/28/2009. The TMDL requires a 100% reduction in anthropogenic direct loads, 99% reductions for agriculture, residential and urban loads, and a 71% reduction in wildlife loads; therefore Little Byrd Creek was considered a nested water (Category 4A).

Additional monitoring was conducted during the 2016 cycle. The E. coli exceedance rate was acceptable at station 2-LTP004.81 (1/11); therefore, Little Byrd Creek will be delisted.

VAP-H34R_RSM01A08 Ransome Creek 3.37 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Benthic Macroinvertebrates - H34R-06-BEN (CFL 2008)

During the 2008 cycle, Ransome Creek was assessed as impaired of the Aquatic Life Use due to impairment of the benthic community at 2005 freshwater probabilistic monitoring station (2-RSM001.88).

Further monitoring was conducted at 2-RSM001.88 in 2011 and also at replacement station 2-RSM000.58 during 2011, 2012, and 2014. The benthic community was fully supporting; therefore, Ransome Creek will be delisted.

VAP-H37R_BLG02A08 Big Lickinghole Creek 3.34 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - H37R-03-DO (CFL 2008)

During the 2008 cycle, the upstream segment of Big Lickinghole Creek was assessed as impaired of the Aquatic Life Use due to a dissolved oxygen violation rate of 5/11 at 2-BLG012.33 (the Route 609 bridge).

The exceedance rate was acceptable during the 2016 cycle (0/11); therefore, the segment will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

James River Basin

VAP-H39R_JMS01A98 James River 7.44 Miles Recreation

Delisting Summary:

PARTIAL DELIST 2016 - E. coli - H39R-26-BAC (CFL 2014)

During the 2014 cycle, the James River between Tuckahoe Creek and William's Island dam was impaired of the Recreation Use due to an E. coli exceedance rate of 4/35 at 2-JMS117.35, which is located at the Huguenot Bridge.

The segment is within the study area for the downstream James River - City of Richmond Bacterial TMDL, which was approved by the EPA on 11/4/2010. The impairment was considered nested (Category 4A.)

The exceedance rate fell to 4/38 in the 2016 cycle; therefore, the segment will be delisted.

VAP-H39R_RDD01A00 Reedy Creek 2.37 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - H39R-06-DO (CFL 2008)

During the 2008 cycle Reedy Creek was assessed as not supporting the Aquatic Life Use due to dissolved oxygen exceedances at the 44th Street bridge and at the Deter Road bridge (2-RDD001.57 and 2-RDD003.61, respectively).

In the 2012 cycle, the violation rates were 3/26 at 2-RDD001.57 and 3/12 at 2-RDD003.61. Dissolved oxygen was acceptable in the lower portion of Reedy Creek (0/27 at 2-RDD000.19 and 0/13 at 2-RDD000.99); therefore, the segment was shortened to end at the tributary above Roanoke Street.

Additional sampling was conducted at 2-RDD001.57 in the 2014 cycle. The DO exceedance rate was acceptable (0/13). However, ACB also conducted monitoring at the same location (2-RDD-RC3-ACB); the violation rate was 2/10. The combined exceedance rate is 2/23 at that location. Although passing, the exceedance rate is marginal and there was no additional monitoring at 2-RDD003.61; therefore, the segment remained impaired for the 2014 cycle but continued monitoring was recommended.

The dissolved oxygen exceedance rate was acceptable at all stations on Reedy Creek in the 2016 cycle; therefore, it will be delisted.
0/25 at 2-RDD000.76
0/23 at 2-RDD-RC1-ACB
2/24 at 2-RDD-RC3-ACB
0/21 at 2-RDD-RC4-ACB

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

James River Basin

VAP-H39R_TKO03A98	Tuckahoe Creek	8.97 Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen 8.97 mi - H39R-02-DO / 00687 / VAP-H39R-02 (CFL 2006)

There have been widespread dissolved oxygen exceedances on separate segments within the Tuckahoe Creek watershed.

The Tuckahoe Creek Natural Conditions Assessment report was completed in November 2005 to determine the source of the dissolved oxygen impairments. The report recommended delisting Deep Run and Little Tuckahoe Creek, reclassifying Tuckahoe Creek from Little Tuckahoe Creek to its mainstem as Class VII waters due to swamp conditions, and assessing multiple streams within the watershed as Category 4C waters due to natural low flow conditions. A portion of Tuckahoe Creek was delisted in the 2006 cycle due to acceptable dissolved oxygen exceedance rates.

Tuckahoe Creek was reclassified as Class VII swampwaters during the 2010 cycle.

Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed and the Class VII portion of Tuckahoe Creek will be partially delisted in the 2016 cycle.

VAP-H39R_XUT01A04	XUT - Tuckahoe Creek, UT	1.8 Miles	Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen 1.8 mi - H39R-02-DO / 00687 / VAP-H39R-02 (CFL 2006)

There have been widespread dissolved oxygen exceedances on separate segments within the Tuckahoe Creek watershed.

During the 2006 cycle, the tributary was assessed as impaired of the Aquatic Life Use due to a dissolved oxygen violation rate of 3/13 at 2-XUT000.62.

The Tuckahoe Creek Natural Conditions Assessment report was completed in November 2005. The low dissolved oxygen in the segment was attributed to natural low-flow conditions and it was recommended that the segment be assessed Cat. 4C.

Additional field data were collected in the 2016 cycle. The dissolved oxygen exceedance rate was acceptable (1/11); therefore, it will be partially delisted.

DELIST 2016 - pH - H39R-03-PH / 10043 / VAP-H39R-03 (CFL 2006)

During the 2006 cycle, the segment was assessed as impaired of the Aquatic Life Use due to a pH violation rate of 2/13 at 2-XUT000.62.

Additional field data was collected in the 2016 cycle. The pH exceedance rate was acceptable (0/11); therefore, it will be delisted.

VAP-J07R_SQT01A00	Skinquarter Creek	5.29 Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO-VAP-J07R-01, J07R-01-DO, 00688 (1998)

During the 2016 cycle no new data had been collected. DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAP-J11R_DPC01B00	Deep Creek	11.54 Miles	Recreation	

Delisting Summary:

DELIST 2016- E.coli- VAP-J11R-01, J11R-01-BAC, 00041(2002)

During the 2016 cycle the segment was fully supporting for all that it was monitored for. E.coli had a violation rate of 11/114 at station 2-DPC005.20. and will be delisted.

VAP-J11R_DPC02A00	Deep Creek	5.67 Miles	Aquatic Life	Recreation

Delisting Summary:

DELIST 2016-DO-00690/00041, VAP-J11R-02, J11R-02-DO(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for site-specific DO criterion, so the DO impairment has been removed.

DELIST 2016-E.coli- VAP-J11R-02, J11R-02-BAC (2010)

During the 2016 cycle the segment was fully supporting for E.coli at station 2-DPC017.07 with a violation rate of 1/12 and at station 2-DPC019.03 with a violation rate of 4/60 and will be delisted.

VAP-J12R_WPK01A98	Winterpock Creek	8.43 Miles	Aquatic Life	

Delisting Summary:

DELIST 2016- DO- 00658/00681, VAP-J12R-02, J12R-02-DO (1994)

During the 2016 cycle new data was collected and DO had a violation rate of 5/12 . DO violations were documented in this water beginning in 1994. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for site-specific DO criterion, so the DO impairment has been removed.

VAP-J12R_WTK02A00	Winticomack Creek	4.07 Miles	Aquatic Life	

Delisting Summary:

Partial Delist 2016-DO- VAP-J12R-01, J12R-01-DO, 00659/00689 (1998)

During the 2016 cycle no new data was collected for DO which has been impaired since 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for site-specific DO criterion.

VAP-J12R_XTZ01A04	UT to Winticomack Creek	2.81 Miles	Aquatic Life	

Delisting Summary:

DELIST 2016- DO-01203/01204, VAP-J12R-04, J12R-04-DO(2004)

During the 2016 cycle no new data was collected for DO which has been impaired since 2004. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for site-specific DO criterion.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

James River Basin

VAP-J14R_CCC01A06	Cattle Creek	2.25	Miles	Aquatic Life

Delisting Summary:

DELIST 2016-pH-VAP-J14R-01, J14R-01-PH(2010)

During the 2016 cycle the segment as fully supporting for aquatic life use and the pH will be delisted.

VAP-J15R_APP01A12	Appomattox River	1.94	Miles	Recreation

Delisting Summary:

Partial DELIST 2016-E.coli-00044, VAP-J15R-01, J15R-01-BAC (2002)

During the 2016 cycle the segment was fully supporting for E.coli with a violation rate of 2/36 at station 2-APP012.79

VAP-J16R_BCM01A04	Blackman Creek	4.56	Miles	Aquatic Life

Delisting Summary:

Partial Delist 2016-pH- 1305, VAP-J16R-02, J16R-02-PH (2004)

During the 2016 cycle the segment was delisted for pH with a violation rate of 1/12, and is fully supporting.

VAP-J17R_FNK01A00	Franks Branch	10.35	Miles	Aquatic Life

Delisting Summary:

DELIST 2016-VAP-J17R-03, J17R-03-PH, 15013 (2006)

During the 2016 cycle the segment was fully supporting for pH (0/12) at station 2-FNK001.12.

VAP-J17R_TBY01A06	Timsbury Creek	6.66	Miles	Aquatic Life

Delisting Summary:

DELIST 2016-PH-VAP-J17R-10, J17R-10-PH (2010)

During the 2016 cycle the segment was fully supporting for all that it was monitored for and will be delisted for pH.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G10E_CLG01A06	College Creek	0.578	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

The benthic impairment was added for this segment in the 2012 assessment. College Creek is included in benthic polygon for the JMSOHb. The impairment is applicable since 2004. CGC G10E-05-EBEN and 2018 TMDL date.

Benthics were also monitored at ProbMon station 2-CLG001.77 and were reserved for judgement.

pH is supporting at station 2-CLG000.23 with 0 viol/ 35 obs. There is insufficient pH data at station 2-CLG001.77 with 0 viol/ 3 obs.

VAT-G10E_JMS01A06	James River Mainstem - Chickahominy R. to Hog Point	17.8432	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)
PARTIAL DELIST 2016 - CHLA - G04E-CHLA (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

Sediment Toxicity is supporting at station 2-JMS040.03

pH is supporting at stations 2-JMS042.92 (0 viol/ 598 obs) , JMS042.92 (0 viol/ 280 obs) and 2-JMS041.27 (0 viol/11 obs).

VAT-G10E_JMS01B08	James River - Carters Grove Area (G10)	0.9854	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)
PARTIAL DELIST 2016 - CHLA - G04E-CHLA (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

pH is supporting with an observed effect at station 2-JMS032.59 with 3 viol/ 625 obs.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAT-G10E_JMS02A06	James River - Hog Point Area (Open Shellfish Area)	2.2402 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)
PARTIAL DELIST 2016 - CHLA - G04E-CHLA (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

VAT-G10E_MIC01A00	Mill Creek	0.0751 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

pH is supporting at station 2-MIC000.03 with 0 viol/ 35 obs.

VAT-G10E_POW01A02	Powhatan Creek/Sandy Bay	0.2041 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

pH is supporting at station 2-POW000.60 with 0 viol/ 34 obs.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAT-G10E_ZZZ01A00	Unsegmented estuaries in G10E	1.1243 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

There is insufficient pH data at ProbMon stations 2CBKR000.23 (0 viol/ 3 obs) and 2CTFR000.62 (0 viol/ 2 obs). Benthics were also analyzed at the aforementioned stations and are reserved for judgement.

VAT-G10E_ZZZ02A00	Unsegmented estuaries - Hog Point Area	0.0043 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

VAT-G11E_BAL01A06	Ballard Creek & Bay-James R. South Shore Tributary	0.019 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G11E_CKT01A04	Chuckatuck & Brewers Creeks	0.5599 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	
James River Basin				
VAT-G11E_CKT02A12	Chuckatuck Creek and Mouth in James	0.8856 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G11E_CYP01A06	Cypress Creek	0.2628 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

CitMon citizen's monitoring station @ 2CYP-CYP2-ALL site specific data DO (3 obs - Supporting) and Level II pH (0 viol/ 3 obs)

VAT-G11E_DEP01A02	Deep Creek - Lower	0.1003 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

There is an observed effect for pH at station 2-DEP000.26 with 1 viol/ 35 obs.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G11E_JMS01A06	James River - Gravel Neck to Pagan River	40.2596	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Benthics are supporting ALUS for this segment since 2010.

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

The impairment is added for the 2008 IR cycle. As the impairment is related to the EPA's 1998 303(d) overlisting as impaired for the Aquatic Life Use; the impairment was attributed to excessive nutrients. 1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

Site Specific pH data at Stations:
2-JMS021.04 0 viol / 539 obs
JMSMH_20M 1 viol / 80 obs
JMSMH_8M 0 viol / 78 obs

VAT-G11E_JMS01B08	James River - Hog Island Area [JMSOH area]	3.8456	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)
PARTIAL DELIST 2016 - CHLA - G04E-CHLA (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

The source/stressor tool yielded an unknown source for the impairment. This segment was previously included (2004 IR) in TMDL ID: VAT-G10E-05. The TMDL due date is carried from the previous 2004 IR impairment identification date. The TMDL is due in 2016.

Site Specific pH data:
2-JMS032.59: 3 viol/ 625 obs

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G11E_JMS01C08	James River - Carter Grove Area	0.4038	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

Benthics are supporting ALUS for this segment since 2010.

Chesapeake Bay TMDL approved 12/29/010.

VAT-G11E_JMS01D14	James River - Carters Grove Area (G11)	1.2179	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSOH-DO-BAY (2006)
PARTIAL DELIST 2016 - CHLA - G04E-CHLA (2006)

Aquatic Life Use is not supporting for the James Oligohaline (JMSOH) Chesapeake Bay Program segment based on benthic community impairments (B-IBI). Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

Site Specific pH data at station 2-JMS032.59 : VIOL / 625 VIOL

VAT-G11E_JMS02A06	James River - Jail Point to Hilton Village	24.697	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

The Chlorophyll-a impairment was added for the 2008 IR cycle. As the impairment is related to the EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients, the TMDL is due in 2010. 1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

Benthics have been supporting since 2010

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G11E_JMS03A06	James River - Along Lower North Shore	3.9425	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

The Chlorophyll-a impairment is added for the 2008 IR cycle. As the impairment is related to the EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients, the TMDL is due in 2010. 1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

Site Specific pH data at Station JMS017.96: 0 viol/ 291 obs.

VAT-G11E_JMS03B06	James River - Hilton Beach Area	0.1102	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

The Chlorophyll-a impairment was added for the 2008 IR cycle. As the impairment is related to the EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients, the TMDL is due in 2010. 1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

VAT-G11E_JMS03C06	James River - Huntington Beach Area	0.008	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

The Chlorophyll-a impairment was added for the 2008 IR cycle. As the impairment is related to the EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients, the TMDL is due in 2010. 1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G11E_JMS04A06	James River - Hilton Village to Craney Island	24.8793	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

The Chlorophyll-a impairment was added for the 2008 IR cycle. As the impairment is related to the EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients, the TMDL is due in 2010. 1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

Site Specific pH data at Stations 2-JMS013.10 , JMSMH_16M, JMSMH_1A_M:

pH: 0 viol/ 386 obs , 0 Viol/ 79, 0 / 84, respectively

VAT-G11E_JMS06A10	James River - Outside Mouth Streeter & Hoffler Creeks	0.1556	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

The Chlorophyll-a impairment was added for the 2008 IR cycle. As the impairment is related to the EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients, the TMDL is due in 2010. 1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

The Aquatic Life Use Aquatic Plants [Macrophytes] use is impaired for the 2014 cycle based on meeting the SAV criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

VAT-G11E_JOG01A08	Jones Creek - Tributary to Pagan River	0.2293	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAT-G11E_JOG02A08	Jones Creek - Tributary to Pagan River	0.1016	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Ambient Stas 2-JOG000.62 - pH 0 viol / 32 obs

VAT-G11E_KIN01A06	Kings Creek & Bay - James R. South Shore Tributary	0.0365	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G11E_LAW01A00	Lawnes Creek (Tributary to James River)	0.2907	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site Specific pH data at station 2-LAW000.42 : 0 viol/ 12 obs

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAT-G11E_MRS01A06	Morrisons Creek - Mulberry Island	0.1268 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G11E_PGN01A08	Pagan River - Upstream of Chalmers Point	0.2999 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site Specific pH:

2-PGN005.46: (1 viol/ 32 obs)
2-PGN006.65: (0 viol/ 32 obs)
2-PGN007.44: (0 viol/ 5 obs)
2-PGN008.42: (0 viol/ 32 obs)
2PGN-32-ALL: (0 viol/ 9 obs)

VAT-G11E_PGN01D16	Pagan River - Middle	0.1547 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G11E_PGN02A08	Pagan River - Middle	0.9155	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

Chesapeake Bay TMDL EPA approved 12/29/2010.

Site Specific pH:

2-PGN002.58: 0 viol/ 4 obs
2-PGN003.57: 0 viol/ 32 obs
2-PGN004.57: 0 viol/ 32 obs

VAT-G11E_PGN02B14	Pagan River - Middle	0.2456	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site specific pH data 2-PGN001.19: 0 viol/ 32 obs.

VAT-G11E_PGN02D16	Pagan River - Middle	0.0779	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		
James River Basin					
VAT-G11E_PGN03A10	Pagan River - Mouth Area	0.7369 Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

PARTIAL DELIST 2016 - FECAL COLIFORM (0.3994 sq mi) - G11E-10-SF (2008)

In 2016, VAT-G11E_PGN02C14 went from condemned to supporting the shellfish use and was subsequently merged with VAT-G11E_PGN03A10. Therefore, the partial delist of the shellfish use from VAT-G11E_PGN02C14 is applied to this assessment unit.

The Shellfishing Use is fully supported based on DSS OPEN shellfish direct harvesting condemnation # 061-064 (20140416). Bacteria impairment covered under TMDL (35579) 'Pagan River & Jones Creek', EPA approved 2/12/2008.

VAT-G11E_RIC01A06	Ragged Island Creek	0.2946 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

CitMon (ACB) Citizen Monitoring station @ 2RIC-RIC-ALL : pH 0 viol/ 59 obs.

VAT-G11E_SFF02A08	Skiffes Creek System [Admin Cond]	0.4518 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G11E_SFF03A10	Skiffes Creek - Mouth	0.0595	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G11E_TTS01A16	Titus Creek	0.0169	Square Miles	Aquatic Life	Open-Water Aquatic Life	Fish Consumption

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

CitMon (ACB) Citizen Monitoring station @ 2TTS-TC1-ALL pH data (Level II) pH: 0 viol/ 26 obs

PARTIAL DELIST 2016 - PCB - G10E-03-PCB (2006)

The Fish Consumption Use is fully supporting. The Fish Consumption impairments for the Elizabeth and James River water bodies were revised to better align with the Fish Consumption Advisories. There is an Observed Effect due to the VDH (issued 1988) caution to limit consumption of fish on a daily basis due to the potential for Kepone fish tissue contamination, reported in historical fish monitoring data with the potential for presence in the sediments of the James River.

VAT-G11E_TYB01A00	Tylers Beach Boat Basin	0.0109	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAT-G11E_WWK01A08	Warwick River - Upper Tidal Portion	0.2833 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G11E_WWK02A08	Warwick River - Middle Tidal Portion	0.075 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G11E_WWK03A08	Warwick River - Lower Tidal Portion	2.5112 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Benthics were sampled at Coastal Probmon station 2CWWK002.14 in 2013 but the assessment was reserved for judgement.

VAT-G11E_ZZZ01A00	Unsegmented estuaries - James R. Tribs	0.3577 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored		
James River Basin						
VAT-G11E_ZZZ02A00	Unsegmented estuaries - Warwick R. Tribs	0.119	Square Miles	Aquatic Life	Open-Water Aquatic Life	Fish Consumption

Delisting Summary:

PARTIAL DELIST 2016 - DO- JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

PARTIAL DELIST 2016 - PCB - G10E-03-PCB (2006)

The Fish Consumption Use is fully supporting. The Fish Consumption impairments for the Elizabeth and James River water bodies were revised to better align with the Fish Consumption Advisories. There is an Observed Effect due to the VDH (issued 1988) caution to limit consumption of fish on a daily basis due to the potential for Kepone fish tissue contamination, reported in historical fish monitoring data with the potential for presence in the sediments of the James River.

VAT-G11E_ZZZ03A10	Unsegmented estuaries - Homewood Creek	0.06	Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

DELIST 2016 - DO - JMSOH-DO-BAY (2006)

Aquatic Life Use is fully supporting. Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

VAT-G11E_ZZZ04A10	Unsegmented estuaries - Hog Island Cr	0.1407	Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

DELIST 2016 - DO - JMSOH-DO-BAY (2006)

Aquatic Life Use is fully supporting. Dissolved oxygen is supporting based on summer and rest-of-year 30-day mean data. Chlorophyll-a data is supporting for both summer and rest-of-year. Submerged Aquatic Vegetation is fully supporting based on meeting acreage requirements.

VAT-G11L_LSL01G06	Lone Star Lake G (PWS)	89.65	Acres	Aquatic Life		

Delisting Summary:

DELIST 2016 - DISSOLVED OXYGEN - G11L-02-DO (2006)

The Aquatic Life Use is Fully Supporting based on dissolved oxygen concentrations at station 2-LSL000.04 with 3 viol/ 100 obs.

DEQ monitoring station 2-LSL000.04 for Lone Star Lake G (Crane Lake)

Nutrients support ALUS at station 2-LSL000.04. Lone Star Lake G pooled nutrients results: 0 viol/ 2 obs (Assessed Chl-a - no algaecide application)

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G11L_LSL01I06	Lone Star Lake I (PWS)	33.2	Acres	Aquatic Life	

Delisting Summary:

DELIST 2016 - TOTAL PHOSPHORUS - G11L-03-TP (2010)

The Aquatic Life Use is supporting based on dissolved oxygen concentrations below the DEQ minimum allowable instantaneous criteria. Station 2- LSL000.20 has a violation rate of 7.3% (4 violates / 55 obs.).

Dissolved Oxygen was delisted in the 2014 cycle (G11L-03-DO (2006))

Lone Star Lake I monitoring station 2-LSL000.20 (Butler Lake).
Lone Star Lake I pooled nutrient results: 0 viol /2 obs Chla & 0 viol/ 2 obs TP 2014, 2011 (IN);
Nutrients Impaired -Assess TP (algaecide application).Maintain impairment for 2014 need another year of nutrient data.

VAT-G13E_BEN01A04	Bennett Creek - Tributary to Nansemond R. [No TMDL]	0.5417	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site Specific data at station 2-BEN001.42 pH: 0 viol / 36 obs
2BEN-SBC000.35-SUF : 2 viol/ 56 obs

VAT-G13E_BHN01A00	Bleakhorn Creek - Tributary to Nansemond R. Mouth	0.014	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		
James River Basin					
VAT-G13E_BML01A06	Burnetts Mill Creek - Tributary to Upper Nansemond R.	0.0283 Square Miles	Aquatic Life	Open-Water Aquatic Life	Fish Consumption

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

PARTIAL DELIST 2016 - PCB - G10E-03-PCB (2006)

The Fish Consumption Use is fully supporting. The Fish Consumption impairments for the Elizabeth and James River water bodies were revised to better align with the Fish Consumption Advisories. There is an Observed Effect due to the VDH (issued 1988) caution to limit consumption of fish on a daily basis due to the potential for Kepone fish tissue contamination, reported in historical fish monitoring data with the potential for presence in the sediments of the James River.

VAT-G13E_KNC01A00	Knotts Creek - Tributary to E. shore Nansemond R.	0.1215 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site Specific data station 2KNC-SKC000.05-SUF : pH 0 viol/ 39 obs

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAT-G13E_NAN01A00	Nansemond River - Upper	0.2692	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Benthics are supporting ALUS for this segment since 2010.
Benthics at Coastal Probmon station 2CNAN017.57 are fully supporting.

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site Specific pH data:

2CNAN017.59: 0 viol/ 5 obs
2-NAN019.14: 0 viol/ 36 obs
2NAN-SNR0015.58-SUF: 0 viol/ 71 obs
2NAN-SNR0018.24-SUF: 0 viol/ 69 obs
2NAN-SNR0018.82-SUF: 0 viol/ 69 obs
2NAN-SNR0019.27-SUF: 0 viol/ 57 obs
2NAN-SNR0019.46-SUF: 0 viol/ 56 obs

VAT-G13E_NAN02A06	Nansemond River - Upper Middle	0.2093	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Benthics are supporting ALUS for this segment since 2010.

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site specific pH at station 2NAN-SNR0013.50-SUF: 0 viol/ 70 obs.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAT-G13E_NAN03A06	Nansemond River - Lower Middle	2.833 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Benthics are supporting ALUS for this segment since 2010.
Benthics at Coastal Probmon station 2CNAN010.55 are reserved for judgement

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site Specific pH data:

2NAN-SNR0011.83-SUF: 0 viol/ 70 obs
2NAN-SNR007.88-SUF: 0 viol/ 58 obs
2NAN-SNR008.82-SUF: 0 viol/ 57 obs

VAT-G13E_NAN04A00	Nansemond River - Lower [No TMDL]	6.303 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Benthics are supporting since 2010.
Benthics are supporting at Coastal Probmon stations 2CNAN000.58 and 2CNAN000.69 and reserved for judgement at stations 2CNAN001.18 and 2CNAN002.00.

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G13E_NAN04C10	Nansemond River - Lower DSS Condemned at Knotts Cr	0.4671 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAT-G13E_SGL01A00	Shingle Creek - Tributary to Nansemond R.	0.0403 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

pH is impaired based on data at station 2-SGL001.00 with 8 viol/ 36 obs.

VAT-G13E_STR01A04	Star & Oyster House Creeks - Tributary to Nansemond R.	0.0459 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G13E_WBN01A06	Western Branch - Tributary to Nansemond R.	0.1063 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site Specific data at Station 2WBN-SWB000.30-SUF :
pH: 0 viol/ 70 obs

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		
James River Basin					
VAT-G13E_ZZZ01A00	Unsegmented Estuaries - Upper Nansemond R.	0.0971 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G13E_ZZZ02A08	Unsegmented Estuaries - Lower Nansemond R.	0.0611 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G15E_HAI01A06	Hampton River	0.5469 Square Miles	Aquatic Life	Open-Water Aquatic Life	Recreation

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSPH-DO-BAY (2006)

Aquatic Life Use is fully supporting. Rest-of-year chlorophyll-a data are supporting. Benthics are fully supporting. Summer and rest-of-year 30-day mean dissolved oxygen data are supporting. Submerged aquatic vegetation is supporting based on acreage.

PARTIAL DELIST 2016 - ENTEROCOCCI - G15E-06-05-BAC (2010)

The Recreation Use is fully supported based on Enterococci data collected at station 2-HAI000.64 with 0 viol/ 11 obs. Data represents monthly sampling in 2013 with the exception of May.

In 2010, there were 3 viol/ 12 obs at station 2-HAI000.64. This data was collected every other month in 2007 and 2008.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G15E_HOF01A06	Hoffler Creek	0.0527	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

DEQ (AQM) station at 2-HOF000.44. CitMon (ACB) Citizen Monitoring station @ 2HOF-HCWF PIER

VAT-G15E_JMS01A00	James River at Hampton Roads Harbor	25.5404	Square Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - BNUT - JMSPH-BNUT-BAY (2010)

Aquatic Life Use is not supporting for the James Polyhaline (JMSPH) Chesapeake Bay Program segment based on summer Chlorophyll-a impairments. Rest-of-year chlorophyll-a data are supporting. Benthics are fully supporting. Summer and rest-of-year 30-day mean dissolved oxygen data are supporting. Submerged aquatic vegetation is supporting based on acreage.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Site Specific pH data at the following stations:

2-JMS000.50: 0 viol/ 1 obs
2-JMS005.72: 0 viol/ 1026 obs
JMSPH_12P: 0 viol/ 86 obs
JMSPH_13P: 0 viol/ 89 obs
JMSPH_21P: 0 viol/ 86 obs
JMSPH_9P: 0 viol/ 90 obs
LE5.5-W: 0 viol/ 556 obs

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G15E_JMS01B06	James River - King/Lincoln Park Beach Area	0.0092	Square Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - BNUT - JMSPH-BNUT-BAY (2010)

Aquatic Life Use is not supporting for the James Polyhaline (JMSPH) Chesapeake Bay Program segment based on summer Chlorophyll-a impairments. Rest-of-year chlorophyll-a data are supporting. Benthics are fully supporting. Summer and rest-of-year 30-day mean dissolved oxygen data are supporting. Submerged aquatic vegetation is supporting based on acreage.

The previous Aquatic Life Use is retained as impaired based on EPA action in 1998 to overlist these waters to the 303d listing. Surrogate impairment holder for previous impairment retained due to EPA action. JMSPH meets 30D assessed Bay oxygen criteria, must remain listed as impaired until all Open Water oxygen criteria are assessed. As the impairment is related to the EPA's 1998 303(d) Overlisting, the impairment was attributed to excessive nutrients, the TMDL is due in 2010. 1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04. EPA approved Chesapeake Bay TMDL 12/29/2010.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G15E_JMS01C06	James River - Anderson Park Beach Area	0.0113	Square Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - BNUT - JMSPH-BNUT-BAY (2010)

Aquatic Life Use is not supporting for the James Polyhaline (JMSPH) Chesapeake Bay Program segment based on summer Chlorophyll-a impairments. Rest-of-year chlorophyll-a data are supporting. Benthics are fully supporting. Summer and rest-of-year 30-day mean dissolved oxygen data are supporting. Submerged aquatic vegetation is supporting based on acreage.

The previous Aquatic Life Use is retained as impaired based on EPA action in 1998 to overlist these waters to the 303d listing. Surrogate impairment holder for previous impairment retained due to EPA action. JMSPH meets 30D assessed Bay oxygen criteria, must remain listed as impaired until all Open Water oxygen criteria are assessed. As the impairment is related to the EPA's 1998 303(d) Overlisting, the impairment was attributed to excessive nutrients, the TMDL is due in 2010. 1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

The Aquatic Life Use - Summer & ROY is evaluated as meeting the 30 day dissolved oxygen CBP criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-G15E_JMS05A06	James River - Newport News Point to NW Corner Craney Isl.	3.6108	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage and summer and rest-of-year Chlorophyll-a impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04. Previous Use ID = VAT-G10E-04.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

James River Basin

VAT-G15E_SRE01A06	Streeter Creek	0.0297	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - JMSMH-DO-BAY (2006)

Aquatic Life Use is not supporting for the James Mesohaline (JMSMH) Chesapeake Bay Program segment based on Aquatic Vegetation acreage impairments. Benthics (B-IBI) and summer and rest-of-year 30-day mean dissolved oxygen data are supporting.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAV-I02R_LTB01A00	Little Back Creek	15	Miles	Aquatic Life

Delisting Summary:

DELIST 2016 - Temperature - I02R-03-TEMP (2012)

Little Back Creek was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2006 assessment period. During the 2006 assessment period 2 violations of 11 samples (18.18%) at station 2-LTB000.01 violated the State's Natural Trout temperature standard. Data assessed during the 2016 assessment period showed 1 violation of 12 samples (8.33%) of the State's Natural Trout temperature standard at station 2-LTB000.01. Based on this improvement in water quality below a 10.5% violation rate, Little Back Creek should be removed from the 303(d) list.

VAV-I05R_CRE01A00	Cedar Creek Lower	1.61	Miles	Aquatic Life

Delisting Summary:

DELIST 2016 - Temperature - I05R-01-TEMP (2006)

Cedar Creek was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2006 assessment period. During the 2006 assessment period 3 violations of 25 samples (12%) at station 2-CRE002.37 violated the State's Natural Trout temperature standard. Data assessed during the 2016 assessment period showed 1 violation of 12 samples (8.33%) of the State's Natural Trout temperature standard at station 2-CRE002.37. Based on this improvement in water quality below a 10.5% violation rate, Cedar Creek should be removed from the 303(d) list.
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VAV-I05R_CRE01A06	Cedar Creek	1.83	Miles	Aquatic Life

Delisting Summary:

DELIST 2016 - Temperature - I05R-01-TEMP (2006)

Cedar Creek was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2006 assessment period. During the 2006 assessment period 3 violations of 25 samples (12%) at station 2-CRE002.37 violated the State's Natural Trout temperature standard. Data assessed during the 2016 assessment period showed 1 violation of 12 samples (8.33%) of the State's Natural Trout temperature standard at station 2-CRE002.37. Based on this improvement in water quality below a 10.5% violation rate, Cedar Creek should be removed from the 303(d) list.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

James River Basin

VAV-I14R_PNR01A02 Panther Run 2.16 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Benthic Macroinvertebrates - I14R-03-BEN (2004)

Panther Run was originally listed on the 303(d) list for violating the State's water quality General Standard for benthic macroinvertebrates during the 2004 assessment period. This was based on an impaired benthic status (USFS MAIS < 13) at station USFS 6018. Data during the 2016 assessment cycle show that station USFS 6018 has improved and the last two monitoring events scored at 68.3 and 70.4 on the Virginia Stream Condition Index. Based on this improvement in the benthic macroinvertebrate community above the fully supporting VSCI score of 60, the benthic impairment on Panther Run should be removed from the 303(d) list.

VAV-I30R_MIT01A02 Mill Creek 2.08 Miles Recreation

Delisting Summary:

DELIST 2016 - Bacteria - I30R-02-BAC (2006)

Mill Creek was originally listed on the 303(d) list for violating the State's water quality standard for fecal coliform bacteria during the 2006 assessment period. During the 2006 assessment period 2 of 12 samples (16.66%) at station 2-MIT000.04 violated the State's water quality standard for fecal coliform bacteria. Data assessed during the 2016 assessment period show 0 violations of 11 samples (0.00%) for e-coli bacteria at station 2-MIT000.04. Based on this improvement in water quality below a 10.5% violation rate, Mill Creek should be removed from the 303(d) list.

VAV-I33R_MRY02A04 Maury River 6.22 Miles Recreation

Delisting Summary:

DELIST 2016 - Bacteria - I33R-02-BAC (2014)

Maury River was listed on the 303(d) list for violating the State's water quality standard for e-coli bacteria during the 2014 assessment period. During the 2014 assessment period 4 of 35 samples (11.43%) at station 2-MRY038.29 violated the State's water quality standard for e-coli bacteria. Data assessed during the 2016 assessment period show 3 violations of 34 samples (8.82%) for e-coli bacteria at station 2-MRY038.29. Based on this improvement in water quality below a 10.5% violation rate, Maury River should be removed from the 303(d) list.

VAV-I36R_ISH01A00 Irish Creek 8.53 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Temperature - I36R-04-TEMP (2010)

Irish Creek was listed on the 303(d) list for violating the State's water quality standard for temperature during the 2010 assessment period. During the 2010 assessment period 2 violations of 11 samples (18.18%) at station 2-ISH000.02 violated the State's Stockable Trout temperature standard. Data assessed during the 2016 assessment period showed 0 violations of 12 samples (0.00%) of the State's Stockable Trout temperature standard at station 2-ISH000.02. Based on this improvement in water quality below a 10.5% violation rate, Irish Creek should be removed from the 303(d) list.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

James River Basin

VAW-I10R_POT02A02	Potts Creek	3.98 Miles	Aquatic Life	Recreation

Delisting Summary:

DELIST 2016 - pH - VAW-I10R-01/01691/I10R-01-PH (2004)
The waters are delisted based on data collections at station 2-POT030.66 (Above Rt. 18 Bridge near Campsite). Station 2-POT030.66 2016 IR pH data produce results with no excursions of the pH range of 6.0-9.0 from 12 observations. The 2016 IR reports an exceedance rate of pH at less than 10.5% indicating full support of the Aquatic Life Use.

DELIST 2016 - Bacteria (escherichia coli) - I10R-01-BAC / VAW-I10R-01 / 50262 (2006)
The waters are delisted based on data collections at station 2-POT030.66 (Above Rt. 18 Bridge near Campsite). Station 2-POT030.66 2016 IR escherichia coli (E.coli) data produce results with no excursions of the WQS 235 cfu/100 mL instantaneous criterion from 12 observations. The 2016 IR reports an exceedance rate of E.coli at less than 10.5% indicating full support of the Recreational Use.

VAW-I10R_POT03A02	Potts Creek	5.66 Miles	Aquatic Life	Recreation

Delisting Summary:

PARTIAL DELIST 2016 - pH - VAW-I10R-01/01691/I10R-01-PH (2004)
The waters are delisted based on data collections at station 2-POT030.66 (Above Rt. 18 Bridge near Campsite). Station 2-POT030.66 2016 IR pH data produce results with no excursions of the pH range of 6.0-9.0 from 12 observations. The 2016 IR reports an exceedance rate of pH at less than 10.5% indicating full support of the Aquatic Life Use.

PARTIAL DELIST 2016 - Bacteria (escherichia coli) - I10R-01-BAC / VAW-I10R-01 / 50262 (2006)
The waters are delisted based on data collections at station 2-POT030.66 (Above Rt. 18 Bridge near Campsite). Station 2-POT030.66 2016 IR escherichia coli (E.coli) data produce results with no excursions of the WQS 235 cfu/100 mL instantaneous criterion from 12 observations. The 2016 IR reports an exceedance rate of E.coli at less than 10.5% indicating full support of the Recreational Use.

VAW-I20R_MEO01A00	Meadow Creek	2.59 Miles	Aquatic Life	

Delisting Summary:

DELIST 2016 - Temperature - I20R-01-TEMP (2006)
The waters are delisted based on data collections at station 2-MEO000.38 (Rt. 311 Bridge). Station 2-MEO000.38 2016 IR temperature data produce results with no excursions of the Class VI Water Quality Standard (20°C) out of 12 samples. The 2016 IR reports an exceedance rate of temperature at less than 10.5% indicating full support of the Aquatic Life Use.

VAW-I26R_ELS01A02	Ellis Run	1.69 Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - Temperature - VAW-I26R-01 / I26R-03-TEMP (2006)
The waters are delisted based on data collections at station 2-ELS000.08 (Rt. 643 Bridge) where only one excursion of the Water Quality Standards Class V 21°C criterion is observed from 12 measurements. The single exceedance is 20.1°C for an exceedance rate of 8.3%.

NOTE: Partial delists indicate at least one other pollutant exists on the Assessment Unit (AU). If "PARTIAL" is not specified in the delist statement, the AU is supporting all assessed Uses.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAN-E05R_THO03B16	Thornton River	3.12	Miles	Aquatic Life	

Delisting Summary:

DELIST 2016 - Benthic Macroinvertebrates - E05R-01-BEN, VAN-E05R-02 (CFL 2014)

In previous assessments, this 3.12 mile stretch of river was included with the downstream segment (VAN-E05R_THO03A02), which was assessed as not supporting the aquatic life use because biological monitoring in 2008 (fall) at station 3-THO022.27 resulted in a VSCI score indicating an impaired macroinvertebrate community. Subsequent biological monitoring in 2013 and 2014 at stations 3-THO022.27, 3-THO024.12, and 3-THO025.39 indicated that this upstream segment should be split from the downstream impaired segment. Four biological monitoring events in 2013 (spring and fall) and 2014 (spring and fall) at station 3-THO024.12 and four biological monitoring events in 2013 (spring and fall) and 2014 (spring and fall) at station 3-THO025.39 indicated a healthy aquatic community and support of the aquatic life use for this upstream segment that was previously included in assessment unit VAN-E05R_THO03A02. It has been determined that this segment should be delisted for benthic macroinvertebrates based upon recent VSCI scores indicating a healthy benthic macroinvertebrate community.

VAN-E10R_SMR01A04	Sumerduck Run	3.77	Miles	Recreation	

Delisting Summary:

DELIST 2016 - E. coli - E10R-02-BAC, VAN-E10R-02 (CFL 2008)

During the 2014 cycle, this segment was assessed as not supporting the recreation use because of excursions from the maximum E. coli bacteria criterion (2 of 11 samples - 18.2%) recorded at DEQ's ambient water quality monitoring station 3-SMR002.60 at the Route 615 bridge. Additional bacteria monitoring at this location found that 2 of 19 samples (10.5%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for E. coli based upon an acceptable exceedance rate.

VAN-E14R_ROB01A06	Robinson River	3.75	Miles	Recreation	

Delisting Summary:

DELIST 2012 - E. coli - E14R-01-BAC, 60091 (CFL 2006)

During the 2010 cycle, this segment was assessed as not supporting the recreation use because of excursions from the maximum E. coli bacteria criterion (4 of 37 samples - 10.8%) recorded at DEQ's ambient water quality monitoring station 3-ROB017.24 at the Route 638 bridge. Additional bacteria monitoring has been conducted and found that a total of 2 of 28 samples (7.1%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for E. coli based upon an acceptable exceedance rate.

VAN-E18R_RAP03A02	Rapidan River	2.58	Miles	Recreation	

Delisting Summary:

PARTIAL DELIST 2016 - E. coli - E18R-01-BAC (CFL 2002)

During the 2014 cycle, this segment was assessed as not supporting the recreation use because of excursions from the maximum E. coli bacteria criterion (5 of 32 samples - 15.6%) recorded at DEQ's ambient water quality monitoring station 3-RAP006.53 at the Route 610 bridge. Additional bacteria monitoring at this location found that 3 of 33 samples (9.1%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for E. coli based upon an acceptable exceedance rate.

VAN-E20E_RPP01A02	Rappahannock River	0.1884	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Rappahannock River Basin

VAN-E20E_RPP02A02	Rappahannock River	0.2313	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

VAN-E20E_RPP03A02	Rappahannock River	0.2117	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

VAN-E20R_MAP02A02	Massaponax Creek	1.2	Miles	Recreation	

Delisting Summary:

DELIST 2016 - E. coli - E20R-03-BAC, VAN-E20R-03 (CFL 2004)

During the 2014 cycle, this segment was assessed as not supporting the recreation use because of excursions from the maximum E. coli bacteria criterion (5 of 20 samples - 25.0%) recorded at DEQ's ambient water quality monitoring station 3-MAP002.61 at the Route 609 bridge. Additional bacteria monitoring at this location found that 2 of 22 samples (9.1%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for E. coli based upon an acceptable exceedance rate.

VAN-E21E_MIC01A06	Mill Creek	0.2025	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

VAN-E21E_RPP01A02	Rappahannock River	4.5468	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

VAN-E21E_RPP03A02	Rappahannock River	1.366	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		
Rappahannock River Basin					
VAN-E21E_RPP04A02	Rappahannock River	1.2055 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

VAN-E21E_RPP05A02	Rappahannock River	0.5794 Square Miles	Aquatic Life	Open-Water Aquatic Life	Recreation

Delisting Summary:

PARTIAL DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

PARTIAL DELIST 2016 - E. coli - E20E-01-BAC, CB-RPPTF (CFL 2002)

During the 2014 cycle, this segment was assessed as not supporting the recreation use because of excursions from the maximum E. coli bacteria criterion (10 of 68 samples - 14.7%) recorded at DEQ's ambient water quality monitoring station 3-RPP098.81 at the location of former Buoy 112 (near Hayfield Bar). Additional bacteria monitoring at this location found that 6 of 65 samples (9.2%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for E. coli based upon an acceptable exceedance rate.

VAN-E21E_RPP48A02	Rappahannock River-Muddy Creek	0.0057 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

VAN-E21E_RPP49A02	Rappahannock River-Mount Creek	0.1474 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

VAN-E21E_RPP51A02	Rappahannock River-Goldenvale Creek	0.1921 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	
Rappahannock River Basin				
VAN-E21E_RPP52A02	Rappahannock River-Portobago Creek	0.0791 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

VAN-E22E_ZZZ01A08	Unnamed Rappahannock River Embayments	0.0726 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016: DO - RPPTF-DO-BAY (CFL 2014)

The open water assessment of dissolved oxygen values for the RPPTF is fully supporting. The segment is considered fully supporting of the aquatic life use.

VAP-E22E_ELM01A10	Elmwood Creek	0.0467 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - RPPTF-DO-BAY / Federal IDs 40887, 40888, and 40889 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

During the 2014 cycle, the tidal freshwater Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPTF met both Open Water 30-day mean criteria during the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPTF is considered Category 2C.

VAP-E22E_OCC01A08	Occupacia Creek	0.6683 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPOH-DO-BAY / Federal IDs 40872, 40873, and 40874 (CFL 2014)

During the 2014 cycle, the oligohaline Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPOH met both Open Water Subuse 30-day mean criteria in the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPOH is considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E22E_PEE01A14	Peedee Creek	0.1501	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPOH-DO-BAY / Federal IDs 40872, 40873, and 40874 (CFL 2014)

During the 2014 cycle, the oligohaline Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPOH met both Open Water Subuse 30-day mean criteria in the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPOH is considered Category 2C.

VAP-E22E_RPP01A02	Rappahannock River	5.1333	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPTF-DO-BAY / Federal IDs 40887, 40888, and 40889 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

During the 2014 cycle, the tidal freshwater Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPTF met both Open Water 30-day mean criteria during the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPTF is considered Category 2C.

VAP-E22E_RPP02A02	Rappahannock River	1.3442	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPOH-DO-BAY / Federal IDs 40872, 40873, and 40874 (CFL 2014)

During the 2014 cycle, the oligohaline Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPOH met both Open Water Subuse 30-day mean criteria in the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPOH is considered Category 2C.

VAP-E22E_RPP02B16	Rappahannock River	2.003	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPOH-DO-BAY / Federal IDs 40872, 40873, and 40874 (CFL 2014)

During the 2014 cycle, the oligohaline Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPOH met both Open Water Subuse 30-day mean criteria in the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPOH is considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E22E_RPP03A02	Rappahannock River	2.0124	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPOH-DO-BAY / Federal IDs 40872, 40873, and 40874 (CFL 2014)

During the 2014 cycle, the oligohaline Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPOH met both Open Water Subuse 30-day mean criteria in the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPOH is considered Category 2C.

VAP-E22E_RPP04A02	Rappahannock River	0.9422	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPOH-DO-BAY / Federal IDs 40872, 40873, and 40874 (CFL 2014)

During the 2014 cycle, the oligohaline Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPOH met both Open Water Subuse 30-day mean criteria in the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPOH is considered Category 2C.

VAP-E22E_RPP05A02	Rappahannock River	6.958	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle, dissolved oxygen exceedances were noted in deep water and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E22E_ZZZ01A00	Unsegmented estuaries in E22	0.1641	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - RPPTF-DO-BAY / Federal IDs 40887, 40888, and 40889 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

During the 2014 cycle, the tidal freshwater Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPTF met both Open Water 30-day mean criteria during the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPTF is considered Category 2C.

VAP-E22E_ZZZ01A06	Unsegmented estuaries in E22	0.4898	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - RPPOH-DO-BAY / Federal IDs 40872, 40873, and 40874 (CFL 2014)

During the 2014 cycle, the oligohaline Rappahannock estuary failed the Open Water Subuse 30-day mean summer dissolved oxygen criterion. The Open Water rest-of-year criterion was met and there was insufficient data to assess the other dissolved oxygen criteria.

RPPOH met both Open Water Subuse 30-day mean criteria in the 2016 cycle and will be delisted. The Chesapeake Bay TMDL was approved by the EPA on 12/19/2010; therefore, RPPOH is considered Category 2C.

VAP-E22E_ZZZ02A06	Unsegmented estuaries in E22	0.0354	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E22R_OCC01B06	Occupacia Creek and tributaries	74.69 Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - E22R-03-DO / 10111 / VAP-E22R-03 (CFL 2006)

The tributaries to Occupacia Creek were first listed for dissolved oxygen in the 2006 cycle. The segment had the following exceedances in the 2008 cycle:
DO 2/18 at 3-BLK002.54
DO 5/18 at 3-BLK006.96
DO 2/18 at 3-XGJ002.23
DO 2/18 at 3-XGJ004.46

The WQS were revised during the 2010 cycle and the Occupacia Creek watershed above its tidal limit was reclassified as Class VII waters. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-E23E_CAT01A02	Cat Point Creek	1.2804 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E23E_CRC01A08	Church Swamp	0.0017 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E23E_HOK01A98	Hoskins Creek	0.0841	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E23E_HOK02A08	Hoskins Creek	0.052	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E23E_HOK02A10	Hoskins Creek	0.0155	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E23E_LIE01A98	Little Carter Creek, Jugs Creek	0.4194 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E23E_MTL01A10	Mount Landing Creek	0.1722 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E23E_PIS02A00	Piscataway Creek	0.5886 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - pH - E23E-04-PH / 01039 / VAP-E23E-04 (CFL 2002)

The tidal Piscataway Creek was assessed not supporting of the Aquatic Life Use in 2002 based on a pH violation rate of 2/19 at the Route 17 bridge (3-PIS004.79).

The pH TMDL was due in 2014, however a Natural Conditions Assessment was performed on the Piscataway Creek watershed during the 2006 cycle. The report recommends that the creek and its tributaries be reclassified as Class VII swampwaters. The segment was considered Category 4C for pH.

Additional monitoring was conducted during the 2016 cycle. The exceedance rate was acceptable (0/12); therefore, Piscataway Creek will be delisted.

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E23E_RPP02A98	Rappahannock River	6.6948 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle, dissolved oxygen exceedances were noted in deep water and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E23E_RPP02B10	Rappahannock River	0.1584	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle, dissolved oxygen exceedances were noted in deep water and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E23E_RPP02C12	Rappahannock River	1.8143	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle, dissolved oxygen exceedances were noted in deep water and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E23E_ZZZ02A06	Unsegmented estuaries in E23	0.0455	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E23E_ZZZ02B10	Unsegmented estuaries in E23	0.0071	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E23E_ZZZ02C12	Unsegmented estuaries in E23	0.0039	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Rappahannock River Basin

VAP-E23R_BLA01A06 Black Swamp 4.18 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - E23R-14-DO / 10105 / VAP-E23R-14 (CFL 2006)

During the 2006 cycle, Black Swamp was assessed as not supporting the Aquatic Life Use based on a dissolved oxygen exceedance rate of 6/15 at 3-BLA002.31, which is located at the Route 644 bridge. The DO exceedance rate was 2/12 at 3-BLA002.31 during the 2014 cycle.

The nontidal Cat Point Creek watershed has been reclassified as Class VII swampwaters. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed in the 2016 cycle.

VAP-E23R_MTL01A98 Mount Landing Creek 1.15 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - E23R-02-DO (CFL 2002)

Mount Landing Creek from the Route 716 bridge to the tidal limit at river mile 1.00 was assessed as not supporting of the Aquatic Life use support goal in 1998 based on pH exceedances recorded at monitoring station 3-MTL004.82, located at the Route 716 bridge.

The segment location was changed during the year 2002 cycle because it was determined that the tidal limit is actually located at approximately river mile 4.44 and that the swamp conditions that may cause the impairment extend upstream of the bridge. In addition, the segment was also listed as impaired for dissolved oxygen.

During the 2006 cycle, the "Natural Conditions Assessment for low pH, Mount Landing Creek, Essex, Virginia" recommended that Mount Landing Creek and its tributaries from its headwaters downstream to the head of tide at rivermile 4.44 be reclassified as Class VII swampwater.

The WQS were revised and Mount Landing Creek and its tributaries were reclassified as Class VII swampwaters. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-E23R_NSS01A12 Nanny Sanford Swamp 3.58 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - E23R-01-DO (CFL 2012)

In the 2012 cycle, Nanny Sanford Swamp was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/12 at 2-NSS000.77, which is located at the Route 622 bridge.

The nontidal Cat Point Creek watershed has been reclassified as Class VII swampwaters. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed in the 2016 cycle.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Rappahannock River Basin

VAP-E23R_TBS01A06 The Big Swamp 6.74 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - E23R-15-DO / 10106 / VAP-E23R-15 (CFL 2006)

During the 2006 cycle, The Big Swamp had a dissolved oxygen violation rate of 2/15 at 3-TBS003.39; therefore, the segment was impaired for dissolved oxygen. During the 2014 cycle, the exceedance rate was 4/12 at 3-TBS003.39 and 0/12 (FS) at 3-TBS001.08.

The nontidal Cat Point Creek watershed has been reclassified as Class VII swampwaters. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed in the 2016 cycle.

VAP-E23R_XFM01A04 UT to Piscataway Creek 3.58 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - E23R-11-DO / 10102 / VAP-E23R-11 (CFL 2006)

During the 2006 cycle, UT XFM was assessed as impaired of the Aquatic Life Use based on a dissolved oxygen exceedance rate of 2/18 at 3-XFM000.82.

During the 2010 cycle, the Piscataway Creek watershed upstream of Sturgeon Swamp was reclassified as Class VII swampwaters. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen (DO) standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-E23R_XFN01A04 UT to Piscataway Creek 3.61 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - E23R-10-DO / 10101 / VAP-E23R-10 (CFL 2006)

During the 2006 cycle, UT XFN was assessed as impaired of the Aquatic Life Use based on a dissolved oxygen violation rate of 2/15 at 3-XFN000.01.

During the 2010 cycle, the Piscataway Creek watershed upstream of Sturgeon Swamp was reclassified as Class VII swampwaters. Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen (DO) standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E24E_LIK01A12	Little Totuskey Creek	0.0553	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E24E_RIC01A04	Richardson Creek	0.1735	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E24E_RIC01B10	Richardson Creek	0.1476	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E24E_RIC01C10	Richardson Creek	0.0239	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E24E_RPP01B14	Garrett's Marina	0.0026	Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle, dissolved oxygen exceedances were noted in deep water and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

PARTIAL DELIST 2016 - Fecal Coliform - E24E-03-SF / Federal ID 39049 (CFL 2014)

Portion of VDH shellfish condemnation 026-181M1, 4/4/2014 - seasonally condemned

Garrett's Marina was impaired of the Shellfish Consumption Use in the 1998 cycle (E24E-03-SF). During the 2008 cycle, the condemnation expanded and incorporated previous condemnation M271, which had been seasonally condemned (observed effects). VDH condemnation 026-181A, 1/20/2006 was rescinded during the 2012 cycle; the area was seasonally condemned and was delisted.

However, a portion of the area was relisted in the 2014 cycle (026-18B, 4/3/2012). The entire area reverted to seasonally condemned again in the 2016 cycle and will be delisted.

Garrett's Marina was included in the Upper Rappahannock Watershed Shellfish TMDL, which was approved by the EPA on 8/10/2010; therefore, this portion is considered Category 2C/2B.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E24E_RPP01C06	Rappahannock River	0.7049	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform 0.0613 mi2 - E24E-01-SF / Federal ID 39392 (CFL 2014)

Previous shellfish condemnations have included Totuskey and Richardson Creeks (separately or combined). The streams have been impaired since the 1998 cycle. However, in 2006 the segments, were recombined under 025-071A, 12/22/2004 and extended into the Rappahannock mainstem. The condemnation was further extended in the 2008 cycle per condemnation 024-071A, 10/4/2005.

The Totuskey and Richardson Creeks Bacterial TMDL was approved by the EPA on 2/19/2010. The TMDL was based on the maximum extent of the condemnation, which occurred in condemnation 025-071A, 3/16/2007.

The condemnation was shortened and split in the 2012 cycle and the Rappahannock River was open for harvest; and a portion was partially delisted. It was relisted in the 2014 cycle (VDH-DSS condemnation 4/2/11).. VDH-DSS condemnation 025-071, 3/19/2014 shrank in the 2016 cycle and a portion was delisted again.

The open portion is considered Category 2C.

VAP-E24E_TOT01A00	Totuskey Creek	0.3022	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate

VAP-E24E_TOT02A00	Totuskey Creek	0.6472	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E24E_TOT02B10	Totuskey Creek	0.0636	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_DEE01A04	Deep Creek	0.0491	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_DEE01B08	Deep Creek	0.0737	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E25E_FAM01A98	Farnham Creek	0.3601	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_FAM01B10	Farnham Creek	0.0673	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_GEE01A98	Greenvale Creek	0.0871	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E25E_GEE02A06	Greenvale Creek	0.012	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_GEE02B10	Greenvale Creek/Belmont Creek	0.0375	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_HRY01A06	Harry George Creek	0.0952	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		

Rappahannock River Basin

VAP-E25E_LAN01A98	Lancaster Creek	0.27 Square Miles	Aquatic Life	Open-Water Aquatic Life	Recreation

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

PARTIAL DELIST 2016 - Enterococci - E25E-11-BAC / 01060 / VAP-E25E-11 (CFL 2004)

In 2004, the segment was assessed as not supporting the Recreation Use due to a fecal coliform violation rate of 2/18 at 3-LAN002.81, located at the end of Route 1105.

During the 2008 cycle, the segment was adjusted to be coincident with the 1995 condemnation. Enterococci monitoring occurred during the 2010 cycle and the impairment converted to enterococci due to a violation rate of 3/12.

As this area was included in the TMDL Report for Shellfish Areas Listed due to Bacterial Contamination for Lancaster Creek, which was approved by the EPA on 8/2/2006 and by the SWCB on 6/27/2007, the enterococci impairment was considered nested. The segment was considered Category 4A for the Recreation Use.

The enterococci exceedance rate was acceptable during the 2016 cycle (1/12); therefore, the impairment will be delisted.

VAP-E25E_LAN01B08	Lancaster Creek	0.1958 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E25E_LAN02A02	Lancaster Creek	1.3243	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_LAN03A06	Lancaster Creek	0.023	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_LGG01A98	Lagrange Creek	0.5903	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E25E_LGG02A06	Lagrange Creek	0.0481	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_MTT01A00	Morattico Creek	0.1378	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_MUB01A02	Mulberry Creek	0.136	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		

Rappahannock River Basin

VAP-E25E_MUB01B16	Mulberry Creek	0.012 Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

PARTIAL DELIST 2016 - Fecal Coliform 0.0120 mi2 - E25E-13-SF / 01063 / VAP-E25E-13 / Federal ID 25364 (CFL 1998)

Portion of VDH shellfish condemnation 023-121A, 12/31/2014

A portion of Mulberry Creek was included on the 1998 303(d) list due to VDH Shellfish condemnation 120B, 8/14/1995. The TMDL for Shellfish Areas Listed due to Bacterial Contamination for Mulberry Creek was approved by the EPA on 8/2/2006 and by the SWCB on 6/27/2007.

The TMDL only addressed the fecal coliform impairment within the 1998 portion of Mulberry Creek. The segment has shrunk and extended several times. During the 2014 cycle, the condemnation expanded again and was larger than the TMDL area; the expansion was addressed in fact sheet E25E-03-SF. It shrank again during the 2016 cycle and the condemnation is smaller than the original impairment. The closed area remains Category 4C and the opened area will be partially delisted (Category 2C).

VAP-E25E_MUB02A06	Mulberry Creek	0.0502 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		

Rappahannock River Basin

VAP-E25E_MUB02B14	Mulberry Creek	0.0414 Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

PARTIAL DELIST 2016 - Fecal Coliform - E25E-03-SF (CFL 2014)

A portion of Mulberry Creek was included on the 1998 303(d) list due to VDH Shellfish condemnation 120B, 8/14/1995. The TMDL only addressed the fecal coliform impairment within the 1998 portion of Mulberry Creek.

During the 2014 cycle, the condemnation expanded and was larger than the TMDL area (023-121A, 8/8/2012). The expansion was nested within the upstream TMDL for Shellfish Areas Listed due to Bacterial Contamination for Mulberry Creek, which was approved by the EPA on 8/2/2006 and by the SWCB on 6/27/2007.

It shrank again during the 2016 cycle and the condemnation is smaller than the original impairment. The expansion will be delisted.

VAP-E25E_MUB03A08	Mulberry Creek	0.0083 Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

PARTIAL DELIST 2016 - Fecal Coliform - E25E-25-SF (CFL 2008)

The UT to Mulberry Creek was previously impaired of the Shellfish Use due to VDH Shellfish Condemnation 023-121B, 8/8/2012.

It was considered nested within the TMDL for Shellfish Areas Listed due to Bacterial Contamination for Mulberry Creek, which was approved by the EPA on 8/2/2006 and by the SWCB on 6/27/2007.

The condemnation was rescinded during the 2016 cycle (023-121, 12/31/2014); therefore, the impairment will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E25E_MUC01A04	Mud Creek	0.204 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / E25R-01- / VAP-E25R-01 / 10076 / Federal IDs 40881, 40883, and 40885 (CFL 2004)

During the 2004 cycle, tidal Mud Creek was assessed not supporting of the Aquatic Life Use support goals based on a dissolved oxygen violation rate of 2/2 at 3-MUC002.31.

During the 2006 cycle, it was thought that the station's classification as tidal during the 2004 cycle was a mistake. The impairments were transferred to nontidal Mud Creek.

However, during the 2012 cycle, it was determined that the station is actually tidally influenced. The dissolved oxygen impairment was transferred to RPPMH-DO-BAY.

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_PAY01A02	Paynes Creek	0.049 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_PRR01A02	Parrotts Creek	0.1531 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E25E_PRR02A08	Parrotts Creek	0.0311	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_ROS01A00	Robinson Creek	0.1646	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored			

Rappahannock River Basin

VAP-E25E_ROS01B16	Robinson Creek	0.042 Square Miles	Aquatic Life	Open-Water Aquatic Life	Recreation	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

PARTIAL DELIST 2016 - Fecal Coliform 0.1646 mi2 - E25E-02-BAC / E25E-02 (CFL 2002)

In 2002, the segment was assessed as not supporting the Recreation Use due to fecal coliform exceedances at the end of Route 680 (3-ROS001.35). The violation rate in the 2004 cycle was 4/20. There has been no additional monitoring since 2001.

The area was addressed in the "Rappahannock River: Lagrange and Robinson Creeks TMDL Report for Shellfish Condemnation Areas Listed due to Bacteria Contamination" which was approved by the EPA on 11/15/2005 and by the SWCB on 9/27/2006. Because the bacteria standard for the Shellfish Use is more stringent than the standard for the Recreation Use, the area was considered nested.

The shellfish condemnation shrank during the 2016 cycle (028-177, 1/24/2014) and a portion will be partially delisted for the Recreation Use to match the shellfish impairment (Category 2A.)

PARTIAL DELIST 2016 - Fecal Coliform 0.0420 mi2 - E25E-02-SF / 00197 / VAP-E25E-02 / Federal ID 25367 (CFL 1998)

The upstream portion of Robinson Creek was assessed in 1998 as not supporting the Shellfish Consumption Use based on VDH-DSS Condemnation 177, 5/28/1997. The TMDL was approved by the EPA on 11/15/2005 and by the SWCB on 9/27/2006. The segment is classified as Category 4A. The condemnation shrank during the 2016 cycle (028-177, 1/24/2014) and a portion will be partially delisted (Category 2C.)

VAP-E25E_ROS02A04	Robinson Creek	0.0394 Square Miles	Aquatic Life	Open-Water Aquatic Life		

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		

Rappahannock River Basin

VAP-E25E_ROS02B12	Robinson Creek	0.0067 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_ROS02C16	Robinson Creek	0.0132 Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

PARTIAL DELIST 2016 - Fecal Coliform 0.0394 mi2 - E25E-22-SF / 10082 / VAP-E25E-22 (CFL 2006)

Described in VDH Shellfish Condemnation 028-177M2, 1/24/2014 - seasonally condemned

The upstream portion of Robinson Creek was assessed in 1998 as not supporting the Shellfish Consumption Use based on VDH-DSS Condemnation 177, 5/28/1997. The TMDL for this original portion has been completed. During the 2006 cycle, however, the condemnation extended downstream. It is considered nested in the upstream Robinson Creek Shellfish TMDL, which was approved by the EPA on 11/15/2005. During the 2016 cycle, a tributary (028-177D, 1/30/2012) was converted to seasonally condemned (028-177M2, 1/24/2014. Therefore, it will be partially delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E25E_RPP01C98	Mark Haven Beach Basin	0.0038 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle, dissolved oxygen exceedances were noted in deep water and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_TWN01A12	Town Bridge Swamp	0.0017 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_URB01A00	Urbanna Creek	0.2149 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E25E_URB02A00	Urbanna Creek	0.2375	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_WEE01A00	Weeks Creek	0.1226	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_WEE02A04	Weeks Creek	0.0344	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E25E_XDV01A02	Beach Creek	0.0834	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_ZZZ01A14	Unsegmented estuaries in E25	0.077	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E25E_ZZZ01C14	Unsegmented estuaries in E25	0.2666	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		

Rappahannock River Basin

VAP-E25E_ZZZ01D14	Unsegmented estuaries in E25	0.277 Square Miles	Aquatic Life	Deep-Water Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_BPC01A98	Bush Park Creek	0.1027 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_BRD01A00	Broad Creek	0.0838 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_BRD02A00	Broad Creek	0.0404	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_BRD04A00	Broad Creek	0.0366	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_CEB01A00	Eastern Branch Carter Creek	0.0838	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_CEB01B08	Eastern Branch Carter Creek	0.031	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_CEB03C16	Eastern Branch Carter Creek	0.0117	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_CTR01A00	Carter Creek	0.2039	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_CTR02A00	Carter Creek	0.0575	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_CTR03A00	Carter Creek	0.1142	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_CTR03B16	Carter Creek	0.3876	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_CTR04A02	Carter Cove	0.0388	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_CTR04B14	Carter Cove	0.0171	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_EWE01B16	Ewells Prong	0.0018	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform 0.0018 mi2 - E26E-06-SF / 01080 / VAP-E26E-06 / Federal ID 35562 (CFL 1998)

Ewells Prong was included on the 1998 303(d) list due to VDH condemnation 87A, 4/28/1997. The condemnation subsequently expanded (see 2014 fact sheet E26E-50-SF). The TMDL for the original portion was approved by the EPA on 1/23/2008 and by the SWCB on 7/31/2008.

Condemnation 021-187B was considerably smaller in the 2016 cycle (10/28/2014) and is now smaller than the TMDL study area. The condemned area is considered Category 4A; the open area will be partially delisted (Category 2C).

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_EWE02A08	Ewells Prong	0.0122	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - E26E-50-SF (CFL 2008)

The upstream portion of Ewells Prong was included on the 1998 303(d) list due to VDH condemnation 87A, 4/28/1997. The condemnation has since expanded. The TMDL was completed for the original portion.

In the 2014 cycle, the expansion was included as a portion of VDH Shellfish Condemnation 021-187B, 10/17/2012. It was considered nested in the upstream Ewells Prong Shellfish TMDL, which was approved by the EPA on 1/23/2008 and by the SWCB on 7/31/2008.

Condemnation 021-187B was considerably smaller in the 2016 cycle (10/28/2014) and is now smaller than the TMDL study area. The expansion will be delisted.

VAP-E26E_HNU01A08	Hunting Creek	0.0204	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_LOL01A02	Locklies Creek	0.0728	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_LOL01B12	Locklies Creek	0.0277	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_LOL02A06	Locklies Creek	0.0541	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_LOL03A08	Roane Cove of Locklies Creek	0.0341	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_MEA01A00	Meachim Creek	0.0751	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_MEA01B00	Meachim Creek	0.0265	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_MEA01C06	Meachim Creek	0.0344	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_MEA02A00	Meachim Creek	0.136	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_MEA03A10	Meachim Creek	0.0544	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_MEA03B12	Meachim Creek	0.0054	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_MIP01A00	Millenbeck Prong	0.0372	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - E26E-32-SF / 01083 / VAP-E26E-32 / Federal ID 35549 (CFL 1998)

Millenbeck Prong was included on the 1998 303(d) list due to VDH condemnation 187B, 4/28/1997. The TMDL was approved by the EPA on 1/23/2008 and by the SWCB on 7/31/2008.

The condemnation was shortened in the 2010 cycle. The impaired area was considered Category 4A, and the reopened area was partially delisted (Category 2C).

In the 2014 cycle, the condemned area was VDH shellfish condemnation 021-187C, 10/17/2012.

However, during the 2016 cycle, Millenbeck Prong was entirely re-opened to shellfish harvest (021-187, 10/28/2014); therefore, it will be delisted (Category 2C).

VAP-E26E_MLL01A98	Mill Creek	0.1111	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_MLL01B12	Mill Creek	0.0126	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_MLL02A06	Mill Creek	0.3584	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_MOR01B12	Moran Creek	0.0099	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - E26E-19-SF (CFL 2014)

In the 2014 cycle, the tributary was impaired due to VDH Shellfish Condemnation 021-198F, 10/17/2012. It was nested within the nearby Taylor Creek Shellfish TMDL, which was approved by the EPA on 1/23/2008 and by the SWCB on 7/31/2008.

The condemnation was rescinded in the 2016 cycle (021-198, 10/28/2014); therefore the impairment will be delisted.

VAP-E26E_MOS01A00	Mosquito Creek	0.023	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_MOS01B12	Mosquito Creek	0.0462	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_MYE01A16	Myer Creek	0.0264	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform 0.0264 mi2 - E26E-05-SF / 01086 / VAP-E26E-05 / Federal ID 34116 (CFL 1998)

A portion of Myer Creek was included on the 1998 303(d) list due to VDH-DSS Condemnation 198, 4/28/1997. The TMDL was approved by the EPA on 1/23/2008 and by the SWCB on 7/31/2008.

In the 2014 cycle, the area was incorporated within 021-198B, 10/17/2012.

However, during the 2016 cycle, the condemnation shrank considerably and split (021-198B and -F, 10/28/2014.). The condemned areas remain Category 4A; the open areas will be partially delisted (Category 2C).

VAP-E26E_MYE01B02	Myer Creek, UT	0.042	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - E26E-31-SF / 01087 / VAP-E26E-31 (CFL 2002)

In the 2014 cycle, the tributary was impaired of the Shellfish Consumption Use due to VDH shellfish condemnation 021-198A, 10/17/2012. It was considered nested within the Myer Creek Shellfish TMDL, which was approved by the EPA on 1/23/2008, and was considered Category 4A.

The condemnation was rescinded during the 2016 cycle (021-198, 10/28/2014); therefore, the area will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Rappahannock River Basin

VAP-E26E_MYE01C04 Myer Creek 0.077 Square Miles Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - E26E-36-SF / 01088 / VAP-E26E-36 (CFL 2004)

A portion of Myer Creek was included on the 1998 303(d) list due to VDH-DSS Condemnation 198, 4/28/1997. The TMDL was approved by the EPA on 1/23/2008 and by the SWCB on 7/31/2008 (see E26E-05-SF).

A cove of Myer Creek was closed in the 2004 cycle. During the 2012 cycle, it was included in 021-198C, 11/8/2010 (TMDL due in 2014.)

In the 2012 cycle, VDH shellfish condemnation 021-198B, 11/8/2010 grew slightly. The TMDL for the small portion that now extended past the TMDL study area is due in 2024. It was previously addressed in 2012 fact sheet E26E-18-SF.

During the 2014 cycle, condemnation B grew substantially and now incorporated the rest of the 2012 expansion, the cove, and a previously seasonally condemned portion (Portion of VDH Shellfish Condemnation 021-198B, 10/17/2012). The impairments were combined. The area was considered nested within the upstream Myer Creek TMDL; it was considered Category 4A.

During the 2016 cycle, the Myer Creek shellfish condemnation shrank considerably and split. The condemned areas are now smaller than the TMDL study area. This fact sheet addressed the area downstream of the TMDL study area - this is now open for harvest or seasonally condemned (021-198M1, 10/28/2014) and will be delisted.

VAP-E26E_MYE02C16 Myer Creek 0.017 Square Miles Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - E26E-26-SF / 01088 / VAP-E26E-36 (CFL 2004)

A portion of Myer Creek was included on the 1998 303(d) list due to VDH-DSS Condemnation 198, 4/28/1997. The TMDL was approved by the EPA on 1/23/2008 and by the SWCB on 7/31/2008 (see E26E-05-SF).

A cove of Myer Creek was closed in the 2004 cycle. During the 2012 cycle, it was included in 021-198C, 11/8/2010 (TMDL due in 2014.)

In the 2012 cycle, VDH shellfish condemnation 021-198B, 11/8/2010 grew slightly. The TMDL for the small portion that now extended past the TMDL study area is due in 2024. It was previously addressed in 2012 fact sheet E26E-18-SF.

During the 2014 cycle, condemnation B grew substantially and now incorporated the rest of the 2012 expansion, the cove, and a previously seasonally condemned portion (Portion of VDH Shellfish Condemnation 021-198B, 10/17/2012). The impairments were combined. The area was considered nested within the upstream Myer Creek TMDL; it was considered Category 4A.

During the 2016 cycle, the Myer Creek shellfish condemnation shrank considerably and split. The condemned areas are now smaller than the TMDL study area. This fact sheet addressed the area downstream of the TMDL study area - this is now open for harvest or seasonally condemned (021-198M1, 10/28/2014) and will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_RPP02A00	Rappahannock River	0.1269	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle, dissolved oxygen exceedances were noted in deep water and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_RPP03A00	Rappahannock River	0.0311	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle, dissolved oxygen exceedances were noted in deep water and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_STE01A98	Sturgeon Creek	0.0661	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_STE01B12	Sturgeon Creek	0.0017	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_STE01C12	Sturgeon Creek	0.0171	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_STE02A08	Sturgeon Creek	0.1923	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_TON01A00	Town Creek	0.0165	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - E26E-07-SF (CFL 2014)

During the 2014 cycle, Town Creek was impaired of the Shellfish Consumption Use due to VDH shellfish condemnation 021-187E, 10/17/2012. It was considered nested in the nearby Millenbeck Prong Shellfish TMDL, which was approved by the EPA on 1/23/2008 and by the SWCB on 7/31/2008.

The condemnation was rescinded in the 2016 cycle (021-187, 10/28/2014); therefore, it will be delisted.

VAP-E26E_WHS01B00	Whiting Creek	0.1945	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_WID01A12	Windmill Point Creek	0.0815	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_WOO01A08	Woods Creek	0.0371	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_XEV01A02	Windmill Point Yacht Harbor	0.0151	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Rappahannock River Basin

VAP-E26E_ZZZ01D14	Unsegmented estuaries in E26	0.0283 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26E_ZZZ01E14	Unsegmented estuaries in E26	0.6634 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - RPPMH-DO-BAY / 01776 / VAP-E22E-01 / Federal IDs 40881, 40883, and 40885 (CFL 2014)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. During the 2014 cycle, the mesohaline portion of the Rappahannock failed the Chesapeake Bay Open Water Subuse's summer 30-day mean dissolved oxygen criterion. Applicable areas also failed the Deep Water 30-day mean dissolved oxygen criteria and the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria.

In the 2016 cycle, RPPMH passed both Open Water Subuse 30-day mean criteria as well as the Deep Water summer 30-day mean; these areas will be delisted. The Deep Channel Subuse continues to be impaired in applicable areas.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it is considered Category 4A/Category 2C as appropriate.

VAP-E26R_XEY01A06	UT to Western Branch Corrotoman River	3.27 Miles	Aquatic Life	

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - E26R-02-DO (CFL 2008)

During the 2008 cycle, unnamed tributary XEY was considered impaired of the Aquatic Life Use based on a dissolved oxygen exceedance rate of 5/21 at the Route 604 bridge (3-XEY001.00).

Additional data was collected in the 2016 cycle. The dissolved oxygen exceedance rate was acceptable (0/13); therefore, the stream will be delisted.

DELIST 2016 - pH - E26R-02-PH / 10121 / VAP-E26R-02 (CFL 2006)

During the 2006 cycle, unnamed tributary XEY was considered impaired of the Aquatic Life Use based on pH exceedances at the Route 604 bridge (3-XEY001.00). During the 2008 cycle, the exceedance rate was 5/21.

Additional data was collected in the 2016 cycle. The pH exceedance rate was acceptable (0/13); therefore, the stream will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	*Waterbody Name*	*Size*	*Uses Partially / Fully Restored*

Rappahannock River Basin

NOTE: Partial delists indicate at least one other pollutant exists on the Assessment Unit (AU). If "PARTIAL" is not specified in the delist statement, the AU is supporting all assessed Uses.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored
Roanoke and Yadkin River Basins				
VAC-L13R_CLA01A10	Clay Branch	4.02	Miles	Recreation
Delisting Summary:				
DELIST 2016 - E. coli - L13R-02-BAC/VAC-L13R-01 (2014) Station ID: 4ACLA000.88 (Ambient) E. coli - 1/12 Violation Rate				
VAC-L36R_CBA01A06	Catawba Creek	7.73	Miles	Recreation
Delisting Summary:				
DELIST 2016 - E. coli - L36R-02-BAC/VAC-L30R-01 (2006) Station ID: 4ACBA000.22 (Ambient) E. coli - 1/12 Violation Rate				
VAC-L37R_LUB01A06	Little Cub Creek	9.21	Miles	Recreation
Delisting Summary:				
DELIST 2016 - E. coli - VAC-L30R-01/L37R-04-BAC (2006) Station ID: 4ALUB000.12 (2006 Roanoke Bacteria TMDL) E. coli - 1/12 Violation Rate				
VAC-L73R_AAR02A10	Aarons Creek	9.4	Miles	Aquatic Life
Delisting Summary:				
PARTIAL DELIST 2016 - Dissolved Oxygen - VAC-L60R-01/L73R-01-DO (2010) Station ID: 4AAAR006.20 (Ambient) Dissolved Oxygen - 0/12 Violation Rate				

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Roanoke and Yadkin River Basins

VAC-L75L_ROA05L98 Kerr Reservoir 30665.42 Acres Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - VAC-L75R-01/L75L-01-DO (2004)
Station IDs:
2010/2012/2014 Kerr Reservoir Sampling
4AROA018.36
4AROA022.52
4AROA028.04
4AROA032.42
4AROA038.49
4AROA043.14
4ABHB004.40
4AGRA003.22

Pooled Data:
Dissolved Oxygen - 134/1437 Violation Rate
Chlorophyll a - 0/3 (3 Sample Yrs pooled data 90th Percentile)

VAC-L76L_BMA01A06 Buffalo Creek 358.96 Acres Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - VAC-L75R-01/L75L-01-DO (2004)
Station IDs:
2010/2012/2014 Kerr Reservoir Sampling
4AROA018.36
4AROA022.52
4AROA028.04
4AROA032.42
4AROA038.49
4AROA043.14
4ABHB004.40
4AGRA003.22

Pooled Data:
Dissolved Oxygen - 134/1437 Violation Rate
Chlorophyll a - 0/3 (3 Sample Yrs pooled data 90th Percentile)

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Roanoke and Yadkin River Basins

VAC-L77L_BST01A06 Bluestone Creek 860.21 Acres Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - VAC-L75R-01/L75L-01-DO (2004)
Station IDs:
2010/2012/2014 Kerr Reservoir Sampling
4AROA018.36
4AROA022.52
4AROA028.04
4AROA032.42
4AROA038.49
4AROA043.14
4ABHB004.40
4AGRA003.22

Pooled Data:
Dissolved Oxygen - 134/1437 Violation Rate
Chlorophyll a - 1/3 (3 Sample Yrs pooled data 90th Percentile)

VAC-L78R_ALN03A04 Allen Creek 8.97 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - L78R-03-DO/VAC-L78R-02 (2010)
Station ID: 4AALN009.12 (Ambient)
Dissolved Oxygen - 3/36 Violation Rate

VAC-L78R_CTT01A08 Cotton Creek 4.39 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - L78R-05-DO/VAC-L78R-02 (2014)
Station ID: 4ACTT000.70 (Ambient)
Dissolved Oxygen - 2/24 Violation Rate

VAC-L81R_POB01A00 Poplar Creek 3.45 Miles Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - L81R-01-DO/VAC-L81R-01 (2010)
Station ID:
4APOB006.35 (Ambient)
DO - 0/3 Violation Rate

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Roanoke and Yadkin River Basins

VAW-L06R_BAA01A00	Back Creek	5.68 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria (escherichia coli) - L06R-01-BAC / VAW-L06R-01 / 24538 (2008)
The waters are delisted based on data collections at station 4ABAA000.03 as a replacement station for 4ABAA002.61 (Rt. 660 Bridge - at Gage). The original 2004 303(d) listing station 4ABAA002.61 has since been discontinued due to data collection safety concerns. Station 4ABAA000.03 (Off Rt. 618, Rutrough Road) 2016 IR escherichia coli (E.coli) data produce results with no excursions of the WQS 235 cfu/100 mL instantaneous criterion from 12 observations. This is a 'nested' bacteria impairment within the watershed boundaries of the U.S. EPA approved (8/02/2006 [Fed ID 24538]) Roanoke River Bacteria TMDL with SWCB approval on 9/07/2006. The bacteria (E.coli) 303(d) Listing continued through the 2014 Cycle; a 'nested' Category 4A water.

VAW-L06R_BAA02A00	Back Creek	4.36 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria (escherichia coli) - L06R-01-BAC / VAW-L06R-01 / 24538 (2008)
The waters are delisted based on data collections at station 4ABAA000.03 as a replacement station for 4ABAA002.61 (Rt. 660 Bridge - at Gage). The original 2004 303(d) listing station 4ABAA002.61 has since been discontinued due to data collection safety concerns. Station 4ABAA000.03 (Off Rt. 618, Rutrough Road) 2016 IR escherichia coli (E.coli) data produce results with no excursions of the WQS 235 cfu/100 mL instantaneous criterion from 12 observations. This is a 'nested' bacteria impairment within the watershed boundaries of the U.S. EPA approved (8/02/2006 [Fed ID 24538]) Roanoke River Bacteria TMDL with SWCB approval on 9/07/2006. The bacteria (E.coli) 303(d) Listing continued through the 2014 Cycle; a 'nested' Category 4A water.

VAW-L43R_SNF02A04	North Fork South Mayo River	2.23 Miles	Aquatic Life

Delisting Summary:

DELIST 2016 - General Standard (Benthic) - VAW-L48R-01 / L43R-01-BEN
The waters are delisted as Virginia Stream Condition Index (VSCI) surveys find full support at station 4ASNF007.64 (Off Rt. 621, Patrick Co.). The VSCI is a multi-metric statewide stream index of biotic integrity that is based on data collected from minimally impacted reference sites throughout Virginia. 4ASNF007.64 was originally listed based on four benthic macroinvertebrate surveys (collected in 2001 and 2002) with an average VSCI score of 57.0. In 2013 and 2014 the same station was sampled to validate the previous assessment and all four samples scored well above 60. Spring and Fall 2013 VSCI Scores were 77.9 and 73.1, respectively. Spring and Fall 2014 VSCI Scores were 69.5 and 65.2, respectively.

VAW-L49R_MTR01A02	Matrimony Creek	4.83 Miles	Recreation

Delisting Summary:

DELIST 2016 - Bacteria - VAW-L48R-01 / L49R-01-BAC (2008)
The waters are delisted based on data collections at station 4AMTR010.33 (Off Rt. 637 Bridge, Henry Co.). Station 4AMTR010.33 2016 IR escherichia coli (E.coli) data produce results with one excursion of the WQS 235 cfu/100 mL instantaneous criterion from 12 observations. This is a 'nested' bacteria impairment within the Dan River Bacteria Total Maximum Daily Load (TMDL) which was U.S. EPA approved on 12/08/2008 [Fed ID 35757] and SWCB approved 4/28/2009. The bacteria (E.coli) 303(d) Listing continued through the 2014 Cycle ('nested' Category 4A water).

NOTE: Partial delists indicate at least one other pollutant exists on the Assessment Unit (AU). If "PARTIAL" is not specified in the delist statement, the AU is supporting all assessed Uses.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Chowan River and Dismal Swamp Basins

VAC-K02R_KIT01A06	Kits Creek	4.82 Miles	Recreation	

Delisting Summary:

PARTIAL DELIST 2016 - E. coli - K02R-03-BAC/VAC-K02R-01 (2008)
Station ID: 5AKIT000.67 (Ambient)
E coli - 0/12 Violation Rate

VAC-K16R_HUR01A04	Hurricane Branch	2 Miles	Aquatic Life	

Delisting Summary:

DELIST 2016 - Dissolved Oxygen - VAC-K14R-01/K16R-03-DO (2004)
Station ID: 5AHUR001.91 (Ambient)
Dissolved Oxygen - 1/12 Violation Rate

VAP-K05R_HAY01A10	Hays Creek	6.39 Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 -pH-VAP-K05R-05, K05R-05-PH(2010)

During the 2016 cycle the segment was fully supporting for pH at all three stations and pH was delisted.

VAP-K08L_RDC01A98	Brunswick Lake (County Pond)	160.33 Acres	Aquatic Life	

Delisting Summary:

Partial Delist 2016-pH-10006, VAP-K08L-02, K08L-02-PH(2006)

During the 2016 cycle the segment was fully supporting at both stations for pH and will be delisted, 5ARDC007.30 (10/102) 5ARDC008.50 (1/47).

VAP-K08R_MHN01B10	Meherrin River	3.04 Miles	Aquatic Life	Recreation

Delisting Summary:

DELIST 2016-pH-VAP-K05R-02, K08R-01-PH(CFL 2010)

During the 2016 cycle the segment was fully supporting for all that it was monitored for and the pH (0/12) will be delisted.

DELIST 2016- E.coli-VAP-K05R-02, K08R-01-BAC (CFL 2010)

During the 2016 cycle the segment was fully supporting for all that it was monitored for and the E.coli (1/12) will be delisted.

VAP-K08R_WIL01A10	Wilson Creek	2.74 Miles	Aquatic Life	

Delisting Summary:

Partial Delist 2016-PH-VAP-K08R-03, K08R-03-PH(2010)

During the 2016 cycle the segment was fully supporting for pH with a violation rate of 5/48, and will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K09R_MHN01D98	Meherrin River	26.75	Miles	Aquatic Life

Delisting Summary:

PARTIAL Delist 2016-DO-VAP-K09R-01, K09R-01-DO, 01315 (CFL 2008)

During the 2016 cycle the segment was fully supporting for Aquatic life and the DO will be delisted, the violation rate was 0/12 at station 5AMHN026.54, and 0/42 at station 5AMHN052.34.

VAP-K10R_FON01B10	Fontaine Creek	0.56	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016-DO .56 miles- VAP-K10R-02, K10R-02-DO(2010)

During the 2016 cycle the segment was fully supporting for all that it was monitored for and the DO will be delisted.

VAP-K10R_LNG01A10	Long Branch	2.67	Miles	Aquatic Life

Delisting Summary:

DELIST-2016-pH-VAP-K10R-05, K10R-05-PH (2010)

During the 2016 cycle the segment was assessed as fully supporting for Aquatic Life Use and the pH will be delisted.

VAP-K10R_RCY01A10	Rocky Run	0.86	Miles	Aquatic Life

Delisting Summary:

Partial Delist 2016-DO- VAP-K10R-02, K10R-06-DO (2010)

During the 2016 cycle the segment was fully supporting for Dissolved Oxygen and will be partially delisted.

VAP-K11R_FON04A00	Fontaine Creek (aka Fountains Creek)	14.48	Miles	Aquatic Life

Delisting Summary:

PARTIAL Delist 2016 -DO-VAP-K09R-01, K11R-02-DO, VAP-K11R-02 (CFL 1998)

DO violations were documented in this water in [1998]. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K11R_XGW01A10	XGW - Fontaine Creek, UT	4.46 Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO-VAP-K10R-02, K11R-07-DO (2010)

During the 2016 cycle the segment was fully supporting for Dissolved Oxygen with a violation rate of 0/12

DELIST 2016-PH-VAP-K10R-02, K11R-07-PH (2010)

During the 2016 cycle the segment was fully supporting for pH with a violation rate of 1/12

VAP-K12R_CNY01A00	Caney Swamp	2.09 Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO-VAP-K09R-01, K11R-02-DO, VAP-K11R-02 (1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K12R_MLS01A00	Mill Swamp	11.53 Miles	Aquatic Life

Delisting Summary:

PARTIAL Delist 2016-DO-VAP-K09R-01, K11R-02-DO, VAP-K11R-02 (CFL 1998)

DO violations were documented in this water in [1998]. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K12R_MLS01B10	Mill Swamp	1.32 Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO-VAP-K09R-01, K11R-02-DO, VAP-K11R-02 (1998)

DO violations were documented in this water in [1998]. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K12R_ZZZ01A00	Unsegmented Rivers in K12	99.9 Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO-VAP-K09R-01, K11R-02-DO, VAP-K11R-02 (1998)

DO violations were documented in this water in [1998]. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K19R_HRS02A08	Harris Swamp	3.27 Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO-VAP-K19R-02, K19R-02 (2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K19R_MSN01A10	Masons Branch	4.89 Miles	Aquatic Life

Delisting Summary:

PARTIAL Delist 2016- PH-VAP-K19R-01, K19R-01-PH (CFL 2010)

During the 2016 cycle the segment was fully supporting for Aquatic life use and will be delisted for pH.

PARTIAL Delist 2016- DO- VAP-K19R-01, K19R-01-DO(CFL 2014)

During the 2016 cycle the segment was fully supporting for Aquatic life use and will be delisted for DO.

VAP-K20R_BTR02A06	Butterwood Creek	9.7 Miles	Aquatic Life

Delisting Summary:

DELIST 2016 -DO-VAP-K20R-01, K20R-01-DO, 01341-01346(2002)

DO violations were documented in this water in 2002. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K20R_WOK01A00	White Oak Swamp	14.83	Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO VAP-K20R-01, K20R-02-DO(2014)

During the 2016 cycle the segment was fully supporting for all that it was monitored for and DO will be delisted.

VAP-K21R_SWT01A08	Southwest Swamp Watershed	23.85	Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO-K21R-02-DO, VAP-K21R-02(2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K21R_XID01A12	XID - Chamberlains Bed, UT	2.95	Miles	Aquatic Life

Delisting Summary:

DELIST-2016-pH-VAP-K21R-04, K21R-04-PH(2012)
DELIST-2016-DO-VAP-K21R-04, K21R-04-DO(2012)

During the 2016 cycle the segment had new data from DEQ station 5AXID002.19 with DO rates of 0/12 and pH rates of 1/12. The DEQ station is .3 miles downstream of the NPS station. The segment will be delisted for DO and pH.

VAP-K22R_HSP01A00	Horsepen Branch	3.96	Miles	Aquatic Life

Delisting Summary:

DELIST 2016-VAP-K22R-02, K22R-02-DO, 10008 (2006)

During the 2016 cycle the segment was fully supporting for Aquatic life use with a DO exceedance rate of 0/12 at station 5AHSP000.38, and 1/12 at station 5AHSP001.53.

VAP-K22R_SAP01C16	Sappony Creek	9.18	Miles	Recreation

Delisting Summary:

DELIST 2016 - E.coli 9.18 miles- VAP-K22R-03, K22R-03-BAC, 10009 (CFL 2006)

During the 2016 cycle the segment was split from VAP-K22R_SAP01A00 and was fully supporting for all that it was monitored for so the E.coli will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K23R_ATH01A08 Arthur Swamp 8.38 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016-DO-K23R-01-DO, 00478, VAP-K23R-01 (1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_ATH01B10 Arthur Swamp 0.24 Miles Aquatic Life

Delisting Summary:

Delist 2016-DO-K23R-01-DO, 00478, VAP-K23R-01 (1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_BBS01A08 Black Branch Swamp 6.26 Miles Aquatic Life

Delisting Summary:

DELIST 2016-DO-VAP-K23R-07, K23R-07-DO (2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_CBP01A08 Cabin Point Swamp 6.55 Miles Aquatic Life

Delisting Summary:

DELIST 2016-DO-VAP-K23R-08, K23R-08-DO(2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_GSE01A98 Gosee Swamp and tributaries 27.71 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016-DO-K23R-01-DO, 00478, VAP-K23R-01 (1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chowan River and Dismal Swamp Basins

VAP-K23R_HRA01A04	Hatcher Run	3.89	Miles	Aquatic Life	

Delisting Summary:

Partial Delist 2016-DO-K23R-01-DO, 00478, VAP-K23R-01 (1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_HRA01B10	Hatcher Run	16.22	Miles	Aquatic Life	

Delisting Summary:

Partial Delist 2016-DO-K23R-01-DO, 00478, VAP-K23R-01 (1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_JNH01A98	Jones Hole Swamp/Moores Swamp watershed	70.67	Miles	Aquatic Life	

Delisting Summary:

PARTIAL Delist 2016 - DO-VAP-K23R-04, K23R-04-DO (CFL 2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_JNH01B16	Jones Hole Swamp	4.28	Miles	Aquatic Life	Recreation

Delisting Summary:

DELIST 2016 - DO-VAP-K23R-04, K23R-04-DO (CFL 2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

DELIST 2016 - E.coli 4.26 miles-VAP-K23R-04, K23R-04-BAC (CFL 2010)

During the 2016 cycle the segment was fully supporting for recreation use. The E.coli violation rate was 0/12 at station 5AJNH009.95.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chowan River and Dismal Swamp Basins

VAP-K23R_JNH01C16	UT to Jones Hole Swamp	9.11	Miles	Aquatic Life	Recreation

Delisting Summary:

DELIST 2016 - DO-VAP-K23R-04, K23R-04-DO (CFL 2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

DELIST 2016 - E.coli 9.11 miles-VAP-K23R-04, K23R-04-BAC (CFL 2010)

During the 2016 cycle the segment was fully supporting for recreation use. The E.coli violation rate was 0/12 at station 5AXIJ000.76.

VAP-K23R_JOE01A10	Joseph Swamp	11.22	Miles	Aquatic Life	

Delisting Summary:

Partial DELIST 2016- DO- VAP-K23R-03, K23R-03-DO, 00466/00465/ 01350/01352(CFL 1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_NBT01A98	Nebletts Mill Run and Tributaries	48.55	Miles	Aquatic Life	

Delisting Summary:

DELIST 2016- DO- VAP-K23R-03, K23R-03-DO, 00466/00465/ 01350/01352(CFL 1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_NBT02A00	Nebletts Mill Run	3.77	Miles	Aquatic Life	

Delisting Summary:

DELIST 2016- DO- VAP-K23R-03, K23R-03-DO, 00466/00465/ 01350/01352(CFL 1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K23R_NBT03A04	Nebletts Mill Run lower tributaries	14.01 Miles	Aquatic Life

Delisting Summary:

DELIST 2016- DO- VAP-K23R-03, K23R-03-DO, 00466/00465/ 01350/01352 (CFL 1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_ROW01A98	Rowanty Creek Tributaries	140.45 Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO- VAP-K23R-01, VAP-K19R-04, K23R-01-DO, 00478 (1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_ROW03A06	Rowanty Creek Tributaries	133.22 Miles	Aquatic Life

Delisting Summary:

DELIST 2016-DO- VAP-K23R-01, VAP-K19R-04, K23R-01-DO, 00478 (CFL 1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_ROW03B10	Rowanty Creek	14.07 Miles	Aquatic Life

Delisting Summary:

PARTIAL Delist 2016- DO - VAP-K23R-01, VAP-K19R-04, K23R-01-DO, 00478 (CFL 1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K23R_XDV01A02 UT to Nebletts Mill Run 1.78 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016-DO- VAP-K23R-03, K23R-03-DO, 00466/00465/01350/01352(CFL 1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_XFL01A08 Spring Branch, UT (XFL) 0.36 Miles Aquatic Life

Delisting Summary:

DELIST 2016-DO- VAP-K23R-03, K23R-03-DO, 00466/00465/01350/01352(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K23R_XFZ01A08 Joseph Swamp, UT 1.39 Miles Aquatic Life

Delisting Summary:

DELIST 2016-DO- VAP-K23R-03, K23R-03-DO, 00466/00465/01350/01352(CFL 1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K24R_HQS01A98 Hunting Quarter Swamp 16.67 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016-DO-K24R-01-DO, VAP-K24R-01(2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K24R_HQS01B08 Hunting Quarter Swamp Tributaries 56.97 Miles Aquatic Life

Delisting Summary:

DELIST-2016-DO-VAP-K24R-01, K24R-02-DO (2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K24R_TWT01A16	Thweatt Branch Tributaries	7.26	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST-2016-DO-VAP-K24R-01, K24R-02-DO (2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K25R_LTS01A06	Little Swamp	8.53	Miles	Aquatic Life

Delisting Summary:

DELIST-2016-DO-VAP-K25R-01, K25R-04-DO, VAP-K25R-04, 10111(2008)

DO violations were documented in this water in 2006. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K25R_RCN01A02	Raccoon Creek	19.9	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST-2016-DO-VAP-K25R-01, K25R-01-DO, 00630/00662(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K25R_SGC01A98	Spring Creek	16.59	Miles	Aquatic Life

Delisting Summary:

DELIST-2016- DO -VAP-K25R-01, K25R-01-DO, 00630/00662(CFL 1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K25R_XFA01A06	UT to Raccoon Creek	4.3	Miles	Aquatic Life

Delisting Summary:

DELIST-2016- DO -VAP-K25R-01, K25R-05-DO, VAP-K25R-0510013(CFL 2006)

DO violations were documented in this water in 2006. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K25R_XFB01A06 UT to Spring Creek 4.12 Miles Aquatic Life

Delisting Summary:

DELIST 2016-DO- VAP-K25R-01, K25R-03-DO, VAP-K25R-03, 10010(2006)

DO violations were documented in this water in 2006. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K26R_MCC01A00 Maclins Creek 8.8 Miles Aquatic Life

Delisting Summary:

PARTIAL Delist 2016-DO- VAP-K26R-04, K26R-04-DO(CFL 2014)

DO violations were documented in this water in 2014. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K26R_OTD01A98 Otterdam Swamp 7.02 Miles Aquatic Life

Delisting Summary:

DELIST 2016-DO- VAP-K19R-04, K26R-01-DO 004481/01357(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K26R_TRE02B98 Three Creek 5.43 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016-DO- VAP-K19R-04, K26R-01-DO, VAP-K26R-01, 00481/01357(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K26R_URH01A12 Uriah Branch 4.08 Miles Aquatic Life

Delisting Summary:

DELIST 2016-DO-VAP-K26R-05, K26R-05-DO (2012)

DO violations were documented in this water in 2012. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K29R_ASM01A98 Assamoosick Swamp 15.41 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_ASM02A02 Assamoosick Swamp 2.46 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_ASM02A98 Assamoosick Swamp 5.56 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_BLS01A00 Black Swamp 4.55 Miles Aquatic Life

Delisting Summary:

Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_DEP01A10 Deep Branch 4.19 Miles Aquatic Life

Delisting Summary:

Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K29R_GMN01A02 German Swamp 2.62 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_GMN01A10 German Swamp 1.07 Miles Aquatic Life

Delisting Summary:

Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_IVY01A10 Ivy Branch 3.7 Miles Aquatic Life

Delisting Summary:

Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_PNS01A02 Pigeon Swamp 4.11 Miles Aquatic Life

Delisting Summary:

Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_PRK01A10 Parkers Branch 3.94 Miles Aquatic Life

Delisting Summary:

Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K29R_SRE01A02 | Seacorrie Swamp | 7.03 Miles | Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_XDW01A02 | XDW - UT to Assamoosick Swamp | 2.05 Miles | Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K29R_XGS01A10 | XGS - Assamoosick Swamp, UT | 2.36 Miles | Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K19R-04, K29R-01-DO, VAP-K29R-01,00498/00483/01361(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_BKR01A98 | Blackwater Swamp | 22.9 Miles | Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-01-DO, VAP-K31R-01,00493/00495/01366(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_BNF01A10 | North Fork Blackwater Swamp | 6.11 Miles | Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-05-DO(2010)

DO violations were documented in this water in 2010. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K31R_CAT01A10 Cattail Creek 3.43 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-06-DO(2012)

DO violations were documented in this water in 2012. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_SEC01A04 Second Swamp 9.52 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-02-DO, VAP-K31R-02,01368(2004)

DO violations were documented in this water in 2004. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_SEC01B10 Second Swamp 6.91 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-02-DO, VAP-K31R-02,01368(2004)

DO violations were documented in this water in 2004. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_WKS01A00 Warwick Swamp 13.21 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-01-DO, VAP-K31R-01,00493/00495/01367/01365/01366(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_WKS02A04 Warwick Swamp 6.23 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-01-DO, VAP-K31R-01,00493/00495/01367/01365/01366(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K31R_WKS03A10 Warwick Swamp 3.02 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-01-DO, VAP-K31R-01,00493/00495/01367/01365/01366(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_XES01A08 Warwick Swamp, UT 3.43 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-03-DO(2010)

DO violations were documented in this water in 2010. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_XFX01A10 Warwick Swamp, UT 2.95 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-07-DO(2012)

DO violations were documented in this water in 2012. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_XGX01A12 XGX - Warwick Swamp, UT 2.22 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-09-DO(2012)

DO violations were documented in this water in 2012. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K31R_XHO01A12 XHO - Warwick Swamp, UT 2.42 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K31R-08-DO(2012)

DO violations were documented in this water in 2012. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K32R_BLW01B98	Blackwater River	18.55	Miles	Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-01-DO(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K32R_BLW02B98	Blackwater River	5.39	Miles	Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-01-DO(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K32R_CPH01A98	Coppahaunk Swamp	11.98	Miles	Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-05-DO, VAP-K32R-05,01370/01371/01372(2002)

DO violations were documented in this water in 2002. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K32R_CPP01A98	Cypress Swamp	17.06	Miles	Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-06-DO, VAP-K32R-06,00633/00665(1998)

DO violations were documented in this water in 1998. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K32R_CPP01B06	Cypress Swamp Tributaries	143.62	Miles	Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-07-DO, VAP-K32R-07,01374(2004)

DO violations were documented in this water in 2004. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K32R_OTR01A98 Otterdam Swamp 7.44 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-03-DO, VAP-K32R-03,01377(2002)

DO violations were documented in this water in 2002. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K32R_OTR02A00 Otterdam Swamp 5.86 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-03-DO, VAP-K32R-03,01377(2002)

DO violations were documented in this water in 2002. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K32R_SRN01A94 Spring Branch 4.15 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-10-DO, VAP-K32R-10,10045(2006)

DO violations were documented in this water in 2006. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K32R_SRN02A06 Spring Branch 0.11 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-10-DO, VAP-K32R-10,10045(2006)

DO violations were documented in this water in 2006. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAP-K32R_XAW01A08 Spring Branch, UT 1.07 Miles Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-15-DO(2008)

DO violations were documented in this water in 2008. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAP-K32R_XDR01A06	UT to Otterdam Swamp	2.61	Miles	Aquatic Life

Delisting Summary:

Partial Delist 2016- DO-VAP-K32R-13, K32R-11-DO, VAP-K32R-11, 10047(2006)

DO violations were documented in this water in 2006. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairment has been removed.

VAT-K13R_FTS01A04	Flat Swamp	8.48	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K13R-02-DO (2004).

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

Data collected for pH is supporting at station 5AFTS002.93 with 0 viol / 24 obs based on swamp water revised pH criteria range (3.7 - 8). pH was delisted in 2008.

Benthic VCPMI was low (2014: F- 29.7). However, this site is swampy with naturally low DO and is not the typical channelized, free-flowing stream used to develop the VCPMI. Therefore, a definitive assessment based in this score is not possible.

VAT-K13R_TRR01A00	Tarrara Creek	14.49	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K13R-01-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

A natural conditions report is complete that determined the DO impairment was not influenced by anthropogenic sources. EPA has approved the Natural Conditions Report and formal approval of the natural conditions designation 4/8/2010.

pH is supporting with 0 violates / 36 obs at station 5ATRR002.50.

VAT-K28R_MSP01A06	Mill Swamp	10.49	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - PH - K28R-01-PH (2012)

Aquatic Life Use is impaired for DO with 4 viol/ 24 obs at Station 5AMSP000.16. pH is supporting with 2 viol. / 24 obs at Station 5AMSP000.16.

Impairment is thought to be due to natural swamp conditions. An upstream segment of Mill Swamp (VAT-K34R_MSW01A00) has been approved by EPA (4/8/2010) as class VII.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Chowan River and Dismal Swamp Basins

VAT-K32R_BLW01A08	Blackwater River - Lower K32	2.32 Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - K32R-01-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

Benthics impairment is retained based on data from stations 5ABLW052.91 and 5ABLW055.26

The listing CD station 5ABLW058.22 is a Piedmont CD listing. The CD segment associated with station 5ABLW058.22 is within VAP-K32R_BLW02B98 and was assessed in PRO as a 4C for 2008 Assessment. However the station is sited within AU segment VAT-K32R_BLW01A08. TRO assigned a category 5C in 2008 Assessment. The CD segment and station will be included in the CD K32R-01-DO and will be listed as a 4C in 2010 Assessment.

(Also includes non-agency data USGS station 02047500. This station has no supporting information relevant to designated uses.)

VAT-K33R_BLW01A00	Blackwater River - Upper	19.1 Miles	Aquatic Life	Recreation

Delisting Summary:

PARTIAL DELIST 2016 - DO - K33R-02-DO (1998)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

Aquatic Life Use impairment is retained from 2008 benthics from stations 5ABLW052.91 and 5ABLW055.26. In the 2008 Assessment there was also an observed effect for sediment toxics at stations 5ABLW052.91 and 5ABLW055.26

pH is supporting Aquatic Life Use based on data from station 5ABLW053.54 (0 viol / 12 obs) and non-agency station 2047500 (USGS) with (0 viol / 10 obs). A natural conditions report is complete that determined the DO impairment was not influenced by anthropogenic sources. EPA approved the Natural Conditions Report 4/8/2010.

PARTIAL DELIST 2016 - ECOLI - K33R-02-BAC (2008)

The Recreation Use is Fully Supporting based on E.coli data at DEQ station 5ABLW053.54 (1 viol/ 12 obs).

VAT-K33R_BLW02A04	Blackwater River - Middle	1.04 Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - DO - K33R-02-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

Aquatic Life Use is supported based on pH data. pH is supporting with 1 viol / 35 obs at station 5ABLW040.22.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAT-K33R_BLW03A08 Blackwater River - Lower 4.18 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K33R-02-D0 (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

A natural conditions report is complete that determined the DO impairment was not influenced by anthropogenic sources. EPA approved the Natural Conditions Report 4/8/2010 and the DO impairment will be Category 4C.

The Aquatic Life Use impairment is retained based on the benthic assessment [MI: S&F '05] at DEQ (ProbMon) station 5ABLW038.69.

VAT-K34R_MSW01A00 Mill Swamp 8.44 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K34R-01-DO (2004)
PARTIAL DELIST 2016 - pH - K34R-01-pH (2010)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

A natural conditions report is complete that determined the DO impairment was not influenced by anthropogenic sources. EPA approved the Natural Conditions Report 4/8/10 the DO impairment will be Category 4C.

pH is supporting with 0 viol/ 12 obs at station 5AMSW006.77

VAT-K34R_RKN01A02 Rattlesnake Swamp K34 6.42 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K34R-02-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

A natural conditions report is complete that determined the DO impairment was not influenced by anthropogenic sources. EPA approved the Natural Conditions Report 4/8/2010 the DO impairment will be Category 4C.

Aquatic life use is supporting based on pH with 0 viol / 36 obs at station 5ARKN006.40

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAT-K35R_BNT01A04 Brantley Swamp - Lower 3.65 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO- K35R-07-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

Aquatic Life Use is supporting based on pH data with 0 viol / 12 obs at station 5ABNT002.70. pH was delisted in 2008 Assessment.

2014 Fall VCPMI score was 27.7 but was not used for assessment because this site is swampy and not a typical stream used in the development of the VCPMI

VAT-K35R_SCK01A00 Seacock Swamp - Upper 0.84 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K35R-01-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

There is no new data within the assessment window to assess the Aquatic Life Use.

VAT-K35R_XDY01A04 UT Seacock Swamp 1.02 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K35R-03-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

There is no new data within the assessment window to assess the Aquatic Life Use.

VAT-K35R_XDZ01A04 UT Airfield Pond - Upper 0.68 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K35R-05-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

Aquatic Life Use is Fully Supporting based on pH with 0 viol / 11 obs at station 5AXDZ001.73. pH data is from 2007, but fully supporting status is being maintained for this cycle. If there is no new data for 2018 cycle, move to not assessed.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAT-K35R_XDZ02A04 UT Airfield Pond - Lower 0.71 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K35R-04-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

Aquatic Life Use is Fully Supporting based on revised Class VII pH criteria at station 5AXDZ000.81 (0 viol / 7 obs). pH data is from 2007, but fully supporting status is being maintained for this cycle. If there is no new data for 2018 cycle, move to not assessed.

VAT-K36R_BLC02A10 Black Creek - Upper 1.25 Miles Recreation

Delisting Summary:

PARTIAL DELIST 2016 - ECOLI - K36R-03-BAC (2010)

Recreation Use is Fully Supporting based on E.coli data collected at station 5ABLC006.97 with 0 viol / 12 obs.

VAT-K36R_CYS01A12 Cypress Swamp 5.16 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K36R-04-DO (2014)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

The Aquatic Life Use is supporting for pH with 0 viol / 23 obs at Station 5ACYS001.92.

Blackwater Nottoway Riverkeeper Station 638CYP (0 viol / 7 obs for pH) and 640BER (0 viol / 5 obs for pH) has insufficient data (Level II CMON) to assess.

VAT-K37R_XDN01A00 Buckhorn Creek 1.52 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K37R-01-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

pH impairment from 2004 retained until new data indicates pH supports class VII criteria.

Need follow up data

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAT-K38R_STN01A00	Somerton Creek	9.38	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K38R-01-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

Aquatic Life Use impairment for benthics is retained from the 2004 IR at station 5ASTN008.78 (MI:F-04). pH is supporting with 0 viol / 36 obs.

VAT-K39R_XCK01A00	Dismal Swamp Canal & Feeder Ditch to Lake Drummond	13.21	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - K39R-01-DO (2004)

Dissolved Oxygen will be delisted for Class VII waters that were previously listed as impaired for the aquatic life use based on the Class III DO water quality standards. Class VII waters currently do not have a water quality standard for DO. Therefore, dissolved oxygen data for aquatic life use in Class VII waters will not be assessed until an applicable water quality standard is developed.

The Natural Conditions Report for pH and DO was approved in Triennial Review.

The pH data is supporting for ALUS based on Class VII pH criteria (3.7-8.0 SU) with 1 viol / 35 obs.

VAT-K42E_BKY04A14	Back Bay	1.6636	Square Miles	Recreation

Delisting Summary:

DELIST 2016 - ECOLI - K42E-11-BAC (2014)

The Recreation Use is fully supporting based on Enterococcus bacteria data (3 viol / 31 obs) at 5BBKY000.99.

The following stations have Observed effects for Enterococci.

5BBKY000.13
5BBKY000.86

This was part of 2012 Assessment ID305B VAT-K42E-BKY03A08. Was split to account for difference in recreational impairment for the 2014 Assessment.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Chowan River and Dismal Swamp Basins

VAT-K42E_HPC02A04	Hell Point Creek - Lower (at mouth)	0.0146	Square Miles	Recreation

Delisting Summary:

DELIST 2016 - ECOLI - K42E-03-BAC (2004)

The Recreation Use is fully supporting with an observed effect based on Enterococci bacteria data (3 violate / 32 obs.) at DEQ station @ 5BHPC000.00.

NOTE: Partial delists indicate at least one other pollutant exists on the Assessment Unit (AU). If "PARTIAL" is not specified in the delist statement, the AU is supporting all assessed Uses.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Tennessee and Big Sandy River Basins

VAS-O02R_SFH01B02 South Fork Holston River 6.14 Miles Recreation

Delisting Summary:

PARTIAL DELIST 2016 - E.coli, Fecal - O01R-01-BAC (2006)
Delist is based on current E.coli data. No samples at 6CSFH093.01 exceed WQS for E.coli. Impairment predates elimination of fecal coliform standard. Delist includes fecal coliform.

VAS-O10R_LAE02A02 Laurel Creek, middle 6.48 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Temperature - O10R-05-TEMP (2010).
No temperature measurements exceeded the WQS for Class VI waters.

VSCI: 04.05.2010 76; 26.03.2009 61
Aquatic Life Use is supported.

VAS-P01R_SFK01A10 South Fork Clinch River 4.17 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Benthic Macroinvertebrates - P03R-01-BEN (2014)

Aquatic Life Use is supported at 6BSFK000.62; data included temp, pH, DO, NH3. VSCI:
11/10/2014 68.47
03/17/2014 75.02
06/02/2009 58.79

VAS-P08R_DUM01A94 Dumps Creek 3.54 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Benthic Macroinvertebrates - P08R-01-BEN (2002)

Aquatic Life Use was supported; VSCI at 6BDUM000.23 indicated full support. VSCI:
10/28/2014 71.83
06/02/2014 64.86
11/19/2012 67.50
04/17/2012 51.30
10/07/2010 50.97
04/06/2010 60.24

VAS-P20L_PWL01L02 Lake Keokee 96.21 Acres Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - pH - P20L-01-PH (2002)
Aquatic Life Use is supported. Only 6% of pH measurements exceeded WQS.DO exceedances occurred at depth during stratification and are not violations of WQS.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

Tennessee and Big Sandy River Basins

VAS-Q05R_DIS01A00	Dismal Creek	5.38 Miles	Recreation

Delisting Summary:

PARTIAL DELIST 2016 - E.coli - Q05R-01-BAC (2006)
Recreation Use was supported; 9% exceeded WQS for E. Coli at 6ADIS001.24.

VAS-Q14R_RLF01A14	Left Fork Rush Creek	2.41 Miles	Aquatic Life

Delisting Summary:

DELIST 2016 - Benthic Macroinvertebrates - Q14R-03-BEN (2014)
Probabilistic monitoring VSCI indicates full support of Aquatic Life Use:
10/20/2014 64.37
04/01/2014 78.85

NOTE: Partial delists indicate at least one other pollutant exists on the Assessment Unit (AU). If "PARTIAL" is not specified in the delist statement, the AU is supporting all assessed Uses.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VACB-R01E-MOB	Chesapeake Bay - CBP Segment MOBPH	92.9512	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016--Dissolved oxygen--MOBPH-DO-BAY (2006) Segment meets the 30-Day Mean Open Water use criterion for DO. SAV acreage did not meet criterion. Estuarine bioassessment indicates attainment.

PARTIAL DELIST 2016--Dissolved oxygen--MOBPH-DO-BAY (2006) Segment meets the 30-Day Mean Open Water use criterion for DO. SAV acreage did not meet criterion. Estuarine bioassessment indicates attainment.

PARTIAL DELIST 2016--Dissolved oxygen--MOBPH-DO-BAY (2006) Segment meets the 30-Day Mean Open Water use criterion for DO. SAV acreage did not meet criterion. Estuarine bioassessment indicates attainment.

PARTIAL DELIST 2016--Dissolved oxygen--MOBPH-DO-BAY (2006) Segment meets the 30-Day Mean Open Water use criterion for DO. SAV acreage did not meet criterion. Estuarine bioassessment indicates attainment.

VAP-C01E_BAR01A98	Barrett Creek	0.0378	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C01E-04-SF (CFL 2014)

Barrett Creek was impaired due to VDH-DSS Shellfish Condemnation Notice 013-089I, 7/31/2012. The impairment was considered nested within the nearby Tipers Creek Shellfish TMDL. The TMDL was developed in the Great Wicomico River Watershed TMDL Report and was approved by the EPA on 6/8/2006. The condemnation was rescinded during the 20216 cycle; therefore, the segment will be delisted.

VAP-C01E_BAR02A08	Barrett Creek	0.008	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C01E-39-SF (CFL 2014)

The tributary was impaired due to VDH-DSS Shellfish Condemnation Notice 013-089H, 7/31/2012. The impairment was nested within the nearby Tipers Creek Shellfish TMDL. The TMDL was developed in the Great Wicomico River Watershed TMDL Report and was approved by the EPA on 6/8/2006. The condemnation was rescinded during the 2016 cycle (013-089, 4/1/2014); therefore, the segment will be delisted.

VAP-C01E_HEN01A00	Henrys Creek	0.0406	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C01E-44-SF / Federal ID 35987 (CFL 2014)

Henrys Creek was impaired during the 2014 cycle due to VDH-DSS condemnation 016-057C, 12/28/2012.

The TMDL for Henrys Creek was developed as part of the Indian Creek Shellfish TMDL, which was approved by the EPA on 4/8/2009 and by the SWCB on 7/27/2009.

The TMDL was developed for the maximum extent of the condemnations, which occurred on 1/28/2005. The condemnation was rescinded in the 2016 cycle (016-057, 12/16/2014); therefore, the impairment will be delisted. Henrys Creek will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C01E_IND01E16	Indian Creek	0.0399	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform 0.0400 mi2 - C01E-22-SF / 00961 / VAP-C01E-22 / Federal ID 35980 (CFL 1998)

During the 1998 cycle, Pitmans Cove and Indian Creek were assessed as impaired of the Shellfish Consumption Use due to VDH-DSS condemnations 57A and 57C, 3/5/1997. The condemnations have since grown and shrunk several times. At their maximum extent (016-057A, 1/28/2005 and 12/13/2006), the condemnations had merged. The Shellfish TMDL was developed for this maximum extent and was approved by the EPA on 4/8/2009 and by the SWCB on 7/27/2009. The condemnations shrunk and split again in the 2016 cycle (VDH-DSS Shellfish Condemnations 016-057A and -C, 12/16/2014) and 0.0400 mi2 will be partially delisted.

VAP-C01E_OHC01A08	Old House Cove	0.0241	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C01E-43-SF (CFL 2014)

Old House Cove was previously impaired due to VDH-DSS Shellfish Condemnation Number 015-022G, 5/1/2012.

The impairment was nested within the Dividing Creek Shellfish TMDL, which was approved by the EPA on 6/8/2006.

The cove is open for harvest in the 2016 cycle (015-022, 5/5/2014): therefore, the segment will be delisted.

VAP-C01E_TSK01A14	Taskmakers Creek	0.021	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C01E-10-SF (CFL 2014)

Taskmakers Creek was impaired due to VDH Shellfish Condemnation 011-190C, 10/10/2012.

It was considered nested in the neighboring Little Taskmakers Creek Shellfish TMDL; the TMDL was approved by the EPA on 6/19/2009 and by the SWCB on 11/14/2009.

The condemnation was rescinded during the 2016 cycle (011-190C, 7/24/2014); therefore, it will be delisted.

VAP-C02R_EXE01A06	Exol Swamp	11.34	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - pH - C02R-04-PH / 15016 / VAP-C01R-04 (CFL 2006)

In 2006, Exol Swamp was assessed as not supporting for Aquatic Life Use based on exceedances of the water quality standards for pH at the Rt. 614 bridge (station 7-EXE000.81). During the 2010 cycle, the exceedance rate was 3/28 at 7-EXE000.81 and 2/13 at station 7-EXE008.44.

During the 2010 cycle, the Natural Condition Report for Dragon Swamp Watershed was completed. The report recommends that Exol Swamp from its perennial headwaters to its mouth be reclassified as Class VII swampwater. The segment length was revised to match the report and Exol Swamp is considered a Category 4C water.

Additional monitoring was conducted during the 2016 cycle at 7-EXE000.81. The pH exceedance rate was acceptable (0/12); therefore, Exol Swamp will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C03R_CAV01A02	Carvers Creek	5.55 Miles	Recreation	

Delisting Summary:

DELIST 2016 - E. coli - C03R-01-BAC (CFL 2012)

During the 2012 cycle, nontidal Carvers Creek was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/10 at 7-CAV001.62, which is located at the Route 198 bridge.

However, the stream is within the study area for the Piankatank River and Harpers Creek Shellfish TMDL, which was approved by the EPA on 6/7/2006. Carvers Creek was considered nested (Category 4A.)

During the 2016 cycle, the exceedance rate fell to 2/22; therefore, the segment will be delisted.

VAP-C04E_BEV01A08	Belleville Creek	0.0368 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_BKA01A98	Back Creek	0.0711 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_BKA01B12	Back Creek	0.0138	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_BLL01A16	Billups Creek	0.0174	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - 0.0175 mi2 - C04E-07-SF/00995/VAP-C04E-07/Federal ID 35556 (CFL 1998)

VDH Shellfish Condemnation 037-061, 1/31/2014 - open

A portion of Billups Creek was included on the 1998 303(d) list for the Shellfish Consumption Use due to VDH-DSS condemnation 204, 4/4/1997. The Shellfish TMDL, which was approved by the EPA on 1/15/2008 and by the SWCB on 7/31/2008 addresses the 1998 portion. During the 2016 cycle, the condemnation shrank and is now smaller than the TMDL extent. The opened area (0.0175 mi2) will be partially delisted (Category 2C.)

VAP-C04E_BLL01B10	Billups Creek	0.0102	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C04E-07-SF2 / 00995 / VAP-C04E-07 (CFL 2002)

Portion of VDH Shellfish Condemnation 037-061B, 2/7/2012 - open 1/31/2014

A portion of Billups Creek was included on the 1998 303(d) list for the Shellfish Consumption Use due to VDH-DSS condemnation 204, 4/4/1997. The condemned area has since expanded. However, the Shellfish TMDL only addresses the 1998 portion. The TMDL for the expansion was due in 2014 as the area first expanded in the 2002 cycle.

The expansion was nested within the Billups Creek Shellfish TMDL, which was included in the Gwynns Island and Milford Haven Watersheds report. The TMDL was approved by the EPA on 1/15/2008 and by the SWCB on 7/31/2008.

The condemnation shrank in the 2016 cycle and is now smaller than the TMDL extent; the expansion will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_BLW01A98	Blackwater Creek	0.1008	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_BUR01A00	Burke Mill Stream	0.0246	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_DAV01A98	Davis Creek	0.0369	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_DAV02A14	Davis Creek, UT	0.0235	Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

PARTIAL DELIST 2016 - Fecal Coliform - C04E-17-SF (CFL 2014)

The tributary of Davis Creek was previously impaired due to VDH-DSS condemnation 042-131B, 7/12/2012. It was considered nested within the upstream Blackwater Creek Shellfish TMDL, which was addressed in the North River TMDL report and approved by the EPA on 6/7/2006.

During the 2016 cycle, the condemnation was rescinded (042-131, 6/12/2014); therefore, the tributary will be delisted.

VAP-C04E_DVS01A98	Davis Creek	0.0055	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_DVS01B08	Davis Creek	0.011	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_DVS02A12	Davis Creek	0.0105	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_DVS03A12	Davis Creek	0.009	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_DYE01A08	Dyer Creek	0.0145	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C04E-34-SF (CFL 2014)

During the 2014 cycle, Dyer Creek was impaired of the Shellfish Consumption Use due to VDH-DSS condemnation 039-100A, 2/24/2011. It was considered nested within the nearby Doctors Creek Shellfish TMDL, which was approved by the EPA on 1/23/2008 and by the SWCB on 7/31/2008.

The shellfish area was re-opened for harvest in the 2016 cycle (039-100, 3/6/2013); therefore, it will be delisted.

VAP-C04E_EDW01A98	Edwards Creek	0.0272	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C04E-03-SF/ 01001 / VAP-C04E-03 / Federal ID 35580 (CFL 1998)

VDH-DSS Shellfish Condemnation 036-197, 1/31/2014 - open

Edwards Creek was included on the 1998 303(d) list due to VDH condemnation 197A, 1/21/1997. The TMDL was approved by the EPA on 1/15/2008 and by the SWCB on 7/31/2008. The segment was considered Category 4A. During the 2016 cycle, Edwards Creek is open or seasonally condemned (036-197, 1/31/2014); therefore, the impairment will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_ELM01A98	Elmington Creek	0.0225	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_ELM01B08	Elmington Creek	0.0085	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_EST01A98	East River	0.1982	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_EST01B10	East River	0.1005	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_EST01D10	East River, UT	0.0225	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_EST02A00	East River	2.4601	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_EST03A06	East River, UT	0.0162	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_EST04A02	East River, UT	0.0261	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_EST05A06	East River, UT	0.0096	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_EST06A08	East River, UT	0.0196	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_EST07A08	East River, UT	0.0138	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_EST08A08	East River, UT	0.0039	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_GRE01A08	Greenmansion Cove	0.0266	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_GRE01B10	Greenmansion Cove	0.0274	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_HUD01A08	Hudgins Creek	0.0155	Square Miles	Shellfishing	

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C04E-32-SF (CFL 2008)

Hudgins Creek has been impaired of the Shellfish Use due to VDH Shellfish Condemnation 037-061D, 2/7/2012. The condemnation was nested within the upstream Stutts Creek Shellfish TMDL, which was addressed in the Gwynn's Island and Milford Haven Watersheds report and was approved by the EPA on 1/15/2008.

The condemnation was opened in the 2016 cycle (037-061, 1/31/2014): therefore, the creek will be delisted.

VAP-C04E_MIS01A04	Miles Creek	0.03	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_NOR01A02	North River	0.317	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_NOR01B08	North River	0.1354	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_NOR02A02	North River	5.3667	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_OAK01A08	Oakland Creek	0.0301	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_PEP01A06	Pepper Creek	0.0309	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_PUT01A98	Put In Creek	0.0786	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_PUT01C10	Put In Creek	0.0478	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_PUT01D16	Put In Creek	0.0054	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_PUT02A98	Put In Creek	0.0205	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_RAN01A08	Raines Creek	0.0388	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_RAY01A12	Raymond Creek	0.0255	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_SLO01A08	Sloop Creek	0.0504	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_STT01B06	Stutts Creek, UT (Hole in the Wall)	0.0164	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C04E-31-SF (CFL 2008)

VDH Shellfish Condemnation 037-061M5, 1/31/2014

Hole in the Wall was previously impaired of the Shellfish Use due to VDH Shellfish Condemnation 037-061C, 2/7/2012. It was nested within the nearby Billups Creek Shellfish TMDL, which was approved by the EPA on 1/15/2008. During the 2016 cycle, Hole in the Wall was seasonally condemned; therefore, the impairment will be delisted.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_TAB01A08	Tabbs Creek	0.0818	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_THO01A08	Thomas Creek	0.0137	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_WON01A08	Weston Creek	0.0248	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_WOO01A10	Woodas Creek	0.0398	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_WTS01A08	Whites Creek	0.0179	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C04E_XFA03A14	XFA - North River, UT	0.0196	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C04E_ZZZ03A06	Unsegmented estuaries in C04	0.4088	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C05E_FOX01A08	Fox Mill Run	0.0853	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C05E_OLD01A12	Oldhouse Creek	0.1018	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C05E_WAR01A02	Ware River	0.2567	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C05E_WAR01B08	Ware River	0.4095	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C05E_WAR02A02	Ware River	6.1698	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C05E_WIL01A98	Wilson Creek	0.0326	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C05E_WIL01B08	Wilson Creek	0.1615	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C05E_XDJ01A08	Wilson Creek, UT	0.0102	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C05E_ZZZ01A00	Unsegmented estuaries in C05	0.2298	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_BRB01A08	Browns Bay	0.0206	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_BRB01B12	Browns Bay	0.0243	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C06E_FSC01A98	Free School Creek	0.0541	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_FSC01B12	Free School Creek	0.0121	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_HEY01A98	Heywood Creek	0.0808	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C06E_HEY01B10	Heywood Creek	0.0851	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_MNC01A98	Monday Creek	0.0823	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_ROW01A06	Rowes Creek	0.0672	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C06E_SEN01A02	Northwest Branch Severn River	0.0916	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_SEN01B16	Northwest Branch Severn River, UT	0.0337	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_SEN01C10	Northwest Branch Severn River	0.2023	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C06E_SEN02A06	Northwest Branch Severn River	0.4414	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_SES01A00	Southwest Branch Severn River	0.6347	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_SEV02A00	Severn River	3.2583	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C06E_STR01A08	Sterling Creek	0.0205	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_THC01A98	Thorntons Creek	0.0518	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_THC01B10	Thorntons Creek	0.0267	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C06E_VGH01A98	Vaughans Creek	0.102	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_VGH01B10	Vaughans Creek	0.0187	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_WET01A06	Willetts Creek	0.033	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C06E_WET01B08	Willetts Creek	0.128	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_WTT01A08	Whitaker Creek	0.066	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAP-C06E_XEE01A10	Northwest Branch Severn River, UT	0.0028	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C06E_ZZZ01A00	Unsegmented estuaries in C06	1.3519	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - MOBPH-DO-BAY / 01770 / VAP-C04E-23 / Federal IDs 40846, 40848, and 40850 (CFL 2006)

The Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle.

The Mobjack Bay previously failed the 30-day Open Water summer dissolved oxygen criteria. The segment meets both the summer and rest-of-year dissolved oxygen criteria in the 2016 cycle and will be delisted.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010; therefore, it will be considered Category 2C.

VAT-C07E_BAK01A00	Mainstem Back River	3.3404	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

No new Benthic Assessment results were provided for the 2016 IR. The 2014 Benthic Assessment will be used again in the 2016 IR. Benthics are still supporting ALUS within the MOBPHb.

Local DO and pH data at C2 stations support ALUS.

Benthic ProbMon WoE stations collected :
7BBAK001.01(2011) - 2A , Fully Support ALUS
7BBAK002.03 (2012) - 3B, Not able to make assessment
7BBAK002.94 (2012) - 3B, Not able to make assessment

The Chesapeake Bay TMDL was EPA approved 12/29/2010 for TN, TP and TSS.
Previous (2006) TMDL-ID of CB-MOBPH.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_BAK01B08	Mainstem Back River-South Shore at Mouth Wallace Cr.	0.0913 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

No new Benthic Assessment results were provided for the 2016 IR. The 2014 Benthic Assessment will be used again in the 2016 IR. Benthics are still supporting ALUS within the MOBPHb.

The Chesapeake Bay TMDL was EPA approved 12/29/2010 for TN, TP and TSS.

VAT-C07E_BAK02A14	Back Creek - Inlet near Dandy Point [TMDL]	0.0344 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

DO and pH data a site specific station 7-BAK001.31 , 0 viol / 12 obs

The Chesapeake Bay TMDL was EPA approved 12/29/2010 for TN, TP and TSS.

VAT-C07E_BCK01A00	Back Creek - Upper	0.2217 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

No new Benthic Assessment results were provided for the 2016 IR. The 2014 Benthic Assessment will be used again in the 2016 IR. Benthics are still supporting ALUS within the MOBPHb.

The Chesapeake Bay TMDL was EPA approved 12/29/2010 for TN, TP and TSS.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_BCK02A06	Back Creek - Middle (DSS-marina area)	0.1377	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

WoE station with 2011 benthic data is a 3B with a potential for chronic effects on sediment metals and PAH contamination.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_BCK03A06	Back Creek - Lower	0.4053	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_BEN01A06	Bennett Creek - Upper (DSS_06-IR)	0.0387	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_BEN02A08	Bennet Creek - Lower Middle	0.2093	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_BEN03A16	Bennett Creek-Mouth	0.366	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

WoE stations 7BBEN000.65 (Fully Support ALUS for Benthic based on 2012 data collected) &7-BEN000.68 (Not able to make a assessment determination based on the 2009 data).

VAT-C07E_BRK01A06	Brick Kiln Creek	0.0859	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

The Chesapeake Bay TMDL EPA approved 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_BTC01A08	Bay Tree Creek	0.1255 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved the Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_BTH01A08	Boathouse Creek	0.0784 Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
Previously (2006 IR) listed as TMDL-ID: CB-MOBPH. EPA approved the Chesapeake Bay TMDL 12/29/2010.

PARTIAL DELIST 2016- FECAL COLIFORM 0.0416 sq mi- C07E-37-SF (2012)

The Shellfishing Use is supporting based on the DSS shellfish OPEN harvesting area # 053-221 (effective 20140218).
Now in 2016 IR all of Boathouse Creek is OPEN for shellfish. Therefore segment VAT-C07E_BTH02A12 was merged with VAT-C07E_BTH01A08. The delist is for segment BTH02A12 with 0.0416 sq miles.

VAT-C07E_CAB01A08	Cabin Creek	0.0819 Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved the Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_CCR01A06	Cedar & Topping Creeks	0.1085	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_CHS01A06	Chisman Creek-Upper	0.3061	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.
The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

Site Specific DO and pH data from CitMon Stas 7CHS-19-ALL with 3 viol / 162 obs and 0 viol / 33 obs (Level III) .

VAT-C07E_CHS02A06	Chisman Creek-Lower North Shore (Marina)	0.0901	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_CHS02B06	Chisman Creek - Lower	0.5411	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.
The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

Local data collected at Station 7-CHS000.84 DO and pH : 0 viol / 34 obs, 0 viol / 35 obs
Alliance for the Chesapeake Bay Station; 7CHS-YC1-ALL has 0 viol / 2 obs for DO and 0 viol / 2 obs for pH

VAT-C07E_EAS01A06	Easton Cove	0.0569	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_FLY01A06	Floyds Bay- Upper	0.0419	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_FLY02A16	Floyds Bay- mouth	0.01	Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

PARTIAL DELIST 2016- FECAL COLIFORM 0.10sq mi - C07E-26-SF (2006)

Shellfish Use is supporting based on DSS shellfish condemnation # 053-222 (effective 20140218).
Part of Floyds Bay near the mouth is now open for shellfishing. The now open area has been split from AU VAT-C07E_FLY01A06 and named VAT-C07E_FLY02A16.

The modified Poquoson River and Back Creek TMDL (55841) EPA approved 3/19/14 includes Floyds Bay.

VAT-C07E_FRT01A06	Front Cove - Upper	0.0415	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_FRT02A08	Front Cove - Lower	0.036	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_GLD01A10	Grunland Creek - Mouth	0.0484	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_GOO01A14	Goose Creek- Upper	0.0647	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_GOO02A14	Goose Creek- Lower	0.0362	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_HAR01A06	Harris River - Upper	0.1711	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_HAR02A10	Harris River - Mouth	0.1854	Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.
The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_HAR02B10	Harris River - Lower Marina Area	0.053	Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_HOD01A08	Hodges Creek - Upper	0.0574	Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.
The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

PARTIAL DELIST 2016- FECAL COLIFORM - C07E-24-SF (2006)

There is a partial delist for Hodges Creek. In 2016 all of Hodges Creek now support Shellfish Use. Merged AU VAT-C07E_HOD02A08 into VAT-C07E_HOD01A06. The new DSS shellfish condemnation # 053-137 with an effective date of 2-18-2014.

VAT-C07E_IN101A08	DSS Inlet #1 - Unnamed Inlet at Mouth of SW Branch	0.0248	Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored		

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_INB01A04	DSS Inlet #2 - Unnamed Inlet S. Shore of SW Br. Back River	0.0078	Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_LMC01A04	Lambs Creek - Poquoson River	0.135	Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010

VAT-C07E_LMC02A16	Lambs Creek - Mouth	0.0281	Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010

PARTIAL DELIST 2016 - FECAL COLIFORM 0.02 sq mi- C07E-06-SF(1998)

The Shellfish Use is supporting based on the DSS OPEN Shellfish condemnation # 053-137 (effective 20140218). There is a partial delist for Fecal Coliform for the mouth of Lambs Creek. The now open area is split from impaired segment VAT-C07E_LMC01A04.

Lambs Creek is covered under TMDL for Poquoson River - Lambs Creek [EPA approved 8/2/2006, VAT-C07E-06-SF for Fecal Coliform [31190] 8/2/2006, modified 3/19/2014.
1999 CD segment (Attachment A, Category 3) TMDL ID VAT-C07E-06.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_LON01A06	Long & Grunland Creeks - Back River	0.0965	Square Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_LON01B12	Long & Grunland Creeks - Back River	0.0552	Square Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_LYO01A06	Lyons Creek - Upper	0.0343	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.
The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

CitMon (PCE Level II) citizen monitoring data at,7LYO-6-PCE, 7LYO-7-PCE & 7LYO-8-PCE.

VAT-C07E_LYO02A06	Lyons Creek - Middle and Lower	0.0854	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_NEW01A02	Newmarket Creek - Upper	0.0733	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.
The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_NEW02A02	Newmarket Creek - Lower	0.079	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.
The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

Data collected at Station 7-NEW001.92 has 0 viol/ 30 obs for pH.

VAT-C07E_NWB01A06	Northwest Br. Back River - Upper [TMDL-CD]	0.2202	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria

EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_NWB01B08	Northwest Br. Back River - Upper [TMDL not CD]	0.248	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria EPA approved Chesapeake Bay TMDL 12/29/2010.

The Aquatic Life Use is impaired based on benthic community assessment at WoE ProbMon station 7-NWB002.18 sampled in 2008. The WoE station evaluated the CBP B-IBI and EMAP benthic community assessment methods which indicated severe degradation, the MAIA BIBI score marginally meets goals. Probable effects (chronic and acute) of sediment contamination - pesticides (DDT exceeded ERM), metals and PAHs.

VAT-C07E_NWB02A06	Northwest Br. Back River - Lower [DSS OPEN]	0.9607	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria

In 2014 data was collected at ProbMon WoE station 7BNWB000.82. Assessment is insufficient (comments : potential of cumulative effects of sediment metals; muddy - 68% fines.)

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_POQ01A06	Poquoson River - Upper [TMDL-CD]	0.4305	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016-DO-MOBPH-DO-BAY (2006)

The Open-Water Aquatic Life Use is now supporting the dissolved oxygen criteria for Open Water - Summer and ROY. The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_POQ02A06	Poquoson River - Lower [DSS-OPEN]	0.9105	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO-MOBPH-DO-BAY (2006)

The Open-Water Aquatic Life Use is now supporting based on meeting the dissolved oxygen criteria for Open Water - Summer& ROY. The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_POQ03A08	Poquoson River - Mouth	1.4921	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016-DO-MOBPH-DO-BAY (2006)

The Open-Water Aquatic Life Use is now supporting based on meeting the dissolved oxygen criteria for Open Water - Summer & ROY. The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_PTC01A04	Patricks Creek - Poquoson River	0.1189	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016-DO-MOBPH-DO-BAY (2006)

The Open-Water Aquatic Life Use is now supporting based on meeting the dissolved oxygen criteria for Open Water - Summer& ROY. The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_ROB01A04	Roberts Creek - Upper	0.104	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016-DO-MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on meeting the dissolved oxygen criteria for Open Water - Summer & ROY. The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_ROB02A08	Roberts Creek - Lower [DSS-OPEN]	0.0088	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016-DO-MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on meeting the dissolved oxygen criteria for Open Water - Summer & ROY. The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_SWB01A08	SW Br Back River - Incl Tides Mill Cr [TMDL area]	0.9936	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

Local data collected at stations 7BSWB001.59 & BAK004.35 have data that support DO and pH. Benthic data collected in 2011 at Benthic ProbMon station 1.59 shows potential chronic effects of sediment metals and PAHs on benthics.

VAT-C07E_SWB01B08	SW Br Back River - Outside DSS Inlet #1 & #2 [TMDL area]	0.0439	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_SWB02A08	Southwest Br. Back River - Mouth [DSS OPEN -No TMDL]	0.2267	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_SWB02B10	SW Br Back R - DSS OPEN [TMDL]	0.4228	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.
The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_TBC01A04	Tabbs Creek - NW Br Back River	0.0537	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_TBC02A10	Tabbs Creek Mouth - NW Br Back River	0.0383	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_TBC02B14	Tabbs Creek Mouth - NW Br Back River	0.0152	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored		

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_THR01A10	Sandbox Area NW Thorofare	0.0122	Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_WAL01A06	Wallace Creek - Upper (Back River)	0.0362	Square Miles	Aquatic Life	Open-Water Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_WAT01A06	Watts Creek - (NW Br. Back River)	0.0575	Square Miles	Aquatic Life	Open-Water Aquatic Life	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.
EPA approved Chesapeake Bay TMDL 12/29/2010.

PARTIAL DELIST 2016-FECAL COLIFORM - C07E-31-SF (2004)

The Shellfish Use is supported based on the newly open portion of DSS condemnation # 054-021 (effective 20140218).

Previously (2006 IR) listed as TMDL-ID: VAT-C07E-18.
Covered under TMDL for "Back River, Northwest Branch" (31201) EPA approved 8/2/2006, modified 4/24/2014.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C07E_WHH01A06	White House Cove - Bennet Cr. Area	0.1452	Square Miles	Recreation	

Delisting Summary:

PARTIAL DELIST 2016-ENTEROCOCCI-C07E-09-BAC (2014)

The Recreation Use is delisted in the 2016 IR. The Recreation Use was listed as impaired in 2014 based on level II Ecoli data for stations along White House Cove collected by Poquoson Citizens for the Environment. The applicable water quality standard is Enterococci and therefore the impairment is delisted in the 2016 IR, The Recreation Use will be insufficient with an observed effect based on the high exceedance rate of the Ecoli bacteria data. Additional monitoring to provide Enterococci data is needed to make an assessment determination.

CitMon PCE Stations (Level II Ecoli data) at 7WHH-1-PCE, 7WHH-2-PCE, 7WHH-3-PCE, 7WHH-4-PCE, 7WHH-5-PCE, 7WHH-5.1-PCE, 7WHH-10-PCE& 7WHH-12-PCE. These stations have high levels of Ecoli WQS.

VAT-C07E_ZZZ01A00	Unsegmented estuaries in Back River	1.0397	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C07E_ZZZ01B12	Unsegmented estuaries in Back River - DSS	0.0968	Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- MOBPH-DO-BAY(2006)

The Open-Water Aquatic Life Use is now supporting based on dissolved oxygen meeting the criteria for Open Water - Summer and Aquatic Life Use for the 30 day assessment. All MOBPH segments will be delisted for DO in the 2016 IR.

The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria.

EPA approved Chesapeake Bay TMDL 12/29/2010.

VAT-C08E_EBL01A06	Eastern Branch - Upper, Lynnhaven River	0.2259	Square Miles	Recreation	

Delisting Summary:

PARTIAL DELIST 2016-ENTEROCOCCI-C08E-06-BAC (2004)

The Recreation Use is now supported based on data at station 7-EBL002.54 (2 violates / 23 obs.) of the criteria for Enterococcus bacteria. Previously (2006 IR) User Flag ID as VAT-C08E-06.
A TMDL for Shellfishing Use has been completed and EPA approved in 2004 (VAT-C08E-13) which includes the Recreation Use under TMDL ID VAT-C08E-06.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C08L_LTR01A08	Little Creek Reservoir - (PWS)	199.79	Acres	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO-C08L-03-DO (2006)

The Aquatic Life Use DO impairment is delisted in 2016. The dissolved oxygen concentrations as reported by observations pooled for 7-LTR000.04, 7-LTR000.95 and LC1 (7 viol / 78 obs = 9%) sampled during the current cycle. Individual station observations include 7-LTR000.04 (3 viol / 34 obs), 7-LTR000.95 (2 viol /26 obs) and LC1 (2 viol / 18 obs).

Little Creek is impaired for nutrients. Both Chla and TP do not support ALUS. Little Creek Reservoir pooled nutrients results: 2 viol / 2 obs Chla & TP 201, 2014 (IM); Both TP and Chla assessed since algaecide was applied during the monitoring year.

The pH observations are supporting for the Aquatic Life Use. pH was delisted in 2008.

VAT-C10E_MES02A06	Messongo Creek - Middle [TMDL-06]	0.1131	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016-FECAL COLIFORM- C10E-17-SF(1998)

The Shellfish Impairment is delisted in the 2016 IR based on the DSS shellfish direct harvesting condemnation # 076-167 (effective 20130809) which is now OPEN. Therefore Messongo Creek is now supporting Shellfish Use. This segment was included in the EPA approved TMDL for Messongo Creek 6/7/2006. The shellfish fecal coliform impairment was a 1998 CD segment.

VAT-C11E_PRK01A08	Parkers Creek - Upper	0.0348	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016- FECAL COLIFORM- C11E-20-SF (2008)

The Shellfishing Use impairment is delisted in the 2016 IR. The SF use is now supporting based on the DSS shellfish direct harvesting condemnation # 080-013 (effective 20131120).
No TMDL.

VAT-D03E_FLL01A08	Folly Creek - Upper & Middle	0.3757	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016- FECAL COLIFORM-D03E-04-SF(1998)

The Shellfish Use is now supporting based on the DSS shellfish condemnation # 097-173 (effective date 20140707). Merged VAT-D03E_FLL02A08 with this AU since now both segments (Upper and Middle) are supporting Shellfish Use.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-D03E_FNC02A06	Finney Creek - Lower	0.2549	Square Miles	Shellfishing	

Delisting Summary:

DELIST 2016-FECAL COLIFORM-D03E-14-SF (2010)

The Shellfish Use is supported based on the DSS Condemnation # 097-219(effective date 20130905). The Shellfish impairment is delisted in the 2016 IR.

Finney Creek' shellfish impairment has fluctuated through the last 4 assessment reports. In 2010 Finney Creek was listed for Shellfish impairment then in 2012 it was delisted (D03E-13-SF).In 2014 IR the segment was relisted and now in the 2016 IR the shellfish use is again delisted based on 2013 shellfish effective date.

VAT-D03E_NCK01A16	Nickawampus Creek	0.0313	Square Miles	Shellfishing	

Delisting Summary:

DELIST 2016 - FECAL COLIFORM - D03E-14-SF (2010)

The Shellfishing Use is now supporting based on the DSS shellfish condemnation # 097-219 effective date 20130905. Shellfish Condemnation is for Finney, Folly and Nickawampus Creeks.

VAT-D03R_GAR01A02	Gargathy Creek	2.83	Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016-BENTHICS- D03R-02-BEN (2002)

The Aquatic Life Use is now supporting based on the data collected at station 7-GAR006.01. The VCPMI scores shows seasonal effects, the station has good fall scores and fair spring scores. The station is delisted because the final 2 and 6 year averages are meeting the VCPMI scores with the most recent scores ranked as Good. VCPMI at station 7-GAR006.01 [FS_2010: S=21.4, F=51.2 2012: F=56.5 2013: F= 58.8 2014: S=- 21.7].

Both pH and DO are maintained as supporting with 0 viol / 2 obs.

VAT-D04E_RBC02A08	Red Bank Creek - Middle & Lower	0.0293	Square Miles	Aquatic Life	Recreation

Delisting Summary:

DELIST 2016-DO- D04E-01-DO (2008)

The Aquatic Life is fully supported based on DO data collected at station 7-RBC002.06 with 0 viol / 10 obs. Previous impairment for DO was associated with merged AUs, VAT-D04E_RBC03A08 and VAT-D04E_RBC04A08. DO was first listed in 2008.

DELIST 2016-FECAL COLIFORM- D04E-01-BAC (2008)

The Recreation Use is delisted in 2016. The Recreation Use is now supporting based on data collected at station 7-RBC002.06 with 0 viol / 10 obs for Enterococci.

VAT-D04R_RBC01A04	Red Bank Creek	1.36	Miles	Recreation	

Delisting Summary:

PARTIAL DELIST 2016-ECOLI-D04R-01-BAC (2004)

The Recreation Use is delisted in 2016 based current E.coli bacteria data has 1 viol / 16 obs at station 7-RBC003.87.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-D05E_OSS01A00	Oyster Slip (Harbor) - Upper	0.0341	Square Miles	Shellfishing

Delisting Summary:

PARTIAL DELIST 2016-FECAL COLIFORM-D05E-01-SF(1998)

The Shellfish Use is a partial delist. Now in 2016 IR upper oyster harbor is a seasonal condemnation rather than a full restricted area and therefore supporting shellfish use with an observed effect. DSS shellfish direct harvesting condemnation # 094-12 M1 (effective 2014-02-26). Oyster Harbor is within the Oyster Harbor Fecal Coliform TMDL for Shellfish impairments EPA approved 6/19/2009.

VAT-D06R_TOM01A08	Tommy's Ditch	1.44	Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016- DO- D06R-03-DO (2008)

The Aquatic Life Use is now supporting based on DO from station 7-TOM001.73 with 1 viol / 15 obs. The previous assessment in 2014 was retained with 1 viol / 4 obs. pH is supporting ALUS with 0 viol /15 obs.

VAT-D07E_LAE01A06	Lake Wesley - Upstream Branches	0.0341	Square Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 -DO- D07E-10-DO(2012)

The ALUS impairment is delisted in 2016. Data from station 7-LAE000.20 now has 0 viol / 6 obs and Station 7LAE-7-VAMSC monitored by Virginia Aquarium and Marine Science Center supports DO with 0 viol / 13 obs. The 2012 IR DO impairment was based on 3 viol / 16 obs. Most impairments were associated with 2005 data. Current data within 2014 IR is 0 viol / 6 obs. Both Station 7-LAE000.20 and 7LAE-7-VAMSC support pH with 0 viol / 6 obs and 0 viol/ 43 obs.

1998 CD segment for DO (Attachment A, Category 1, Part 2) VAT-D07E-01 [DELISTED 2004].

VAT-D07E_OWL02A02	Owl Creek - Lower	0.0194	Square Miles	Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016-DO-D07E-04-DO (2008)

The Aquatic Life Use impairment is delisted in the 2016 IR with no DO violations out of 6 obs. at DEQ station @ 7-OWL000.01 based on Class II 4mg/L water quality standard. pH is supporting with 0 viol / 6 obs.

CitMon data collected at station 7OWL-01-VAMSC 1 viol / 63 obs for DO and pH 0 viol / 633 obs.

NOTE: Partial delists indicate at least one other pollutant exists on the Assessment Unit (AU). If "PARTIAL" is not specified in the delist statement, the AU is supporting all assessed Uses.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

York River Basin

VAN-F01R_HUD01A04 Hudson Creek 3.61 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - Dissolved Oxygen - F01R-01-DO (CFL 2012)

During the 2014 cycle, this segment was assessed as not supporting the aquatic life use because of excursions below the minimum dissolved oxygen criterion (2 of 10 samples - 20.0%) recorded at DEQ's ambient water quality monitoring station (8-HUD001.80) at the Route 695 (Hamilton Road) crossing. Additional dissolved oxygen monitoring at this location found that 2 of 20 samples (10.0%) are below the minimum dissolved oxygen criterion. It has been determined that this segment should be delisted based on an acceptable excursion rate.

VAN-F01R_SAR01A02 South Anna River 7.95 Miles Recreation

Delisting Summary:

DELIST 2016 - Fecal Coliform- F01R-01-BAC, VAN-F01R-01 (CFL 2006)

Since the 2006 assessment cycle, this segment was assessed as not supporting the recreation use because of excursions of the instantaneous fecal coliform bacteria criterion (5 of 19 samples - 57.1%) recorded at DEQ's ambient water quality monitoring station 8-SAR096.83 at the Route 15 bridge. Subsequent E. coli bacteria monitoring has been conducted in 2013 at probabilistic ambient monitoring station 8-SAR093.47 at Route 22. This monitoring found that 1 of 12 samples (8.3%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for fecal coliform based upon an acceptable exceedance rate of E. coli bacteria samples.

Note: During the 2016 delisting process, it was determined that the 2006 fecal coliform impairment listing information was inaccurate. It was determined that there were a total of seven fecal coliform samples collected during the 2006 assessment period. However, three of those samples were not valid because they failed quality control. The impairment should have been based on excursions of the instantaneous fecal coliform bacteria criterion (3 of 4 samples - 75.0%) recorded at DEQ's ambient water quality monitoring station 8-SAR096.83 at the Route 15 bridge.

VAN-F03R_OWN01A04 Owens Creek 2.71 Miles Recreation

Delisting Summary:

DELIST 2016 - E. coli - F03R-05-BAC, VAN-F03R-01 (CFL 2010)

During the 2012 and 2014 cycles, this segment was assessed as not supporting the recreation use because of excursions from the maximum E. coli bacteria criterion (2 of 18 samples - 11.1%) recorded at DEQ's ambient water quality monitoring station 8-OWN000.48 at the Route 663 bridge crossing. Additional bacteria monitoring at this location found that 0 of 12 samples (0.0%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for E. coli based upon an acceptable exceedance rate.

VAN-F09R_NST01A08 Northeast Creek 2.86 Miles Recreation

Delisting Summary:

DELIST 2016 - E. coli - F09R-03-BAC, VAN-F09R-01 (CFL 2006)

During the 2010, 2012, and 2014 cycles, this segment was assessed as not supporting the recreation use because of excursions from the maximum E. coli bacteria criterion (3 of 12 samples - 25.0%) recorded at DEQ's ambient water quality monitoring station 8-NST000.58 at a private road crossing. Additional bacteria monitoring at this location found that 0 of 2 samples (0.0%) exceed the maximum E. coli bacteria criterion. It has been determined that this segment should be delisted for E. coli based upon an acceptable exceedance rate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored

York River Basin

VAN-F09R_NST03A08 Northeast Creek 6.36 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - F09R-01-DO (CFL 2008)

During the 2012 and 2014 cycles, this segment was assessed as not supporting the aquatic life use because of excursions below the minimum dissolved oxygen criterion (2 of 7 samples - 28.6%) at the Route 614 bridge (8-NST007.84). Additional monitoring has been conducted at this location and found that a total of 1 of 11 samples (9.1%) were less than the dissolved oxygen criterion. It has been determined that this segment should be delisted for dissolved oxygen based upon an acceptable excursion rate.

VAN-F09R_NST04A08 Northeast Creek 3.52 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - F09R-01-DO (CFL 2008)
PARTIAL DELIST 2016 - pH - F09R-02-PH (CFL 2008)

During the 2012 and 2014 cycles, this segment was assessed as not supporting the aquatic life use because of excursions below the minimum dissolved oxygen criterion (2 of 18 samples - 11.1%) at the Route 208 bridge (8-NST011.67). Additional monitoring conducted at this location found that a total of 0 of 22 samples (0.0%) were less than the minimum dissolved oxygen criterion. It has been determined that this segment should be delisted for dissolved oxygen based upon an acceptable excursion rate.

During the 2012 and 2014 cycles, this segment was assessed as not supporting the aquatic life use because of excursions below the lower limit of the pH criterion range (3 of 18 samples - 16.6%) at the Route 208 bridge (8-NST011.67). Additional monitoring conducted at this location found that a total of 1 of 23 samples (4.3%) is below the lower limit of the pH criterion range. It has been determined that this segment should be delisted for pH based upon an acceptable exceedance rate.

VAN-F10R_LTL01A02 Little River 4.17 Miles Aquatic Life

Delisting Summary:

PARTIAL DELIST 2016 - DO - F10R-01-DO (CFL 2006)

During the 2014 cycle, this segment was assessed as not supporting the aquatic life use because of excursions below the minimum dissolved oxygen criterion (5 of 32 samples - 15.6%) at the Route 654 bridge (8-LTL030.55). Additional monitoring conducted at this location found that a total of 3 of 33 samples (9.1%) were less than the dissolved oxygen criterion. It has been determined that this segment should be delisted for dissolved oxygen based upon an acceptable excursion rate.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored	

York River Basin

VAP-F13R_TPT01A98	Totopotomoy Creek	10.26 Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - pH - F13R-02-PH (CFL 2004)

In the 2004 cycle, Totopotomoy Creek from Strawhorn Creek to its mouth was assessed as not supporting the Aquatic Life Use due to pH exceedances at 8-TPT004.37. Although monitoring at NPS station 8-TPT-RICH-05-NPS was acceptable (0/4) during the 2012 cycle, no additional data was collected at 8-TPT004.37 therefore the segment remained listed.

A Natural Conditions Assessment was conducted during the 2014 cycle. The report attributes the pH violations to natural conditions and recommends that the entire mainstem of Totopotomoy Creek be reclassified as Class VII swampwater. Until the WQS can be revised, the impairment was considered Category 4C.

Additional monitoring was conducted at multiple stations in the segment in the 2016 cycle. pH was acceptable at all of the monitoring stations (see below); therefore, the segment will be delisted for pH.

8-TPT000.79 - 0/25
8-TPT004.37 - 0/13
8-TPT006.97 - 0/13
8-TPT009.17 - 0/13
8-TPT-TOTC1-ACB - 1/11
8-TPT-RICH-05-NPS - 0/17

VAP-F14E_ZZZ02A06	Unsegmented estuaries in F14	0.2646 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen 0.2646 mi2 - PMKOH-DO-BAY (CFL 2014)

The Pamunkey River oligohaline estuary failed the Open Water Subuse's summer 30-day mean dissolved oxygen criteria during the 2014 cycle. The TMDL was approved by the EPA on 12/29/2010, therefore the entire estuary is impaired for dissolved oxygen (Category 4A).

In the 2016 cycle, the Pamunkey Oligohaline segment was again in attainment of every Chesapeake Bay dissolved oxygen criteria which was measured. However, EPA considers there to insufficient information to assess the Migratory Spawning Use or the other Open Water Use's dissolved oxygen frequency criteria, and therefore the mainstem must remain impaired due to EPA's overlisting (Category 4D). The tributaries to the segment will be partially delisted (Category 2C.)

VAP-F14E_ZZZ02B06	Unsegmented estuaries in F14	0.0602 Square Miles	Aquatic Life	Open-Water Aquatic Life

Delisting Summary:

DELIST 2016 - Dissolved Oxygen 0.0602 mi2 - PMKOH-DO-BAY (CFL 2014)

The Pamunkey River oligohaline estuary failed the Open Water Subuse's summer 30-day mean dissolved oxygen criteria during the 2014 cycle. The TMDL was approved by the EPA on 12/29/2010, therefore the entire estuary is impaired for dissolved oxygen (Category 4A).

In the 2016 cycle, the Pamunkey Oligohaline segment was again in attainment of every Chesapeake Bay dissolved oxygen criteria which was measured. However, EPA considers there to insufficient information to assess the Migratory Spawning Use or the other Open Water Use's dissolved oxygen frequency criteria, and therefore the mainstem must remain impaired due to EPA's overlisting (Category 4D). The tributaries to the segment will be partially delisted (Category 2C.)

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size		Uses Partially / Fully Restored	

York River Basin

VAP-F23E_MPN02A98	Mattaponi River	0.1593	Square Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - pH - F23E-01-PH / 00654 / VAP-F23E-01 (CFL 1998)

The Mattaponi River from the tidal limit near Aylett downstream to Garnetts Creek was assessed in 1998 as impaired of the Aquatic Life Use due to pH exceedances.

During the 2006 cycle, the "Natural Conditions Assessment for Low pH, Mattaponi River" was completed. It recommends that the Mattaponi River from Maracossic Creek downstream to Garnetts Creek be reclassified as Class VII swampwaters. The segment was assessed as Cat 4C.

In the 2016 cycle, the pH exceedance rate was acceptable (4/47 at 8-MPN039.10, 1/210 at 8-MPN029.08, and 0/12 at 8-MPN034.33); therefore, the segment will be delisted.

VAP-F23E_MPN03A06	Mattaponi River	1.7563	Square Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - pH - F23E-01-PH / 00654 / VAP-F23E-01 (CFL 1998)

The Mattaponi River from the tidal limit near Aylett downstream to Garnetts Creek was assessed in 1998 as impaired of the Aquatic Life Use due to pH exceedances.

During the 2006 cycle, the "Natural Conditions Assessment for Low pH, Mattaponi River" was completed. It recommends that the Mattaponi River from Maracossic Creek downstream to Garnetts Creek be reclassified as Class VII swampwaters. The segment was assessed as Cat 4C.

In the 2016 cycle, the pH exceedance rate was acceptable (4/47 at 8-MPN039.10, 1/210 at 8-MPN029.08, and 0/12 at 8-MPN034.33); therefore, the segment will be delisted.

VAP-F24E_MPN03A98	Mattaponi River	1.3842	Square Miles	Aquatic Life	

Delisting Summary:

PARTIAL DELIST 2016 - pH - F24E-01-PH (CFL 2014)

During the 2014 cycle, the Mattaponi River from Garnetts Creek downstream to the oligohaline boundary was considered impaired of the Aquatic Life Use due to a pH exceedance rate of 4/35 at 8-MPN017.46. All other stations were acceptable.

The exceedance rate fell to 0/36 in the 2016 cycle; therefore, the segment will be delisted.

VAT-F26R_FRS02A10	France Swamp (Middle Downstream)	0.88	Miles	Aquatic Life	Recreation

Delisting Summary:

DELIST 2016 - DO - F26R-03-DO (2010)

The Aquatic Life Use is fully supporting based on DO data at monitoring station @ 8-FRS001.17 with 0 viol/ 12 obs.

DELIST 2016 - ECOLI - F26R-03-BAC (2010)

The Recreation Use is fully supporting based on E.coli bacteria instantaneous criteria (0 viol/ 11 obs) at monitoring station @ 8-FRS001.17.

NOTE: Partial delists indicate at least one other pollutant exists on the Assessment Unit (AU). If "PARTIAL" is not specified in the delist statement, the AU is supporting all assessed Uses.

Waters Identified for Delisting Since 2014 Report

Assessment Unit ID	Waterbody Name	Size	Uses Partially / Fully Restored
New River Basin			
VAS-N10R_GLN01A04	Gullion Fork	3.54 Miles	Recreation
Delisting Summary:	DELIST 2016 - E.coli - N11R-01-BAC (2012) 8% of E. Coli samples exceeded WQS.		
VAS-N10R_RDC01A02	Reed Creek	5.23 Miles	Aquatic Life
Delisting Summary:	PARTIAL DELIST 2016 - TEMP - N10R-02-TEMP (2012) No samples exceeded WQS.		
VAS-N31R_HCC01A00	Hunting Camp Creek	8.93 Miles	Aquatic Life
Delisting Summary:	PARTIAL DELIST 2016 - TEMP - N31R-01-TEMP (2006) No temperature measurements exceeded WQS at 9-HCC005.57. 9-HCC000.16 has shown steady decline in VSCI scores. VSCI @ 9-HCC000.16: 10/13/2011 58.31 05/05/2011 61.71 10/28/2008 68.21 04/16/2008 65.41 VSCI @ 9-HCC007.83: VSCI: 10/13/2011 57.23 05/05/2011 64.04. No exceedance was detected for DO, pH, NH3.		
VAW-N23R_SNK01B10	Sinking Creek	3.03 Miles	Aquatic Life
Delisting Summary:	PARTIAL DELIST 2016 - Temperature 3.03 miles - VAW-N23R-01 / N23R-01-TEMP (2010) The waters are delisted based on data collections at station 9-SNK005.38 (Route 778 Bridge - Giles County). 9-SNK005.38 2016 IR temperature data produce results with no excursions of the Class V Stockable Trout Waters WQS 21°C from 12 observations. The 2016 IR reports an exceedance rate of 0% which is less than 10.5% indicating full support of the Aquatic Life Use.		

NOTE: Partial delists indicate at least one other pollutant exists on the Assessment Unit (AU). If "PARTIAL" is not specified in the delist statement, the AU is supporting all assessed Uses.

Waters Identified for Delisting (Use Removed) Since 2014 Report

Assessment Unit ID	*Waterbody Name*	*Size*
James River Basin		
VAT-G11E_TYB01A00	Tylers Beach Boat Basin	0.0109 Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016 - FC - G11E-18-SF (2004)
Shellfishing Use Removed 2016 - Admin. Condemned - DSS Cond # 060-206 B, 20141231

Waters Identified for Delisting (Use Removed) Since 2014 Report

Assessment Unit ID	Waterbody Name	Size

Chesapeake Bay/Atlantic/Small Coastal Basins

VAP-C01E_NPC01A16 Natty Point Cove 0.0176 Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016 - Enterococci - C01E-59-SF (CFL 2012)

During the 2012 cycle, upper tidal Dividing Creek was impaired of the Recreation Use due to an enterococci exceedance rate of 3/4 at 7-XDB000.08. The exceedance rate was 7/24 during the 2016 cycle. The area is within the study area for the Dividing Creek Shellfish Bacterial TMDL, which was approved by the EPA on 6/8/2006. Implementation of the TMDL is expected to address the Recreation Use impairment; therefore, it is considered nested. The size was reduced in the 2016 cycle to remain coincident with the shellfish condemnation.
In the 2016 cycle, it was determined that it was inappropriate to include Natty Point Cove in the Recreation Use impairment due to the distance from the listing station; it will be partially delisted (Cat 3A).

VAP-C01E_XFC02C12 XFC - Antipoison Creek, UT 0.0019 Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C01E-63-SF / Federal ID 35981 (CFL 2012)
Shellfishing Use Removed 2016 - Admin. Condemned - DSS Cond #017-188D, 12/16/2014

The upper portion of Antipoison Creek was included on the 1998 303(d) list due to condemnation 188, 6/3/1996. The Shellfish TMDL for Antipoison Creek was developed for Antipoison Creek in its entirety to match the maximum extent of condemnation, which occurred on 7/13/2004. The condemnation was changed to administrative during the 2016 cycle and the segment will be delisted.

VAT-C08E_EBL01A06 Eastern Branch - Upper, Lynnhaven River 0.2259 Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016 - Fecal Coliform - C08E-13-SF (1998)
Shellfishing Use Removed 2016 - Admin Condemned- DSS Cond # 070-025, 20140616

VAT-C08E_EBL01B10 Eastern Branch - Lower Upper, Lynnhaven River 0.2632 Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016-FECAL COLIFORM 0.1 SQ MI -C08E-13-SF (1998)
SHELLFISH USE REMOVED 2016 - Admin. Condemned- DSS Cond # 070-025 A, 20140616

VAT-C08E_LOB01A00 London Bridge Creek 0.0593 Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016-FECAL COLIFORM-C08E-13-SF (1998)
Shellfishing Use Removed 2016-Admin. Condemned-DSS Cond # 070-025 A, 20140616

VAT-C08E_THA01A02 Thalia Creek, Thurston Branch & Buchanan Creek 0.2856 Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016-FECAL COLIFORM-C08E-13-SF (1998)
Shellfishing Use Removed 2016- Admin. Condemned - DSS Cond # 070-025 H, 20140616

Waters Identified for Delisting (Use Removed) Since 2014 Report

Assessment Unit ID	Waterbody Name	Size

Chesapeake Bay/Atlantic/Small Coastal Basins

VAT-C08E_WES01A06	Western Branch - Upper, Lynnhaven River	0.1507	Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016-FECAL COLIFORM-C08E-13-SF (1998)
Shellfishing Use Removed 2016- Admin. Condemned - DSS Cond # 070-025 H, 20140616

VAT-C08E_WES01B16	Western Branch - Middle, Lynnhaven River	0.1738	Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016-FECAL COLIFORM 0.18 SQ MI- C08E-13-SF (1998)
Shellfishing Use removed 2016-Admin. Condemned-DSS Cond # 070-025H, 20140616

VAT-C08E_ZZZ01A00	Unsegmented tidal tributaries in C08E-LYNPH	0.9585	Square Miles

Delist / Use Removal Summary:

PARTIAL DELIST 2016-FECAL COLIFORM- C08E-13-SF (1998)
Shellfishing Use Removed 2016-Admin. Condemned-DSS Cond # 070-025 A & H, 20140616

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A02R-02-BEN** **North Fork Catoctin Creek**

Location: Begins at the confluence with an unnamed tributary to North Fork Catoctin Creek, approximately 0.15 rivermile downstream from the Route 287 bridge, and continues downstream until the confluence with Catoctin Creek.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of four biological monitoring events in 2009 and 2010, one biological monitoring event in 2011, and one biological monitoring event in 2014 at station 1aNOC000.42 resulted in a VSCI score which indicates an impaired macroinvertebrate community

North Fork Catoctin Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.42**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A02R-04-BEN** **North Fork Catoctin Creek**

Location: Begins at the confluence of an unnamed tributary to North Fork Catoctin Creek, approximately 0.75 rivermile upstream from Route 719 near Hillsboro, and continues downstream 2.45 rivermiles to an unnamed impoundment.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of four biological monitoring events in 2010, 2011, and 2014 at station 1aNOC009.37 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

North Fork Catoctin Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.54**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A03R-02-BAC** **Clarks Run**

Location: Begins at the confluence with an unnamed tributary to Clarks Run, at rivermile 5.4, and continues downstream until the confluence with the Potomac River.

City / County: Loudoun Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2014 Assessment: E. coli bacteria criterion excursions (4 of 12 samples - 33.3%) from station 1aCLK002.40, at Route 658.

Clarks Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**5.46**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A05R-01-BEN** **Wancopin Creek**

Location: Begins at the confluence with an unnamed tributary to Wancopin Creek, just upstream from Route 50, and continues downstream until the confluence with Goose Creek.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2008 Assessment: Two biological monitoring events in 2002 at station 1aWAC003.31 (Route 50) both resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Wancopin Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.44**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A05R-02-BEN** **Jeffries Branch**

Location: Segment begins at the headwaters of Jeffries Branch and continues downstream until the confluence with an unnamed tributary at rivermile 1.43.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Eight biological monitoring events in 2010, 2011, 2013, and 2014 at station 1aJEE002.22, at Route 743, resulted in a VSCI score indicating an impaired macroinvertebrate community.

Jeffries Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.19**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A06R-01-BEN** **North Fork Goose Creek**

Location: Begins at the confluence with an unnamed tributary to North Fork Goose Creek, approximately 0.23 rivermile upstream from Route 725, and continues downstream until the confluence with Crooked Run.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: One biological monitoring event in 2008 at station 1aNOG005.69 (Route 722) resulted in a VSCI score which indicates an impaired macroinvertebrate community.

North Fork Goose Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.69**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A07R-02-BEN** **North Fork Beaverdam Creek**

Location: Begins at the headwaters of North Fork Beaverdam Creek and continues downstream until the confluence with Butchers Branch.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2008 Assessment: One of two biological monitoring events in 2001 at station 1aNOB007.97 (Route 831) resulted in a VSCI score which indicates an impaired macroinvertebrate community, as does the mean score of these two samples.

North Fork Beaverdam Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.81**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A08R-01-PCB** **Broad Run, Difficult Run, Goose Creek**

Location: Includes the following tributaries between the Virginia/Maryland state line near the Route 340 bridge (Loudoun County) to the I-395 bridge in Arlington County (above the Woodrow Wilson Bridge): Goose Creek up to the Dulles Greenway Road Bridge, Broad Run up to the Route 625 bridge, and Difficult Run up to the Route 7 bridge.

City / County: Fairfax Co. Loudoun Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel consumption to no more than two meals per month.

Broad Run, Difficult Run, Goose Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**39.63**	**15.34**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A08R-04-BEN** **Tuscarora Creek**

Location: Begins at the confluence with Town Branch and continues downstream until the confluence with Goose Creek.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of 2 biological monitoring events in 2012 at station 1aTUS003.19 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Tuscarora Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.89**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A08R-05-BEN** **Dry Mill Branch**

Location: Segment begins at the confluence with an unnamed tributary at rivermile 2.97 and continues downstream to the confluence with Tuscarora Creek.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of four biological monitoring events in 2013 and 2014 at station 1ADRL001.00 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Dry Mill Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.97**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-01-BAC** **Unnamed tributary to the Potomac River**

Location: Begins at an unnamed tributary at rivermile 1.82, and continues downstream to the confluence with the Potomac River.

City / County: Loudoun Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2014 Assessment: E. coli bacteria criterion excursions (6 of 12 samples - 50.0%) from station 1aXLE001.62, at Algonkian Parkway.

Unnamed tributary to the Potomac River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**1.74**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-01-BEN** **Broad Run**

Location: Begins at the confluence with Horsepen Run and continues downstream until the confluence with the Potomac River.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2009 and two biological monitoring events in 2012 at station 1aBRB002.15, at Route 7, and two biological monitoring events in 2009 and two biological monitoring events in 2012 at station 1aBRB006.97 (upstream from Waxpool Road) resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Broad Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.42**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-01-HG** **Broad Run**

Location: Begins at the confluence with Beaverdam Run and continues downstream until the confluence with the Potomac River.

City / County: Loudoun Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

2010 Assessment: Excursions above the water quality criterion based tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue were recorded in two species of fish; smallmouth bass (2004) and yellow bullhead catfish (2004) at monitoring station 1aBRB002.15.

Broad Run **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**2.93**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-02-BAC** **Broad Run**

Location: Begins at the confluence with Horsepen Run, and continues downstream until the confluence with Cabin Branch, at rivermile 5.35. Also, begins at the confluence with Beaverdam Run and continues downstream until the confluence with the Potomac River.

City / County: Loudoun Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (2 of 12 samples - 16.7%) from station 1aBRB006.33, at Route 625 (Waxpool Rd), and E. coli bacteria criterion excursions (7 of 40 samples - 17.5%) from station 1aBRB002.15, at Route 7.

Broad Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.15**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-02-BEN** **Broad Run**

Location: Begins at the confluence with Lenah Run and continues downstream until the confluence with South Fork Broad Run.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring event in 2009 and two biological events in 2012 at station 1aBRB015.43, upstream of Route 621, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Broad Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.42**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A09R-03-BAC** **Broad Run**

Location: Begins at the confluence with Lenah Run and continues downstream until the confluence with South Fork Broad Run.

City / County: Loudoun Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (6 of 23 samples - 26.1%) from station 1aBRB015.38, at Route 621.

Broad Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.42**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-03-BEN** **Horsepen Run**

Location: Segment begins at the headwaters of Horsepen Run and continues until the confluence with an unnamed tributary to Horsepen Run, approx. 1.0 rivermile downstream from Route 28.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of six biological monitoring events in 2010, 2013, and 2014 at station 1aHPR003.93 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Horsepen Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.17**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-04-BAC** **South Fork Broad Run**

Location: Begins at the headwaters of South Fork Broad Run and continues downstream until the confluence with Broad Run.

City / County: Loudoun Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (3 of 12 samples - 25.0%) from station 1aSOR000.59, at Route 621.

South Fork Broad Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.28**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A09R-04-BEN** **South Fork Broad Run**

Location: Begins at the headwaters of South Fork Broad Run and continues downstream until the confluence with Broad Run.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of four biological monitoring events in 2011 and 2012 at station 1aSOR000.59 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

South Fork Broad Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.28**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-05-BAC** **Beaverdam Run**

Location: Begins at the confluence with of an unnamed tributary to Beaverdam Run, in Ashburn Park, and continues downstream until the confluence with Broad Run.

City / County: Loudoun Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (3 of 12 samples - 26.0%) from station 1aBEM000.60, at Route 607.

Beaverdam Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-05-BEN** **Beaverdam Run**

Location: Begins at the confluence with of an unnamed tributary to Beaverdam Run, in Ashburn Park, and continues downstream until the confluence with Broad Run.

City / County: Loudoun Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of four biological monitoring events in 2013 and 2014 at station 1ABEM000.60 resulted in a VSCI score which indicates an impaired macroinvertebrate community

Beaverdam Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.85**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A09R-06-BAC** **Indian Creek**

Location: Begins at the headwaters of Indian Run and continues downstream to the confluence with Horsepen Run.

City / County: Loudoun Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (5 of 15 samples - 33.3%) from station 1aINI000.80, at Route 606 (Old Ox Road).

Indian Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.48**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A09R-07-BAC** **Horsepen Run**

Location: Segment begins at the headwaters of Horsepen Run and continues until the confluence with an unnamed tributary to Horsepen Run, approx. 1.0 rivermile downstream from Route 28.

City / County: Loudoun Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (2 of 17 samples - 11.8%) from station 1AHPR003.87 at Dulles Airport Access Road.

Horsepen Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.17**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A10R-01-BEN** **Sugarland Run**

Location: Begins at the confluence with Smilax Branch and continues downstream until the confluence with the Potomac River.

City / County: Fairfax Co. Loudoun Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of four biological events in 2009 and in 2010 at station 1aSUG006.28 at Wiehle Avenue and two biological monitoring events in 2010 at station 1aSUG003.52 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Sugarland Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.71**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-01-HEPOXID Difficult Run**

Location: Begins at the confluence with Captain Hickory Run and continues downstream until the confluence with the Potomac River.

City / County: Fairfax Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Heptachlor epoxide / 5A

2008 Assessment: Excursions above of the water quality criterion based tissue screening value (TV) of 12 parts per billion (ppb) for heptachlor epoxide in fish tissue were recorded in one species of fish samples (2 total samples) in American eel (2001 and 2004), collected at monitoring station 1aDIF000.86.

Difficult Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Heptachlor epoxide - Total Impaired Size by Water Type:			**3.17**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-02-BEN** **Captain Hickory Run**

Location: Begins at the headwaters of Captain Hickory Run and continues downstream until the confluence with Difficult Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2008 Assessment: Two biological monitoring events in 2001 at station 1aCAH001.82 (upstream from Route 681) both resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Captain Hickory Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.27**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-03-BEN** **Difficult Run**

Location: Begins at confluence with Rocky Branch, approximately 0.25 rivermile upstream of Route 672, and continues downstream until the confluence with Wolftrap Creek.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007 at station 1aDIF005.06 (Route 675) and two biological monitoring events in 2007 at station 1aDIF010.48 (Route 672) resulted in VSCI scores indicating an impaired macroinvertebrate community.

Difficult Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.37**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-04-BEN** **Colvin Run**

Location: Begins at the headwaters of Colvin Run and continues downstream until the confluence with an unnamed tributary (streamcode XJJ) flowing from Lake Anne.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007 at station 1aCOV003.32 (Wiehle Ave) resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Colvin Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.09**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-05-BEN** **Snakeden Branch**

Location: Begins at the confluence with an unnamed tributary to Snakeden Branch, approximately 0.4 rivermile downstream from the Twin Branches Road bridge, and continues downstream until the confluence with Difficult Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007 at station 1aSNA000.21, at Route 677 (Hunter Station Road) resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Snakeden Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.97**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-06-BEN** **Little Difficult Run**

Location: Segment begins at the confluence with South Fork Little Difficult Run and continues downstream until the confluence with Difficult Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007 at station 1aLID000.64, at Route 669, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Little Difficult Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.75**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-07-BEN** **Old Courthouse Spring Branch**

Location: Begins at the headwaters of Old Courthouse Spring Branch and continues downstream until the confluence with Wolftrap Creek.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007 at station 1aOCS000.43, at Laurel Hill Rd, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Old Courthouse Spring Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.11**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-08-BAC** **Nichols Run**

Location: Begins at the headwaters of Nichols Run and continues downstream until the confluence with the Potomac River.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (3 of 11 samples - 27.3%) from station 1aNIC002.10, at Route 603.

Nichols Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.56**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-08-BEN** **Turkey Run**

Location: Begins at the headwaters of Turkey Run, near Langley High School, and continues downstream until the confluence with the Potomac River.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2009 at station 1aTUY000.26, upstream of the G.W. Parkway, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Turkey Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.34**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A11R-09-BEN** **Dead Run**

Location: Begins at the headwaters of Dead Run and continues downstream until the confluence with the Potomac River.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2009 at station 1aDED000.29, upstream of G.W. Parkway, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Dead Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.82**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A12E-01-CDANE** **Four Mile Run**

Location: Includes the tidal waters of Four Mile Run; from rivermile 1.46 downstream until the confluence with the Potomac River, at the state line.

City / County: Alexandria City Arlington Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Chlordane / 5A

Excursions above the water quality criterion based fish tissue value (TV) of 110 parts per billion (ppb) for total chlordane in fish tissue were recorded in 2 species (carp and channel catfish) of fish (3 total samples) in 2008 at monitoring station 1aFOU000.45.

Four Mile Run **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chlordane - Total Impaired Size by Water Type:	**0.050**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A12R-01-BEN** **Pimmit Run**

Location: Begins at the Route 309 bridge crossing and continues downstream until the confluence with Little Pimmit Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2009 and two biological monitoring events in 2011 at station 1aPIM001.89 at Ranleigh Road, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Pimmit Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.76**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A12R-03-CDANE** **Pimmit Run**

Location: Begins at the confluence with Little Pimmit Run and continues downstream until the confluence with the Potomac River.

City / County: Arlington Co. Fairfax Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Chlordane / 5A

2008 Assessment: Excursions above the water quality criterion based tissue value (TV) of 310 ppb for chlordane in fish tissue were recorded in tissue from one species (American eel) of fish sampled in 2001 and 2004 at monitoring station 1aPIM000.15.

Pimmit Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Chlordane - Total Impaired Size by Water Type:			**1.64**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A12R-03-HEPOXID Pimmit Run**

Location: Begins at the confluence with Little Pimmit Run and continues downstream until the confluence with the Potomac River.

City / County: Arlington Co. Fairfax Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Heptachlor epoxide / 5A

2010 Assessment: Excursions above the water quality criterion based tissue value (TV) of 4.4 parts per billion (ppb) for heptachlor epoxide in fish tissue were recorded in two species of fish samples (3 total samples); American eel (2004, 2004) and white sucker (2004) at monitoring station 1aPIM000.15.

Pimmit Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Heptachlor epoxide - Total Impaired Size by Water Type:			**1.64**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A13R-01-PCB** **Indian Run**

Location: Includes the entire portion of Indian Run, from the headwaters until the confluence with Backlick Run.

City / County: Fairfax Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 7/27/05, limits consumption of creek chub to no more than two meals per month.

Indian Run **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**3.18**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A13R-03-BEN** **Holmes Run**

Location: Begins at the headwaters of Holmes Run and continues downstream until the start of Lake Barcroft.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2010 at station 1aHOR005.48, upstream of Route 613, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Holmes Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.09**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A13R-04-BEN** **Tripps Run**

Location: Begins at the headwaters of Tripps Run and continues downstream until the start of Lake Barcroft.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2010 at station 1aTRI001.50, upstream of Route 613, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Tripps Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.70**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A14R-01-BAC** **Paul Springs Branch**

Location: Begins at the headwaters of Paul Spring Branch and continues downstream until the confluence with North Branch.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2014 Assessment: E. coli bacteria criterion excursions (5 of 12 samples - 41.7%) at station 1aPAU001.17, at Route 626.

Paul Springs Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.38**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A14R-01-BEN** **Paul Springs Branch**

Location: Begins at the headwaters of Paul Spring Branch and continues downstream until the confluence with North Branch.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007 at station 1aPAU001.17 (Route 626) resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Paul Springs Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.38**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A14R-01-DO** **Paul Springs Branch**

Location: Begins at the headwaters of Paul Spring Branch and continues downstream until the confluence with North Branch.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Excursions below the minimum dissolved oxygen criterion (6 of 42 samples - 14.3%%) were recorded at USGS station 01653717, downstream of Sherwood Hall Lane.

Paul Springs Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.38**

Sources:

Source Unknown

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Potomac and Shenandoah River Basins

***Cause Group Code:* A14R-02-BAC** **Dogue Creek**

Location: Begins at the confluence with an unnamed tributary to Dogue Creek, approximately 0.3 rivermiles upstream from Rt. 622, and continues downstream until the end of the free-flowing waters of Dogue Creek.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (6 of 12 samples - 50.0%) at station 1aDOU003.17, at Route 622.

Dogue Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.41**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A15E-01-PH** **Pohick Bay**

Location: Segment includes tidal waters of Pohick Creek, from the boundary of watershed A15, and extends until rivermile 1.31 in Gunston Cove.
Portion of CBP segment POTTF.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Sufficient excursions above the upper limit of the pH criterion range at station 1aPOH002.10 at the end of the dock at Pohick Regional Park (36 of 210 observations - 17.1%).

Pohick Bay		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life	pH - Total Impaired Size by Water Type:	**0.619**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A15L-01-HG** **Lake Accotink**

Location: Includes all of Lake Accotink.

City / County: Fairfax Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

2014 Assessment: Excursions above the water quality criterion based fish tissue value (TV) of 300 parts per billion (ppb) for mercury in fish tissue were recorded in two species of fish (3 total samples): largemouth bass (2007, 2007) and bluegill sunfish (2007) collected at monitoring station 1aACO012.78.

Lake Accotink **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**73.93**	

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A15L-01-PCB** **Lake Accotink**

Location: Includes all of Lake Accotink.

City / County: Fairfax Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

2014 Assessment: Excursions above the water quality criterion based fish tissue value (TV) of 20 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue were recorded in two species of fish (3 total samples): carp (2007, 2007) and gizzard shad (2007) collected at monitoring station 1aACO012.78.

Lake Accotink **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**73.93**	

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A15R-01-BEN** **Accotink Creek**

Location: Begins at the outlet of Lake Accotink and continues downstream until the tidal waters of Accotink Bay.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007 at station 1aACO002.50, at Route 1; two biological monitoring events in 2007 and two biological monitoring events in 2008 at station 1aACO006.10, at Route 790; and two biological monitoring events in 2008 at station 1aACO009.14, at Routes 636 and 286, all resulted in VSCI scores which indicate an impaired macroinvertebrate community.

Accotink Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**10.09**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A15R-01-CHLR** **Accotink Creek**

Location: Begins at the confluence with Crook Branch, upstream from Route 846, and continues downstream until the start of Lake Accotink.

City / County: Fairfax Co.

Use(s): Aquatic Life Wildlife

Cause(s) / VA Category: Chloride / 5A

Three exceedances of the acute water quality criterion were recorded at station 1AACO-1654000-MD within a three-year period.

Accotink Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chloride - Total Impaired Size by Water Type:			**5.22**

Accotink Creek **Wildlife**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chloride - Total Impaired Size by Water Type:			**5.22**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A15R-01-PCB** **Accotink Creek**

Location: Segment begins at the outlet of Lake Accotink and continues downstream until the tidal waters of Accotink Bay.

City / County: Fairfax Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

2010 Assessment: Excursions above the water quality criterion based fish tissue value (TV) of 20 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue were recorded in three species of fish (3 total samples): American eel (2004), redbreast sunfish (2004), and rainbow trout (2004) collected at monitoring station 1aACO004.86 (2010 Assessment). 2014 Assessment: Excursions for PCBs in fish tissue recorded in one species (American eel) of fish sampled (1 total excursion) at station 1aACO011.62 and in one species (yellow bullhead catfish) of fish sampled (1 total excursion) at station 1aACO012.58, in 2008.

Accotink Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**10.09**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A15R-04-BEN** **Accotink Creek**

Location: Begins at the headwaters of Accotink Creek and continues downstream until the start of Lake Accotink.

City / County: Fairfax City Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: EPA biological monitoring events in 2005 and 2006, and two biological monitoring events in 2007 at station 1aACO014.57, at Route 620, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Accotink Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**11.59**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A15R-05-BEN** **Long Branch**

Location: Begins at the confluence with an unnamed tributary to Long Branch, at the Route 651 (Guinea Road) bridge, and continues downstream until the confluence with Accotink Creek, just below Braddock Road.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2012 Assessment: Two biological monitoring events in 2006 at station 1aLOE001.99 (downstream from Route 651/Guinea Road) resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Long Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.37**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A16E-01-BZOKFL Pohick Creek**

Location: Includes tidal waters of Pohick Creek upstream from the boundary of watershed A16.

City / County: Fairfax Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Benzo[k]fluoranthene / 5A

2002 Assessment: Excursions above the water quality criterion based tissue value (TV) of 5.5 ppb for benzo(k) fluoranthene in fish tissue (bullhead catfish, white perch, and sunfish) at station 1aPOH003.56 in 1996.

Pohick Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Benzo[k]fluoranthene - Total Impaired Size by Water Type:	**0.292**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A16R-01-BAC** **Pohick Creek**

Location: Begins at the confluence with South Run, approximately 0.25 rivermile upstream from I-95, and continues downstream until the end of the free-flowing portion of Pohick Creek.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (15 of 40 samples - 37.5%) from station 1aPOH005.36, at Route 1.

Pohick Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.78**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A16R-01-BEN** **Pohick Creek**

Location: Begins at the confluence with Middle Run and continues downstream to the confluence with South Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2011 at station 1aPOH008.54, upstream of Route 641, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Pohick Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.61**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A16R-02-BAC** **Pohick Creek**

Location: Begins at the confluence with Sideburn Branch and continues downstream until the confluence with South Run.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (6 of 12 samples - 50.0%) from station 1aPOH015.09, at Route 645; excursions (7 of 23 samples - 30.4%)from station 1aPOH013.12, at Route 644; and excursions (7 of 12 samples - 58.3%) from station 1APOH007.65, at Route 641.

Pohick Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.79**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A16R-03-BAC** **South Run**

Location: Begins at the confluence with an unnamed tributary, at rivermile 3.6, and continues downstream to the confluence with Pohick Creek.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (4 of 12 samples - 33.3%) from station 1ASOH001.71, at Route 6070.

South Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.16**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A16R-04-BAC** **Middle Run**

Location: Begins at the confluence of Cherry Run and Peyton Run, creating Middle Run, and continues downstream to the confluence with Pohick Creek.

City / County: Fairfax City Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (6 of 11 samples - 54.5%) from station 1AMID000.75, at Route 640.

Middle Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.85**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A18R-02-BEN** **Lucky Run**

Location: Begins at the headwaters of Lucky Run and continues downstream until the confluence with Cedar Run.

City / County: Prince William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2008 Assessment: Two biological monitoring events in 2001 at station 1aLUC000.95, off Route 611, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Lucky Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.48**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A21R-01-BEN** **Catharpin Creek**

Location: Begins at the Route 601 crossing and continues downstream until the confluence with Little Bull Run.

City / County: Prince William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2009 at station 1aCAA001.18, at Route 676, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Catharpin Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.80**

Sources:

Source Unknown

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Potomac and Shenandoah River Basins

***Cause Group Code:* A21R-01-PCB** **Bull Run**

Location: Includes Bull Run near Manassas Park from the I-66 bridge downstream approximately fourteen miles to the Route 612 (Yates Ford Road) bridge.

City / County: Fairfax Co. Manassas Park City Prince William Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04 and modified 07/27/05, limits consumption of carp and channel catfish to no more than two meals per month.

Bull Run **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**63.12**	**11.53**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A21R-02-BEN** **Bull Run**

Location: Begins at the confluence with Chestnut Lick, approximately 0.7 rivermile upstream from Route 705, and continues downstream until the confluence with an unnamed tributary to Bull Run, at rivermile 22.34.

City / County: Loudoun Co. Prince William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2014 at station 1ABUL025.94, at Route 705, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Bull Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.66**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A22R-01-BEN** **Flatlick Branch**

Location: Begins at the confluence with Frog Branch and continues downstream until the confluence with Cub Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2008 Assessment: Two biological monitoring events in 2001 at station 1aFLL000.62 (downstream of Route 620) resulted in a VSCI score indicating an impaired macroinvertebrate community.

Flatlick Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.22**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A22R-02-BEN** **Big Rocky Run**

Location: Begins at the confluence with an unnamed tributary to Big Rocky Run, at approximately rivermile 4.03, and continues downstream until the confluence with Cub Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007, at station 1aBIR003.02 (Route 657), resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Big Rocky Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.34**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A22R-03-BEN** **Cub Run**

Location: Begins at the confluence with an unnamed tributary to Cub Run at rivermile 13.23 and continues downstream until the confluence with Bull Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2009 and one biological monitoring event in 2010 at station 1aCUB004.63, upstream of Route 28, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Cub Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**13.23**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A22R-04-BEN** **Elklick Run**

Location: Begins at the confluence with an unnamed tributary to Elklick Run, approximately 0.65 rivermile downstream from the Route 620 crossing, and continues downstream until the confluence with Cub Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2012 at station 1aELC001.39, at Route 609, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Elklick Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.27**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A23R-03-BEN** **Little Rocky Run**

Location: Begins at the confluence with Willow Springs and continues downstream until the confluence with Bull Run.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007, at station 1aLIP001.00, at Route 658 (Compton Road), resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Little Rocky Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.23**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A24R-01-BAC** **Wolf Run**

Location: Begins at the confluence with Maple Branch and continues downstream until the end of the free-flowing waters at the inundated waters of the Occoquan Reservoir.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (5 of 23 samples - 21.7%) from station 1aWOL001.26, at Route 643.

Wolf Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.50**

Sources:

Source Unknown

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Potomac and Shenandoah River Basins

***Cause Group Code:* A24R-02-BAC** **Sandy Run**

Location: Begins at the headwaters of Sandy Run and continues downstream until the end of the free-flowing waters at the inundated waters of the Occoquan Reservoir.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (3 of 12 samples - 25.0%) from station 1aSAD001.76, at Cathedral Forest Drive.

Sandy Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.08**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A24R-03-BAC** **Hooes Run**

Location: Begins at the outlet from Lake Omiscol and continues downstream until the beginning of the inundated waters of the Occoquan Reservoir.

City / County: Prince William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (6 of 20 samples - 30.0%) from station 1aHOO000.34, at Route 641 (Old Bridge Road).

Hooes Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**0.98**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A25E-02-BAC** **Neabsco Creek**

Location: Segment includes the tidal waters of Neabsco Bay, beginning at rivermile 1.37, downstream until the confluence with Occoquan Bay.

City / County: Prince William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (6 of 51 samples - 11.8%) from station 1aNEA000.57.

Neabsco Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:	**0.545**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A25E-03-BAC** **Occoquan River**

Location: Extends from the end of the free-flowing waters to 0.5 rivermile downstream of monitoring station 1aOCC006.64.

City / County: Fairfax Co. Prince William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (3 of 18 samples - 16.7%) combined from stations 1aOCC006.47, upstream of the Occoquan Regional Park boat ramp, and 1aOCC006.71, at the Route 123 (Gordon Boulevard).

Occoquan River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:	**0.074**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A25E-04-BAC** **Marumsco Creek**

Location: Includes all the tidal waters of Marumsco Creek from the end of the free-flowing stream to the open Occoquan Bay.

City / County: Prince William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (5 of 23 samples - 21.7%) from station 1aMAU001.16, at Featherstone Drive.

Marumsco Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:	**0.025**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A25E-04-EBEN** **Occoquan River**

Location: Extends 0.5 mile around Coastal 2000 monitoring station 1aOCC002.62.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

2008 Assessment: Coastal 2000 weight of evidence analysis, utilizing bulk chemical data, toxicity test data, and an evaluation of benthic community conditions, resulted in an impaired determination for the aquatic life use. Results from the estuarine bioassessment, from station 1aOCC002.62, were the primary factor for this determination.

Occoquan River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**0.286**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A25R-01-BEN** **Giles Run**

Location: Begins at the headwaters of Giles Run and continues downstream until the end of the free-flowing waters of Giles Run, at Massey Creek.

City / County: Fairfax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2010 at station 1aGIL003.10, at Route 642 (Lorton Road), resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Giles Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.48**

Sources:

Source Unknown

***Cause Group Code:* A25R-02-BAC** **Mills Branch**

Location: Begins at the headwaters of Mills Branch and continues downstream until the confluence with the Occoquan River.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (2 of 12 samples - 16.7%) from station 1aWLB000.06, at Occoquan Regional Park.

Mills Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.72**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A25R-03-BAC** **Giles Run**

Location: Begins at the headwaters of Giles Run and continues downstream until the end of the free-flowing waters of Giles Run, at Massey Creek.

City / County: Fairfax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (2 of 12 samples - 16.7%) from station 1aGIL000.85, at Route 1 (Jefferson Davis Highway).

Giles Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**6.48**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A25R-04-BAC** **Marumsco Creek**

Location: Begins at the confluence with an unnamed tributary to Marumsco Creek, just upstream from Easy Street, and continues downstream until the end of the free-flowing waters.

City / County: Prince William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (5 of 11 samples - 45.5%) from station 1aMAU001.67, at Route 1 (Jefferson Davis Highway).

Marumsco Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**0.53**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A25R-05-BAC** **Unnamed Tributary to Occoquan River**

Location: Begins at the headwaters of an unnamed tributary and continues downstream until the confluence with the Occoquan River.

City / County: Fairfax Co. Prince William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (4 of 12 samples - 33.3%) from station 1AXMK000.37, at Route 2100.

Unnamed Tributary to Occoquan River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.11**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A26E-01-BZOKFL Powells Creek**

Location: Extends to a 0.5 mile radius around the ACB station 1aPOW-765-ALL.

City / County: Prince William Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Benzo[k]fluoranthene / 5A

2002 Assessment: Excursions above the water quality criterion based tissue value (TV) of 5.5 ppb for benzo(k) fluoranthene in fish tissue (largemouth bass and sunfish) at station 1aPOW001.20 in 1996.

Powells Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Benzo[k]fluoranthene - Total Impaired Size by Water Type:	**0.402**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A26E-03-EBEN** **Quantico Creek**

Location: Extends to a 0.5-mile radius around station 1aQUA001.09.

City / County: Prince William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

2008 Assessment: Impairment based on the Coastal 2000 weight of evidence analysis in 2001 at station 1aQUA001.09, utilizing bulk chemical data, toxicity test data, and an evaluation of benthic community conditions. Conclusions noted that organic enrichment, as well as chemical contamination, may be responsible for the impairment. The survey revealed low diversity of benthic faunal taxa.

Quantico Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**0.419**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A26E-03-EBTOX Quantico Creek**

Location: Extends to a 0.5-mile radius around station 1aQUA001.09.

City / County: Prince William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Sediment Bioassays for Estuarine and Marine Water / 5A

2008 Assessment: Impairment based on the Coastal 2000 weight of evidence analysis in 2001 at station 1aQUA001.09, utilizing bulk chemical data, toxicity test data, and an evaluation of benthic community conditions. Conclusions noted that organic enrichment, as well as chemical contamination, may be responsible for the impairment. The acute bioassay revealed slight, yet significant, toxicity.

Quantico Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Sediment Bioassays for Estuarine and Marine Water - Total Impaired Size by Water Type:	**0.419**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A26L-01-HG** **Lake Montclair**

Location: Includes all of Lake Montclair.

City / County: Prince William Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

2012 Assessment: Excursions above the water quality criterion based fish tissue value (TV) of 300 parts per billion (ppb) for mercury in fish tissue were recorded in three species of fish (9 total samples): largemouth bass (2006), channel catfish (2006) and black crappie (2006) collected at monitoring station 1aPOW009.08.

Lake Montclair **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**103.54**	

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A26R-02-PH** **Unnamed tributary to Potomac River**

Location: Begins at the headwaters of the unnamed tributary and continues downstream until its confluence with the Potomac River

City / County: Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Excursions below the lower limit of the pH criterion range (4 of 12 samples - 33.3%) at station 1aXLF000.13, at Route 633 (Arkendale Road).

Unnamed tributary to Potomac River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**3.67**

Sources:

Source Unknown

***Cause Group Code:* A27R-01-BAC** **Aquia Creek**

Location: Begins at the confluence with Cannon Creek, approximately 0.1 rivermile downstream from Route 610, and continues downstream until Smith Lake (Aquia Reservoir).

City / County: Stafford Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (4 of 32 samples - 12.5%) at station 1aAUA014.51, at the Route 641.

Aquia Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.36**

Sources:

Source Unknown

***Cause Group Code:* A27R-01-DO** **Unnamed tributary to Aquia Creek**

Location: Begins at the headwaters of the unnamed tributary and continues downstream until its confluence with Aquia Creek.

City / County: Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Excursions below the minimum dissolved oxygen criterion (4 of 16 samples - 25.0%) at station 1aXLN-SCVDOT-ALL.

Unnamed tributary to Aquia Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.25**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A27R-02-BAC** **Aquia Creek**

Location: Begins at the headwaters of Aquia Creek and continues downstream until the confluence with Cannon Creek, approximately 0.1 rivermile downstream from Route 610.

City / County: Fauquier Co. Stafford Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (2 of 10 samples - 20.0%) from station 1aAUA023.09, at Route 644.

Aquia Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.81**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A29E-01-PH** **Potomac Creek**

Location: Segment extends from rivermile 1.91 until rivermile 1.09 along Potomac Creek and includes the lower portion of the Accokeek Creek arm of Potomac Creek, approximately 0.35 rivermile upstream.

City / County: King George Co. Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

2014 Assessment: Sufficient excursions above the upper limit of the pH criterion range were recorded at the continuous monitoring station 1aPOM-000.97-VIMS (69 of 606 observations, 11.4%).

Potomac Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:	**0.587**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A29E-02-BAC** **Fairview Beach (Potomac River)**

Location: Includes all of Fairview Beach on the Potomac River.

City / County: King George Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5R

Sufficient excursions from the geometric mean enterococci criterion (12 of 18 samples) were recorded at the Virginia Department of Health station (VA351214) at Fairview Beach. VDH issued a total of 22 new and/or continued public beach closure advisories for Fairview Beach from 2009 to 2014. These advisories were based on the results of enterococci bacteria sampling at station VA351214 at Fairview Beach.

Fairview Beach (Potomac River)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.005**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A29E-03-BAC** **Chotank Creek**

Location: Includes the tidal portion of Chotank Creek, from its headwaters until the fire road crossing inside of Caledon State Park.

City / County: King George Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

Enterococci bacteria criterion excursions (3 of 12 samples - 25.0%) at station (1aCHN002.97) at the fire road in Caledon State Park.

Chotank Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.054**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A29R-01-BEN** **Unnamed tributary to Long Branch**

Location: Begins at the headwaters of an unnamed tributary to Long Branch and continues downstream until the confluence with Long Branch, at rivermile 3.58.

City / County: Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2014 at station 1AXLB000.05 (0.05 mile upstream of confluence with Long Branch) resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Unnamed tributary to Long Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.30**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A29R-03-DO** **Potomac Run**

Location: Begins at the headwaters of Potomac Run and continues downstream until the confluence with Long Branch.

City / County: Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Excursions below the minimum dissolved oxygen criterion (2 of 18 samples - 11.1%) were recorded at station 1aPOR000.40, at Route 648.

Potomac Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.59**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

Cause Group Code: **A30R-01-DO** **Pepper Mill Creek**

Location: Begins at the headwaters of Pepper Mill Creek and continues downstream until its confluence with Upper Machodoc Creek.

City / County: King George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

2014 Assessment: Excursions below the minimum dissolved oxygen criterion (2 of 14 samples - 14.3%) at station 1aPEP001.58, at Route 206.

Pepper Mill Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**8.66**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A30R-01-PH** **Pepper Mill Creek**

Location: Begins at the headwaters of Pepper Mill Creek and continues downstream until its confluence with Upper Machodoc Creek.

City / County: King George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

2014 Assessment: Excursions below the lower limit of the pH criterion range (3 of 14 samples - 21.4%) at station 1aPEP001.58, at Route 206.

Pepper Mill Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**8.66**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A30R-02-DO** **Gambo Creek**

Location: Begins at the confluence with an unnamed tributary to Gambo Creek, approximately 0.35 rivermile upstream from Route 645, and continues downstream until the ponded waters on Gambo Creek.

City / County: King George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Excursions below the minimum dissolved oxygen criterion (4 of 5 samples - 80.0%) at station 1AGAM003.83, at Route 635.

Gambo Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.50**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A30R-02-PH** **Gambo Creek**

Location: Begins at the confluence with an unnamed tributary to Gambo Creek, approximately 0.35 rivermile upstream from Route 645, and continues downstream until the ponded waters on Gambo Creek.

City / County: King George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Excursions below the lower limit of the pH criterion range (2 of 5 samples - 40.0%) at station 1aGAM003.83, at Route 635.
Excursions below the lower limit of the pH criterion range (3 of 9 samples - 33.3%) at station 1aGAM003.50, at Route 301.

Gambo Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:	**0.177**		**0.50**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A31E-01-BAC** **Rosier Creek**

Location: The portion of VDH Shellfish Condemnation 001-088A 9/17/2014 which was not included in the Rosier Creek Shellfish TMDL.

City / County: Westmoreland Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

During the 2010 cycle, the portion of Rosier Creek around station 1AROS001.05, which is located off of the Route 205 boat ramp, was assessed as impaired of the Recreation Use due to an enterococci violation rate of 3/12.

Rosier Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.274**		

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A31E-11-BAC** **Bridges Creek**

Location: The tidal portion of Bridges Creek

City / County: Westmoreland Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

Bridges Creek was assessed as not supporting of the Recreation Use support goal during the 2004 cycle based on a fecal coliform violation rate of 2/2 at 01660860, a USGS station located near the mouth of Bridges Creek.

The impairment converted to enterococci during the 2012 cycle based on violations at 1ABRG000.15.

The enterococci exceedance rate was 26/35 during the 2016 cycle.

Bridges Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.182**		

Sources:

Source Unknown

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Potomac and Shenandoah River Basins

***Cause Group Code:* A31R-01-BAC** **Pine Hill Creek Watershed**

Location: Pine Hill Creek watershed from its headwaters to tidal limit at Rosier Creek.

City / County: King George Co. Westmoreland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, the Pine Hill Creek watershed was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 1APIN007.24, which is located at Route 301.

Note: monitoring at station 1APIN000.57 is acceptable (1/12).

Pine Hill Creek Watershed **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**34.91**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A32E-09-EBEN** **Lower Machodoc Creek**

Location: One-half mile upstream and downstream of monitoring station 1ALOW002.18

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

During the 2016 cycle, a portion of Lower Machodoc Creek was assessed as impaired of the Aquatic Life Use. Estuarine probabilistic monitoring at station 1ALOW002.18 in 2013 indicated a high potential for chronic benthic alteration due to PAHs in sediment.

Lower Machodoc Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**0.687**		

Sources:

Contaminated Sediments Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A32R-01-DO** **Thompson Branch**

Location: Thompson Branch from its headwaters to the tidal limit.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Thompson Branch was initially assessed as not supporting the Aquatic Life Use during the 2006 cycle based on dissolved oxygen exceedances at Route 626 (1ATHP001.15), as well as DO exceedances at special study stations in the creek (1/1).

During the 2014 cycle, the segment remained impaired with a DO violation rate of 2/12.

Thompson Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.60**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A32R-01-PH** **Thompson Branch**

Location: Thompson Branch from its headwaters to the tidal limit.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Thompson Branch was initially assessed as not supporting the Aquatic Life Use during the 2006 cycle based on pH exceedances at Route 626 (1ATHP001.15), as well as pH exceedances at special study stations in the creek (1/1).

During the 2014 cycle, the segment remained impaired with a pH violation rate of 10/12.

Thompson Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.60**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A32R-03-PH** **XLK - Nomini Creek, UT**

Location: The unnamed tributary in its entirety.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2010 cycle, the stream was assessed as not supporting the Aquatic Life Use due to a pH exceedance rate of 2/2 at probabilistic monitoring station 1AXLK000.04.

The impairment was confirmed during the 2016 cycle with an exceedance rate of 2/11.

XLK - Nomini Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.45**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A32R-05-PH** **Tavern Run**

Location: Tavern Run from its headwaters to the confluence with Newtons Mill Run.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Tavern Run was impaired of the Aquatic Life Use due to pH violations at 1ATAE002.50, which is located at the Route 615 bridge.

Additional monitoring occurred in the 2014 cycle; the impairment was confirmed with exceedance rates of 3/24 at 1ATAE002.50 and 3/12 at 1ATAE003.85.

Tavern Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**3.27**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A32R-06-PH** **Nontidal Nomini Creek Tributaries**

Location: Multiple tributaries throughout the upper Nomini Creek watershed - including Nomini Creek, Marshall Creek, Buena Vista Branch, Oldham Creek, Newtons Mill Run, Antioch Branch, Templeman Run.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, monitoring occurred throughout the upper Nomini Creek watershed. Multiple tributaries indicated low pH - including Nomini Creek, Marshall Creek, Buena Vista Branch, Oldham Creek, Newtons Mill Run, Antioch Branch, and Templeman Run.

4/5 at 1AANT001.31
3/12 at 1ABUV000.15
2/12 at 1AMAR000.62
2/12 at 1ANET001.77
2/12 at 1AOLD000.70
3/12 at 1ATEM003.54
2/12 at 1ANOM012.38

Note; Nomini Creek, UT (XLK) and Tavern Run were already listed for pH (see A32R-03-PH and A32R-05-PH).

Additional monitoring was conducted during the 2016 cycle at 1ANOM012.38. The pH exceedance rate was acceptable 2/23 and Nomini Creek will be partially delisted.

Nontidal Nomini Creek Tributaries **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**16.36**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A32R-07-DO** **Marshall Creek**

Location: Marshall Creek from its headwaters to its mouth at Templeman Run.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, Marshall Creek was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/12 at 1AMAR000.62, which is located at the Route 600 bridge.

Marshall Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.88**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A32R-08-DO** **Barnes Creek**

Location: The nontidal portion of Barnes Creek.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, Barnes Creek was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 3/12 at 1ABAN001.34, which is located at Route 649.

Barnes Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.94**

Sources:

Dam or Impoundment	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

Cause Group Code: **A32R-08-PH** **Barnes Creek**

Location: The nontidal portion of Barnes Creek.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, Barnes Creek was impaired of the Aquatic Life Use due to a pH exceedance rate of 5/12 at 1ABAN001.34, which is located at Route 649.

Barnes Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**1.94**

Sources:

Dam or Impoundment	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A32R-09-DO** **Mount Pleasant Creek**

Location: The nontidal portion of Mount Pleasant Creek.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, Mount Pleasant Creek was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/11 at 1AMBP001.00, which is located at Route 612.

Mount Pleasant Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.26**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A32R-09-PH** **Mount Pleasant Creek**

Location: The nontidal portion of Mount Pleasant Creek.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, Mount Pleasant Creek was impaired of the Aquatic Life Use due to a pH exceedance rate of 3/11 at 1AMBP001.00, which is located at Route 612.

Mount Pleasant Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.26**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A33E-04-BAC** **Lodge Creek**

Location: Lodge Creek from its tidal limit to the downstream extent of VDH-DSS condemnation 007-028F, 5/12/1997

City / County: Northumberland Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

Lodge Creek from its tidal limit downstream to the end of VDH-DSS condemnation 007-028F, 7/21/2004 has been assessed as not supporting the Recreation Use due to enterococci exceedances at 1ALOG001.20, which is located at the end of Route 712. The segment was expanded during the 2008 cycle to align the boundary with the 5/12/1997 impairment. During the 2016 cycle, the violation rate was 4/35.

The bacteria TMDL for shellfish impairments in the Yeocomico River watershed was approved by the EPA on 6/8/2006. Section 028F was addressed in the report. However, the Recreation Use impairment cannot be nested because the Callao WWTP was not addressed in the TMDL.

Lodge Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.301**		

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* A33L-01-DO** **Hampton Hall, Gardy Millpond**

Location: Hampton Hall, Gardy Millpond

City / County: Northumberland Co. Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2016 cycle an error was discovered from the 2014 cycle. The temperature impairment from 2014 cycle was actually a DO impairment. the violation rate for the DO impairment was 13/69 at station 1AHAM003.08. No new data has been collected since the 2014 cycle.

Hampton Hall, Gardy Millpond **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**45.86**	

Sources:

Natural Sources

Potomac and Shenandoah River Basins

Cause Group Code: **A33R-02-BAC** **Lodge Creek**

Location: The free flowing portion of Lodge Creek.

City / County: Northumberland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, Lodge Creek was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 3/21 at 1ALOG003.30, which is located at the Route 360 bridge. Monitoring at station 1ALOG003.45 was acceptable (0/3).

Lodge Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.44**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A33R-02-DO** **Lodge Creek**

Location: The free flowing portion of Lodge Creek.

City / County: Northumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Lodge Creek was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 1ALOG003.30, which is located at the Route 360 bridge. The exceedance rate was 5/22 during the 2014 cycle. Monitoring at station 1ALOG003.45 was acceptable (0/3).

Lodge Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.44**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Non-Point Source

Potomac and Shenandoah River Basins

***Cause Group Code:* A33R-03-DO** **Gardner Creek**

Location: The free flowing portion of Gardner Creek.

City / County: Northumberland Co. Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Gardner Creek was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 1AGAD001.73, which is located at 3352 Coles Point Road. During the 2012 cycle, the violation rate was 4/11 at 1AGAD001.73.

Additional monitoring has been conducted in the 2016 cycle at 1AGAD002.54; the dissolved oxygen exceedance rate was 3/11.

Gardner Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.40**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

***Cause Group Code:* A33R-03-PH** **Gardner Creek**

Location: The free flowing portion of Gardner Creek.

City / County: Northumberland Co. Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2010 cycle, Gardner Creek was assessed as not supporting of the Aquatic Life Use due to a pH violation rate of 5/5 at 1AGAD001.73, which is located at 3352 Coles Point Road as well as a pH violation rate of 1/1 at 1AGAD002.54, which is located at the Route 612 bridge.

During the 2012 cycle, the violation rates increased to 11/11 and 7/7, respectively.

Additional monitoring has been conducted in the 2016 cycle at 1AGAD002.54; the pH exceedance rate was 11/11.

Gardner Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**1.40**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A33R-04-DO** **XMB - Hampton Hall Creek, UT**

Location: Headwaters to the backwater of Gardys Millpond.

City / County: Northumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, UT XMB was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/12 at 1AXMB000.88, which is located at Route 618.

XMB - Hampton Hall Creek, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.48**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A33R-04-PH** **XMB - Hampton Hall Creek, UT**

Location: Headwaters to the backwater of Gardys Millpond.

City / County: Northumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, UT XMB was impaired of the Aquatic Life Use due to a pH exceedance rate of 2/12 at 1AXMB000.88, which is located at Route 618.

XMB - Hampton Hall Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**3.48**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A33R-05-PH** **XLZ - Hampton Hall Creek, UT**

Location: Headwaters to the backwater of Gardys Millpond.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, UT XLZ was impaired of the Aquatic Life Use due to a pH exceedance rate of 2/12 at 1AXLZ002.04, which is located at Route 601.

XLZ - Hampton Hall Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**3.13**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A33R-07-BAC** **XMC - Lodge Creek, UT**

Location: Headwaters to mouth at Lodge Creek.

City / County: Northumberland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, UT XMC was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 3/12 at 1AXMC000.92, which is located at the Route 768 bridge.

XMC - Lodge Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**1.69**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* A34R-02-PH** **Little Wicomico River**

Location: The nontidal portion of Little Wicomico River.

City / County: Northumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The nontidal portion of Little Wicomico River was initially considered not supporting the Aquatic Life Use during the 2006 cycle due to a pH exceedance rate of 2/11 at 1ALIS007.20, located at the Route 646 bridge. During the 2008 cycle, the exceedance rate increased to 3/13. No additional data has been collected.

Little Wicomico River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.33**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* A34R-03-DO** **XLL - Coan Mill Stream, UT**

Location: The unnamed tributary in its entirety.

City / County: Northumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, the tributary was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 1AXLL000.92, which is located west of Route 301. The exceedance rate was 2/12 during the 2012 cycle.

XLL - Coan Mill Stream, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.10**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B02R-01-BAC** **West Strait Creek**

Location: West Strait Creek from the headwaters downstream to the Monterey STP discharge. (Start Mile: 4.84 End Mile: 3.97 Total Impaired Size: .87 miles)

City / County: Highland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station 1AWSC003.79 (3 violations of 9 samples for e-coli ion 2014, no new data in 2016). Initial Listing Date: 2010

West Strait Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**0.87**

Sources:

Agriculture	Non-Point Source	Unspecified Domestic Waste	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B02R-06-BAC** **Strait Creek**

Location: Strait Creek from the headwaters downstream to its confluence with West Strait Creek. (Start Mile: 6.06 End Mile: 3.29 Total Impaired Size: 2.77 Miles) This segment was shortened in 2016 with delist of downstream segments)

City / County: Highland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the violations of the e-coli bacteria WQS at stations 1ASTT000.02 (1 violations of 12 samples for e-coli and 1ASTT004.26 (2 violations of 6 samples for e-coli in 2014 No new data in 2016). Initial Listing Date: 2006

Strait Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.77**

Sources:

Agriculture	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B03R-03-BAC** **South Fork South Branch Potomac River**

Location: South Fork South Branch Potomac River from the headwaters downstream to the VA/WVA State Line. (Start Mile: 2.71 End Mile: 0.00 Total Impaired Size: 2.71 Miles

City / County: Highland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1ASFP002.56 (2 violations of 12 samples for e-coli). Initial Listing Date: 2012.

South Fork South Branch Potomac River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.71**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B04R-01-BAC** **Middle Fork Sleepy Creek**

Location: Middle Fork Sleepy Creek from the headwaters downstream to the VA/WVA state line. (Start Mile: 2.93 End Mile: 0.00 Total Impaired Size: 2.93 Miles)

City / County: Frederick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 1AMIS000.33 (3 violations of 11 samples for e-coli). Initial Listing Date: 2014

Middle Fork Sleepy Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.93**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Potomac and Shenandoah River Basins

***Cause Group Code:* B04R-02-BAC** **Sleepy Creek**

Location: Sleepy Creek from the headwaters downstream to the VA/WVA state line. (Start Mile: 7.72 End Mile: 0.00 Total Impaired Size: 7.72 Miles)

City / County: Frederick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 1ASLP034.20 (2 violations of 12 samples for e-coli) Initial Listing Date: 2016.

Sleepy Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.72**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B05R-01-BAC** **Back Creek**

Location: Back Creek from the headwaters downstream to its confluence with Isaacs Creek. (Start Mile: 25.34 End Mile: 7.73 Total Impaired Size: 17.61 Miles)

City / County: Frederick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1ABAR041.11 (3 violations of 12 samples for e-coli). Initial Listing Date: 2010.

Back Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**17.61**

Sources:

Non-Point Source	Wildlife Other than Waterfowl

Potomac and Shenandoah River Basins

***Cause Group Code:* B05R-02-BAC** **Little Isaacs Creek**

Location: Little Isaacs Creek from the Timber Ridge School STP downstream (including an unnamed tributary originating near Reynolds Store) to its confluence with Isaacs Creek. (Start Mile: 9.93 End Mile: 0.00 Total Impaired Size: 9.93 Miles)

City / County: Frederick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station 1ALIG001.84 (No new data in 2016, last data available was 2012). Initial Listing Date: 2008

Little Isaacs Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.93**

Sources:

Agriculture	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B05R-03-BAC** **Isaacs Creek**

Location: Isaacs Creek from its confluence with Little Isaacs Creek downstream to its confluence with Back Creek. (Start Mile: 2.84 End Mile: 0.00 Total Impaired Size: 2.84 Miles)

City / County: Frederick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station 1AISC001.77 (2 violations of 11 samples for e-coli) Initial Listing Date: 2016.

Isaacs Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.84**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B12R-01-PCB** **Lewis Creek**

Location: Lewis Creek south of the Staunton City boundary near the power line crossing downstream to its confluence with Middle River. (Start Mile: 10.06 End Mile: 0.00 Total Impaired Size: 10.06 Miles)

City / County: Augusta Co. Staunton City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

This segment is impaired due to violations of Fish Tissue and Sediment screening values at stations: 1BLEW005.24 (01 Hg, HMW PAH, PHH, FTH, Pry, ATH Ben, Chrys, Chl 01 Fish PCB 2 sp 2005 Fish PCB) and 1BLEW006.64 (1 samples exceeded the PEC of 128 for Lead (172)) Data outside of data window, however, status carried forward. Initial Listing Date: 2004.

Lewis Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**10.06**

Sources:

Inappropriate Waste Disposal	Municipal (Urbanized High Density Area)

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B14R-03-TEMP** **Long Meadow Run**

Location: Long Meadow Run and tributary from the headwaters downstream to its confluence with Christians Creek. (Start Mile: 11.06 End Mile: 0.00 Total Impaired Size: 11.06 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

This segment is impaired due to violations of the natural trout temperature WQS (20 C) at station: 1BMDW000.18 (4 violations of 12 samples for temperature in 2012), no new data in 2016. Initial Listing Date: 2006. The aquatic life use is impaired due to violations of the temperature standard and is Category 5C due to suspected natural conditions.

Long Meadow Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**11.06**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* B16L-01-TEMP** **Elkhorn Lake**

Location: Elkhorn Lake (Total Impaired Size: 52.66 Acres)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This lake is impaired due to violations of the temperature WQS at station: 1BNTH045.36 (37 violations of 139 samples for temperature). Initial Listing Date: 2010.

Elkhorn Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:		**52.66**	

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* B16R-01-PH** **North River**

Location: North River from its confluence with Little River downstream to its confluence with Freemason Run. This impairment length was shortened in 2010 due to upstream stations returning to fully supporting status. Original length was 21.80 Miles. (Start Mile: 36.42 End Mile: 31.96 Total Impaired Size: 4.46 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment remains impaired due to violations of the pH WQS at station: 1BNTH036.96 (1 violations of 3 samples for pH 3 of 9 in 2010, no new data in 2016). Initial Listing Date: 2002

North River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.46**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B18R-01-BEN** **Wolf Run**

Location: Wolf Run from the headwaters downstream to its confluence with Briery Branch. (Start Mile: 3.31 End Mile: 0.00 Total Impaired Size: 3.31 Miles)

City / County: Augusta Co. Rockingham Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: USFS 2019 and USFS 2042. No new data available for the 2016 assessment window, this impairment carries over to this cycle. Initial Listing Date: 2002.

Wolf Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.29**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B18R-01-PH** **Wolf Run**

Location: Wolf Run from the headwaters downstream to its confluence with Briery Branch. (Start Mile: 3.31 End Mile: 0.00 Total Impaired Size: 3.31 Miles)

City / County: Augusta Co. Rockingham Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA VT56 (12 violations of 12 samples for pH in 2010, no new data available for 2016. Impairment carries forward.). Initial Listing Date: 2006.

Wolf Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.29**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B18R-02-PH** **Briery Branch**

Location: Briery Branch from the headwaters downstream to its confluence with Hone Quarry Run. (Start Mile: 14.86 End Mile: 7.67 Total Impaired Size: 7.19 Miles)

City / County: Augusta Co. Rockingham Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

This segment remained impaired due to previous violations of the pH WQS at station: 1BBRY006.94. This assessment unit had 2 pH minimum standard violations out of 9 samples for the 2006 assessment window at station 1BBRY006.94. No additional data is available for the 2016 assessment cycle. In the 2002 assessment window, this segment was listed as impaired and carries forward to this cycle. The Category 5C - Impaired - No TMDL due to natural conditions carries from the 2006 assessment. Initial Listing Date: 2002.

Briery Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**7.18**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B18R-06-PH** **Rocky Run**

Location: Rocky Run from the headwaters downstream to its confluence with Briery Branch. (Start Mile: 1.94 End Mile: 0.00 Total Impaired Size: 1.94 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA RH33 (12 violations of 12 samples for pH in 2010, no new data for 2016, impairment carries forward). Initial Listing Date: 2006.

Rocky Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.93**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B18R-07-PH** **Union Springs Run**

Location: Union Springs Run from the headwaters downstream to its confluence with Red Banks Run. (Start Mile: 3.74 End Mile: 0.00 Total Impaired Size: 3.74 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA RH34 (12 violations of 12 samples for pH in 2010, no new data for 2016, impairment carries forward). Initial Listing Date: 2006.

Union Springs Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**3.73**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B20L-01-TEMP** **Switzer Lake**

Location: Switzer Lake (Total Impaired Size: 99.49 Acres)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This lake is impaired due to violations of the temperature WQS at station: 1BSKD003.18 (50 violations of 335 samples for temperature). Initial Listing Date: 2006.

Switzer Lake	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Temperature, water - Total Impaired Size by Water Type:		**100.81**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B20R-01-PH** **Dry River**

Location: Dry River from its confluence with Little Laurel Run downstream to its confluence with Blacks Run. (Start Mile: 20.83 End Mile: 10.65 Total Impaired Size: 10.18 Miles) This segment was shortened in 2014 due to a downstream assessment unit returning for fully supporting status.

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: 1BDUR017.26 (2 violations of 12 samples for pH). Initial Listing Date: 2002.

Dry River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**10.18**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B30R-02-PH** **Loves Run**

Location: Loves Run from the headwaters downstream to its confluence with the South River. (Start Mile: 5.64 End Mile: 0.00 Total Impaired Size: 5.64 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA AU14 (12 violations of 12 samples for pH) This data is now outside the assessment data window, however the impairment must carry forward. Level II data at this site indicates continued impairment (1 violation of 1 sample for pH in 2016). Initial Listing Date: 2006.

Loves Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**5.63**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B30R-03-BEN** **Pine Run**

Location: Pine Run from the headwaters downstream to its confluence with the South River. (Start Mile: 20.38 End Mile: 0.00 Total Impaired Size: 20.38 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 1BPNE001.60 (Impaired for VSCI). Initial Listing Date: 2014

Pine Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**20.38**

Sources:

Agriculture	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B31L-01-PH** **Coles Run Reservoir**

Location: Coles Run Reservoir (Total Impaired Size: 10.58 Acres)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This lake is impaired due to violations of the pH WQS at station: 1BCLS003.60 (88 violations of 88 samples for pH). Initial Listing Date: 2008.

Coles Run Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:		**10.84**	

Sources:

Atmospheric Deposition - Acidity

Potomac and Shenandoah River Basins

***Cause Group Code:* B31R-01-BAC** **Back Creek**

Location: Back Creek from the headwaters (including South Fork Back Creek) downstream to the confluence with South River. (Start Mile: 12.87 End Mile 0.00 Total Impaired Size 12.87 Miles)

City / County: Augusta Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station 1BBCK000.78. (2 violations of 9 samples for e-coli). Initial Listing Date: 2012.

Back Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**12.85**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B31R-01-BEN** **Back Creek**

Location: Back Creek from the headwaters (including South Fork Back Creek) downstream to the confluence with South River. (Start Mile: 12.87 End Mile 0.00 Total Impaired Size 12.87 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station 1BBCK000.78 (Impaired for VSCI). Initial Listing Date 2002.

Back Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**12.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B31R-02-BEN** **Mills Creek**

Location: Mills Creek from the headwaters downstream to its confluence with Back Creek. (Start Mile: 9.14 End Mile: 0.00 Total Impaired Size: 9.14 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at USFS Station: 5116 (Impaired for VSCI) and 1BMLS002.37 (Impaired for VSCI). Initial Listing Date: 2002.

Mills Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.12**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B31R-04-PH** **Coles Run**

Location: Coles Run from the headwaters downstream to its confluence with South River. (Start Mile: 6.89 End Mile: 0.00 Total Impaired Size: 6.89 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA AU16 (12 violations of 12 samples for pH in 2010, 1 violation of 1 samples in 2016 with Level II data indicate continued impairment, the impairment carries forward). Initial Listing Date: 2006.

Coles Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**6.88**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B31R-05-PH** **Johns Run**

Location: Johns Run from the headwaters downstream its confluence with South River. (Start Mile: 5.46 End Mile: 0.00 Total Impaired Size: 5.46 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA AU15 (12 violations of 12 samples for pH in 2010, 1 violation of 1 samples in 2016 with Level II data indicate continued impairment, the impairment carries forward. Initial Listing Date: 2006.

Johns Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**5.45**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B31R-06-PH** **Kennedy Creek**

Location: Kennedy Creek and tributaries from the headwaters downstream to its confluence with South River. (Start Mile: 15.48 End Mile: 0.00 Total Impaired Size: 15.48 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA VT39 (12 violations of 12 samples for pH in 2010, 14 violations of 14 samples in 2016 with Level II data indicate continued impairment, the impairment carries forward). Initial Listing Date: 2006.

Kennedy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**15.47**

Sources:

Atmospheric Deposition - Acidity

Potomac and Shenandoah River Basins

***Cause Group Code:* B31R-07-PH** **Orebank Creek**

Location: Orebank Creek from the headwaters downstream to its confluence with Back Creek. (Start Mile: 3.56 End Mile: 0.00 Total Impaired Size: 3.56 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA OB01 (12 violations of 12 samples for pH in 2010, no new data are available in 2014; AU35-UVA (1 violation of 1 sample Level II data indicate continued impairment, the impairment carries forward). Initial Listing Date: 2006.

Orebank Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.55**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B32R-02-PCB** **South River**

Location: South River from its confluence with Stull Run downstream to its confluence with North River. (Start Mile: 5.38 End Mile: 0.00 Total Impaired Size: 5.38 Miles)

City / County: Augusta Co. Rockingham Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

This segment is impaired due to the presence of PCB's in fish tissue at station: 1BSTH000.19 (2 samples of PCB's (Carp and Redhorse Sucker (2005). Initial Listing Date: 2008.

South River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**5.37**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B32R-03-PH** **Paine Run**

Location: Paine Run from the headwaters downstream to its confluence with South River. (Start Mile: 6.75 End Mile: 0.00 Total Impaired Size: 6.75 Miles)

City / County: Augusta Co. Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at stations: UVA PAIN (11 violations of 12 samples for pH) (This data is now outside the assessment data window, however 313 violations of 313 samples for pH in 2016 Level II data indicate continued impairment and the impairment carries forward to 2016). Initial Listing Date: 2004.

Paine Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**6.73**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B32R-04-PH** **Meadow Run**

Location: Meadow Run from the headwaters downstream its confluence with South River. (Start Mile: 8.82 End Mile: 0.00 Total Impaired Size: 8.82 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA VT36 (12 violations of 12 samples for pH in 2010 cycle, 15 violations of 15 samples in 2016 with Level II data indicates continues impairment, the impairment carries forward to 2016). Initial Listing Date: 2004.

Meadow Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**8.82**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B33R-02-PH** **Deep Run**

Location: Deep Run from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 4.49 End Mile: 0.00 Total Impaired Size: 4.49 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA DR01 (12 violations of 12 samples for pH) (This data is now outside the assessment data window, Level II data in 2016 are 102 violations of 102 samples indicating continued impairment and the impairment carries forward to 2016. Initial Listing Date: 2004.

Deep Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life	pH - Total Impaired Size by Water Type:			**4.49**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B33R-03-PH** **Lower Lewis Run**

Location: Lower Lewis Run from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 3.94 End Mile: 0.00 Total Impaired Size: 3.94 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA RH47 (12 violations of 12 samples for pH) (This data is now outside the assessment data window, Level II data in 2016 are 1 violation of 1 sample indicating continued impairment and the impairment carries forward to 2016. Initial Listing Date: 2006.

Lower Lewis Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.93**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B35R-01-BAC** **Boone Run**

Location: Boone Run and tributaries from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 13.82 End Mile: 0.00 Total Impaired Size: 13.82 Miles)

City / County: Rockingham Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

This segment remains impaired for recreational use due to violations of the e-coli bacteria WQS at station: 1BBON000.60 (22 violations of 47 samples for e-coli) and 1BBON001.46 (10 violations of 23 samples for e-coli). Initial Listing Date: 2002.

Boone Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**13.81**

Boone Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**13.81**

Sources:

Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B35R-02-BAC** **Quail Run**

Location: Quail Run from the headwaters downstream to its confluence with Boone Run. (Start Mile: 6.60 End Mile: 0.00 Total Impaired Size: 6.60 Miles)

City / County: Rockingham Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at stations: 1BQAL004.30 (4 violations of 12 samples for e-coli) and 1BQAL005.29 (12 violations of 59 samples for e-coli). Initial Listing Date: 2004 (lengthened 2010).

Quail Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.58**

Quail Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**5.12**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Potomac and Shenandoah River Basins

***Cause Group Code:* B35R-03-BEN** **Quail Run**

Location: Quail Run from the headwaters downstream to the Massanutten STP discharge. (Start Mile: 6.60 End Mile: 5.14 Total Impaired Size: 1.46 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5C

This segment is impaired due to violations of the General Standard for Benthics at station: 1BQAL005.04 (Impaired for VSCI) and 1BQAL005.09 (Impaired for VSCI). Initial Listing Date: 2002.

Quail Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.46**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Potomac and Shenandoah River Basins

***Cause Group Code:* B35R-04-PH** **Two Mile Run**

Location: Two Mile Run from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 5.06 End Mile: 0.00 Total Impaired Size: 5.06 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA VT53 (12 violations of 12 samples for pH) (This data is now outside the assessment data window, however 15 violations of 15 samples were observed with Level II data and indicate continued impairment and the impairment will carry forward to 2016). Initial Listing Date: 2006.

Two Mile Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**5.05**

Sources:

Atmospheric Deposition - Acidity

Potomac and Shenandoah River Basins

***Cause Group Code:* B35R-05-PH** **One Mile Run**

Location: One Mile Run from the headwaters downstream to its confluence with the South Fork Shenandoah River (Start Mile: 9.17 End Mile: 0.00, Total Impaired Size: 9.17 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA RH52 (6 violations of 6 samples for pH) This data is now outside the assessment window for 2016, however Level II data in 2016 of 1 violation of 1 sample indicate continued impairment and the impairment carries forward to 2016. Initial Listing Date: 2010

One Mile Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**9.16**

Sources:

Atmospheric Deposition - Acidity

Potomac and Shenandoah River Basins

***Cause Group Code:* B37R-01-PCB** **South Fork Shenandoah River**

Location: South Fork Shenandoah River from its confluence with Naked Creek downstream to its confluence with Stony Creek just above the Route 340 bridge at Alma. (Start Mile: 78.23 End Mile: 59.46 Total Impaired Size: 18.77)

City / County: Page Co. Rockingham Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

This segment is impaired due to violations of the fish tissues screening value for PCB at stations: 1BSSF063.17 (2 samples of PCB in Lmouth Bass & Redbreast Sunfish) and 1BSSF078.24 (3 samples of PCB in White Sucker, Redbreast Sunfish & Smouth Bass). Initial Listing Date: 2010

South Fork Shenandoah River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption				
	PCB in Fish Tissue - Total Impaired Size by Water Type:			**19.12**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B37R-02-BAC** **Line Run**

Location: Line Run from the headwaters downstream to its confluence with Honey Run. (Start Mile: 4.94 End Mile: 0.00 Total Impaired Size: 4.94 Miles)

City / County: Page Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BLIN001.60 (4 violations of 36 samples for e-coli in 2010, 2 of 33 in 2012, 1 of 24 in 2014, no data in 2016) Segment remains impaired in 2016. Initial Listing Date: 2006.

Line Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.93**

Sources:

Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B37R-03-BAC** **Honey Run**

Location: Honey Run from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 5.11 End Mile: 0.00 Total Impaired Size: 5.11 Miles)

City / County: Page Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BHDY000.91 (2 violations of 12 samples for e-coli). Initial Listing Date: 2008.

Honey Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**5.10**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B37R-04-TEMP** **Cub Run**

Location: Cub Run in Page County from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 9.81 End Mile: 0.00 Total Impaired Size: 9.81 Miles)

City / County: Page Co. Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This segment is impaired due to violations of the temperature WQS at station: 1BCUB-FP12-FOSR (10 violations of 98 samples for temperature). Initial Listing Date: 2012

Cub Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**9.79**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B38R-02-BAC** **Big Run**

Location: Big Run from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 6.41 End Mile: 0.00 Total Impaired Size: 6.41 Miles)

City / County: Page Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BBIG000.48 (21 violations of 23 samples for e-coli in 2014, no data in 2016). Initial Listing Date: 2006.

Big Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.40**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B39R-03-BEN** **East Hawksbill Creek**

Location: East Hawksbill Creek from the headwaters downstream to its confluence with Hawksbill Creek. (Start Mile: 9.38 End Mile: 0.00 Total Impaired Size: 9.38 Miles)

City / County: Page Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 1BEHC001.18 (Impaired for VSCI). Initial Listing Date: 2008.

East Hawksbill Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.38**

Sources:

Agriculture	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B39R-03-PH** **Rocky Branch**

Location: Rocky Branch from the headwaters downstream to its confluence with Pass Run . (Start Mile: 4.25 End Mile: 0.00 Total Impaired Size: 4.25 Miles)

City / County: Page Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: USGS 163054325. Initial Listing Date: 2004; This segment is impaired for aquatic life use based on violations of the pH WQS at USGS site 163054325. This use support carries forward for the 2006 assessment as no new data are available for assessment in 2016.

Rocky Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.25**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B39R-03-TEMP** **Pass Run**

Location: Pass Run from the headwaters downstream to its confluence with Hawksbill Creek. (Start Mile: 9.48 End Mile: 0.00 Total Impaired Size: 9.48 Miles)

City / County: Page Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This segment is impaired due to violations of the temperature WQS at station: 1BPSS-FP17-FOSR (24 violations of 67 samples for temperature). Initial Listing Date: 2010

Pass Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**9.47**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B39R-04-BEN** **Dry Run**

Location: Dry Run from the outfall of Lake Arrowhead downstream to its confluence with Hawksbill Creek. (Start Mile: 5.52 End Mile: 0.00 Total Impaired Size: 5.52 Miles)

City / County: Page Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 1BDRI000.21 (Impaired for VSCI). Initial Listing Date: 2012

Dry Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.52**

Sources:

Agriculture Dam or Impoundment Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B40R-01-BAC** **Jeremys Run**

Location: Jeremys Run from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 11.70 End Mile: 0.00 Total Impaired Size: 11.70 Miles)

City / County: Page Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BJER000.62 (10 violations of 24 samples for e-coli). Initial Listing Date: 2012

Jeremys Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.69**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B40R-02-BAC** **Flint Run**

Location: Flint Run and tributaries from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 12.59 End Mile: 0.00 Total Impaired Size: 12.59 Miles)

City / County: Warren Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

This segment remains impaired due to violations of the e-coli WQS at station: 1BFNT002.16. (7 violations of 12 samples for e-coli). Initial Listing Date: 2004

Flint Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**12.58**

Flint Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**12.58**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Potomac and Shenandoah River Basins

***Cause Group Code:* B40R-03-BAC** **Gooney Run**

Location: Gooney Run and tributaries from the headwaters downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 20.18 End Mile: 0.00 Total Impaired Size: 20.18 Miles)

City / County: Warren Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BGNY000.04 (3 violations of 12 samples for e-coli). Initial Listing Date: 2010.

Gooney Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**20.17**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B40R-04-TEMP** **Flint Run**

Location: Flint Run from a point 4 miles upstream of its confluence with the South Fork Shenandoah River downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 4.10 End Mile: 0.00 Total Impaired Size: 4.10 Miles)

City / County: Warren Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This segment is impaired due to violations of the temperature WQS standard at station: 1BFNT-FW21-FOSR (9 violations of 38 samples for temperature in 2014, 2 of 16 samples in 2016, no new data). Initial Listing Date: 2010

Flint Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**4.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B41R-04-BAC** **South Fork Shenandoah River**

Location: South Fork Shenandoah River from its confluence with Gooney Run downstream to its confluence with the North Fork Shenandoah River. (Start Mile: 10.32 End Mile: 0.00 Total Impaired Size: 10.32 Miles) This segment was lengthened in 2012.

City / County: Warren Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BSSF000.19 (5 violations of 12 samples for e-coli); 1BSSF003.56 (9 violations of 46 samples for e-coli) and 1BSSF009.58 (2 violations of 13 samples for e-coli in 2014, no new data in 2016). Initial Listing Date: 2010

South Fork Shenandoah River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**10.31**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B42R-01-BAC** **Crab Run**

Location: Crab Run from the VA/WVA line downstream to its confluence with the German River. (Start Mile: 3.93 End Mile: 0.00 Total Impaired Size: 3.93 Miles)

City / County: Rockingham Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BCRB000.18 (2 violations of 11 samples for e-coli). Initial Listing Date: 2010

Crab Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.93**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B42R-01-BEN** **North Fork Shenandoah River**

Location: North Fork Shenandoah River from its confluence with the German River downstream to its confluence with Capon Run (Start Mile: 107.67 End Mile: 105.08 Total Impaired Size: 2.59 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 1BNFS107.86 (Impaired for VSCI). Initial Listing Date: 2010

North Fork Shenandoah River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.59**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B45R-01-BEN** **Long Meadow Run**

Location: Long Meadow Run from the headwaters downstream to its confluence with the North Fork Shenandoah River. (Start Mile: 9.85 End Mile: 0.00 Total Impaired Size: 9.85 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 1BLOM000.24 (Impaired for VSCI). Initial Listing Date 2008.

Long Meadow Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B45R-02-BEN** **Turley Creek**

Location: Turley Creek from the headwaters downstream to its confluence with the North Fork Shenandoah River. (Start Mile: 4.04 End Mile: 0.00 Total Impaired Size: 4.04 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 1BTRL000.02 (Impaired for VSCI). Initial Listing Date: 2002.

Turley Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.03**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B45R-05-BEN** **North Fork Shenandoah River**

Location: North Fork Shenandoah River from its confluence with Linville Creek downstream to its confluence with Holmans Creek. (Start Mile: 89.24 End Mile: 75.71 Total Impaired Size: 13.53 Miles).

City / County: Rockingham Co. Shenandoah Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 1BNFS087.35 (Impaired for VSCI) and 1BNFS088.81 (Impaired for VSCI (improving)). Initial Listing Date: 2008.

North Fork Shenandoah River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**13.52**

Sources:

- Industrial Point Source Discharge
- Municipal (Urbanized High Density Area)
- Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B47R-01-BEN** **Fridley Run**

Location: Fridley Run from the headwaters downstream to its confluence with Mountain Run. (Start Mile: 2.38 End Mile: 0.00 Total Impaired Size: 2.38 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: USFS 4074 (Slightly Impaired) Initial Listing Date: 2002.

Fridley Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.38**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B47R-01-PH** **Fridley Run**

Location: Fridley Run from the headwaters downstream to its confluence with Mountain Run. (Start Mile: 2.38 End Mile: 0.00 Total Impaired Size: 2.38 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: 1BFDY000.02 (24 violations of 32 samples for pH) Initial Listing Date: 2006.

Fridley Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**2.38**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B47R-07-BEN** **Dry Fork**

Location: Dry Fork from the headwaters downstream to its confluence with Smith Creek. (Start Mile: 10.85 End Mile: 0.00 Total Impaired Size: 10.85 Miles)

City / County: Rockingham Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 1BDFK003.82 (Impaired for VSCI) and 1BDFK004.03 (Impaired for VSCI) in 2010 cycle, no new data in 2016. Initial Listing Date: 2006.

Dry Fork **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**10.85**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B48R-02-BEN** **Crooked Run**

Location: Crooked Run from the headwaters downstream to its confluence with Mill Creek. (Start Mile: 4.08 End Mile: 0.00 Total Impaired Size: 4.08 Miles)

City / County: Shenandoah Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 1BCKD000.38 (Impaired for VSCI). Initial Listing Date: 2008.

Crooked Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.07**

Sources:

Agriculture Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B49R-01-BEN** **Stony Creek**

Location: Stony Creek from its confluence with Yellow Spring Run downstream to its confluence with the North Fork Shenandoah River. (Start Mile: 9.28 End Mile: 0.00 Total Impaired Size: 9.28 Miles)

City / County: Shenandoah Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 1BSTY004.24 (Impaired for VSCI) and 1BSTY005.91 (Impaired for VSCI). Initial Listing Date: 2008. This impairment was lengthened (added upstream segment) in 2016.

Stony Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.28**

Sources:

Agriculture	Municipal (Urbanized High Density Area)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B49R-05-TEMP** **Little Stony Creek**

Location: Little Stony Creek and tributary from the headwaters of the tributary and the confluence of the tributary with Little Stony Creek near USFS Road 92 downstream to the confluence with Stony Creek. (Start Mile: 4.91 End Mile: 0.00 Total Impaired Size: 4.91 Miles.

City / County: Shenandoah Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This segment is impaired due to violations of the temperature WQS at station: 1BLSC000.50 (3 violations of 10 for temperature) Initial Listing Date: 2012.

Little Stony Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**4.91**

Sources:

Source Unknown

Potomac and Shenandoah River Basins

***Cause Group Code:* B49R-07-TEMP** **Stony Creek**

Location: Stony Creek from the Lake Laura dam outfall downstream to the Route 682 bridge (Wakeman's Grove Road). (Start Mile: 23.44 End Mile: 4.59 Total Impaired Size: 18.85 Miles) This impairments downstream extents was modified in 2012 and the impairment lengthened based on additional data.

City / County: Shenandoah Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This segment is impaired due to violations of the temperature WQS at station: 1BSTY013.85 (3 violations of 10 samples for temperature); 1BSTY-NS30-FOSR (15 violations of 116 samples for temperature); 1BSTY-NS58-FOSR (15 violations of 110 samples for temperature) and 1BSTY-NS29-FOSR (13 violations of 110 samples for temperature). Initial Listing Date: 2006.

Stony Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**18.84**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B50R-03-BAC** **Pughs Run**

Location: Pughs Run from the headwaters downstream to its confluence with the North Fork Shenandoah River. (Start Mile: 7.00 End Mile: 0.00 Total Impaired Size: 7.00 Miles)

City / County: Shenandoah Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BPGH000.60 (4 violations of 10 samples for e-coli in 2012, no data in 2016, impairment carried forward). Initial Listing Date: 2004

Pughs Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.00**

Pughs Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**7.00**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B50R-03-BEN** **Pughs Run**

Location: Pughs Run from the headwaters downstream to its confluence with the North Fork Shenandoah River. (Start Mile: 7.00 End Mile: 0.00 Total Impaired Size: 7.00 Miles)

City / County: Shenandoah Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 1BPGH000.29 (Impaired for VSCI). Initial Listing Date: 2012

Pughs Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.00**

Sources:

Agriculture	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B51R-01-BAC** **Tumbling Run**

Location: Tumbling Run from the headwaters downstream to the 5 mile upper limit of the PWS designation for the Strasburg Public Water Intake. (Start Mile: 5.20 End Mile: .95 Total Impaired Size: 4.25 Miles)

City / County: Shenandoah Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BTBL-NS44-FOSR (5 violations of 18 samples for e-coli). Initial Listing Date: 2004

Tumbling Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.24**

Tumbling Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**4.24**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B51R-02-BAC** **North Fork Shenandoah River**

Location: North Fork Shenandoah River from the 5 mile upper limit of the PWS designation for the Winchester Public Water intake downstream to its confluence with the South Fork Shenandoah River. (Start Mile: 11.72 End Mile: 0.00 Total Impaired Size: 11.72 Miles) This impairment was lengthened in 2010.

City / County: Shenandoah Co. Warren Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BNFS000.57 (4 violations of 36 samples for e-coli) and 1BNFS010.34 (12 violations of 60 samples for e-coli). Initial Listing Date: 2008.

North Fork Shenandoah River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.69**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B52R-01-PH** **Cedar Creek**

Location: Cedar Creek from the headwaters downstream to the U.S. Forest Service boundary. (Start Mile: 40.57 End Mile: 32.28 Total Impaired Area: 8.29 Miles.

City / County: Shenandoah Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: 1BCDR045.30 (4 violations of 31 samples for e-coli. Initial Listing Date: 2014 (Upstream assessment unit added in 2016)

Cedar Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**8.27**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B52R-04-BAC** **Cedar Creek**

Location: Cedar Creek from its confluence with a spring branch near Van Buren Furnace downstream to its confluence with Duck Run. (Start Mile: 37.11 End Mile: 20.29 Total Impaired Size: 16.82 Miles) This impairment was lengthened in 2014 adding two downstream segments.

City / County: Frederick Co. Shenandoah Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 1BCDR023.47 (2 violations of 12 samples for e-coli); 1BCDR028.86 (2 violations of 12 samples for e-coli) 1BCDR-CC06-FOSR (9 violations of 17 samples for e-coli). Initial Listing Date: 2012.

Cedar Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**16.80**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B52R-05-BAC** **Fall Run**

Location: Fall Run and its tributaries from the headwaters downstream to its confluence with Cedar Creek. (Start Mile: 15.17 End Mile: 0.00 Total Impaired Size: 15.17 Miles

City / County: Frederick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 1BFLR000.57 (2 violations of 12 samples for e-coli)
Initial Listing Date: 2014

Fall Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**15.17**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B52R-06-BAC** **Gravel Springs**

Location: Gravel Springs from the headwaters downstream to its confluence with Cedar Creek. (Start Mile: 3.29 End Mile: 0.00 Total Impaired Size: 3.29 Miles

City / County: Frederick Co. Shenandoah Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 1BGSR000.40 (3 violations of 10 samples for e-coli) Initial Listing Date: 2016

Gravel Springs **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.29**

Sources:

Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B53R-01-BAC** **Cedar Creek**

Location: Cedar Creek from its confluence with Stickley Run downstream to its confluence with the North Fork Shenandoah River. (Start Mile: 3.75 End Mile: 0.00 Total Impaired Size: 3.75 Miles) This impairment was shortened in 2016 delisting two upstream segments.

City / County: Frederick Co. Shenandoah Co. Warren Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BCDR000.81 (2 violations of 12 samples for e-coli). Initial Listing Date: 2008. Upper segments de-listed and impairment shortened in 2016.

Cedar Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.75**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B54R-01-BAC** **Passage Creek**

Location: Passage Creek from its confluence with Peters Mill Run downstream to a point 4.6 miles upstream of the U.S. Forest Service boundary. (Start Mile: 19.08 End Mile: 8.66 Total Impaired Size: 10.42 Miles)

City / County: Shenandoah Co. Warren Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at stations: 1BPSG018.13 (3 violations of 12 samples for e-coli). Initial Listing Date: 2006. Lower segments were de-listed in 2016 and impairment length shortened.

Passage Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**10.42**

Passage Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**10.42**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B54R-01-PH** **Passage Creek**

Location: Passage Creek from the headwaters downstream to the Route 675 bridge crossing. (Start Mile: 37.38 End Mile: 31.93 Total Impaired Size: 5.45 Miles)

City / County: Page Co. Shenandoah Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: 1BPSG031.99 (2 violations of 5 samples for pH in 2010, no new data in 2016). Initial Listing Date: 2010

Passage Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**5.44**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B56R-01-DO** **Crooked Run**

Location: Crooked Run from the Lake Frederick dam downstream to its confluence with the Nineveh Spring outfall. (Start Mile: 9.23 End Mile: 6.90 Total Impaired Size: 2.33 Miles) Impairment length shortened in 2016 with delist of downstream assessment unit.

City / County: Frederick Co. Warren Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

This segment is impaired due to violations of the DO WQS at stations: 1BCRO-CR01-FOSR (2 violations of 13 samples for DO, no new data in 2014 or 2016, 1BCRO006.93 (4 violations of 10 samples for DO). Initial Listing Date: 2008.

Crooked Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.32**

Sources:

Upstream Impoundments
(e.g., PI-566 NRCS
Structures)

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B56R-02-BEN** **Stephens Run**

Location: Stephens Run from an unnamed tributary 1 mile upstream of Crooked Run downstream to its confluence with Crooked Run. (Start Mile: 1.00 End Mile: 0.00 Total Impaired Size: 1.00 Miles)

City / County: Frederick Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 1BSTV000.20 (Impaired for VSCI). Initial Listing Date: 2016

Stephens Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.99**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B57R-03-BAC** **Chapel Run**

Location: Chapel Run and tributaries from the headwaters downstream to its confluence with the Shenandoah River. (Start Mile: 11.75 End Mile: 0.00 Total Impaired Size: 11.75 Miles)

City / County: Clarke Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BCPL000.95 (3 violations of 24 samples for e-coli). Initial Listing Date: 2008.

Chapel Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.74**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B57R-03-BEN** **Chapel Run**

Location: Chapel Run and tributaries from the headwaters downstream to its confluence with the Shenandoah River. (Start Mile: 11.75 End Mile: 0.00 Total Impaired Size: 11.75 Miles)

City / County: Clarke Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 1BCPL000.95 (Impaired for VSCI). Initial Listing Date: 2006.

Chapel Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**11.74**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Potomac and Shenandoah River Basins

***Cause Group Code:* B57R-05-BAC** **Shenandoah River**

Location: Shenandoah River from its confluence with Long Branch downstream to its confluence with Spout Run. (Start Mile: 39.63 End Mile: 34.23 Total Impaired Size: 5.4 Miles)

City / County: Clarke Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 1BSHN038.48 (4 violations of 12 samples for e-coli). Initial Listing Date: 2014

Shenandoah River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.40**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B58R-02-BAC** **Dog Run**

Location: Dog Run from the headwaters downstream to its confluence with the Shenandoah River. (Start Mile: 6.13 End Mile: 0.00 Total Impaired Size: 6.13 Miles)

City / County: Clarke Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BDGR000.23 (5 violations of 12 samples for e-coli). Initial Listing Date: 2008.

Dog Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.13**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B58R-03-BAC** **Wheat Spring Branch**

Location: Wheat Spring Branch from the headwaters downstream to its confluence with the Shenandoah River. (Start Mile: 4.69 End Mile: 0.00 Total Impaired Size: 4.69 Miles)

City / County: Clarke Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 1BWSB000.22 (15 violations of 18 samples for e-coli). Initial Listing Date: 2008.

Wheat Spring Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.69**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B58R-04-BAC** **Long Marsh Run**

Location: Long Marsh Run from the headwaters downstream to the VA/WVA State Line. (Start Mile: 7.09 End Mile: 0.00 Total Impaired Size: 7.09 Miles)

City / County: Clarke Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 1ALMR001.82 (6 violations of 12 samples for e-coli). Initial Listing Date: 2012.

Long Marsh Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.09**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Potomac and Shenandoah River Basins

***Cause Group Code:* B58R-05-BAC** **Shenandoah River**

Location: Shenandoah River from its confluence with Craig Run downstream to the VA/WVA State Line. (Start Mile: 28.20 End Mile: 20.29 Total Impaired Size 7.91 Miles)

City / County: Clarke Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 1BSHN022.63 (5 violations of 36 samples for e-coli). Initial Listing Date: 2012.

Shenandoah River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.90**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01E-02-EBEN** **James River**

Location: Mainstem James River from the fall line at Mayos Bridge downstream to the JMSTFl/JMSOH boundary.

City / County: Charles City Co. Chesterfield Co. Henrico Co. Hopewell City Prince George Co.
Richmond City Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

During the 2012-2016 cycles, the mainstem of the tidal freshwater James River was impaired of the Aquatic Life Use due to an inadequate benthic community based on the Chesapeake Bay Benthic Index of Biological Integrity.

This is supported by benthic alteration at 2010 Coastal 2000 stations 2CJMS055.04 and 2CJMS084.70, which were considered Category 5A. The source is "possibly cumulative chronic effects of metals and PAHs in the sediment".

James River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**31.358**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01E-03-PCB** **James River and Various Tributaries**

Location: Estuarine James River from the fall line to the Hampton Roads Bridge Tunnel, including several tributaries listed below.

City / County:					
	Charles City Co.	Chesapeake City	Chesterfield Co.	Colonial Heights City	Dinwiddie Co.
	Hampton City	Henrico Co.	Hopewell City	Isle Of Wight Co.	James City Co.
	New Kent Co.	Newport News City	Norfolk City	Petersburg City	Portsmouth City
	Prince George Co.	Richmond City	Suffolk City	Surry Co.	Williamsburg City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

During the 2002 cycle, the James River from the fall line to Queens Creek was considered not supporting of the Fish Consumption Use due to PCBs in several fish species at multiple DEQ monitoring locations.

During the 2004 cycle, a VDH Fish Consumption Restriction was issued from the fall line to Flowerdew Hundred and the segment was adjusted slightly to match the restriction. In addition, in the 2004 cycle, the Chickahominy River from Walkers Dam to Diascund Creek was assessed as not supporting of the Fish Consumption Use because the DEQ screening value for PCBs was exceeded in 3 species during sampling in 2001.

The VDH restriction was extended on 12/13/2004 to stretch from the I-95 bridge downstream to the Hampton Roads Bridge Tunnel and include the tidal portions of the following tributaries:

Appomattox River up to Lake Chesdin Dam
Bailey Creek up to Route 630
Bailey Bay
Chickahominy River up to Walkers Dam
Skiffes Creek up to Skiffes Creek Dam
Pagan River and its tributary Jones Creek
Chuckatuck Creek
Nansemond River and its tributaries Bennett Creek and Star Creek
Hampton River
Willoughby Bay and the Elizabeth R. system (Western, Eastern, and Southern Branches and Lafayette R.) and tributaries St. Julian Creek, Deep Creek, and Broad Creek

The advisory was modified again on 10/10/2006 to add Poythress Run.

The impairments were combined. The TMDL for the lower extended portion is due in 2018.

PCB sampling in 2012 showed exceedances in 4 species at 2-JMS087.01, 3 species at 2-JMS097.77, 4 species at 2-JMS110.00, 2 species at 2-PTH000.23, 2 species at 2-BLY000.65, 3 species at 2-JMS074.44, 2 species at 2-JMS066.88, 2 species at 2-JMS057.69, 3 species at 2-JMS052.67, among others.

James River and Various Tributaries **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:	**248.079**		**7.51**

Sources:

Contaminated Sediments	Source Unknown	Sources Outside State Jurisdiction or Borders

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01L-01-DO** **Falling Creek Reservoir**

Location: Falling Creek Reservoir

City / County: Chesterfield Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The lake was subject to historical chronic problems resulting from nutrients and organic loadings. It was listed in 1998 as not supporting the Public Water Supply use and threatened of the ALUS.

During the 2006 cycle, monitoring showed acceptable DO in the epilimnion, but showed depressed DO in the hypolimnion during stratification. The TSIs were:

TSI(CA) = 53
TSI(TP) = 59
TSI(SD) = 63

Although the secchi depth TSI exceeded the limit of 60, the Chlorophyll a and phosphorus TSIs were acceptable (mesotrophic); these are considered more reliable since an elevated secchi depth TSI may be due to inorganic turbidity and not an indication of excessive nutrients. Since the PWS Use for Falling Creek has been removed from the WQS and the TSIs meet acceptable limits the lake should be delisted for PWS. However due to the depressed dissolved oxygen in the bottom, the segment should be classified as Category 4C due to natural stratification; the segment is first listed for DO in 2006.

During the 2008 cycle the lake criteria was developed and the lake is fully supporting for DO and will be DELISTED.

During the 2012 cycle the segment became impaired for DO with a pooled violation rate of 11/60 at stations 2-FAC005.78, and 2-FAC003.85.

There was no new data for the 2014 cycle

During the 2016 cycle the segment was impaired for DO with a violation rate of 11/43 at station 2-FAC003.85.

Falling Creek Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**88.37**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-01-PCB** **Goode Creek**

Location: Goode Creek from the confluence with Broad Rock Creek to its mouth at the James River.

City / County: Richmond City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Water Column / 5A

During the 2012 cycle, Goode Creek was impaired of the Fish Consumption Use due to two exceedances of the Human Health - Other Surface Waters WQS for water column PCBs. The samples were collected at 2-GOD000.77 as part of a 2009 source identification study for the VDH PCB advisory in the James River.

Goode Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:			**1.21**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-02-PCB** **Almond Creek**

Location: Almond Creek from its headwaters to its mouth.

City / County: Henrico Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Water Column / 5A

During the 2012 cycle, Almond Creek was impaired of the Fish Consumption Use due to two exceedances of the Human Health - Other Surface Waters WQS for water column PCBs. The samples were collected in 2009 as part of a source identification study for the PCB advisory in the James River.

Almond Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Water Column - Total Impaired Size by Water Type:			**2.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-02-PH** **XVO and XVP - Almond Creek, UT**

Location: Unnamed tributaries of Almond Creek.

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

In 2004, Almond Creek and tributaries XVO and XVP were considered impaired of the Aquatic Life Use due to pH exceedances at 2-ALM000.42 as well as pH exceedances at station located on UTs downstream of the BFI landfill (2-XVO000.10 and 2-XVP000.04).

Although there are numerous exceedances on the tributary, the pH violation rates were acceptable during the 2010 cycle on mainstem Almond Creek; therefore, Almond Creek was partially delisted.

During the 2012 cycle, the exceedance rates were as follows:
2-XVO000.10 - 8/27 (2008 cycle)
2-XVO000.16 - 0/2
2-XVP000.04 - 3/5

XVO and XVP - Almond Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**0.82**

Sources:

Landfills Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-04-DO** **Falling Creek**

Location: Falling Creek from Gregorys Pond downstream to the confluence with Horners Run.

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2008 cycle, this segment of Falling Creek was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 3/22 at DEQ station 2-FAC012.96, which is located at the Route 360 bridge.

The dissolved oxygen impairment was confirmed in the 2016 cycle with exceedance rates of 5/6 at 2-FAC012.96 and 2/2 at 2-FAC013.25.

Falling Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.98**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-05-PH** **Kingsland Creek**

Location: Kingsland Creek from its headwaters downstream to its mouth at the James River.

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2006 cycle, Kingsland Creek was assessed as not supporting the Aquatic Life Use based on pH exceedances at the Route 1 bridge (2CKSL002.62). The exceedance rate was 3/11 in the 2008 cycle. No additional data has been collected.

A Natural Conditions Assessment was completed in February 2014. The report attributes the impairment to natural conditions and recommends that Kingsland Creek be reclassified as Class VII swampwaters. Due to an error, it remained 5C for the 2014 cycle.

Additional monitoring was conducted during the 2016 cycle. The exceedance rate was 2/13 at 2-KSL004.42 (Hopkins Road); however, the exceedance rate was acceptable at other stations.

Kingsland Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**8.54**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-06-PCB** **Gillies Creek**

Location: Gillies Creek from its headwaters to its mouth at the James River.

City / County: Henrico Co. Richmond City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Water Column / 5A

During the 2012 cycle, Gillies Creek was impaired of the Fish Consumption Use due to two exceedances of the Human Health - Other Surface Waters WQS for water column PCBs. The samples were collected at 2-GIL000.42 as part of a 2009 source identification study for the PCB advisory in the James River.

Gillies Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:			**5.88**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-06-PH** **Gillies Creek**

Location: Gillies Creek from its headwaters to its mouth at the James River.

City / County: Henrico Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Gillies Creek was initially assessed as not supporting the Aquatic Life Use in 2004 based on elevated pH at the Government Road Bridge (2-GIL001.00, which was mistakenly called 2-GIL000.42 from 2001 to 2005).

During the 2010 cycle, the pH exceedance rate was 3/25 at 2-GIL001.00, although the other stations within the segment have acceptable pH exceedance rates.

Gillies Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**5.88**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-07-DO** **Redwater Creek**

Location: Redwater Creek from its headwaters to its mouth at Proctors Creek.

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Redwater Creek was assessed as impaired of the Aquatic Life Use in the 2010 cycle due to dissolved oxygen exceedances at Route 615 (Coxendale Road.)

The exceedance rate was 3/13 in the 2012 cycle. Two values were extremely low.

Redwater Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.96**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-09-DO** **UT to James River - XPF**

Location: Ditch to James River through National Battlefield Park

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The ditch was considered impaired of the Aquatic Life use due to dissolved oxygen monitoring by the USGS:

2/4 at 0203853010 (James River Trib 5 at West Boundary at Bellwood, VA
2/4 at 0203853030 (James River Trib 5 Below Landfill at Bellwood, VA)

The downstream station 020853050 (James River Trib 5 at East Boundary) was acceptable. This station is near station 2-XPF-RICH-08-NPS, which also shows acceptable DO levels.

Additional monitoring was conducted by the DEQ during the 2014 cycle. The dissolved oxygen impairment was confirmed (3/10 at 2CXBD000.15). The exceedance rate at 2CXBD000.38 was insufficient (1/5).

Monitoring at station 20XPF-RICH-08-NPS, which is co-located with 2CXBD000.15, was acceptable during the 2016 cycle. However, when the exceedance rates are combined, the segment still fails.

UT to James River - XPF **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.39**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-09-PH** **UT to James River - XPF**

Location: Ditch to James River through National Battlefield Park

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The ditch was considered impaired of the Aquatic Life use due to pH monitoring by the USGS:

2/4 at 0203853010 (James River Trib 5 at West Boundary at Bellwood, VA
2/4 at 0203853030 (James River Trib 5 Below Landfill at Bellwood, VA)

The downstream station 020853050 (James River Trib 5 at East Boundary) was acceptable. This station is near station 2-XPF-RICH-08-NPS, which also has acceptable pH.

Additional monitoring was conducted by the DEQ during the 2014 cycle. The dissolved oxygen impairment was confirmed (3/10 at 2CXBD000.15). The exceedance rate at 2CXBD000.38 was insufficient (1/5).

Monitoring at station 20XPF-RICH-08-NPS, which is co-located with 2CXBD000.15, was acceptable during the 2016 cycle. However, when the exceedance rates are combined, the segment still fails.

UT to James River - XPF		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**0.39**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-12-PH** **XYI - Coles Run, UT**

Location: The unnamed tributary XYI from its headwaters to its mouth

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The tributary has been assessed as impaired of the Aquatic Life Use based on a pH exceedance rate of 4/4 at USGS station 0203854210, which is located in the breastworks on the National Battlefield.

Additional data was collected during the 2016 cycle at station 2CXBX001.08. The exceedance rates was 4/4; therefore, the tributary will continue to be listed.

XYI - Coles Run, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**0.94**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-15-BEN** **Proctors Creek**

Location: The nontidal mainstem of Proctors Creek.

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Proctors Creek was assessed as impaired of the Aquatic Life Use in the 2010 cycle due to an impaired benthic community at the Route 1 bridge (2-PCT002.46).

Benthics have been collected in 2007, 2008, and 2011.

Proctors Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.26**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-21-DO** **Great Branch**

Location: Great Branch from its headwaters to its mouth at Proctors Creek.

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Great Branch was impaired of the Aquatic Life Use during the 2014 cycle based on a dissolved oxygen exceedance rate of 2/12 at 2-GTB000.65, which is located at Route 144.

The exceedance rate fell to 1/10 during the 2016 cycle; however, additional monitoring was conducted at 2-GTB000.46 (2/10). Monitoring at upstream Chesterfield Water Trends station 2-GTB-25-CWT is insufficient for assessment.

Great Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.38**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-22-CU** **XVP - Almond Creek, UT**

Location: Unnamed tributary of Almond Creek.

City / County: Henrico Co.

Use(s): Aquatic Life Wildlife

Cause(s) /
VA Category: Copper / 5A

During the 2012 cycle, the tributary was impaired of the Aquatic Life and Wildlife Uses due to exceedances of the acute water quality criteria for dissolved copper in 2008 and 2009 at station 2-XVP000.04.

XVP - Almond Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Copper - Total Impaired Size by Water Type:			**0.72**

Sources:

Landfills Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-22-ZN** **XVP - Almond Creek, UT**

Location: Unnamed tributary of Almond Creek.

City / County: Henrico Co.

Use(s): Aquatic Life Wildlife

Cause(s) /
VA Category: Zinc / 5A

During the 2012 cycle, the tributary was impaired of the Aquatic Life and Wildlife Uses due to exceedances of the acute water quality criteria for dissolved zinc in 2008 and 2009 at station 2-XVP000.04.

XVP - Almond Creek, UT **Wildlife**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Zinc - Total Impaired Size by Water Type:			**0.72**

Sources:

Landfills Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G01R-23-PH** **XFU - Pocoshock Creek, UT**

Location: Headwaters to mouth at Pocoshock Creek

City / County: Chesterfield Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

During the 2016 cycle, the tributary was assessed as impaired of the Aquatic Life Use due to a pH exceedance rate of 2/7 at ACB station 2CXFU-PSC-ACB, which is located off of Walmsley Boulevard.

XFU - Pocoshock Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**3.83**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G02E-04-PCB** **James River**

Location: Mainstem James River from the limit of PWS near Dutch Gap downstream to the JMSTFu/JMSTFl boundary at the Appomattox River.

City / County: Charles City Co. Chesterfield Co. Henrico Co.

Use(s): Fish Consumption Public Water Supply

Cause(s) / VA Category: PCB in Water Column / 5A

During the 2012 cycle, the segment was impaired of the Fish Consumption Use due to two exceedances of the Human Health Water Quality Criteria for PCBs in water samples collected at 2-JMS087.01. The station was sampled in 2009 and is located at buoy 137.

James River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:	**3.972**		

James River **Public Water Supply**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:	**3.972**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G02R-03-DO** **Johnson Creek Watershed**

Location: Johnson Creek and tributaries from its headwaters to the mouth at the James River

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Johnson Creek was initially assessed as not supporting the Aquatic Life Use goal during the 2004 cycle based on dissolved oxygen exceedances at Route 827 / Allied Road (2-JOD001.19). The exceedance rate was 3/23 in the 2008 cycle.

The segment was extended during 2006 based on monitoring by Chesterfield County.

Extensive monitoring was conducted by the DEQ in the 2016 cycle. Dissolved oxygen was only low at two stations.

0/12 at 2CXBR000.10
1/122 at 2CXBR000.68
0/12 at 2CXBR001.15
4/11 at 2CXBS000.62
1/10 at 2CXBS002.85
2/12 at 2-JOD001.19
0/15 at 2-JOD001.96
0/12 at 2-JOD002.69
0/12 at 2-JOD003.05
1/12 at 2-JOD004.15
0/12 at 2-JOD005.04

Johnson Creek Watershed **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**16.27**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G02R-03-PH** **Johnson Creek Watershed**

Location: Johnson Creek and tributaries from its headwaters to the mouth at the James River

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Johnson Creek was initially assessed as not supporting the Aquatic Life Use goal during the 2004 cycle based on pH exceedances at Route 827 / Allied Road (2-JOD001.19). During the 2008 cycle, the exceedance rate was 11/23.

The segment was extended during 2006 based on monitoring by Chesterfield County.

The segment was extended during 2006 based on monitoring by Chesterfield County. Extensive monitoring was conducted by the DEQ in the 2016 cycle. pH exceedances were widespread.

3/12 at 2CXBR000.10
4/12 at 2CXBR000.68
4/12 at 2CXBR001.15
6/11 at 2CXBS000.62
7/10 at 2CXBS002.85
5/15 at 2-JOD001.19
4/15 at 2-JOD001.96
1/12 at 2-JOD002.69
4/12 at 2-JOD003.05
6/12 at 2-JOD004.15
2/12 at 2-JOD005.04

Johnson Creek Watershed **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**16.27**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G02R-05-DO** **Crewes Channel**

Location: Crewes Channel from its headwaters to its tidal limit

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, Crewes Channel was assessed as not supporting the Aquatic Life Use goal based on dissolved oxygen exceedances at NPS station 2-CCH-RICH-06-NPS, which is located at Route 156.

In the 2016 cycle, the exceedance rate was 7/28 at 2-CCH-RICH-06-NPS; in addition, the exceedance rate was 4/12 at the co-located DEQ station 2-CCH001.54.

Crewes Channel **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.24**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G02R-09-DO** **Roundabout Creek**

Location: Mainstem of Roundabout Creek from its headwaters downstream to the confluence with the tributary at approximately river mile 2.04

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, upper Roundabout Creek was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 3/12 at 2-ROT003.15, which is located at Kingsland Road.

Roundabout Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.96**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G02R-09-PH** **Roundabout Creek**

Location: Mainstem of Roundabout Creek from its headwaters downstream to the confluence with the tributary at approximately river mile 2.04

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

During the 2014 cycle, upper Roundabout Creek was impaired of the Aquatic Life Use due to a pH exceedance rate of 2/12 at 2-ROT003.15, which is located at Kingsland Road.

Roundabout Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**3.96**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G02R-10-PH** **XBE - Roundabout Creek, UT**

Location: Headwaters to mouth at Roundabout Creek

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, the tributary was impaired of the Aquatic Life Use due to a pH exceedance rate of 4/10 at 2CXBE000.69, which is located at Wallo Road.

XBE - Roundabout Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**1.43**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G02R-11-PH** **Turkey Island Creek**

Location: Turkey Island Creek from its headwaters to Shirley Millpond.

City / County: Charles City Co. Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2016 cycle, the upper portion of Turkey Island Creek was assessed as not supporting of the Aquatic Life Use due to a pH violation rate of 5/12 at Carters Mill Road (2-TIC002.69).

Additional monitoring at downstream station 2-TIC002.69 (Carters Mill Road) was acceptable (0/12).

Turkey Island Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**7.03**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03E-01-PCB** **Bailey Creek (tidal), Cattail Creek (tidal)**

Location: Segment begins at Bailey Creek fall line and extends downstream to its mouth at the confluence with the James River. The segment includes the tidal portion of Cattail Creek.

City / County: Hopewell City Prince George Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Water Column / 5A

During the 2012 cycle, tidal Bailey Creek was impaired of the Fish Consumption Use due to two exceedances of the Human Health - Other Surface Waters WQS for water column PCBs. The samples were collected at 2-BLY000.65 as part of a 2009 source identification study for the VDH PCB advisory in the James River.

Bailey Creek (tidal), Cattail Creek (tidal)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Water Column - Total Impaired Size by Water Type:	**0.114**		

Sources:

Contaminated Sediments Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03E-01-PH** **Bailey Creek (tidal), Cattail Creek (tidal)**

Location: Segment begins at Bailey Creek fall line and extends downstream to its mouth at the confluence with the James River. The segment includes the tidal portion of Cattail Creek.

City / County: Hopewell City Prince George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Tidal Bailey Creek was initially considered impaired for pH on the 2004 303(d) list due to high pH measurements at the Hopewell Region Monitoring and Assessment Project's (HERMA) stations.

During the 2016 cycle, the pH exceedance rate at 2-BLY000.65 was 1/46; however, the segment remains listed based on the downstream HERMA stations.

Bailey Creek (tidal), Cattail Creek (tidal)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:	**0.114**		

Sources:

- Industrial Point Source Discharge
- Municipal Point Source Discharges
- Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03E-03-PH** **James River**

Location: The mainstem tidal James River from the confluence of the Appomattox River downstream to Powell Creek

City / County: Charles City Co. Hopewell City Prince George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The James River from the Appomattox River downstream to Powells Creek was impaired of the Aquatic Life Use in the 2014 cycle due to elevated pH exceedances at VIMS' continuous monitoring station JMS073.37.

James River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:	**10.194**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03L-01-DO** **Harrison Lake**

Location: Harrison Lake in its entirety.

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

In 2006 the lake is also considered impaired Cat. 5A because the dissolved oxygen violation rate was unacceptable in the epilimnion/nonstratified periods. This was primarily due to DO violations during the September 2004 monitoring when the lake was not stratified.

In 2008 cycle no additional monitoring was collected, the lake nutrient criteria was developed, lake Harrison does not have a true lacustrine zone. The regional biologist recommended that this lake should be removed from the table of lakes to which the nutrient criteria standards apply during the next triennial review.

During the 2010 cycle the segment remained impaired aquatic life with a DO violation rate of 9/36 at station 2-WER000.02.

During the 2012 cycle the segment remained impaired for DO since there has been no new data since the 2010 cycle.

During the 2014 cycle the segment remained impaired for Aquatic life with a DO violation rate of 9/55 at station 2-WER000.02.

During the 2016 cycle the segment remained impaired for DO with a violation rate of 24/67 at station 2-WER000.02.

Harrison Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**60.16**	

Sources:

Changes in Ordinary Stratification and Bottom Water Hypoxia/Anoxia	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03L-01-HG** **Harrison Lake**

Location: Harrison Lake in its entirety.

City / County: Charles City Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

2-HEC006.22 (C)- 2005 fish tissue had As in 3 species as an observed effect and Hg in 4 species.

VDH Fish Consumption Advisory for kepone

The VDH issued a Fish Consumption Advisory for Harrison Lake on 7/20/2006. No more than 2 meals per month of Redear Sunfish, Largemouth Bass, Chain Pickerel, and Bowfin are recommended due to mercury in fish tissue.

No new data for the 2014 and 2016 cycle

Harrison Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**60.16**	

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03L-01-PH** **Harrison Lake**

Location: Harrison Lake in its entirety.

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

In 2006 Harrison Lake was assessed as not supporting of the Aquatic Life Use based on a pH violation rate of 12/25 at 2-WER000.02.

In 2008 cycle no additional monitoring was collected, the lake nutrient criteria was developed, lake Harrison does not have a true lacustrine zone. The regional biologist recommended that this lake should be removed from the table of lakes to which the nutrient criteria standards apply during the next triennial review.

During the 2010 cycle the segment remained impaired for pH with a violation rate of 33/60 at station 2-WER000.02.

no new data during the 2010 cycle.

During the 2014 cycle the segment remained impaired aquatic life with a pH violation rate of 30/68 at station 2-WER000.02.

During the 2016 cycle the segment remained impaired for pH with a violation rate of 18/67 at station 2-WER000.02.

Harrison Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:		**60.16**	

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03R-02-ALD** **Bailey Creek**

Location: Segment begins at the headwaters of Bailey Creek and extends downstream to the tidal limit.

City / County: Hopewell City Prince George Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Aldrin / 5A

The non-tidal portion of Bailey Creek was assessed in the 2002 cycle as impaired of the Fish Consumption Use goal because of exceedances of the human health screening levels for aldrin in fish tissue at station 2-BLY005.72 in 1997.

Bailey Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aldrin - Total Impaired Size by Water Type:			**6.47**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03R-02-BEN** **Bailey Creek**

Location: Segment begins at the headwaters of Bailey Creek and extends downstream to the tidal limit.

City / County: Hopewell City Prince George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2014 cycle, Bailey Creek was impaired of the Aquatic Life Use due to an altered benthic community at 2-BLY005.73, which is located at Route 630.

Bailey Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.47**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03R-02-PCB** **Bailey Creek**

Location: Segment begins at the headwaters of Bailey Creek and extends downstream to the tidal limit.

City / County: Hopewell City Prince George Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The non-tidal portion of Bailey Creek was assessed in the 2002 cycle as impaired of the Fish Consumption Use because of exceedances of the human health screening levels for PCBs in fish samples at station 2-BLY005.72 in 1997.

In addition, the VDH has issued a Fish Consumption Advisory for PCBs in Bailey Creek upstream to the Route 630 bridge.

Bailey Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**6.47**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03R-03-PCB** **Poythress Run**

Location: Poythress Run from its headwaters to its tidal limit

City / County: Charles City Co. Hopewell City Prince George Co.

Use(s): Aquatic Life Fish Consumption Wildlife

Cause(s) /
VA Category: PCB in Water Column / 5A

During the 2012 cycle, Poythress Run was impaired of the Fish Consumption Use due to two water column PCB exceedances of the Human Health - Other Surface Waters WQS and the Aquatic Life/Wildlife WQS. The samples were collected at 2-PTH000.42 as part of a 2009 source identification study for the PCB advisory in the James River. The station is located at Poythress Run at Station Street.

Poythress Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:			**1.40**

Poythress Run **Wildlife**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:			**0.70**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03R-04-PH** **West Run**

Location: West Run from the confluence with East Run downstream to the backwater of Harrison Lake.

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

West Run was initially assessed as not supporting the Aquatic Life Use in 2004 based on pH exceedances at the Route 625 bridge (2-WER001.93).

During the 2016 cycle, the segment remained impaired (7/15).

West Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**1.86**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03R-05-PCB** **XYO - Cattail Creek, UT**

Location: The tributary in its entirety.

City / County: Hopewell City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Water Column / 5A

During the 2012 cycle, the tributary was impaired of the Fish Consumption Use due to two water column PCB exceedances of the Human Health - Other Surface Waters WQS. The samples were collected at 2-XYO000.03 as part of a 2009 source identification study for the PCB advisory in the James River. The station is located off South 1st Street.

XYO - Cattail Creek, UT **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:			**0.34**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03R-06-BEN** **XUD - West Run, UT**

Location: The unnamed tributary XUD in its entirety.

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, the unnamed tributary to West Run was assessed as not supporting the Aquatic Life Use based on an impaired benthic community at 2-XUD000.15, a freshwater probabilistic monitoring station.

XUD - West Run, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.57**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03R-06-DO** **Upper West Run / East Run Watershed**

Location: West Run above the confluence with East Run, East Run, and all tributaries.

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Monitoring was conducted in the West Run watershed during the 2016 cycle. The upper portion of the watershed is impaired of the Aquatic Life Use due to widespread dissolved oxygen violations. Exceedance rates were as follows:

0/12 (FS) at 2-ETR000.50
4/12 at 2-ETR003.00
3/12 at 2-SLM001.23
3/12 at 2-WER006.35
2/12 at 2-WER002.89
7/12 at 2-WER004.42
4/12 at 2-WER005.35
5/12 at 2-XUD000.35

Upper West Run / East Run Watershed **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**45.27**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G03R-06-PH** **Upper West Run / East Run Watershed**

Location: West Run above the confluence with East Run, East Run, and all tributaries.

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Stream XUD, an unnamed tributary to West Run, was assessed in 2006 as not supporting the Aquatic Life Use based on a pH exceedance rate of 2/2 at 2-XUD000.15, a freshwater probabilistic monitoring station.

Additional monitoring was conducted in the West Run watershed during the 2016 cycle. Due to widespread pH violations, the impairment was extended to the upper portion of the watershed. Exceedance rates were as follows:

5/12 at 2-ETR000.50
5/12 at 2-ETR003.00
6/12 at 2-SLM001.23
1/12 (FS) at 2-WER006.35
8/12 at 2-WER002.89
7/12 at 2-WER004.42
7/12 at 2-WER005.35
12/12 at 2-XUD000.35

Upper West Run / East Run Watershed **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**45.27**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G04E-02-EBEN** **James River**

Location: The mainstem of the James River within the Oligohaline Estuary.

City / County: Charles City Co. James City Co. Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

The oligohaline portion of the James River is impaired for benthics as determined by the Chesapeake Bay B-IBI study.

James River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**20.409**		

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G04L-01-BAC** **Sunken Meadow Pond**

Location: Sunken Meadow Pond in its entirety.

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Sunken Meadow Pond was impaired of the Recreation Use during the 2016 cycle due to an E. coli exceedance rate of 2/12 at 2-SKC001.17, which is located at Rt. 626.

Sunken Meadow Pond		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation	Escherichia coli - Total Impaired Size by Water Type:		**172.85**	

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G04L-01-DO** **Sunken Meadow Pond**

Location: Sunken Meadow Pond in its entirety.

City / County: Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Sunken Meadow Pond was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 2-SKC001.17, which is located at Rt. 626. The exceedance rate was 3/12 during the 2016 cycle.

Although the segment is a non-significant/non 187 lake, the TSI was not used because guidance states that only nutrient data collected in the lacustrine zone of the lake should be used. The station is located near the backwater of the pond. In previous cycles, the TSIs would have been 50 for chlorophyll a, 61 for total phosphorus, and secchi depth information was not collected.

Sunken Meadow Pond **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**172.85**	

Sources:

Dam or Impoundment	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G04R-03-MIREX** **Bailey Branch**

Location: Bailey Branch from the headwaters to its tidal limit.

City / County: Surry Co.

Use(s): Aquatic Life Wildlife

Cause(s) /
VA Category: Mirex / 5A

During the 2010 cycle, Bailey Branch was assessed as not supporting of the Aquatic Life and Wildlife Uses due to two exceedances of the water quality standard for Mirex in SPMDs at freshwater probabilistic monitoring station 2-BLB002.04.

Bailey Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mirex - Total Impaired Size by Water Type:			**11.38**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-01-NH3** **Chickahominy River, UT - Unnamed Tributary**

Location: Segment consists of the unnamed tributary of the Chickahominy River to which the Tyson Plant discharges.

City / County: Hanover Co.

Use(s): Aquatic Life Wildlife

Cause(s) /
VA Category: Ammonia (Un-ionized) / 5A

Multiple exceedances of the chronic ammonia criteria had been noted in grab samples throughout the stream; therefore, a special study was conducted in July 2005 to investigate the ammonia levels in the stream. Based on the results of the study, the segment was impaired for ammonia because of 6 acute ammonia exceedances each at 2-XDD000.84 and at 2-XDD000.91. A fish kill was noted in the pond.

Although there were no acute ammonia exceedances in the 2014 cycle, there were multiple chronic exceedances at 2-XDD000.32, 2-XDD000.40, 2-XDD000.84, and 2-XDD000.91. The impairment will be carried over, but continued monitoring is recommended.

Chickahominy River, UT - Unnamed Tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Wildlife			
Ammonia (Un-ionized) - Total Impaired Size by Water Type:			**2.34**

Sources:

Industrial Point Source Discharge

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-04-PH** **Chickahominy River**

Location: The Chickahominy River from the confluence with UT XDD to the confluence with a UT immediately downstream of rivermile 76.59.

City / County: Hanover Co. Henrico Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

During the 2010 cycle, the Chickahominy from the headwaters downstream to tributary XDD was assessed as not supporting of the Aquatic Life Use due to a pH violation rate of 3/16 at station 2-CHK079.23, which is located at the Route 33 bridge.

The segment was extended during the 2012 cycle due to a violation rate of 5/36 at 2-CHK076.59, which is located at the Route 625 bridge.

Additional monitoring occurred in the 2014 cycle. The exceedance rates in the original segment were acceptable; however, the 2012 expansion remained impaired. The original upstream portion was partially delisted. The downstream segment remains impaired in the 2016 cycle (7/37 at 2-CHK076.59).

Chickahominy River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**2.30**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-06-DO** **Grassy Swamp Creek**

Location: Grassy Swamp Creek from the pond at rivermile 0.99 to its mouth.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Grassy Swamp Creek was assessed as impaired of the Aquatic Life Use in the 2008 cycle due to dissolved oxygen exceedances at 2-GRC000.96, which is located at the Route 660 bridge. The exceedance rate was 19/61 in the 2014 cycle.

Grassy Swamp Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.02**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-07-DO** **Chickahominy River, UT (XDD)**

Location: The unnamed tributary XDD from its headwaters to the Tysons Foods discharge.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The segment was initially assessed as not supporting of the Aquatic Life Use in the 2006 cycle due to dissolved oxygen exceedances at 2-XDD001.23. The impairment is suspected to be caused by low flow conditions potentially exacerbated by the excess phosphorus in the watershed. During the 2014 cycle, the segment had a DO violation rate of 14/38 at 2-XDD001.23.

Chickahominy River, UT (XDD)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.56**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-07-PH** **Chickahominy River, UT (XDD)**

Location: The unnamed tributary XDD from its headwaters to the Tysons Foods discharge.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The segment was initially considered impaired during the 2006 cycle due to pH exceedances at 2-XDD001.23. It was categorized as Category 4A because of the benthic/pH TMDL for the lower portion of the tributary. Since the pH at this station is low, not elevated as at the downstream stations, this impairment should not be considered addressed. Because it was initially impaired in 2006, a TMDL due date of 2018 was assigned.

The violation rate was 29/38 during the 2014 cycle.

Chickahominy River, UT (XDD)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**0.56**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-09-BEN** **North Run**

Location: North Run from its headwaters to its mouth.

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

North Run from its headwaters to the confluence with Hungary Creek was assessed as not supporting the Aquatic Life Use during the 2008 cycle based on an impaired benthic community at freshwater probabilistic monitoring station 2-NTR005.53, located above Mountain Road.

Additional monitoring occurred at another freshwater probabilistic monitoring station (2-NTR000.23) in 2011. That station also shows benthic impairment; therefore, the impairment was extended to the mouth of North Run.

North Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.90**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-09-PH** **North Run**

Location: North Run from its headwaters to the confluence with Hungary Creek.

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

North Run from its headwaters to the confluence with Hungary Creek was assessed as not supporting the Aquatic Life Use during the 2006 cycle based on a pH exceedance rate of 3/6 at station 2-NTR005.53, located above Mountain Road.

No additional data has been collected.

North Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life	pH - Total Impaired Size by Water Type:			**3.66**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-10-DO** **Upham Brook**

Location: Upham Brook from Flippen Creek downstream to the confluence with the UT entering above Wilkinson Road

City / County: Henrico Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The segment was assessed as not supporting the Aquatic Life Use in the 2008 cycle based on a dissolved oxygen exceedance rate of 2/12 at Route 301 (2-UPM002.41).

Upham Brook	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.16**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-11-DO** **Upham Brook, UT (XXP)**

Location: The unnamed tributary XXP from its headwaters to its mouth at Upham Brook.

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2008 cycle, the tributary was assessed as not supporting of the Aquatic Life Use based on a dissolved oxygen violation rate of 3/12 at TMDL station 2-XXP000.23, which is located at Wilkinson Road.

The exceedance rate was 5/12 during the 2016 cycle.

Upham Brook, UT (XXP)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.46**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-14-BEN** **Jordans Branch**

Location: The mainstem of Jordans Branch.

City / County: Henrico Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2016 cycle, Jordans Branch was impaired of the Aquatic Life Use due to an altered benthic community at freshwater probabilistic monitoring station 2CJOP000.34.

Jordans Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.19**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-15-DO** **XCJ - North Run, UT**

Location: Ditch from Lewis Ginter Botanical Garden to North Run.

City / County: Henrico Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2016 cycle, the ditch was impaired of the Aquatic Life Use due to dissolved oxygen exceedances at citizen monitoring station 2CXCJ-LSE-LSBG, which is located at the Lewis Ginter Botanical Garden driveway.

Monitoring at 2CXCJ-LSM-LSBG was acceptable.

XCJ - North Run, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.42**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-15-PH** **XCJ - North Run, UT**

Location: Ditch from Lewis Ginter Botanical Garden to North Run.

City / County: Henrico Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

During the 2016 cycle, the ditch was impaired of the Aquatic Life Use due to pH exceedances at citizen monitoring station 2CXCJ-LSE-LSBG, which is located at the Lewis Ginter Botanical Garden driveway.

Monitoring at 2CXCJ-LSM-LSBG was acceptable.

XCJ - North Run, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**0.42**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G05R-16-BEN** **Upham Brook**

Location: The mainstem of Upham Brook.

City / County: Henrico Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2016 cycle, Upham Brook was impaired of the Aquatic Life Use due to an altered benthic community at station 2-UPM003.12.

Upham Brook	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**12.15**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G06L-04-TEMP** **Westhaven Lake**

Location: The extent of Westhaven Lake

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

During the 2014 cycle, Westhaven Lake was impaired of the Aquatic Life Use due to a temperature exceedance rate of 3/8 at citizen monitoring station 2-BVR07.00-WH.

Westhaven Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:		**15.12**	

Sources:

Dam or Impoundment

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G06R-01-HG** **Chickahominy River**

Location: Segment begins at the Route 360 bridge over the Chickahominy River, and extends downstream to the Route 156 bridge.

City / County: Hanover Co. Henrico Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

During the 2010 cycle, the segment was assessed as not supporting of the Fish Consumption Use due to mercury exceedances in chain pickerel and yellow bullhead catfish during 2005 sampling.

Chickahominy River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**7.45**

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G06R-05-DO** **Powhite Creek**

Location: Powhite Creek below Gaines Millpond.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, Powhite Creek below Gaines Millpond was impaired of the Aquatic Life Use due to dissolved oxygen exceedances at 2-PWH002.12, which is located at Route 156. Natural conditions are suspected, however the dam should be investigated.

The exceedance rate was 2/14 in the 2016 cycle. Other stations within the segment had insufficient data for assessment.

Powhite Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.14**

Sources:

Dam or Impoundment	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G06R-06-PH** **Beaverdam Creek**

Location: Beaverdam Creek from its headwaters to the confluence with tributary XBT.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Beaverdam Creek was assessed as not supporting of the Aquatic Life Use based on a pH standard exceedance rate of 3/4 at USGS station 02042433.

During the 2008 cycle, monitoring at DEQ station 2-BEV002.00 at the Route 156 bridge, only slightly upstream of the USGS station, had an acceptable exceedance rate of 0/11; therefore continued monitoring was recommended.

During the 2014 cycle, monitoring was conducted at 2-BEV002.00 as well as 2-BEV-RICH01-NPS, which is a National Park Service station. The NPS station had an acceptable violation rate (0/31), however the DEQ station was 3/26; therefore, the segment remained impaired.

During the 2016 cycle, widespread monitoring was conducted by the DEQ and National Park Service. Although the majority of stations had acceptable pH, the upstream-most station, 2-BEV006.75 continues to have pH exceedances (7/13). The segment will be shortened to end at tributary XBT and the downstream portion will be partially delisted.

Beaverdam Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.67**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G06R-07-DO** **Boatswain Creek**

Location: Boatswain Creek from its headwaters to its mouth at the Chickahominy River.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2016 cycle, Boatswain Creek was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 7/50 at National Park Service Station 2-BTS-RICH-03-NPS. The station is located 100 yards downstream of Wyatt House Road near the west boundary of Richmond National Battlefield Park.

Monitoring at upstream DEQ station 2-BTS002.62 was acceptable (0/12).

Boatswain Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.75**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G06R-07-PH** **Boatswain Creek**

Location: Boatswain Creek from its headwaters to its mouth at the Chickahominy River.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Boatswain Creek was assessed as not supporting of the Aquatic Life Use during the 2008 cycle based on pH standard exceedance rates of 3/4 at USGS station 0204243830, 2/4 at USGS station 02043790, and 7/15 at DEQ station 2-BTS002.62.

During the 2012 cycle, the exceedance rate at 2-BTS002.62 was 4/11. Monitoring at new National Park Service station 2-BTS-RICH-03-NPS was inconclusive (1/8).

During the 2014 cycle, the pH exceedance rate was acceptable (2/31) at 2-BTS-RICH-03-NPS; however, there was no additional monitoring at any of the other stations. Boatswain Creek remained impaired in the 2014 cycle until further monitoring could be conducted.

In the 2016 cycle, the creek remains impaired due to an exceedance rate of 5/12 at 2-BTS002.62; monitoring at 2-BTS-RICH-03-NPS was acceptable (0/50).

Boatswain Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.75**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G06R-11-PH** **Bloody Run**

Location: Bloody Run from its headwaters to the its mouth at Gaines Millpond.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Bloody Run was assessed as not supporting of the Aquatic Life Use during the 2004 cycle based on pH exceedance rates of 4/4 at USGS stations 0204243610 and 0204243650.

Additional monitoring was conducted during the 2016 cycle. Monitoring at National Park Service station 2-BDY-RICH-04-NPS, which is co-located with the previous USGS station 0204243650, had a pH violation rate of 33/51. DEQ station 2-BDY000.58 had an exceedance rate of 12/12.

Bloody Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.16**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07L-01-DO** **Chickahominy Lake**

Location: Chickahominy Lake in its entirety.

City / County: Charles City Co. New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2014 cycle the segment became impaired for aquatic life with a DO pooled violation rate of 29/166 at stations 2-CHK025.15, 2-CHK026.94, 2-CHK029.54.

During the 2016 cycle there was no new data collected so the segment remains impaired for DO.

Chickahominy Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**1,050.46**	

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07L-01-HG** **Chickahominy Lake**

Location: Chickahominy Lake in its entirety.

City / County: Charles City Co. New Kent Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The VDH issued a Fish Consumption Advisory for Chickahominy Lake on 7/20/2006. No more than 2 meals per month of Largemouth Bass, Chain Pickerel, and Bowfin are recommended due to mercury in fish tissue.

Chickahominy Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**1,050.46**	

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07R-01-DO** **Collins Run**

Location: Collins Run from the headwaters downstream to rivermile 0.99

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Collins Run from its headwaters downstream to rivermile 0.99 was assessed as not supporting of the Aquatic Life Use in the 2010 cycle because of a dissolved oxygen violation rate of 4/6 at 2-CNR002.69, which is located at the Route 155 bridge.

The exceedance rate was 2/18 during the 2016 cycle. Downstream stations 2-CNR001.54 and 2-CNR001.58 were acceptable.

Collins Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.49**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07R-01-PH** **Collins Run**

Location: Collins Run from the headwaters downstream to rivermile 0.99

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Collins Run from its headwaters downstream to rivermile 0.99 was assessed as not supporting of the Aquatic Life Use in the 2012 cycle because of pH violation rates of 3/12 at 2-CNR002.69 (Route 155) and 2/12 at 2-CNR001.58. Station 2-CNR001.54 was acceptable (0/12).

Additional monitoring was conducted during the 2016 cycle at 2-CNR002.69. The segment remained impaired for pH (4/18).

Collins Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**4.49**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07R-02-DO** **Rumley Marsh**

Location: Rumley Marsh from its headwaters to Old Forge Pond. Below Old Forge Pond, the stream name is Jones Run.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C Oxygen, Dissolved / 5A

Special studies conducted in Rumley Marsh and Jones Run in 1994 identified summertime DO exceedances in Rumley Marsh at station 2-RUM002.46.

The segment was threatened in 1998 and downgraded in 2002. During the 2008 cycle, additional monitoring was conducted at 2-RUM004.38, which is located at the Route 617 bridge. The monitoring confirmed the impairment. In addition, station 2-RUM002.46 had a violation rate of 5/6 and station 2-RUM005.54 was 1/6 (IN).

During the 2014 cycle, the dissolved oxygen exceedance rates were as follows:
18/30 at 2-RUM002.46
11/27 at 2-RUM004.38 (2012)
3/12 at 2-RUM005.54

The Natural Conditions Assessment for Low pH and Low Dissolved Oxygen in Rumley Marsh, Pelham Swamp, and Tributaries was completed in January 2012. The report recommends that Rumley Marsh from its headwaters to its confluence with tributary XWS be reclassified as Class VII swampwater; until the WQS can be revised the upper portion will be assessed as Category 4C. However, it indicates that the nutrients in lower Rumley Marsh are too high. It is believed that the Chesapeake Bay TMDL will reduce nutrients in nonpoint source runoff.

Rumley Marsh **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.31**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07R-02-PH** **Rumley Marsh**

Location: Rumley Marsh from its headwaters to Old Forge Pond. Below Old Forge Pond, the stream name is Jones Run.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C pH / 5A

During the 2010 cycle, the segment was assessed as not supporting of the Aquatic Life Use due to pH violations at 2-RUM002.46 and 2-RUM005.54. During the 2014 cycle, the pH exceedance rates were as follows:

6/30 at 2-RUM002.46
4/28 at 2-RUM004.38 (2012)
9/12 at 2-RUM005.54

The Natural Conditions Assessment for Low pH and Low Dissolved Oxygen in Rumley Marsh, Pelham Swamp, and Tributaries was completed in January 2012. The report recommends that Rumley Marsh from its headwaters to its confluence with tributary XWS be reclassified as Class VII swampwater; until the WQS can be revised the upper portion will be assessed as Category 4C. However, it indicates that the nutrients in lower Rumley Marsh are too high. It is believed that the Chesapeake Bay TMDL will reduce nutrients in nonpoint source runoff.

Rumley Marsh **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**1.31**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07R-04-DO** **Schiminoe Creek**

Location: Schiminoe Creek from its headwaters to its mouth at the Chickahominy River.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, Schiminoe Creek was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 3/12 at 2-SMN001.42, which is located at Route 60.

Schiminoe Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.22**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07R-04-PH** **Schiminoe Creek**

Location: Schiminoe Creek from its headwaters to its mouth at the Chickahominy River.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Schiminoe Creek was assessed as not supporting of the Aquatic Life Use due to a pH exceedance rate of 4/12 at 2-SMN001.42, which is located at Route 60.

Schiminoe Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**6.22**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07R-06-DO** **XWS - Rumley Marsh, UT**

Location: Unnamed tributary from its headwaters to its mouth at Rumley Marsh.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2012 cycle, XWS was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 3/18 at 2-XWS000.85, which is located at the Route 155 bridge.

XWS - Rumley Marsh, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.17**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07R-06-PH** **XWS - Rumley Marsh, UT**

Location: Unnamed tributary from its headwaters to its mouth at Rumley Marsh.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

During the 2012 cycle, XWS was assessed as not supporting of the Aquatic Life Use due to a pH exceedance rate of 4/18 at 2-XWS000.85, which is located at the Route 155 bridge.

XWS - Rumley Marsh, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**2.17**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G07R-07-PH** **XAB - Collins Run, UT**

Location: Unnamed tributary from its headwaters to its mouth at Collins Run.

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, XAB was assessed as not supporting of the Aquatic Life Use due to a pH exceedance rate of 2/12 at 2-XAB000.15, which is located off of Route 155.

XAB - Collins Run, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.72**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G08E-03-BAC** **Diascund Creek**

Location: The tidal Diascund Creek.

City / County: James City Co. New Kent Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

Diascund Creek from the dam to its mouth was assessed as not supporting of the Recreation Use during the 2010 cycle due to an enterococci exceedance rate of 4/23 at 2-DSC003.19.

Additional monitoring in the 2016 cycle confirmed the impairment (2/11 at 2-DSC003.19 and 5/12 at 2-DSC005.38.)

The draft TMDL is currently under EPA review.

Diascund Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.271**		

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G08E-07-EBEN** **XAC - Chickahominy River, UT**

Location: The tidal portion of tributary XAC.

City / County: James City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

Station 2CXAC000.20 is a Coastal 2000 probabilistic monitoring station. During the 2010 cycle, Weight of Evidence assessment performed by DEQ's Central Office indicated benthic alteration which was probably caused by the acute and chronic effects of sediment PAHs and possibly metals (scenario 1, category 5A).

XAC - Chickahominy River, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**0.017**		

Sources:

Contaminated Sediments

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G08R-02-BAC** **Mill Creek**

Location: Mill Creek from its headwaters downstream to its tidal limit

City / County: James City Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Mill Creek was initially assessed as not supporting of the Recreation Use support goal in 2004 based on a fecal coliform violation rate of 3/13 recorded at 2-MCR002.38.

Additional monitoring was conducted during the 2012 cycle. The impairment converted to E. coli due to an exceedance rate of 2/12.

The exceedance rate was 6/24 during the 2016 cycle.

Mill Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.81**

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G08R-04-DO** **Yarmouth Creek**

Location: The nontidal portion of Yarmouth Creek.

City / County: James City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, Yarmouth Creek was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 4/12 at 2-YRM004.96, which is located at Rt. 632.

The violation rate was 5/36 during the 2016 cycle.

Yarmouth Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.09**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G08R-05-BAC** **Barrows Creek**

Location: The nontidal portion of Barrows Creek.

City / County: Charles City Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, Barrows Creek was assessed as impaired of the Recreation Use due to an E. coli exceedance rate of 6/12 at 2-BRW002.50, which is located at Route 615.

Barrows Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.93**

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G08R-05-DO** **Barrows Creek**

Location: The nontidal portion of Barrows Creek.

City / County: Charles City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, Barrows Creek was assessed as impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 5/12 at 2-BRW002.50, which is located at Route 615.

Barrows Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.93**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09L-01-HG** **Diascund Creek Reservoir**

Location: Diascund Creek Reservoir

City / County: James City Co. New Kent Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The 2010 cycle the segment was impaired for fish consumption use due to Mercury in fish tissue of Bass and Bowfin.
The 2012 cycle the segment was impaired for fish consumption use due to Mercury in fish tissue of Bass and Bowfin.

No new data for the 2014 and 2016 cycle.

Diascund Creek Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**1,056.13**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-01-BAC** **Beaverdam Creek**

Location: All of Beaverdam Creek, a tributary to Diascund Reservoir.

City / County: New Kent Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

In the 2012 cycle, Beaverdam Creek was impaired of the Recreation Use due to the following exceedance rates:

3/9 at 2-BDM003.16
4/20 at 2-BDM004.12
3/9 at 2-BDM004.60
5/9 at 2-BDM005.70

The draft TMDL is currently under EPA review.

Beaverdam Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**4.34**

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-01-DO** **Beaverdam Creek**

Location: All of Beaverdam Creek, a tributary to Diascund Reservoir.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Beaverdam Creek has been assessed as not supporting of the Aquatic Life use because of dissolved oxygen standard exceedances at the Route 632 bridge (2-BDM004.12). The segment was initially considered fully supporting but threatened in the 1998 cycle, but was downgraded to impaired in the 2002 cycle. The DO TMDL is due in 2014.

Additional monitoring has been conducted throughout the creek. The exceedance rates are as follows:
2/11 at 2-BDM003.16
13/37 at 2-BDM004.12 (2014 cycle)
14/23 at 2-BDM004.60
0/23 at 2-BDM005.70 (fully supporting)

Although the upstream station is fully supporting and is upstream of a swampy area, dark water was seen at this station, so it will remain incorporated with the downstream stations.

Beaverdam Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.34**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-01-PH** **Beaverdam Creek**

Location: All of Beaverdam Creek, a tributary to Diascund Reservoir.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

During the 2012 cycle, Beaverdam Creek was assessed as not supporting of the Aquatic Life use because of pH exceedances.

The exceedance rates in the 2016 cycle were as follows:
2/11 at 2-BDM003.16
2/37 at 2-BDM004.12 (2014 cycle - fully supporting)
5/23 at 2-BDM004.60
2/23 at 2-BDM005.70 (fully supporting)

Beaverdam Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.34**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-02-DO** **Diascund Creek**

Location: All of Diascund Creek from its headwaters to the Diascund Reservoir.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2008 cycle, Diascund Creek was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen violation rate of 4/25 at the Route 628 bridge (2-DSC012.68).

During the 2014 cycle, the exceedance rates were as follows:
5/11 at 2-DSC011.33
1/24 at 2-DSC012.67 (fully supporting)
5/11 at 2-DSC014.53
4/11 at 2-DSC015.32

Additional monitoring was conducted at 2-DSC012.67 during the 2016 cycle. The exceedance rate was acceptable (1/35). The segment will remain impaired due to the previous exceedances at the remaining stations in the stream; however, continued monitoring is recommended.

Diascund Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.88**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-02-PH** **Diascund Creek**

Location: All of Diascund Creek from its headwaters to the Diascund Reservoir.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Diascund Creek was assessed as not supporting of the Aquatic Life Use due to pH exceedances. The exceedance rates during the 2014 cycle were as follows:

2/11 at 2-DSC011.33
1/24 at 2-DSC012.67 (fully supporting)
1/11 at 2-DSC014.53 (fully supporting)
2/11 at 2-DSC015.32

Additional monitoring was conducted at 2-DSC012.67 during the 2016 cycle. The exceedance rate was acceptable (1/35). The segment will remain impaired due to the previous exceedances at the remaining stations in the stream; however, continued monitoring is recommended.

Diascund Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**6.88**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-03-DO** **XAL - Diascund Creek, UT**

Location: Unnamed tributary from its headwaters to its mouth at Diascund Creek

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, XAL was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 6/11 at 2CXAL000.15.

XAL - Diascund Creek, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.22**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-03-PH** **XAL - Diascund Creek, UT**

Location: Unnamed tributary from its headwaters to its mouth at Diascund Creek

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, XAL was assessed as not supporting of the Aquatic Life Use due to a pH exceedance rate of 2/11 at 2CXAL000.15.

XAL - Diascund Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.22**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-04-DO** **XAK - Diascund Creek, UT**

Location: Unnamed tributary from its headwaters to its mouth at Diascund Creek

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, XAK was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/11 at 2CXAK000.08.

XAK - Diascund Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.91**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-05-DO** **XAJ - Diascund Creek, UT**

Location: Unnamed tributary from its headwaters to its mouth at Diascund Creek

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, XAJ was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/11 at 2CXAJ000.69.

XAJ - Diascund Creek, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.93**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-06-BAC** **XAH - Beaverdam Creek, UT**

Location: Unnamed tributary from its headwaters to its mouth at Beaverdam Creek

City / County: New Kent Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2012 cycle, XAH was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/6 at 2CXAH000.35.

XAH - Beaverdam Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**2.23**

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-06-DO** **XAH - Beaverdam Creek, UT**

Location: Unnamed tributary from its headwaters to its mouth at Beaverdam Creek

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2012 cycle, XAH was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances at 2CXAH000.35. The exceedance rate was 4/9 during the 2014 cycle.

XAH - Beaverdam Creek, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.23**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-07-DO** **Wahrani Swamp**

Location: Wahrani Swamp from its headwaters to the upstream limit of Diascund Creek Reservoir.

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, Wahrani Swamp was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 6/12 at 2-WAS002.69, which is located at Route 632.

Wahrani Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.66**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G09R-08-DO** **XBY - Beaverdam Creek, UT**

Location: Unnamed tributary from its headwaters to its mouth at Beaverdam Creek

City / County: New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2016 cycle, tributary XBY was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 6/12 at 2CXBY000.19.

XBY - Beaverdam Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.08**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G10E-05-EBEN** **James River (Oligohaline)**

Location: This cause encompasses a portion of the James River Oligohaline segment from Sandy Bay to Hog Island Creek

City / County: Isle Of Wight Co. James City Co. Newport News City Surry Co. Williamsburg City

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

The Aquatic Life Use is impaired based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per CBP (Benthic-BIBI) analysis. The source/stressor tool yielded an unknown source for the impairment. Powhatan C

James River (Oligohaline)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Estuarine Bioassessments - Total Impaired Size by Water Type:	**28.118**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G10R-01-BAC** **College Run**

Location: This cause encompasses College Run, from the convergence of the two upstream branches downstream to the confluence with the James River at Cobham Bay. Located north of Chippokes Plantation State Park, tributary to Cobham Bay (Surry County, PRO station).

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The Recreation Use impairment is retained from previous assessments '02-'08 (2 violates / 8 obs. collected for 2006 IR at station 2-CGE001.41) due to exceedance of the criteria for Fecal Coliform bacteria. No further bacteria data has been collected. Need E.coli data to confirm previous FC impairment.

College Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			**2.61**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G10R-02-BEN** **Powhatan Creek**

Location: This cause encompasses Powhatan Creek, from the confluence with Long Hill Swamp and Chisel Run downstream to the beginning of tidal waters. Located west of the Five Forks area. North of Jamestown Island, north shore tributary to the James River.

City / County: James City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use impairment is retained for the stream's benthic population as measured by DEQ's Benthic-Macroinvertebrate Bioassessments program at station 2-POW006.77. Benthic data assessment (Spring - 2000 and Fall - 2000) resulted in a moderate impairment rating for this station.

Powhatan Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.36**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G10R-03-BAC** **Dark Swamp, UT (XHC)**

Location: The unnamed tributary XHC in its entirety.

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2012 cycle, the unnamed tributary to Dark Swamp was impaired of the Recreation Use due to an E. coli exceedance rate of 4/17 at 2-XHC000.12, which is located approx. 0.6 miles downstream of the Surry WWTF.

Dark Swamp, UT (XHC)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**1.30**

Sources:

Agriculture	Municipal Point Source Discharges	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G10R-03-DO** **Dark Swamp, UT (XHC)**

Location: The unnamed tributary XHC in its entirety.

City / County: Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2010 cycle, the unnamed tributary to Dark Swamp was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances at 2-XHC000.12, which is located approx. 0.6 miles downstream of the Surry WWTF. The exceedance rate was 5/22 during the 2012 cycle.

Dark Swamp, UT (XHC)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.30**

Sources:

Agriculture	Municipal Point Source Discharges	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G10R-04-BAC** **Unnamed tributary to Mill Creek**

Location: This cause encompasses the Unnamed tributary to Mill Creek. Located N of Lake Powell, between Jamestown Isl. and City of Williamsburg.

City / County: James City Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli data from Station 2-XZK000.06 with 11 viol / 12 obs.

Unnamed tributary to Mill Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.22**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G10R-05-BAC** **Dark Swamp**

Location: The nontidal portion of Dark Swamp

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, Dark Swamp was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 4/12 at 2-DRK000.31, which is located at the Route 626 bridge.

Dark Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.15**

Sources:

Municipal Point Source Discharges	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11E-20-BAC** **James River - Hilton Beach Area**

Location: This cause encompasses the area of north shore James R. NW of James R. Bridge. Mainstem along north shoreline beach in Hilton Village area. CBP segment JMSMH.

City / County: Newport News City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on Enterococcus bacteria data from the VDH-Beach station VA747818 (3 viol. / 20 Geo-mean obs.) along with multiple swimming advisories between the years 2007-2012.

James River - Hilton Beach Area	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.110**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11E-21-BAC** **James River - Huntington Beach Area**

Location: This cause encompasses the area north shore James R. near foot of James R. Bridge. Mainstem along north shoreline beach in Hilton Village area. CBP segment JMSMH.

City / County: Newport News City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on Enterococcus bacteria data from the VDH-Beach station VA747813 (2 viol. / 21 Geo-mean obs.) and multiple short term swimming advisories.

James River - Huntington Beach Area **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.008**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11L-01-CU** **Lee Hall Reservoir**

Location: This cause encompasses the entirety of Lee Hall Reservoir. Located southeast of Lee Hall area. Northeast of Fort Eustis. Lee Hall is split by I-64. Newport News PWS.

City / County: Newport News City

Use(s): Aquatic Life Wildlife

Cause(s) / VA Category: Copper / 5A

The Aquatic Life Use and Wildlife Uses are impaired based on exceedance of the DEQ copper (acute) criteria as reported from a USGS 2002 special study. Cu exceedances include 0204279210 (4 violates), 0204279224 (1 violates), 0204279230 (4 violates) and 0204279240 (4 violates).

Lee Hall Reservoir **Wildlife**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Copper - Total Impaired Size by Water Type:		**584.28**	

Sources:

Municipal (Urbanized High Density Area)

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11L-01-HG** **Lee Hall Reservoir**

Location: This cause encompasses the entirety of Lee Hall Reservoir. Located southeast of Lee Hall area. Northeast of Fort Eustis. Lee Hall is split by I-64. Newport News PWS.

City / County: Newport News City

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on fish tissue metals data collected from 2005. The Mercury impairment was found in Largemouth Bass.

Lee Hall Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**292.14**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11L-01-PCB** **Lee Hall Reservoir**

Location: This cause encompasses the entirety of Lee Hall Reservoir. Located southeast of Lee Hall area. Northeast of Fort Eustis. Lee Hall is split by I-64. Newport News PWS.

City / County: Newport News City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The Fish Consumption Use is impaired based on fish tissue data collected from 2005. The PCB impairment was found in Carp and Largemouth Bass.

Lee Hall Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**292.14**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11L-05-DO** **Lee Hall Reservoir**

Location: This cause encompasses the entirety of Lee Hall Reservoir. Located southeast of Lee Hall area. Northeast of Fort Eustis. Lee Hall is split by I-64. Newport News PWS.

City / County: Newport News City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Dissolved oxygen is not supporting ALUS based on data at stations 2-LHR001.76 (7 viol/ 40 obs) and 2-LHR002.56 (5 viol/ 32 obs).

Lee Hall Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:		**292.14**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11L-06-DO** **Scotts Factory Pond**

Location: This cause encompasses the pond in its entirety.

City / County: Isle Of Wight Co. James City Co. Newport News City Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Dissolved oxygen is impaired based on level III data at station 2ECL-1-IRC with 3 viol/ 12 obs.

Scotts Factory Pond		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:		**14.83**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11R-02-BEN** **Chuckatuck Creek**

Location: This cause encompasses Chuckatuck Creek, from the confluence of unnamed tributary (downstream of Rt 600) downstream to confluence of unnamed tributary (downstream of Rt 602, below BIO station @ 2-CKT005.72).Riverine portion southwest of Longview.

City / County: Isle Of Wight Co. Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use impairment is retained from previous assessments (2004 - 2006) based on a moderately impaired rating for freshwater benthic bioassessment monitored at DEQ (BIO) benthic assessment monitoring station @ 2-CKT005.72 during Spring & Fall of 1998 - 2000. No more recent benthic monitoring has been conducted with which to revise assessment.

Chuckatuck Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.53**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11R-03-BAC** **Champion Swamp**

Location: This cause encompasses a portion of Champion Swamp. Located southwest of Town of Smithfield. Western tributary to Cypress Creek. Portion of lower Champion Swamp, from split of stream upstream of State Hwy 620 downstream to the start of tidal waters in downstream Cypress Creek past pipeline marker on topo

City / County: Isle Of Wight Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impairment is retained (2 violates / 2 observations) based on exceedance of the DEQ E.coli bacteria instantaneous maximum criteria measured at DEQ biomonitoring station 2-CPN004.81 and 2CPN-1-IRC (1 / 7) .

Champion Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.16**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G11R-04-BAC** **Pagan River (including Wrenns Millpond)**

Location: This cause encompasses Riverine portion of Pagan River beginning at the confluence of Warren Creek and in eastern trib. Proceeding downstream (including Wrenns Millpond) and downstream of pond to confluence with tidal waters.

City / County: Isle Of Wight Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on (10 viol / 36 obs.) based on E.coli bacteria data meeting the applicable criteria monitored at DEQ (AQM) monitoring station 2-PGN010.07.

Pagan River (including Wrenns Millpond)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**1.35**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G12L-01-DO** **Lake Cahoon**

Location: This cause encompasses the entirety of Lake Cohoon. Southeast of Myrtle. West and upstream of Lake Meade, (portion of the headwater impoundment system of the Nansemond River). Portion of Portsmouth PWS system.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on dissolved oxygen concentrations below the DEQ minimum allowable instantaneous criteria. DEQ Monitoring Stations 2-LCN000.20, 2-LMD004.35, and 2-LMD005.55. Pooled DO data violation rate 20 % (15 violates/ 75 obs).

Lake Cahoon **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**454.16**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G12L-02-DO** **Lake Meade**

Location: This cause encompasses the entirety of Lake Meade. Northwest of City of Suffolk. Headwater impoundments of Nansemond River. Downstream receptor of Lakes Cohoon & Kilby. Portion of Portsmouth PWS system.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on dissolved oxygen concentrations below the DEQ minimum allowable instantaneous criteria. Pooled DO data is impaired with a violation rate of 16.8 % (38 violates/ 225 obs.).

Lake Meade **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**489.49**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G12L-02-TP** **Lake Meade**

Location: This cause encompasses the entirety of Lake Meade. Northwest of City of Suffolk. Headwater impoundments of Nansemond River. Downstream receptor of Lakes Cohoon & Kilby. Portion of Portsmouth PWS system.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) / VA Category: Phosphorus (Total) / 5A

The Aquatic Life Use is impaired based on the Lake Meade pooled nutrient results: 2 viol / 2 obs TP 2009, 2012 (IM); Nutrients Impaired -Assess TP since algaecide application.

Lake Meade **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Phosphorus (Total) - Total Impaired Size by Water Type:		**489.49**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G12L-03-CHLA** **Speights Run Lake**

Location: This cause encompasses the entirety of Speights Run Lake. Northwest of Suffolk Municipal Airport. Southwest of Lake Kilby. Most southwest branch and upstream of Lake Kilby/Lake Meade system (headwater impoundments of Nansemond River). Portion of Portsmouth PWS system

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Chlorophyll-a / 5A

ALUS is impaired for nutrients - Chla. Speights Run pooled nutrients results: 2 viol / 3 obs Chla 2012, 2009, 2008 (IM); Chla Assessed IM -no algaecide application.

Speights Run Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chlorophyll-a - Total Impaired Size by Water Type:		**120.87**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G12L-03-DO** **Speights Run Lake**

Location: This cause encompasses the entirety of Speights Run Lake. Northwest of Suffolk Municipal Airport. Southwest of Lake Kilby. Most southwest branch and upstream of Lake Kilby/Lake Meade system (headwater impoundments of Nansemond River). Portion of Portsmouth PWS system

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on dissolved oxygen concentrations below the DEQ minimum allowable instantaneous criteria. Pooled DO violation rate is 42.8% (21 violates/88 obs.).

Speights Run Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**120.87**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G12L-04-DO** **Lake Kilby**

Location: This cause encompasses the entirety of Lake Kilby. Northwest of Suffolk Municipal Airport. South of Pitchkettle Creek. Most southwest branch of Lake Kilby/Pitchkettle Creek/Lake Meade system (headwater impoundments of Nansemond River). Portion of Portsmouth PWS system

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on dissolved oxygen concentrations below the DEQ minimum allowable instantaneous criteria. Pooled DO data violation rate is 69.4 % (25 violates/ 36 obs.).

Lake Kilby **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**200.03**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G12L-04-TP** **Lake Kilby**

Location: This cause encompasses the entirety of Lake Kilby. Northwest of Suffolk Municipal Airport. South of Pitchkettle Creek. Most southwest branch of Lake Kilby/Pitchkettle Creek/Lake Meade system (headwater impoundments of Nansemond River). Portion of Portsmouth PWS system

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Phosphorus (Total) / 5A

Aquatic Life Use is impaired for nutrients - TP. Lake Kilby pooled nutrient results: 2 viol/ 2 obs TP 2009, 2012 (IM).

Lake Kilby **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Phosphorus (Total) - Total Impaired Size by Water Type:		**200.03**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G13E-07-PH** **Shingle Creek - Tributary to Nansemond R.**

Location: This cause encompasses the area NE of Suffolk, near Rt 642. From end of tidal waters (0.2 mi upstream of Portsmouth Blvd) downstream to confluence with Nansemond River. CBP segment JMSMH.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The Aquatic Life Use is impaired (TMDL ID = VAT-G13E-07) based on a site specific failure to meet the minimum pH criteria.(4.0 SU) at station 2-SGL001.00 (8/36). Connection of upstream portions with canals associated with the Dismal Swamp may impart low pH waters into this segment.

Shingle Creek - Tributary to Nansemond R.		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:	**0.040**		

Sources:

Natural Sources Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G14L-01-DO** **Lake Burnt Mills**

Location: This cause encompasses the entirety of Lake Burnt Mills. West of Chuckatuck. Upper northwest portion of Western Branch Reservoir system. Upstream of Rt 603. Impounded headwaters tributary of the Nansemond River. Portion of Norfolk water supply reservoirs.

City / County: Isle Of Wight Co. Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on dissolved oxygen concentrations below the DEQ minimum allowable instantaneous criteria. Pooled DO exceedance rate 16.2% (40 violates/ 247 obs.).

Lake Burnt Mills **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**637.99**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G14L-01-PH** **Lake Burnt Mills**

Location: This cause encompasses the entirety of Lake Burnt Mills. West of Chuckatuck. Upper northwest portion of Western Branch Reservoir system. Upstream of Rt 603. Impounded headwaters tributary of the Nansemond River. Portion of Norfolk water supply reservoirs.

City / County: Isle Of Wight Co. Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Pooled pH for Lake Burnt Mills is impaired for Aquatic Life Use with a violation rate of 13.4 % (79 viol/ 588 obs). Individual station exceedances include 2-NWB007.04 (27 viol/ 130 obs), BM1 (29 viol/ 264 obs), and BM2 (23 viol/ 173 obs). Insufficient Level II data at station 2GRW-3-IRC has an observed effect with 2 viol/ 9 obs.

Lake Burnt Mills		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:		**637.99**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G14L-02-DO** **Western Branch Reservoir**

Location: This cause encompasses the entirety of Western Branch Reservoir. West of Chuckatuck. Impounded headwaters tributary of the Nansemond River. Portion of Norfolk water supply reservoirs.

City / County: Isle Of Wight Co. Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on dissolved oxygen concentrations below the DEQ minimum allowable instantaneous criteria. Pooled DO violation rate is 13.8 % (216 violates/ 1558 obs.).

Western Branch Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**1,209.67**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G14L-02-TP** **Western Branch Reservoir**

Location: This cause encompasses the entirety of Western Branch Reservoir. West of Chuckatuck. Impounded headwaters tributary of the Nansemond River. Portion of Norfolk water supply reservoirs.

City / County: Isle Of Wight Co. Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Phosphorus (Total) / 5A

The Aquatic Life Use is impaired based on pooled nutrient results: 2 viol/ 2 obs Chla & TP 2009,2012 (IM); (algaecide application).

Western Branch Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Phosphorus (Total) - Total Impaired Size by Water Type:		**1,209.67**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G14L-03-DO** **Lake Prince Reservoir**

Location: This cause encompasses the entirety of Lake Prince Reservoir. Northwest of Suffolk, south of Town of Indika. Southwest branch of Western Branch Reservoir system. Upstream of Western Branch Reservoir. Portion of Norfolk water supply reservoirs.

City / County: Isle Of Wight Co. Norfolk City Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on dissolved oxygen concentrations below the DEQ minimum allowable instantaneous criteria. Pooled DO exceedance rate is 17.2% (219 violates / 1269 obs.).

Lake Prince Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:		**715.37**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G14R-01-PH** **Carbell Swamp - Upper**

Location: This cause encompasses the upper portion of Carbell Swamp. Upstream tributary to the northwest branch of Lake Prince (near Holly Grove Church). Entire watershed is portion of PWS for City of Norfolk.

City / County: Isle Of Wight Co. Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The Aquatic Life Use is impaired based on pH concentrations below the DEQ minimum criteria (6.0 SU). DEQ freshwater benthic bioassessment monitoring station @ 2-CRL004.04 (1 violates / 4 observations).

Carbell Swamp - Upper **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.95**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G14R-02-BAC** **Carbell Swamp - Lower**

Location: This cause encompasses the lower portion of Carbell Swamp. Upstream tributary to the northwest branch of Lake Prince (near Holly Grove Church), including confluent trib. at station originating from the NW. Begins at Branch & Joyner Millpond downstream to joining Lake Prince. Within PWS for City of Norfolk

City / County: Isle Of Wight Co. Norfolk City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on exceedance of the E.coli bacteria instantaneous criteria (5 violates / 35 obs.) as monitored at the DEQ monitoring station 2-CRL001.83.

Carbell Swamp - Lower **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.88**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G14R-02-DO** **Carbell Swamp - Lower**

Location: This cause encompasses the lower portion of Carbell Swamp. Upstream tributary to the northwest branch of Lake Prince (near Holly Grove Church). Lower segment of swamp. Entire watershed is portion of PWS for City of Norfolk.

City / County: Isle Of Wight Co. Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on DO concentrations below the DEQ minimum criteria (9 violates /34 obs.) at station 2-CRL001.83.

Carbell Swamp - Lower **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.88**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G15E-01-01-TCDD** **Elizabeth River Southern Branch and its tidal tributaries. CBP segment SBEMH.**

Location: This cause encompasses the entirety of the Southern Branch Elizabeth River and its tidal tributaries.

City / County: Chesapeake City Norfolk City Portsmouth City

Use(s): Fish Consumption

Cause(s) /
VA Category: Dioxin (including 2,3,7,8-TCDD) / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory within the Southern Branch Elizabeth River and its tidal tributaries for Dioxin in Blue Crab hepatopancreas contamination, issued by the VDH 1/23/09.

Elizabeth River Southern Branch and its tidal tributaries. CBP segment SBEMH.	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Dioxin (including 2,3,7,8-TCDD) - Total Impaired Size by Water Type:	**3.147**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G15E-02-04-EBEN** **Eastern Branch Elizabeth River, Broad Creek and Unsegmented estuaries in EBEMH**

Location: This cause encompasses the entirety of the Eastern Branch Elizabeth River and Broad Creek. Located between Carolanne Farms and Tanglewood areas. Upper Eastern Branch, from headwaters to confluence of Broad Creek (RM 4.0). CBP segment EBEMH.

City / County: Chesapeake City Norfolk City Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

For 2014 there is insufficient data to assess benthics, therefore the 2010 impairment will be retained. 2010- The Aquatic Life Use was impaired based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per CBP (Benthic-BIBI) analysis (VERSAR-2005). The benthic source/stressor tool yielded sediment contaminants as the suspected source for the impairment. This segment was previously included (2004 IR) in TMDL ID: VAT-G15E-01-03. The TMDL due date is carried from the previous 2004 IR impairment identification date."

Eastern Branch Elizabeth River, Broad Creek and Unsegmented estuaries in EBEMH	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Estuarine Bioassessments - Total Impaired Size by Water Type:	**2.350**		

Sources:

Contaminated Sediments Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G15E-03-01-EBEN Elizabeth River Mainstem**

Location: This cause encompasses the entirety of the Elizabeth River Mainstem. CBP segment SBEMH. BIBI segment ELIMHa.

City / County: Norfolk City Portsmouth City

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

The Aquatic Life Use is impaired based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per CBP (Benthic-BIBI) analysis. The source/stressor tool yielded an unknown source for the impairment.

Elizabeth River Mainstem **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**7.917**		

Sources:

Contaminated Sediments Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G15E-03-03-EBEN Scott Creek**

Location: This cause encompasses the entirety of Scott Creek

City / County: Norfolk City Portsmouth City

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

The Aquatic Life Use - Estuarine Bioassessment impairment based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per CBP (Benthic-BIBI) analysis. The Elizabeth River mainstem segment BIBI-ELIPHa was assessed as impaired of the Clean Water Act's Aquatic Life Use Support Goal due to the results of benthic BIBI probabilistic station surveys. The BIBI stressor tool yielded"unknown" as the probable impairment source.

Scott Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**0.194**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G15E-04-02-EBEN Western Branch Elizabeth River and Unsegmented estuaries in WBEMH**

Location: This cause encompasses the entirety of the Western Branch Elizabeth River and its tributaries. CBP segment WBEMH. BIBI segment WBEMHa.

City / County: Chesapeake City Portsmouth City

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

For 2014 there is insufficient data to assess benthics, therefore the 2010 impairment will be retained. 2010- The Aquatic Life Use was impaired based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per CBP (Benthic-BIBI) analysis (VERSAR-2005). The benthic source/stressor tool yielded sediment contaminants as the suspected source for the impairment.

Western Branch Elizabeth River and Unsegmented estuaries in WBEMH **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**2.725**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G15E-06-01-BAC** **James River - King/Lincoln Park Beach Area**

Location: Located NE of Newport News Point, along the northern shore of Hampton Roads Harbor. CBP segment JMSPH.

City / County: Hampton City Newport News City Norfolk City Portsmouth City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on the Enterococcus bacteria data from the VDH-Beach station VA722627 (1 viol. / 20 Geo-mean obs.) in addition to several swimming advisories. Previous Use ID = VAT-G15E-06-01.

James River - King/Lincoln Park Beach Area	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.009**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G15E-06-02-BAC** **James River - Anderson Park Beach Area**

Location: Located NE of Newport News Point, along the northern shore of Hampton Roads Harbor. CBP segment JMSPH.

City / County: Hampton City Newport News City Norfolk City Portsmouth City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on the Enterococcus bacteria data from the VDH-Beach station VA523358 (2 viol. /19 Geo-mean obs.) and swimming advisories.

James River - Anderson Park Beach Area	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.011**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* G15E-06-04-BAC** **Willoughby Bay - Beach Area**

Location: This cause encompasses the area located along the northern shore portion of Willoughby Bay along Willoughby Spit. CBP segment JMSPH.

City / County: Norfolk City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 5A

The Recreation Use is assessed as impaired based on the data from the VDH Beach Monitoring Program geometric mean violation, swimming advisories and joint VDH-DEQ assessment review at Captains Quarters VDH station. The station VA862384 exceeds the monthly geometric mean 9/2011 (1 geomean viol / 6 obs).

Willoughby Bay - Beach Area		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation	Enterococcus - Total Impaired Size by Water Type:	**0.142**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H01R-01-HG** **James River**

Location: James River from Balcony Falls Dam downstream to Holcomb Rock Dam

City / County: Amherst Co. Bedford Co. Rockbridge Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2010 303(d) Listing is based on 2005 fish tissue collections and new Water Quality Standards effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) tissue value cause impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. The Virginia Department of Health (VDH) level of concern is 0.5 ppm. Please visit http://www.deq.virginia.gov/ for more information about mercury contamination and http://www.vdh.virginia.gov for VDH Advisories or Bans.

2-JMS279.41 (Blue Ridge Parkway Bridge) - The initial 2010 303(d) Listing is based on 2005 fish tissue analysis where mercury (Hg) is found in two species; smallmouth bass at 0.46 ppm and largemouth bass at 0.40 ppm; each in excess of the new WQS TV based 0.3 ppm. There are no additional data within the 2012, 2014 or 2016 data windows.

James River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**15.83**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H01R-02-BAC** **James River**

Location: James River mainstem from the Balcony Falls Dam downstream to the mouth of Peters Creek (JM01).

City / County: Rockbridge Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

These waters were previously Listed in 1998 and subsequently de-listed with the 2002 assessment. The Recreational Use impairment returns with the 2014 Integrated Report (IR) due to escherichia coli (E/coli) exceedances of the WQS instantaneous criterion.

2-JMS282.28 (Rt. 501 Bridge - S.E. of Glasgow) There are no additional data beyond the 2014 IR. The 2014 IR finds six of 36 E.coli observations exceeding the 235 cfu/100 ml instantaneous criterion. Values in excess of the criterion range from 325 to 1225 cfu/100 ml.

James River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.42**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wastes from Pets
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H01R-03-BAC** **James River**

Location: James River from the mouth of Reed Creek downstream to Holcomb Rock Dam.

City / County: Amherst Co. Bedford Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

These waters were previously 303(d) Listed in 1998 and de-listed with the 2002 assessment. These waters return to impaired waters status with the 2016 Integrated Report (IR).

2-JMS275.75 (Below Big Island) The 2016 IR finds five of 36 escherichia coli (E.coli) samples exceed the WQS instantaneous criterion of 235 cfu/100 ml. Excessive values range from 355 to 1750 cfu/100 ml.

James River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.36**

Sources:

Livestock (Grazing or Feeding Operations)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Unspecified Domestic Waste	Wastes from Pets
Wet Weather Discharges (Non-Point Source)	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Wildlife Other than Waterfowl	

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H03R-01-BEN** **Blackwater Creek**

Location: Blackwater Creek from the confluence of Tomahawk and Burton Creeks to the mouth at the James River.

City / County: Lynchburg City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-BKW000.40
2007 Bio - IM
Habitat assessment scores at this site were low for epifaunal substrate, sediment deposition, bank stability and bank vegetative protection. Blackwater Creek is an urban stream with many non-point sources of pollution, in addition to scouring and high sediment loads during rain events. It has a uniform stream bottom with little instream habitat.
2-BKW004.87
2007, 2009-2010 Bio - IM
This section of Blackwater Creek has an excellent riparian zone for an urban area, but has poor bank stability, increased embeddedness and sediment deposition, and marginal epifaunal substrate.

Blackwater Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**10.54**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H03R-03-BEN** **Ivy Creek**

Location: Ivy Creek mainstem from its headwaters downstream to its confluence with Blackwater Creek.

City / County: Lynchburg City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station IDs:
2-IVA000.05
2007 - IM - Ivy Creek had very low flow during the spring 2007 sampling event. Ivy Creek is an urban stream with obvious dumping of trash and debris, including bricks, tires, and metal objects. The upstream portion of the sample reach has homes, lawns, and construction present up to the edges of the banks.
2-IVA005.75
2007 - FS
Ivy Creek flows through a city park and has high sediment deposition, however, satellite imagery shows that much of the upstream riparian zone is wooded or consists of fields and low intensity residential areas. Additional development will threaten the biological integrity of this stream.
2-IVA012.13
2007 - IM
Heavy, fresh sediment deposition noted in stream at time of sampling. Available habitat was heavily embedded in sediment. This watershed is being rapidly developed and will likely degrade further due to increased runoff from new neighborhoods.

Ivy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**21.44**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H03R-04-PCB** **James River**

Location: The James River from Big Island dam (below Blue Ridge Parkway) downstream to the I-95 bridge James River Bridge in Richmond including its tributaries Hardware River up to Rt. 6 bridge and Slate River up the Rt. 676 bridge.

City / County:					
	Albemarle Co.	Amherst Co.	Appomattox Co.	Bedford Co.	Buckingham Co.
	Campbell Co.	Chesterfield Co.	Cumberland Co.	Fluvanna Co.	Goochland Co.
	Henrico Co.	Lynchburg City	Nelson Co.	Powhatan Co.	Richmond City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The rivers are considered impaired of the Fish Consumption Use due to a 12/13/2004 VDH fish consumption restriction for PCBs. No more than two meals/month of gizzard shad, carp, American eel, flathead catfish, and quillback carpsucker are recommended.

A portion of the segment was first listed in the 2004 cycle but was expanded during the 2006 cycle based on the condemnation. The original 2016 TMDL due date was maintained.

The impairment is based on the results of DEQ's fish tissue monitoring program which has indicated PCB exceedances at multiple stations including 2-JMS157.28, 2BJMS118.99, 2-JMS127.50, 2CJMS110.00, et al.

James River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**199.28**

Sources:

Contaminated Sediments Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H03R-05-BEN** **Burton Creek**

Location: Burton Creek from its headwaters to its mouth on Tomahawk Creek.

City / County: Lynchburg City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-BUN000.04 - 2007 Bio Station
Burton Creek suffers from heavy algal growth in addition to fine sediments covering the stream bottom. Habitat assessment scores were low for bank stability and bank vegetative protection. An abundance of trash was noted in the stream at the time of sampling.

Burton Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.47**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H03R-06-BEN** **Judith Creek**

Location: Judith Creek from its headwaters to the confluence with the James River.

City / County: Bedford Co. Lynchburg City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-JTH001.52 - 2008-2010 Bio - FS
2-JTH006.53 - 2008 Bio - IM
This stream is small and has unstable banks with little vegetative protection.

Judith Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**11.08**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H03R-07-BEN** **Tomahawk Creek**

Location: Tomahawk Creek from its headwaters to its confluence with Burton Creek.

City / County: Lynchburg City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-THK000.03 - 2007, 2009 Bio - IM
Tomahawk Creek is an urban stream with highly embedded substrate and unstable banks.

Tomahawk Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.06**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H05R-01-BAC** **James River**

Location: The confluence with Wreck Island Creek to Tye River

City / County: Amherst Co. Appomattox Co. Buckingham Co. Campbell Co. Nelson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2-JMS229.14 (Ambient, Trend)
E. coli - 3/12 Violation Rate

James River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**15.93**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H05R-03-BAC** **Beaver Creek**

Location: Beaver Creek mainstem from its mouth on the James River upstream to an unnamed tributaries mouth at the Rt. 501 Bridge.

City / County: Campbell Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2-BCR000.20 (Ambient)
E. coli - 3/24 Violation Rate

Beaver Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.67**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H05R-06-BAC** **Little Beaver Creek**

Location: Little Beaver Creek from its headwaters to its mouth on the James River.

City / County: Campbell Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2-LTJ000.16 (James River TMDL Site)
E. coli - 3/12 Violation Rate

Little Beaver Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.13**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H05R-08-BAC** **Beck Creek**

Location: Beck Creek from the confluence of the North and South Forks of Stovall Creek to its mouth.

City / County: Amherst Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2-BEK000.10 (Ambient)
E. coli - 6/12 Violation Rate

Beck Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.28**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H05R-09-BAC** **Partridge Creek**

Location: Partridge Creek from its headwaters to the mouth.

City / County: Amherst Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2-PDG000.12 (Ambient)
E. coli - 5/15 Violation Rate

Partridge Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**10.40**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H05R-10-BAC** **Archer Creek**

Location: Archer Creek from its headwaters to its mouth on the James River

City / County: Campbell Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2BACH000.09 (Ambient)
E. coli - 5/12 Violation Rate

Archer Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**7.46**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H05R-11-BAC** **Allens Creek**

Location: Allens Creek from its headwaters to its mouth on the James River

City / County: Campbell Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2BANC000.09 (Ambient)
E. coli - 5/12 Violation Rate

Allens Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**7.18**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H08R-01-BAC** **Davids Creek**

Location: David Creek from the confluence with Stevens Run to the mouth.

City / County: Appomattox Co. Buckingham Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2-DVD000.23 (Ambient)
E. coli - 4/12 Violation Rate

Davids Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.18**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H09R-01-PH** **Montebello Spring Branch**

Location: Montebello Spring Branch from the spring downstream to its confluence with Mill Creek. (Start Mile: .13 End Mile: 0.00 Total Impaired Size: .13 Miles)

City / County: Nelson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: 2-XXM000.01 (2 violations of 3 samples for pH in 2008. This site was not monitored in the 2016 cycle and the assessment will carry forward to the 2016 cycle). Initial Listing Date: 2004.

Montebello Spring Branch		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**0.13**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H09R-02-BEN** **Hat Creek**

Location: Hat Creek from the headwaters downstream to its confluence with the Tye River. (Start Mile: 9.52 End Mile: 0.00 Total Impaired Size: 9.52 Miles)

City / County: Nelson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-HAT000.14 (Impaired for VSCI). Initial Listing Date: 2012.

Hat Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.51**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H09R-04-BEN** **Tye River**

Location: Tye River from its confluence with Silver Creek downstream to its confluence with Hat Creek. (Start Mile: 31.99 End Mile: 24.29 Total Impaired Size: 7.70 Miles)

City / County: Nelson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-TYE028.94 (Impaired for VSCI). Initial Listing Date: 2012

Tye River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.70**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H09R-05-BEN** **Black Creek**

Location: Black Creek from the headwaters downstream to its confluence with the Tye River. (Start Mile: 1.96 End Mile: 0.00 Total Impaired Size: 1.96 Miles)

City / County: Nelson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station 2-BKC001.43 and 2-BKC001.55 (Impaired for VSCI). Initial Listing Date: 2014

Black Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.95**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H11L-01-DO** **Stonehouse Creek Reservoir**

Location: Stonehouse Creek Reservoir from its impounding structure upstream to its backwaters.

City / County: Amherst Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
2-SHS001.00 (Lake Station)
DO - 5/38 Violation Rate

Stonehouse Creek Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**33.53**	

Sources:

Dam or Impoundment

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H11L-01-PH** **Stonehouse Creek Reservoir**

Location: Stonehouse Creek Reservoir from its impounding structure upstream to its backwaters.

City / County: Amherst Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Station ID:
2-SHS001.00 (Lake Station)
pH - 12/80 Violation Rate

Stonehouse Creek Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:		**33.53**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H11L-02-CHLA** **Thrashers Creek Reservoir**

Location: Thrashers Creek Reservoir from its impounding structure upstream to its backwaters.

City / County: Amherst Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Chlorophyll-a / 5A

Station ID:
2-TRH000.40 (Lake Station)
Chlorophyll a - 2/2 Samples (90% Calculated over 2 Sample Yrs)
Total Phosphorus not assessed since no algaecide used

Thrashers Creek Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Chlorophyll-a - Total Impaired Size by Water Type:		**31.95**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H11L-02-PH** **Thrashers Creek Reservoir**

Location: Thrashers Creek Reservoir from its impounding structure upstream to its backwaters.

City / County: Amherst Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Station ID:
2-TRH000.40 (Lake Station)
pH - 24/99 Violation Rate

Thrashers Creek Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:		**31.95**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H11L-03-PH** **Mill Creek Reservoir**

Location: Mill Creek Reservoir

City / County: Amherst Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Station ID:
2-MIN000.98 (2011/2012 Lake Station)
pH - 16/117

Mill Creek Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:		**186.40**	

Sources:

Dam or Impoundment Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H12R-01-BEN** **Rutledge Creek**

Location: Rutledge Creek mainstem from the Town of Amherst outfall downstream to its mouth on the Buffalo River.

City / County: Amherst Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-RTD003.08 (Bio)
IM - 2007/2011 Bio
This site was highly embedded with unstable banks and poor bank vegetative protection. Available habitat was covered with periphyton and filamentous algae.

Rutledge Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.32**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H13L-01-DO** **Lake Nelson**

Location: Lake Nelson (40.62 Acres)

City / County: Nelson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

This lake is impaired due to violations of the dissolved oxygen WQS at station: 2-XLU000.10 (12 violations of 52 samples for dissolved oxygen) Initial Listing Date: 2016.

Lake Nelson		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:		**40.62**	

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H14R-01-BEN** **Mallorys Creek**

Location: Mallorys Creek from its headwaters to its mouth on the James River.

City / County: Buckingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-MLY005.39 (2012/20140 Bio)
IM - This site had optimal habitat but satellite imagery shows considerable clearcutting in the watershed. Sediment metrics were rated high suboptimal, indicating that sedimentation may not be the primary problem.

Mallorys Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.75**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H14R-01-HG** **James River**

Location: James River from the Tye River to the Rockfish River

City / County: Buckingham Co. Nelson Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Station ID:
2-JMS213.00 (2005 FT/Sediment)
Hg 2 Species

James River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**18.57**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H15R-03-BEN** **Taylor Creek**

Location: Taylor Creek from the headwaters downstream to its confluence with Perry Creek. (Start Mile: 4.99 End Mile: 0.00 Total Impaired Size: 4.99 Miles)

City / County: Nelson Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-TLR000.03 (Impaired for VSCI) and 2-TLR000.52 (Impaired for VSCI in 2014) Initial Listing Date: 2008. This impairment was lengthened slightly in 2016 to correct a previous segmentation error.

Taylor Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.99**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H16R-02-BAC** **Beaver Creek**

Location: Beaver Creek from the confluence of its two headwater branches downstream to its confluence with the Rockfish River. (Start Mile 7.41 End Mile: 0.00 Total Impaired Size: 7.41 Miles)

City / County: Nelson Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 2-BVR000.83 (2 violations of 12 samples for e-coli). Initial Listing Date: 2012.

Beaver Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.41**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H16R-03-BAC** **Cove Creek**

Location: Cove Creek from the headwaters downstream to its confluence with the Rockfish River. (Start Mile: 10.47 End Mile: 0.00 Total Impaired Size: 10.47 Miles)

City / County: Albemarle Co. Nelson Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2-COV003.44 (7 violations of 12 samples for e-coli). Initial Listing Date: 2012.

Cove Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**10.46**

Sources:

Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H16R-04-BAC** **Rockfish River**

Location: Rockfish River from its confluence with Davis Creek downstream to its confluence with Hog Creek. (Start Mile: 23.36 End Mile: 6.06 Total Impaired Size: 17.3 Miles)

City / County: Nelson Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at stations: 2-RKF007.28 (2 violations of 12 samples for e-coli) and 2-RKF014.71 (2 violations of 12 samples for e-coli). Initial Listing Date: 2012

Rockfish River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**17.28**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H16R-05-BAC** **Rockfish River UT**

Location: Rockfish River UT (Lower Rockfish River watershed) from the headwaters downstream to its confluence with the Rockfish River. (Start Mile: 2.69 End Mile: 0.00 Total Impaired Size: 2.69 Miles)

City / County: Nelson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2-XRK001.64 (2 violations of 13 samples for e-coli) Initial Listing Date: 2016.

Rockfish River UT **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.69**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H17L-01-DO** **Totier Creek Reservoir**

Location: Totier Creek Reservoir (37.23 Acres)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

This lake is impaired due to violations of the dissolved oxygen WQS in the Epilimnion at station: 2-TOT001.01 (5 violations of 30 samples for dissolved oxygen). Initial Listing Date: 2012.

Totier Creek Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**37.23**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H17R-02-BAC** **James River**

Location: Rockfish River to Rivanna River.
*Segment smaller in 2014 due to creation of single channel impaired segment.

City / County: Albemarle Co. Buckingham Co. Cumberland Co. Fluvanna Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2BJMS195.54 (Probabilistic Ambient)
E. coli - 2/12 violation rate
2-JMS189.31 (Ambient)
E. coli - 6/36 Violation Rate
James River Association Co-located Monitoring
E. coli - 4/15 Violation Rate
2-JMS176.63 (Ambient)
E. coli - 11/36 Violation Rate

James River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**35.01**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H17R-05-BEN** **Totier Creek**

Location: Totier Creek from the RWSA-Scottsville Public Water Intake downstream to its confluence with the James River. (Start Mile: .79 End Mile: 0.00 Total Impaired Size: .79 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthic at station: 2-TOT000.08 (Impaired for VSCI). Carries forward from 2008 Initial Listing Date: 2006.

Totier Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.71**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H20R-02-BAC** **South Creek**

Location: South Creek from its headwaters to its mouth on the James River

City / County: Fluvanna Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
2-SSX001.39 (Ambient)
E. coli - 4/12 Violation Rate

South Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.66**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H21L-01-DO** **Troublesome Reservoir**

Location: Troublesome Reservoir

City / County: Buckingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
2-TBM000.92 (Lake Station)
2013/2014 Troublesome Creek Reservoir
Dissolved Oxygen - 8/65 Violation Rate
Chlorophyll a - 0/2 Samples (90% Calculated over 1 Sample Yr)
Total Phosphorus - 0/2 Samples (Median Calculated over 1 Sample Yr)

Troublesome Reservoir	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:		**52.68**	

Sources:

- Changes in Ordinary Stratification and Bottom Water Hypoxia/Anoxia
- Dam or Impoundment

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H21R-01-BEN** **Horsepen Creek**

Location: Horsepen Creek from its headwaters to its mouth on the Slate River

City / County: Buckingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2BHOX000.62 (2009/2012 BIO)
IM - Biologist notes from 2009 indicated that the riffles were highly embedded and unstable, which was likely a result of relatively unstable stream banks and heavy local watershed erosion. Sediment is a likely stressor in this stream.

Horsepen Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.86**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H21R-02-BEN** **Walton Fork**

Location: Walton Fork from its confluence with Ripley Creek to its mouth on the Slate River

City / County: Buckingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-WTN002.50 (Bio)
2013 Bio - IM - This stream had riffles consisting of mostly gravel and a little cobble. There was excessive sedimentation throughout the stream and an abundance of periphyton.

Walton Fork **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.99**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H23L-01-CHLA** **Lake Albemarle**

Location: Lake Albemarle (Total Impaired Size: 37.01 Acres)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Chlorophyll-a / 5A

This lake is impaired due to violations of the chlorophyll a (nutrients) Lake Nutrient Criteria at station : 2-SIN000.44 (>35 ug/l two for two years. Initial Listing Date: 2016

Lake Albemarle **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chlorophyll-a - Total Impaired Size by Water Type:		**37.01**	

Sources:

Dam or Impoundment Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H23L-01-DO** **Lake Albemarle**

Location: Lake Albemarle (Total Impaired Size: 37.01 Acres)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

This lake is impaired due to violations of the dissolved oxygen WQS at station: 2-SIN000.44 (6 violations of 39 samples for DO) Initial Listing Date: 2016

Lake Albemarle **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**37.01**	

Sources:

Dam or Impoundment Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H23R-01-BEN** **Broad Axe Run**

Location: Broad Axe Run and tributaries from the headwaters downstream to its confluence with the Mechums River. (Start Mile: 8.32 End Mile: 0.00 Total Impaired Size: 8.32 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-BRX000.66 (Impaired for VSCI). Initial Listing Date: 2004.

Broad Axe Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.31**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H23R-02-BEN** **Lickinghole Creek**

Location: Lickinghole Creek from the headwaters downstream to its confluence with the Mechums River. (Start Mile: 8.94 End Mile: 0.00 Total Impaired Size: 8.94 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-LKN000.02 (Impaired for VSCI) and 2-LKN-LKN01-SW (Impaired for VSCI based on Level III benthic data from StreamWatch). Initial Listing Date: 2010.

Lickinghole Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.93**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H23R-03-BEN** **Mechums River**

Location: Mechums River from the headwaters downstream to its confluence with Lickinghole Creek. (Start Mile: 26.36 End Mile: 11.19 Total Impaired Size: 15.17 Miles)

City / County: Albemarle Co. Nelson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-MCM018.92 (Impaired for VSCI). Initial Listing Date: 2004.

Mechums River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**15.16**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H23R-04-BEN** **Slabtown Branch**

Location: Slabtown Branch and tribs from the headwaters downstream to its confluence with Lickinghole Creek. (Start Mile: 4.92 End Mile: 0.00 Total Impaired Size: 4.92 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-SLB-SLB01-SW (Impaired for VSCI based on Level III benthic data from StreamWatch). There are no new data available for assessment in 2016, thus the impairment carries forward to 2016. Initial Listing Date: 2010

Slabtown Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.92**

Sources:

Golf Courses Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H23R-06-BEN** **Parrott Branch X-trib**

Location: Parrott Branch X-trib from the headwaters downstream to its confluence with Parrott Branch. (Start Mile: 1.15 End Mile: 0.00 Total Impaired Size: 1.15 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-XPT-XPT01-SW (Impaired for VSCI based on Level III benthic data from StreamWatch). Initial Listing Date: 2010

Parrott Branch X-trib	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.15**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H23R-07-BEN** **Spring Creek**

Location: Spring Creek from the headwaters downstream to the upper end of Lake Albemarle. (Start Mile 3.49 End Mile: 0.00 Total Impaired Size: 3.49 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-XSI-XSI01-SW (Impaired for VSCI). Initial Listing Date: 2012

Spring Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.48**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H23R-08-BAC** **Stockton Creek**

Location: Stockton Creek from the headwaters downstream to its confluence with the Mechums River. (Start Mile: 12.06 End Mile: 0.00 Total Impaired Size: 12.06 Miles)

City / County: Albemarle Co. Nelson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2-SKM001.47 (8 violations of 12 samples for e-coli). Initial Listing Date: 2014.

Stockton Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**12.06**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H24R-01-TEMP** **Moormans River North Fork/Pond Ridge Branch**

Location: North Fork Moormans River and tributaries (including Pond Ridge Branch) from the headwaters downstream to the Charlottesville Reservoir. (Start Mile: 21.11 End Mile: 0.00 Total Impaired Size: 21.11 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This segment is impaired due to violations of the temperature WQS at station: 2BMNF000.10 (2 violations of 6 samples for temperature). Initial Listing Date: 2014

Moormans River North Fork/Pond Ridge Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Temperature, water - Total Impaired Size by Water Type:			**21.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H24R-02-BEN** **X-trib to Doyles River**

Location: X-trib to Doyles River from the headwaters downstream to its confluence with the Doyles River. (Start Mile: 4.74 End Mile: 0.00 Total Impaired Size: 4.74 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-XDL-XDY01-SW (Impaired for VSCI). Initial Listing Date: 2012

X-trib to Doyles River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.74**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H25R-01-BAC** **Buck Mountain Creek**

Location: Buck Mountain Creek from the headwaters downstream to its confluence with the South Fork Rivanna River. (Start Mile: 10.59 End Mile 0.00 Total Impaired Size: 10.59 Miles)

City / County: Albemarle Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 2-BKM002.01 (2 violations of 12 samples for e-coli). Initial Listing Date: 2010

Buck Mountain Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**10.59**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H25R-02-BEN** **Piney Creek X-trib**

Location: Piney Creek X-trib from its headwaters downstream to its confluence with Piney Creek. (Start Mile: 3.23 End Mile: 0.00 Total Impaired Size: 3.23 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-XPY-XPY01 -SW (Impaired for VSCI) and 2-XPY-XPY02-SW (Impaired for VSCI). Initial Listing Date: 2012.

Piney Creek X-trib **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.22**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H26R-01-BAC** **Ivy Creek**

Location: Ivy Creek from the headwaters downstream to the 5 mile upper limit of the PWS designation for the S. F. Rivanna Reservoir Intake. (Start Mile: 12.08 End Mile 2.57 Total Impaired Size: 9.51 Miles)

City / County: Albemarle Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2-IVC008.09 (4 violations of 12 samples for e-coli).
Initial Listing Date: 2014

Ivy Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.51**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H26R-02-PH** **Ivy Creek**

Location: Ivy Creek from the headwaters downstream to its confluence with Little Ivy Creek. (Start Mile: 12.08 End Mile: 6.59 Total Impaired Size: 5.49 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: 2-IVC010.20 (2 violations of 6 samples for pH in 2010, 0 of 6 in 2014, no new data in 2016, thus impairment carries forward to 2016). Initial Listing Date: 2006.

Ivy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**5.49**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H26R-03-BEN** **Ivy Creek**

Location: Ivy Creek from the headwaters downstream to its confluence with the South Fork Rivanna River Reservoir. (Start Mile: 12.08 End Mile: 0.00 Total Impaired Size: 12.08 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 2-IVC005.19 (Impaired for VSCI) and 2-IVC010.20 (Impaired for VSCI). Initial Listing Date: 2008. (This segment was lengthened in 2010)

Ivy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**12.07**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H26R-04-BEN** **South Fork Rivanna River**

Location: South Fork Rivanna River from the RWSA SF Rivanna River Public Water Intake downstream to its confluence with the Rivanna River. (Start Mile: 3.47 End Mile: 0.00 Total Impaired Size: 3.47 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 2-RRS001.81 (Impaired for VSCI) and 2-RRS-RVN31-SW (Impaired for VSCI). Initial Listing Date: 2010.

South Fork Rivanna River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.47**

Sources:

Dam or Impoundment	Municipal (Urbanized High Density Area)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H26R-05-BEN** **Powell Creek**

Location: Powell Creek (including all tributaries) from the headwaters downstream to its confluence with the South Fork Rivanna River. (Start Mile: 10.36 End Mile: 0.00 Total Impaired Size: 10.36 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-PLC001.49 (Impaired for VSCI), 2-PLC-PWL01-SW (Impaired for VSCI) and 2-PWC-PWL03-SW (Impaired for VSCI). Initial Listing Date; 2010

Powell Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**10.36**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H26R-06-BEN** **Naked Creek**

Location: Naked Creek (including all tributaries) from the headwaters downstream to its confluence with the South Fork Rivanna Reservoir. (Start Mile: 9.82 End Mile 0.00 Total Impaired Size: 9.82 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-NKD-NKD02-SW (Impaired for VSCI). Initial Listing Date: 2010.

Naked Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.82**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H26R-07-BEN** **South Fork Rivanna River X-trib**

Location: South Fork Rivanna River X-trib from the headwaters downstream to its confluence with the South Fork Rivanna River. (Start Mile: 3.21 End Mile: 0.00 Total Impaired Size: 3.21 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-XRV-XZW01-SW (Impaired for VSCI). Initial Listing Date: 2010

South Fork Rivanna River X-trib	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.20**

Sources:

Municipal (Urbanized High Density Area)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H26R-08-BEN** **Fishing Creek**

Location: Fishing Creek and tributaries from the headwaters downstream to its confluence with the South Fork Rivanna Reservoir. (Start Mile: 12.54 End Mile: 0.00 Total Impaired Size: 12.54 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-FSH-FSH01-SW (Impaired for VSCI). Initial Listing Date: 2012.

Fishing Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**12.53**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H26R-09-BEN** **Little Ivy Creek X-trib**

Location: Little Ivy Creek X-trib from the headwaters downstream to its confluence with Little Ivy Creek. (Start Mile: 4.44 End Mile: 0.00 Total Impaired Size: 4.44 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-XLI-XLI01-SW (Impaired for VSCI). Initial Listing Date: 2016.

Little Ivy Creek X-trib **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.44**

Sources:

Agriculture	Non-Point Source	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-01-BEN** **Flat Branch X-trib**

Location: Flat Branch X-trib from the headwaters downstream to its confluence with Flat Branch. (Start Mile: 2.03 End Mile: 0.00 Total Impaired Size: 2.03 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 2-XKL000.37 (Impaired for VSCI). Initial List Date: 2010.

Flat Branch X-trib	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.03**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-02-BAC** **Swift Run**

Location: Swift Run from its confluence with Welsh Run downstream to its confluence with the North Fork Rivanna River. (Start Mile: 1.91 End Mile: 0.00 Total Impaired Size: 1.91 Miles)

City / County: Albemarle Co. Greene Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 2-SFR000.60 (2 violations of 12 samples for e-coli). Initial Listing Date: 2010

Swift Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.91**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-02-BEN** **Swift Run**

Location: Swift Run from its confluence with Welsh Run downstream to its confluence with the North Fork Rivanna River. (Start Mile: 1.91 End Mile: 0.00 Total Impaired Size: 1.91 Miles)

City / County: Albemarle Co. Greene Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-SFR000.60 (Impaired for VSCI)
Initial Listing Date: 2012

Swift Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.91**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-03-BEN** **Preddy Creek North Branch**

Location: Preddy Creek North Branch from the headwaters downstream to its confluence with Preddy Creek. (Start Mile: 6.24 End Mile: 0.00 Total Impaired Size: 6.24)

City / County: Albemarle Co. Greene Co. Orange Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 2-PRD004.42 (Impaired for VSCI), 2-PRD006.35 (Impaired for VSCI) and 2-PRD-PRD01-SW (Impaired for VSCI). Initial Listing Date: 2010

Preddy Creek North Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.24**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-05-BEN** **Marsh Run**

Location: Marsh Run from the headwaters downstream to its confluence with the North Fork Rivanna River. (Start Mile: 3.65 End Mile: 0.00 Total Impaired Size: 3.65 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-MAR-XZY01-SW (Impaired for VSCI). Initial Listing Date: 2010

Marsh Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.65**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-06-BEN** **Blue Run**

Location: Blue Run from the headwaters downstream to its confluence with Swift Run. (Start Mile: 8.72 End Mile: 0.00 Total Impaired Size: 8.72 Miles)

City / County: Greene Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-BLU-BLU02-SW (Impaired for VSCI). Initial Listing Date: 2012.

Blue Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.72**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-07-BEN** **Stanardsville Run**

Location: Stanardsville Run and tributaries from the headwaters downstream to its confluence with Blue Run. (Start Mile: 5.71 End Mile: 0.00 Total Impaired Size: 5.71 Miles)

City / County: Greene Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-SDV001.02 (Impaired for VSCI) and 2-SDV-SDV01-SW (Impaired for VSCI). Initial Listing Date: 2014.

Stanardsville Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.70**

Sources:

Agriculture	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-08-BEN** **Preddy Creek**

Location: Preddy Creek from the headwaters downstream to its confluence with the North Fork Rivanna River. (Start Mile: 7.48 End Mile: 0.00 Total Impaired Size: 7.48 Miles)

City / County: Albemarle Co. Orange Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-PRD-BRN01-SW (Impaired for VSCI). Initial Listing Date: 2016

Preddy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.48**

Sources:

Agriculture Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-09-BEN** **North Fork Rivanna River**

Location: North Fork Rivanna River from its confluence with the Lynch River downstream to the RWSA - North Fork Rivanna River Public Water Intake. (Start Mile: 17.87 End Mile: 10.68 Total Impaired Size: 7.19 Miles)

City / County: Albemarle Co. Greene Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-RRN012.89 (Impaired for VSCI) and 2-RRN-RRN06-SW (Impaired for VSCI). Initial Listing Date: 2016

North Fork Rivanna River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.33**

Sources:

Agriculture Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H27R-10-BEN** **Quarter Creek**

Location: Quarter Creek from the dam outfall at Jonquil Road downstream to its confluence with Swift Run. (Start Mile: 1.58 End Mile: 0.00 Total Impaired Size: 1.58 Miles)

City / County: Greene Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-QTR-QTR03-SW (Impaired for VSCI). Initial Listing Date: 2016

Quarter Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.58**

Sources:

Non-Point Source	Upstream Impoundments (e.g., Pl-566 NRCS Structures)

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-02-BEN** **Moores Creek**

Location: Moores Creek from its confluence with the Ragged Mountain Dam receiving stream downstream to the RWSA Moores Creek STP bridge. (Start Mile: 6.86 End Mile: 0..54 Total Impaired Size: 6.32 Miles)

City / County: Albemarle Co. Charlottesville City

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-MSC000.60 (Impaired for VSCI); 2-MSC-MSC04-SW (Impaired for VSCI) and 2-MSC-MSV12-SW (Impaired for VSCI). Initial Listing Date: 2008.

Moores Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.32**

Sources:

Municipal (Urbanized High Density Area)

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-04-BEN** **Moores Creek X-trib**

Location: Moores Creek X-trib from the headwaters downstream to its confluence with Moores Creek. (Start Mile: 1.67 End Mile: 0.00 Total Impaired Size: 1.67 Miles)

City / County: Charlottesville City

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-XRC001.15 (Impaired for VSCI) and 2-XRC-XRC01-SW (Impaired for VSCI). Initial Listing Date: 2006.

Moores Creek X-trib	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.66**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-05-BEN** **Meadow Creek**

Location: Meadow Creek from where it becomes a perennial stream downstream to its confluence with Moores Creek. (Start Mile: 4.98 End Mile: 0.00 Total Impaired Size: 4.98 Miles)

City / County: Albemarle Co. Charlottesville City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-MWC000.60 (Impaired for VSCI); 2-MWC-MWC03-SW (Impaired for VSCI) 2-MWC-MWC07-SW (Impaired for VSCI); 2-MWC-MWC05-SW (Impaired for VSCI); 2-MWC-MWC06-SW (Impaired for VSCI); 2-MWC-MWC08-SW (Impaired for VSCI); 2-MWC-MWC09-SW (Impaired for VSCI); 2-MWC-MWC10-SW Impaired for VSCI). Initial Listing Date: 2006.

Meadow Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.98**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-07-BAC** **Schenks Branch**

Location: Schenks Branch and tributaries from the headwaters downstream to its confluence with Meadow Creek. (Start Mile: 2.92 End Mile: 0.00 Total Impaired Size: 2.92 Miles)

City / County: Charlottesville City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at stations: 2-SNK000.88 (3 violations of 3 samples for e-coli) and 2-XSN000.08 (6 violations of 6 samples for e-coli). Initial Listing Date: 2010.

Schenks Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.91**

Sources:

Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-07-BEN** **Schenks Branch**

Location: Schenks Branch and tributaries from the headwaters downstream to its confluence with Meadow Creek. (Start Mile: 2.92 End Mile: 0.00 Total Impaired Size: 2.92 Miles)

City / County: Charlottesville City

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 2-SNK000.88 (Impaired for VSCI); 2-XSN000.08 (Impaired for VSCI) and 2-SNK-SHV01-SW (Impaired for VSCI). Initial Listing Date: 2008.

Schenks Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.91**

Sources:

Municipal (Urbanized High Density Area)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-08-BEN** **Biscuit Run**

Location: Biscuit Run and tributaries from the tributary at the mobile home park downstream to its confluence with Moores Creek. (Start Mile 6.60 End Mile: 0.00 Total Impaired Size 6.60 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-BSC-BSC01-SW (Impaired for VSCI). Initial Listing Date: 2010

Biscuit Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.59**

Sources:

Municipal (Urbanized High Density Area)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-09-BEN** **Morey Creek**

Location: Morey Creek from the headwaters downstream to its confluence with Moores Creek. (Start Mile: 2.93 End Mile: 0.00 Total Impaired Size: 2.93 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-MOY-MRY01-SW (Impaired for VSCI). Initial Listing Date: 2010.

Morey Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.93**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-10-BEN** **Town Branch**

Location: Town Branch and tributary from the headwaters downstream to its confluence with the Rivanna River. (Start Mile: 1.20 End Mile: 0.00 Total Impaired Size: 1.20 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-TWN-TWN01-SW (Impaired for VSCI). Initial Listing Date: 2010.

Town Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.19**

Sources:

Municipal (Urbanized High Density Area)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-11-BEN** **Meadow Creek X-trib**

Location: Meadow Creek X-trib beginning near Rothery Street downstream to its confluence with Meadow Creek. (Start Mile: 1.78 End Mile 0.00 Total Impaired Size: 1.78 Miles)

City / County: Charlottesville City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-XMW-XMW01-SW (Impaired for VSCI). Initial Listing Date: 2010.

Meadow Creek X-trib **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.78**

Sources:

Municipal (Urbanized High Density Area)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H28R-12-BEN** **X-trib to Moores Creek**

Location: X-trib to Moores Creek from the outfall of the Ragged Mountain Reservoir downstream to Moores Creek. (Start Mile: 2.23 End Mile: 0.00 Total Impaired Size: 2.23 Miles)

City / County: Albemarle Co. Charlottesville City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-XMR-XMR01-SW (Impaired for VSCI). Initial Listing Date: 2012.

X-trib to Moores Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.23**

Sources:

Dam or Impoundment Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H29R-03-BAC** **Buck Island Creek**

Location: Buck Island Creek from the headwaters downstream to its confluence with the Rivanna River. (Start Mile: 9.17 End Mile: 0.00 Total Impaired Size: 9.17 Miles)

City / County: Albemarle Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 2-BID002.11 (2 violations of 12 samples for e-coli) and 2-BID005.83 (6 violations of 9 samples for e-coli in 2012, no new data in 2016). Initial Listing Date: 2008.

Buck Island Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.16**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H29R-03-BEN** **Buck Island Creek**

Location: Buck Island Creek from the 5 mile upper limit of the PWS designation for the Lake Monticello Service Authority Public Water Intake downstream to its confluence with the Rivanna River. (Start Mile: 2.66 End Mile: 0.00 Total Impaired Size: 2.66 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-BID-BKI01-SW (Impaired for VSCI). Initial Listing Date: 2010

Buck Island Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.65**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H29R-04-BEN** **Carroll Creek**

Location: Carroll Creek and tributaries from the headwaters downstream to its confluence with the Rivanna River. (Start Mile: 18.46 End Mile: 0.00 Total Impaired Size: 18.46 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 2-CRR000.27 (Impaired for VSCI) and 2-CRR-CRL01-SW (Impaired for VSCI). Initial Listing Date: 2010.

Carroll Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**18.45**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H30R-01-BEN** **Mechunk Creek**

Location: Mechunk Creek from the headwaters downstream to the DOC water intake near the Route 250 bridge crossing. (Start Mile: 19.87 End Mile: 7.27 Total Impaired Size: 12.60 Miles)

City / County: Albemarle Co. Fluvanna Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at stations: 2-MCK007.47 (Impaired for VSCI) and 2-MCK-MCK02-SW (Impaired for VSCI). Initial Listing Date: 2012.

Mechunk Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**12.60**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H30R-02-BEN** **East Prong Beaverdam Creek**

Location: East Prong Beaverdam Creek and tributary from the headwaters downstream to its confluence with Beaverdam Creek. (Start Mile: 4.70 End Mile: 0.00 Total Impaired Size: 4.70 Miles)

City / County: Fluvanna Co. Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-BEP-BVE01-SW (Impaired for VSCI). Initial Listing Date: 2012.

East Prong Beaverdam Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.69**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H30R-03-BEN** **Jacks Branch**

Location: Jacks Branch and tributary from the headwaters downstream to its confluence with Mechunk Creek. (Start Mile 7.17 End Mile 0.00 Total Impaired Size: 7.17 Miles)

City / County: Albemarle Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station: 2-JAK-JCK01-SW (Impaired for VSCI). Initial Listing Date: 2012.

Jacks Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.16**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H31R-02-BEN** **Carys Creek**

Location: Carys Creek from the headwaters downstream to the confluence with a major tributary upstream of the Rivanna River. (Start Mile: 1.80 End Mile: 0.00 Total Impaired Size: 1.80 Miles)

City / County: Fluvanna Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-CRY000.69 (Impaired for VSCI) and 2-CRY-CYC01-SW (Impaired for VSCI). Initial Listing Date: 2010.

Carys Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.79**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H31R-03-BEN** **X-trib to Boston Creek**

Location: X-trib to Boston Creek from the headwaters downstream to its confluence with Boston Creek. (Lake Monticello) (Start Mile: 2.30 End Mile: 0.00 Total Impaired Size: 2.30 Miles)

City / County: Albemarle Co. Fluvanna Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-XYX-XYX01-SW (Impaired for VSCI). Initial Listing Date: 2010.

X-trib to Boston Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.29**

Sources:

Municipal (Urbanized High Density Area)

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H31R-04-BEN** **X-trib to Rivanna River**

Location: X-trib to the Rivanna River from the headwaters downstream to its confluence with the Rivanna River. (Start Mile: 1.00 End Mile: 0.00 Total Impaired Size 1.00 Mile)

City / County: Fluvanna Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-XRN-XZZ01-SW (Impaired for VSCI). Initial Listing Date: 2010

X-trib to Rivanna River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.00**

Sources:

Municipal (Urbanized High Density Area)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H31R-05-BAC** **Rivanna River**

Location: Rivanna River from its confluence with Mechunk Creek downstream to its confluence with Cunningham Creek. (Start Mile: 23.72 End Mile: 15.34 Total Impaired Size: 8.38 Miles)

City / County: Fluvanna Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2-RVN015.97 (10 violations of 66 samples for e-coli). Initial Listing Date: 2016.

Rivanna River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.38**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H32L-01-DO** **Fluvanna Ruritan Lake**

Location: Fluvanna Ruritan Lake (Total Impaired Size: 51.13 Acres)

City / County: Fluvanna Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

This lake is impaired due to violations of the DO WQS at station: 2-CFK004.34 (6 violations of 42 samples for pH). Initial Listing Date: 2012.

Fluvanna Ruritan Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**51.13**	

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H32R-01-BEN** **Middle Fork Cunningham Creek**

Location: Middle Fork Cunningham Creek and tributary from the headwaters downstream to its confluence with an unnamed tributary originating near Antioch. (Start Mile: 7.43 End Mile: 3.41 Total Impaired Size: 4.02 Miles)

City / County: Fluvanna Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5C

This segment had a fully supporting for VSCI benthic assessment during the 2010 cycle. This benthic impairment is believed to be natural (drought). The segment remains not supporting as two unimpaired benthic assessments are required to de-list. Initial Listing Date: 2004.

Middle Fork Cunningham Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.02**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H32R-02-BAC** **Middle Fork Cunningham Creek**

Location: Middle Fork Cunningham Creek and tributary from the headwaters downstream to its confluence with Cunningham Creek. (Start Mile: 7.43 End Mile: 0.00 Total Impaired Size: 7.43 Miles)

City / County: Fluvanna Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at stations: 2-CNM002.25 (6 violations of 18 samples for e-coli in 2010, 1 of 9 in 2012, no new data in 2016, remained impaired) and 2-CNM004.16 (2 violations of 12 samples for e-coli in 2010, 1 of 9 in 2012, no new data in 2016, remains impaired). Initial Listing Date: 2004.

Middle Fork Cunningham Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.42**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H32R-02-BEN** **Middle Fork Cunningham Creek**

Location: Middle Fork Cunningham Creek from its confluence with an unnamed tributary originating near Antioch downstream to its confluence with Cunningham Creek. (Start Mile: 3.41 End Mile: 0.00 Total Impaired Size: 3.41 Miles)

City / County: Fluvanna Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-CNM-CNM07-SW (Impaired for VSCI) and 2-CNM001.75 (Impaired for VSCI). Initial Listing Date: 2010

Middle Fork Cunningham Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.40**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H32R-03-BAC** **Middle Fork Cunningham Creek X-trib**

Location: Middle Fork Cunningham Creek X-trib from the headwaters downstream to its confluence with the Middle Fork Cunningham Creek. (Start Mile: 3.77 End Mile: 0.00 Total Impaired Size: 3.77 Miles)

City / County: Fluvanna Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 2-XPA000.57 (2 violations of 12 samples for e-coli, no data in 2016, impairment carries forward to 2016). Initial Listing Date: 2008.

Middle Fork Cunningham Creek X-trib **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.77**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H32R-04-BEN** **X-trib to North Fork Cunningham Creek**

Location: X-trib to North Fork Cunningham Creek from the headwaters downstream to its confluence with the North Fork Cunningham Creek. (Start Mile: .59 End Mile: 0.00 Total Impaired Size: .59 Miles)

City / County: Fluvanna Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-XCF-XCF01-SW (Impaired for VSCI). Initial Listing Date: 2010

X-trib to North Fork Cunningham Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.59**

Sources:

Municipal (Urbanized High Density Area)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H32R-05-BEN** **Cunningham Creek North Fork**

Location: North Fork Cunningham Creek from the Fluvanna Ruritan Lake outfall downstream to its confluence with Cunningham Creek. (Start Mile: 4.19 End Mile: 0.00 Total Impaired Size: 4.19 Miles)

City / County: Albemarle Co. Fluvanna Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at station 2-CFK001.31 (Impaired for VSCI). Initial Listing Date; 2012.

Cunningham Creek North Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.18**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H32R-06-BEN** **Cunningham Creek**

Location: Cunningham Creek from the confluence of the Middle/South Fork Cunningham Creek downstream to its confluence with the Rivanna River. (Start Mile: 5.62 End Mile: 0.00 Total Impaired Size (5.62 Miles)

City / County: Fluvanna Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for benthics at stations: 2-CXB000.86 (Impaired for VSCI) and 2-CXB-CXB02-SW (Impaired for VSCI). Initial Listing Date: 2012.

Cunningham Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.62**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H33L-01-CHLA** **Powhatan Lake**

Location: Upper and lower

City / County: Powhatan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Chlorophyll-a / 5A

In 2014 the lake was impaired for aquatic life due to Chlorophyll a pooled violations at 2-STG000.21 and 2-STG000.91.

During the 2016 cycle there was no new data so the segment remained impaired for Chlorophyll a.

Powhatan Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chlorophyll-a - Total Impaired Size by Water Type:		**61.36**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H33L-01-DO** **Powhatan Lake**

Location: Upper and lower

City / County: Powhatan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2012 cycle the segment became a reservoir. The segment was impaired for aquatic life use due to DO violations at stations 2-STG000.21 and 2-STG000.91 with a pooled rate of 5/25.

During the 2014 cycle the segment remained impaired for aquatic life use due to DO violations at 2-STG000.21 and 2-STG000.91 with a pooled rate of 11/92.

During the 2016 cycle there was no new data so the segment remained impaired for DO.

Powhatan Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**61.36**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H33R-02-DO** **Deep Creek**

Location: Segment begins at the confluence of Deep Creek with Sallee Creek, and extends downstream to the Route 684 bridge.

City / County: Powhatan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2008 cycle, Deep Creek from Maxey Mill Creek to the Route 684 bridge (rm 3.00) was assessed as impaired of the Aquatic Life Use because of a dissolved oxygen exceedance rate of 2/12 at 2-DCR003.00. The TMDL is due in 2020, but natural conditions are suspected.

The DO exceedance rates at other stations were acceptable in the 2010 cycle (2/26 at 2-DCR007.93 and 1/11 at 2-DCR013.89); therefore, the upstream segment was shortened to the confluence with Sallee Creek.

The exceedance rate at 2-DCR003.00 is 3/23 during the 2016 cycle.

Deep Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.37**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H34R-04-BEN** **Phils Creek**

Location: Phils Creek from its headwaters to its mouth at Byrd Creek.

City / County: Fluvanna Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2016 cycle, Phils Creek was assessed as impaired of the Aquatic Life Use due to an altered benthic community at 2-PHL003.97, which is located at the Route 629 bridge.

Phils Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.69**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H36R-02-BEN** **Randolph Creek**

Location: Randolph Creek from the headwaters to the upstream limit of Sports Lake.

City / County: Buckingham Co. Cumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-RND003.57 (2001 Probmon)
IM - Habitat assessment indicates sediment impacts.

Randolph Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**11.80**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H36R-03-BEN** **Buffalo Creek**

Location: Buffalo Creek from its headwaters to its mouth on the Willis River

City / County: Buckingham Co. Cumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-BFC001.11 (2013 Bio)
IM - Buffalo Creek had marginal habitat availability and moderate sediment deposition.

Buffalo Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H36R-05-BEN** **Reynolds Creek**

Location: Reynolds Creek from its headwaters to its mouth on the Willis River

City / County: Cumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-RLD000.48 (Ambient & 2009/2012 Bio)
IM - This stream is in the Cumberland State Forest. It is characterized by marginal bank stability, excessive sediment deposition, and marginal epifaunal substrate. Biologist notes from 2009 and 2012 indicate very unstable habitat, mostly consisting of leaf packs and woody debris that were covered in sediment. Heavy local watershed erosion was also noted. In 2012 there was noted beaver activity affecting habitat availability.

Reynolds Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.84**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H36R-06-BEN** **Bigger Creek**

Location: Bigger Creek from its headwaters to the mouth on Reynolds Creek.

City / County: Cumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-BIO000.45 (2009/2014 Bio)
IM - This site is in the Cumberland State Forest and had marginal bank stability, pronounced sediment deposition, and suboptimal epifaunal substrate.

Bigger Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.43**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H38R-01-PH** **Little Creek**

Location: Little Creek below its confluence with Cheneys Creek.

City / County: Goochland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Little Creek was impaired of the Aquatic Life Use during the 2012 cycle due to a pH violation rate of 2/12 at 2-LLI000.58, which is located off of Route 607.

Little Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**0.65**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H38R-07-DO** **Branch Creek**

Location: Branch Creek from its headwaters to its mouth at Fine Creek.

City / County: Powhatan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2008 cycle, Branch Creek was assessed as impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 4/10 at the Route 615 bridge (2-BNH001.76).

Branch Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**5.51**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-01-PH** **Broad Branch**

Location: Broad Branch from its headwaters to the dam above Route 623.

City / County: Goochland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

In 2006, Broad Branch was assessed as not supporting the Aquatic Life Use due to three high pH exceedances in the summer of 2003 at 2-BOD003.31, which is located downstream of a pond draining a golf course.

Broad Branch		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**2.63**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-05-BEN** **Powhite Creek**

Location: Powhite Creek from its headwaters to its mouth at the James River.

City / County: Chesterfield Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, Powhite Creek was assessed as not supporting of the Aquatic Life Use goal due to impairment of the benthic community at station 2-PWT001.97, which is a freshwater probabilistic monitoring station.

The station was replaced by 2-PWT001.23 because the location is a more appropriate stream type (non-swampy). Monitoring at 2-PWT001.23 in 2012-2013 also indicated impairment.

Powhite Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.13**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-06-PH** **Reedy Creek**

Location: Reedy Creek from the tributary upstream of Roanoke Street downstream to Roanoke Street.

City / County: Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

During the 2010 cycle, the portion of Reedy Creek around station 2-RDD000.99 was assessed as impaired of the Aquatic Life Use due to elevated pH levels.

The source of the pH impairment was considered unknown. However, the pH exceedances were 9.6 and 9.8 SU, which is substantially higher than at other stations on Reedy Creek and may be due to pooled water in the channelized stream.

The segment length was adjusted in the 2014 cycle to end at Roanoke Street because sampling at all other stations within Reedy Creek remain acceptable, including ACB station 2-RDD-RC1-ACB which is just downstream.

Reedy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**0.35**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-07-DO** **XZE - James River, UT**

Location: The tributary from its headwaters to its mouth at the James River.

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2010 cycle, the tributary was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 5/12 at station 2-XZE000.19, which is located at a private drive downstream of Tarrington.

XZE - James River, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.30**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-08-DO** **XAB - Salles Creek, UT**

Location: The tributary from its headwaters to its mouth at Salles Creek.

City / County: Chesterfield Co. Goochland Co. Henrico Co. Powhatan Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2010 cycle, the unnamed tributary was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances at 2-SAL001.93, which is located at Route 711.

The violation rate was 3/19 during the 2014 cycle.

XAB - Salles Creek, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-08-PH** **XAB - Salles Creek, UT**

Location: The tributary from its headwaters to its mouth at Salles Creek.

City / County: Chesterfield Co. Goochland Co. Henrico Co. Powhatan Co. Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

During the 2010 cycle, the unnamed tributary was assessed as not supporting of the Aquatic Life Use due to pH exceedances at 2-SAL001.93, which is located at Route 711. The exceedance rate was 9/19 during the 2012 cycle.

XAB - Salles Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**0.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-09-DO** **James River - South Channel**

Location: The south channel of the James River around Belle Isle.

City / County: Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

In the 2012 cycle, the James River from the Boulevard Bridge downstream to the fall line was assessed as not supporting of the Aquatic Life Use because of low dissolved oxygen at 2-JMS111.48. The station is located on the south channel of the James River below the Canoe Run CSO outfall.

All other stations within the segment had acceptable exceedance rates. Therefore, the segment was separated during the 2014 cycle. The impairment is limited to the south channel between the Belle Island Dam and the Brown's Island dam. The north channel was partially delisted.

The exceedance rate was 10/60 at 2-JMS111.48 during the 2016 cycle.

James River - South Channel	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.94**

Sources:

Combined Sewer Overflows Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-10-DO** **Bernards Creek**

Location: The mainstem of Bernards Creek.

City / County: Chesterfield Co. Powhatan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2014 cycle, Bernards Creek was impaired of the Aquatic Life Use due to dissolved oxygen exceedances at 2-BOR001.73, which is located at the Route 711 bridge. Monitoring near the mouth was acceptable (0/3 at 2-BOR000.02).

The exceedance rate was 4/27 during the 2016 cycle.

Bernards Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**8.12**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-11-HG** **James River**

Location: The James River from the rivermile 128.14 near the confluence with Norwood Creek downstream to the confluence with Tuckahoe Creek.

City / County: Goochland Co. Powhatan Co.

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

The segment was assessed as not supporting of the Fish Consumption Use in the 2010 cycle due to mercury exceedances in redbreast sunfish and quillback carpsucker in 2003 and smallmouth bass in 2005. The monitoring occurred at station 2-JMS127.50, which is located at the end of Route 652 at Watkins Landing.

James River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**4.37**

Sources:

Atmospheric Deposition - Toxics Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-13-BEN** **Stony Run**

Location: Stony Run from its headwaters to the extent of backwater at the pond.

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, upper Stony Run was assessed as impaired of the Aquatic Life Use due to impairment of the benthic community at 2-SNJ001.88 (downstream of Church Road). Additional sampling in 2012 confirmed the impairment.

Stony Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.01**

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-14-BEN** **Jones Creek**

Location: Jones Creek from its headwaters downstream to its mouth at the extent of backwater of Woodberry Pond.

City / County: Powhatan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, Jones Creek was assessed as impaired of the Aquatic Life Use due to impairment of the benthic community at 2005 freshwater probabilistic monitoring station 2-JOH004.23.

Additional monitoring in 2012 and 2013 confirmed the impairment.

Jones Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.19**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-15-BEN** **Stony Run, UT (XYT)**

Location: The unnamed tributary from its headwaters to its mouth at Stony Run.

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle the tributary was assessed as impaired of the Aquatic Life Use due to impairment of the benthic communities at stations 2-XYT000.04 and 2-XYT000.29, which were located downstream and upstream of the Barrington pipeline spill.

Stony Run, UT (XYT)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.27**

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-16-HG** **James River**

Location: The James River from the Boulevard Bridge to the fall line at approximately the railroad trestle above Mayos Bridge.

City / County: Richmond City

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

During the 2010 cycle, the James River from the Boulevard Bridge to the fall line was assessed as not supporting of the Fish Consumption Use due to mercury exceedances in 1 sp. in 2004 at 2-JMS109.98 and 3 sp. in 2003, 2 sp. in 2004 & 2 sp in 2006 at 2-JMS110.00.

James River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**3.88**

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-17-CDANE** **James River**

Location: The James River from the Boulevard Bridge to the fall line at approximately the railroad trestle above Mayos Bridge.

City / County: Richmond City

Use(s): Fish Consumption

Cause(s) /
VA Category: Chlordane / 5A

During the 2010 cycle, the James River from the Boulevard Bridge to the fall line was assessed as not supporting of the Fish Consumption Use due to chlordane exceedances in 1 sp. in 2003 and 2 sp. in 2005 (carp and striped bass) at 2-JMS110.00.

James River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Chlordane - Total Impaired Size by Water Type:			**3.88**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-17-DDE** **James River**

Location: The James River from the Boulevard Bridge to the fall line at approximately the railroad trestle above Mayos Bridge.

City / County: Richmond City

Use(s): Fish Consumption

Cause(s) /
VA Category: DDE / 5A

During the 2010 cycle, the James River from the Boulevard Bridge to the fall line was assessed as not supporting of the Fish Consumption Use due to DDE exceedances in carp in 2002 and blue catfish in 2003 at 2-JMS110.00.

James River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
DDE - Total Impaired Size by Water Type:			**3.88**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-17-DDT** **James River**

Location: The James River from the Boulevard Bridge to the fall line at approximately the railroad trestle above Mayos Bridge.

City / County: Richmond City

Use(s): Fish Consumption

Cause(s) /
VA Category: DDT / 5A

During the 2010 cycle, the James River from the Boulevard Bridge to the fall line was assessed as not supporting of the Fish Consumption Use due to DDT exceedances in carp in 2002, blue catfish in 2003, and striped bass in 2005 at 2-JMS110.00.

James River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
DDT - Total Impaired Size by Water Type:			**3.88**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-19-DO** **Deep Run**

Location: Deep Run from the dam at river mile 1.47 to its mouth at Tuckahoe Creek.

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Deep Run was impaired of the Aquatic Life Use during the 2012 cycle due to a dissolved oxygen exceedance rate of 2/12 at 2-DPR001.00, which is located at the Route 6 bridge.

Deep Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.49**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-24-DO** **Little Tuckahoe Creek**

Location: Headwaters to mouth

City / County: Goochland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

There have been historically been widespread dissolved oxygen exceedances on separate segments within the Tuckahoe Creek watershed.

The Tuckahoe Creek Natural Conditions Assessment report was completed in November 2005. The DO violations on Little Tuckahoe Creek were determined to be at periods when the stream flows were <7Q10 and the stream was recommended for delisting. The stream was delisted during the 2006 cycle.

During the 2014 cycle, the exceedance rate was 2/11; therefore, Little Tuckahoe Creek was relisted as impaired of the Aquatic Life Use.

Although the stream has extremely swampy physical characteristics, the watershed is urbanized; therefore, the natural conditions report will be considered a low priority.

Little Tuckahoe Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.02**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-27-BEN** **Deep Run**

Location: Deep Run from its headwaters to the extent of backwater at the pond.

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2016 cycle, upper Deep Run was impaired of the Aquatic Life Use due to an altered benthic community at 2-DPR003.75, which is located at the northern edge of Deep Run Park.

Deep Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.16**

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-28-BEN** **Stony Run**

Location: Deep Run from the dam of the pond downstream to the mouth at Tuckahoe Creek.

City / County: Henrico Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2016 cycle, lower Stony Run was impaired of the Aquatic Life Use due to an altered benthic community at 2-SNJ000.19, which is located at Falcon Bridge Road.

Stony Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.35**

Sources:

Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* H39R-29-DO** **XBH - Reedy Creek, UT**

Location: Headwaters to its mouth at Reedy Creek

City / County: Richmond City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2016 cycle, the unnamed tributary was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/13 at 2BXBH-UT1-ACB, which is located at Bassett Avenue and West 46th Street. The station is sampled by the Alliance for the Chesapeake Bay.

XBH - Reedy Creek, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.11**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I01R-01-TEMP** **Jackson River**

Location: Jackson River from its confluence with Dry Branch downstream to the upper end of Lake Moomaw. (Start Mile: 84.37 End Mile: 55.5 Total Impaired Size: 28.87 Miles). This impairment was lengthened in 2010 with the addition of an impaired upstream assessment unit.

City / County: Bath Co. Highland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

This segment is impaired due to violations of the temperature WQS at station: 2-JKS058.60 (7 violations of 36 samples for temperature) and 2-JKS074.27 (3 violations of 12 samples for temperature in 2014, no new data in 2016). Initial Listing Date: 2004. This impairment is believed to be natural.

Jackson River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**28.86**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I01R-02-TEMP** **Bolar Run**

Location: Bolar Run from the upper Bolar Spring downstream to its confluence with the Jackson River. (Start Mile: 2.10 End Mile: 0.00 Total Impaired Size: 2.10 Miles). This impairment was shortened following review of WQS and an upstream mountainous zone assessment unit was de-listed.

City / County: Bath Co. Highland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

This segment is impaired due to violations of the temperature WQS at station: 2-BOL000.97 (3 violations of 12 samples for temperature in 2008, 0 violations of 3 samples for temperature in 2010, no data in 2016, impairment carries forward). Initial Listing Date: 2006.

Bolar Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**2.09**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I02R-02-BAC** **Back Creek**

Location: Back Creek from the headwaters downstream to its confluence with East Back Creek. (Start Mile: 41.28 End Mile: 26.21 Total Impaired Size: 15.07 Miles)

City / County: Highland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the E-coli WQS at station: 2-BCC026.08 (2 violations of 12 samples for e-coli). Initial Listing Date: 2010

Back Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**15.05**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I04R-01-BAC** **Falling Spring**

Location: Falling Spring Creek mainstem from its mouth to confluence of an unnamed tributary located at 37°52'48" / 79°54'52".

City / County: Alleghany Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station 2-FAS001.08 (Rt. 640 Bridge at Falling Spring Community) There are no additional data beyond the 2008 Integrated Report where two escherichia coli (E.coli) samples exceed the 235 cfu/100 ml instantaneous criterion from seven samples within the 2008 and 2010 data windows. The exceeding values are 250 and 580 cfu/100 ml. This 2008 initial 303(d) Listing is for 5.10 miles in Alleghany County.

Falling Spring **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.10**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I09R-01-BAC** **Smith Creek**

Location: Smith Creek mainstem from its mouth on the Jackson River upstream 1.20 miles; the beginning of the WQS natural trout section.

City / County: Alleghany Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

2-SMH000.08 (Ridgeway Street - Clifton Forge) There are no additional data beyond the 2006 Integrated Report (IR) and no escherichia coli (E.coli) data available. The 2004 303(d) Listed waters (1.17 miles) remain. Fecal coliform bacteria (FC) exceeded the former 400 cfu/100 ml instantaneous criterion in eight of 16 observations with values ranging from 500 to 3500 cfu/100 ml. Three of three FC samples exceed in 2010 based on the former criterion ranging from 500 to 1600 cfu/100 ml. The 2008 data window produces the same end results where FC exceeds the former instantaneous criterion in seven of 15 observations with a range of exceedance from 500 to 3500 cfu/100 ml. Escherichia coli (E.coli) replaces fecal coliform bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters] when data become available.

Smith Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**1.21**

Sources:

- Municipal (Urbanized High Density Area)
- Sanitary Sewer Overflows (Collection System Failures)
- Unspecified Domestic Waste
- Wastes from Pets
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I09R-01-DO** **Jackson River**

Location: Jackson River mainstem from the Westvaco main processing outfall downstream to just above the Lowmoor community.

City / County: Alleghany Co. Covington City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The original 1998 IDs, VAW-I04R and VAW-I09R, 1996 303(d) Listed dissolved oxygen impairment was combined into one in 2002 for 11.19 miles.

2010 Assessment station locations are:
2-JKS013.29 - Off Rt. 696 above Lowmoor (I09R)
2-JKS018.68 - Rt. 18 Bridge at Covington (I09R)
2-JKS022.15 - Industrial Park behind Walmart
2-JKS023.61 - City Park - Covington at gage (I09R)

Diurnal swings in dissolved oxygen (DO) cause nonsupport of the aquatic life use for a total of 11.19 miles extending from river mile 24.21 (I04R- 0.46 miles) to 13.02 (I09R- 10.73 miles) (37°46'49.59 / 079°55'40.00").

The DO impairment remains for final determination of Use Support via the TMDL Study. 2012 flow adjusted trend analysis finds a significant increasing trend for dissolved oxygen.

2-JKS023.61- Zero excursions of the minimum DO criterion are found in the 2016 assessment from 73 measurements. The 2014 assessment reports zero excursions of the 4.0 mg/l minimum DO criterion from 50 DO measurements. Zero excursions of the minimum DO criterion are found from 46 measurements in 2012. The 2010 assessment reports no DO excursions of the minimum criterion from 48 measurements within the ambient monitoring program. The 2008 assessment also found no DO measurements in excess of the DO minimum criterion from 52 observations. However diurnal effects have been noted in previous assessments. The 2004 IR reports DO exceeds the WQS minimum of 4.0 mg/l in six of 26 1998 special study observations as well as those described below at 2-JKS022.15.

Both the 2006 and 2012 flow adjusted trend analysis reveals significant declining trends in total phosphorus and total nitrogen at 2-JKS023.61. However elevated total phosphorus (TP) levels continue resulting in 'Observed Effects'. The 2016 assessment finds four elevated total phosphorus (>0.20 mg/l) values ranging from 0.24 to 0.52 mg/l from 36 observations. TP results within the 2014 data window find six of 38 TP samples are elevated greater than 0.20 mg/l. Values range from 0.24 - 0.52 mg/l. The 2012 assessment reports TP results find five of 41 samples greater than 0.20 mg/l. Elevated TP samples range from 0.24 to 0.52 mg/l. The 2010 assessment finds six of 40 observations above 0.20 mg/l. Excessive values range from 0.28 to 0.40 mg/l. 2008 elevated TP levels are found in 17 of 51 samples with a maximum value of 1.40 mg/l and minimum of 0.23 mg/l. 2006 TP concentrations are elevated in 25 of 48 samples with excessive values also ranging from 0.23 to 1.40 mg/l.

2-JKS022.15- 2004 IR reports 1998 DO Recordings find 222 excursions of the minimum 4.0 mg/l WQS criterion from 481 measurements; Diurnal affects are noted. These data are older than 5 years.

2-JKS018.68- The 2016 IR reports no excursions of the DO minimum criterion from 63 measurements. However three measurements below 6.0 mg/l are recorded outside the 2016 data window in 2015. No excursions of the 4.0 mg/l minimum dissolved oxygen criterion are found from 41 measurements in 2014. Twenty-five DO measurements find no excursions of the minimum criterion within the 2012 data window. No excursions of the minimum criterion are found from 20 observations for the 2010 assessment. DO data within the 2008 data window find no excursions of the 4.0 mg/l minimum criterion from 10 measurements. However diurnal effects have been noted in previous assessments.

Two of 31 total phosphorus observations are elevated (>0.20 mg/l) at 0.25 and 0.41 mg/l within the 2016 data window. 2014 elevated TP results greater than 0.20 mg/l are three of 32 obs. At 0.22, 0.30 and 0.41 mg/l. 2012 TP data are two of 22 measurements.; elevated at 0.22 and 0.30 mg/l. Two of 16 TP samples are elevated above 0.20 mg/l with the 2010 assessment. Excessive values range from 0.22 to 0.30 mg/l. 2008 TP assessment results find no elevated TP levels from nine observations with no additional data beyond the 2006 IR. The 2006 IR reports six of 18 observations in excess of 0.20 mg/l. TP excursions ranged from 0.30 to 0.70 mg/l.

James River Basin

2-JKS013.29- The 2014 assessment records zero exceedances of the minimum DO criterion of 4 mg/l from 25 measurements. No excursions of the minimum DO criterion are found within the 2012 data window from 9 measurements. 2010 DO data report no exceeding values from eight observations. Ambient data within the 2008 assessment data window report no excursions of the WQS minimum criteria for DO. However diurnal effects have been noted in previous assessments.

Elevated total phosphorus values of 0.43 and 0.71 mg/l are found within the 2016 data window from 13 observations. Two TP observations from a total of 13 in 2014 are greater than 0.20 mg/l at 0.43 and 0.70 mg/L. Only one elevated TP value (0.43 mg/l) from nine samples is recorded in 2012. Two TP samples are within the 2010 data window with none greater than 0.20 mg/l. The 2008 IR reports elevated TP above 0.20 mg/l in six of 12 samples with excessive values ranging from 0.29 to 1.41 mg/l.

Jackson River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**11.36**

Sources:

Industrial Point Source Discharge	Municipal Point Source Discharges

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I09R-01-PCB** **Jackson River**

Location: The Jackson River from the Covington water intake downstream to just above the Lowmoor community.

City / County: Alleghany Co. Covington City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The 2008 Integrated Report (IR) produces the initial 303(d) Listing of these waters for a total of 12.63 miles.

2-JKS023.88 (Covington City Park) 2005 fish tissue collections find exceedances above the former WQS based PCB TV of 54 ppb (VDH 50) from a single species. Two carp are found with tissue values of 66.4 (68.0 cm) and 71.3 ppb (61.31 cm). Application of the new WQS of 20 ppb adds three additional carp sizes (63.9 cm) exceeding at 28.81 ppb, (63.2 cm) at 35.96 and (51-58 cm) at 37.48 ppb. There are no additional data.

Jackson River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**12.63**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I09R-02-BAC** **Jackson River**

Location: Jackson River mainstem from the Covington water intake downstream to just below the Lexington Avenue Bridge.

City / County: Alleghany Co. Covington City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The original 3.38 mile waters were 1998 303(d) listed for fecal coliform (FC) bacteria and delisted for bacteria October 2005 as approved by the U.S. EPA (Fed. ID - NA) where only one exceedance from 24 observations are reported via the 2006 Integrated Report (IR) for escherichia coli (E. coli) bacteria.

The bacteria impairment returned with the 2008 Integrated Report (IR) based on E. coli excursions at 2-JKS023.61. Data within the 2010 data window results in an additional extension of the impairment from stations 2-JKS018.68 and 2-JKS015.60. The impairment extends a total of 12.63 miles.

2-JKS023.61 (Covington City Park) Fourteen of 36 E.coli observations exceed the WQS instantaneous criterion of 235 cfu/100 ml. The range of exceeding values is from 425 cfu/100 ml to 24,196. The 2014 IR records 16 of 36 E.coli samples in excess of the instantaneous criterion. Excessive values range from 320 to greater than 2000 cfu/100 ml. Seventeen of 37 E.coli samples exceed the instantaneous criterion within the 2012 data window. Excessive values range from 250 cfu/100 ml to greater than 2000. 2010 results produce nine of 33 Escherichia coli (E. coli) observations in excess of the instantaneous criterion. Exceeding values range from 320 to 1400 cfu/100 ml. 2008 IR found four of 27 E. coli observations in excess of the instantaneous criterion. Exceeding values range from 250 to 1400 cfu/100 ml.

2-JKS018.68 (Rt. 8 Bridge at Covington) Six of 24 E.coli samples exceed the instantaneous criterion within the 2016 data window. Excessive values range from 275 to greater than 2000 cfu/100 ml. The 2014 data window finds E.coli exceeds 235 cfu/100 ml instantaneous criterion in seven of 24 samples. Excursions range from 250 to 950 cfu/100 ml. There are no additional E.coli data within the 2012 data window. Three of 12 E. coli observations exceed the instantaneous criterion ranging from 550 to 380 cfu/100 ml in 2010.

2-JKS015.60 (K-Mart Parking Lot, SE corner) There are no additional E.coli data within the 2012, 2014 or 2016 data windows. 2010 E. coli observations exceed the 235 cfu/100 ml criterion in two of 12 observations. Exceeding values range from 250 to 450 cfu/100 ml.

Jackson River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**12.63**

Sources:

Municipal (Urbanized High Density Area)

Sanitary Sewer Overflows (Collection System Failures)

Urban Runoff/Storm Sewers

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I09R-02-TEMP** **Wilson Creek**

Location: Wilson Creek from the headwaters downstream to the upper end of Douthat Lake pool. (Start Mile: 14.23 End Mile: 7.48 Total Impaired Size: 6.75 Miles)

City / County: Bath Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Temperature, water / 5C

This segment is considered impaired due to violations of the temperature WQS. This is carried from the 2006 assessment as no new data are available in the 2016 cycle as well and is believed to be natural. Initial Listing Date: 2004.

Wilson Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**6.74**

Sources:

Drought-related Impacts Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I10R-01-TEMP** **Potts Creek**

Location: Potts Creek from the Paint Bank Branch confluence downstream to the Alleghany / Craig County Line.

City / County: Alleghany Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

2-POT030.66- (Above the Route 18 Bridge near campsite). The 2016 Integrated Report (IR) finds two of 12 temperature observations exceed the Class V temperature criterion. The two excursions are 21.1°C (7/01/2014) and 21.7 (9/04/2014). There are no additional data beyond the 2008 Integrated Report. No excursions of the Class V 21°C criterion are found from three remaining measurements within the 2012 data window. The 2010 (12 measurements) and 2008 (13 measurements) IRs find the same temperature excursions as in the 2006 IR initial 303(d) Listing where the Class V Temp criterion of 21 °C exceeds in three of 12 measurements. Temperature exceedances occur in July and September of 2003 and 2004 ranging from 21.7 to 23 °C.

Potts Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**5.66**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I12R-01-BAC** **Cowpasture River**

Location: Cowpasture River from the headwaters downstream to its confluence with Shaws Fork. (Start Mile: 87.78 End Mile: 75.48 Total Impaired Size: 8.3 Miles)

City / County: Bath Co. Highland Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2-CWP075.64 (2 violations of 12 samples for e-coli) Initial Listing Date: 2016

Cowpasture River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.30**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I13R-01-BAC** **Bullpasture River**

Location: Bullpasture River from the headwaters downstream to just below its confluence with the Davis Run. (Start Mile: 24.56 End Mile: 12.62 Total Impaired Size: 11.94 Miles) This impairment length was shortened in 2010, lower section fully supporting.

City / County: Bath Co. Highland Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is considered impaired due to violations of the e-coli bacteria standard at stations: 2-BLP015.32 (4 violations of 20 samples for e-coli in 2012, no new data in 2016, segment remains impaired). Initial Listing Date: 2006.

Bullpasture River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.94**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I13R-02-TEMP** **Bullpasture River**

Location: Bullpasture River from the headwaters downstream to its confluence with the Cowpasture River. (Start Mile: 24.56 End Mile: 0.00 Total Impaired Size: 24.56 Miles)

City / County: Bath Co. Highland Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Temperature, water / 5A

This segment is impaired due to violations of the temperature WQS at stations: 2-BLP000.79 (15 violations of 136 samples for temperature) and 2-BLP015.32 (3 violations of 11 samples for temperature). Initial Listing Date: 2012.

Bullpasture River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**24.56**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I14R-04-PH** **Laurel Run**

Location: Laurel Run from the headwaters downstream to its confluence with Dry Run. (Start Mile: 2.04 End Mile: 0.00 Total Impaired Size: 2.04 Miles)

City / County: Bath Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA VT10 (2 violations of 14 samples for pH) Data now outside the 2016 assessment data window, however, the impairment carries forward. Initial Listing Date 2006.

Laurel Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.03**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I16R-01-PH** **Porters Mill Creek**

Location: Porters Mill Creek and headwater tributary from the headwaters downstream to its confluence with Mill Creek. (Start Mile: 5.17 End Mile: 0.00 Total Impaired Size: 5.17 Miles)

City / County: Bath Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA VT15 (10 violations of 14 samples for pH) in 2010. This data is now outside the assessment data window for 2016, however, the impairment carries forward to 2014. Initial Listing Date: 2006.

Porters Mill Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.85**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I18R-01-BAC** **James River**

Location: James River from the confluence of the Jackson and Cowpasture Rivers downstream to the mouth of Stull Run (JU37).

City / County: Botetourt Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This 2014 initial 303(d) Listing is a result of bacteria exceedances causing impairment of the Recreational Use.

2-JMS345.73- (Rt. 220 Bridge - near Gage) Escherichia coli exceed the WQS instantaneous criterion of 235 cfu/10 ml in three of 24 observations. Excessive values range from 250 to 550 cfu/10 ml. The 2014 IR reports E.coli exceedances occur in two of 12 samples. Values in excess of the WQS criterion are 250 and 400 cfu/100 ml.

James River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.63**

Sources:

- Municipal (Urbanized High Density Area)
- Rural (Residential Areas)
- Unspecified Domestic Waste
- Urban Runoff/Storm Sewers
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I18R-03-BAC** **Sinking Creek**

Location: Sinking Creek mainstem from its mouth on the James River upstream to the Route 697 crossing (JU38).

City / County: Botetourt Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This 2014 initial 303(d) Listing is a result of bacteria exceedances causing impairment of the Recreational Use.

2-SKG001.04 (Lower Ford - near Gala) There are no additional data beyond the 2014 Integrated Report (IR) where escherichia coli (E.coli) exceedances occur in two of 12 samples. Values in excess of the 235 cfu/10 ml instantaneous criterion are 400 and 1075 cfu/100 ml.

Sinking Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.42**

Sources:

Livestock (Grazing or Feeding Operations)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Rural (Residential Areas)	Unspecified Domestic Waste
Wet Weather Discharges (Non-Point Source)	Wildlife Other than Waterfowl		

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I19R-01-BAC** **Craig Creek**

Location: Craig Creek mainstem from the mouth of Turnpike Creek extending downstream to the Rt. 311 crossing located downstream of the Abbott community.

City / County: Craig Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The 2004 initial Listing basis is three of 27 fecal coliform (FC) samples exceeding the former 400 cfu/100 ml WQS instantaneous criterion. The maximum reported is 1100 cfu/100 ml with the remaining values at 900 and 500. These 2004 7.91 mile 303(d) Listed waters remain impaired for bacteria. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

2-CRG062.29- (Rt. 311 Bridge nearest New Castle) There are no additional data within the 2016 data window. The 2014 data window produces seven of 24 escherichia coli (E.coli) samples exceeding the 235 cfu/100 ml WQS instantaneous criterion. The exceeding values range from 280 to 1050 cfu/100 ml. The 2010 and 2012 assessments find two of 12 Escherichia coli (E.coli) samples exceeding the current 235 cfu/100 ml WQS instantaneous criterion. E.coli exceeding values are 280 and 400 cfu/100 ml. Data within the 2006 and 2008 data windows find one FC excursion (1100 cfu/100 ml) of the former instantaneous criterion of 400 cfu/100 ml from 15 samples.

Craig Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.90**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I22R-01-BAC** **Barbours Creek**

Location: Barbours Creek from just downstream of the Rt. 617 and 611 junction at the mouth of Valley Branch on downstream to its mouth on Craig Creek. (New Castle Quad).

City / County: Craig Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The 7.15 mile bacteria impairment initially 303(d) Listed in 2004 remains.

2-BAR000.60- (Rt. 614 Bridge) There are no additional bacteria data beyond the 2004 Integrated Report (IR). The 2004 IR reports the maximum fecal coliform (FC) of 1100 cfu/100 ml and a second at 500; both exceed the former WQS instantaneous criterion of 400 cfu/100 ml from 18 samples. The 2006 IR finds no excursions of the former WQS FC instantaneous criterion from nine samples. The 2008 data window finds no excursions of the aforementioned from 3 samples. There are no bacteria data within the 2010, 2012, 2014 or 2016 assessment data windows.

Barbours Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**7.15**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I22R-01-PH** **Mill Creek**

Location: Mill Creek mainstem from ~2.0 miles upstream of its mouth on Craig Creek upstream to its headwaters and above the upstream most pond.

City / County: Craig Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

2-MIU002.97 (Upstream of Upper pond and downstream of former iron mine) Three 2010-2011 observations each of pH are in excess of the WQS acidic minimum criterion of 6.0 Standard Units (SU) at 5.2, 5.4 and 4.4 SU. This is a 2012 initial Listing. There are no additional data and the Aquatic Life Use remains impaired.

Mill Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.24**

Sources:

Mine Tailings

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I22R-01-TEMP** **Barbours Creek**

Location: Barbours Creek from its mouth on Craig Creek upstream to the I23 Watershed Boundary located just downstream of the Rt. 617 and 611 junction at the mouth of Valley Branch.

City / County: Craig Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The original 7.15 mile temperature impairment continues with the 2014 Integrated Report (IR). The 2006 IR extended the impairment 6.29 miles (2-BAR010.10 - I23R) from the initial 2002 303(d) Listing (2-BAR000.60 - I22R). The 6.29 mile upstream extension is de-listed with the 2012 Integrated Report with station 2-BAR010.10 recording no exceeding Class VI temperatures of the 20°C WQS criterion from 15 observations.

2-BAR000.60- (Rt. 614 Bridge) There are no additional data beyond the 2004 IR. The 2004 assessment finds temperature exceeds the WQS 20°C natural trout water criterion in three of 18 observations with a maximum of 22°C on 7/10/00. Each of the remaining two temperature excursions occur on 7/08/98 (20.6°C) and 7/12/99 (20.5°C). The 2006 IR data window reveals one of nine temperature measurements in excess of the Class VI criterion. The 2008 data window finds no excursions from three measurements. There are no additional data within the 2016 assessment data window.

Barbours Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**7.15**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I22R-02-BAC** **Craig Creek**

Location: Craig Creek from the mouth of Johns Creek downstream to Barbours Creek confluence with Craig Creek

City / County: Craig Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2-CRG048.53 (Below New Castle STP) - There are no additional data beyond the 2012 Integrated Report (IR). The 2012 initial 303(d) Listing results from escherichia coli (E.coli) exceedances from two of 12 samples within the 2012 data window. Values in excess of the 235 cfu/10 ml instantaneous criterion are 320 and 700 cfu/100 ml. A downstream station 2-CRG042.34 (Rt. 614 Bridge) records a single exceedance of greater than 2000 cfu/100 ml from 24 samples within the 2014 data window. The exceedance indicates potential for impairment although not impaired via Guidance.

Craig Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.43**

Sources:

- Livestock (Grazing or Feeding Operations)
- Municipal (Urbanized High Density Area)
- Unspecified Domestic Waste
- Wastes from Pets
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I22R-04-BAC** **Little Patterson Creek**

Location: Little Patterson Creek from just upstream of the Rt. 684 (Sugar Tree Hollow Rd.) crossing downstream to its confluence with Patterson Creek.

City / County: Botetourt Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

The 2004 Integrated Report (IR) initially 303(d) Lists the 4.24 mile fecal coliform (FC) bacteria impairment. Escherichia coli replaces the fecal coliform impairment with the 2012 IR.

Station 2-LIP001.00 (Rt. 682 Bridge - Sugartree Hollow Rd.) There are no additional data beyond the 2012 Integrated Report (IR). Five of 12 escherichia coli (E.coli) samples exceed the 235 cfu/100 ml instantaneous criterion within the 2012 data window. Exceeding values range from 250 to 1300 cfu/100 ml. The 2004 IR reports FC exceeds the former 400 cfu/100 ml WQS instantaneous criterion in two of nine samples. The two exceedances are 2800 (2001) and 2100 cfu/100 ml (2001). In both the 2006 and 2008 assessments FC exceeds in two of 12 samples with the same excursions as in previous cycles. No additional data extended into the 2010 data window where three observations did not exceed.

Little Patterson Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.24**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I22R-05-BAC** **Craig Creek**

Location: Craig Creek mainstem from the mouth of Wilson Branch downstream to the Craig Creek confluence with the James River.

City / County: Botetourt Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This 2016 303(d) initial Listing is due to impairment of the Recreational Use based on escherichia coli (E.coli) bacteria excursions of the WQS instantaneous criterion.

2-CRG016.90 (Rt. 817 pull off from Rt. 615) The 2016 Integrated Report (IR) finds two of 11 E.coli samples exceed the instantaneous criterion of 235 cfu/100 ml. Values in excess of the criterion are 546 and 650 cfu/100 ml.

2-CRG001.20 (Rt. 818 Bridge) The 2016 data window reveals two of 11 E.coli samples exceed the 235 cfu/100 ml instantaneous criterion. Values in excess of the criterion are 325 and 830 cfu/100 ml.

Craig Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**27.56**

Sources:

Livestock (Grazing or Feeding Operations)	Loss of Riparian Habitat	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Unspecified Domestic Waste
Wastes from Pets	Wet Weather Discharges (Non-Point Source)	Wildlife Other than Waterfowl	

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I24R-01-BAC** **Lapsley Run**

Location: Lapsley Run from its confluence with the James River upstream to its headwaters.

City / County: Botetourt Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2-LAP001.20 (Rt. 726 Bridge) The 2016 Integrated Report (IR) finds six of 12 escherichia coli (E.coli) samples exceed the 235 cfu/100 ml instantaneous criterion. Excessive values range from 275 to 1325 cfu/100 ml. There were no additional data within the 2010, 2012 or 2014 assessment cycles. E.coli exceed the WQS instantaneous criterion in three of nine samples within the 2008 data window. These excursions cause the 2008 initial 303(d) Listing of these waters for 9.01 miles. E.coli values in excess of the criterion are: 800, 420 and 250 cfu/100 ml.

Lapsley Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.01**

Sources:

- Grazing in Riparian or Shoreline Zones
- Livestock (Grazing or Feeding Operations)
- Unspecified Domestic Waste
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I25R-01-BAC** **Catawba Creek**

Location: Catawba Creek from the confluence of Little Catawba Creek downstream to the Town of Fincastle POTW (JU53).

City / County: Botetourt Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Three Catawba Creek stations find non-supporting fecal coliform (FC) bacteria results through the 2008 - 2012 data windows. In previous cycles two of the stations below (2-CAT000.34 & 2-CAT023.83) have sufficient escherichia coli (E.coli) data to assess. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

2014 escherichia coli (E.coli) data are sufficient to partially delist the lower portion of Catawba Creek from the Town of Fincastle POTW downstream to the confluence of Catawba Creek with the James River (11.71 miles). Station 2-CAT000.34 (Bridge near Salisbury Furnace) records two of 24 E.coli samples exceeding the WQS instantaneous criterion with a exceedance rate of 8.30%. The remaining waters exhibit impairment for the Recreational Use.

The original 2002 FC bacteria impairment was extended both upstream and downstream with the 2004 assessment. The extension downstream is from the Fincastle POTW to the Catawba Creek confluence with the James River (11.71 miles); now delisted. The upstream extension is from the confluence of Little Catawba Creek downstream to the Roanoke Cement outfalls on Catawba Creek (0.81 miles). The original 2002 11.87 mile impairment began at the Roanoke Cement Co. water intake on Catawba Creek (37°28'12"/80°00'18") extending downstream to the Town Branch confluence with Catawba Creek (37°31'01"/79°52'45").

2-CAT023.83- (Rt. 779 Bridge near Gage) There are no additional data within the 2016 data window where six of 12 E.coli remaining samples exceed the WQS instantaneous criterion of 235 cfu/100 ml. The 2014 assessment finds eight of 24 escherichia coli (E.coli) samples exceed the instantaneous criterion. Excursions range from 280 to 1950 cfu/100 ml. There are no additional data within the 2012 data window. 2010 data report two of 12 E.coli observations in excess of the 235 cfu/100 ml instantaneous criterion with data through 2008. Exceeding values are 280 and 480 cfu/100 ml. FC exceeds in four of 12 observations with additional data through May 2003 in 2008. Each excursion is in excess of the former WQS 400 cfu/100 ml instantaneous criterion. The maximum exceedance is 1900 cfu/100 ml and the minimum is 500 (2004 upstream extension). The 2006 Integrated Report (IR) finds FC exceeds in four of 12 observations. The maximum exceedance is 1900 cfu/100 ml and the minimum is 500. Exceedance range is the same as in 2004 where FC exceeds in three of nine observations.

2-CAT014.63- (Rt. 606 Bridge, Botetourt Co.) There are no additional E.coli data within the 2014 data window. The 2008 IR finds FC exceeds the former WQS criterion in four of 14 observations with additional data through May 2003. The 2006 IR reports FC exceeds in six of 20 observations. Exceedances range from 500 to the maximum of 1300 cfu/100 ml (original 2002 303(d) Listing). FC exceeds in seven of 27 observations ranging from 500 to the maximum of 2000 cfu/100 ml in 2004.

Catawba Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**13.46**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wastes from Pets
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I25R-01-BEN** **Catawba Creek**

Location: Catawba Creek from Buchanan Branch downstream to the Fincastle POTW.

City / County: Botetourt Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The impaired waters were partially delisted for 9.16 miles with the 2012 assessment; 3.23 miles remain impaired.

These remaining waters will be considered for delist with additional macroinvertebrate data collection within the 2016 data window. Both upstream (2-CAT028.98) and downstream (2-CAT025.14) sites indicate non-impaired conditions. The Virginia Stream Condition Index (VSCI) is a multi-metric statewide stream index of biotic integrity that is based on data collected from minimally impacted reference sites throughout Virginia. The index shows that a VSCI score of 60.0 is the lower limit for reference (or, unimpaired) conditions in a benthic community. Each of the aforementioned sites have average scores above 60.

2-CAT026.55 (Off Rt. 779 North of Catawba) There are no additional data beyond the 2008 Integrated Report (IR). This 2008 initial 303(d) Listing for General Standard (Benthic) impairment is based on two 2003 Virginia Stream Condition Index (VSCI) surveys scoring spring 36.4 and fall 56.9. More taxa, including a higher percentage of mayflies were collected in the fall sample. Also, fewer midge larvae (Chironomidae) were present in the fall sample helping to improve the benthic community score. The land use adjacent to and immediately upstream of the station is open pasture. The riparian zone is impacted by the pastures and bank erosion due to cattle access as well as poor bank vegetative protection.

Catawba Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.23**

Sources:

- Grazing in Riparian or Shoreline Zones
- Livestock (Grazing or Feeding Operations)
- Loss of Riparian Habitat

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I26R-01-BEN** **Mill Creek, UT (XUL)**

Location: Mill Creek, UT (XUL) from just downstream of the Rt. 11 crossing upstream to its headwaters.

City / County: Botetourt Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2-XUL001.67 (Downstream of Rt. 799 (Ammen Rd.) crossing)- There are no additional information beyond the 2010 Integrated Report (IR). The benthic community is impaired for 5.37 miles from two 2008 Virginia Stream Condition Index (VSCI) surveys. 2008 VSCI scores are spring 33.9 and fall 50.9. This is a small second order tributary to Mill Creek. The average VSCI score for all samples was 42.4 indicating a benthic community with many organisms that are tolerant of pollution. Habitat scores indicate a stream reach with badly eroded stream banks, poor vegetative protection on the banks and in the riparian zone excessive deposits of sand and fine sediment on the stream bottom. The watershed consists of pastures, crop fields, and some residential areas.

Mill Creek, UT (XUL)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.37**

Sources:

- Livestock (Grazing or Feeding Operations)
- Loss of Riparian Habitat
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I27R-01-BAC** **James River**

Location: James River from the Looney Cr. mouth downstream to the confluence of Jennings Creek (JU56).

City / County: Botetourt Co. Rockbridge Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This initial 7.15 mile 2014 303(d) Listing is a result of escherichia coli (E.coli) samples in excess of the WQS 235 cfu/10 ml instantaneous criterion. The Recreational impairment is extended downstream 9.53 mile with the 2016 Integrated Report (IR).

2-JMS309.13 (Gage - Foot Bridge Buchanan) Six of 24 E.coli samples exceed the 235 cfu/100 ml WQS instantaneous criterion within the 2016 data window. Excessive values range from 600 to 1800 cfu/100 ml. The 2014 Integrated Report (IR) finds three E.coli samples exceed the instantaneous criterion from 24 samples. Values in excess of the instantaneous criterion are 600, 1000 and 1475 cfu/100 ml.

2-JMS298.17 (Pull off of Rt. 608) The 2016 IR reports two of 12 E.coli samples in excess of the WQS instantaneous criterion. Excessive values are 265 and 275 cfu/100 ml.

James River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**16.67**

Sources:

Livestock (Grazing or Feeding Operations)	Municipal (Urbanized High Density Area)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Rural (Residential Areas)
Unspecified Domestic Waste	Wastes from Pets	Wet Weather Discharges (Non-Point Source)	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I28R-02-BAC** **Elk Creek**

Location: Elk Creek from the headwaters downstream to its confluence with the James River. (Start Mile: 4.00 End Mile: 0.00 Total Impaired Size: 4.00 Miles)

City / County: Rockbridge Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2-ELK001.37 (2 violations of 10 samples for e-coli)
Initial Listing Date: 2014

Elk Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.98**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I29R-01-TEMP** **Ramseys Draft**

Location: Ramseys Draft from the headwaters downstream to its confluence with the Calfpasture River. (Start Mile: 10.29 End Mile: 0.00 Total Impaired Size: 10.29 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This segment is impaired due to violations of the temperature WQS at station: 2-RAM000.26 (2 violations of 12 samples for temperature). Initial Listing Date: 2016

Ramseys Draft **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**10.29**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I30R-01-BAC** **Calfpasture River**

Location: Calfpasture River from its confluence with Tizzle Branch downstream to its confluence with Hamilton Branch. (Start Mile: 26.52 End Mile: 23.72 Total Impaired Size: 2.8 Miles) The extents of this impairment were adjusted due to changes in the NWBD boundaries in 2010. The impairment length was shortened in 2012 as a downstream assessment unit returned to fully supporting status for bacteria.

City / County: Augusta Co. Rockbridge Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 2-CFP024.20 (3 violations of 12 samples for e-coli in 2014, no new data in 2016). Initial Listing Date: 2006.

Calfpasture River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**2.83**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I30R-03-BAC** **Hamilton Branch**

Location: Hamilton Branch from the headwaters downstream to its confluence with the Calfpasture River. (Start Mile: 6.29 End Mile: 0.00 Total Impaired Size: 6.29 Miles)

City / County: Augusta Co. Bath Co. Rockbridge Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station 2AHAM000.02 (8 violations of 12 samples for e-coli). Initial Listing Date: 2016

Hamilton Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.28**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I30R-03-PH** **Piney Branch**

Location: Piney Branch from the headwaters downstream to its confluence with Guys Run. (Start Mile: 2.33 End Mile: 0.00 Total Impaired Size: 2.33 Miles)

City / County: Rockbridge Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: UVA RB08 (12 violations of 12 samples for pH) in 2010. This data is now outside the assessment data window for 2016, however, the impairment carries forward to 2014. Initial Listing Date: 2006.

Piney Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.33**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I32R-03-BAC** **Little Calfpasture River**

Location: Little Calfpasture River from the headwaters downstream to its confluence with Smith Creek. (Start Mile: 23.54 End Mile: 11.18 Total Impaired Size: 12.36 Miles)

City / County: Augusta Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 2-LCF013.93 (2 violations of 12 samples for e-coli in 2014) no data in 2016. Initial Listing Date: 2004.

Little Calfpasture River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**12.35**

Little Calfpasture River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**12.35**

Sources:

Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I33R-01-BAC** **Cedar Grove Branch**

Location: Cedar Grove Branch from the headwaters downstream to its confluence with the Maury River. (Start Mile: 4.62 End Mile: 0.00 Total Impaired Size: 4.62 Miles)

City / County: Rockbridge Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 2-CGB001.80 (10 violations of 23 samples for e-coli in 2012, 3 violations 5 samples in 2014/16, no new data). Initial Listing Date: 2004.

Cedar Grove Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.62**

Cedar Grove Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**4.62**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I33R-03-BAC** **Kerrs Creek**

Location: Kerrs Creek from the headwaters downstream to its confluence with the Maury River. (Start Mile: 11.87 End Mile: 0.00 Total Impaired Size: 11.87 Miles)

City / County: Rockbridge Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at stations: 2-KRR001.54 (4 violations of 12 samples for e-coli) and 2-KRR008.16 (2 violations of 6 samples for e-coli). Initial Listing Date: 2012.

Kerrs Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.86**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I35R-02-BAC** **Mill Creek**

Location: Mill Creek from the headwaters downstream to its confluence with the Maury River. (Start Mile: 9.14 End Mile: 0.00 Total Impaired Size: 9.14 Miles)

City / County: Rockbridge Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

This segment is impaired due to violations of the e-coli bacteria WQS at station: 2-MIS000.04 (2 violations of 12 samples for e-coli in 2014, no data in 2016). Initial Listing Date: 2006.

Mill Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.13**

Mill Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**9.13**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I35R-02-BEN** **Mill Creek**

Location: Mill Creek from the headwaters downstream to its confluence with the Maury River. (Start Mile: 9.14 End Mile: 0.00 Total Impaired Size: 9.14 Miles)

City / County: Rockbridge Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations General Standard for Benthics at station: 2-MIS000.04 (Impaired for VSCI). Initial Listing Date: 2016.

Mill Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.13**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I35R-03-BAC** **Woods Creek**

Location: Woods Creek and tributary from the headwaters downstream to its confluence with the Maury River. (Start Mile: 6.06 End Mile: 0.00 Total Impaired Size: 6.06 Miles)

City / County: Lexington City Rockbridge Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2AWDS000.10 (2 violations of 6 samples for e-coli). Initial Listing Date: 2012.

Woods Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.05**

Sources:

Municipal (Urbanized High Density Area) Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I35R-03-BEN** **Woods Creek**

Location: Woods Creek and tributary from the headwaters downstream to its confluence with the Maury River. (Start Mile: 6.06 End Mile: 0.00 Total Impaired Size: 6.06 Miles)

City / County: Lexington City Rockbridge Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 2-WDS000.12 (Impaired for VSCI) and 2-WDS002.08 (Impaired for VSCI). Initial Listing Date: 2008.

Woods Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.05**

Sources:

Municipal (Urbanized High Density Area) Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I36R-02-BEN** **Moores Creek**

Location: Moores Creek and tributaries from the headwaters downstream to its confluence with the South River. (Start Mile: 9.09 End Mile: 0.00 Total Impaired Size: 9.09 Miles)

City / County: Rockbridge Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at stations: 2-MRC002.14 (Impaired for VSCI) and 2-MRC003.82 (Impaired for VSCI). Initial Listing Date 2006.

Moores Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.09**

Sources:

Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I36R-03-PH** **Saint Marys River**

Location: Saint Marys River from a point approximately 1.97 miles above its confluence with Cellar Hollow downstream to its confluence with South River. (Start Mile: 1.97 End Mile: 0.00 Total Impaired Size: 1.97 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

This segment is impaired due to violations of the pH WQS at station: 2-SMR001.52 (3 violations of 16 samples for pH in 2014, no new data in 2016). Initial Listing Date: 2006.

Saint Marys River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**1.97**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I36R-03-TEMP** **Saint Marys River**

Location: Saint Marys River from a point approximately 1.97 miles above its confluence with Cellar Hollow downstream to its confluence with South River. (Start Mile: 1.97 End Mile: 0.00 Total Impaired Size: 1.97 Miles)

City / County: Augusta Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

This segment is impaired due to violations of the temperature WQS at station: 2-SMR001.52 (3 violations of 16 samples for temperature in 2014, no new data in 2016). Initial Listing Date: 2010.

Saint Marys River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**1.97**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I36R-05-BEN** **Marl Creek**

Location: Marl Creek and tributaries from the headwaters downstream to its confluence with the South River. (Start Mile: 7.74 End Mile: 0.00 Total Impaired Size: 7.74 Miles)

City / County: Rockbridge Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment is impaired due to violations of the General Standard for Benthics at station: 2-MRL002.62 (Impaired for VSCI) and 2AXEM000.35 (Impaired for VSCI). Initial Listing Date: 2012.

Marl Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.74**

Sources:

Agriculture	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I36R-06-BAC** **South River**

Location: South River from its confluence with Moores Creek downstream to its confluence with Irish Creek. (Start Mile: 13.56 End Mile: 5.60 Total Impaired Size: 7.96 Miles)

City / County: Augusta Co. Rockbridge Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2-STH011.28 (2 violations of 11 samples for e-coli). Initial Listing Date; 2012.

South River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.95**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I37R-02-PCB** **Maury River**

Location: Maury River from its confluence with the South River downstream to its confluence with the James River. (Start Mile: 16.94 End Mile: 0.00 Total Impaired Size: 16.94 Miles)

City / County: Buena Vista City Rockbridge Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

This segment is impaired due to the presence of PCB's in fish tissue at stations: 2-MRY011.23 (01 PCBs 3 sp 05 PCBs 3 sp) and 2-MRY011.86 (04 PCBs) This data now outside the 2016 assessment data window, however, the impairment carries forward to 2016. Initial Listing Date: 2006. VDH Fish Consumption Advisory

Maury River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**16.92**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I37R-03-BAC** **Poague Run**

Location: Poague Run and tributaries from the headwaters downstream to its confluence with the Maury River. (Start Mile: 17.12 End Mile: 0.00 Total Impaired Size: 17.12)

City / County: Rockbridge Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This segment is impaired due to violations of the e-coli WQS at station: 2-PGH002.44 (5 violations of 12 samples for e-coli). Initial Listing Date: 2014

Poague Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**17.12**

Sources:

Agriculture	Non-Point Source	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* I38L-01-PH** **Lexington Reservoir**

Location: Lexington Reservoir (Total Impaired Size: 22.60 Acres)

City / County: Rockbridge Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The lake is impaired due to violations of the pH WQS at 2-MOR003.60 (18 violations of 66 samples for pH). Initial Listing Date: 2010.

Lexington Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:		**22.60**	

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J01R-02-BEN** **Horsepen Creek**

Location: Horsepen Creek from its headwaters to the mouth at the Appomattox River

City / County: Buckingham Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-HRE000.44 (2013 Bio)
IM - This stream had moderate deposition of sediment and moderately unstable banks.

Horsepen Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.00**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J01R-09-BEN** **Crane Creek**

Location: Crane Creek from its headwaters to its mouth on Vaughans Creek

City / County: Appomattox Co. Buckingham Co. Cumberland Co. Prince Edward Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-CNE000.96
2008/2012-2014 Bio - IM
Dairy cows have access to stream, though it is a very wooded area. Habitat consisted of numerous log jams, some good cobble riffles and some gravel riffles. The riffles weren't very embedded but sedimentation was high throughout the rest of the stream. Nitrogen concentrations in the stream were high, indicating a nutrient problem. Extreme seasonal variation in SCI scores, therefore additional monitoring is needed to accurately assess water quality in this stream reach.

Crane Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.18**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J03R-06-BEN** **Sandy River**

Location: Sandy River from the backwaters of Sandy River Reservoir to the Prince Edward Lake Dam.

City / County: Prince Edward Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2DSDY008.80 (2009 & 2012 Bio)
IM - This stream had marginal bank stability, obvious sediment deposition, and marginal epifaunal substrate. 2009 biologist field notes indicate that every surface was covered in algae. The water was very sluggish and there were beaver dams upstream and downstream.

Sandy River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.08**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J04R-01-BEN** **Bush River**

Location: Bush River from its headwaters to the confluence with Mountain Creek.

City / County: Prince Edward Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station IDs:
2-BSR012.33 (2014 FPM)
FS Benthic Assessment
2-BSR017.69 (2008 Bio)
IM Benthic Assessment - This site was monitored in order to supplement probabilistic monitoring data from probabilistic monitoring site 2-BSR018.10, which can only be accessed via private land and cannot be revisited. Bush River has evidence of extremely high flows with very high sedimentation occurring instream. The habitat assessment scores very low for bank stability and bank vegetative protection. In the fall of 2008 a new clear-cut was noted on the right bank. The riffles had become more embedded, reducing available habitat for benthic macro invertebrates.
2-BSR018.10 (2005 Probmon)
J Rating Benthic Assessment - Condition of stream drastically different seasonally, therefore an accurate assessment is not possible without additional data. This site was part of the probabilistic monitoring program and can only be accessed via private land, therefore it will not be revisited. Seasonal difference noted. Abundant algal floc dominated riffles in spring but was not present in fall.

Bush River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**11.48**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J04R-02-BEN** **Mountain Creek**

Location: Mountain Creek from its headwaters to its mouth on Bush River.

City / County: Prince Edward Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-MTC001.24 (Ambient, Bio)
IM - 2008 Bio
This monitoring station was characterized by sluggish flow, marginal habitat, considerable sediment deposition, and unstable banks with little vegetative protection.
2-MTC005.27 (2014 Bio)
FS - This site had decent habitat but sedimentation was occurring.

Mountain Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.97**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J05R-01-BEN** **Briery Creek**

Location: Briery Creek from the Briery Creek Lake Dam to the confluence with the Bush River.

City / County: Prince Edward Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-BRI007.80 (2004 Probmon)
Impaired Benthic Assessment - Fixed, stable habitat was in short supply within this stream reach. Sediments are frequently disturbed during high flow events. Briery Creek Reservoir is upstream of the sample reach. Flow modifications due to the upstream dam may be affecting the stream community.
Are any seasonal differences noted? None
2009 Bio
This stream has marginal bank stability, increased sediment deposition, and decent epifaunal substrate. 2009 biologist field notes indicate that the snags were full of sediment and the stream appears to get high flows relatively often.
2DBRI007.10 (2009/2012-2014 Bio)
Impaired Benthic Assessment - This stream has marginal bank stability, increased sediment deposition, and decent epifaunal substrate. 2009 biologist field notes indicate that the snags were full of sediment and the stream appears to get high flows relatively often.

Briery Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**10.48**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J05R-03-BEN** **Rice Creek**

Location: Rice Creek from its headwaters to its mouth on Bush River.

City / County: Prince Edward Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2DRCE002.44 (2012 Bio)
IM - This site has unstable banks and sediment deposition. Habitat availability improved somewhat in the fall. This site was monitored as a follow-up to probabilistic station 2DRCE001.21 that was located on private property and could not be revisited.

Rice Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.59**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J06R-03-BEN** **Horsepen Creek**

Location: Horsepen Creek from its headwaters to the mouth at Big Guinea Creek.

City / County: Cumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-HRP000.42 (2007-2012 Bio)
Impaired Benthic Assessment
Small, sandy stream in low area that is likely inundated often and may dry during drought.
The benthic macroinvertebrate population is probably influenced by these flow fluctuations. Habitat scores were low for sediment deposition, pool variability, bank stability, bank vegetative protection and epifaunal substrate. SCI scores straddled the impairment threshold until 2012. Sediment and organic pollution are likely stressors in this stream.

Horsepen Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.99**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J07L-01-PH** **Amelia Lake**

Location: Amelia Lake

City / County: Amelia Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

In 2014 the Lake became impaired for aquatic life with a pH violation rate of 21/122 at station 2-XLW000.60. During the 2016 cycle the segment remained impaired for pH since there was no new data collected.

Amelia Lake		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:		**98.31**	

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J09R-04-BEN** **Nibbs Creek South Branch**

Location: Nibbs Creek South Branch

City / County: Amelia Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2014 cycle the segment became impaired for aquatic life due to Benthics at station 2DNBX002.33.
During the 2016 cycle no new data was collected so the segment remains impaired for benthics at station 2DNBX002.33.

Nibbs Creek South Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.86**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J10R-01-BEN** **UT to Appomattox River**

Location: Mainstem to Appomattox

City / County: Amelia Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle this segment is impaired for aquatic life use due to benthic impairment at fresh water probabilistic monitoring station 2-XUE000.31

During the 2010 cycle this segment is impaired for aquatic life use due to benthic impairment at fresh water probabilistic monitoring station 2-XUE000.31.

During the 2012 cycle this segment will remain impaired for aquatic life use due to benthic impairment at fresh water probabilistic monitoring station 2-XUE000.31 because there is no new data in the data window.

There is no new data during the 2014 and 2016 cycle

UT to Appomattox River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.49**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J10R-02-DO** **Goodes Creek**

Location: From the dam of the pond located at approximately 2.73 miles from the mouth to the Appomattox

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle the segment was impaired for aquatic life use due to low DO with a violation rate of 2/14 at station 2-GOC001.19., and assessed as Category 5C.

During the 2012 cycle the segment was impaired aquatic life use due to low DO with a violation rate of 3/23 at station 2-GOC001.19.

During the 2014 and 2016 cycle there was no new data so the impairment remains.

Goodes Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.91**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J10R-03-DO** **Smacks Creek**

Location: Headwaters to mouth

City / County: Amelia Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The 2012 cycle the segment was impaired for aquatic life use at station 2-SMK006.57 for DO with a violation rate of 3/9. During the 2014 and 2016 cycle there was no new data, so the impairments remain.

Smacks Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**9.06**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J11R-03-DO** **Bland Creek**

Location: Bland Creek from its headwaters to the confluence with Cellar Creek

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle the segment was impaired for aquatic life use due to low D.O. with a violation rate of 2/12 at station 2-BLO001.85 .

During the 2012 cycle the segment was impaired for aquatic life use due to low D.O. at station 2-BLO001.85(10/35).

During the 2014 cycle the segment was impaired for aquatic life use due to low D.O. at station 2-BLO001.85(13/47).

During the 2016 cycle the segment was impaired for DO(15/46).

Bland Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.51**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J11R-04-DO** **Cellar Creek**

Location: From the confluence of Bland Creek to the mouth at Deep Creek

City / County: Amelia Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle the segment was impaired for aquatic life use with a D.O. with a violation rate of 5/35 at station 2-CLR001.23.

During the 2014 cycle the segment was impaired for aquatic life use with a DO violation rate of 9/47 at station 2-CLR001.23.

During the 2016 cycle the segment was impaired for DO with a violation rate of 14/46.

Cellar Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.70**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J11R-05-DO** **Woody Creek**

Location: Woody Creek from its headwaters to its mouth at Deep Creek.

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle the segment became impaired aquatic life use with a DO violation rate of 6/48 at station 2-WDY003.04.

During the 2016 cycle the segment remained impaired for DO with a violation rate of 5/46 at station 2-WDY003.04.

Woody Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**7.97**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J12R-01-BEN** **Winticomack Creek**

Location: Winticomack Creek from Long Branch to its mouth at the Appomattox River.

City / County: Amelia Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2010 cycle the segment was impaired for aquatic life use for Benthics at station 2-WTK001.50.

There has been no new data since the 2010 cycle.

During the 2016 cycle the segment was impaired for Benthics, new data was collected in 2013.

Winticomack Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.07**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J12R-06-PH** **Horsepen Branch**

Location: Headwaters to mouth

City / County: Amelia Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Horsepen Branch is assessed as not supporting for aquatic life use goals based on a dissolved oxygen violation rate 2/15 and a pH violation rate of 6/15 at the Rt. 622 bridge (2-HOI001.85).

Source of the DO and pH violations may be attributed to natural conditions

For 2008 it was assessed as not supporting for aquatic life based on a DO and pH violations at station at HOI001.85, violation rate was 1/15 for DO and 7/15 for pH.

For the 2010 cycle the segment was impaired for pH with a violation rate of 5/12 and the DO was fully supporting and delisted

no new data since 2010 cycle

During the 2016 cycle the segment had insufficient data to fully assess.

Horsepen Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.44**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J13R-01-DO** **Namozine Creek**

Location: Namozine Creek from its headwaters to the confluence with Tylers Branch.

City / County: Amelia Co. Dinwiddie Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2016 cycle the segment was impaired for DO with a violation rate of 6/12.

Namozine Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**12.91**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J14R-02-PH** **Stoney Creek**

Location: Stoney Creek from headwaters to the limit with Lake Chesdin

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

In 2010 cycle the DEQ station 2-STY001.96 was added and was impaired for pH with a violation rate of 8/10. The Chesterfield Co station was also impaired for pH. The Chesterfield data was not acceptable for an impairment but were assessed as an observed effect for low pH. The low pH could be due to natural conditions.

In 2012 cycle station 2DSTY001.96 was impaired for pH with a violation rate of 9/14. The Chesterfield Co station was also impaired for pH. The Chesterfield data was not acceptable for an impairment but were assessed as an observed effect for low pH. The low pH could be due to natural conditions.

During the 2014 cycle there was no new data.

During the 2016 cycle the segment remained impaired for pH with a violation rate of 2/14.

Stoney Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.59**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J14R-03-DO** **Whipponock Creek**

Location: Whipponock Creek from its headwaters to the limit of Lake Chesdin.

City / County: Chesterfield Co. Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2016 cycle the segment became impaired due to a DO violation rate of 3/23.

Whipponock Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.82**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J15E-01-EBTOX** **Appomattox River**

Location: Tidal Appomattox River from the confluence of Walthall Channel to the end of APPTF

City / County: Chesterfield Co. Hopewell City Prince George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Sediment Bioassays for Estuarine and Marine Water / 5A

WOE was performed in 2006 at station 2SAPP001.91 Was Category 5A scenario 1. The segment was also shortened to split WOE samples.
No new data for the 2014 and 2016 cycle so the impairment remains.

Appomattox River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Sediment Bioassays for Estuarine and Marine Water - Total Impaired Size by Water Type:	**1.474**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J15R-01-BEN** **Appomattox River**

Location: Appomattox River from the Lake Chesdin dam downstream to the Confluence with Rohoic Creek

City / County: Chesterfield Co. Dinwiddie Co. Petersburg City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2012 cycle, the segment was shortened from 7.502 miles to 5.13 miles. The segment is impaired for aquatic life from Benthics at station 2DAPP015.51.

no new data since 2012 cycle

Appomattox River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.57**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J15R-02-BEN** **Oldtown Creek**

Location: Oldtown Creek from the confluence with Big Branch downstream to its tidal limit.

City / County: Chesterfield Co. Colonial Heights City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

For the 2010 cycle the segment was impaired for aquatic life use from Benthics at station 2-OTC001.54.

For the 2012 cycle the segment was impaired for Benthics at station 2-OTC001.54.

During the 2014 and 2016 cycle there has been no new data collected so the segment remains impaired for Benthics.

Oldtown Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.22**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J15R-05-BEN** **Rohoic Creek**

Location: Mainstem Rohoic Creek from headwaters to mouth including tributaries

City / County: Dinwiddie Co. Petersburg City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2012 cycle the segment became impaired for aquatic life use for Benthics at station 2-RHC000.58.

During the 2014 and 2016 cycle there was no new data so the Benthic Impairment remains.

Rohoic Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**13.45**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J15R-08-PH** **Oldtown Creek**

Location: Headwaters to the confluence of Big Branch

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

For the 2010 Cycle the segment was impaired for aquatic life use with a pH violation rate of 2/10 at station 2-OTC005.38.

For the 2012 Cycle the segment was impaired for aquatic life use with a pH violation rate of 2/14 at station 2-OTC005.38.

During the 2014 cycle there was no new data so the pH remained impaired.

For the 2016 Cycle the segment was impaired for pH with a violation rate of 2/16 at station 2-OTC005.38.

Oldtown Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**6.22**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J16R-02-DO** **Blackman Creek**

Location: Mainstem from its headwaters to its mouth at the confluence of Deep Creek and Horsepen Creek

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The segment is considered impaired of the Aquatic Life Use based on a dissolved oxygen violations at the Route 668 bridge (2-BCM000.79). In addition, phosphorus was listed as an observed effect in the segment.

The DO standards violation rate for Blackman Creek was 6/12 at the Rt. 668 bridge. However, it is suspected the low DO is due to natural conditions of the watershed. Therefore, for the 2006 cycle, Blackman Creek is assessed as Cat. 5C.

The segment also had observed effects for violation in Total Phosphorus standards with exceedences of 2/12.

The 2008 cycle the segment was impaired for the aquatic life use. the violation rate for DO was 6/12 at station 2-BCM000.79.

There is no new data since the 2008 cycle.

There is no new data for the 2014 cycle.

During the 2016 cycle the segment was impaired for DO(4/12) at station 2-BCM000.79.

Blackman Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.56**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17L-01-DO** **Swift Creek Lake**

Location: Swift Creek Lake

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

In 2006 the reservoir was impaired for DO in bottom waters during summer months due to stratification and the lake being drained in 2003. The Trophic State Index (TSI) is acceptable except for Secchi TSI = 67 (TSI >60). Since the Secchi TSI is larger than the Phos and Chl_a TSIs, the Secchi TSI is ignored and the segment is considered naturally impaired due to stratification.

For 2008 cycle there was no new data; Swift Creek Lake does not have defined nutrient criteria therefore the segment was moved to Cat 5A.

During the 2010 cycle the segment was impaired for aquatic life use with a DO violation rate of 9/58 at station 2-SFT022.14.

No new data since the 2010 cycle, the DO impairment remains.

Swift Creek Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**107.74**	

Sources:

Changes in Ordinary Stratification and Bottom Water Hypoxia/Anoxia	Dam or Impoundment

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-01-BEN** **Swift Creek**

Location: Swift Creek from the Swift Creek Lake dam downstream to its confluence with Licking Creek.

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

For the 2010 cycle the segment was impaired for Benthics at station 2-SFT019.02.

During the 2012 cycle the segment was impaired at station 2-SFT019.02 for Benthics.
During the 2014 and 2016 cycle there was no new data so the segment remains impaired for Benthics.

Swift Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.25**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-01-DO** **Swift Creek**

Location: Swift Creek from the Swift Creek Lake dam downstream to its confluence with Licking Creek.

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

In 1998, Swift Creek was assessed as threatened of the Aquatic Life Use due to dissolved oxygen violations. In 2002, the segment was considered partially supporting of the Aquatic Life use support goal based on water quality monitoring performed at the Route 655 bridge (2-SFT019.15). During the year 2004 cycle, the segment continued to show dissolved oxygen problems.

In 2006, the DO violation rate was 3/22 at the Rt. 655 bridge. However, it is suspected the low DO violations in this segment of Swift Creek are due to an upstream impoundment, therefore will be assessed as Cat. 5C.

In 2008 cycle, the DO violation rate was 4/26 at the Rt. 655 bridge. However, it is suspected the low DO violations in this segment of Swift Creek are due to an upstream impoundment, therefore will be assesses as Cat. 5C.

In the 2010 cycle the segment remained impaired for DO with a violation rate of 5/33.it is suspected the low DO violations in this segment of Swift Creek are due to an upstream impoundment, therefore will be assesses as Cat. 5A.

During the 2012 cycle the segment was impaired for aquatic life use for DO at station 2-SFT019.15. However, it is suspected the low DO violations in this segment of Swift Creek are due to an upstream impoundment, therefore will be assessed as Cat. 5C.

During the 2014 and 2016 cycle there was no new data so the segment remains impaired for DO.

Swift Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**7.25**

Sources:

Dam or Impoundment

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-05-PH** **Church Branch**

Location: From headwaters to the mouth at Franks Branch

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

For the 2008 cycle the violation rate for pH was 8/8. This segment was assessed as Insufficient information with observed effects of pH, since methodology used for samples was uncertain.

For the 2010 cycle the segment was impaired for aquatic life use with a pH violation rate of 8/9 at station 2-CUR001.58.

For the 2012 cycle the segment was impaired for aquatic life use with a pH violation rate of 12/13 at station 2-CUR001.58.

During the 2014 and 2016 cycle there was no new data so the segment remains impaired for pH.

Church Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.64**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-06-BEN** **Nuttree Branch**

Location: The mainstem of Nuttree Branch

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2012 cycle the segment was impaired for aquatic life use for Benthics at station 2-NUT000.62.
During the 2014 and 2016 cycle there was no new data so the segment remained impaired for Benthics.

Nuttree Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.58**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-06-DO** **Nuttree Branch**

Location: The mainstem of Nuttree Branch

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

For the 2010 cycle 2 new stations were added Station 2-NUT002.22 was impaired for aquatic life use with a DO violation rate of 2/9.

During the 2012 cycle the segment was impaired for aquatic life use with a DO violation rate of 2/13 at station 2-NUT002.22.

During the 2014 and 2016 cycle there was no new data so the segment remained impaired for DO.

Nuttree Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**5.58**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-06-PH** **Nuttree Branch**

Location: The mainstem of Nuttree Branch

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

for the 2006 cycle the pH violation rate recorded by Chesterfield Co was 4/20. However the data are not acceptable for an impairment, therefore the segment was assessed as fully supporting with an observed effect for low pH.

for the 2008 cycle the pH violation rate recorded by Chesterfield Co was 4/20. However the data are not acceptable for an impairment, therefore the segment was assessed as fully supporting with an observed effect for low pH.

For the 2010 cycle 2 new stations were added Station 2-NUT002.22 was impaired for aquatic life use with a pH violation rate of 2/9.

During the 2012 cycle the segment was impaired for aquatic life use with a pH violation rate of 2/13 at station 2-NUT002.22.

During the 2014 and 2016 cycle there was no new data so the segment remained impaired for pH.

Nuttree Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**5.58**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-07-PH** **Second Branch**

Location: Second Branch from Headwaters downstream to confluence with Mann Creek

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

For the 2010 cycle the segment was impaired for pH at station 2-SEC008.84(A) with a violation rate of 4/12. The Chesterfield Co. stations are impaired with observed effects for pH and DO.

For the 2012 cycle the segment is impaired for aquatic life use for pH at station 2-SEC008.84(A) with a violation rate of 4/16. The Chesterfield Co. and ACB stations are impaired with observed effects for pH and DO.

During the 2014 and 2016 cycle there was no new data so the segment remained impaired for pH.

Second Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**6.22**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-08-DO** **Swift Creek**

Location: Swift Creek from the Swift Creek Reservoir dam downstream to its confluence with Reedy Creek.

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

For the 2010 cycle 2 DEQ stations (2-SFT030.65, 2-SFT027.38) were added and both stations were impaired for aquatic life use for DO.

there has been no new data since 2010 cycle.

Swift Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.78**

Sources:

Dam or Impoundment

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-09-BEN** **Swift Creek**

Location: Swift Creek from Reedy Branch to the limit of Swift Creek Lake

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

For the 2010 cycle the segment was impaired for aquatic life use for Benthics at station 2-SFT025.32.

For the 2012 cycle the segment was impaired for aquatic life use for Benthics at station 2-SFT025.32.

During the 2014 and 2016 cycle there was no new data and the segment remained impaired for Benthics.

Swift Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.88**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-11-DO** **Long Swamp**

Location: The mainstem of Long Swamp

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

For the 2010 cycle the segment was assessed as not supporting for Aquatic Life use due to a pH violation rate of 6/11 at station 2-LNS000.69.

there has been no new data since 2010 cycle.

During the 2016 cycle the segment was impaired for DO(4/11).

Long Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.72**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

James River Basin

***Cause Group Code:* J17R-11-PH** **Long Swamp**

Location: The mainstem of Long Swamp

City / County: Chesterfield Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

For the 2010 cycle the segment was assessed as not supporting for Aquatic Life use due to a pH violation rate of 6/11 at station 2-LNS000.69.

there has been no new data since 2010 cycle.

During the 2016 cycle the segment was impaired for pH(2/11).

Long Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.72**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E01R-01-BEN** **Thumb Run, East Branch**

Location: Begins at the headwaters of East Branch Thumb Run and continues downstream until the confluence of East Branch to the mainstem Thumb Run.

City / County: Fauquier Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of three biological monitoring events in 2011 and 2012 at station 3-THM001.40 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Thumb Run, East Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.59**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E01R-02-BEN** **Unnamed Tributary to Thumb Run, West Branch**

Location: Segment begins at the headwaters of an unnamed tributary to West Branch Thumb Run and continues downstream until the confluence with West Branch Thumb Run.

City / County: Fauquier Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of two biological monitoring events in 2011 at station 3-XHU000.04 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Unnamed Tributary to Thumb Run, West Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.80**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E02R-01-BEN** **Great Run**

Location: Begins at the confluence with an unnamed tributary to Great Run at rivermile 7.20, approximately 0.6 rivermile downstream from Route 802, and continues downstream until the confluence with the Rappahannock River.

City / County: Fauquier Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Three biological monitoring events, at station 3-GRT001.70, in 2011, and 2012 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Great Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.19**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E03R-01-TEMP** **Hughes River**

Location: Begins at the upper crossing of Route 707 near the confluence of Rocky Run and continues downstream until the crossing of Route 231.

City / County: Madison Co. Rappahannock Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

2012 Assessment: Instantaneous temperature criterion for stockable trout waters excursions (2 of 6 samples - 33.3%) from station 3-HUE007.31, at the lower crossing of Route 707.

Hughes River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**3.20**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E04R-01-TEMP** **Hazel River**

Location: Begins at the confluence of an unnamed tributary to Hazel River at rivermile 36.80, approximately 1.6 rivermiles upstream of Route 607, and continues downstream until the Route 707 bridge.

City / County: Rappahannock Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

Instantaneous temperature criterion excursions (3 of 11 samples - 27.3%) from station 3-HAZ034.96, at Route 607.

Hazel River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**3.63**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E05R-01-BEN** **Thornton River**

Location: Begins at the Sperryville Main Street crossing and continues downstream until the confluence with the North Fork Thornton River.

City / County: Rappahannock Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Four biological monitoring event in 2013 and 2014 at station 3-THO022.27 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Thornton River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.86**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E08R-01-BEN** **Marsh Run**

Location: Begins at the confluence with Craig Run and continues downstream until the confluence with Harpers Run, at approximately rivermile 2.4.

City / County: Fauquier Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of two biological monitoring events in 2009 at station 3-MAH004.18 at Route 668 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Marsh Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.01**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E09R-01-BEN** **Mountain Run**

Location: Begins at the Route 15/29 bridge crossing and continues downstream until the confluence with the Rappahannock River.

City / County: Culpeper Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2008 Assessment: Two biological monitoring events in 2003 and one of two biological monitoring events in 2004 at station 3-MTN003.31 (downstream of Route 672) both resulted in a VSCI score which indicates an impaired macroinvertebrate community, as does the mean score of these four samples (2010 Assessment). Two biological monitoring events in 2006 at station 3-MTN018.83 (downstream of the Route 15/29 bypass) both resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Mountain Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**19.90**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E09R-01-PCB** **Mountain Run**

Location: Begins at the Route 15/29 bridge crossing near Culpeper City and continues downstream until the confluence with the Rappahannock River.

City / County: Culpeper Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel consumption to no more than two meals per month. The affected stretch of Mountain Run extends roughly 19 miles, from the Route 15/29 bridge crossing near Culpeper City downstream until the confluence with the Rappahannock River.

Additionally, exceedances of the water quality criterion based tissue value (TV) of 20 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue were recorded in one species of fish (6 total samples) collected in 2013 at monitoring station 3-MTN005.79 (American eel) and in two species of fish (4 total samples) collected in 2013 at monitoring station 3-MTN005.79 (American eel and yellow bullhead catfish).

Mountain Run **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**19.90**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E09R-02-BEN** **Jonas Run**

Location: Begins at the confluence with an unnamed tributary to Jonas Run (XDZ), at approximately rivermile 3.74, and continues downstream until the confluence with Mountain Run.

City / County: Culpeper Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of two biological monitoring events in 2009 at station 3-JOA001.60, at Route 684, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Jonas Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.78**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E09R-02-PCB** **Mountain Run**

Location: Begins at the outlet from Lake Pelham and continues downstream until the Route 15/29 bridge crossing.

City / County: Culpeper Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

Excursions above the water quality criterion based fish tissue value (TV) of 20 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue were recorded in 2013 at monitoring station 3-MTN022.21 in three total samples of three species of fish collected (white sucker, American eel, and yellow bullhead catfish).

Mountain Run **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**4.63**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E10R-01-BEN** **Sumerduck Run**

Location: Begins at the confluence with an unnamed tributary to Sumerduck Run, approximately 0.55 rivermile upstream of Route 632, and continues downstream until the confluence with another unnamed tributary, at Route 631.

City / County: Fauquier Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of six biological monitoring events in 2009, 2013, and 2014 at station 3-SMR004.81, at Route 632, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Sumerduck Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E10R-04-BAC** **Sumerduck Run**

Location: Begins at the confluence with an unnamed tributary to Sumerduck Run, approximately 0.55 rivermile upstream of Route 632, and continues downstream until the confluence with another unnamed tributary, at Route 631.

City / County: Fauquier Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (6 of 19 samples - 31.6%) from station 3-SMR004.81 at Route 632.

Sumerduck Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E11R-01-BEN** **Conway River**

Location: Segment begins at the confluence with an unnamed tributary to the Conway River, approximately 0.6 rivermile upstream from Route 230, and continues downstream until the confluence with the Rapidan River.

City / County: Greene Co. Madison Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: A total of 3 biological monitoring events in 2007 and 2008 at station 3-CON002.26 located at Route 230 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Conway River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.98**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E12R-01-BEN** **Rippin Run**

Location: Begins at the confluence with White Run and continues downstream until the confluence with the Rapidan River.

City / County: Greene Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of two biological monitoring events in 2010 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Rippin Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.60**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E13R-01-BEN** **Beautiful Run**

Location: Begins at an unnamed tributary at rivermile 3.44, and continues downstream to another unnamed tributary, upstream of Route 620.

City / County: Madison Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of four biological monitoring events in 2010 and 2011 at station 3-BFL002.90, at Route 616, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Beautiful Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.50**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E14R-01-TEMP** **Robinson River**

Location: Begins at the confluence with the Rose River, just downstream of Route 670, and continues downstream until the crossing of Route 231, rivermile 21.58.

City / County: Madison Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

Instantaneous temperature criterion excursions (4 of 10 samples - 40.0%) from station 3-ROB024.06, at Route 649.

Robinson River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Temperature, water - Total Impaired Size by Water Type:			**3.00**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E14R-02-TEMP** **Rose River**

Location: Begins at rivermile 2.6, approximately 0.36 rivermile downstream from the confluence with Strother Run, and continues downstream until the confluence with the Robinson River.

City / County: Madison Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

2010 Assessment: Instantaneous temperature criterion excursions (3 of 28 samples - 10.7%) from station 3-ROE000.75, at a private road.

Rose River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**2.58**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E17R-01-BEN** **Brook Run**

Location: Begins at the confluence with an unnamed tributary to Brook Run, at Route 647, and continues downstream until the confluence with the Rapidan River.

City / County: Culpeper Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

One biological monitoring events in 2009 at station 3-BRK002.64 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Brook Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.51**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E18R-01-HG** **Rapidan River**

Location: Begins at the confluence with Flat Run and continues downstream to the confluence with the Rappahannock River.

City / County: Culpeper Co. Orange Co. Spotsylvania Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The fish consumption use is impaired for mercury in fish tissue. Three excursions above the fish tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue was recorded in three species of fish (3 total samples) collected in 2006 at monitoring station 3-RAP006.53 (American eel, rock bass, smallmouth bass).

Rapidan River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**9.79**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E19L-01-HG** **Motts Run Reservoir**

Location: Includes the entirety of Motts Run Reservoir.

City / County: Spotsylvania Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, mercury (Hg) fish consumption advisory. The advisory, dated 8/31/07, limits consumption of largemouth bass to no more than two meals per month. The affected area includes the entirety of Motts Run Reservoir.

Motts Run Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**137.17**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E19R-01-BAC** **Horsepen Run**

Location: Begins at headwaters of Horsepen Run and continues downstream to the confluence with the Rappahannock River.

City / County: Stafford Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (4 of 12 samples - 33.3%) from station 3-HOR000.50 at Route 655 (Holly Corner Road).

Horsepen Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.70**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E19R-02-BAC** **Mine Run**

Location: Begins at the headwaters of Mine Run and continues downstream to the upper end of the Motts Run Reservoir.

City / County: Fredericksburg City Spotsylvania Co. Stafford Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (6 of 12 samples - 50.0%) from station 3-MIN002.14 at Route 620 (Spotswood Furnace Road).

Mine Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**4.01**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E20E-03-PCB** **Rappahannock River**

Location: Extends from the I-95 bridge above Fredericksburg downstream to the mouth of the river near Stingray Point, including its tributaries Hazel Run up to the I-95 bridge crossing and Claiborne Run up to the Route 1 bridge crossing.

City / County: Caroline Co. Essex Co. Fredericksburg City King George Co. Lancaster Co.
Middlesex Co. Richmond Co. Spotsylvania Co. Stafford Co. Westmoreland Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel, blue catfish, carp, channel catfish, croaker, gizzard shad, and anadromous (coastal) striped bass consumption to no more than two meals per month.

Rappahannock River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:	**128.946**		**9.24**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E20R-01-BEN** **Falls Run**

Location: Begins at the headwaters of Falls Run and continues downstream until the confluence with the Rappahannock River.

City / County: Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of two biological monitoring events in 2009 at station 3-FAL000.13 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Falls Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.35**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E20R-02-BEN** **Hazel Run**

Location: Begins at the Route 95 crossing and continues downstream until the confluence with the Rappahannock River.

City / County: Fredericksburg City Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of two biological monitoring events in 2009 at station 3-HAL002.72, upstream of Route 1, resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Hazel Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.72**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E20R-03-BEN** **Little Falls Run**

Location: Begins at the headwaters of Little Falls Run and continues downstream until the confluence with the Rappahannock River.

City / County: Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of two biological monitoring events in 2013 at station 3-LIA003.14 (0.02 miles downstream from Route 606) resulted in a VSCI score which indicates an impaired macroinvertebrate community

Little Falls Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.92**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E20R-03-PH** **Massaponax Creek**

Location: Begins at the confluence with an unnamed tributary to Massaponax Creek, just upstream of Route 1, and continues downstream until the confluence with another unnamed tributary, at rivermile 2.68.

City / County: Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

2012 Assessment: Excursions below the lower limit of the pH criterion range (3 of 27 samples - 11.1%) from station 3-MAP007.97 at Route 1.

Massaponax Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**5.19**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E20R-04-PH** **Deep Run**

Location: Begins at the headwaters of Deep Run, and continues downstream to the confluence with an unnamed tributary at rivermile 2.19, downstream of Route 638.

City / County: Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Excursions below the lower limit of the pH criterion range (28 of 50 samples - 56.0%) at NPS's water quality monitoring station (3DEP-06-NPS) at Lee Drive.

Deep Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**1.56**

Sources:

Source Unknown

Rappahannock River Basin

***Cause Group Code:* E20R-05-PH** **Unnamed tributary to Massaponax Creek**

Location: Begins where XEN joins XFE and continues downstream until the confluence with Massaponax Creek at rivermile 8.06

City / County: Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Excursions below the lower limit of the pH criterion range (2 of 11 samples - 18.2%) at station 3-XFE001.05, at Spotsylvania County Parkway.

Unnamed tributary to Massaponax Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.27**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-01-BEN** **Muddy Creek**

Location: Begins at the confluence with an unnamed tributary to Muddy Creek, approximately 0.7 rivermile downstream from Route 218, and continues downstream until the confluence with the Rappahannock River.

City / County: King George Co. Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: A total of two biological monitoring events at station 3-MUY003.63, at Route 602, in 2007 resulted in a VSCI score that indicates an impaired macroinvertebrate community.

Muddy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.58**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-02-BEN** **Ware Creek**

Location: Begins at the headwaters of Ware Creek and continues downstream until the confluence with an unnamed tributary to Ware Creek, just downstream from Burma Road.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2008 Assessment: One biological monitoring event in 2002 at station 3-WAE005.95 (Fort A.P. Hill) resulted in a MACS score which indicates an impaired macroinvertebrate community.

Ware Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.06**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-02-PH** **Ware Creek**

Location: Begins at the headwaters of Ware Creek and continues downstream until the confluence with the Rappahannock River.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

2014 Assessment: Excursions below the lower limit of the pH criterion range (2 of 11 samples - 18.2%) at station 3-WAE000.72 at Route 17. 2008 Assessment: Excursions below the lower limit of the pH criterion range (2 of 2 samples - 100%) at station 3-WAE005.95 at the Fort A.P. Hill property.

Ware Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**7.56**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-03-BAC** **Gingoteague Creek**

Location: Begins at the confluence with an unnamed tributary to Gingoteague Creek, at rivermile 2.99, and continues downstream until tidal waters, near the confluence with the Rappahannock River.

City / County: King George Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (2 of 10 samples - 20.0%) from station 3-GIN002.64 at Route 625.

Gingoteague Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.49**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-03-BEN** **Gingoteague Creek**

Location: Begins at the confluence with an unnamed tributary to Gingoteague Creek, at rivermile 2.99, and continues downstream until tidal waters, near the confluence with the Rappahannock River.

City / County: King George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

A total of two biological monitoring events in 2010 at station 3-GIN002.64 resulted in a MACS score which indicates an impaired macroinvertebrate community.

Gingoteague Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.49**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-03-PH** **Gingoteague Creek**

Location: Begins at the confluence with an unnamed tributary to Gingoteague Creek, at rivermile 2.99, and continues downstream until tidal waters, near the confluence with the Rappahannock River.

City / County: King George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Excursions below the lower limit of the pH criterion range (2 of 12 samples - 16.7%) at station 3-GIN002.64, at Route 625.

Gingoteague Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**1.49**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-04-BEN** **Mill Creek**

Location: Begins at the confluence with an unnamed tributary, at rivermile 9.5, and continues downstream until the confluence with Peumansend Creek, at rivermile 6.06.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2010 Assessment: Two biological monitoring events in 2004 at station 8-MTA012.09 (upstream of Route 646) resulted in a MACS score which indicates an impaired macroinvertebrate community.

Mill Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.59**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-05-BEN** **White Oak Run**

Location: Begins just downstream from the Route 604 crossing and continues downstream until the confluence with Muddy Creek.

City / County: Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: A total of two biological monitoring events in 2007 at station 3-WHT003.73 resulted in a VCPMI score which indicates an impaired macroinvertebrate community.

White Oak Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.51**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-05-PH** **Mount Creek**

Location: Begins at the confluence with West Branch and continues downstream until the confluence with the Rappahannock River.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

2014 Assessment: Excursions below the lower limit of the pH criterion range (9 of 11 samples - 81.8%) at station 3-MTC001.94 at Route 17.

Mount Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.46**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-07-BAC** **Mill Creek**

Location: Begins at the confluence with Peumansend Creek, at rivermile 6.06, and continues downstream until the tidal waters of Mill Creek.

City / County: Caroline Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2012 Assessment: E. coli bacteria criterion excursions (4 of 20 samples - 20.0%) from station 3-MIC0001.66 at Route 17.

Mill Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.58**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-07-PH** **Mill Creek**

Location: Begins at the confluence with Peumansend Creek, at rivermile 6.06, and continues downstream until the tidal waters of Mill Creek.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

2012 Assessment: Excursions below the lower limit of the pH criterion range (3 of 20 samples - 15.0%) at station 3-MIC001.66 at Route 17.

Mill Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.58**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-08-PH** **Goldenvale Creek**

Location: Begins at the confluence with Doctor Branch and continues downstream until tidal waters, near the confluence with the Rappahannock River.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Excursions below the lower limit of the pH criterion range (8 of 10 samples - 80.0%) at station 3-GLL001.98, at Route 17.

Goldenvale Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**5.31**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-09-PH** **Hugh Run**

Location: Segment begins at the headwaters of Hugh Run and continues downstream until the confluence with the Rappahannock River.

City / County: King George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

2014 Assessment: Excursions below the lower limit of the pH criterion range (2 of 2 samples - 100.0%) at station 3-HUH001.19, approximately 0.24 rivermiles upstream from the Port Conway Road bridge crossing.

Hugh Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.45**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-10-BAC** **Jetts Creek**

Location: Segment begins at the confluence of Boom Swamp with Jetts Creek, and continues downstream to the end of the free flowing waters.

City / County: King George Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2014 Assessment: E. coli bacteria criterion excursions (3 of 12 samples - 25.0%) from station 3-JET003.49 at Route 625.

Jetts Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-10-PH** **White Oak Run**

Location: Begins just downstream from the Route 604 crossing and continues downstream until the confluence with Muddy Creek.

City / County: Stafford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Excursions below the lower limit of the pH criterion range (2 of 12 samples - 16.7%) at station 3-WHT000.35, at Route 601.

White Oak Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**6.51**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-11-BAC** **Portobago Creek**

Location: Segment begins at the confluence of two intermittent tributaries around rivermile 6.66 and extends downstream to the end of the free-flowing waters.

City / County: Caroline Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2014 Assessment: E. coli bacteria criterion excursions (3 of 11 samples - 27.3%) from station 3-PBC003.09 at Route 17.

Portobago Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.00**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E21R-11-DO** **Portobago Creek**

Location: Segment begins at the confluence of two intermittent tributaries around rivermile 6.66 and extends downstream to the end of the free-flowing waters.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

2014 Assessment: Excursions below the lower limit of the DO criterion range (3 of 12 samples - 25.0%) at station 3-PBC003.09 at Route 17.

Portobago Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**7.00**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22E-01-EBEN** **Rappahannock River**

Location: The oligohaline mainstem of the Rappahannock River

City / County: Essex Co. Richmond Co. Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

During the 2010 cycle, the oligohaline portion of the mainstem Rappahannock indicated benthic impairment based on the Chesapeake Bay Benthic Index of Biological Integrity.

The segment remains impaired in the 2016 cycle.

Rappahannock River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**6.302**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22E-02-EBEN** **Rappahannock River**

Location: The mesohaline mainstem of the Rappahannock River

City / County: Essex Co. Lancaster Co. Middlesex Co. Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

In 2004 the mesohaline portion of the mainstem Rappahannock indicated benthic impairment based on the Chesapeake Bay Benthic Index of Biological Integrity. The impairment was attributed to low oxygen and the benthic impairment was treated as a confirmation of the impairment. The mainstem remained impaired in the 2006 cycle; however, due to guidance changes the segment was 303(d) listed for estuarine bioassessments.

The segment remains impaired in the 2016 cycle.

Rappahannock River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**110.220**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22E-03-BAC** **Peedee Creek**

Location: Tidal Peedee Creek

City / County: Essex Co. Westmoreland Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

During the 2014 cycle, tidal Peedee Creek was impaired of the Recreation Use due to an enterococci exceedance rate of 6/13 at 3-PEE003.97.

Peedee Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.150**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22E-05-BAC** **Rappahannock River**

Location: The Rappahannock River from the tidal freshwater/oligohaline boundary downstream to river mile 56.21.

City / County: Essex Co. Richmond Co. Westmoreland Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

During the 2014 cycle, the Rappahannock River from the tidal freshwater oligohaline boundary downstream to rivermile 51.04 was impaired of the Recreation Use due to an enterococci exceedance rate of 2/12 at 3-RPP056.20.

The impairment was nested within the Upper Rappahannock River Shellfish TMDL, which was approved by the EPA on 8/10/2010 and was considered Category 4A.

However, during the 2016 cycle, the upper portion of the impairment, which was not located within the actual TMDL study area boundary, was split off and will be considered Category 5A.

Rappahannock River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**1.344**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22E-08-CHLR** **Rappahannock River**

Location: The lower tidal freshwater Rappahannock River downstream of Devils Elbow.

City / County: Essex Co. King George Co. Westmoreland Co.

Use(s): Aquatic Life Wildlife

Cause(s) /
VA Category: Chloride / 5C

During the 2004 cycle, the lower tidal freshwater area downstream of Devils Elbow at Toby Point and Green Bay (rivermile 70.52) and the transitional area of the Rappahannock River were assessed as not supporting the Aquatic Life and Wildlife Uses based on chloride exceedances at multiple stations, including 3-RPP064.40.

During the 2010 cycle, the Water Quality Standards were revised during Triennial Review. The freshwater-transitional zone boundary was moved upstream to rivermile 57.85. In addition, the chloride standard was removed in transitional waters. The standard still applies in freshwater areas and station 3-RPP064.40 remains in the freshwater area; therefore, this impairment has been shortened to extend from Devils Elbow at Toby Point and Green Bay to the transitional zone boundary. The Rappahannock River below the new transitional boundary was delisted.

No additional monitoring has been conducted.

Rappahannock River **Aquatic Life**		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
	Chloride - Total Impaired Size by Water Type:	**5.133**		

Rappahannock River **Wildlife**		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
	Chloride - Total Impaired Size by Water Type:	**5.133**		

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-02-DO** **Farmers Hall Creek**

Location: Farmers Hall Creek from its headwaters to its tidal limit

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Farmers Hall Creek was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/11 at 3-FAR002.88. The exceedance rate at 3-FAR004.38 was acceptable (0/11).

Farmers Hall Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.00**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-02-PH** **Farmers Hall Creek**

Location: Farmers Hall Creek from its headwaters to its tidal limit

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

In 2006, Farmers Hall Creek was assessed as not supporting of the Aquatic Life Use support goal based on pH violations at the Route 631 bridge (3-FAR002.88).

Additional monitoring was conducted during the 2012 cycle. The impairment was confirmed due to the following exceedance rates:

6/11 at 3-FAR002.88
4/11 at 3-FAR004.38

Farmers Hall Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.00**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-03-MIREX** **Occupacia Creek and Tributaries**

Location: Occupacia Creek from the headwaters to Hunters Millpond dam, and all tributaries entering above the tidal limit.

City / County: Essex Co.

Use(s): Aquatic Life Wildlife

Cause(s) /
VA Category: Mirex / 5A

During the 2010 cycle, it was determined that station 3-BLK001.92 failed the water quality standard for Mirex in two 2002 SPMD values.

Occupacia Creek and Tributaries **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mirex - Total Impaired Size by Water Type:			**149.38**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-04-BAC** **Elmwood Creek and Tributary XHY**

Location: The nontidal portion of Elmwood Creek and its tributary XHY in its entirety.

City / County: Essex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Elmwood Creek and its tributary were assessed as not supporting of the Recreation Use in the 2014 cycle based on multiple E. coli exceedances.

The exceedance rates are as follows in the 2016 cycle:
5/23 at 3-ELM002.23
5/13 at 3-ELM002.92
1/13 (FS) at 3-ELM004.27
4/13 at 3-XHY000.06
1/12 (FS) at 3-XHY002.50

Elmwood Creek and Tributary XHY **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.07**

Sources:

Agriculture	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-04-DO** **Elmwood Creek and Tributary XHY**

Location: The nontidal portion of Elmwood Creek and its tributary XHY in its entirety.

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Elmwood Creek was assessed as not supporting of the Aquatic Life Use in the 2014 cycle based on dissolved oxygen exceedances throughout the watershed.

The exceedance rates are as follows in the 2016 cycle:
3/24 at 3-ELM002.23
0/26 (FS) at 3-ELM002.92
6/26 at 3-ELM004.27
8/26 at 3-XHY000.06
0/25 (FS) at 3-XHY002.50

Elmwood Creek and Tributary XHY		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**9.07**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-04-PH** **Elmwood Creek and Tributary XHY**

Location: The nontidal portion of Elmwood Creek and its tributary XHY in its entirety.

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Elmwood Creek was assessed as not supporting of the Aquatic Life Use in the 2006 cycle based on a pH exceedance rate of 4/10 at 3-ELM002.23, which is located at the Route 17 bridge.

Additional data was collected during the 2014 and 2016 cycles. The impairment was expanded to incorporate tributary XHY. The exceedance rates are as follows:
5/24 at 3-ELM002.23
5/26 at 3-ELM002.92
4/26 at 3-ELM004.27
6/26 at 3-XHY000.06
2/25 (FS) at 3-XHY002.50

Elmwood Creek and Tributary XHY		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**9.07**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-05-BAC** **Baylors Creek**

Location: Baylors Creek from its headwaters to the extent of backwater of Baylors Pond.

City / County: Essex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2008 cycle, Baylors Creek was assessed as impaired of the Recreation Use due to an E.coli exceedance rate of 2/16 at the Route 17 bridge (3-BAY002.62).

Additional data was collected in the 2014 cycle. The impairment was confirmed with the following exceedance rates:
3/12 at 3-BAY002.62
3/11 at 3-BAY004.39
1/12 (FS) at 3-BAY006.66

Baylors Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**5.89**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-05-PH** **Baylors Creek**

Location: Baylors Creek from its headwaters to the extent of backwater of Baylors Pond.

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2008 cycle, Baylors Creek was assessed as impaired of the Aquatic Life Use due to a pH exceedance rate of 6/16 at the Route 17 bridge (3-BAY002.62).

Additional monitoring was conducted during the 2014 cycle. The impairment was confirmed with the following exceedance rates:
2/13 at 3-BAY002.62
2/12 at 3-BAY004.39
11/13 at 3-BAY006.66

Baylors Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**5.89**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-06-BAC** **Peedee Creek**

Location: The mainstem of Peedee Creek from its headwaters to the extent of tide.

City / County: Westmoreland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2008 cycle, Peedee Creek was assessed as not supporting of the Recreation Use due to E. coli exceedances at the Route 640 bridge (3-PEE004.46).

During the 2016 cycle, the exceedance rate at station 3-PEE004.46 remained impairing (4/36); however, monitoring at stations 3-PEE004.11, 3-PEE004.96, and 3-PEE006.57 is acceptable.

Peedee Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.29**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-06-DO** **Peedee Creek**

Location: The mainstem of Peedee Creek from its headwaters to the extent of tide.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Peedee Creek was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at the Route 640 bridge (3-PEE004.46). Additional monitoring was conducted along the creek in the 2014 and 2016 cycles.
7/12 at 3-PEE004.11
21/48 at 3-PEE004.46
7/12 at 3-PEE004.96
0/12 (FS) at 3-PEE006.57

Peedee Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.29**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-06-PH** **Peedee Creek**

Location: The mainstem of Peedee Creek from its headwaters to the extent of tide.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2008 cycle, Peedee Creek was assessed as not supporting of the Aquatic Life Use due to pH exceedances at the Route 640 bridge (3-PEE004.46).

Additional monitoring was conducted along the creek in the 2014 and 2016 cycles.
1/12 (FS) at 3-PEE004.11
4/48 (FS) at 3-PEE004.46
3/12 at 3-PEE004.96
3/12 at 3-PEE006.57

Peedee Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**3.29**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-08-BAC** **Stillwater Creek**

Location: Stillwater Creek from its headwaters at Cockerel Creek downstream to its tidal limit

City / County: Essex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Stillwater Creek was assessed as not supporting of the Recreation Use in the 2014 cycle based on an E. coli exceedance rate of 3/12 at 3-STL003.35 (Route 17 South).

Note: monitoring at 3-STL001.54, which is located at the Route 674 bridge, was acceptable (0/12).

Stillwater Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.52**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-08-DO** **Stillwater Creek**

Location: Stillwater Creek from its headwaters at Cockerel Creek downstream to its tidal limit

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Stillwater Creek was assessed as not supporting of the Aquatic Life Use in the 2014 cycle based on a dissolved oxygen exceedance rate of 4/13 at 3-STL003.35 (Route 17 South).

Note: monitoring at 3-STL001.54, which is located at the Route 674 bridge, was acceptable (1/13).

Stillwater Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.52**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-08-PH** **Stillwater Creek**

Location: Stillwater Creek from its headwaters at Cockerel Creek downstream to its tidal limit

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Stillwater Creek was assessed as not supporting of the Aquatic Life Use in the 2014 cycle based on pH exceedance rates of 12/13 at 3-STL003.35 (Route 17 South) and 4/13 at 3-STL001.54 (Route 674).

Stillwater Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.52**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-09-BAC** **XHW - UT to Peedee Creek, UT (XHV)**

Location: Headwaters to mouth

City / County: Westmoreland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, tributary XHW was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 3-XHW000.20, which is located at the Route 640 bridge.

XHW - UT to Peedee Creek, UT (XHV)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**0.47**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-10-PH** **Mill Swamp**

Location: Nontidal Mill Swamp below Horners Pond

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, Mill Swamp was impaired of the Aquatic Life Use due to a pH exceedance rate of 2/12 at 3-MSW000.85, which is located at Route 625 below Horners Pond.

Mill Swamp		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**0.72**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-11-DO** **Smoots Mill Run, UT**

Location: From its headwaters to its mouth at Smoots Mill Run.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, the tributary was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 3/12 at 3-SMO001.58, which is located at Route 697.

Smoots Mill Run, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.67**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E22R-11-PH** **Smoots Mill Run, UT**

Location: From its headwaters to its mouth at Smoots Mill Run.

City / County: Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, the tributary was impaired of the Aquatic Life Use due to a pH exceedance rate of 7/12 at 3-SMO001.58, which is located at Route 697.

Smoots Mill Run, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.67**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E23L-01-HG** **Chandlers Millpond**

Location: Chandlers Millpond in its entirety

City / County: Westmoreland Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

On 8/31/2007, the Virginia Department of Health issued a fish consumption advisory for Chandlers Millpond based upon DEQ fish tissue monitoring at station 3-CMR001.00 in 2006. The advisory recommends consuming no more than two meals/month of largemouth bass due to the presence of mercury.

The DEQ monitoring showed mercury exceedances in both largemouth bass and black crappie.

Chandlers Millpond **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**47.99**	

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E23R-04-DO** **Hoskins Creek**

Location: Headwaters to tidal limit

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Hoskins Creek was assessed as impaired of the Aquatic Life Use during the 2014 cycle due to a dissolved oxygen exceedance rate of 4/16 at 3-HOK007.25. Monitoring at the other stations was acceptable.

Hoskins Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**13.16**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E23R-07-BEN** **Ruin Branch**

Location: Ruin Branch in its entirety

City / County: Richmond Co. Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2014 cycle, Ruin Branch was assessed as not supporting the Aquatic Life Use due to impairment of the benthic community at 3-RUN000.13.

Ruin Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.53**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E23R-12-DO** **Mussell Swamp**

Location: Headwaters to mouth at Piscataway Creek

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2006 cycle, Mussell Swamp was assessed as impaired of the Aquatic Life Use based on dissolved oxygen exceedances at 3-MUS001.23, located at the Route 615 bridge. Natural conditions are suspected; therefore, the segment is assessed as Cat. 5C until the natural conditions assessment can be performed. During the 2008 cycle, the exceedance rate was 3/26. No additional monitoring has been conducted.

Mussell Swamp		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**5.13**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E23R-16-BEN** **Church Swamp**

Location: Church Swamp from its headwaters to its tidal limit at Hoskins Creek

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, Church Swamp was assessed as not supporting the Aquatic Life Use due to impairment of the benthic community at freshwater probabilistic monitoring station 3-CRC001.38.

Church Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.24**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E23R-20-DO** **Scates Millstream**

Location: Nontidal Scates Millstream

City / County: Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, Scates Millstream was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/12 at station 3-SMS000.77, which is located at Route 635.

Scates Millstream **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.89**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E23R-20-PH** **Scates Millstream**

Location: Nontidal Scates Millstream

City / County: Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, Scates Millstream was impaired of the Aquatic Life Use due to a pH exceedance rate of 6/12 at station 3-SMS000.77, which is located at Route 635.

Scates Millstream		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**2.89**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Rappahannock River Basin

***Cause Group Code:* E24E-02-EBTOX** **Totuskey Creek**

Location: The tidal portions of Totuskey Creek.

City / County: Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Sediment Bioassays for Estuarine and Marine Water / 5A

During the 2006 cycle, estuarine probabilistic monitoring was conducted through the Coastal 2000 program at 3-TOT007.84 and 3-TOT004.92. The data was assessed by DEQ-CO through the Weight of Evidence approach. The alteration at station 3-TOT007.84 was assessed as Category 5A for toxics. The TMDL is due in 2018.

Totuskey Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Sediment Bioassays for Estuarine and Marine Water - Total Impaired Size by Water Type:	**1.068**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E24E-05-PH** **Little Totuskey Creek**

Location: The tidal portion of Little Totuskey Creek.

City / County: Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2010 cycle, nontidal Little Totuskey Creek was considered not supporting of the Aquatic Life Use based on pH exceedances at 3-LIK002.12, which is located at the Route 697 bridge. During the 2012 cycle, it was determined that the stream is tidally influenced at that location. The TMDL will be due in 2022 because the station was first impaired in the 2010 cycle.

Additional stations within the segment were fully supporting and the impaired station has a marginal exceedance rate (3/25); therefore, continued monitoring is recommended.

Little Totuskey Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life	pH - Total Impaired Size by Water Type:	**0.055**		

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E24R-01-DO** **Bookers Mill Stream**

Location: Bookers Mill Stream from its headwaters to its mouth at the confluence with Totuskey Creek.

City / County: Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, Bookers Mill Stream was impaired of the Aquatic Life Use due to the following dissolved oxygen exceedance rates:

2/12 at 3-BMS000.37
0/14 at 3-BMS002.00 (FS)
3/12 at 3-BMS004.42

Bookers Mill Stream **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.53**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E24R-03-PH** **Muddy Gut**

Location: Headwaters to mouth at Rappahannock River.

City / County: Essex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2008 cycle, Muddy Gut was assessed as impaired of the Aquatic Life Use based on a pH exceedance rate of 4/10 at the Route 607 bridge (3-MUG000.96).

No additional data has been collected.

Muddy Gut		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**2.63**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Rappahannock River Basin

***Cause Group Code:* E24R-05-PH** **Branham Mill Swamp**

Location: Branham Mill Swamp from its headwaters to its mouth at Marshy Swamp

City / County: Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Branham Mill Swamp was impaired of the Aquatic Life Use due to a pH exceedance rate of 2/12 at 3-BRA000.85.

Branham Mill Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.66**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E24R-06-DO** **Richardson Creek and Tributaries**

Location: Headwaters to the tidal limit

City / County: Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, Richardson Creek and its tributaries were impaired of the Aquatic Life Use due to dissolved oxygen exceedances. During the 2016 cycle, the exceedance rates are as follows:

11/24 at 3-RIC003.85
0/12 (FS) at 3-RIC005.00
4/12 at 3-RIC006.43
1/12 (FS) at 3-RNF002.04
7/12 at 3-XHJ000.04

Richardson Creek and Tributaries **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**17.21**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E24R-06-PH** **Richardson Creek and Tributaries**

Location: Headwaters to the tidal limit

City / County: Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Richardson Creek and its tributaries were impaired of the Aquatic Life Use due to pH exceedances. The pH exceedance rates were as follows in the 2016 cycle:

16/24 at 3-RIC003.85
3/12 at 3-RIC005.00
11/12 at 3-RIC006.43
2/12 at 3-RNF002.04
7/12 at 3-XHJ000.04

Richardson Creek and Tributaries		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**17.21**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E24R-08-PH** **XHL - Bookers Mill Stream, UT**

Location: Headwaters to mouth at Bookers Mill Stream

City / County: Richmond Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, tributary XHL was impaired of the Aquatic Life Use due to a pH exceedance rate of 2/11 at 3-XHL000.96, which is located at the Route 603 bridge.

XHL - Bookers Mill Stream, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**2.01**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E24R-09-DO** **Marshy Swamp**

Location: Headwaters to tidal limit

City / County: Northumberland Co. Richmond Co. Westmoreland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, nontidal Marshy Swamp was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 4/12 at 3-MAY008.43, which is located at Route 618.

Other stations in the stream were acceptable. In addition, the exceedance rate fell to 4/24 during the 2016 cycle; therefore, further monitoring is recommended.

Marshy Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**9.53**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E25R-02-DO** **Lagrange Creek**

Location: Lagrange Creek from the headwaters to the extent of tide at approximately river mile 3.75.

City / County: Middlesex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Lagrange Creek was assessed in 2010 as not supporting of the Aquatic Life Use support goal based on dissolved oxygen exceedances recorded at the Route 610 bridge (3-LGG004.54). The exceedance rate was 7/24 during the 2012 cycle.

Lagrange Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.49**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E25R-04-DO** **South Branch Lagrange Creek**

Location: The nontidal portion of South Branch Lagrange Creek.

City / County: Middlesex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

South Branch Lagrange Creek was impaired of the Aquatic Life Use during the 2012 cycle due to a dissolved oxygen exceedance rate of 2/12 at 3-LSB002.17. The low dissolved oxygen (~2 mg/L) occurred during the summer months.

South Branch Lagrange Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.40**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E25R-17-DO** **Masons Mill Swamp**

Location: Masons Mill Swamp from its headwaters downstream to its tidal limit.

City / County: Middlesex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During previous cycles, Masons Mill Swamp was mistakenly assessed as a tidal water. The creek was assessed as not supporting of the Aquatic Life Use for dissolved oxygen since the 2006 cycle because it was thought to be a part of the mesohaline portion of the Rappahannock; the TMDL had a 2010 due date because of the Bay Overlist.

However, during the 2008 cycle, it was determined that station 3-MAO000.62 is on the free flowing section of Masons Mill Swamp. The stream remained impaired for dissolved oxygen due to an exceedance rate of 4/13. The dissolved oxygen TMDL due date was changed to 2018.

Additional monitoring during the 2012 cycle confirmed the dissolved oxygen impairment (6/14).

Masons Mill Swamp **Aquatic Life**		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.37**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E26E-04-EBEN** **Corrotoman River**

Location: The mainstem Corrotoman River and its large branches within segment CRRMH.

City / County: Lancaster Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

During the 2014 cycle, the mainstem Corrotoman River and its large tributaries were impaired of the Aquatic Life Use due to an insufficient Chesapeake Bay Index of Biological Integrity (B-IBI).

The impairment continued in the 2016 cycle.

Corrotoman River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Estuarine Bioassessments - Total Impaired Size by Water Type:	**6.954**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E26E-24-BAC** **Whiting Creek**

Location: Tidal Whiting Creek as described in VDH Shellfish Condemnation 030-051C, 10/3/2005

City / County: Middlesex Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

During the 2012 cycle, Whiting Creek was impaired of the Recreation Use due to an enterococci exceedance rate of 3/19 at 3-WHS000.89.

Although Whiting Creek is administratively condemned by VDH and the Shellfish Use is therefore considered removed, the TMDL was completed and was approved by the EPA on 11/15/2005. However, the TMDL did not include a nearby VPDES discharger; therefore, the Recreation Use cannot be considered nested.

Whiting Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.195**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E26R-03-DO** **Norris Prong**

Location: Norris Prong from its headwaters to its tidal limit.

City / County: Lancaster Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2008 cycle, Norris Prong was considered impaired of the Aquatic Life Use based on a dissolved oxygen exceedance rate of 4/10 at the Route 3 bridge (3-NOR001.00).

No additional data has been collected.

Norris Prong **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.47**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Rappahannock River Basin

***Cause Group Code:* E26R-04-DO** **Browns Creek**

Location: Browns Creek from its headwaters to its tidal limit.

City / County: Lancaster Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2008 cycle, Browns Creek was considered impaired of the Aquatic Life Use based on dissolved oxygen exceedances at the Route 614 bridge (3-BON001.65). The exceedance rate was 5/25 during the 2014 cycle.

Browns Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.58**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L01R-01-TEMP** **Roanoke River, South Fork**

Location: South Fork Roanoke River mainstem from the mouth of Elliott Creek extending downstream to the confluence of the South and North Forks of the Roanoke River.

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

USGS Gaging Station 02053800 (S.F. Roanoke R. near Shawsville)- There are no additional data beyond the 2010 IR. 2010 assessment reveals two of 12 temperature measurements exceed the Class V 21°C criterion. Measurements in excess of the criterion occur on 8/07/2007 at 24.5°C and 8/29/2007 at 22°C. These data result in the return of 6.43 miles to the temperature 303(d) List that were partially de-listed with the 2008 IR. The temperature impairment is extended upstream for 4.61 miles based on 2012 Cycle data for 4ARSF014.02.

4ARSF014.02 (Persimmon Road Bridge) The 2012, 2014 and 2016 assessments find three temp measurements from 12 observations exceed the 21°C criterion at 23.1°C (8/13/2009); 22°C (6/10/2010) and 23.2°C (8/31/2010).

4ARSF011.73- (Rt. 637 Bridge) There are no additional data beyond the 2008 IR. Observations within the 2010 data window find no excursions of the respective criterion for temperature. The 2008 IR finds only one exceedance of the Class V 21°C criterion from 12 observations. 2008 data resulted in the partial de-list of temperature for 6.43 miles. The 2004 IR reported two of 12 temperature measurements in excess of the criterion. Each exceedance is 22°C occurring on 7/22/99 and 6/06/01. The 2004 Category 5C assessment remains. Low stream flows and drought conditions were observed during both 1999 and 2001.

4ARSF002.20- (above the old Green Hill industrial site near Rt. 11/460) There are no additional data beyond the 2004 IR. The 2004 IR records two of 18 temperature measurements exceed the WQS criterion. Each 2004 exceedance is 22°C occurring on 7/22/99 and 6/06/01. The 6.27 mile waters remain impaired (Category 5C) for temperature.

4ARSF000.88- (Rt. 11 Bridge - below Green Hill) Two of 12 temperature measurements exceed the WQS Class V 21°C criterion at 21.8 °C (6/9/2014) and 21.9 °C (7/1/2014) within the 2016 data window.

Roanoke River, South Fork **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**17.31**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Roanoke and Yadkin River Basins

***Cause Group Code:* L01R-02-TEMP** **Bottom Creek**

Location: Bottom Creek mainstem from its mouth on the South Fork Roanoke River on upstream to the Rt. 669 crossing.

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

4ABTM000.04 (Rt. 637 Bridge)-Temperature measurements within the 2016, 2014 and 2012 data windows result in three exceeding values from 12 observations with no additional data beyond the 2012 IR. Measurements in excess of the Class VI criterion occur on 8/13/2009 at 22.9, 6/10/2010 at 23.0 and 8/31/2010 at 24.0 °C. The 2012 data window reports five of 20 measurements exceeding the 20°C criterion. Exceeding values range from 20.5 to 24°C. Temperature measurements within the 2010 data window find two of nine measurements exceeding the WQS Class VI 20°C criterion. Exceeding values occur on 7/7/2005 at 21 and 7/25/2006 at 20.5 °C. The 2008 IR finds three of 10 temperature measurements exceed the Class VI criterion on 06/04/02 at 24.4 °C; 7/7/2005 at 21 and 7/25/2006 at 20.5 °C.

Bottom Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**4.49**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Roanoke and Yadkin River Basins

***Cause Group Code:* L02R-01-PH** **Bradshaw Creek**

Location: Bradshaw Creek from its mouth on the N.F. Roanoke River upstream to its headwaters.

City / County: Montgomery Co. Roanoke Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

4ABDC002.36 (Rt. 629 Bridge)- The aquatic life use is impaired based on 2010 pH data. Four of 16 pH observations exceed the minimum pH criterion of 6.5. The range of exceeding values are 6.1 to 6.3 SU. There are no additional data beyond the 2010 Integrated Report (IR).

Bradshaw Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**10.36**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L03R-01-TEMP** **Roanoke River**

Location: Roanoke River mainstem from Spring Hollow Reservoir extending downstream to the Rt. 419 Bridge crossing.

City / County: Roanoke Co. Salem City

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The waters remain impaired for the Aquatic Life Use. Station 4AROA227.42 is located within the Water Quality Standards 'hh' special standard [9VAC25-260-310] establishing a maximum temperature of 31°C May 1 through October 31 for these seasonally stockable trout waters. Temperature data from 4AROA227.42 (located at the Rt. 773 Bridge in Lafayette) now meets the temperature criterion and 1.28 miles of the Roanoke are delisted with the 2012 Integrated Report (IR). Station 4AROA227.42 is no longer a Listing station for the temperature impairment.

4AROA212.17- (Rt. 11 Bridge - below Eaton, Inc.) The 2016 data window produces one exceedance at 22.8°C (6/8/2010) from four observations. One temperature excursion from six observations exceeds the stockable trout water criterion at 22.8°C (6/08/2010) within the 2014 data window. This same excursion occurs within the 2012 data window from a total of 8 measurements. Two of 17 temperature measurements exceed the criterion within the 2010 data window. Measurements in excess of the criterion are 21.3 on 7/15/2003 and 25.4 on 7/13/2004. These same exceedances occur within the 2008 data window where two of 21 temperature measurements exceed the 21°C criterion. Temperature data within the 2006 data window finds exceedances in six of 32 measurements ranging from 21 to 25°C. The 2004 assessment finds temperature exceeds the stockable trout water criterion in eight of 42 measurements. Exceedances range from 22 to 25°C. Eleven of 67 temperature measurements exceed the criterion within the 2002 assessment.

Roanoke River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**13.09**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L04R-01-HG** **Roanoke River**

Location: Roanoke River from the confluence of Mason Creek downstream to the confluence of Tinker Creek.

City / County: Roanoke City Roanoke Co. Salem City

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2010 303(d) Listing is based on 2006 fish tissue collections and new Water Quality Standards effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) and Virginia Department of Health (VDH) level of concern of 0.5 ppm are found in fish tissue causing impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. Please visit http://www.deq.virginia.gov for more information about mercury contamination and http://www.vdh.virginia.gov/Epidemiology/dee/PublicHealthToxicology/Advisories/ for VDH Advisories or Bans.

4AROA206.80 (Roanoke R. @Wasena Park near Rt. 11 Bridge)- Exceedance of the Mercury (Hg) WQS based tissue value (TV) of 0.3 ppm is found in two species from 2006 collections; smallmouth bass (1 fish 37.0 cm) at 0.37 ppm and (4 fish composite 21.8-27.5 cm) at 0.537 ppm and rock bass (6 fish composite 17.4-19.4 cm) at 0.446 ppm. There are no additional data.

Roanoke River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**10.28**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L04R-03-BEN** **Roanoke River**

Location: Roanoke River mainstem from Niagara Dam downstream to the mouth of Back Creek.

City / County: Bedford Co. Roanoke Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The benthic impairment is extended downstream with the 2008 Integrated Report (IR) for 3.16 miles from Niagara Dam downstream to the mouth of Back Creek. The 2008 and 2010 Integrated Reports assigned a Cause Group Code of L04R-01-BEN incorporating the entire 14.45 mile benthic impairment. This 3.14 mile portion is Category 5A as the TMDL Study did not address these waters. Thus a new Cause Group Code of L04R-03-BEN is assigned with the 2012 Integrated Report. The impairment does not include the impounded waters of Niagara Dam.

4AROA198.08- (Explore Park near the Shenandoah Pavilion) Bio 'IM' The 2016 data window finds impairment from four spring and fall VSCI surveys (2010 & 2014) with an average score of 46.4. Previous surveys yielded benthic communities dominated by net-spinning caddisfly larvae (Hydropsychidae) and the fourth was dominated by midges (Chironomidae). These organisms typically dominate streams that have high amounts of organic matter. All surveys had low taxa richness and diversity as well as low numbers of pollution-sensitive taxa such as mayflies and stoneflies.
Instream habitat, riparian zone vegetation, and bank stability were all optimal providing conditions favorable for a healthy benthic community. However, filamentous algae and periphyton growth was thick on stream substrates indicating that nutrients may be excessive in this reach of the Roanoke River.
There were no additional within the 2014 data window. The 2012 assessment reports four VSCI surveys (fall 2005 & fall 2009 & 2010 spring & fall) with an average score of 51.5. 2010 and 2008 data windows contain two VSCI surveys 2005 and 2006 both fall scores are 56.3 and 55.0.

Roanoke River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.16**

Sources:

- Discharges from Municipal Separate Storm Sewer Systems (MS4)
- Industrial Point Source Discharge
- Industrial/Commercial Site Stormwater Discharge (Permitted)
- Municipal (Urbanized High Density Area)
- Municipal Point Source Discharges
- Post-development Erosion and Sedimentation
- Residential Districts
- Sediment Resuspension (Clean Sediment)
- Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L05R-01-BEN** **Tinker Creek**

Location: Tinker Creek mainstem from the its confluence with the Roanoke River upstream to the mouth of Carvin Creek.

City / County: Roanoke City Roanoke Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The benthic community is impaired for 5.37 miles based on a 2008 Virginia Stream Condition Index survey (VSCI).

4ATKR000.69 (Rt. 24 Bridge - Vinton) One 2008 VSCI survey scoring 50.9. There have been no additional surveys within the 2012, 2014 or 2016 data windows. The score indicates a stressed community with low taxonomic diversity and low abundance of pollution-sensitive organisms. A visual assessment indicates that more than 70% of the stream substrate was covered with a thick mat of algae which may limit habitat available for macroinvertebrates that require clean substrates.

Tinker Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.37**

Sources:

- Loss of Riparian Habitat
- Municipal (Urbanized High Density Area)
- Residential Districts
- Urban Runoff/Storm Sewers
- Wet Weather Discharges (Non-Point Source)

Roanoke and Yadkin River Basins

***Cause Group Code:* L05R-01-TEMP** **Tinker Creek**

Location: Tinker Creek mainstem from the confluence of Buffalo Creek downstream to its confluence with the Roanoke River.

City / County: Botetourt Co. Roanoke City Roanoke Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The waters remain impaired for the Aquatic Life Use.

4ATKR009.30- (Rt. 11 Bridge - near Hollins) There are no additional temperature data beyond the 2008 IR. No exceedances are found in the remaining three measurements within the 2012 data window. 2010 data find one temperature measurement exceeding the 21°C criterion from 15 measurements. 2008 temperature data exceeds the stockable trout water criterion in three of 23 measurements at 23°C (6/04/2002); 25 °C (8/08/2001) and 21.2°C (7/06/2004). Temperature exceeds the criterion in three of 20 measurements in 2006 with the same exceeding measurements as in 2008. Temperature exceeds the 21°C criterion in two of eight measurements within the 2004 data window. Temperature exceedances are 23°C (6/04/2002) and 25 °C (8/08/2001).

4ATKR000.69- (Rt. 24 Bridge in Vinton) A 1999 Consent Decree Attachment A station. WQS Class V temperature excursions are four of 36 within the 2016 data window. Excursions range from 21.4 to 24.6°C. Five of 37 temperature observations exceed the Stockable Trout Water criterion of 21°C in 2014. Values in excess of the criterion range from 21.3 to 24.6°C. The 2012 assessment reports five of 38 measurements exceed the Class V temperature criterion (21°C). Exceedances range from 21.3 to 22.1°C. Seven of 41 measurements exceed the Class V criterion with the 2010 data window. Exceedances range from 21.3 to 22.2°C. Ten of 48 measurements exceed the 21°C criterion within the 2006 & 2008 data windows. Exceedances range from 21.1°C to 23.4°C for both assessments. The 2004 assessment reports three of 56 measurements exceed the 21°C Class V criterion although Fully Supporting from assessed data. Exceedances occur on 7/22/1999 (23°C), 6/13/2000 (22°C) and 8/08/2001 (23°C). The 2002 data window shows seven of 59 temperature measurements in excess of the criterion.

Tinker Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**11.87**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L05R-02-BEN** **Deer Branch**

Location: Deer Branch from its mouth on Carvin Creek upstream to Airport Road (Rt. 118).

City / County: Roanoke Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2014 assessment reports the Deer Branch Aquatic Life Use (General Standard - Benthic) is impaired for 1.38 miles.

4ADEE000.06 (Brookside Park, Roanoke City)- No additional data beyond the 2014 IR. Bio 'IM' Two 2012 surveys score spring 45.1 and fall 61.8 for an average score of 53.4 indicating a benthic community dominated by pollution-tolerant taxa in the spring. Midges (Chironomidae) dominated the spring sample; whereas, the fall sample had a high abundance of filter-feeding caddisflies (Hydropsychidae and Philopotamidae). Suburban/commercial land cover along with major roads upstream of this station may cause periodic flooding in this stream that results in bank erosion, sediment deposition, and runoff. Riparian buffers are impacted on both banks.

Deer Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.38**

Sources:

- Loss of Riparian Habitat
- Municipal (Urbanized High Density Area)
- Residential Districts
- Urban Runoff/Storm Sewers
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L06R-01-BEN** **Back Creek**

Location: Back Creek mainstem waters from ~0.1 miles downstream of the Mt. Haran Church on downstream of the Blue Ridge Parkway crossing and downstream of the Back Creek Church.

City / County: Roanoke Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

4ABAA023.07 (Along Rt. 221 Roanoke County) The 2014 initial 303(d) Listing finds the benthic community impaired from a total of six Virginia Stream Condition Index (VSCI) surveys conducted in 2005, 2008, 2009 and 2012. The average score is 57.8 resulting in this Listing.

Initially a fall 2005 sediment discharge from a construction site prompted sampling of this site. The 2005 fall score of 61.3 and 2006 scores spring of 50.9 and fall 60.9 caused assessment decisions to be reserved due to the improvement of scores in fall 2006 and fall 2008 (70.3). Subsequent 2009 fall survey scored 52.8 and 2012 surveys scored spring 52.5 and fall 2012 at 64.9. The abundance of macroinvertebrates that feed by scraping algae and periphyton (%Scrapers) has always been low indicating a lack of clean substrate or often scoured substrates. The 2008, 2009, and 2012 habitat surveys find sand and fine sediment impact the stream substrate. This would indicate continued sources of fines beyond the initial 2005 release.

Back Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.92**

Sources:

Municipal (Urbanized High Density Area)	Non-Point Source	Residential Districts	Site Clearance (Land Development or Redevelopment)
Wet Weather Discharges (Non-Point Source)			

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L07L-01-PH** **Beaverdam Reservoir**

Location: Beaverdam Reservoir, Bedford County

City / County: Bedford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Beaverdam Creek Reservoir located in Bedford County is owned by the Western Virginia Water Authority. The reservoir is fenced and public access is not permitted. There are no known sources other than from the natural landscape.

4AXKD0003.34 (100 ft. from Dam) There are no additional data within the 2014 data window. The reservoir 2012 data window reports 5 of 36 pH measurements in excess of the Class IV pH acidity criterion of 6.0. Four values in excess of the criterion are at 5.7 and one at 5.8 during one sampling event on 4/22/2010 from a total of 13 sampling events in 2005 and 2010.

Beaverdam Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:		**66.93**	

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L07R-01-BEN** **Beaverdam Creek**

Location: Beaverdam Creek mainstem waters from the 795 ft. pool elevation of Smith Mtn. Lake on upstream to its headwaters (Stewartsville, Irving, Goodview and Hardy Quads).

City / County: Bedford Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2010 Virginia Stream Condition Index (VSCI) surveys find the Aquatic Life Use is impaired for 10.33 miles. There are no additional data beyond the 2010 Integrated Report (IR).

4ABDA006.72 (Rt. 24 Crossing)- Two 2008 Virginia Stream Condition Index (VSCI) surveys with an average score of 45.0 find the benthic community impaired. This watershed is influenced by agricultural land use with open pastures including some with no riparian vegetation. Habitat scores show this stream reach is impacted by sediment deposition and a poor riparian buffer.

Beaverdam Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**10.33**

Sources:

Agriculture	Loss of Riparian Habitat	Residential Districts	Rural (Residential Areas)
Wet Weather Discharges (Non-Point Source)			

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L07R-02-BEN** **Merriman Run, UT (XUO)**

Location: Merriman Run, UT (XUO) mainstem from the backwaters of Smith Mtn. Lake upstream to its headwaters.

City / County: Bedford Co. Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

4AXUO000.49 (Free flowing to Smith Mtn. Lake backwaters)- Previous assessments DEQ reserved judgment for this initial 2004 probabilistic site (VAEQ99-456) from four Virginia Stream Condition Index (VSCI) surveys (2004 - 2005). The station is located on a small second order stream upstream of Smith Mountain Lake backwaters in a watershed influenced by agricultural land use. More information was desired before a conclusive assessment could be made on this station's benthic community. The average Virginia Stream Condition Index (VSCI) score was 54.2 from six surveys (2010 IR) conducted in the spring and fall seasons of both 2004, 2005 and 2008.

There are no additional data beyond the 2010 IR and no new data within the 2016 data window. Two 2008 VSCI surveys remain within the 2014 data window averaging 47.9. Four VSCI Surveys (2005-2008) within the 2012 data window score an average of 46.6. The 2010 Listing is based on six VSCI surveys (2004 - 2008) with an average score of 54.2. This station is located just upstream of a cove on Smith Mountain Lake. The impounded waters do not appear to impact this stream reach. Sediment deposition scores were low for all samples. Water flow, velocity, and bank erosion scores worsened during 2004-2005. Relative Bed Stability habitat analyses from 2004 and 2005 determined that approximately 40-50% of the stream substrate consisted of sand and fine sediments. The land cover for this watershed is 44 % agriculture consisting mostly of pasture. During the 2005 samples, it appeared that there had been a change in flow and velocity so that fine sediments deposition had increased in the sampled reach. Contributing factors possibly include low rainfall and subsequent low flow levels. Also, a recently (2004-2005) constructed pond may contribute to reduced flows during specific periods and or seasons.

Merriman Run, UT (XUO)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.88**

Sources:

Agriculture	Loss of Riparian Habitat	Wet Weather Discharges (Non-Point Source)

***Cause Group Code:* L08R-01-TEMP** **Green Creek**

Location: Green Creek mainstem from its perennial headwaters downstream to the community of Algoma where the South Fork of the Blackwater River begins.

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The 4.09 mile temperature impairment returns with the 2012 assessment. The 2010 IR de-listed the temperature impairment.

4AGCR000.01- (Rt. 739 Bridge at Algoma) There are no additional data beyond the 2012 IR. The 2012 assessment finds four of 33 temperature measurements exceed the Class VI 20°C criterion for an exceedance rate of 12%. The exceeding values occur in the summer months with an exceedance range from 21.6°C to 22.6°C. Data remaining within the 2016 data window are two of 12 measurements exceed and within the 2014 data window two of 24. The waters were initially Listed in 2002 with two of 17 temperature measurements exceeding the Class VI 20°C criterion.

Green Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**4.09**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L08R-02-TEMP** **Blackwater River, South Fork**

Location: South Fork Blackwater River mainstem from Algoma, Green Creek mouth, downstream to the South Fork's confluence with the North Fork Blackwater River (RU21).

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The Temperature impairment on the South Fork Blackwater River returns with the 2016 Integrated Report (IR). The temperature impairment was last de-listed in 2014 after the impairment returned with the 2012 IR. The temperature impairment has previously been de-listed in 2004 and 2010.

The Aquatic Life Use is impaired due to excursions of the WQS Class V temperature criterion of 21°C.

4ABSF001.15 (Rt. 641 Bridge east of Callaway) The 2016 data window finds four of 36 temperature measurements in excess of the WQS Class V Stockable Trout Water criterion of 21°C. Values in excess of the criterion occur in the summer months on 6/22/2010 at 23.3°C; 8/9/2010 at 22.9°C; 7/7/2011 at 23.7°C and 6/10/2014 at 21.1°C. Three of 36 temperature measurements exceed the Class V criterion of 21°C in 2014; an exceedance rate of 8.3%. The waters were delisted with the 2014 Integrated Report (IR) where temperature measurements in excess of the Class V criterion are 23.3°C (6/22/2010), 22.9°C (8/9/2010) and 23.7°C (7/7/2011). Five of 36 temperature measurements exceed the Class V criterion of 21 °C in 2012. Exceedances occur in the summer months of June and August and range from 22.4 to 24.1°C. The South Fork Blackwater River was delisted in 2004 for temperature but returned with the 2008 assessment. 2008 data report three excessive measurements from a total of 26.

Blackwater River, South Fork **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**6.20**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L08R-05-BEN** **Little Creek**

Location: Little Creek mainstem extending from the confluence of an unnamed tributary (XKF) from just west of Helm off Rt. 693 on downstream to the Little Creek mouth on the Blackwater River (Boones Mill Quad).

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is not supported for 7.85 miles due to contravention of the General Standard for aquatic life (formerly VAW-L08R-05). The waters are categorized 5A for the General Standard (Benthic) impairment. The benthic impairment is not addressed by the EPA approved Upper Blackwater River Benthic TMDL Study. The General Standard (Benthic) impairment is a 2002 initial 303(d) Listing.

4ALLE005.22- (Rt. 697 Bridge) There are no additional data beyond the 2014 Integrated Report (IR) where four (2010-2011) Virginia Stream Condition Index (VSCI) scores yield an average score of 45.2. Two VSCI surveys (2010) produce an average score of 48.98 within the 2012 data window. Previous assessments (2008 and 2010) found impairment from two spring VSCI surveys (2001 & 2002) producing an average score of 32.2. The assemblages collected at this site indicate excessive organic matter, excessive nutrients, and embedded substrates. Habitat surveys also indicate impacts from sediment deposition removal of riparian buffers. Ambient chemical data indicates NPS impacts from bacteria and nutrients. A TMDL study indicating sediment and phosphorus as the stressors in the Upper Blackwater and North Fork Blackwater Rivers was approved by the EPA in 2004. Currently, the Soil and Water Conservation District is implementing agricultural best management practices in the watershed.

Little Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.85**

Sources:

- Livestock (Grazing or Feeding Operations)
- Loss of Riparian Habitat
- Sediment Resuspension (Clean Sediment)
- Streambank Modifications/destabilization
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L08R-06-BEN** **Teels Creek**

Location: Teel Creek mainstem perennial headwaters downstream to its confluence with Little Creek (Boones Mill Quad).

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is not supported for 4.76 miles due to contravention of the General Standard for aquatic life (formerly VAW-L08R-06). The waters are categorized 5A for the 2002 initially 303(d) Listed General Standard (Benthic) impairment. The General Standard (benthic) impairment is not addressed in the EPA approved Upper Blackwater River Benthic TMDL Study.

4ATEL001.02- (Rt. 697 Bridge) Bio 'IM' There are no additional data beyond the 2014 Integrated Report (IR) where four (2010-2011) Virginia Stream Condition Index (VSCI) surveys yield an average score of 58.3. The 2012 assessment reports two 2010 VSCI surveys with an average score of 57.33. The instream habitat (substrate) at this site has been impacted by fine sediment. The riparian zone vegetation is reduced and stream banks are eroded as a result. Currently, the Soil and Water Conservation District is implementing agricultural best management practices in the watershed for the Implementation Plan of the 2004 Bacteria TMDL. The 2008 and 2010 assessments report a single 2002 VSCI survey scoring 60.2. Although the VSCI score in 2002 was above the 60.0 threshold score for non-impairment, previous surveys indicated impairment. The community in spring 2002 had approximately 50% pollution tolerant organisms. The assemblages collected at this site indicated excessive organic matter, and embedded substrates. Habitat surveys also indicate impacts from sediment deposition, eroded banks and removal of riparian buffers.

Teels Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.76**

Sources:

- Livestock (Grazing or Feeding Operations)
- Loss of Riparian Habitat
- Sediment Resuspension (Clean Sediment)
- Streambank Modifications/destabilization
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L08R-07-BEN** **Buck Run**

Location: Buck Run from its confluence on Little Creek upstream to its headwaters.

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The benthic community is impaired for 3.77 miles for this 2008 303(d) Listing.

4ABCE001.32 (Above Rt. 731 Bridge) Bio 'IM' There are no additional data beyond the 2014 Integrated Report (IR) where four (2010-2011) Virginia Stream Condition Index (VSCI) surveys yield an average score of 35.2. The instream habitat (substrate) at this site has been impacted by fine sediment. The immediate riparian zone vegetation has been reduced and stream banks are eroded due to reduced vegetation. Runoff from this type of landuse affects water quality by adding sediment, nutrients, and bacteria to the stream.

4ABCE000.87- (Downstream of Rt. 731; end of Twin Hollow Lane) Bio 'IM' There are no additional data beyond the 2010 IR. Four 2006-2007 VSCI surveys with an average score of 35.0. Two remaining 2007 VSCI surveys score 29.8 on average within the 2014 data window. Located in a small second order stream in a watershed influenced by agricultural land use (dairy farms, corn fields). The watershed upstream of this station is dominated by agricultural land cover (67%). The instream habitat was affected by sediment deposition and thick periphyton growth on rocky substrates. Bank vegetation and riparian zones are impacted by the land use. Water chemistry results indicate elevated nutrients relative to other Probabilistic stations in the region.

Buck Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.77**

Sources:

- Livestock (Grazing or Feeding Operations)
- Loss of Riparian Habitat
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Sediment Resuspension (Clean Sediment)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L09R-01-BEN** **Maggodee Creek**

Location: Maggodee Creek mainstem from Piedmont Mill Dam downstream to the mouth of Maggodee Creek on the Blackwater River.

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non-support of the Aquatic Life Use is originally based (2002- formerly VAW-L09R-01) on Rapid Bioassessment Protocol II surveys (RBP II) conducted at 4AMEE002.38. The station is assessed using the Virginia Stream Condition Index (VSCI). The 7.47 mile 2002 303(d) Listed General Standard (Benthic) impairment remains.

4AMEE002.38- Bio 'IM' There are no additional data beyond the 2014 Integrated Report (IR). The 2014 data window yields four (2010-2011) VSCI surveys with an average score of 57.4. Two 2010 VSCI surveys with an average score of 52.1 for the 2012 assessment. The instream habitat (substrate) at this site has been impacted by fine sediment. The immediate riparian zone vegetation has been reduced and stream banks are eroded due to reduced vegetation. Runoff from this type of landuse affects water quality by adding sediment, nutrients, and bacteria to the stream.

4AMEE000.70- (Below Rt. 122 Bridge) Bio 'IM' There are no additional data beyond the 2008 IR. One 2002 Virginia Stream Condition Index (VSCI) survey scoring 47.2. Sediment deposition from agricultural runoff appears to have a large impact on the benthic community. Habitat scores for embeddedness and sediment deposition were the lowest of the ten habitat parameters. Both parameters fell in the marginal category. In 2006 three RBP II surveys, outside the 2008 data window, produce an average score of 44.9 at this site. Two surveys in the spring result in scores of 30.43 (2000) and 52.17 (2002). The fall 2000 survey score is 52.17.

Maggodee Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.47**

Sources:

Livestock (Grazing or Feeding Operations)	Loss of Riparian Habitat	Sediment Resuspension (Clean Sediment)

Roanoke and Yadkin River Basins

***Cause Group Code:* L09R-01-TEMP** **Maggodee Creek**

Location: Maggodee Creek mainstem waters from the confluence of North and South Forks of Maggodee Creek downstream to just below the Rt. 220 crossing at Boones Mill.

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The Aquatic Life Use is not supported for 4.43 miles due to temperature exceedances for this stockable trout water (21°C).

4AMEE021.13- (Rt. 613 Bridge Below Conflu./w Fork) There are no additional data beyond the 2014 IR where seven of 36 temperature measurements exceed the stockable trout water criterion of 21°C within the 2014 data window. Temperature exceedances range from 21.2 to 25.2°C and occur in the summer months. Five of 23 measurements exceed within the 2016 data window. The 2012 assessment reports six of 27 temperature measurements exceed the stockable trout water criterion ranging from 21.4 to 25.2°C. Four of 24 temperature measurements exceed the criterion in 2010. Temperature exceedances occur at 21.1°C on 8/5/2004; 21.4°C on 6/30/2005; 25.2°C on 8/01/2007; and 23.4°C on 6/11/2008. The 2008 assessment reports one temperature exceedance at 21.1°C on 8/5/2004 and a second at 21.4°C on 6/30/2005 from 12 measurements. These excursions are in excess of the 21°C stockable trout water criterion causing the initial Listing of these waters in 2008.

Maggodee Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**4.43**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L09R-02-BEN** **Maggodee Creek**

Location: Maggodee Creek mainstem waters from the confluence of North and South Forks of Maggodee Creek downstream to the Boones Mill STP outfall (RU23).

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2016 initial 5.42 mile General Standard - Benthic impairment of the Aquatic Life Use is the result of macroinvertebrate surveys resulting in an impaired status.

4AMEE017.24 (Upstream of Rt. 220 near Boones Mill) Bio 'IM' Two 2014 Virginia Stream Condition Index (VSCI) surveys scoring spring 46.8 and fall 57.9. The average VSCI score was 52.4 indicating a benthic community lacking in diversity and dominated by pollution-tolerant organisms. Some instream habitat scores were good; however, those related to sediment deposition were low. Bank erosion and riparian zone width scores were also low. This section of Maggodee Creek appears to be impacted by runoff from Rt. 220 and Rt. 613 upstream of the sampling site as well as agricultural land in the headwaters.

Maggodee Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.42**

Sources:

Agriculture	Clean Sediments	Livestock (Grazing or Feeding Operations)	Non-Point Source
Sediment Resuspension (Clean Sediment)	Urban Runoff/Storm Sewers		

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L10L-01-HG** **Blackwater River**

Location: Blackwater River mainstem waters from the Maggodee Creek confluence downstream ending at 37°03'03" / 79°43'49" located ~1.7 miles upstream of the 4H Camp in Smith Mountain Lake.

City / County: Franklin Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2010 303(d) Listing is based on 2006 fish tissue collections and new Water Quality Standards effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) and Virginia Department of Health (VDH) level of concern of 0.5 ppm are found in fish tissue causing impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. Please visit http://www.deq.virginia.gov/ for more information about mercury contamination and http://www.vdh.virginia.gov/Epidemiology/dee/PublicHealthToxicology/Advisories/ for VDH Advisories or Bans.

4ABWR019.75 (Rt. 834 Bridge - Brooks Mill Bridge)- 2006 fish tissue collections find from a total of 12 fish, a flathead catfish and a largemouth bass whose tissue values are in excess of the WQS based tissue value (TV) of 0.3 ppm for mercury; flathead catfish (1 fish 96.0 cm) at 0.477 ppm and largemouth base (1 fish 46.5 cm) at 0.514.

Blackwater River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**524.78**	**8.21**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L10L-05-BAC** **Smith Mountain Lake - Crazy Horse Camp Ground**

Location: Crazy Horse Camp Ground Beach and Marina area.

City / County: Franklin Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Crazy Horse Camp Ground and Marina is located on an unnamed tributary to the Blackwater River. The VDH issued a beach closure at the facility for one week each in June and July 2000 noting a recurrence of bacterial contamination is likely. The facility is located off Route 601 at 37°04'04" / 79°38'54" on the Moneta SW Quad. This is a 2004 Listing (formerly VAW-L12L-05 & L12L-05-BAC). There are no additional data.

Smith Mountain Lake - Crazy Horse Camp Ground **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:		**30.27**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L10R-01-BEN** **Blackwater River**

Location: Blackwater River mainstem from the mouth of Maggodee Creek downstream to the backwaters of Smith Mountain Lake (L10R) at the 795 ft. pool elevation.

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

An upstream portion of the Blackwater River General Standard - Benthic impairment is delisted based on Virginia Stream Condition Index (VSCI) survey data from station 4ABWR029.51 for 5.99 miles. The waters downstream of Maggodee Creek (8.19 miles) remain impaired until sufficient benthic survey data can confirm support or non-support of the Aquatic Life Use in this downstream reach. Habitat impacts include excessive sediment deposition. Water quality in this reach is affected by NPS pollution.

4ABWR029.51- (Downstream of Rt. 122 Bridge) Both the 2010 and 2008 assessments find benthic impairment from two 2004 Virginia Stream Condition Index (VSCI) surveys scoring 60.7 spring and 50.1 fall. The average VSCI score is 55.4. Subsequent surveys in 2011 and 2012 find three non-impaired and one impaired score but averaging 69.4. The station is located upstream of Maggodee Creek with no additional benthic survey data downstream of Maggodee Creek. A partial delisting (5.99 miles) is a result of these additional surveys. 2011 scores are: spring 69.4; fall 73.6. And 2012 scores are: spring 58.6; fall 74.8.

Blackwater River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.21**

Sources:

- Livestock (Grazing or Feeding Operations)
- Loss of Riparian Habitat
- Sediment Resuspension (Clean Sediment)
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L11R-01-BEN** **North Fork Gills Creek, UT (XML)**

Location: North Fork Gills Creek, UT (XML) from its mouth on Gills Creek upstream to its headwaters.

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

4AXML000.56- (Off of Rt. 684 near Red Valley) Bio 'IM' There are no additional information beyond the 2006 Integrated Report (IR). Two 2003 Virginia Stream Condition Index (VSCI) surveys find impairment at this site where the average score is 23.3 (spring 17.5 / fall 29.0). This stream has a small watershed (<1.0 sq. mi) which is dominated by agricultural land. The stream channel is impacted by heavy deposits of fine sediment and many areas of eroded stream bank. One side of the stream has a good riparian buffer while the other side is impacted by a pasture.

North Fork Gills Creek, UT (XML)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.43**

Sources:

- Livestock (Grazing or Feeding Operations)
- Loss of Riparian Habitat
- Sediment Resuspension (Clean Sediment)
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L12L-01-HG** **Smith Mountain Lake**

Location: Smith Mtn. Lake from the backwaters of the Roanoke River (elevation 795 ft.) downstream to a point 37°04'39" / 79°37'15"; downstream of the State Park.

City / County: Bedford Co. Franklin Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2010 303(d) Listing is based on 2006 fish tissue collections and new Water Quality Standards (WQS) effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) tissue value cause impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. The Virginia Department of Health (VDH) level of concern is 0.5 ppm. Please visit http://www.deq.virginia.gov/info/mercury.html for more information about mercury contamination and http://www.vdh.virginia.gov/Epidemiology/dee/PublicHealthToxicology/Advisories/ for VDH Advisories or Bans.

4AROA175.63 (Hales Ford Bridge)- Mercury (Hg) fish tissue exceedances of the DEQ WQS based 0.3 ppm TV are found in two species from 2006 collections; largemouth bass from four individual fish (49.2 cm) at 0.691, (47.3 cm) at 0.484, (44.5 cm) at 0.376 and (40.9 cm) at 0.305 ppm; and flathead catfish (83.4 cm) at 0.406 ppm.

2002 Data from station 4AROA196.05 (McVeigh Ford)- records one species, an individual flathead catfish (91.3 cm) at 0.34 ppm.

Smith Mountain Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**6,480.10**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L12R-01-BAC** **Craddock Creek (XME)**

Location: An unnamed tributary (XME) to Craddock Creek from it's headwaters downstream to it's inundation on Smith Mountain Lake.

City / County: Bedford Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

4ACCK004.26 (Surry Drive Bridge) There are no additional data beyond the 2012 IR where three of 11 escherichia coli (E.coli) samples exceed the WQS instantaneous criterion of 235 cfu/100 ml. Exceedances range from 320 to 980 cfu/100 ml.

Craddock Creek (XME)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**1.23**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L14R-01-BEN** **Pigg River**

Location: Pigg River mainstem from near Five Mile Mountain Road (Rt. 748) on downstream to the confluence of Turners Creek.

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired with this initial 2012 General Standard- Benthic Listing for 4.43 miles.

4APGG077.15 (Ferrum Mtn. Rd. (Rt. 602) Bridge) Bio 'IM' Three Virginia Stream Condition Index (VSCI) surveys (fall 2013 and 2014 spring/fall) with an average 2016 score of 58.8. This station surveyed as a follow up to an initial 303(d) listing at 4APGG076.93. The average Stream Condition Index (SCI) score was 58.8 indicating a stressed benthic community. The two metrics that vary most are % Scrapers and %Chiro. The metric % 2Dom averaged 57% indicating that 2 taxa of benthic macroinvertebrates made up >50% of the samples. Total Habitat scores averaged 98, yielding a marginal score. Stream bank and riparian zone scores were poor and sediment deposition scores were all marginal

4APGG076.93 (~ 1 mile upstream of the South Prong Pigg River confluence) Bio 'IM' A 2009 Probabilistic site. Two 2009 VSCI surveys with an average score of 50.5. There are no additional data beyond the 2012 Integrated Report. A stressed benthic community. A high number of mayflies were in this sample; however, the family Ephemerellidae is tolerant of moderate sediment impacts. The stream substrate was impacted by sediment deposition and some benthic macroinvertebrates were covered with bacteria which may indicate nutrient enrichment.

Pigg River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.43**

Sources:

Crop Production (Crop Land or Dry Land)	Dairies (Outside Milk Parlor Areas)	Livestock (Grazing or Feeding Operations)	Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L14R-02-BEN** **Storey Creek**

Location: Storey Creek mainstem from the Ferrum Water and Sewerage Authority POTW downstream to the Storey Creek mouth on the Pigg River (RU29).

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

These waters (9.82 miles) are initially 2016 listed for impairment of the Aquatic Life Use. Impairment is based on Virginia Stream Condition Index (VSCI) surveys conducted at station 4ASDA004.94.

4ASDA004.94 (Between Bridges on Waidsboro Rd. (607) & Pleasant Hill Rd. (619)) Bio 'IM' Two 2013 VSCI surveys with an average score of 51.7 indicating a benthic community lacking in diversity and pollution-sensitive organisms. Some instream habitat scores are good; however, those related to sediment deposition were low. Bank erosion and bank vegetative cover were impacted by highly eroded stream banks in this reach.

Storey Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.82**

Sources:

- Crop Production (Crop Land or Dry Land)
- Dairies (Outside Milk Parlor Areas)
- Livestock (Grazing or Feeding Operations)
- Wet Weather Discharges (Non-Point Source)

Roanoke and Yadkin River Basins

***Cause Group Code:* L17R-01-BEN** **Poplar Branch**

Location: Poplar Branch headwaters downstream to its confluence with Snow Creek.

City / County: Franklin Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired for 2.53 miles with the 2008 303(d) Listing of these waters from data at station 4APAA000.24.

4APAA000.71- Bio 'IM' Four VSCI (2013-2014) surveys with an average score of 58.2. Fall samples had higher percentages of pollution sensitive taxa and less chironomidae. The habitat available for sampling at this bridge crossing is dominated by bedrock and may be better than the available habitat upstream yielding a VSCI score that is not indicative of all segments. Habitat survey scores for sediment were low in this reach due to landuse impacts to the watershed.

4APAA000.24 (Below Rt. 629)- Bio 'IM' There are no additional data beyond the 2008 assessment where two Virginia Stream Condition Index (VSCI) surveys score spring 54.0 and fall 55.5. The immediate land use at this station is forested with a closed canopy and excellent riparian vegetation. However, the watershed upstream from this station has pasture land with many small ponds that appear to reduce stream flow and subsequently allows fine sediment to accumulate in the stream.

Poplar Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.56**

Sources:

Sediment Resuspension (Clean Sediment)	Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L18R-01-BEN** **Fryingpan Creek**

Location: Headwaters of Fryingpan Creek downstream ~0.85 miles of the Rt. 40 crossing (36°57'30" / 79°26'54").

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The waters of Fryingpan Creek are impaired for the Aquatic Life Use due to contravention of the WQS General Standard (Benthic). The 2006 303(d) 2.56 mile 303(d) Listing is a result of benthic impairments found at station 4AFRY006.08 (Rt. 40 Bridge) where two 2003 Virginia Stream Condition Index (VSCI) scores are spring 42.4 and fall 32.8. Four additional 2011 and 2013 VSCI surveys find continued impairment with an average score of 44.4.

The stream has a small watershed (5.2 mi2) which is approximately 46% agricultural land. The stream channel is impacted by deposits of fine sediment and some areas of eroded stream bank. Both sides of the stream are protected by a good riparian buffer. The benthic community has low diversity of pollution sensitive families and is dominated by those tolerant of excessive sediment.

Fryingpan Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.56**

Sources:

Livestock (Grazing or Feeding Operations)	Sediment Resuspension (Clean Sediment)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L19R-01-HG** **Roanoke (Staunton) River, Cub Creek, Kerr Reservoir**

Location: Roanoke (Staunton) River from Leesville Dam to the John H. Kerr Dam including Kerr Reservoir, its tributaries Eastland Creek and Nutbush Creek (within the state of Virginia) and Cub Creek from its mouth to the crossing of Rough Creek Road near Rough Creek.

City / County: Campbell Co. Charlotte Co. Halifax Co. Mecklenburg Co. Pittsylvania Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

VDH Fish Advisory - PCBs: Issued 7/24/98 , revised 8/31/07 & Mercury: Issued 8/31/07
Roanoke (Staunton) River from below Leesville Dam downstream ~ 98 miles to the confluence of Dan River including its tributary Cub Creek up to Rough Creek Road (State Route 695) near Rough Creek.
VDH recommends the following precautions to reduce any potential harmful effects from eating contaminated fish:

Eat smaller, younger fish (within the legal limits). Younger fish are less likely to contain harmful levels of contaminants than larger, older fish.
Eat fewer or smaller servings of fish.
Try to eat different species of fish from various sources (i.e., different creeks, rivers and streams).
Cleaning or cooking contaminated fish does not eliminate or reduce mercury. However, levels of PCBs in fish can be reduced by taking the following precautions:
Remove the skin, the fat from the belly and top and internal organs before cooking the fish.
Bake, broil or grill on an open rack to allow fats to drain away from the meat.
Discard the fats that cook out of the fish.
Avoid or reduce the amount of fish drippings or broth that is used to flavor the meal.
Eat less deep-fried fish, since frying seals contaminants into the fatty tissue.
For more information about fish consumption advisories, including frequently asked questions go to www.vdh.virginia.gov.

Mercury Fish Tissue Sampling Results
Near Route 29 - Altavista
4AROA129.55 (2006 FT/Sediment) - 2 species exceed Mercury VDH level of concern
Near Brookneal
4AROA097.07 (2006 FT/Sediment) - 1 species exceeded Mercury VDH level of concern
Near Route 746 - Randolph
4AROA067.91 (2006 FT/Sediment) - 1 species exceeded Mercury VDH level of concern
Near Route 360 - Clover
4AROA059.12 (2006 FT/Sediment) - 4 species exceed Mercury VDH level of concern
Near Clarksville
4AROA036.59 (2006 FT/Sediment) - 1 species exceeded Mercury VDH level of concern
Kerr Reservoir near Ivy Hill
4AROA028.04 (2006 FT/Sediment) - 2 species exceed Mercury VDH level of concern
Lake Gaston near State Line
4AROA004.54 (2006 FT/Sediment) - 1 species exceeded Mercury VDH level of concern

Roanoke (Staunton) River, Cub Creek, Kerr Reservoir	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**31,884.59**	**102.09**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L19R-02-BEN** **Lynch Creek**

Location: Lynch Creek from its headwaters to the mouth on the Roanoke (Staunton) River.

City / County: Campbell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ALYH000.50 (Ambient, Bio)
2008 Bio
IM - Located in a City Park with significant impervious surface coverage in the riparian zone.

Lynch Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.90**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L19R-03-BEN** **Reed Creek**

Location: Reed Creek mainstem from its mouth on the Roanoke (Staunton) River upstream to its perennial headwaters.

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ARAB000.52 (Bio)
2008 & 2012 Bio
IM - 4ARAB000.52 exhibited high seasonal variability, with one score approaching the impairment cutoff of 60. Sedimentation and elevated nutrients may be negatively affecting the stream community. Further sampling is needed to accurately assess the benthic community.

Reed Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.90**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L19R-04-BEN** **Roanoke (Staunton) River, Unnamed tributary**

Location: An unnamed tributary to the Roanoke (Staunton) River downstream of Frazier Creek from its mouth on the Roanoke River upstream to its headwaters.

City / County: Campbell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AXCN000.31 (2008 Bio)
IM - appears to be negatively affected by high nutrient levels and suburban storm flows.

Roanoke (Staunton) River, Unnamed tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L21R-01-BEN** **Wolf Creek**

Location: Wolf Creek from its headwaters downstream to the Wolf Creek confluence on Goose Creek.

City / County: Bedford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired with this 2012 303(d) Listing for contravention of the General Standard (Benthic). There are no additional data within the 2016 data window.

4AWLF001.20- (Upstream of Joppa Mill) Bio 'IM' There are no additional data beyond the 2012 Integrated Report (IR). Two 2010 VSCI surveys with an average score of 51.5. The benthic macroinvertebrate community is dominated by filter-feeding taxa indicating an environment high in organic matter. The station had relatively good habitat scores except for moderate sedimentation. Land cover upstream of this site is approximately 43% agriculture which could be a source of sediment and nutrients.

Wolf Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.13**

Sources:

- Crop Production (Crop Land or Dry Land)
- Livestock (Grazing or Feeding Operations)
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L21R-02-BEN** **Bore Auger Creek**

Location: Bore Auger Creek from near it's headwaters downstream to it's confluence with Goose Creek.

City / County: Bedford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

These waters are initially listed with the 2014 Integrated Report (IR).

4ABOE005.27 (Rt. 806 Bridge) Bio 'IM' Two 2012 VSCI surveys scoring spring 48.7 and fall 59.6. These surveys indicate a community dominated by pollution-tolerant taxa in the spring including midges and blackflies. There are a higher percentage of mayflies in the fall but both seasons had relatively low taxa richness, low numbers of stoneflies and low numbers of organisms in the scraper feeding category which require clean rock surfaces to feed upon. The instream habitat is affected by sediment deposition (low Sed score) with more than 50% of the stream bottom covered by fine particles. The sediment load in the stream also results in the low Embeddedness score meaning that the interstitial spaces between rocks is clogged by fine material thus limiting available habitat for sensitive macroinvertebrates. The watershed has a mix of forested and agricultural land cover.

Bore Auger Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.56**

Sources:

Loss of Riparian Habitat	Non-Point Source	Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L26R-01-BEN** **Little Otter River**

Location: Little Otter River mainstem from the Bedford City POTW downstream to mouth to its confluence with the Big Otter River.

City / County: Bedford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The original 2002 303(d) Listed 5.90 mile General Standard (Benthic) impairment is extended upstream in 2008 with an additional 7.44 miles showing benthic impairment at station 4ALOR014.75 for an additional impaired length of 13.34 miles. The 2010 assessment extends the impairment downstream 8.71 miles based on impaired benthic conditions at stations 4ALOR012.20, 4ALOR008.64 and 4ALOR007.20. Total impaired miles are 22.05 miles.

4ALOR014.75- (Rt. 718 Bridge - above Bedford STP) Bio 'IM' Four Virginia Stream Condition Index (VSCI) surveys (2011-2012) report an average score of 57.9 within the 2016 data window. The 2014 IR reports six VSCI surveys (2008, 2011-2012) with an average score of 59.9. The 2010 and 2012 assessments record three Virginia Stream Condition Index (VSCI) surveys (2006 and 2008) scoring fall 2006 58.7; and spring 56.7 and fall 67.8 in 2008. The 2008 IR reports the fall 2006 VSCI survey as noted previously. Habitat impacts include stream substrates that are embedded by fine sediment, eroded stream banks and riparian zone vegetation removal. Application of the VSCI to previous RBP II surveys (1994-2006 outside the 2008 data window) reveals an average VSCI score of 54.0. As a result the benthic community is assessed as impaired and is a 2008 7.30 mile extension upstream from the 2002 303(d) Benthic Listing.

4ALOR014.33- (Below Bedford STP) Bio 'IM'. The 2014 and 2016 Integrated Reports (IR) find four (2011-2012) VSCI surveys with an average score of 49.2. The preliminary stressor identification determined sediment and nutrients to be the cause of the impairment.
There are no additional data between the 2004 and 2014 IRs where three 2004 RBP II surveys Fall 1999 score 45; Spring '99 and '00 average score 53.95. This station is located below the City of Bedford's STP discharge at 4ALOR014.36 (excluding the mixing zone). Best Professional Judgment was used in spring 1999 because the sample had a high number of pollution tolerant organisms. The aquatic life use General Standard (Benthic) impairment is a 2002 original 303(d) Listing.

4ALOR012.20 (Passed the end of Dowdy Rock Rd.) Bio 'IM' Two 2008 VSCI surveys with an average score of 58.2. Habitat impacts include stream substrates that are embedded by fine sediment and eroded stream banks. This site replaces the historical downstream impact station (4ALOR014.33) that has become inaccessible.

4ALOR008.93 (Off Nicopolis Dr., Rt. 784)- Bio 'IM' Both the 2014 and 2016 IRs report two 2012 VSCI surveys scoring spring 48.9 and fall 27.2. Habitat surveys indicated a stream section with marginal bank stability, sediment impacts and lack of instream habitat. Preliminary stressor identification determined sediment and nutrients to be the cause of the impairment.

4ALOR008.64 (Nicopolis Dr., Rt. 784 Bridge) Bio 'IM' One 2008 VSCI survey scoring 56.5. This station was sampled as part of the Nutrient Criteria Special Study in 2008. Stations were selected based on historical nutrient levels and data on benthic macroinvertebrates, algae, periphyton and habitat were collected to be compared with nutrients. The VSCI score indicates a stressed community with low taxonomic diversity and low abundance of pollution-sensitive organisms. Habitat surveys indicated a stream section with substrates that were impacted by excessive fine sediments. Chemical analyses indicate high phosphorus levels.

4ALOR007.20 (Downstream of Nicopolis Dr. - Rt. 784) Bio 'IM'- A 2007 probabilistic site. Two 2007 VSCI surveys with an average score of 52.7. Both spring and fall samples had relatively low taxonomic diversity and low abundance of pollution-sensitive organisms. Habitat surveys indicated a stream section with substrates that were impacted by excessive fine sediments.

Little Otter River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**22.05**

Roanoke and Yadkin River Basins

Sources:

- Loss of Riparian Habitat
- Municipal (Urbanized High Density Area)
- Municipal Point Source Discharges
- Sediment Resuspension (Clean Sediment)
- Streambank Modifications/destabilization
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L26R-01-HG** **Little Otter River**

Location: Little Otter River mainstem from the Bedford City POTW downstream to the Little Otter River confluence with the Big Otter River.

City / County: Bedford Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2010 303(d) Listing is based on 2006 fish tissue collections and Water Quality Standards (WQS) effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) tissue value cause impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. The Virginia Department of Health (VDH) level of concern is 0.5 ppm. Please visit http://www.deq.virginia.gov for more information about mercury contamination and http://www.vdh.virginia.gov/Epidemiology/dee/PublicHealthToxicology/Advisories/ for VDH Advisories or Bans.

4ALOR007.94 (Below Bedford)- There are no additional data within the 2016 data window. Mercury (Hg) is found in 2006 fish tissue results for one smallmouth bass (0.489 ppm) and one rock bass (0.450 ppm) each greater than the water quality based mercury tissue value (TV) of 0.3 ppm.

Little Otter River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**14.61**

Sources:

Urban Runoff/Storm Sewers

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L26R-02-BEN** **Johns Creek**

Location: Johns Creek mainstem from near its perennial headwaters in Bedford City downstream to the Johns Creek mouth on the Little Otter River (Bedford & Goode Quads).

City / County: Bedford City Bedford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

4AJHN000.01- (near the Johns Creek confluence with the Little Otter River) Bio 'IM' Four Virginia Stream Condition Index (VSCI) surveys (2011-2012) with an average score of 49.4 show an impaired condition within the 2016 data window. The 2014 data window contains six VSCI (2008-2012). The 2014 average score is 48.5 indicating continued impairment of the biota. The benthic community was dominated by midges (Chironomidae) and net-spinning caddisflies (Hydropsychidae). These organisms typically dominate streams that have high amounts of organic matter. Two surveys had low taxa richness and diversity and all had low numbers of pollution-sensitive taxa such as mayflies and stoneflies.
There were no additional data within the 2012 data window. The 2010 assessment finds the benthic community impaired from three VSCI surveys (2006-2008) with an average score of 44.20. This stream is affected by urban and agricultural NPS pollution. Flashy flows appear to cause severe erosion of stream banks. The original 2002 2.13 mile General Standard (Benthic) 303(d) Listing remains. The 2008 assessment reports one 2006 fall Virginia Stream Condition Index (VSCI) survey scoring 40.7.

Historical surveys of Johns Creek from the 1990s and 2000 also indicate an impaired benthic community. The original 2002 Benthic results show moderate impact to the benthic community from a total of three Rapid Bioassessment Protocol II (RBP II) surveys. BPJ used in spring 1999 because the number of total taxa and total individuals were low, and pollution tolerant taxa were dominant.

Johns Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.24**

Sources:

Municipal (Urbanized High Density Area)	Sediment Resuspension (Clean Sediment)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L26R-03-BEN** **Wells Creek**

Location: Wells Creek mainstem from its mouth on Machine Creek upstream to its headwaters.

City / County: Bedford Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2008 initial 303(d) Listing finds the Aquatic Life Use impaired for 3.93 miles based on results from benthic surveys at station 4AWEL000.59.

4AWEL001.14- (Rt. 722 Bridge, Old Country Rd.) Bio 'IM' Four Virginia Stream Condition Index (VSCI) surveys (2011-2012) with an average score of 50.2. The habitat at this station is moderately impacted by hay fields and pastures. The riparian zone buffers are narrow and there is obvious stream bank erosion. The instream habitat is affected by deposition of fine sediment. The benthic community is dominated by organisms tolerant of nutrient and organic matter impacts.

4AWEL000.59- (Downstream of Rt. 747 Crossing) Bio 'IM' Both the 2010 and 2008 assessments find two 2005 VSCI surveys scoring spring 45.6 and fall 59.6. There are no additional data within the 2012, 2014 or 2016 data windows. The habitat is moderately impacted by hay fields and pastures. The riparian zone buffers are narrow and there is substantial stream bank erosion. The in stream habitat is affected by deposition of fine sediment. The benthic community is dominated by organisms tolerant of nutrient and organic matter impacts.

Wells Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.93**

Sources:

Loss of Riparian Habitat	Sediment Resuspension (Clean Sediment)	Streambank Modifications/destabilization

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L29R-01-BEN** **Flat Creek**

Location: Flat Creek from the confluence of Yellow Branch to its headwaters.

City / County: Campbell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2007/2012/2014 Bio
IM - 4AFCA010.95 was listed as impaired in the 2008 IR. Sediment and scour are listed as probable stressors. It exhibits slight seasonal variability and moderate variability near the assessment threshold of 60. Recent sampling has indicated an improvement is VSCI scores, although sediment and scour are still affecting the community. Additional monitoring is required to accurately assess the waterbody.

Flat Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.21**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L31R-01-BEN** **East Little Seneca Creek, Unnamed Tributary**

Location: East Little Seneca Creek, Unnamed Tributary from the headwaters to the mouth

City / County: Campbell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AXUP000.06 (2004 FPM)
IM - seems to be negatively affected by flow regime and sedimentation.
2011/2013 Bio - IM - Sediment and nutrients are primary stressors to this reach. VSCI scores exhibit seasonal variability over several years.

East Little Seneca Creek, Unnamed Tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.50**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L34R-04-PH** **Entry Creek**

Location: Entry Creek from its headwaters to its mouth on Little Falling River

City / County: Campbell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Station ID:
4AENT001.64 (Ambient)
pH - 2/12 violation rate - below 6.0

Entry Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.73**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L34R-07-BEN** **Entry Creek, Unnamed Tributary**

Location: From its headwaters to the mouth on Entry Creek

City / County: Campbell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AXVK001.44 (2009-2010 FPM)
IM - very small intermittent stream within the PROBMON program. Sampling in the fall of 2010 was halted due to lack of flow. The site is within an agricultural watershed and cattle do have direct access to the stream.

Entry Creek, Unnamed Tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.69**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L35R-01-BEN** **Mollys Creek**

Location: Mollys Creek mainstem from its perennial headwaters downstream to the reservoir backwaters.

City / County: Campbell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AMEY016.00 (2007-2008 Bio)
IM - Agriculture watershed influences in addition to a small POTW several miles upstream.

Mollys Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.99**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L36R-04-BEN** **Armistead Branch**

Location: Armistead Branch from the second unnamed tributary upstream of Route 627 to its mouth on Catawba Creek

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AATD002.66 (Ambient/2012 Bio)
IM - Lack of riparian vegetation and poor bank condition may be limiting the ability of 4AATD002.66 to support a diverse community. This station was sampled in an effort to follow up on seasonal variability of the upstream Probmon station (4AATD003.36). The probmon station is not accessible. Satellite imagery shows changes in land use upstream of 4AATD002.66 and this portion of the watershed should not be excluded in any future TMDL study.

Armistead Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.20**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L38L-01-DO** **Conner Lake**

Location: Conner Lake

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4AHTA003.26 (2013-2014 Lake Station)
Dissolved Oxygen - 6/40 Violation Rate
Insufficient Nutrient Data to Assess

Conner Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**101.92**	

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L38L-01-HG** **Conner Lake**

Location: Conner Lake

City / County: Halifax Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Station ID:
4AHTA003.26 (2006 FT/Sediment)
Hg 2 Species

Conner Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**101.92**	

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L39R-03-BEN** **Horsepen Creek**

Location: Horsepen Creek from Route 47 downstream to Little Horsepen Creek

City / County: Charlotte Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AHEN004.74 (2001 FPM)
IM - Potential sediment impacts and lack of instream habitat.

Horsepen Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.32**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L39R-05-HG** **Roanoke Creek**

Location: Roanoke Creek from Wards Fork Creek to its mouth on the Roanoke (Staunton) River.

City / County: Charlotte Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Station ID:
4AROC005.35 (2006 FT/Sed)
Hg 2 Species

Roanoke Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**10.50**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L39R-07-BEN** **Little Roanoke Creek**

Location: Little Roanoke Creek from its headwaters to its confluence with Dunnavant Creek.

City / County: Charlotte Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ALRO010.68 (2007 FPM)
IM - exhibited high seasonal variation. The spring sample half the taxa of the fall sample and both samples were dominated by tolerant taxa (Hydropsychidae in the spring and Chironomidae in the fall).

Little Roanoke Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**10.15**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L39R-08-BEN** **Bush Ford Branch**

Location: Bush Ford Branch from its headwaters to the mouth.

City / County: Charlotte Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ABWB000.32 (2008 FPM)
IM Benthic Assessment

Bush Ford Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.09**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L39R-09-BEN** **UT, Spencer Creek**

Location: An unnamed tributary to Spencer Creek from its headwaters to its mouth

City / County: Charlotte Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AXVO000.50 (2012 FPM)
IM - This stream was incised and had a sedimentation problem. The habitat was marginal and the banks were unstable.

UT, Spencer Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.90**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L40R-01-BEN** **Berles Creek**

Location: Berles Creek from its headwaters to Sandy Creek.

City / County: Charlotte Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

NESTED 2014: 23316, 06/20/2006
Station ID:
4ABLE001.21 (Ambient, 2010/2014 Bio)
E. coli - 3/6 Violation Rate
IM - Heavy to moderate embeddedness observed in 2014 samples. Sedimentation is a likely stressor

Berles Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.28**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L40R-06-BEN** **Buffalo Creek**

Location: Buffalo Creek from an unnamed tributary at river mile 2.3 to the Roanoke (Staunton) River.

City / County: Charlotte Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ABNN002.17 (2012 Bio)
IM - 4ABNN002.17 exhibits seasonal variability below the impairment threshold. Habitat scores and Taxa lists indicate bank scour and sedimentation to be likely stressors within this reach.

Buffalo Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.35**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L42L-01-HG** **Talbott Reservoir**

Location: Talbott Reservoir

City / County: Patrick Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2010 303(d) Listing is based on 2007 fish tissue collections and new Water Quality Standards effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) tissue value cause impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. The Virginia Department of Health (VDH) level of concern is 0.5 ppm. Please visit http://www.vdh.virginia.gov/Epidemiology/dee/PublicHealthToxicology/Advisories/ for VDH Advisories or Bans.

4ADAN196.09- (Talbott Res. Arm of Reservoir) 2007 fish tissue collection finds two species in excess of the WQS TV based 0.3 ppm criterion; largemouth bass (4-fish composite at 0.394 ppm) and yellow bullhead catfish (2 fish composite at 0.429 ppm).

Talbott Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**140.51**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L42R-01-TEMP** **Dan River**

Location: The Dan River from the Pinnacles Power House downstream to the VA-NC State Line in Patrick County.

City / County: Patrick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The Dan River 2002 temperature impairment of 9.66 miles is extended 5.81 miles upstream with additional data obtained at 4ADAN181.10 within the 2008 data window. The Aquatic Life Use remains impaired for temperature (Category 5C).

4ADAN181.10- (Rt. 648 Bridge near Kibler (Kibler Valley Rd.)) There are no additional data beyond the 2014 Integrated Report (IR). Temperature exceedances of the 21°C Class V criterion are found in three of 12 measurements in 2014. The three excursions occur on 6/29/2011 (21.2°C), 8/25/2011 (21.4°C) and 7/31/2012 (21.7°C). There are no additional temperature data within the 2010 and 2012 data windows. The 2008 assessment records two of nine temperature measurements exceed the 21°C Class V stockable trout water criterion. These exceedances occur on 8/24/2005 at 21.8°C and 22.3°C on 8/30/2006 within both the 2008 and 2010 data windows.

4ADAN169.57- (Rt. 645 Bridge, VA-NC Stateline) There are no additional temperature data beyond the 2008 assessment where exceedances of the 21°C Class V criterion are found in two of nine measurements within the 2008 and 2010 data windows. The two excursions occur on the same days as at 4ADAN181.10; 8/24/2005 at 21.6°C and 8/30/2006 at 22.5°C. Previous assessment cycles have found temperature exceeds the criterion in one of 11 measurements taken within the 2004 assessment window (1998 - 2002- Station last sampled in May 2000). There were no additional data within the 2006 data window. The 2002 assessment and the original 303(d) Listing Cycle found three of 19 excursions of the criterion. The exceedances are 21.5 °C (1996), 21.2 °C (1997) and 23.6 °C (1998), all occurring in the month of July.

Dan River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**15.47**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L43R-01-TEMP** **South Mayo River**

Location: South Mayo River mainstem from upstream of the Wilson Creek mouth downstream to the end of the WQS natural trout section located just upstream of the Town of Stuart water intake.

City / County: Patrick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

These waters were previously 303(d) Listed in 2004 and delisted in 2006. The temperature impairment returns with the 2010 assessment.

4ASMR033.98 (Rt. 787 Bridge west of Stuart)- There are no additional data beyond the 2010 Integrated Report (IR). 2010 data find the Aquatic Life Use is impaired where temperature measurements exceed the Class VI 20°C criterion in three of 15 samples. Excursions range from 20.6 to 20.8°C.

South Mayo River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**4.73**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L45R-01-HG** **South Mayo River**

Location: South Mayo River mainstem from the confluence of Spoon Creek downstream to the Virginia / North Carolina State Line.

City / County: Henry Co. Patrick Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2008 303(d) Listing is based on 2007 fish tissue collections and new Water Quality Standards effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) tissue value cause impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. The Virginia Department of Health (VDH) level of concern is 0.5 ppm. Please visit http://www.deq.virginia.gov/ for more information about mercury contamination and http://www.vdh.virginia.gov/Epidemiology/dee/PublicHealthToxicology/Advisories/ for VDH Advisories or Bans.

4ASMR004.17 (George Taylor Rd, Rt. 695 Bridge)- There are no additional data beyond the 2010 Integrated Report (IR). 2007 fish tissue records exceedance of the mercury (Hg) WQS tissue value (TV) of 0.30 ppm in smallmouth bass (1 fish 27.3 cm) at 0.442 ppm and (4 fish composite 38.0-43.1 cm) redhorse sucker at 0.419 ppm.

South Mayo River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**10.97**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L47R-01-BEN** **Horse Pasture Creek**

Location: The upper limit of the bacteria impairment is at the confluence of an unnamed tributary East of Route 696 (36°39'38" / 80°00'55") downstream to the mouth of Horse Pasture Creek on the North Mayo River (Spencer and Price Quads).

City / County: Henry Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired from data collected at two sites within the 2010 data window causing this 2010 initial 303(d) Listing.

4AHRN007.65 (Off Rt. 695 north of Rt. 58) Bio 'IM' A 2003 Probabilistic site. The 2008 assessment reserved judgment on 303(d) listing of these waters for Aquatic Life Use impairment until more data could be collected to determine use support. Two 2003 VSCI surveys scoring 67.5 spring and 41.5 fall resulted in an average score of 54.5. The spring collection indicates full support while the fall indicates impairment. The impaired Use is confirmed based on additional data collection at 4AHRN004.93. The land use at this station consists of forest and pasture land. There is a beef cattle farm upstream that includes a large pond that may affect flow and the ability of the stream to transport sediment. Stream banks are eroded.

4AHRN004.93 (Route 695 Bridge) Five Virginia Stream Condition Index (VSCI) surveys (Fall 2009 and Fall 2010; Spring/Fall 2013-2014) find continued benthic impairment with an average score of 53.3. Three fall VSCI surveys (2008, 2009 & 2010) results in an average score of 49.3 indicating impairment. Data collection at this station validates biological community impairment at the upstream Probabilistic Monitoring station surveyed in 2003 (4AHRN007.93). This site is also collocated at an ambient chemical monitoring station. The stream substrate is impacted by fine sediments also with eroded stream banks.

Horse Pasture Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.44**

Sources:

- Sediment Resuspension (Clean Sediment)
- Streambank Modifications/destabilization
- Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L50R-01-TEMP** **Smith River**

Location: The temperature impaired waters begin at the mouth of Rich Run on the Smith River and extend downstream to the mouth of Widegon Creek on the Smith River spanning the Woolwine and Charity Quads.

City / County: Patrick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

Exceedance of the WQS Class VI 20°C temperature criterion for this natural trout water caused the original 2002 303(d) Listing of these waters. The 9.48 mile Aquatic Life Use impairment remains.

4ASRE075.69- (Rt. 708 Bridge) 2014 and 2016 temperature data records nine of 36 measurements in excess of the 20°C natural trout water criterion. Both the 2014 and 2016 range of exceedance is from 20.3 to 25.2°C all occurring in the summer months. Temperature exceeds the natural trout criterion in ten of 35 measurements within the 2012 data window. The range of exceedance is from 20.5 to 25.2°C all occurring in the summer months. 2010 data find nine of 37 temperature measurements exceeding the 20°C criterion in the summer months. Excursions range from 20.4° to 22.7°C. Temperature exceeds the 20°C natural trout criterion in 12 of 41 measurements with the 2008 assessment. The range of exceedance is from 20.4 to 24.3°C all occurring in the summer months. 2006 records nine of 33 measurements exceeding the criterion and ranging from 21 to 24°C. Excursions are found primarily during the 1999-2002 drought. The temperature impairment, originally listed in 2002, is based on 4ASRE075.69 data where three of 20 measurements exceed the criterion.

Supplemental information: (Outside 2008 Assessment data window 2000 - 2004): Two of eight exceedances of the 20°C criterion are recorded by the US Geological Survey (USGS) station 02071510. The excursions are from July 18 (23°C) and August 15 (24°C) 1995. The USGS station is located 1.19 miles upstream of any known potential anthropogenic source of heat at the Rt. 615 crossing.

Smith River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**9.48**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L51L-01-HG** **Philpott Reservoir**

Location: Philpott Reservoir

City / County: Franklin Co. Henry Co. Patrick Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2010 303(d) Listing is based on 2007 fish tissue collections and new Water Quality Standards effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) tissue value cause impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. The Virginia Department of Health (VDH) level of concern is 0.5 ppm. Please visit http://www.deq.virginia.gov for more information about mercury contamination and http://www.vdh.virginia.gov/Epidemiology/dee/PublicHealthToxicology/Advisories/ for VDH Advisories or Bans.

4ASRE046.90 (Above Philpott Dam)- 2007 fish tissue analysis finds exceedances of the WQS based tissue value (TV) for mercury (Hg) of 0.3 ppm in three individual largemouth bass (size 41.8 cm) at 0.59 ppm, (size 40.9 cm) at 0.563 ppm and (size 33.2 cm) at 0.374 ppm. There are no additional data within the 2016 data window.

Philpott Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**2,813.52**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L51R-01-HG** **Goblintown Creek**

Location: Goblintown Creek from its headwaters downstream to the backwaters of Fairystone Lake

City / County: Patrick Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2010 303(d) Listing is based on 2007 fish tissue collections and new Water Quality Standards effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) tissue value cause impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. The Virginia Department of Health (VDH) level of concern is 0.5 ppm. Please visit http://www.vdh.virginia.gov/Epidemiology/dee/PublicHealthToxicology/Advisories/ for VDH Advisories or Bans.

4AGOB005.18 (Rt. 623 Bridge)- 2007 fish tissue analysis finds exceedances of the WQS based tissue value (TV) for mercury (Hg) of 0.3 ppm in five individual largemouth bass 33.5 cm at 0.306; 37.1 at 0.472; 39.2 cm at 0.420; 47.1 cm at 0.926 and 48.9 cm at 0.734 ppm. There are no additional data within the 2012 data window.

Goblintown Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**6.80**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L51R-01-TEMP** **Rennet Bag Creek**

Location: Rennet Bag Creek from its headwaters downstream to its inundation at Philpott Reservoir. The impairment spans the Endicott, Charity and Philpott Reservoir Quads.

City / County: Floyd Co. Franklin Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Temperature, water / 5C

Station 4ARBC005.44 is utilized to assess both the natural trout and stockable trout waters for this stream. Station 4ARBC005.44 is located on Rt. 43 west of Endicott near the downstream end of the WQS 9.41 mile natural trout water section. And is just upstream of the Class V stockable trout waters that are 2.13 miles in length. Both WQS Classes are assessed by this station. The 2002 temperature impairment remains from the initial 303(d) Listing.

4ARBC005.44- (Rt. 43 west of Endicott) The 2016 assessment reveals three of 12 temperature measurements exceed the Class VI Natural Trout criterion of 20°C. Excessive values occur in July August and September with a range of 20.2°C to 21.9°C. Only one excursion of the Class V Stockable Trout waters occurs. There are no additional data beyond the 2008 Integrated Report (IR). The natural trout water (Class VI) criterion of 20°C is exceeded in three of eight measurements taken within the 2010 and 2008 data windows. These excursions are 20.6 (8/25/05), 21.9 (6/22/06) and 21.6°C (8/29/06). Based on these results two of eight temperature measurements exceed the downstream stockable trout water (Class V) criterion of 21°C in both the 2010 and 2008. In the 2002 and 2004 assessments two temperature exceedances from six measurements are found. Temperature excursions of the WQS Class V (stockable trout) 21°C and Class VI (natural trout) 20°C criteria occurred in the summer months of August 1999 at 26.4 °C and June 2000 at 23.3 °C. Both excursions occur during the 1999-2002 drought years.

Rennet Bag Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**11.54**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L51R-02-TEMP** **Shooting Creek**

Location: Shooting Creek from its mouth on the Smith River upstream to its headwaters.

City / County: Floyd Co. Franklin Co. Patrick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

4ASOT000.99- (Rt. 622 Bridge) Five of 24 temperature measurements exceed the Class VI 20°C within the 2016 data window. Values in excess range from 20.4°C to 22.2°C. Each excursion occurs within the summer months. 2014 temperature excursions are found in three of 12 measurements. The three excursions are 21.8°C (6/29/2011), 21.5°C (8/25/2011) and 22.2°C (7/31/2012). There are no additional data within the 2012 data window. Three of eight temperature measurements exceed the 20°C Class VI natural trout water criterion within both 2008 and 2010 data windows. Temperature excursions are 20.6 (8/25/05 & 6/22/06) and 21.2°C (8/29/06). These waters were assessed based on a stream Class IV designation in the 2008 IR resulting in full support. The stream Class is VI, natural trout waters, and should have been initially 303(d) Listed in 2008.

Shooting Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**7.32**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L51R-03-TEMP** **Smith River**

Location: Smith River mainstem from the mouth of Small Creek upstream (WQS Class V waters) to Rt. 704.

City / County: Patrick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The 2016 Integrated Report (IR) produces the initial 303(d) Listing for temperature excursions of the Stockable Trout water criterion and results in impairment of the Aquatic Life Use.

4ASRE063.69 (Upstream of Shooting Cr.) Two of 15 temperature measurements exceed the Class V Stockable Trout water criterion of 21°C. Both excursions occur in warmer months: 21.6°C (7/7/14) and 22.0°C (9/3/14).

Smith River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**8.98**

Sources:

Natural Sources	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L53R-01-TEMP** **Smith River**

Location: Smith River mainstem from the mouth of Reed Creek downstream to the E.I. DuPont Intake (RD24).

City / County: Henry Co. Martinsville City

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

The 2016 Integrated Report (IR) is the initial 303(d) listing for Aquatic Life Use due to temperature impairment.

4ASRE033.19 - (Rt. 701 in Fieldale) A continuous temperature monitoring device was placed at the station during the critical time period of August 4th to September 2nd 2014. The device recorded temperature every 30 minutes for 30 days. The 2016 assessment reveals 20% of the days exceeded the max daily temperature at least 10.5% of day for the Class VI Natural Trout criterion of 20°C. The rate of temperature change (0.5°C per hour) was exceeded 72.4% of the days the temperature sensor was deployed. These temperature exceedances are believed the result of the hydroelectric operations and flow release patterns from the Philpott Dam.

Smith River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**6.50**

Sources:

Dam or Impoundment

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L53R-03-BEN** **Beaver Creek**

Location: Beaver Creek mainstem from its headwaters downstream to its inundation at the Martinsville Reservoir.

City / County: Franklin Co. Henry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2008 IR reports the Aquatic Life Use impaired for 6.97 miles due to contravention of the General Standard.

4ABAU011.17- (Off Rt. 922 upstream of Rt. 657 crossing) The 2016 assessment records four VSCI surveys (2011, 2013) with an average score of 37.5. Two 2011 Virginia Stream Condition Index (VSCI) surveys within the 2014 data window find continued impairment with an average score of 38.8. Taxa richness is higher in the fall and the abundance of midges (Chironomidae) higher in the spring. Sediment deposition, bank erosion, bank vegetation, and riparian buffer width scores were low in this reach. Approximately 46% of the riparian land cover in the watershed is agricultural. The benthic community is dominated by pollution tolerant organisms and appears to be affected by habitat impacts. There are no additional data within the 2010 or 2012 data windows. The 2008 Integrated Report (IR) finds the benthic community impaired from two 2004 VSCI surveys with an average score of 51.2.

Beaver Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.97**

Sources:

Loss of Riparian Habitat	Sediment Resuspension (Clean Sediment)	Streambank Modifications/destabilization

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L53R-04-BEN** **Jones Creek, UT (XMP)**

Location: Unnamed tributary (XMP) to Jones Creek from downstream of the Henry County Landfill to its confluence with Jones Creek.

City / County: Franklin Co. Henry Co. Martinsville City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2006 303(d) Listed 2.04 mile Aquatic Life Use impairment remains due to contravention of the General Standard. There are no additional data beyond the 2008 assessment.

4AXMP001.85- (directly below Henry County Landfill) Bio 'IM' A single 2003 Virginia Stream Condition Index (VSCI) survey scoring spring 2003 47.1. Analysis of the benthic community data with VSCI metrics displays a difference between the benthic communities above and below the landfill. The community at the reference site (4AXMP002.21, VSCI avg.=72.8) was very diverse in pollution sensitive organisms and approximated what would be considered Ecoregion reference quality for a first order stream in the Piedmont area. Two metrics that show the difference in pollution sensitivity of the communities are the Taxa Richness and EPT metrics. EPT represents the sensitive Mayflies, Stoneflies, and Caddisflies. The reference site also had a much higher number of organisms present (159) in a similar amount of habitat sampled relative to the impact site (34).

The main physical difference between the two stations is the presence of large growths of sphaerotilus bacteria at the downstream site. The bacteria covered practically every part of the stream substrate including the mineral sand, gravel and cobble bottom of the stream as well as the woody debris and leaf packs in stream. This covering ranged in thickness from about one inch in high velocity areas to approximately one foot in pool habitats. This bacterium typically thrives in waters impacted by organic effluents and is often referred to as "sewage fungus." This bacterium was not observed at the reference site. Such a large presence of this bacterium indicates a pollution impact. More recent investigations have found that sphaerotilus bacteria is common in waters impacted by landfill leachate indicating that excessive growths are related to volatile organic chemicals. The bacterial growth has an impact on the abundance of benthic organisms.

4AXMP001.26- One fall 2006 survey scoring 57.4. Several metrics indicated a substantial difference in the pollution sensitivity of the communities at this station versus the upstream site. This sample also required 3.5 times more effort than the upstream site to collect an equivalent number of organisms, displaying a large difference in macro invertebrate abundance.

4AXMP000.44 4AXMP000.44 (Dwnstr. of Henry Co. Landfill off Rt. 663; Clearview Dr.) Bio 'J' Four VSCI surveys (2013-2014) with an average score of 52.3. This stream begins upslope of the Martinsville Sanitary Landfill then flows through a pipe that is buried below the landfill. In 2003 the stream appeared to be impacted by landfill leachate. Volatile organic chemicals (VOCs) were found in both groundwater and surface water samples collected down gradient of the landfill.

This new station was sampled to determine the status of the benthic community at a location well beyond the landfill boundary and above the confluence with Jones Creek as well as to validate the assessment of upstream station (4AXMP001.26) sampled in the fall of 2006. The VSCI scores from 2014 were much better than those from 2013 but the two year average is below 60. DEQ is going to reserve judgment at this time and plans to sample this site in 2016.

Jones Creek, UT (XMP)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.00**

Sources:

Landfills

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L53R-05-BEN** **Beaver Creek**

Location: The mainstem waters of Beaver Creek from its mouth on the Smith River upstream to the Martinsville Reservoir (RD24).

City / County: Henry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2016 Integrated Report finds the benthic community impaired due to contravention of the WQS General Standard. The Virginia Stream Condition Index (VSCI) is a multi-metric statewide stream index of biotic integrity based on data collected from minimally impacted reference sites throughout Virginia. This index shows that an VSCI score of 60.0 is the lower limit for unimpaired conditions in a benthic community.

4ABAU000.25 (Off Koehler Rd.) Bio 'IM' Four Virginia Stream Condition Index (VSCI) surveys (2013-2014) with an average score of 36.30. The benthic community consisted of more pollution tolerant taxa and less diversity in the Spring surveys. Total Habitat Scores were in the Marginal to low Sub-Optimal range. Embeddedness and Substrate scores were the lowest ranging from marginal to poor and are likely the dominant factors in the negative effect on the benthic macroinvertebrate community.

Beaver Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.30**

Sources:

Clean Sediments	Sediment Resuspension (Clean Sediment)	Unspecified Urban Stormwater

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L53R-06-BEN** **Daniels Creek**

Location: Daniels Creek from its headwaters downstream to its confluence with the Smith River Class III PWS (RD24).

City / County: Henry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired due to contravention of the WQS General Standard. The Virginia Stream Condition Index (VSCI) is a multi-metric statewide stream index of biotic integrity based on data collected from minimally impacted reference sites throughout Virginia. This index shows that an VSCI score of 60.0 is the lower limit for unimpaired conditions in a benthic community.

4ADEL001.35 (Off Rt. 619 (Daniels Cr. Rd) on Miles Rd.) The 2016 assessment finds the benthic community impaired from four of four Virginia Stream Condition Index (VSCI) surveys with an average score of 18.6. Habitat survey scores were low in this reach due to urban impacts to the watershed. The benthic community is dominated by pollution tolerant organisms. Pollution sensitive organisms were not present in some samples.

Daniels Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.99**

Sources:

Municipal (Urbanized High Density Area)	Streambank Modifications/destabilization	Unspecified Urban Stormwater	Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L53R-07-BEN** **Jones Creek**

Location: Jones Creek mainstem upstream to XMP confluence (RD24).

City / County: Henry Co. Martinsville City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This 2016 initial macroinvertebrate impaired water is Listed for contravention of the WQS Aquatic Life Use General Standard. The Virginia Stream Condition Index (VSCI) is a multi-metric statewide stream index of biotic integrity based on data collected from minimally impacted reference sites throughout Virginia. This index shows that an VSCI score of 60.0 is the lower limit for unimpaired conditions in a benthic community.

4AJCR000.42 (Upstream of Rt. 220 Business) Bio 'IM' The benthic community is impaired based on four Virginia Stream Condition Index (VSCI) (2013-2014) with an average score of 29.2.

Jones Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.36**

Sources:

Municipal (Urbanized High Density Area)	Unspecified Urban Stormwater	Wet Weather Discharges (Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L54R-02-BEN** **Machine Branch**

Location: Machine Branch from its mouth on the Smith River upstream to its headwaters.

City / County: Henry Co. Martinsville City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

4AMCH000.53 (Clover Rd - Rt. 976 Bridge) Bio 'IM' The 2016 Integrated Report (IR) finds continued impaired benthic community impairment. Five Virginia Stream Condition Index (VSCI) surveys (2009-2014) report an average score of 21.9. The 2014 (IR) finds Aquatic Life Use impairment from three VSCI (2008-2009) surveys. The average score is 24.0. The original 2010 303(d) Listing is based on the single 2008 survey scoring 30.7. The surveys find a stressed community with low taxonomic diversity dominated by pollution-tolerant organisms. Habitat surveys indicate a stream section with substrates impacted by excessive fine sediments, severely eroded stream banks, and impacted riparian buffer strips.

Machine Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.68**

Sources:

- Loss of Riparian Habitat
- Sediment Resuspension (Clean Sediment)
- Streambank Modifications/destabilization

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L54R-03-BEN** **Mulberry Creek**

Location: Mulberry Creek from its confluence with the Smith River upstream to an unnamed tributary (36°40'03"/79°50'00").

City / County: Henry Co. Martinsville City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired as determined by the 2010 assessment.

4AMBY001.51 (Sam Lions Trail/Country Club Dr. Crossing) Bio 'IM' The 2016 Integrated Report (IR) finds impairment from four Virginia Stream Condition Index (VSCI) surveys (2013-2014). The average score is 45.9. The samples are dominated by pollution tolerant organisms and show variability in the total number of taxa observed. Habitat surveys indicated the stream is impacted by eroded banks and sediment.

4AMBY001.33- Bio 'IM' A 2008 probabilistic site. Two 2008 Virginia Stream Condition Index (VSCI) surveys with an average score of 46.8 find a stressed benthic community dominated by pollution tolerant organisms. Habitat surveys indicate the stream is impacted by eroded banks, sediment deposition and a riparian zone that has almost no vegetation. There are no additional data within the 2012 or 2014 data windows.

Mulberry Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.60**

Sources:

Loss of Riparian Habitat
Sediment Resuspension (Clean Sediment)
Streambank Modifications/destabilization

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L60R-01-HG** **Dan River, Banister River and Hyco River**

Location: Dan River within the state of Virginia from Schoolfield Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam.

City / County: Danville City Halifax Co. Pittsylvania Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Station ID:
4ADAN054.03 (2007 FT Sampling)
PCB 4 Species
Hg 4 Species
4ABAN000.50 (2007 FT/Sed)
PCB 3 Species
Hg 2 Species
4ABAN008.30 (2007 FT/Sed)
PCB 3 Species
Hg 2 Species
4ADAN001.18 (2007 FT/Sed)
PCB 3 Species
Hg 3 Species
4AHYC002.70 (2007 FT/Sed)
PCB 3 Species
Hg 3 Species

VDH Fish Advisory - PCBs: Issued 10/27/99, revised 12/31/04 & Mercury: Issued 8/31/07
Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam. These river segments comprise ~67 miles.
VDH recommends the following precautions to reduce any potential harmful effects from eating contaminated fish:

Eat smaller, younger fish (within the legal limits). Younger fish are less likely to contain harmful levels of contaminants than larger, older fish.
Eat fewer or smaller servings of fish.
Try to eat different species of fish from various sources (i.e., different creeks, rivers and streams).
Cleaning or cooking contaminated fish does not eliminate or reduce mercury. However, levels of PCBs in fish can be reduced by taking the following precautions:
Remove the skin, the fat from the belly and top and internal organs before cooking the fish.
Bake, broil or grill on an open rack to allow fats to drain away from the meat.
Discard the fats that cook out of the fish.
Avoid or reduce the amount of fish drippings or broth that is used to flavor the meal.
Eat less deep-fried fish, since frying seals contaminants into the fatty tissue.
For more information about fish consumption advisories, including frequently asked questions go to www.vdh.virginia.gov.

Dan River, Banister River and Hyco River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**1,655.18**	**62.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L60R-01-PCB** **Dan River, Banister River and Hyco River**

Location: Dan River within the state of Virginia from Schoolfield Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam.

City / County: Danville City Halifax Co. Pittsylvania Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

Station ID:
4ADAN054.03 (FT/Sed)
2007 - PCB 4 Species
Hg 4 Species
2013 - PCB 4 Species
4ADAN028.90 (FT/Sed)
2013 - PCB 4 Species
4ADAN015.30 (2013 FT/Sed)
PCB 3 Species
4ABAN000.50 (FT/Sed)
2007 - PCB 3 Species
Hg 2 Species
2013 - PCB 3 Species
4ABAN008.30 (FT/Sed)
2007 - PCB 3 Species
Hg 2 Species
2013 - No exceedances
4ADAN009.93 (FT/Sed)
2013 - PCB 4 Species
4ADAN001.18 (2007 FT/Sed)
PCB 3 Species
Hg 3 Species
4AHYC002.70 (FT/Sed)
2007 - PCB 3 Species
Hg 3 Species
2013 - PCB 2 Species

VDH Fish Advisory - PCBs: Issued 10/27/99, revised 12/31/04 & Mercury: Issued 8/31/07
Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam. These river segments comprise ~67 miles.
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Cleaning or cooking contaminated fish does not eliminate or reduce mercury. However, levels of PCBs in fish can be reduced by taking the following precautions:
Remove the skin, the fat from the belly and top and internal organs before cooking the fish.
Bake, broil or grill on an open rack to allow fats to drain away from the meat.
Discard the fats that cook out of the fish.
Avoid or reduce the amount of fish drippings or broth that is used to flavor the meal.
Eat less deep-fried fish, since frying seals contaminants into the fatty tissue.
For more information about fish consumption advisories, including frequently asked questions go to www.vdh.virginia.gov.

Roanoke and Yadkin River Basins

Dan River, Banister River and Hyco River

Fish Consumption

	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**1,655.18**	**62.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L60R-02-BEN** **Pumpkin Creek**

Location: From the VA/NC line to the mouth on the Dan River

City / County: Danville City Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4APKP002.46 (2009 Bio)
IM - is in an urban watershed with abundant impervious surfaces. Flow regime and sedimentation seem to be affecting the benthic community negatively.

Pumpkin Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.28**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L60R-03-BEN** **Cane Creek**

Location: Cane Creek mainstem from its headwaters downstream to the VA/NC State Line.

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ACAN000.80 (2009 Bio)
IM - Bank scour and sedimentation are negatively affecting the site.

Cane Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**12.25**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L60R-04-BEN** **Rutledge Creek**

Location: Rutledge Creek from its headwaters to the mouth on Pumpkin Creek

City / County: Danville City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ARUT000.45 (2009 & 2011 Bio)
IM - 4ARUT000.45 is located in an older suburban watershed with abundant impervious surfaces. An historic pollution event at an up gradient industrial facility may be affecting the benthic community as well.
4ARUT002.04 (2009 Bio)
J - 4ARUT002.04 is located in an older suburban watershed with abundant impervious surfaces. An historic pollution event at an up gradient industrial facility may be affecting the benthic community as well. Significant seasonal variability and a single score near the impairment cutoff of 60 warrants further sampling at 4ARUT002.04

Rutledge Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.37**

Sources:

Source Unknown

***Cause Group Code:* L61R-01-BEN** **Fall Creek**

Location: Fall Creek mainstem from its mouth on the Dan River upstream to its headwaters.

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AFAL000.92 (2007-2008, 2011-2012 Bio)
IM - AFAL000.92 exhibits significant seasonal variation. Additional data must be collected to accurately characterize the status of the stream community. VSCI scores from 2011 and 2012 indicate an unbalanced community with tolerant taxa dominating the samples. Sediment and nutrient enrichment are probable stressors to this reach.
4AFAL006.61 (2014 Probmon)
IM - Bank scour and slight sedimentation were observed. Originally a PROBMON station, accessible from Rt 29 in Danville.

Fall Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**11.97**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L61R-01-HG** **Fall Creek**

Location: Fall Creek mainstem from its mouth on the Dan River upstream to its headwaters.

City / County: Pittsylvania Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Station ID:
4AFAL000.92 (2007 FT Sampling)
Hg 2 Species

Fall Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**11.97**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L62R-07-BEN** **Wolfe Creek**

Location: Wolfe Creek from its headwaters to its mouth on the Dan River

City / County: Halifax Co. Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AWFE000.60 (2012 Bio)
J - This stream had marginal bank stability and increased sedimentation as well as marginal habitat.
4AWFE001.57 (2006-2007 FPM)
IM - scored close to the VSCI impairment cutoff score of 60. Habitat seemed suitable in Wolfe Creek; nutrient levels may be shifting the stream community towards more tolerant taxa. Access to the site is limited by private landowners and additional sampling will be difficult.

Wolfe Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.86**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L62R-10-BEN** **Sandy Creek, Unnamed Tributary**

Location: Unnamed Tributary of Sandy Creek from its headwaters to the mouth.

City / County: Halifax Co. Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AXVQ000.77 (2013 FPM)
IM - 4AXVQ000.77 is a small stream within the PROBMON program. Access to the site is limited by private landowners and additional sampling will not be possible.

Sandy Creek, Unnamed Tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.29**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L63R-01-BEN** **Birch Creek**

Location: Birch Creek from its headwaters to the mouth on the Dan River.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ABIR011.55 (2013 Bio)
IM - Unbalanced benthic community. A breached mill dam is present upstream which may negatively affect the flow regime. Moderate algae production and embeddedness indicate nutrient enrichment and sedimentation are also likely stressors.

Birch Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**20.15**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L64R-01-DO** **Lawsons Creek**

Location: Lawsons Creek from its headwaters to its confluence with Jerimy Creek.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4ALSN007.45 (Ambient)
DO - 2/12 Violation Rate

Lawsons Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**8.26**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L64R-03-BEN** **Grassy Creek**

Location: Grassy Creek from its headwaters to the Route 744 crossing

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AGSY004.98 (2006 FPM)
IM - Headwater stream which flows through an active cattle pasture. The stream community may be negatively impacted from sedimentation and excess nutrients. Additional monitoring needed to accurately delineate impairment.

4AGSY004.60 (2010/2014 Bio)
IM - Significant seasonal variability and a VSCI score close to the impairment cutoff of 60. Very low flows are characteristic of this waterbody. Further sampling is required to accurately assess this waterbody. 4AGSY004.60 was sampled in response to a J assessment of an upstream PROBMON station (4AGSY004.98).

Grassy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.83**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L64R-04-BEN** **Poplar Creek**

Location: Poplar Creek from its headwaters to its mouth on the Dan River.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4APDA000.35 (2008/2012 Bio)
IM - Flow regime related sedimentation seems to be negatively affecting the stream community. 4APDA000.35 is located in a highly urban/industrial watershed.

Poplar Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.04**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L64R-05-BEN** **Reedy Creek**

Location: Reedy Creek from its headwaters to the confluence of Woods Creek.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ARAC000.92 (2008/2012 Bio)
IM - 4ARAC000.92 is located in an older suburban watershed with abundant impervious surfaces which negatively affects flows and sedimentation. There is also an unlined municipal landfill in the watershed which has historical leachate issues.

Reedy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.92**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L65R-02-BEN** **Bearskin Creek**

Location: Bearskin Creek from its mouth on the Banister River upstream to its headwaters.

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ABKN000.52 (Ambient, Bio)
2008/2011/2012/2014 Bio
IM - Sediment and flow regime seem to affect the stream community negatively. Showing improvement in 2012 and 2014. Sedimentation still seems to be the main stressor. However, when in-stream snag habitat is present a fairly diverse benthic community is supported.

Bearskin Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.57**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L65R-04-BEN** **Strawberry Creek**

Location: Strawberry Creek from its headwaters to its mouth on the Banister River.

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ASRW002.32 (2011 Bio)
IM - Habitat scores and taxa lists indicate sedimentation as a stressor causing an unbalanced community.

Strawberry Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.96**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L66L-01-DO** **Cherrystone Reservoir**

Location: Cherrystone Reservoir

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4ACRR008.32 (Lake Station)
Dissolved Oxygen - 11/51 Violation Rate
Chlorophyll a - 0/2 Samples (90% Calculated over 1 Sample Yr)
No Total Phos assessed since lake has not been treated with algaecide

Cherrystone Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:		**104.27**	

Sources:

Dam or Impoundment

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L66L-02-DO** **Roaring Fork Reservoir**

Location: Roaring Fork Reservoir

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4ARFK000.20 (Lake Station)
Dissolve Oxygen - 5/35 Violation Rate
Chlorophyll a - 0/2 Samples (90% Calculated over 1 Sample Yr)
No Total Phos assessed since no algaecide used in lake.

Roaring Fork Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**19.58**	

Sources:

Dam or Impoundment

Roanoke and Yadkin River Basins

***Cause Group Code:* L66L-02-PH** **Roaring Fork Reservoir**

Location: Roaring Fork Reservoir

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Station ID:
4ARFK000.20 (Lake Station)
pH - 9/63 Violation Rate

Roaring Fork Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life	pH - Total Impaired Size by Water Type:		**19.58**	

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L67R-03-BEN** **Elkhorn Creek**

Location: Elkhorn Creek from its headwaters to its mouth.

City / County: Halifax Co. Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AEKH003.18 (2001 Probabilistic Monitoring)
4AEKH003.68 (Bio)
2008/2012 Bio - IM
4AEKH003.68 was sampled to replace 4AEKH003.18.
4AEKH003.18 was a probabilistic monitoring station located on private property. The final assessment of 4AEKH003.18 was “J”, meaning more information was needed for an accurate assessment. The remoteness of this site makes future sampling at 4AEKH003.18 unlikely.
The proximity of station 4AEKH003.68 to 4AEKH003.18 makes it a suitable surrogate for the assessment of both stations.

Elkhorn Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**12.90**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L67R-04-BEN** **Bradley Creek**

Location: Bradley Creek from its headwaters to its mouth on the Banister River.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ABDB000.75 (2010/2014 Bio)
IM - VSCI scores continually close to the impairment cutoff score of 60. Additional sampling yielded lower scores. Loose, soft sand/sediment dominated stream bottom and banks.

Bradley Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.46**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L68R-01-BEN** **Whitehorn Creek**

Location: Whitehorn Creek mainstem from its confluence with Georges Creek upstream to its headwaters.

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AWRN005.50 (2009/2013 Bio)
IM - Exhibits significant seasonal variation. Additional data were collected to accurately characterize the stream community. 2013 data are dominated by tolerant Chironomidae taxa and may indicate sediment as a probable stressor.

Whitehorn Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**15.10**

Sources:

Source Unknown

Cause Group Code: **L70R-02-BEN** **Sweden Fork**

Location: Sweden Fork from its headwaters to the mouth.

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ASED002.18 (2012 FPM)
IM - This site is on private property and was sampled as part of the Probabilistic Monitoring program, therefore it will not be revisited. The stream had relatively unstable banks and increased sediment deposition. There was a large beaver dam just downstream of the reach in fall 2012 in addition to several smaller beaver dams throughout the sampling reach.
4ASDE002.65 (2010 FPM)
J - VSCI scores close to the impairment cutoff of 60. Further sampling is required to accurately assess this waterbody.

Sweden Fork **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.63**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L70R-03-BEN** **Bar Branch**

Location: Bar Branch from its headwaters to its mouth.

City / County: Pittsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ABAR000.32 (2012/2014 Bio)
IM - 4ABAR000.32 exhibits great seasonal variability with the fall sample scoring near the impairment threshold of 60. Habitat scores indicate sediment may be a stressor on the system. Additional sampling is required to accurately assess water quality within this reach.

Bar Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.03**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

Cause Group Code: **L71R-05-BEN** **Polecat Creek**

Location: Polecat Creek from its headwaters to the mouth at the Banister River.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4APEC002.42 (2009 & 2013 Bio)
IM - 4APEC002.42 exhibits seasonal variability. Spring scores are very low. Sedimentation is a likely stressor due to high embeddedness scores.
4APEC006.49 (2009 & 2013 Bio)
IM - 4APEC006.49 has fall VSCI scores very close to the impairment cutoff score of 60. Spring scores are very low. Sedimentation is a likely stressor due to high embeddedness scores.

Polecat Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.70**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L71R-07-DO** **Gibson Creek**

Location: Gibson Creek from its headwaters to its mouth on the Banister River.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4AGIB000.66 (Ambient)
Dissolved Oxygen - 1/6 Violation Rate

Gibson Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**5.38**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L72R-01-BAC** **Terrible Creek**

Location: Terrible Creek from Little Terrible Creek to its mouth on Banister River.

City / County: Halifax Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4ATRR001.92 (Ambient/Bio)
E. coli - 4/12 Violation Rate

Terrible Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.82**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L72R-01-BEN** **Terrible Creek**

Location: Terrible Creek from Little Terrible Creek to its mouth on Banister River.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ATRR001.92 (Ambient/Bio)
2005-2006/2011-2012 Bio
IM - 4ATRR001.92 exhibits some seasonal variability near the assessment threshold. The community depends greatly on snag habitat due to scoured banks and sandy bottoms.

Terrible Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.82**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L73R-03-DO** **Peter Creek**

Location: Peter Creek from its headwaters to its confluence with the Dan River.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4APET004.35 (Ambient)
Dissolved Oxygen - 3/12 Violation Rate

Peter Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.61**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L74R-03-DO** **Coleman Creek**

Location: Coleman Creek from its headwaters to its mouth on the Hyco River.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station IDs:
4ACLB001.90 (FPM/TMDL)
DO - 5/12 Violation Rate

Coleman Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**8.48**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L74R-04-DO** **Big Bluewing Creek**

Location: Big Bluewing Creek from the VA/NC state line to its mouth on the Hyco River

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4ABLU002.02 (Ambient)
Dissolved Oxygen - 2/11 Violation Rate

Big Bluewing Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**11.23**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L74R-05-BEN** **Bowes Branch**

Location: Bowes Branch from the VA/NC State Line to its confluence with the Hyco River.

City / County: Halifax Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ABOS000.13 (2004 FPM)
IM - Segment affected by beaver activity. Suitable habitat was limited for the maintenance of an adequate stream community.

Bowes Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.44**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L75L-01-PCB** **Kerr Reservoir**

Location: Kerr Reservoir from the John H. Kerr dam to its backwaters, excluding the Dan River portion.

City / County: Halifax Co. Mecklenburg Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

VDH Fish Advisory - PCBs: Issued 7/24/98 , revised 8/31/07 & Mercury: Issued 8/31/07
Roanoke (Staunton) River from below Leesville Dam downstream ~ 98 miles to the confluence of Dan River including its tributary Cub Creek up to Rough Creek Road (State Route 695) near Rough Creek.
VDH recommends the following precautions to reduce any potential harmful effects from eating contaminated fish:

Eat smaller, younger fish (within the legal limits). Younger fish are less likely to contain harmful levels of contaminants than larger, older fish.
Eat fewer or smaller servings of fish.
Try to eat different species of fish from various sources (i.e., different creeks, rivers and streams).
Cleaning or cooking contaminated fish does not eliminate or reduce mercury. However, levels of PCBs in fish can be reduced by taking the following precautions:
Remove the skin, the fat from the belly and top and internal organs before cooking the fish.
Bake, broil or grill on an open rack to allow fats to drain away from the meat.
Discard the fats that cook out of the fish.
Avoid or reduce the amount of fish drippings or broth that is used to flavor the meal.
Eat less deep-fried fish, since frying seals contaminants into the fatty tissue.
For more information about fish consumption advisories, including frequently asked questions go to www.vdh.virginia.gov.

PCB Fish Tissue Sampling Results
Near Route 29 - Altavista
4AROA129.55 (2006 FT/Sediment) - 1 species exceeded VDH upper level of concern
Near Long Island
4AROA108.09 (2006 FT/Sediment) - 1 species exceeded VDH upper level of concern
Near Brookneal
4AROA097.07 (2006 FT/Sediment) - 1 species exceeded VDH upper level of concern
Near Route 746 - Randolph
4AROA067.91 (2006 FT/Sediment) - 2 species exceed VDH upper level of concern
Near Route 360 - Clover
4AROA059.12 (2006 FT/Sediment) - 2 species exceed VDH upper level of concern
Near Clarksville
4AROA036.59 (2006 FT/Sediment) - 2 species exceeded VDH lower level of concern
Kerr Reservoir near Ivy Hill
4AROA028.04 (2006 FT/Sediment) - 2 species exceed VDH lower level of concern
Lake Gaston near State Line
4AROA004.54 (2006 FT/Sediment) - 1 species exceeded VDH lower level of concern
Cub Creek near Route 40 Gaging Station
4ACUB010.96 (2006 FT/Sediment) - 1 species exceeded VDH upper level of concern

Kerr Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption	PCB in Fish Tissue - Total Impaired Size by Water Type:		**31,884.59**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L75R-03-BEN** **Beech Creek**

Location: Beech Creek from its headwaters to the VA/NC state line.

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ABEE000.80 (Ambient)
2010/2014 Bio - IM - Site exhibits seasonal variability. Further sampling indicates an unbalanced benthos community. Sedimentation and nutrient enrichment are probable stressors.

Beech Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.69**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L76R-01-BAC** **Little Buffalo Creek**

Location: Little Buffalo Creek from its headwaters to its mouth on Kerr Reservoir.

City / County: Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4ALFF001.85 (Ambient)
E. Coli - 5/12 Violation Rate

Little Buffalo Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.51**

Sources:

- Livestock (Grazing or Feeding Operations)
- Unspecified Domestic Waste
- Wastes from Pets
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L76R-01-BEN** **Little Buffalo Creek**

Location: Little Buffalo Creek from its headwaters to its mouth on Kerr Reservoir.

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ALFF001.85 (Bio)
2010 Bio - IM - Sedimentation and STP effluent have negatively affected the benthic community.

Little Buffalo Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.51**

Sources:

Municipal Point Source
Discharges

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L77R-01-BAC** **Little Bluestone Creek**

Location: Little Bluestone Creek from a fork upstream of Route 696 to Kerr Reservoir.

City / County: Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4ALNE006.56 (Ambient)
E. coli - 9/35 Violation Rate

Little Bluestone Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.38**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L77R-02-BAC** **Bluestone Creek**

Location: Bluestone Creek from its headwaters to its confluence with Moody Creek.

City / County: Charlotte Co. Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4ABST017.09 (Ambient)
E. coli - 4/12 Violation Rate

Bluestone Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.25**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L77R-02-BEN** **Bluestone Creek**

Location: Bluestone Creek from its confluence with Moody Creek to the backwaters of Kerr Reservoir.

City / County: Charlotte Co. Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ABST013.64 (2012 Bio)
IM - 4ABST013.64 has limited habitat due to scour and sedimentation. Riparian vegetation was suitable but bank scour was evident. Spring taxa list was dominated by Simuliidae and Chironomidae, bringing VSCI scores well below the impairment threshold.
4ABST014.94 (2007 FPM)
J Benthic Assessment - 4ABST014.94 exhibits significant seasonal variation. Additional data must be collected to accurately characterize the status of the stream community.

Bluestone Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**13.73**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-02-BAC** **Unnamed Tributary to Allen Creek**

Location: Entire tributary located just south of the intersection of Redlawn and Baskerville Roads in Mecklenburg County.

City / County: Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

Station ID:
4AXUQ000.00 (Hog Farm SS)
Total Fecal Coliform - 2/4 Violation Rate

Unnamed Tributary to Allen Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			**1.27**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-03-BAC** **Allen Creek**

Location: Allen Creek from its headwaters to Cox Creek.

City / County: Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4AALN009.12 (Ambient)
E. coli - 9/37 Violation Rate
4AALN016.38 (Ambient)
E. coli - 7/24 Violation Rate

Allen Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**24.24**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-03-BEN** **Allen Creek**

Location: Allen Creek from its headwaters to Layton Creek.

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4AALN016.38 (Ambient/2013 Bio)
J - 4AALN016.38 exhibits significant seasonal variability. Sedimentation is a potential stressor. Additional data needed to accurately characterize the benthic community
4AALN020.60 (2013 Bio)
IM - Sedimentation is a probable stressor to the benthic community. Silviculture is taking place within the nearby watershed.

Allen Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**15.27**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-04-BEN** **Cox Creek**

Location: Cox Creek from its headwaters to its confluence with Allen Creek

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ACOX007.73 (2005 Probmon)
IM - Lack of suitable habitat is negatively affecting the stream community. Beaver activity has made the reach unwadeable. Accurate assessment depends on locating a suitably accessible site.

Cox Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**10.80**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-04-DO** **Cox Creek**

Location: Cox Creek from its headwaters to its confluence with Allen Creek

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4ACOX000.38 (Ambient)
Dissolved Oxygen - 3/11 Violation Rate
4ACOX003.23 (Ambient)
Dissolved Oxygen - 4/12 Violation Rate

Cox Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**10.80**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-04-PH** **Cox Creek**

Location: Cox Creek from its headwaters to its confluence with Allen Creek

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Station ID:
4ACOX000.38 (Ambient)
pH - 2/11 Violation Rate

Cox Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**10.80**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

Cause Group Code: **L78R-05-BAC** **Cotton Creek**

Location: Cotton Creek from its headwaters to its mouth on the Roanoke River

City / County: Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4ACTT000.70 (Ambient)
E. coli - 8/24 Violation Rate

Cotton Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**4.39**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-06-BAC** **Layton Creek**

Location: Form its headwaters to its confluence with Allen Creek

City / County: Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4ALYT003.77 (Ambient)
E. coli - 11/36 Violation Rate

Layton Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.64**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-06-BEN** **Layton Creek**

Location: Form its headwaters to its confluence with Allen Creek

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
4ALYT003.77 (Bio)
IM - 2005-2012/2014 Bio
4ALYT003.77 was negatively affected by drought in 2007-2008, with periods of very low flow. Logging in the up gradient watershed appears to have negatively affected the benthic community with sedimentation. Current monitoring (2014) has yielded similar results.

Layton Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.64**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-07-BAC** **Kettles Creek**

Location: Kettles Creek from its headwaters to the mouth

City / County: Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4AKTT001.15 (Ambient)
E. coli - 3/23 Violation Rate

Kettles Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.48**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L78R-07-DO** **Kettles Creek**

Location: Kettles Creek from its headwaters to the mouth

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4AKTT001.15 (Ambient)
DO - 9/22 Violation Rate

Kettles Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**5.48**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L79L-02-CHLA** **Lake Gordon**

Location: Lake Gordon

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Chlorophyll-a / 5A

Station ID:
4AMES007.54 (2013-2014 Lake Gordon)
Dissolved Oxygen - 8/41 Violation Rate
Chlorophyll a - 2/2 Samples (90% Calculated over 1 Sample Yr)
No Total Phos assessed since lake has not been treated with algaecide

Lake Gordon **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chlorophyll-a - Total Impaired Size by Water Type:		**107.48**	

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L79L-02-HG** **Lake Gordon**

Location: Lake Gordon

City / County: Mecklenburg Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Station ID:
4AMES007.54 (2006 FT/Sed)
Hg 2 Species

Lake Gordon **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**107.48**	

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L79R-01-DO** **Flat Creek**

Location: Flat Creek from upstream of the South Hill STP discharge to its headwaters.

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
4AFLT009.17 (Benthic & 2004 Flat Creek TMDL)
Dissolved Oxygen - 2/8 Violation Rate

Flat Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.69**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L79R-02-BAC** **Smith Creek**

Location: Smith Creek from the VA/NC state line to its mouth on Kerr Reservoir

City / County: Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4ASMI003.58 (Ambient)
E. coli - 4/24 Violation Rate

Smith Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.90**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L79R-03-BAC** **Miles Creek**

Location: Lake Gordon to the Roanoke River.

City / County: Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4AMES004.78 (Ambient)
E coli - 2/11 Violation Rate

Miles Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.97**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L80L-01-PCB** **Lake Gaston**

Location: Roanoke River from the John H. Kerr Dam into Lake Gaston within Virginia.

City / County: Mecklenburg Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

Station ID:
4AROA004.54 (2006 FT/Sed)
PCB 2 Species

Lake Gaston **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**4,440.93**	**5.69**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* L81R-02-BAC** **Lizard Creek**

Location: Lizard Creek from its headwaters to Lake Gaston.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4ALIZ003.42 (Ambient)
E. coli - 4/12 Violation Rate

*Segment was shortened in 2014 to only include VA Portion of Lizard Creek

Lizard Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.73**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L81R-03-BAC** **Little Poplar Creek**

Location: Little Poplar Creek from its headwaters to its mouth on Poplar Creek.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4ALPP002.66 (ProbAmbient)
E coli - 2/12 Violation Rate
4ALPP004.46 (2013 Probambient)
E coli - 2/12 Violation Rate

Little Poplar Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation	Escherichia coli - Total Impaired Size by Water Type:			**6.51**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* L82R-01-BAC** **Pea Hill Creek**

Location: Pea Hill Creek from its headwaters to Lake Gaston.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
4APHC006.38 (Ambient)
E coli - 4/12 Violation Rate

Pea Hill Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.86**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* M02L-01-DDD** **Lovills Creek Lake**

Location: The Lovills Creek flood control impoundment east of Cana.

City / County: Carroll Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: DDD / 5A

Fish tissue samples collected on 8/8/2007 at station 4BLOV008.45 exceeded the Department of Environmental Quality screening value.

Lovills Creek Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
DDD - Total Impaired Size by Water Type:		**42.46**	

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* M02L-01-DDE** **Lovills Creek Lake**

Location: The Lovills Creek flood control impoundment east of Cana.

City / County: Carroll Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: DDE / 5A

Fish tissue samples collected on 8/8/2007 at station 4BLOV008.45 exceeded the Department of Environmental Quality screening value.

Lovills Creek Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
DDE - Total Impaired Size by Water Type:		**42.46**	

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* M02L-01-DDT** **Lovills Creek Lake**

Location: The Lovills Creek flood control impoundment east of Cana.

City / County: Carroll Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: DDT in Fish Tissue / 5A

Fish tissue samples collected on 8/8/2007 at station 4BLOV008.45 exceeded the Department of Environmental Quality screening value.

Lovills Creek Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
DDT in Fish Tissue - Total Impaired Size by Water Type:		**42.46**	

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* M02L-01-HG** **Lovills Creek Lake**

Location: The Lovills Creek flood control impoundment east of Cana.

City / County: Carroll Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Fish tissue samples collected at station 4BLOV008.45 exceeded the Department of Environmental Quality screening value. The Virginia Department of Health recommends no more than two meals per month of largemouth bass.

Lovills Creek Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**42.46**	

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* M02R-01-BAC** **Lovills Creek**

Location: Lovills Creek mainstem from the North Carolina state line upstream to just above the Route 686 crossing. This segment also includes Stewarts Creek from the North Carolina state line upstream near Route 696 at Lambsburg.

City / County: Carroll Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The ambient water quality monitoring station 4BLOV007.92 had a 58% exceedance of the E.coli water quality standard. Station 4BSTE007.99 had a 22% exceedance of the E. coli water quality standard.

Lovills Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.15**

Sources:

Source Unknown Unrestricted Cattle Access

Roanoke and Yadkin River Basins

***Cause Group Code:* M02R-01-DDE** **Lovills Creek**

Location: Lovills Creek mainstem from the North Carolina state line upstream to just above the Route 686 crossing.

City / County: Carroll Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: DDE / 5A

Fish tissue samples at station 4BLOV007.92 exceeded DEQ's screening value for DDE.

Lovills Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
DDE - Total Impaired Size by Water Type:			**2.15**

Sources:

Source Unknown

Roanoke and Yadkin River Basins

***Cause Group Code:* M02R-01-DDT** **Lovills Creek**

Location: Lovills Creek mainstem from the North Carolina state line upstream to just above the Route 686 crossing.

City / County: Carroll Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: DDT in Fish Tissue / 5A

Fish tissue samples at station 4BLOV007.92 exceeded DEQ's screening value for DDT.

Lovills Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
DDT in Fish Tissue - Total Impaired Size by Water Type:			**2.15**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* M02R-01-TEMP** **Lovills Creek and Stewarts Creek**

Location: Lovills Creek mainstem from the North Carolina state line upstream to just above the Route 686 crossing. This segment also includes Stewarts Creek from the North Carolina state line upstream near Route 696 at Lambsburg.

City / County: Carroll Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

The ambient water quality monitoring station 4BLOV007.99 had a 33% exceedance of the Class V, 21°C stockable trout water criterion. Exceeding temperature values up to 25°C occurred from August 2005 to August 2006. In addition, 4BSTE007.99 had a 33% exceedence of temperature values.

Lovills Creek and Stewarts Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**4.20**

Sources:

Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access

Roanoke and Yadkin River Basins

***Cause Group Code:* M03R-01-BAC** **Ararat River**

Location: Ararat River mainstem from the VA/NC State Line upstream to the Rt. 823 crossing.

City / County: Patrick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

4BARA035.13 (Rt. 739 Bridge, near VA/NC State Line)- The 2008 and 2010 assessments find escherichia coli (E.coli) exceeds the WQS instantaneous criterion of 235 cfu/100 ml in three of nine samples. Exceeding values range from 250 to 950 cfu/100 ml. There are no additional data within the 2012 or 2014 data windows.

Ararat River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.13**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* M03R-01-HG** **Ararat River**

Location: Ararat River mainstem from the VA/NC State Line upstream to the Rt. 823 crossing.

City / County: Patrick Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

This initial 2010 303(d) Listing is based on 2007 fish tissue collections and new Water Quality Standards (WQS) effective 2/01/2010. Mercury (Hg) exceedances of the DEQ 0.3 parts per million (ppm) tissue value cause impairment of the Fish Consumption Use. No VDH Fish Consumption or Drinking Water Advisories are issued for mercury for these waters. The Virginia Department of Health (VDH) level of concern is 0.5 ppm. Please visit http://www.deq.virginia.gov/info/mercury.html for more information about mercury contamination and http://www.vdh.virginia.gov/Epidemiology/dee/PublicHealthToxicology/Advisories/ for VDH Advisories or Bans.

4BARA035.07 (Rt. 739 Bridge near VA/NC State Line)- 2007 fish tissue analysis finds mercury (Hg) exceeds the WQS based tissue value (TV) of 0.30 ppm in three species; yellow bullhead catfish (1 fish 27.7 cm) at 0.495 ppm; white sucker (4 fish composite 31.0-39.1 cm) at 0.369 ppm; and two groups of redhorse sucker (6 fish composite 36.5 - 38.6 cm) at 0.535 ppm and (7 fish composite 28.5 - 34.6 cm) at 0.412 ppm. A 2002 golden redhorse sucker collection (4 fish 25.7-34.3 cm) exceeds the WQS TV at 0.35 ppm.

Ararat River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**6.13**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* M03R-01-TEMP** **Johnson Creek**

Location: Johnson Creek mainstem from the VA / NC State Line upstream to its headwaters Class V.

City / County: Carroll Co. Patrick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

4BJOH004.45 (Rt. 672 Bridge, Johnson Creek Rd.) There are no new data within the 2016 data window. The 2014 assessment finds two of 12 temperature measurements exceed the Class V stockable trout criterion of 21°C. Exceedances occur on 6/29/2011 at 21.5°C and 7/31/2012 at 22.3°C. There are no additional data within the 2012 data window. Both the 2008 and 2010 assessments find two of nine temperature measurements exceed the Class V stockable trout criterion of 21°C. Exceedances occur on 8/24/2005 at 21.6°C and 8/30/2006 at 22.8°C.

Johnson Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**9.15**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Roanoke and Yadkin River Basins

***Cause Group Code:* M03R-02-BAC** **Johnson Creek**

Location: Johnson Creek mainstem from the VA / NC State Line upstream to its headwaters Class V.

City / County: Carroll Co. Patrick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This 2014 initial 303(d) Listing results in impairment of the Recreational Use.

4BJOH004.45 (Rt. 672 Bridge, Johnson Creek Rd.) There is no additional data within the 2016 data window. The 2014 assessment finds two escherichia coli (E.coli) observations exceed the WQS 235 cfu/100 ml instantaneous criterion from 12 observations at 350 and 475 cfu/100 ml.

Johnson Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.15**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K01R-01-BEN** **Middle Meherrin River**

Location: Middle Meherrin River from its headwaters to its confluence with Crupper Run.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
2-MMR008.77
IM - 2012 Bio
Sediment metrics are moderate to low. Filterer FFG dominates spring and fall samples indicating possible nutrient enrichment.

Middle Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**11.25**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K01R-03-BEN** **Finneywood Creek**

Location: Finneywood Creek from its headwaters to its mouth on the South Meherrin River

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
5AFNY004.78 (2005 Probmon)
Impaired Benthic Assessment - Stream runs through a pasture with active cattle access. Flow was minimal, sedimentation was extensive, organic solids were abundant in channel. Minimal habitat present.

Finneywood Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.11**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K02R-01-BEN** **North Meherrin River**

Location: North Meherrin River from Couches Creek to unnamed tributary below unimproved road.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
5ANMR007.90 (Bio)
2008-2012 Bio - IM
Tied to 2002 FPM
This is a large incised stream with high sediment deposition that appears to flood often. Habitat is sparse and consists mostly of snags, and banks are moderately stable. Water was low for fall 2010 sample. Additional samples in 2012 indicate limited habitat may prevent a balanced community.
5ANMR013.95 (2008 Bio)
IM - This section of the North Meherrin River has incised banks and a high rate of sedimentation. Cobble surfaces in riffles were dominated by periphyton.

North Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**10.17**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K02R-03-BEN** **Kits Creek**

Location: Kits Creek from its headwaters to the mouth

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
5AKIT000.67 (TMDL Monitoring)
2012/2014 Bio
FS - Kits Creek exhibits seasonal variability around the assessment threshold but fall scores show the stream is capable of supporting a healthy aquatic community. This site will be monitored in the future due to this fluctuation.
5AKIT002.65 (Probmon/2011/2013 Bio)
Impaired Benthic Assessment - Limited instream habitat consisted of riffles dominated by bedrock. Excellent riparian zone. Reach may be subject to storm scour due to prevalence of bedrock substrate.

Kits Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.82**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K02R-04-BEN** **Couches Creek**

Location: Couches Creek from its headwaters to its mouth on the North Meherrin River

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
5ACHS003.42 (Ambient)
2008 Bio
IM - Cobble riffles were partially embedded. Periphyton was abundant.
5ACHS006.33 (Special Study, Bio)
2008 Ammonia Study
Station located downstream of Victoria West Lagoon. Single violation of the chronic ammonia std
2008-2010 Bio
IM - Couches Creek at this site had marginal habitat with a high rate of sediment deposition. Black fluffy material was present throughout stream.

Couches Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.37**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K02R-04-PH** **Couches Creek**

Location: Couches Creek from its headwaters to its mouth on the North Meherrin River.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Station ID:
5ACHS006.33 (Ambient)
pH - 2/18 Violation Rate

Couches Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**7.37**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K02R-05-DO** **Ledbetter Creek**

Location: Ledbetter Creek from its headwaters to its mouth.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
5ALDB000.03 (Ambient)
Dissolved Oxygen - 2/12 Violation Rate

Ledbetter Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**9.08**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K03R-01-BEN** **Flat Rock Creek**

Location: Flat Rock Creek from headwaters to the confluence of Kettlesticks Creek.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
5AFRC011.93 (2012 Probmon)
IM - Beaver activity and sedimentation from within the watershed has limited habitat availability.

Flat Rock Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**15.99**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K03R-06-BEN** **Mason Creek**

Location: Mason Creek from its headwaters to the mouth.

City / County: Lunenberg Co. Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
5AMSC002.30 (Ambient/Bio)
IM - 2011/2014 Bio
Habitat scores and Taxa lists indicated habitat was a limiting factor in Masons Creek in 2011. This site was more wadeable in 2014 and better habitat was accessible further upstream. Masons Creek will continue to be monitored in order to accurately characterize the benthic community.

Mason Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.05**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K05R-05-DO** **Hays Creek**

Location: The mainstem of Hayes Creek.

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Hays Creek was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/11 at 5AHAY000.38, which is located at the Route 686 bridge.

During the 2016 cycle, Hays Creek was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen violation rate of 2/12 at 5AHAY000.38

Hays Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.39**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K05R-06-BEN** **Little Genito Creek**

Location: Headwaters to mouth at Genito Creek.

City / County: Brunswick Co. Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2010 cycle, Little Genito Creek was assessed as not supporting of the Aquatic Life Use due to benthic impairment at 2008 probabilistic monitoring station 5ALTG001.50.

Little Genito Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**12.05**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K07R-03-BEN** **Rocky Run**

Location: Rocky Run and its tributaries, including Sandy Branch.

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, Rocky Run was assessed as impaired of the Aquatic Life Use due to a benthic impairment at freshwater probabilistic monitoring station 5ARYR001.23.

Additional monitoring occurred during the 2014 cycle, both at station 5ARYR001.23 and at station 5ARYR000.62, which is located at Rt. 642. There is severe impairment at both stations.

Rocky Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**21.27**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K08L-01-HG** **Emporia Lake (Meherrin Reservoir)**

Location: Emporia Lake

City / County: Greensville Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

In 2007 the lake had fish tissue monitoring with Mercury in 3 species (Chain Pickerel, Largemouth Bass and Redear Sunfish.

Emporia Lake (Meherrin Reservoir)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**263.68**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K08L-02-CHLA** **Brunswick Lake**

Location: Brunswick Lake

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Chlorophyll-a / 5A

During the 2016 cycle the segment became impaired for Chlorophyll a with 2/3 violations.

Brunswick Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chlorophyll-a - Total Impaired Size by Water Type:		**160.33**	

Sources:

Agriculture

Chowan River and Dismal Swamp Basins

Cause Group Code: **K08L-02-DO** **Brunswick Lake**

Location: Brunswick Lake

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

In 2006 Brunswick Lake was assessed as not supporting the Aquatic Life Use due to low dissolved oxygen in bottom waters. The low DO only occurred during periods of stratification, however the TSIs for the lake were above 60:

TSI(TP) = 64
TSI(CA) = 69
TSI(SD) = 66

Therefore the low dissolved oxygen was considered to be exacerbated by excessive nutrients and a TMDL was required. In addition, both total phosphorus and chlorophyll a were considered observed effects b/c of screening level exceedances. The lake should be reevaluated once nutrient criteria are established.

For the 2008 cycle nutrient criteria was developed for lakes and DO was no longer impaired. Only pH was impaired at 5ARDC007.30 with a violation rate of 5/36.

In the 2012 cycle the segment was listed as impaired for aquatic life use with a DO violation rate of 7/37 at station 5ARDC007.30.

During the 2014 cycle there was no new data so the impairments remain.

During the 2016 cycle the segment was impaired for DO with a violation rate of 7/56 at 5ARDC007.30 and 9/47 at 5ARDC008.50.

Brunswick Lake **Aquatic Life**		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
	Oxygen, Dissolved - Total Impaired Size by Water Type:		**160.33**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K08R-03-BAC** **Wilson Creek**

Location: Wilson Creek from its beginning at the confluence of Dukes Branch and Huckleberry Branch to its mouth at Brunswick Lake.

City / County: Brunswick Co. Greensville Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2012 cycle, Wilson Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 5AWIL002.42, which is located at the Route 712 bridge. The violation rate was 7/24 during the 2014 and 2016 cycle.

Wilson Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.74**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K08R-03-BEN** **Wilson Creek**

Location: Wilson Creek from its beginning at the confluence of Dukes Branch and Huckleberry Branch to its mouth at Brunswick Lake.

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2010 cycle, Wilson Creek was assessed as not supporting of the Aquatic Life Use due to impairment of the benthic community at 5AWIL002.42, which is located at Rt. 712. Additional monitoring during the 2014 cycle showed an acceptable benthic community; therefore, the stream should be delisted.

During the 2016 cycle the segment was relisted and impaired for Benthics.

Wilson Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.74**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K08R-04-BAC** **UT to Dukes Branch**

Location: Headwaters to the mouth at Dukes Branch

City / County: Brunswick Co. Greensville Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was impaired for Recreation use due to an E.coli violation rate of 3/10.

UT to Dukes Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.71**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K08R-05-BAC** **Dukes Branch**

Location: Headwaters to the mouth

City / County: Brunswick Co. Greensville Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was impaired for Recreation use due to an E.coli violation rate of 4/12.

Dukes Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.41**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K09R-01-BAC** **Meherrin River**

Location: The Meherrin River from the Emporia Reservoir Dam to the Route 730 bridge

City / County: Emporia City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment became impaired for recreation use. Station 5AMHN026.54 had a 2/12 violation rate and station 5AMHN052.34 had a 4/36 violation rate for E.coli.

Meherrin River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**26.75**

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K09R-01-HG** **Meherrin River, Fontaine Creek, Mill Swamp**

Location: Meherrin River below Emporia Reservoir Dam to the state line, including its tributaries Fontaine Creek up to I-95 bridge crossing and Mill Creek up to I-95 bridge crossing

City / County: Emporia City Greensville Co. Southampton Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

On 12/13/2004, the Virginia Department of Health issued a fish consumption advisory due to mercury in gizzard shad. The advisory includes the Meherrin River from below the Emporia dam downstream ~28 miles to the Route 730 bridge. In addition, on 9/16/2008, they issued an advisory for bowfin and largemouth bass from Emporia Reservoir dam to the state line, including the tributaries Fontaine Creek and Mill Swamp up to the I-95 bridge crossings.

The segments will be considered impaired of the Fish Consumption Use. The advisory was based on mercury exceedances at DEQ monitoring stations 5AMHN026.54, 5AMHN051.43, 5AFON006.07, and 5AMLS001.42.

Meherrin River, Fontaine Creek, Mill Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**67.74**

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K09R-01-PCB** **Meherrin River**

Location: The Meherrin River from the Emporia Reservoir Dam to the Route 730 bridge

City / County: Emporia City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

During the 2004 cycle, the Meherrin River from the Emporia Reservoir dam downstream approximately 5 miles was assessed as not supporting the Fish Consumption Use due to PCBs in fish tissue in two samples at station 5AMHN051.43. During the 2006 cycle, VDH issued a fish consumption advisory for PCBs from the Emporia dam to the Route 730 bridge (12/13/2004). The segment was extended to match the advisory. The TMDL due date for PCBs is 2016.

Meherrin River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**26.75**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K10R-01-DO** **Rattlesnake Creek**

Location: Rattlesnake Creek mainstem from headwaters to its mouth at Fontaine Creek

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Rattlesnake Creek from Edwards Creek to its mouth was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances at several stations in the segment. The impairment was extended upstream in the 2012 cycle. During the 2014 cycle, the exceedance rates were as follows:

1/10 at 5ARSK000.23
4/24 at 5ARSK003.08
6/12 at 5ARSK006.97
4/12 at 5ARSK009.28
2/10 at 5ARSK011.59

During the 2016 cycle the segment remained impaired for Aquatic Life Use due to Dissolved oxygen exceedances at two stations 5ARSK006.97 and 5ARSK009.28.

Rattlesnake Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**17.18**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K10R-02-DO** **Fontaine Creek (Fountains Creek)(Partial delist16 .56 miles)**

Location: Fontaine Creek mainstem from Rattlesnake Creek to the confluence with tributary XGV

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Fontaine Creek from Rattlesnake to the confluence with tributary XGV was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances throughout the segment.

3/9 at 5AFON039.47
3/25 at 5AFON037.89
5/12 at 5AFON033.05
3/12 at 5AFON027.33

During the 2016 cycle the segment was impaired for Aquatic life use due to an impairment of DO at station 5AFON039.47 with a violation rate of 2/12. The length of the impairment was reduced by .56 miles.

Fontaine Creek (Fountains Creek)(Partial delist16 .56 miles)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**16.64**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K10R-03-DO** **Quarrel Creek**

Location: Quarrel Creek mainstem from White Oak Creek to its mouth.

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Quarrel Creek was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 5AQRL000.54, which is located at Rt. 602. The violation rate was 5/12 during the 2012 cycle. No additional data has been collected.
During the 2016 cycle the segment remained impaired for Aquatic life use due to dissolved oxygen violations at 5AQRL000.54 with a violation rate of 6/24.

Quarrel Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.34**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K10R-03-PH** **Quarrel Creek**

Location: Quarrel Creek mainstem from White Oak Creek to its mouth.

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2016 cycle the segment remained impaired for Aquatic life use due to pH with a violation rate of 3/24.

Quarrel Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.34**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K10R-04-DO** **Beddingfield Creek**

Location: Beddingfield Creek from Mason Branch to its mouth at Fontaine Creek.

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Beddingfield Creek was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 5ABDD000.69, which is located at Rt. 600. The violation rate was 5/11 during the 2012 cycle.

During the 2016 cycle the segment was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 5ABDD000.69 with a violation rate of 5/12.

Beddingfield Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.18**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K10R-06-PH** **Rocky Run**

Location: Rocky Run from the Doyle Lake dam to its mouth at Fontaine Creek.

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Rocky Run was assessed as not supporting of the Aquatic Life Use in the 2010 cycle due to a pH exceedance rate of 2/12 at 5ARCY000.90, which is located at Route 604.
During the 2016 cycle the segment remained impaired for Aquatic life use due to pH violation of 2/12.

Rocky Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**0.86**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K11R-04-DO** **Fontaine Creek**

Location: Fontaine Creek from the I-95 bridge to the Route 301 bridge.

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, Fontaine Creek from I-95 to Route 301 was assessed as impaired of the Aquatic Life Use due to a dissolved oxygen violation rate of 3/22 at 5AFON014.38. Continued monitoring was recommended due to the low violation rate and an acceptable violation rate at 5AFON016.90 (0/2.) The exceedance rate increased to 4/24 during the 2014 cycle and 2/24 during the 2016 cycle.

Fontaine Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**7.30**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K11R-05-DO** **Beaverpond Creek**

Location: The mainstem of Beaverpond Creek within Virginia.

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Beaverpond Creek was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances. The violation rates during the 2012 cycle were as follows:

3/12 at 5ABVC000.48
2/12 at 5ABVC002.31

During the 2016 cycle the segment remained impaired for the aquatic life use due to exceedances in DO.

Beaverpond Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.35**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: **K11R-06-PH** **XGV - Fontaine Creek, UT**

Location: Headwaters to mouth

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

XGV was assessed as not supporting of the Aquatic Life Use in the 2010 cycle due to a pH exceedance rate of 3/7 at 5AXGV000.92.

XGV - Fontaine Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.95**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K11R-08-DO** **XGU - Fontaine Creek, UT**

Location: Headwaters to mouth

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

XGU was assessed as not supporting of the Aquatic Life Use in the 2010 cycle due to a dissolved oxygen exceedance rate of 9/12 at 5AXGU000.35, which is located at frontage road F-128.

During the 2016 cycle the segment was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen violation rate of 4/11 at 5AXGU000.35

XGU - Fontaine Creek, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.82**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K11R-08-PH** **XGU - Fontaine Creek, UT**

Location: Headwaters to mouth

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

XGU was assessed as not supporting of the Aquatic Life Use in the 2010 cycle due to a pH exceedance rate of 6/12 at 5AXGU000.35, which is located at frontage road F-128.

During the 2016 cycle the segment was assessed as not supporting of the Aquatic Life Use due to a pH violation rate of 9/11 at 5AXGU000.35

XGU - Fontaine Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**1.82**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K13R-04-BAC** **Flat Swamp**

Location: This cause encompasses the are downstream of the confluence of Bellyache Swamp and Frank's Branch extending downstream to its confluence with Tarrara Creek.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Impairment is retained for Recreational Use based on Fecal Coliform data (2 viol / 8 obs) for 2004 303d, since no new data (E.coli) for the 2010 Assessment cycle was collected. Previous listing of impairment will be upheld.

Flat Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.48**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K14L-02-BAC** **Nottoway Falls Lake**

Location: Nottoway Falls Lake

City / County: Lunenberg Co. Nottoway Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
5ANTW143.06 (2007/2011-2012 Nottoway Falls Lake)
E. coli - 2/14 Violation Rate

Nottoway Falls Lake **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:		**32.19**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K14L-02-DO** **Nottoway Falls Lake**

Location: Nottoway Falls Lake

City / County: Lunenberg Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
5ANTW143.06 (2007/2011-2012 Nottoway Falls Lake)
DO - 7/39 Violation Rate

Nottoway Falls Lake **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**32.19**	

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K14L-02-HG** **Nottoway Falls Lake**

Location: Nottoway Falls Lake

City / County: Lunenberg Co. Nottoway Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Station ID:
5ANTW143.06 (2007 FT Sampling)
Hg 2 Species

Nottoway Falls Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**32.19**	

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K14R-01-BEN** **Nottoway River**

Location: Nottoway River from its confluence with Big Hounds Creek to its confluence with Little Nottoway River.

City / County: Lunenberg Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
5ANTW134.52 (2007 Probmon)
IM - This section of the Nottoway River had very slow-moving water and limited habitat availability, mostly in the form of large woody debris. Sediment deposition in the river was relatively high and banks were marginally stable. The flow was low in the fall due to the drought.

Nottoway River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.26**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K15L-01-HG** **Nottoway Pond**

Location: Nottoway Pond

City / County: Nottoway Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Station ID:
5ALZT000.12 (2007 FT Sampling)
Hg 2 Species

Nottoway Pond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**50.70**	

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K15R-03-DO** **Lazaretto Creek**

Location: Lazaretto Creek from the headwaters of Crystal Lake to its headwaters.

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
5ALZT001.39 (Ambient)
Dissolved Oxygen - 2/12 Violation Rate

Lazaretto Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.97**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K15R-04-BEN** **Mallorys Creek**

Location: Mallorys Creek from its headwaters to the mouth

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
5AMLL000.03 (2012 Probmon)
IM - Sediment metrics scored moderate to low with the presence of beaver activity and filamentous algae.
5AMLL001.27 (2014 Bio)
IM - This is a small stream with eroded clay banks and excessive sedimentation. There is cattle access downstream of the bridge.

Mallorys Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.11**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K16L-01-TP** **Fort Pickett Reservoir**

Location: Fort Pickett Reservoir

City / County: Brunswick Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Phosphorus (Total) / 5A

Station IDs:
5ANTW127.14 (Lake Station)
Lake treated with algaecides
Total Phosphorus - 2/3 Violation Rate (Median calculated from 3 sample years)

Fort Pickett Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Phosphorus (Total) - Total Impaired Size by Water Type:		**318.95**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K16R-04-BAC** **Nottoway River**

Location: Nottoway River from Fort Pickett raw water intake to its confluence with Hurricane Branch.

City / County: Brunswick Co. Nottoway Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
5ANTW126.94 (Ambient)
E. coli - 2/12 Violation Rate

Nottoway River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.39**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K16R-06-BAC** **Tommeheton Creek**

Location: Tommeheton Creek from its headwaters to the backwaters of Tommeheton Lake.

City / County: Brunswick Co. Dinwiddie Co. Lunenberg Co. Nottoway Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:
5ATMT006.63 (Ambient)
E coli - 2/12 Violation Rate

Tommeheton Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.84**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K16R-06-DO** **Tommeheton Creek**

Location: Tommeheton Creek from its headwaters to the backwaters of Tommeheton Lake.

City / County: Brunswick Co. Dinwiddie Co. Lunenberg Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID:
5ATMT006.63 (Ambient)
Dissolved Oxygen - 4/12 Violation Rate

Tommeheton Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**7.84**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K16R-07-BEN** **Seay Creek**

Location: Seay Creek from its headwaters to it mouth on Crooked Creek.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID:
5ASYC003.90 (2012 Bio)
IM - Seay Creek and its benthic community is limited by available habitat. Hardpan clay is dominant and banks show signs of frequent scouring events. Algae and brown floc observed in slower reached of the stream, indicating a potential for nutrient enrichment.

Seay Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.48**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-01-BAC** **Nottoway River**

Location: The Nottoway River from Turkey Egg Creek to Sturgeon Creek.

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2010 cycle, the Nottoway River from Turkey Egg Creek to Sturgeon Creek was assessed as not supporting of the Recreation Use due to E. coli exceedances at the Route 1 bridge (5ANTW109.02). The violation rate was 7/36 during the 2014 cycle.

During the 2016 cycle the segment remained impaired due to E.coli with a violation rate of 3/12 at station 5ANTW0113.13 and 9/41 at 5ANTW109.02.

Nottoway River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**9.99**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-02-BAC** **Waqua Creek**

Location: Waqua Creek upstream of the Route 46 bridge

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Waqua Creek was initially assessed as not supporting of the Recreation Use goal during the 2002 cycle. In 2004, the impairment was based on fecal coliform exceedances at 5AWAQ020.52 (Route 617) and at 5AWAQ022.17 (private road). These stations were confined animal feeding operation (CAFO) special study stations.

There had been no additional monitoring since 2002, so the 2004 assessment was carried over. However, additional monitoring was conducted during the 2012 cycle. The impairment was confirmed due to an E. coli violation rate of 3/12 at 5AWAQ020.52 and the impairment was converted to E. coli.

Waqua Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.57**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-03-BAC** **Waqua Creek**

Location: Waqua Creek from confluence with great branch to the mouth

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was split from VAP-K17R_WAQ01A98 and was impaired for Recreation use due to an E.coli violation rate of 2/12.

Waqua Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.59**

Sources:

Agriculture	Non-Point Source	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-04-BAC** **Great Creek**

Location: Great Creek from the Headwaters to the mouth

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was impaired for Recreation use due to exceedances in E.coli. The violation rate was 7/12.

Great Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.45**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-05-BAC** **Reedy Creek**

Location: Reedy Creek from the Headwaters to the mouth

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was assessed as not supporting the Recreation use due to an E.coli impairment with a violation rate of 10/21.

Reedy Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.02**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-05-DO** **Reedy Creek**

Location: Reedy Creek from the Headwaters to the mouth

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2016 cycle the segment was assessed as not supporting the Aquatic life use due do a DO impairment with violation rate of 4/25.

Reedy Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.02**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-06-BAC** **Turkey Egg Creek**

Location: Turkey Egg Creek from the Headwaters to the mouth

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was impaired for the Recreation use due to exceedances in E.coli. The violation rate was 6/12.

Turkey Egg Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.64**

Sources:

Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-07-BAC** **Waqua Creek**

Location: Waqua Creek downstream one mile of the Route 46 bridge

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was not supporting for the Recreation use due to an E.coli violation rate of 2/12.

Waqua Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.09**

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-07-DO** **Hickory Run**

Location: Hickory Run from its headwaters to its mouth.

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Station ID:
5AHCK000.96 (TMDL Station)
Dissolved Oxygen - 2/12 Violation Rate

Hickory Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.94**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K17R-07-PH** **Hickory Run**

Location: Hickory Run from its headwaters to its mouth.

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Station ID:
5AHCK000.96 (TMDL Station)
pH - 2/12 Violation Rate

Hickory Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**4.94**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K18R-01-DO** **Sturgeon Creek**

Location: The mainstem of Sturgeon Creek from its headwaters downstream to the confluence with Lloyds Run.

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The dissolved oxygen violation rate at station 5ASTG013.22, which is located at the Route 1 bridge, was 2/12 during the 2014 cycle. Therefore, the segment is considered impaired of the Aquatic Life Use.

No new data has been collected since 2012 cycle

Sturgeon Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**12.96**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-01-BAC** **Masons Branch**

Location: Masons Branch from its headwaters to its mouth at Indian Creek.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2012 cycle, Masons Branch was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/17 at 5AMSN001.62, which is located at the Route 633 bridge.

During the 2016 cycle the segment was impaired for the Recreation use due to an E.coli exceedance rate of 2/11 at station 5AMSN003.24.

Masons Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**4.89**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-03-BAC** **Buckskin Creek**

Location: Buckskin Creek from its headwaters to its mouth at the Nottoway River.

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Buckskin Creek was previously assessed as not supporting the Recreation Use goal based on a fecal coliform violations at the Route 609 bridge (5ABSK004.32).

Additional monitoring was conducted during the 2010 cycle. The impairment was confirmed and converted to E. coli due to a violation rate of 2/10. During the 2012 cycle, the violation rates were as follows:

2/12 at 5ABSK000.60
5/22 at 5ABSK004.32
3/12 at 5ABSK006.52
4/12 at 5ABSK007.40
2/12 at 5ABSK008.75
4/11 at 5ABSK011.17

During the 2016 cycle the segment remained impaired for Recreation Use due to E.coli violations at all stations.

Buckskin Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.90**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-03-DO** **Buckskin Creek**

Location: Buckskin Creek from the confluence with XHW to the second downstream tributary.

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2012 cycle, the portion of Buckskin Creek downstream of tributary XHW was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 6/12 at 5ABSK008.75, which is located at Rt. 692.

During the 2016 cycle the segment was extended downstream to include station 5ABSK007.40. Both stations are impaired for the Aquatic life use due to DO violations with exceedance rate of 3/24 at station 5ABSK007.40 and 9/24 at station 5ABSK008.75. Both stations are also impaired for the recreation use due to E.coli violations.

Buckskin Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.96**

Sources:

Dam or Impoundment	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-04-HG** **Nottoway River and Tributaries**

Location: The Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributaries Assamoosick Swamp, Three Creek up to I-95, Rowanty Creek and tributaries, Hatcher Run to I-85, and Arthur Swamp to I-85.

City / County: Dinwiddie Co. Emporia City Greensville Co. Prince George Co. Southampton Co. Sussex Co.

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

During the 2008 cycle, the Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributary Assamoosick Swamp, was considered impaired of the Fish Consumption Use due to a VDH fish consumption advisory for mercury. Three Creek up to I-95, Rowanty Creek and its tributaries, Hatcher Run up to I-85, and Arthur Swamp up to I-85 were added to the advisory during the 2010 cycle. No more than two meals/mouth of largemouth bass, smallmouth bass, bowfin, redhorse sucker species, longnose gar, channel catfish, chain pickerel, or sunfish species are recommended.

The advisory was based on exceedances of TSVs and TVs at several DEQ fish tissue monitoring stations, including 5ANTW091.70, 5ANTW075.48, 5ANTW077.95, 5ANTW045.45, 5AASM013.36, 5AROW002.41, 5AATH006.56, and 5AHRA004.16.

Nottoway River and Tributaries **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**186.50**

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-05-BEN** **XEJ - Nottoway River, UT**

Location: An unnamed tributary (XEJ) of the Nottoway River in its entirety.

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, the segment was assessed as impaired of the Aquatic Life Use due to an impaired benthic community at station 5AXEJ001.73 in 2001.

XEJ - Nottoway River, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.88**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-06-BEN** **Nottoway River**

Location: The Nottoway River from Buckskin Creek downstream to the confluence with an unnamed tributary located near the Dinwiddie/Sussex Co. line

City / County: Brunswick Co. Dinwiddie Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment of the Nottoway River was assessed as impaired of the Aquatic Life Use during the 2008 cycle due to benthic monitoring in Fall 2003 at freshwater probabilistic station 5ANTW097.27.

Nottoway River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.04**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-07-DO** **XAD - Buckskin Creek, UT**

Location: Tributary XAD from its headwaters to its mouth at Buckskin Creek.

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, the tributary XAD was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 4/12 at 5AXAD001.59, which is located at the Rt. 1 bridge.

During the 2016 cycle the segment remained impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 5/24 at 5AXAD001.59.

XAD - Buckskin Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.90**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-08-DO** **XHW - Buckskin Creek, UT**

Location: Tributary XHW from its headwaters to its mouth at Buckskin Creek.

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2012 cycle, the tributary XHW was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 5/11 at 5AXHW000.38, which is located at the Rt. 692 bridge.

During the 2016 cycle the segment was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 5/19 at 5AXHW000.38.

XHW - Buckskin Creek, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.63**

Sources:

Dam or Impoundment	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-09-BAC** **XHX - Buckskin Creek, UT**

Location: Tributary XHX from its headwaters to its mouth at Buckskin Creek.

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2012 cycle, the tributary XHX was impaired of the Recreation Use due to an E. coli exceedance rate of 2/9 at 5AXHX001.19, which is located at the Rt. 709 bridge.

During the 2016 cycle the segment was impaired of the Recreation Use due to an E. coli exceedance rate of 5/21 at 5AXHX001.1

XHX - Buckskin Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**2.66**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-10-BAC** **XHY - Buckskin Creek, UT**

Location: Tributary XHY from its headwaters to its mouth at Buckskin Creek.

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2012 cycle, the tributary XHY was impaired of the Recreation Use due to an E. coli exceedance rate of 3/11 at 5AXHY001.08, which is located south of Route 40.

XHY - Buckskin Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**1.61**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K19R-11-BAC** **Moores Swamp**

Location: Headwaters to the start of PWS

City / County: Greensville Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was impaired for Recreation use due to an E.coli impairment at station 5AMRS002.31 with a violation rate of 6/12.

Moores Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**5.08**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K21R-03-HG** **Stony Creek**

Location: Stony Creek from Mortar Branch downstream to its mouth.

City / County: Dinwiddie Co. Sussex Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

During the 2010 cycle, Stony Creek from Mortar Branch to its mouth was assessed as not supporting of the Fish Consumption Use due to mercury exceedances in flier sunfish and spotted bass during DEQ's 2007 fish tissue sampling.

Stony Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**8.35**

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K21R-05-BAC** **Mortar Branch**

Location: Headwaters to mouth at Stony Creek

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, Mortar Branch was assessed as impaired of the Aquatic Life Use due to an E. coli exceedance rate of 4/11 at station 5AMTR001.65, which is located at the Route 626 bridge.

Mortar Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.12**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K21R-05-DO** **Mortar Branch**

Location: Headwaters to mouth at Stony Creek

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, Mortar Branch was assessed as impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 3/11 at station 5AMTR001.65, which is located at the Route 626 bridge.

Mortar Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.12**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K21R-05-PH** **Mortar Branch**

Location: Headwaters to mouth at Stony Creek

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2014 cycle, Mortar Branch was assessed as impaired of the Aquatic Life Use due to a pH exceedance rate of 5/11 at station 5AMTR001.65, which is located at the Route 626 bridge.

Mortar Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**6.12**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K21R-06-BAC** **Stony Creek**

Location: Mortar Branch to Snake Branch

City / County: Dinwiddie Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment became impaired for the recreation use due to E.coli exceedances of 3/12.

Stony Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.60**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K21R-07-PH** **Chamberlains Bed**

Location: Start of unnamed pond to the mouth at Stony Creek

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2016 cycle the segment was impaired for Aquatic Life use due to a exceedance of pH (2/12).

Chamberlains Bed		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**1.32**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K21R-08-DO** **Chamberlains Bed**

Location: Headwaters to Wheelers Pond

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2016 cycle the segment was impaired for Aquatic Life use due to a exceedance of DO (3/11).

Chamberlains Bed **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.82**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K21R-08-PH** **Chamberlains Bed**

Location: Headwaters to Wheelers Pond

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2016 cycle the segment was impaired for Aquatic Life use due to a exceedance of pH (5/11).

Chamberlains Bed **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.82**

Sources:

Natural Sources

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K22R-03-BAC** **Sappony Creek (partial Delist 9.18mi(upper portion)**

Location: Sappony Creek from UT at powerline downstream to Spiers Pond.

City / County: Dinwiddie Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Sappony Creek from the headwaters to Spiers Pond was assessed as impaired of the Recreation Use during the 2006 due to an E. coli violation rate of 3/12 at 5ASAP005.54. In the 2010 cycle, the impairment was shortened to begin at Mill Run Branch because the E. coli rate at 5ASAP013.69 was acceptable (1/20). The violation rate was 3/13 during the 2012 cycle; therefore, the segment was returned to its original length.

No additional data was collected in the 2014 cycle.

During the 2016 cycle the segment was shortened and split to exclude the headwaters portion which was no longer impaired for E.coli. This portion remains impaired for Recreation use due to an E.coli violation of 5/23 at station 5ASAP013.69.

Sappony Creek (partial Delist 9.18mi(upper portion)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**11.86**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K22R-04-BAC** **Sappony Creek**

Location: Spiers Pond Dam to mouth at Stony Creek

City / County: Dinwiddie Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment became impaired for the Recreation Use due to an E.coli violation rate of 4/23.

Sappony Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.35**

Sources:

Agriculture Non-Point Source Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K23R-01-BAC** **Arthur Swamp**

Location: Arthur Swamp

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment became impaired for Recreation use due to E.coli exceedances (2/12).

Arthur Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.38**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K23R-02-BAC** **Joseph Swamp**

Location: The mainstem of Joseph Swamp.

City / County: Prince George Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2010 cycle, Joseph Swamp was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/9 at 5AJOE003.92, which is located at Rt. 602.

Joseph Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.22**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K23R-04-BAC** **Jones Hole Sw/Moores Sw and all tribs(ptl Delist 4.2&9.11mi)**

Location: Jones Hole Swamp/Moores Swamp and tributaries from the mouth at the Nottoway River to their headwaters.

City / County: Dinwiddie Co. Prince George Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2010 cycle, the Jones Hole Swamp watershed was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 5/22 at 5AJNH001.73, which is located at the Route 637 bridge.

The violation rate was 6/24 during the 2014 cycle.

During the 2016 cycle the segment was split to remove the headwaters portion of Jones Hole Swamp (VAP-K23R_JNH01B16 and VAP-K23R_JNH01C16) The lower portion remains impaired for recreation use due to E.coli violations at every station.

Jones Hole Sw/Moores Sw and all tribs(ptl Delist 4.2&9.11mi)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**70.67**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K23R-05-BAC** **Gosee Swamp and Tributaries**

Location: Gosee Swamp/Indian Creek and all of its tributaries below rivermile 6.88

City / County: Prince George Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, lower Gosee Swamp was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/12 at 5AGSE001.35, which is located at the Rt. 602 bridge.

No new data since 2014 cycle.

Gosee Swamp and Tributaries **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**27.71**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K23R-10-BAC** **Rowanty Creek**

Location: Rowanty Creek mainstem downstream of Gravelly Run.

City / County: Dinwiddie Co. Prince George Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2012 cycle, Rowanty Creek from Little Cattail Creek to the mouth was assessed as impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 5AROW004.72, which is located at the Route 618 bridge. Continued monitoring was recommended to confirm the impairment because all other stations in the segment were acceptable.

Additional monitoring was conducted in the 2014 cycle at station 5AROW013.14, which is located at the Route 605 bridge. The exceedance rate was unacceptable (3/24); therefore, the segment was extended upstream to Gravelly Run.

During the 2016 cycle E.coli monitoring continued to be impaired.

Rowanty Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**14.07**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K24R-03-BAC** **Hunting Quarter Swamp**

Location: The mainstem of Hunting Quarter Swamp.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2008 cycle, Hunting Quarter Swamp was assessed as impaired of the Recreation Use due to an E. coli violation rate of 2/14 at the Route 642 bridge (5AHQS006.22). Additional monitoring during the 2014 cycle indicated an acceptable exceedance rate (1/12); therefore, the stream will be delisted.

During the 2016 cycle the segment became impaired for Recreation Use due to exceedances in E.coli with a violation rate of 4/24 at station 5AHQS006.22, and 5/12 at station 5AHQS009.57.

Hunting Quarter Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**16.67**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K24R-04-BAC** **Nottoway River**

Location: Nottoway River from route 40 bridge downstream to Three Creek

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was impaired for the Recreation use due to E.coli exceedances at station 5ANTW052.83

Nottoway River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**15.61**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K24R-05-BAC** **Thweatt Branch Tributaries**

Location: Thweatt Branch entirely

City / County: Southampton Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle the segment was split from VAP-K24R_HQS01B08. Station 5ATWT001.19 was impaired for the Recreation Use due to E.coli exceedances 4/11.

Thweatt Branch Tributaries **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.26**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K27R-03-BEN** **Applewhite Swamp**

Location: This cause encompasses the area from the start of swamp (near Harrells Mill) downstream to confluence with Three Creek. Located south of Mason & northeast of Arringdale.

City / County: Southampton Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use impairment is retained based on the Benthic population rating from the Benthic ProbMon-Benthic IM [MI:S&F-'01, S&F-'02]. No data within Assessment window. Impairment retained until new data collected.

Applewhite Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.16**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K27R-05-BEN** **Three Creek - Upper**

Location: This cause encompasses the area from the confluence of Chatman Branch (RM 19.26) downstream to above Southampton Correctional Farm at Rt 308 crossing (RM 10.4).

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use impairment is retained from the 2004 Assessment based on benthic monitoring assessment which indicates impairment (MI in Fall-'04] based on data at DEQ (AQM & Bio) station @ 5ATRE016.02.

Three Creek - Upper **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.17**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K28R-01-DO** **Mill Swamp**

Location: This cause encompasses the Main stem of Mill Swamp only, from headwaters downstream to the confluence with the Nottoway River. Tributary to Nottoway R, downstream of PWS. W of Delaware.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the dissolved oxygen exceedances at Station 5AMSP000.16 (3 violates/ 12 obs.).

Mill Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**10.49**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K28R-02-BEN** **Buckhorn Swamp**

Location: This cause encompasses the segment of Buckhorn Swamp that is near Pope Count, segment is located between State Hwy 652 and US Hwy 58. Segment ends below State Hwy 657.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the Benthic population rating from the Benthic ProbMon-sample events [MI:F-'06, VI:S-'06] at Station 5ABKH005.16.

Buckhorn Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.68**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K28R-04-BEN** **Unnamed Tributary to Mill Swamp**

Location: This cause encompasses the tributary running S / SE from Mill Swamp to the east of Darden Pond and crosses RT 749 perpendicular.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Benthic data is impaired at station 5AXEC000.76 (X-Trib to Mill Swamp). Spring Score 2012 = 17.1, Fall Score 2012 = 37.5. This was a 2012 probabilistic monitoring site. This stream has very steep banks but is very shallow with loosely packed sediment and little habitat available for benthic organisms to colonize. Assessed with VCPMI score.

Unnamed Tributary to Mill Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K28R-05-BAC** **Buckhorn Swamp**

Location: This cause encompasses the segment of Buckhorn Swamp near Pope that crosses over Route 652.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli data collected at Station 5BKH003.89 with 2 viol / 12 obs.

Buckhorn Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.22**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K28R-05-DO** **Buckhorn Swamp**

Location: This cause encompasses the segment of Buckhorn Swamp near Pope that crosses over Route 652.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Aquatic Life Use is impaired based on DO at Station 5BKH003.89 with 4 viol / 12 obs. The DO impairment is thought to be from natural conditions. There is currently no natural conditions report.

Buckhorn Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.22**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K28R-05-PH** **Buckhorn Swamp**

Location: This cause encompasses the segment of Buckhorn Swamp near Pope that crosses over Route 652.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

pH is impaired with 3 viol/ 24 obs at station 5ABKH003.89. Impairment thought to be from natural causes.

Buckhorn Swamp		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**4.22**

Sources:

Naturally Occurring Organic Acids

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K28R-06-DO** **Nottoway Swamp**

Location: This cause encompasses the segment of Nottoway Swamp near Route 611.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Aquatic Life Use is impaired based on DO and pH exceedances at Station 5ANT002.96. DO - 5 viol / 11 obs and pH 8 viol / 11 obs.

Nottoway Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**8.12**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K28R-06-PH** **Nottoway Swamp**

Location: This cause encompasses the segment of Nottoway Swamp near Route 611.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Aquatic Life Use is impaired based on DO and pH exceedances at Station 5ANT002.96. DO - 5 viol / 11 obs and pH 8 viol / 11 obs.

Nottoway Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**8.12**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K29R-02-BAC** **Assamoosick Swamp**

Location: Assamoosick Swamp from rivermile 2.5 near Mill Run downstream to its mouth

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2010 cycle, Assamoosick Swamp from rivermile 2.5 near Mill Run downstream to its mouth was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/11 at 5AASM000.89, which is located at the Route 647 bridge.

Assamoosick Swamp		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**2.46**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K29R-03-BAC** **XGT - Assamoosick Swamp, UT**

Location: The UT XGT from its headwaters to its mouth at Assamoosick Swamp.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2010 cycle, the segment was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/6 at 5AXGT000.50, which is located at the Route 607 bridge.

XGT - Assamoosick Swamp, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**1.93**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K30R-01-DO** **Darden Mill Run**

Location: This cause encompasses the area from headwaters near Newsoms downstream to Windbourne Millpond, near VA/NC state line.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Aquatic Life Use is impaired due to depressed DO & pH concentrations below the criteria minimum. Impairment is suspected due to natural swamp conditions present in these waters, low flow and high organic content. Below criteria minimum = 4.0 mg/l. DO = 18 viol / 33 obs and pH 25 viol / 33 obs.

Darden Mill Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**10.72**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K30R-01-PH** **Darden Mill Run**

Location: This cause encompasses the area from headwaters near Newsoms downstream to Windbourne Millpond, near VA/NC state line.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Aquatic Life Use is impaired due to depressed DO & pH concentrations below the criteria minimum. Impairment is suspected due to natural swamp conditions present in these waters, low flow and high organic content. Below criteria minimum = 4.0 mg/l. DO = 18 viol / 33 obs and pH 25 viol / 33 obs.

Darden Mill Run		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**10.72**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K30R-02-DO** **Nottoway River - Lower**

Location: This cause encompasses the lower portion of the Nottoway River in watershed K30. Segment starts below Mill Creek near Point Beach to VA/NC state line.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

DO is not supporting (4 viol / 36 obs) @ 5ANTW003.30 / Special Study and Trend Station.

Nottoway River - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.54**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: **K30R-04-BAC** **Nottoway River - Upper**

Location: This cause encompasses the upper portion of Nottoway River in watershed K30. Segment begins at upstream intersection with watershed boundary (NW of Delaware) downstream below Route 671.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Recreation is impaired based on E coli data from station 5ANTW014.99 with 5 viol/ 32 obs

Nottoway River - Upper **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**0.45**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K32R-01-BEN** **Blackwater River - Lower**

Location: This cause encompasses the lower portion of Blackwater River in K32. Starts at the confluence with Cypress Swamp (upstream of Walls Bridge) downstream to above Rt 617 crossing @ Walls Bridge (RM 58.22).

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on benthic data collected at stations 5ABLW052.91 and 5ABLW055.26.

Blackwater River - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.32**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K32R-13-HG** **Blackwater River Basin**

Location: Blackwater River and tributaries from its headwaters to the VA-State Line

City / County: Dinwiddie Co. Isle Of Wight Co. Petersburg City Prince George Co. South Boston City
Southampton Co. Suffolk City Surry Co. Sussex Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

During the 2006 cycle, the Blackwater River from Route 31 near Dendron downstream to the Virginia-North Carolina state line was assessed as impaired of the Fish Consumption Use due to a VDH fish consumption advisory for mercury.

During the 2008 cycle, the advisory was expanded on 8/31/2007 to include the Blackwater River to its headwaters, including all of its tributaries. The advisory currently recommends consuming no more than two meals/month of largemouth bass, sunfish species, bowfin, chain pickerel, white catfish, redhorse sucker and longnose gar.

The advisory is based on the results of DEQ's fish tissue monitoring program, which show mercury exceedances at multiple stations throughout the watershed, including 5ABKR003.68, 5ABKR002.33, 5AWKS013.53, 5ASEC005.39, 5ABLW074.66, 5ACPP004.04, 5ACPP007.86, 5AJCH000.73.

Blackwater River Basin **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			######

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K32R-18-BEN** **Blackwater River, UT**

Location: Unnamed tributary XFM from its headwaters to its mouth at Blackwater River

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, the tributary was assessed as not supporting the Aquatic Life Use due to impairment of the benthic community at station 5AXFM000.88, which is located at the Route 613 bridge.

Blackwater River, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.13**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K33R-02-BAC** **Blackwater River - Middle**

Location: This cause encompasses the middle portion of Blackwater River from Rt 460 bridge crossing, RM 40.22 to downstream approx. halfway between Station 5ABLW040.22 and Station 5ABLW038.69.

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Recreational Use is not supported with 6 viol / 34 obs at station 5ABLW040.22 (K33R-02-BAC)

Blackwater River - Middle **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.04**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K33R-02-BEN** **Blackwater River - Upper**

Location: This cause encompasses the upper portion of Blackwater R. in K33. Starts at the Rt 617 crossing (Walls Bridge, RM 58.22) downstream to above Rt 460 crossing @ Zuni (RM 40.23).

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Benthic impairment is retained from 2008 Assessment. No new benthic data within the assessment window. Previous impairment is from benthic data collected at stations 5ABLW052.91 and 5ABLW055.26.

Blackwater River - Upper **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**19.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K33R-03-BEN** **Blackwater River - Lower and Burnt Mills Swamp**

Location: This cause encompasses the lower portion of the Blackwater River from RM 39.34 to the confluence with Antioch Swamp as well as the entirety of Burnt Mills Swamp

City / County: Isle Of Wight Co. South Boston City Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Benthic impairment identified at DEQ (ProbMon) station 5ABLW038.69. Station 5ABLW038.69 Benthic IM [MI: S&F '05] and 5ABMS000.80 [VI: S&F 10].

Blackwater River - Lower and Burnt Mills Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.34**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35L-01-DO** **Airfield Pond**

Location: This cause encompasses the Pond north of Lightwood Swamp, off of State Route 628.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Aquatic Life Use is impaired for dissolved oxygen based on the Class III DO water quality criteria. Data from station 5ALTD005.10 has 15 viol / 42 obs for Dissolved Oxygen.

Airfield Pond		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:		**120.07**	

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35L-01-HG** **Airfield Pond**

Location: This cause encompasses all of Airfield Pond north of Lightwood Swamp off of State Route 628.

City / County: Sussex Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on Fish Tissue data from 2006 at Station 5ALTD005.10. Fish Tissue data Impaired for Hg for fish species Brown Bullhead Catfish, Largemouth Bass, Chain Pickerel, Bowfin & Bluegill Sunfish. The VDH Fish Advisory is for all of Blackwater and its tributaries as stated on 10/29/03, modified 7/27/05 and again on 8/31/07.

Airfield Pond **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**120.07**	

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35L-01-PH** **Airfield Pond**

Location: This cause encompasses the Pond north of Lightwood Swamp, off of State Route 628.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Aquatic Life Use is impaired for pH based on data from station 5ALTD005.10 with 5 viol/ 42 obs for pH based on Class III water quality criteria.

Airfield Pond		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:		**120.07**	

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35R-02-BAC** **Seacock Swamp - Lower**

Location: This cause encompasses the lower portion of Seacock swamp south of Doles Crossroads, west of State Hwy 600.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

Recreational Use impairment is retained. Need new E.coli data.
2006 01557 / 2008 K35R-02-BAC

Seacock Swamp - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			**2.59**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35R-02-BEN** **Seacock Swamp - Lower**

Location: This cause encompasses the lower portion of Seacock swamp

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on benthic assessment at station 5ASCK003.84 Benthic IM [MI: S-'04]. There is insufficient data to assess DO or pH.

Seacock Swamp - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.59**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35R-03-BAC** **UT Seacock Swamp**

Location: This cause encompasses the UT to Seacock Swamp, PRO CAFO special study. Headwaters to confluence with Seacock Swamp mainstem.

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

Recreational Use is not supported based on data over 5 years old (2004 IR FC data: 6 viol / 7 obs.) at 5AXDY000.96. The impaired status was retained from previous Fecal Coliform data.
Confined animal operations are present in the watershed.

UT Seacock Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**1.02**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35R-04-BAC** **UT Airfield Pond - Lower**

Location: This cause encompasses the UT at the confluence with segment VAT-K35R_XDZ01A04 halfway between State Hwy 622 and 729 downstream to Airfield Pond.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Listed in 2004 as Impaired for Fecal Coliform. The TMDL date is retained for the E.coli impairment of 2016.

UT Airfield Pond - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**0.71**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35R-05-BAC** **UT Airfield Pond - Upper**

Location: This cause encompasses UT to Airfield Pond, PRO CAFO special study. Headwaters to confluence with UT VAT-K35R_XDZ02A04.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

No new data for 2016 cycle. Recreation Use impairment is retained. Station 5AXDZ001.73 for E.coli with 4 viol/ 6 obs. Previous Fecal Coliform data impairment (TMDL ID: VAT-K41R-05) based on fecal Coliform (13 violates / 16 observations). TMDL due date retained per H. Augustine e-mail 2/6/06.

UT Airfield Pond - Upper **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**0.68**

Sources:

Animal Feeding Operations (NPS)	Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35R-06-BAC** **Seacock Swamp - Upper and Lower**

Location: This cause encompasses the upper portion of Seacock Swamp between Drumwright Pond and approximately 0.2 mi east of Rt. 628 and lower Seacock Swamp between the confluence of Brantley Swamp and the confluence with Round Hill Swamp.

City / County: Southampton Co. Surry Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The Recreational Use is impaired based on Fecal Coliform data retained since no E.coli data collected. Station 5ASCK018.65 in 2006 (2 violations / 8 observations) for Fecal Coliform.

Seacock Swamp - Upper and Lower **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.50**

Seacock Swamp - Upper and Lower **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**0.84**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K35R-08-BEN** **Round Hill Swamp**

Location: The cause encompasses Round Hill Swamp between the confluence with Seacock Swamp and Rt. 623

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Aquatic Life Use is impaired based on benthic impairments (Benthic ProbMon-Benthic IM [MI: S-'05] at station 5ARHS000.39.

2008 K35R-08-BEN

Round Hill Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.64**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K36R-02-BAC** **Blackwater River - Lower Middle**

Location: This cause encompasses the lower Blackwater River from RM 13.76 (downstream of Franklin, confluence of UT, parallel to Hayden High School) downstream west of Union Camp Holding Pond.

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli data.

DEQ (AQM) stations:
5ABLW011.48 (0 viol / 6 obs) - There has been no new data at this station since 2009. Therefore, it cannot confidently be assessed as supporting and split

Blackwater River - Lower Middle **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.83**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K36R-02-BEN** **Black Creek**

Location: This cause encompasses the Black Creek Located NW of Burdette. From Wades Pond downstream to mouth. Tributary to Blackwater R. with confluence at RM 22.0.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use impairment is retained based on the Benthic data collected at Station 5ABLC000.88 (Benthic ProbMon-Benthic IM [MI: F-'03, VI: S-'03]).

Black Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.95**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K36R-04-BAC** **Cypress Swamp**

Location: This cause encompasses Cypress Swamp from town of Sedley downstream to Route 611.

City / County: Isle Of Wight Co. Southampton Co. Suffolk City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired (5 violations / 23 observations) at Station 5ACYS001.92.

Cypress Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.16**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K36R-04-BEN** **Unsegmented Tributary to Blackwater**

Location: This cause encompasses the Unsegmented River from Blackwater South of Franklin to North of State Hwy 58.

City / County: Southampton Co. Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on Benthic Impairments. The Benthic ProbMon is impaired [VI:S&F-'06, 07] AT DEQ (ProbMon) Station @ 5AXGI001.79.

Unsegmented Tributary to Blackwater	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.75**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K36R-05-BAC** **Washole Creek**

Location: This cause encompasses the area at the confluence of Blackwater. East of Franklin Sewage Disposal. South of US Hwy 58.

City / County: Isle Of Wight Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use ins not supporting based on E.coli data (5 violations / 35 observations) at station 5AWAC000.30.

Washole Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**0.55**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K36R-06-BAC** **Blackwater River - Lower Middle**

Location: The cause encompasses the portion of the Blackwater River south of the Isle of Wight/ Suffolk line beginning at Rt 58 downstream near South Quay/

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli data (4 viol /34 obs) at DEQ (AQM) stations @ 5ABLW009.80.

Blackwater River - Lower Middle	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**0.77**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K36R-07-BAC** **Blackwater River - Upper**

Location: This cause encompasses the Blackwater River segment north of Maynards Crossroads and State Hwy 630 and ends at Joyners Bridge

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Recreation impaired with 4 viol/ 32 obs for E. coli at station 5ABLW022.84

Blackwater River - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**2.47**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K38R-01-BEN** **Somerton Creek**

Location: This cause encompasses the area of Somerton Creek from 5 miles upstream from monitoring station (RM 10.36) downstream to VA/NC state line.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the Benthic Impairments at Station 5ASTN008.78. Station 5ASTN008.78 Benthic IM [MI:F-'04].

Somerton Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.38**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K38R-02-BAC** **March Swamp**

Location: This cause encompasses entirety of March Swamp. Northeast of Factory Hill. Northern tributary to Somerton Creek.

City / County: Suffolk City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impairment is maintained based on the E.coli data exceedance of the swimming criteria indicator (1 violates /6 obs.) at Station 5AMAR001.65.

March Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.71**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K38R-02-DO** **March Swamp**

Location: This cause encompasses entirety of March Swamp. Northeast of Factory Hill. Northern tributary to Somerton Creek.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the depressed DO concentrations, impairment continued from 2004 IR. Data within assessment window is 1 viol /5 obs. No new data available.

March Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**7.71**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K38R-02-PH** **March Swamp**

Location: This cause encompasses entirety if March Swamp. Northeast of Factory Hill. Northern tributary to Somerton Creek.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The Aquatic Life Use is impaired based on depressed pH concentrations, impairment continued from 2004 IR. Station 5AMAR001.65 4 viol/ 11 obs.

March Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**7.71**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K38R-03-DO** **Chapel Swamp**

Location: This cause encompasses the entirety of Chapel Swamp. Northern tributary of Somerton Creek. Located east of Cleopus.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Aquatic Life Use impaired due to depressed pH & DO concentrations, DEQ Station @ 5ACHP002.03. The pH has 2 viol / 6 obs and the DO has 2 viol / 6 obs. Both are impaired with data from 2012. Previously there was a continued impairment for the same from 2004 IR.

Chapel Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**8.28**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K38R-03-PH** **Chapel Swamp**

Location: This cause encompasses the entirety of Chapel Swamp. Northern tributary of Somerton Creek. Located east of Cleopus.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Aquatic Life Use impaired due to depressed pH & DO concentrations, DEQ Station @ 5ACHP002.03. The pH has 2 viol / 6 obs and the DO has 2 viol / 6 obs. Both are impaired with data from 2012. Previously there was a continued impairment for the same from 2004 IR.

Chapel Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**8.28**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K38R-04-BAC** **Unsegmented rivers in K38R**

Location: This cause encompasses the Non-segmented areas of K38

City / County: Suffolk City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation is impaired with 2 viol / 6 obs for E. Coli @ DEQ Station 5AJNS001.89.

Unsegmented rivers in K38R **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.80**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K38R-05-BAC** **Chapel Swamp**

Location: This cause encompasses the Northern tributary of Somerton Creek. Located east of Cleopus. Entirety of swamp.

City / County: Suffolk City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Recreation Use is impaired with 2 viol / 6 obs.

Chapel Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.28**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K38R-06-BAC** **Somerton Creek**

Location: This cause encompasses Somerton Creek from 5 miles upstream from monitoring station (RM 10.36) downstream to VA/NC state line.

City / County: Suffolk City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Recreation Use impaired based on E. coli data from station 5ASTN008.78 with 6 viol/ 34 viol.

Somerton Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.38**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K39L-01-HG** **Lake Drummond**

Location: This cause encompasses the entirety of lake Drummond within the Great Dismal Swamp National Wildlife Refuge. Located on City of Suffolk/City of Chesapeake boundary near NC state line.

City / County: Chesapeake City Suffolk City

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for Bowfin and Chain Pickerel (issued 10/2003 & modified 7/27/05, 8/31/2007 recommending no more than two meals/month due to Hg reported in fish tissue).

Lake Drummond **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**3,241.96**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K39L-01-PH** **Lake Drummond**

Location: This cause encompasses the entirety of lake Drummond within the Great Dismal Swamp National Wildlife Refuge. Located on City of Suffolk/City of Chesapeake boundary near NC state line.

City / County: Chesapeake City Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The Aquatic Life Use is impaired based on the pooled pH exceedance of the criteria for this parameter with a violation rate of 99.2% (121 violates/122 obs.).

Lake Drummond **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:		**3,241.96**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K39R-01-HG** **Dismal Swamp Canal & Feeder Ditch to Lake Drummond**

Location: This cause encompasses the Dismal Swamp Canal from Deep Creek Locks to VA/NC state line and including Feeder Ditch to Lake Drummond and unsegmented rivers in K39R.

City / County: Chesapeake City

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for Bowfin and Chain Pickerel (issued 10/2003 & modified 7/27/05, recommending no more than two meals/month due to Hg reported in fish tissue).

Dismal Swamp Canal & Feeder Ditch to Lake Drummond **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**13.21**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K39R-02-HG** **Unsegmented rivers in K39R**

Location: This cause encompasses the non-segmented rivers-feeder ditches within K39.

City / County: Chesapeake City Suffolk City

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use impairment is retained. Data from Station 5B-GDS-ED has an observed effect for FT. 05-OE, FT_Met-As Red Pickerel

Unsegmented rivers in K39R **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**15.28**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: **K40R-02-BAC** **Northwest River - Middle (PWS)**

Location: This cause encompasses Northwest River from RM 16.63 (start of PWS) to RM 10.44. From start of PWS area, upstream of Pine Grove Lane, downstream to Indian Cr. confluence.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli data impaired with 5 viol/ 32 obs at station 5BNTW012.86

Northwest River - Middle (PWS)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**6.33**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K40R-04-BAC** **Northwest River - Lower (PWS)**

Location: This cause encompasses the Northwest River from RM 10.44 to the Indian Creek Confluence

City / County: Chesapeake City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Recreation is impaired based on E. coli data at station 5BNTW010.23 with 4 viol/ 32 obs.There is an observed effect for E. coli at station 5BNTW009.49 with 3 viol/ 32 obs.

Northwest River - Lower (PWS)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**1.70**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K40R-04-HG** **Northwest River - Middle**

Location: This cause encompasses the Northwest River from RM 16.63 (start of PWS) to RM 10.44. From start of PWS area, upstream of Pine Grove Lane, downstream to Indian Creek confluence.

City / County: Chesapeake City

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on FT data collected at Station 5BNTW011.90. The mercury Fish Tissue Value was violated in 2007 (07-IM- FT_Met Hg Largemouth Bass & Bowfin).

Northwest River - Middle **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**6.33**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K40R-09-BAC** **Indian Creek tributary to Northwest River**

Location: From the St. Brides Rd. crossing downstream to the confluence with the Northwest River. Located southeast of Saint Brides.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli data collected at station 5BIND001.15 with 7 viol / 31 obs.

Indian Creek tributary to Northwest River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**3.46**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K41R-01-BEN** **Pocaty River**

Location: This cause encompasses the Pocaty River and selected tribs. from headwaters at mile 3.92 to confluence with North Landing River at mile 0.00.

City / County: Chesapeake City Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use impairment is retained based on benthic impairment. Data collected at station 5BPCT002.16 MI: S-03 and VI : F-03.

Pocaty River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.43**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K41R-05-PCB** **West Neck Creek - Middle**

Location: This cause encompasses the area from south side of Princess Anne road crossing (RM 6.20) downstream to widening of creek (RM 3.10) approx. 0.55 mi downstream of Indian River Road crossing.

City / County: Virginia Beach City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The Fish Consumption Use is impaired based on Fish Tissue data collected at Station 5BWNC003.65. 07-IM, FT_PCB White Catfish, Carp & FT-OE, Met_As Carp.

West Neck Creek - Middle **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**2.74**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K41R-12-BEN** **Unnamed Trib to Milldam Creek**

Location: This cause encompasses the area from the confluence with Milldam Creek to Crags Cswy.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Aquatic Life Use is not supported based on benthic data from Station 5BXAT000.30. Benthic IM [VI:S&F-09 & S-10; MI:F-10]

Unnamed Trib to Milldam Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.66**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K41R-12-DO** **Unnamed Trib to Milldam Creek**

Location: This cause encompasses the area from the confluence with Milldam Creek to Crags Cswy.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Aquatic Life Use is not supported based DO data from Station 5BXAT000.30, DO with 4 viol / 4 obs.

Unnamed Trib to Milldam Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.66**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K41R-13-DO** **Blackwater Creek**

Location: This cause encompasses the Blackwater Creek from headwaters at RM 3.2 to confluence with North Landing River RM 0.0.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Dissolved oxygen is impaired. 4 viol/ 34 obs at station 5BBKW002.50.

Blackwater Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.47**

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K42E-06-PH** **Ashville Bridge Creek - Lower**

Location: This cause encompasses the lower portion of Ashville Bridge Creek, between Hell Point and Muddy Creeks.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The Aquatic Life Use impairment is retained based on pH concentrations from 2005-2006 with 1 viol / 15 obs. New data is needed to delist pH. Previous listing 4 violates/ 36 obs.

Ashville Bridge Creek - Lower		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life	pH - Total Impaired Size by Water Type:	**0.016**		

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chowan River and Dismal Swamp Basins

***Cause Group Code:* K42E-07-DO** **Beggars Bridge Creek**

Location: This cause encompasses the area located southeast of Dawley Corners, tributary to Shipps Bay. Segment begins at the confluence of numerous unnamed tributaries (RM 1.34) near Dawley Corners and extends downstream to the mouth at the confluence with Shipps Bay

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Dissolved oxygen is impaired. 4 viol/ 33 obs at station 5BBBC000.76.

Beggars Bridge Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:	**0.042**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O01R-01-BAC** **South Fork Holston River and Tributaries**

Location: This segment includes the mainstem South Fork Holston River from the headwaters downstream to the Barton Creek confluence; from the Rowland Creek confluence downstream to the Grosses Creek confluence; and the Lower South Fork Holston River from the South Holston Lake backwaters upstream to the Rush Creek confluence. It also includes Bishop Branch from the confluence with South Fork Holston River upstream to the confluence with Parker Branch, Grosses Creek from the headwaters downstream to the confluence with South Fork Holston River, Slemp Creek from the headwaters downstream to the confluence with the South Fork Holston River, and St. Clair Creek, a South Fork Holston River tributary south of St. Clair Bottom.

City / County: Smyth Co. Washington Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station located at 6CSFH075.61 had a 21% exceedance of the E.coli water quality standard, 6CSFH110.45 had a 33% exceedance, 6CSFH097.42 had a 25% exceedance of the E. coli water quality standard. Station 6CGRC000.68 had a 67% exceedance of the E. coli water quality standard, station 6CBSC000.10 had a 91% exceedance, station 6CSLM000.67 had a 40% exceedance, and station 6BSTC000.20 had a 23% exceedance of the E. coli water quality standard.

South Fork Holston River and Tributaries **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**43.30**

South Fork Holston River and Tributaries **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**9.58**

Sources:

- Grazing in Riparian or Shoreline Zones
- Livestock (Grazing or Feeding Operations)
- Rural (Residential Areas)
- Source Unknown
- Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O01R-02-PH** **Hurricane Creek Tributary**

Location: This is an unnamed tributary of Hurricane Creek in Smyth County north of the Appalachian Trail.

City / County: Smyth Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

pH measurements at station 6CXEE000.72 failed to meet the pH water quality standard.

Hurricane Creek Tributary **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**1.12**

Sources:

Natural Sources

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O02R-01-HG** **South Fork Holston River**

Location: This segment extends from the Grosses Creek confluence downstream to Rush Creek.

City / County: Washington Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Two samples at station 6CSFH088.91 exceeded the Mercury screening values in 2007.

South Fork Holston River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**6.14**

Sources:

Atmospheric Deposition - Toxics

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O02R-03-HG** **Beaverdam Creek**

Location: This segment extends from the Tennessee state line upstream to its confluence with the South Fork Holston River.

City / County: Washington Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The Virginia Department of Health's level of concern was exceeded for Mercury in one fish tissue sample and the Department of Environmental Quality's screening value for Mercury was exceeded in an additional sample.

Beaverdam Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**2.01**

Sources:

Atmospheric Deposition - Toxics

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O02R-05-BAC** **Whitetop Laurel Creek**

Location: Mainstem from Pennington Branch confluence upstream of Konnarock, downstream to the Green Cove Creek confluence.

City / County: Washington Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6CWLC011.55 had a 16% exceedance of the E. coli water quality standard.

Whitetop Laurel Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.80**

Sources:

Rural (Residential Areas) Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O03R-01-BEN** **Middle Fork Holston River**

Location: This segment includes the Middle Fork Holston River from the headwaters downstream to the Dutton Branch confluence.

City / County: Smyth Co. Wythe Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Probabilistic Monitoring station 6CMFH055.88 was impaired based on the VSCI scores.

Middle Fork Holston River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.42**

Sources:

Grazing in Riparian or Shoreline Zones

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O03R-02-BAC** **Bear Creek**

Location: Middle Fork Holston River tributary, west of Atkins, parallel to Route 622.

City / County: Smyth Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

AWQM station at 6CBER000.17 had a 33% exceedance of the E. coli water quality standard.

Bear Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.51**

Sources:

Rural (Residential Areas) Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O03R-03-BAC** **Staley Creek**

Location: This segment is a Middle Fork Holston River tributary, parallel to Route 16, south of Marion to the National Forest border.

City / County: Smyth Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

AWQM station at 6CSTA000.05 has a 63% exceedance of the E. coli water quality standard.

Staley Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.59**

Sources:

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O04L-01-HG** **Hungry Mother Lake**

Location: This segment includes Hungry Mother Lake from its headwaters to the dam.

City / County: Smyth Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Mercury exceeded DEQ's screening value in four fish samples at station 6CHUN005.24

Hungry Mother Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**103.23**	

Sources:

Atmospheric Deposition - Toxics

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O05R-02-BEN** **Greenway Creek**

Location: This segment includes the mainstem from the headwaters downstream to the confluence with the Middle Fork Holston River.

City / County: Washington Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological station located at 6CGRW002.31 was impaired based on VSCI scores.

Greenway Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.02**

Sources:

Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O06L-01-HG** **South Holston Reservoir**

Location: The TVA dam is located in Tennessee and Virginia. It is operated to generate hydroelectric power, flood control and provide recreational opportunities.

City / County: Washington Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Four fish tissue samples exceeded the Virginia Department of Health's level of concern for Mercury and 7 samples exceeded the Department of Environmental Quality's screening value for Mercury.

South Holston Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**1,699.97**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O06L-01-PCB** **South Holston Reservoir**

Location: The TVA dam is located in Tennessee and Virginia. It is operated to generate hydroelectric power, flood control and provide recreational opportunities.

City / County: Washington Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

Two fish tissue samples from channel catfish exceeded the Department of Environmental Quality's screening value for polychlorinated biphenyls (PCBs).

South Holston Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**1,699.97**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O06R-01-PCB** **Wolf Creek**

Location: This segment extends from the Town Creek confluence downstream to the lake backwaters.

City / County: Washington Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

This segment was listed based on the Virginia Department of Health's fish consumption advisory for polychlorinated biphenyls.

Wolf Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**6.67**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O06R-02-BAC** **Fifteen Mile Creek**

Location: This segment extends from the headwaters downstream to the confluence with the South Holston Reservoir.

City / County: Washington Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station 6CFIF000.96 had a 16% exceedance of the E.coli water quality standard and station 6CFIF006.16 had a 36% exceedance of the E. coli water quality standard.

Fifteen Mile Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**12.93**

Sources:

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O06R-03-BAC** **Spring Creek**

Location: This segment extends from the South Holston Reservoir backwaters upstream to the headwaters.

City / County: Washington Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6CSPR001.18 had a 41% exceedance of the E.coli water quality standard.

Spring Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.43**

Sources:

Rural (Residential Areas) Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O07R-01-PCB** **Beaver Creek and Little Creek**

Location: This segment includes the headwaters of Beaver Creek downstream to the Tennessee political boundary and Little Creek from the headwaters downstream to the Tennessee political boundary in the City of Bristol.

City / County: Bristol City Washington Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

Fish tissue stations (6CBEV015.27 and 6CLTL000.26) found polychlorinated biphenyls (PCB's) in carp and stonerollers above DEQ's screening value.

Beaver Creek and Little Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**17.33**

Sources:

Inappropriate Waste Disposal

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O07R-04-BAC** **Sinking Creek**

Location: This segment includes the headwaters downstream to the Tennessee state line, east of the City of Bristol.

City / County: Washington Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6CSNK006.68 has a 16% exceedance of the E. coli water quality standard.

Sinking Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.79**

Sources:

Rural (Residential Areas) Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O07R-05-BAC** **Stoffel Creek**

Location: This segment is located northwest of the City of Bristol, near the Three Springs community.

City / County: Bristol City Washington Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6CSTO000.86 has a 25% exceedance of the E. coli water quality standard.

Stoffel Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.22**

Sources:

Rural (Residential Areas) Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O08R-01-BAC** **Boozy Creek**

Location: This is a South Fork Holston Lake tributary to Tennessee, parallel to Route 618.

City / County: Scott Co. Washington Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6CBOO002.71 has a 50% exceedance of the E. coli water quality standard.

Boozy Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.53**

Sources:

Rural (Residential Areas) Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O10R-01-PCB** **North Fork Holston River**

Location: This segment begins in Saltville at river mile 85.40 and extends to the Route 80 bridge. Historically there has been an error in the segments that are included in this impairment due to a discrepancy in the VDH website.

City / County: Scott Co. Smyth Co. Washington Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The Virginia Department of Health added polychlorinated biphenyls (PCBs) to the fish consumption ban in 12/13/2004. Stations 6CNFH059.65 and 6CNFH039.18 revealed PCBs in the sediment.

North Fork Holston River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**15.27**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O10R-05-BEN** **Laurel Creek**

Location: This segment includes the headwaters within Jefferson National Forest in Bland County downstream to the confluence with Roaring Fork.

City / County: Bland Co. Tazewell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological stations located at 6CLAE018.29 was impaired based on the VSCI.

Laurel Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.65**

Sources:

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O11L-01-TEMP** **Hidden Valley Lake**

Location: This is a warm water fishery owned by the Department of Game and Inland Fisheries.

City / County: Washington Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

Station 6CBRU010.91 had a 22% exceedance of the water quality standard for temperature.

Hidden Valley Lake	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Temperature, water - Total Impaired Size by Water Type:		**61.10**	

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O11L-02-PH** **Laurel Bed Lake**

Location: Laurel Bed Lake is a DGIF owned cool water fishery, located in Clinch Mountain Wildlife Management Area.

City / County: Russell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

A station located at 6CLAU001.84 had a 18% exceedance of the pH water quality criteria.

Laurel Bed Lake		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:		**359.43**	

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

***Cause Group Code:* O11L-02-TEMP** **Laurel Bed Lake**

Location: This lake is owned by the Department of Game and Inland Fisheries and lies within Clinch Mountain Wildlife Management Area.

City / County: Russell Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Temperature, water / 5C

Station 6CLAU001.84 had a 14% exceedance of the water quality standard for temperature.

Laurel Bed Lake		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Temperature, water - Total Impaired Size by Water Type:		**359.43**	

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* O12R-03-BEN** **Greendale Creek**

Location: This segment extends from the North Fork Holston River confluence upstream 4.1 miles.

City / County: Washington Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological station located at 6CGRN003.29 was impaired based on VSCI scores of 53 and 54 in 2007.

Greendale Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.03**

Sources:

- Highway/Road/Bridge Runoff (Non-construction Related)
- Livestock (Grazing or Feeding Operations)
- Rural (Residential Areas)

Tennessee and Big Sandy River Basins

***Cause Group Code:* P01L-03-HG** **Lake Witten**

Location: This Lake is located in Cavitts Creek Park in Tazewell County.

City / County: Tazewell Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Two largemouth fish tissue samples collected in May 2007 exceeded the Virginia Department of Heath's level of concern for Mercury (Hg).

Lake Witten **Fish Consumption**		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
	Mercury in Fish Tissue - Total Impaired Size by Water Type:		**53.17**	

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P01R-02-BEN** **Plum Creek**

Location: This segment extends from the headwaters of Plum Creek downstream to the confluence with the Clinch River.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological station located at 6BPLU002.15 was impaired based on a VSCI score of 41.

Plum Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.88**

Sources:

Loss of Riparian Habitat Unrestricted Cattle Access

Tennessee and Big Sandy River Basins

***Cause Group Code:* P03R-01-BEN** **Clinch River Tributaries**

Location: This segment extends from confluence with Clinch River upstream to the Left Fork Coal Creek confluence, Big Creek from the confluence with West Fork downstream to the confluence with the Clinch River, Mudlick Creek from the confluence with Zeke Creek downstream to the confluence with the Clinch River, and Town Hill Creek from the confluence with Little Town Hill Creek downstream to the confluence with the Clinch River.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Probabilistic Monitoring station at 6BCOL001.93, 6BBIG000.99, 6BMCK000.04, and 6BTHC000.06 were impaired based on the VSCI scores.

Clinch River Tributaries **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.87**

Sources:

Coal Mining
Rural (Residential Areas)
Silviculture Activities
Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P03R-02-HG** **Clinch River**

Location: This segment begins just upstream of the Town Hill confluence and continues downstream to the Mill Creek confluence.

City / County: Tazewell Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Three fish samples collected in 2007 exceeded the Department of Environmental Quality's screening value for Mercury.

Clinch River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**5.55**

Sources:

Atmospheric Deposition - Toxics

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P04R-02-BEN** **Swords Creek**

Location: This segment includes the mainstem from the Sculpture Spring Branch confluence downstream to the confluence with Clinch River.

City / County: Russell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological monitoring station located at 6BSWO000.11 was impaired based on VSCI scores of 47.68 and 68.53.

Swords Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.91**

Sources:

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P04R-03-BEN** **Mill Creek**

Location: From the Clinch River confluence near West Raven upstream to the confluence of Right Fork Mill Creek.

City / County: Russell Co. Tazewell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological monitoring station located at 6BMLG000.55 was impaired based on VSCI scores.

Mill Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.22**

Sources:

Rural (Residential Areas)	Streambank Modifications/destabilization

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P06R-01-BEN** **Big Cedar Creek**

Location: From the vicinity of Daughertys Cave downstream to the confluence with the Clinch River

City / County: Russell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological monitoring station located at 6BBCD002.01 was impaired based on VSCI scores of 59.21 and 52.43 in 2012.

Big Cedar Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.20**

Sources:

Rural (Residential Areas) Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P07R-02-BEN** **Mill Creek**

Location: A Clinch River tributary, from the headwaters on Copper Ridge to Pennus Hollow.

City / County: Russell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological monitoring station located at 6BMIF003.23 was impaired based on VSCI scores of 53.50 and 56.22.

Mill Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.84**

Sources:

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P09L-01-HG** **Bark Camp Lake**

Location: This lake is also known as Corder Bottom Lake, located in Scott County.

City / County: Scott Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Three fish samples exceeded the Department of Environmental Quality's screening value for Mercury.

Bark Camp Lake **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**41.06**	

Sources:

Source Unknown

Tennessee and Big Sandy River Basins

***Cause Group Code:* P09R-02-BAC** **Clinch River**

Location: The Clinch River mainstem from the Lick Creek confluence at Boody, upstream to an unnamed tributary at rivermile 259.68, includes Kiser Bend, site of the Clinch River Steam Plant and the Clinch River mainstem from an unnamed tributary at rivermile 259.68 upstream to the Dumps Creek confluence, at Kiser Bend.

City / County: Russell Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station at 6BCLN256.31 had a 30% exceedance of the bacteria water quality standard and station 6BCLN264.27 had a 19% exceedance of the bacteria water quality standard

Clinch River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.96**

Sources:

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P11R-03-PCB** **Guest River and Bear Creek**

Location: This segment begins at the confluence with Parson's Branch and continues downstream to the confluence with the Clinch River and Bear Creek from the Yellow Creek confluence downstream to the Guest River confluence.

City / County: Norton City Wise Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

Sediment and Fish Tissue stations located at 6BGUE020.37, 6BGUE014.49 and 6BGUE009.33 indicated levels of polychlorinated biphenyls (PCBs) in carp that exceeded DEQ's screening value for PCBs. Sediment and Fish Tissue stations located at 6BGUE001.14 and 6BGUE006.45 found PCB levels that exceeded the Virginia Department of health's level of concern. PCBs were detected in carp and sediment at station 6BBER001.14.

Guest River and Bear Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**25.96**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P11R-05-BEN** **Eastland Creek**

Location: This segment of Eastland Creek includes from the headwaters downstream to the confluence with Clear Creek.

City / County: Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological station located at 6BEAS000.07 was impaired based on VSCI scores.

Eastland Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.00**

Sources:

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P12R-01-BEN** **Bark Camp Branch**

Location: This segment begins at the headwaters, includes the tributary, and continues downstream to the Stony Creek confluence.

City / County: Scott Co. Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

DEQ biological station 6BBAR000.97 was impaired based on the VSCI score. United States Forest Service (USFS) monitoring station 9150 indicated slight impairment.

Bark Camp Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.07**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P12R-01-PH** **Bark Camp Branch**

Location: This segment begins at the headwaters, includes the tributary, and continues downstream to the Stony Creek confluence.

City / County: Scott Co. Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The biological station 6BBAR000.97 found that pH did not meet water quality standards.

Bark Camp Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.07**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P12R-02-BEN** **Devil Fork**

Location: This segment begins at the headwaters of Devil Fork and continues downstream to the confluence with Straight Fork.

City / County: Scott Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

DEQ biological station 6BDEV000.07 was impaired based on the VSCI score of 34 and United States Forest Service monitoring station 9131 was also impaired.

Devil Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.40**

Sources:

Atmospheric Deposition - Acidity	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P12R-02-pH** **Devil Fork**

Location: Devil Fork is a tributary to Straight Fork in Jefferson National Forest, north of Stone Mountain.

City / County: Scott Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The DEQ Biological monitoring station 6BDEV000.07 found that pH did not meet water quality standards.

Devil Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**4.40**

Sources:

Atmospheric Deposition - Acidity — Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P13R-02-PCB** **Stock Creek**

Location: From stream mile 4.56 downstream to the Clinch River confluence at Clinchport.

City / County: Scott Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

AWQM and sediment/fish tissue station located at 6BSTO004.56 had one fish that exceeded the DEQ screening value for Hg.

Stock Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**4.78**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P14R-02-BEN** **Blackoak Branch Tributary**

Location: This segment is north of Spivey Mill parallel to Route 665.

City / County: Scott Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological station located at 6BXGD000.01 was impaired based on the VSCI scores.

Blackoak Branch Tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.76**

Sources:

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P17R-00-PH** **Dark Hollow**

Location: This segment is a Powell River tributary south of Appalachia.

City / County: Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The biological monitoring station located at 6BDAR000.26 resulted in low VSCI scores. 2 of 2 pH measurements failed to meet water quality standards.

Dark Hollow	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.40**

Sources:

Atmospheric Deposition - Acidity

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P17R-04-BEN** **Unnamed tributary to Callahan Creek**

Location: Flows from Ninemile Spur upstream of Stonega, WQS Section 1.

City / County: Norton City Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological monitoring data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

Unnamed tributary to Callahan Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.58**

Sources:

Unspecified Land Disturbance

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P17R-09-BEN** **Roaring Fork and Potcamp Fork**

Location: This segment includes from the headwaters above the Roaring Fork community to the Powell River confluence at Kent Junction, parallel to Route 603, including Potcamp Fork and Canepatch Creek.

City / County: Norton City Wise Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological monitoring station located at 6BRIN001.84 was impaired based on VSCI scores of 49.15 and 27.84 and non agency biological monitoring data provided by Appalachian Technical Services indicates impairment on Potcamp Fork and Canepatch Creek.

Roaring Fork and Potcamp Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**26.77**

Sources:

Coal Mining Mountaintop Mining Silviculture Harvesting Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P17R-12-BEN** **Powell River**

Location: This segment includes the mainstem of the Powell River south of Appalachia from Pigeon Creek to the Roaring Creek confluence.

City / County: Norton City Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

Powell River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.00**

Sources:

Coal Mining

Impacts from Abandoned Mine Lands (Inactive)

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P17R-13-BEN** **Looney Creek**

Location: This segment is a Powell River tributary west of Appalachia.

City / County: Norton City Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

Looney Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.54**

Sources:

Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P18L-01-HG** **Big Cherry Reservoir**

Location: This reservoir is located east of East Stone Gap on Powell Mountain.

City / County: Wise Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Two largemouth bass samples exceeded the Virginia Department of Health's level of concern for Mercury.

Big Cherry Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**104.00**	

Sources:

Atmospheric Deposition - Toxics

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P18L-01-PH** **Big Cherry Reservoir**

Location: This reservoir is located east of East Stone Gap on Powell Mountain.

City / County: Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Category 5C: Monitoring station 6BPLL012.79 had a 61% exceedance of the pH water quality criteria and station 6BPLL012.99 had a 79% exceedance of the pH criteria.

Big Cherry Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:		**104.00**	

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P18R-01-PH** **South Fork Powell River**

Location: Mainstem from the Butcher Fork confluence north of East Stone Gap downstream to the confluence with the Powell River at Three Forks in Big Stone Gap.

City / County: Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The AWQM station located at 6BPLL001.61 had a 13% exceedance of the pH water quality criterion.

South Fork Powell River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.83**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P20L-01-HG** **Lake Keokee**

Location: This lake is located south of Exeter on Stone Mountain.

City / County: Lee Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

A largemouth bass sample exceeded the Virginia Department of Health level of concern for Mercury and one fish tissue sampled exceeded the Department of Environmental Quality's screening value for Mercury.

Lake Keokee	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**96.21**	

Sources:

Atmospheric Deposition - Toxics

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P20R-01-TEMP** **North Fork Powell River**

Location: This segment includes the mainstem from the Payne Branch confluence at Sigma downstream to the confluence with Straight Creek.

City / County: Lee Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

Class V water quality standard for temperature was exceeded in 36% of the samples at the AWQM station located at 6BPWL006.59. Station 6BPWL010.36 had a 18% exceedance of the Class V water quality standard for temperature.

North Fork Powell River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**10.65**

Sources:

Silviculture Activities

Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P20R-04-BEN** **North Fork Powell River Tributaries**

Location: These segments include the headwaters of Bundy Creek at Calvin; Cox Creek near Delvale; and Jones Creek from the headwaters at Trace Gap to the confluence with Reeds Creek, northeast of Purcell.

City / County: Lee Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

North Fork Powell River Tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.23**

Sources:

Silviculture Activities Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P21R-02-BAC** **Hardy Creek**

Location: This segment includes the Hardy Creek mainstem and its tributaries.

City / County: Lee Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6BHAR000.34 had a 27% exceedance of the bacteria water quality standard.

Hardy Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**12.52**

Sources:

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P21R-03-BAC** **Powell River and Town Creek**

Location: This segment includes the mainstem of Town Creek, just south of Jonesville to the confluence with Batie Creek.

City / County: Lee Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6BTOW001.32 had a 13% exceedance of the E.coli standard.

Powell River and Town Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.42**

Sources:

Rural (Residential Areas)

Sewage Discharges in Unsewered Areas

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P21R-04-BAC** **Dry Creek**

Location: From the Trading Creek confluence, along Route 656, downstream to the confluence with Hardy Creek near Route 650.

City / County: Lee Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6BDBR001.69 had a 18% exceedance of the E. coli water quality standard.

Dry Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.87**

Sources:

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P22R-01-TEMP** **Wallen Creek**

Location: North of Powell Mountain, from headwaters through Stickleyville, downstream to Rasnic Hollow.

City / County: Lee Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

Class V water quality standard for temperature was exceeded in 18% of the samples at the AWQM station located at 6BWAL026.64.

Wallen Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**42.90**

Sources:

- Grazing in Riparian or Shoreline Zones
- Loss of Riparian Habitat
- Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P23R-02-BAC** **Martin Creek**

Location: This segment includes the headwaters and extends downstream to the Tennessee political boundary.

City / County: Lee Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6BMTN003.56 had a 45% exceedance of the E.coli water quality standard.

Martin Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.66**

Sources:

Sewage Discharges in Unsewered Areas

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P23R-03-BAC** **Fourmile Creek**

Location: This segment includes from the headwaters, south of Ingles Chapel, parallel to Route 744 and flows south into Tennessee.

City / County: Lee Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6BFOU003.59 had a 50% exceedance of the E. coli water quality standard.

Fourmile Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.36**

Sources:

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* P24R-01-BAC** **Indian Creek**

Location: This segment includes the mainstem from the confluence of Machine Branch downstream to the Tennessee political boundary and the mainstem from Ketron Mill to just south of Elydale School

City / County: Lee Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6BIND009.12 had a 50% exceedance of the E.coli water quality standard. Non agency bacteria monitoring data provided by the Department of Conservation and Recreation at Wilderness Road State Park had a 66% exceedance of the E. coli water quality standard.

Indian Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**12.62**

Sources:

- Sewage Discharges in Unsewered Areas
- Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q03R-02-PCB** **Knox Creek and Tributaries**

Location: This segment includes the mainstem from the headwaters to the Kentucky political boundary. It also includes all tributaries to Knox Creek that were included in the December 2005 Virginia Department of Health (VDH) Fish Consumption Ban update including Guess Fork, Big Butt Branch and tributaries, Long Bottom Branch and Pawpaw Creek.

City / County: Buchanan Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

Fish Tissue stations located at 6AKOX023.25, 6AKOX020.36, 6AKOX019.30, 6AKOX017.97, 6AKOX014.37, 6AKOX012.06, 6AKOX010.98, 6AKOX008.14 indicated an exceedance of the DEQ screening value for polychlorinated biphenyls (PCBs) and the VDH human health criteria for PCBs.

Knox Creek and Tributaries **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**200.75**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q03R-03-BAC** **Pawpaw Creek and Jacobs Fork**

Location: This segment includes the Pawpaw Creek mainstem from the Kentucky political boundary to the confluence with Knox Creek and Jacobs Fork.

City / County: Buchanan Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station 6AJBF010.88 had a 50% exceedance of the E.coli water quality standard and 6APPW000.03 had a 41% exceedance of the E.coli water quality standard.

Pawpaw Creek and Jacobs Fork **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.57**

Sources:

Rural (Residential Areas)	Sewage Discharges in Unsewered Areas

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q05R-00-TEMP** **Dismal Creek**

Location: This segment includes Dismal Creek from the confluence of Long Branch to the confluence with Levisa Fork.

City / County: Buchanan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

The AWQM station located at 6ADIS001.24 had a 16% exceedance of the temperature water quality standard for WQS Class V waters.

Dismal Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**5.38**

Sources:

Loss of Riparian Habitat	Silviculture Activities	Unspecified Land Disturbance

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q08R-05-BEN** **Conaway Creek**

Location: Levisa Fork Tributary at Conaway near the Kentucky state line upstream to the Caney Fork confluence.

City / County: Buchanan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Biological monitoring station at 6ACNW000.07 was impaired based on VSCI scores.

Conaway Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.62**

Sources:

Coal Mining Mountaintop Mining Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q08R-06-BEN** **State Line Branch**

Location: A tributary to Levisa Fork in KY north of Conaway.

City / County: Buchanan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological monitoring data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

State Line Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.35**

Sources:

Coal Mining Mountaintop Mining Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q08R-07-BEN** **Home Creek Headwaters**

Location: This segment includes the headwaters of Home Creek.

City / County: Buchanan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

Home Creek Headwaters	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.80**

Sources:

Coal Mining
Rural (Residential Areas)
Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q08R-08-BEN** **Conaway Creek and Tributaries**

Location: Headwaters of Conaway Creek.

City / County: Buchanan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

Conaway Creek and Tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.99**

Sources:

Coal Mining Mountaintop Mining Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q08R-09-BEN** **Poplar Creek**

Location: This segment includes the mainstem of Poplar Creek from the Poplar Fork confluence downstream to rivermile 0.19, above the confluence with the Levisa Fork near Harman Junction.

City / County: Buchanan Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological monitoring data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

Poplar Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.03**

Sources:

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q09R-01-BAC** **Russell Fork**

Location: This segment includes the unassessed stream segments in the headwaters of Russell Fork downstream to the confluence of the Pound River near Bartlick and from the Kentucky state line upstream 2.2 miles. Hurricane Creek from the confluence of Carver Branch downstream to the confluence with Russell Fork and Indian Creek from Duty downstream to the confluence with Russell Fork.

City / County: Buchanan Co. Dickenson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6ARSS047.10 had a 17% exceedance of the E.coli water quality standard, station 6ARSS041.08 had a 33% exceedance, station 6ARSS024.30 had a 14% exceedance, station 6ARSS014.15 had a 14% exceedance and Level III citizen monitoring station 6ARSS-RT722-MRRP had a 66% exceedance. Station 6AHRC000.05 had a 72% exceedance of the E. coli water quality standard and 6AIND000.52 had a 33% exceedance of the E. coli water quality standard.

Russell Fork **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**34.48**

Sources:

Rural (Residential Areas)

Sewage Discharges in Unsewered Areas

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

Cause Group Code: **Q09R-01-BEN** **Indian Creek**

Location: A Russell Fork tributary from the Cane Creek confluence at Duty, parallel to Route 602 downstream to the Russell Fork confluence at the Buchanan/Dickenson County line.

City / County: Buchanan Co. Dickenson Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Probabilistic monitoring station located at 6AIND000.52 was impaired based on the VSCI scores.

Indian Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.69**

Sources:

Coal Mining Mountaintop Mining Rural (Residential Areas) Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

Cause Group Code: **Q09R-02-BEN** **Sullivan Branch**

Location: This segment begins at the headwaters of Sullivan Branch and continues downstream to the confluence with Indian Creek.

City / County: Buchanan Co. Dickenson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological station located at 6ASLV000.85 was impaired based on the VSCI scores.

Sullivan Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.62**

Sources:

Rural (Residential Areas) Silviculture Harvesting Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q10R-01-BEN** **Fryingpan Creek**

Location: From headwaters on Sandy Ridge near Carrie downstream to the Priest Fork confluence.

City / County: Dickenson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The probabilistic monitoring station 6AFRY006.70 indicates impairment based on VSCI scores.

Fryingpan Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.45**

Sources:

Coal Mining	Unspecified Land Disturbance

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q11R-02-BAC** **McClure River and Tributaries**

Location: This segment begins at the Buffalo Creek confluence and continues downstream to the Road Branch confluence and Buffalo Creek from the headwaters downstream to the confluence with McClure River and includes Roaring Fork

City / County: Dickenson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The station identified as BC on Buffalo Creek had a 50% exceedance of the E.coli water quality standard and station 6AMCR007.46 had a 16% exceedance and station 6AMCR014.69 had a 60% exceedance and station 6AROR-RF-MRRP had a 22% exceedance of the E. coli water quality standard.

McClure River and Tributaries **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**28.40**

Sources:

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q11R-02-BEN** **McClure River and Tributaries**

Location: This segment includes the McClure River upstream of Caney Creek confluence to the Buffalo Creek confluence. This segment also includes Wakenva Branch.

City / County: Dickenson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological station located at 6AMCR014.13 was impaired based on the VSCI scores. Non agency biological monitoring data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

McClure River and Tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.80**

Sources:

Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q11R-04-BEN** **Cowan Rose Branch**

Location: This segment includes Cowan Rose Branch, a tributary to Open Fork west of Carrico Ridge.

City / County: Dickenson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological monitoring data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

Cowan Rose Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.30**

Sources:

Coal Mining	Unspecified Land Disturbance

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q11R-05-BEN** **Dismal Fork**

Location: This segment includes Dismal Fork, a Neece Creek tributary between Brushy Ridge and Dismal Ridge.

City / County: Dickenson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological monitoring data indicated impairment based on VSCI scores.

Dismal Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.51**

Sources:

Coal Mining (Subsurface) Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q12R-01-BAC** **Russell Prater Creek**

Location: This segment extends from the headwaters at Poplar Gap downstream to the confluence with Russell Fork.

City / County: Buchanan Co. Dickenson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6ARPC000.40 had a 58% exceedance of the E.coli water quality standard.

Russell Prater Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**11.72**

Sources:

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

Cause Group Code: **Q12R-05-BEN** **Middle Fork (Hunts Creek)**

Location: This segment is located parallel to Route 631 near Breaks.

City / County: Buchanan Co. Dickenson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Non agency biological monitoring data provided by Appalachian Technical Services indicated impairment based on VSCI scores.

Middle Fork (Hunts Creek)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.93**

Sources:

Loss of Riparian Habitat Silviculture Activities Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q13L-01-HG** **John Flannagan Reservoir**

Location: This reservoir is located Northeast of Clintwood near the Kentucky state line.

City / County: Dickenson Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Fish tissue sampling done in 2008 found one largemouth bass that exceeded the Virginia Department of Health's level of concern and one exceeded the DEQ screening value for Mercury.

John Flannagan Reservoir **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**1,177.21**	

Sources:

Atmospheric Deposition - Toxics

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q13R-02-TEMP** **North Fork Pound River**

Location: This segment extends from the PWS segment at the intake in the North Fork Pound Reservoir, upstream five miles on all tributaries.

City / County: Dickenson Co. Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

Station 6APNK000.08 had a 33% exceedance of the water quality standard for temperature.

North Fork Pound River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Temperature, water - Total Impaired Size by Water Type:			**10.25**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q13R-03-BAC** **Pound River**

Location: This segment of the Pound River extends from the Georges Fork confluence downstream to the lake backwaters at Jerry Branch.

City / County: Dickenson Co. Wise Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6APNR023.86 had a 18% and 6APNR028.76 and 30% exceedance of the E.coli water quality standard. Station 6APNR035.66 had a 18% exceedance of the E.coli water quality standard.

Pound River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**16.94**

Sources:

Sewage Discharges in Unsewered Areas

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q13R-03-TEMP** **North Fork Pound River**

Location: This segment includes the mainstem, south of Horse Gap from the dam of North Fork Pound Lake, downstream to the confluence with the Pound River.

City / County: Wise Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Temperature, water / 5C

Station 6APNK000.08 had a 16% exceedance and 6APNK001.10 has 30% exceedance of the water quality standard for temperature.

North Fork Pound River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Temperature, water - Total Impaired Size by Water Type:			**1.29**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q13R-04-BEN** **Indian Creek**

Location: Pound River tributary south of the Town of Pound upstream to Barn Branch confluence.

City / County: Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station 6AIAC000.42 was impaired based on VSCI scores of 34.01 and 32.55 in 2010. SOS monitoring at 6BIAC-Indian Creek-SOS in 2007 detected an unacceptable benthic community.

Indian Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.98**

Sources:

Coal Mining Rural (Residential Areas) Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q13R-06-BEN** **Pound River**

Location: This segment includes the Pound River from Georges Fork confluence upstream to the confluence of the North Fork and South Fork Pound Rivers.

City / County: Dickenson Co. Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological station located at 6APNR034.58 was impaired based on VSCI scores. Station 6APNR023.86 was impaired based on VSCI scores of 51.97 and 31.98 in 2013.

Pound River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**16.94**

Sources:

Coal Mining Rural (Residential Areas) Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q13R-07-BEN** **Bear Pen Branch**

Location: Bear Pen Branch from the confluence with Childress Branch downstream to the confluence with the Pound River.

City / County: Dickenson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Benthic station 6ABEP000.08 was impaired based on VSCI scores.

Bear Pen Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.30**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

Cause Group Code: **Q13R-09-BAC** **Big Branch**

Location: This segment includes Big Branch, a tributary to the South Fork Pound River off Route 671.

City / County: Dickenson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Citizen monitoring station 6A-BIGBR-NF-MRRP has a 40% exceedance of the E. coli water quality standard.

Big Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.46**

Sources:

Rural (Residential Areas) Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q13R-09-BEN** **North Fork Pound River**

Location: This segment includes the headwaters of the North Fork Pound River north of Flat Gap, including Bear Fork, downstream to Bad Creek confluence at Gilley.

City / County: Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Biological Monitoring station at 6APNK008.28 was impaired based on VSCI scores.

North Fork Pound River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.29**

Sources:

Coal Mining Mountaintop Mining Silviculture Activities Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q13R-10-BAC** **South Fork Pound River**

Location: This segment includes the mainstem from the Donald Branch downstream to confluence with the Pound River west of the Town of Pound.

City / County: Wise Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The citizen monitoring station located at 6APNS-RM-MRRP had a 80% exceedance of the E. coli water quality standard AWQM station 6APNS003.38 had a 25% exceedance of the E. coli water quality standard.

South Fork Pound River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.24**

Sources:

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q14R-01-BAC** **Cranesnest River**

Location: This segment extends from the headwaters downstream to the confluence with Bartley Branch at the backwaters of the Flannagan Reservoir.

City / County: Dickenson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 6ACNR021.72 had a 27% exceedance of the E.coli water quality standard and station 6ACNR009.17 had a 15% exceedance of the E.coli standard.

Cranesnest River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**20.45**

Sources:

Rural (Residential Areas)	Sewage Discharges in Unsewered Areas

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q14R-01-BEN** **Birchfield Creek and Cranesnest River**

Location: This segment includes the mainstem of the Cranesnest River from the headwaters downstream to the Honeycamp Branch confluence and Birchfield Creek from the confluence with Happy Hollow downstream to the Cranesnest River.

City / County: Dickenson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Benthic stations 6ACNR017.24, 6ACNR018.89 and 6ABLD000.90 were impaired based on VSCI scores.

Birchfield Creek and Cranesnest River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**15.45**

Sources:

Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Tennessee and Big Sandy River Basins

***Cause Group Code:* Q14R-02-BEN** **Dotson Creek**

Location: A Birchfield Creek tributary parallel to Route 636.

City / County: Wise Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The biological monitoring station at 6ADOT000.46 was impaired based on VSCI scores.

Dotson Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.81**

Sources:

Coal Mining Surface Mining

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* AO23-01-BAC** **Atlantic Ocean Beaches - Croatan**

Location: This cause encompasses the Croatan Beach along shore of City of Virginia Beach. VDH bathing beach areas.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired for Croatan Beach based on Enterococcus bacteria data from the VDH-Beach station VA723069 (1 viol. / 26 Geo-mean obs.) along with multiple swimming advisories between the years 2009-2014. In 2014, Tidewater beaches experienced a wide spread precipitation event on Sept 8 with a total of 5 inches of rainfall. Since the event is within the last two years of the assessment period, the beach will be listed in the 2016 IR as impaired.

Atlantic Ocean Beaches - Croatan **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.410**		

Sources:

Wet Weather Discharges
(Non-Point Source)

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C01E-17-PCB** **Chesapeake Bay and Tidal Tributaries**

Location: Chesapeake Bay mainstem and its small coastal tidal tributaries

City / County: Accomack Co. | Chesapeake Bay - Co | City Not Applicable. | Lancaster Co. | Mathews Co. | Middlesex Co. | Norfolk City | Northampton Co. | Northumberland Co. | Poquoson City. | Virginia Beach City | York Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The Chesapeake Bay and its small coastal tidal tributaries are included under the 12/13/2004 VDH Fish Consumption Advisories for PCBs. No more than 2 meals/month are recommended of anadromous (coastal) striped bass.

Also, VDH issued additional fish consumption advisory for PCBs in the Mobjack Bay and its tributaries, particularly the East, West, and Ware Rivers (on 12/13/2004) and in the Piankatank River from Rt. 17 to Deep Point Boat Landing (10/7/2009). No more than two meals/month of gizzard shad are recommended.

The advisories are based on the results of DEQ's fish tissue monitoring program, which show elevated PCBs levels in several monitoring sites within the basin, including:

7-GWR007.97 in the Great Wicomico River
7-COC000.40 in Cockrell Creek
7-IND001.80 in Indian Creek
7-DYM000.00 in Dymer Creek
7-PNK019.85 in the Piankatank River
7-MLF002.45 in Milford Haven
7-WIN000.88 in Winter Harbor
7-EST002.65 in the East River
7-NOR003.65 in the North River
7-WAR005.77 in the Ware River

Chesapeake Bay and Tidal Tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Fish Tissue - Total Impaired Size by Water Type:	**1,825.592**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C01R-01-BAC** **Crabbe Mill Stream**

Location: The nontidal mainstem of Crabbe Mill Stream.

City / County: Northumberland Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2012 cycle, Crabbe Mill Stream was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 7-CMS002.00, which is located at Route 201.

Although Crabbe Mill Stream is within the TMDL study area for the Great Wicomico River Shellfish Bacterial TMDL, there is a VPDES discharger which drains to the stream that was not addressed in the TMDL; therefore, the impairment cannot be nested.

Crabbe Mill Stream **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.90**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C01R-01-DO** **Crabbe Mill Stream**

Location: The nontidal mainstem of Crabbe Mill Stream.

City / County: Northumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, Crabbe Mill Stream was impaired of the Aquatic Life Use due to a dissolved oxygen violation rate of 3/14 at 7-CMS002.00. Monitoring at 7-CMS000.12 was acceptable (1/17).

Crabbe Mill Stream **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.90**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C01R-01-PH** **Crabbe Mill Stream**

Location: The nontidal mainstem of Crabbe Mill Stream.

City / County: Northumberland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Crabbe Mill Stream was impaired of the Aquatic Life Use due to pH violation rates of 2/17 at 7-CMS000.12 and 2/14 at 7-CMS002.00.

Crabbe Mill Stream		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**3.90**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C01R-02-BEN** **Dymer Creek**

Location: The nontidal mainstem of Dymer Creek

City / County: Lancaster Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2014 cycle, nontidal Dymer Creek was impaired of the Aquatic Life Use due to an impacted benthic community at 7-DYM003.52, which is located at the Route 200 bridge.

Dymer Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.06**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C02R-03-HG** **Dragon Swamp/Piankatank River**

Location: Dragon Swamp and the Piankatank River from the headwaters near the State Route 620 bridge downstream to Deep Point Boat Landing (Rt. 606) across from Piankatank Shores.

City / County: Essex Co. Gloucester Co. King And Queen Co. Middlesex Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Dragon Swamp and the Piankatank River are considered impaired of the Fish Consumption Use based on DEQ monitoring which has indicated elevated levels of mercury in largemouth bass.

Mercury exceedances at:
7-DRN003.40
7-DRN001.43
7-PNK017.47
7-PNK020.42

A portion of this area was considered fully supporting but threatened in 2002 based on these results. VDH subsequently issued a fish consumption advisory and the stream was downgraded to impaired.

In July 2005, VDH extended the Fish Consumption Advisory boundary to include the entire length of Dragon Swamp from the headwaters near Rt. 620 downstream to Deep Point Boat Landing. No more than two meals/month of largemouth bass are recommended.

Dragon Swamp/Piankatank River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:	**2.722**		**31.97**

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C03E-10-EBEN** **Piankatank River**

Location: Piankatank River / Dragon Swamp tidal mainstem

City / County: Gloucester Co. Mathews Co. Middlesex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

During the 2006 cycle, the Piankatank River from Pond Point to just upstream of Iron Point was impaired of the Aquatic Life Use based on information collected from the Coastal 2000 station 7-PNK005.20 in 2003.

During the 2008 cycle, Coastal 2000 monitoring in 2004 at station 7-PNK005.35 also indicated benthic impairment. In addition, during the 2008 cycle, estuarine probabilistic monitoring was conducted at Coastal 2000 station 7-PNK010.41. The data was assessed by DEQ's Central Office staff who assessed the area around Berkley Island as impaired due to alteration of the benthic community (C03E-14-EBEN due 2020).

During the 2014 cycle, the entire mainstem Piankatank River/Dragon Swamp was impaired of the Aquatic Life Use based on the Chesapeake Bay Benthic Index of Biological Integrity. The impairment will be expanded. The TMDL due date is 2018 to reflect the earliest benthic impairment within the segment.

In addition, 2011 monitoring at Coastal 2000 station 7BPNK003.14 indicated benthic impairment. There is a high potential of chronic effects due to sediment PAHs.

During the 2016 cycle, benthic impairment was noted at Coastal 2000 estuarine probabilistic monitoring station 7BPNK016.89 (Category 5A, scenario 8.)

Piankatank River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Estuarine Bioassessments - Total Impaired Size by Water Type:	**19.497**		

Sources:

Changes in Ordinary Stratification and Bottom Water Hypoxia/Anoxia

Contaminated Sediments

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C03E-16-BAC** **Piankatank River**

Location: River's bend around Berkley Island

City / County: Middlesex Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

During the 2014 cycle, the Piankatank River around Berkley Island was impaired of the Recreation Use due to an enterococci exceedance rate of 4/12 at 7-PNK010.39, which is located at the end of Route 630.

Piankatank River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.785**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C03E-17-BAC** **Piankatank River**

Location: One-half mile radius around monitoring station 7-PNK005.36 on the Piankatank River between Pond Point and Iron Point.

City / County: Mathews Co. Middlesex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle, the segment was impaired of the Recreation Use due to an enterococci exceedance rate of 2/11 at 7-PNK05.78, which is located at the Route 630 boat ramp.

Piankatank River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:	**1.167**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C04E-53-BAC** **Whites Creek - Festival Beach**

Location: Whites Creek at Festival Beach

City / County: Mathews Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

During the 2012 cycle, Whites Creek at Festival Beach was mistakenly impaired of the Recreation Use due to 7 short-term swimming advisories during the 2010 swim season. The advisories were limited to 1-3 days in length and therefore are not appropriate for listing.

During the 2016 cycle, there were no beach closures of a week or more duration. However, there were two exceedances of the bacteria geometric mean during the 2016 cycle and the beach will remain listed.

Whites Creek - Festival Beach		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation	Enterococcus - Total Impaired Size by Water Type:	**0.046**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C04R-01-DO** **East River**

Location: Nontidal mainstem of the East River.

City / County: Mathews Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, the nontidal East River was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 4/12 at 7-EST008.71, which is located at Rt. 14.

East River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.59**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C04R-01-PH** **East River**

Location: Nontidal mainstem of the East River.

City / County: Mathews Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, the nontidal East River was impaired of the Aquatic Life Use due to a pH exceedance rate of 8/12 at 7-EST008.71, which is located at Rt. 14.

East River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**0.59**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C07E-01-PCB** **Chesapeake Bay & Tidal Tributaries VDH Fish Consumption Advisory for PCBs**

Location: This cause encompasses the Chesapeake Bay & Tidal Tributaries within the lower bay.

City / County: Hampton City Poquoson City. York Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for PCBs fish tissue contamination within the Chesapeake Bay issued 12/13/04. Previous Use ID (2006 IR) as TMDL ID: VDH-Bay PCBs.

Chesapeake Bay & Tidal Tributaries VDH Fish Consumption Advisory for PCBs	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Fish Tissue - Total Impaired Size by Water Type:	**16.028**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C07E-33-EBEN** **Northwest Br. Back River - Upper near Marsh Point**

Location: This cause encompasses the impairment located in the Northwest Branch Back River - Upper portion near Marsh Point. This cause encompasses the benthic community related to the ProbMon station 7-NWB002.18.

City / County: Hampton City Poquoson City.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

The Aquatic Life Use is impaired based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per benthic community structure analysis. There is no source/stressor currently identified as source for the impairment. Probable effects (chronic and acute) of sediment contamination - pesticides (DDT exceeded ERM), metals and PAHs.

Northwest Br. Back River - Upper near Marsh Point	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Estuarine Bioassessments - Total Impaired Size by Water Type:	**0.248**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C07E-38-SF** **Bennett Creek - Upper (DSS_06-IR)**

Location: This cause encompasses the Bennett Creek upstream portion (S of Poquoson R mouth) tributary to Poquoson River. From end of tidal waters downstream 0.1 mi. CBP Segment MOBPH.

City / County: Poquoson City.

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfish Use is impaired based on DSS Condemnation # 053-222 E (effective date 20120823).

Bennett Creek - Upper (DSS_06-IR)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Shellfishing			
Fecal Coliform - Total Impaired Size by Water Type:	**0.039**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C07E-41-SF** **Unsegmented estuaries in Back River - DSS**

Location: This cause encompasses the non segmented areas of C07E. CBP Segment MOBPH.

City / County: Hampton City Poquoson City. York Co.

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfishing Use is impaired based on the DSS Condemnation # 054-021 B (effective date 20141031).

Unsegmented estuaries in Back River - DSS	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Shellfishing			
Fecal Coliform - Total Impaired Size by Water Type:	**0.097**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C07E-43-BAC** **Buckroe Beaches**

Location: This cause encompasses the area northeast of Buckroe Beach southwest to parallel with start of Mill Cr. Portion of CBP Segment CB8PH. No DSS shellfish condemnations.

City / County: Hampton City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on Enterococcus bacteria data from the VDH-Beach station VA884979 (1 viol. / 23 Geo-mean obs.) along with multiple swimming advisories between the years 2009-2014. This is a new impairment for the Buckroe Beach. Tidewater beaches experienced a wide spread precipitation event on Sept 8 with a total of 5 inches of rainfall. Since the event is within the last two years of the assessment period, the beach will be listed in the 2016 IR as impaired.

Buckroe Beaches **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.224**		

Sources:

Urban Runoff/Storm Sewers	Wet Weather Discharges (Non-Point Source)	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C07L-01-CU** **Harwood Mills Reservoir**

Location: This cause encompasses the Harwood Mills Reservoir, portion of Poquoson River upstream of dam @ RM 5.7. PWS for York County.

City / County: York Co.

Use(s): Aquatic Life Wildlife

Cause(s) / VA Category: Copper / 5A

The Aquatic Life and Wildlife impairments are carried from 2004 IR, due water column copper exceedances of the freshwater acute criteria (data supplied by USGS @ station 01677850 - surface layer in September 2002). Exceedance of Cu freshwater acute criteria at violation rate of 100% (3 violates / 3 surface obs.).

Harwood Mills Reservoir		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Copper - Total Impaired Size by Water Type:		**515.36**	

Sources:

Municipal (Urbanized High Density Area)	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C07L-02-DO** **Harwoods Mill Reservoir (PWS)**

Location: This cause encompasses the Harwood Mills Reservoir, portion of Poquoson River upstream of dam @ RM 5.7. PWS for York County.

City / County: York Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired in the 2016 IR for DO. The pooled DO violation rate is 14.4% with 13 viol / 90 obs. Individual station violations are 7-POQ005.72 @ 9/51 and 7-POQ006.84 @ 4/39. Previously in the 2014 IR, the DO was delisted based on a violation rate 8.3%. The DO was initially listed in 2004 with a CGC VAT-C07L-01-DO.

Harwoods Mill Reservoir (PWS)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:		**257.68**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C07R-01-DO** **Newmarket Creek - Lower Riverine**

Location: This cause encompasses Newmarket Creek from 0.1 mi. below Chestnut Ave. downstream to 0.65 mi. below Aberdeen Rd. crossing. Lowermost riverine portion, prior to start of tidal influence. In area of Mount Olive Cemetery.

City / County: Hampton City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on data for DO at station 7-NEW005.44 with 3 viol / 12 obs.

Newmarket Creek - Lower Riverine	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.01**

Sources:

Municipal (Urbanized High Density Area)	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08E-01-EBEN** **London Bridge Creek**

Location: This cause encompasses the entirety of creek, from headwaters near Shipps Corner downstream to Rt. 58 crossing. CBP segment LYNPH. BIBI segment LYNPHa. DSS # 070-025 A (effective 20120412).

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

The Aquatic Life Use is impaired based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per CBP (Benthic-BIBI) analysis. The source/stressor tool identified sediment contaminants as source for the impairment.

London Bridge Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**7.976**		

Sources:

Contaminated Sediments

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08E-01-PCB** **Eastern Branch -Lynnhaven River System VDH Fish Consumption Advisory**

Location: This cause encompasses the Eastern Branch of the Lynnhaven River System and Chesapeake Bay Beaches.

City / County: Norfolk City Virginia Beach City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for Chesapeake Bay and tidal tributaries for PCBs issued 12/13/04 and updated 10/07/2009.

Eastern Branch -Lynnhaven River System VDH Fish Consumption Advisory	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Fish Tissue - Total Impaired Size by Water Type:	**3.833**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08E-14-BAC** **Sara Constance Park, East End**

Location: This cause encompasses the area located along Chesapeake Bay, in Norfolk. Portion of CBP segment CB8PH. No DSS shellfish direct harvesting condemnations present.

City / County: Norfolk City Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 5A

The Recreation Use is impaired based on data from the VDH Beach Monitoring Program geometric mean violation, swimming advisories and joint VDH-DEQ assessment review at Sara Constance Park VDH station VA742733 and Ocean View Park Beach station VA509547. Stations exceeds the monthly geometric mean in 9/2014 (1 viol / 25 mos geomean obs). Tidewater beaches experienced a wide spread precipitation event on Sept 8 with a total of 5 inches of rainfall. Since the event is within the last two years of the assessment period, the beach will be listed in the 2016 IR as impaired.

Sara Constance Park, East End	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.140**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08E-15-BAC** **13th View Beach**

Location: This cause encompasses the area along Chesapeake Bay, in Norfolk. Portion of CBP segment CB8PH. No DSS shellfish direct harvesting condemnations present.

City / County: Norfolk City Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 5A

The Recreation Use is impaired in the 2016 IR based on Enterococcus bacteria data from the VDH-Beach station VA845980 (1 viol. / 23 Geo-mean obs.) along with multiple swimming advisories between the years 2009-2014. The Monthly Geometric Mean violation occurred in July 2013 with no storm event to associate with the exceedance therefore 13th View Beach is newly listed as impaired in the 2016 IR.

13th View Beach **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.353**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08E-16-BAC** **Chicks Beach**

Location: This cause encompasses the area along Chesapeake Bay near Chesapeake Bay Bridge Tunnel, in cities of Norfolk and Virginia Beach. Portion of CBP segment CB8PH. No DSS shellfish direct harvesting condemnations present.

City / County: Norfolk City Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 5A

The Recreation Use is not supported based on data from the VDH Beach Monitoring Program and joint VDH-DEQ assessment review at Chicks Beach Station VA718451. There is 1 geo mean viol in Sept of 2014 out of 25 obs within the 2016 IR. This is a new impairment for Chicks Beach. Tidewater beaches experienced a wide spread precipitation event on Sept 8 with a total of 5 inches of rainfall. Since the event is within the last two years of the assessment period, the beach will be listed in the 2016 IR as impaired.

Chicks Beach **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.433**		

Sources:

Wet Weather Discharges (Non-Point Source)	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-01-CHLA** **Lake Whitehurst**

Location: This cause encompasses the entirety of Lake Whitehurst, from Rt. 60 south to the border of Norfolk Intl Airport. City of Norfolk PWS.

City / County: Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Chlorophyll-a / 5A

Aquatic Life Use is impaired for nutrients. 2016 Lake Whitehurst pooled nutrient results: 1 viol/ 1 obs Chla & TP 2011 (IM). The 2008 second year of nutrients data dropped out of the assessment window. 2014Lake Whitehurst pooled nutrient results: 2 viol / 2 obs Chla & TP 2008, 2011 (IM).

Lake Whitehurst		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life	Chlorophyll-a - Total Impaired Size by Water Type:		**482.28**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-01-DO** **Lake Whitehurst**

Location: This cause encompasses the entirety of Lake Whitehurst, from Rt. 60 south to the border of Norfolk Intl Airport. City of Norfolk PWS.

City / County: Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Aquatic Life Use is impaired for DO. The Aquatic Life Use impairment is retained for 2016. Most of the data dropped off this assessment cycle. The pooled dissolved oxygen concentration measurements (13 violates / 93 obs.) below the minimum criteria (4.0 mg/L) reported from the pooled data at all monitoring lake stations sampled during the current cycle.

Lake Whitehurst		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:		**482.28**	

Sources:

Residential Districts Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-01-HG** **Lake Whitehurst**

Location: This cause encompasses the entirety of Lake Whitehurst, from Rt. 60 south to the border of Norfolk Intl Airport. City of Norfolk PWS.

City / County: Norfolk City

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for Mercury for Lake Whitehurst issued 12/13/04. DEQ (CORE) monitoring at 7-LAW001.00 for fish tissue results have an observed effect for Hg.

Lake Whitehurst **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**482.28**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-01-PCB** **Lake Whitehurst VDH Fish Consumption Advisory**

Location: This cause encompasses the entirety of Lake Whitehurst, from Rt. 60 south to the border of Norfolk Intl Airport. City of Norfolk PWS.

City / County: Norfolk City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for PCBs for Lake Whitehurst issued 12/13/04 modified 10/7/09. DEQ (CORE) monitoring at 7-LAW001.00 for fish tissue results exceeded DEQ-SV for PCBs.

Lake Whitehurst VDH Fish Consumption Advisory **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**482.28**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-01-TP** **Lake Whitehurst**

Location: This cause encompasses the entirety of Lake Whitehurst, from Rt. 60 south to the border of Norfolk Intl Airport. City of Norfolk PWS.

City / County: Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Phosphorus (Total) / 5A

Aquatic Life Use is impaired for nutrients. 2016 Lake Whitehurst pooled nutrient results: 1 viol/ 1 obs Chla & TP 2011 (IM). The 2008 second year of nutrients data dropped out of the assessment window. 2014 Lake Whitehurst pooled nutrient results: 2 viol / 2 obs Chla & TP 2008, 2011 (IM). Nutrients Impaired- Both Chla & TP assessed since algaecide was applied during monitoring year.

Lake Whitehurst **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Phosphorus (Total) - Total Impaired Size by Water Type:		**482.28**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-03-CHLA** **Little Creek Reservoir**

Location: This cause encompasses the upper portion of the lake, beginning at Rt 13 (RM 1.0) downstream to north, ends at lake terminus @ route 60 (RM 0.0). City of Norfolk PWS.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Chlorophyll-a / 5A

Little Creek is also impaired for nutrients. Both Chla and TP do not support ALUS. Little Creek Reservoir pooled nutrients results: 2 viol / 2 obs Chla & TP 2014, 2011 (IM); Both TP and Chla assessed since algaecide was applied during the monitoring year.

Little Creek Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chlorophyll-a - Total Impaired Size by Water Type:		**199.79**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-03-PCB** **Little Creek Reservoir VDH Fish Consumption Advisory**

Location: This cause encompasses the upper portion of the lake, beginning at Rt 13 (RM 1.0) downstream to north, ends at lake terminus @ route 60 (RM 0.0). City of Norfolk PWS.

City / County: Virginia Beach City

Use(s): Fish Consumption

Cause(s) / VA Category: PCB in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for PCBs for Little Creek Reservoir issued 12/13/04.

Little Creek Reservoir VDH Fish Consumption Advisory	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Fish Tissue - Total Impaired Size by Water Type:		**199.79**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-03-TP** **Little Creek Reservoir**

Location: This cause encompasses the upper portion of the lake, beginning at Rt 13 (RM 1.0) downstream to north, ends at lake terminus @ route 60 (RM 0.0). City of Norfolk PWS.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Phosphorus (Total) / 5A

Little Creek is also impaired for nutrients. Both Chla and TP do not support ALUS. Little Creek Reservoir pooled nutrients results: 2 viol / 2 obs Chla & TP 2014, 2011 (IM); Both TP and Chla assessed since algaecide was applied during the monitoring year.

Little Creek Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Phosphorus (Total) - Total Impaired Size by Water Type:		**199.79**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-04-CHLA** **Lake Smith**

Location: This cause encompasses the entirety of Lake Smith. City of Norfolk PWS.

City / County: Norfolk City Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Chlorophyll-a / 5A

Aquatic Life Use is impaired for nutrients.2016 Lake Smith pooled nutrients results: 1 viol/ 1 obs Chla & TP (2011) Nutrients Impaired-Both TP and Chla assessed since algaecide was applied during monitoring year.2014 Lake Smith pooled nutrients results: 2 viol / 2 obs Chla & TP (2008, 2011)

Lake Smith **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Chlorophyll-a - Total Impaired Size by Water Type:		**184.89**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-04-DO** **Lake Smith**

Location: This cause encompasses the entirety of Lake Smith. City of Norfolk PWS.

City / County: Norfolk City Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired due to dissolved oxygen concentration measurements below the minimum criteria (4.0 mg/L). Pooled stations include 7-LAS00.06, 7-LAS001.03, and SM1. Lake Smith's pooled DO violation rate is 1/42 = 2.4%. However, impairment is retained for DO since both 2008 and 2011 data was used to list lake. Now in the 2016 IR the 2008 data is dropped outside of the assessment window and 2011 remains. Need additional data to make delist. Individual station exceedances for DO include 7-LAS00.06 (0/14), 7-LAS001.03 (0/10), SM1 (1/18). Pooled pH data supported use with a lake violation rate of 0/78.

Lake Smith **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**184.89**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-04-TP** **Lake Smith**

Location: This cause encompasses the entirety of Lake Smith. City of Norfolk PWS.

City / County: Norfolk City Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Phosphorus (Total) / 5A

Aquatic Life Use is impaired for nutrients.2016 Lake Smith pooled nutrients results: 1 viol/ 1 obs Chla & TP (2011) Nutrients Impaired-Both TP and Chla assessed since algaecide was applied during monitoring year.2014 Lake Smith pooled nutrients results: 2 viol / 2 obs Chla & TP (2008, 2011).

Lake Smith **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Phosphorus (Total) - Total Impaired Size by Water Type:		**184.89**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-06-HG** **Lake Trashmore - Western Pond VDH Fish Consumption Advisory for Mercury**

Location: This cause encompasses the entirety of Lake Trashmore - Western Pond. Includes western portion of dual ponds lake system, pond on eastern side of Mt. Trashmore is not included in VDH advisory.

City / County: Virginia Beach City

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory (Carp and Largemouth Bass) for mercury and PCBs fish tissue contamination (issued 9/30/04 for Hg, 12/13/04 for PCBs) and DEQ (CORE) monitoring at 7-MTL000.20 for fish tissue results exceeded DEQ-SV for Hg and PCBs.08-IM, FT_PCB Largemouth Bass, Perch, Carp, Gizzard Shad, Walleye; 08-IM, FT_Met-Hg Largemouth Bass, Perch

Lake Trashmore - Western Pond VDH Fish Consumption Advisory for Mercury **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**54.39**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-06-PCB** **Lake Trashmore - Western Pond VDH Fish Consumption Advisory for PCBs**

Location: This cause encompasses the entirety of Lake Trashmore - Western Pond. Includes western portion of dual ponds lake system, pond on eastern side of Mt. Trashmore is not included in VDH advisory.

City / County: Virginia Beach City

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption ban (for Carp) and advisory (for Yellow Perch) for PCBs fish tissue contamination issued 12/13/04. DEQ (CORE) monitoring at 7-LAW001.00 for fish tissue results exceeded DEQ-SV for Hg and PCBs.08-IM, FT_PCB Largemouth Bass, Perch, Carp, Gizzard Shad, Walleye; 08-IM, FT_Met-Hg Largemouth Bass, Perch

Lake Trashmore - Western Pond VDH Fish Consumption Advisory for PCBs **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**54.39**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C08L-07-DO** **Lake Wright**

Location: This cause encompasses the entirety of Lake Wright near South of Norfolk Intl. Airport, south of Rt I-64 adjacent to USAA Office Park. Sampled by City of Norfolk as PWS.

City / County: Norfolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired due to exceedance of the dissolved oxygen standard measurement below the minimum criteria (4.0 mg/L). Station WRI sampled by City of Norfolk Department of Utilities has 5 viol / 21 obs in 2014 IR and now 4 viol / 8 obs with the data from 2008 and 2007 dropped out of the assessment window.

Lake Wright **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**15.62**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C09R-02-PH** **Unnamed tributary to Pitts Creek**

Location: This cause encompasses the riverine portion of this tributary to Pitts Creek. Includes unnamed tributary (south bank) of this unnamed tributary to Pitts Creek. Located northwest of New Church in Accomack County.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The Aquatic Life Use is impaired due to low pH (6 violates / 36 obs.; VAT-C09R-02) concentrations at station 7-XAE001.42, which exceed the minimum criteria for this parameter. Although pH impairment from 1998 303d was delisted in the 2004 IR, more recent data indicates impairment and need to re-add pH again as impairment to the TMDL listing.Upstream discharge from Tyson Foods 001 may have impact on this impairment. Also need to investigate if natural conditions (leaf litter/organic content) may be the cause of the low pH.

Unnamed tributary to Pitts Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**7.50**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C10E-02-BAC** **Muddy Creek - Upper**

Location: This cause encompasses the upper portion of Muddy Creek, from end of tidal waters downstream to Pettigrew Bend. Portion of CBP segment POCMH.

City / County: Accomack Co.

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 5A

The Recreation Use is impairment is retained for 2014 IR. Data within assessment window is from 2005 & 2006. Enterococcus bacteria data from 2010 at DEQ AQM station @ 7-MUD002.29 (3 viol / 15 obs.).

Muddy Creek - Upper **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.214**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C10R-03-BEN** **Guilford Creek**

Location: This cause encompasses Guilford Creek, from confluence of two branches west of Rt 316 downstream to Rt 658 crossing.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired due to impacts to the stream's benthic population. Assessment is based on biological benthic monitoring noting MI [MI: S&F 05,06] at DEQ (BIO) station @ 7-GLF003.77.

Guilford Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C11E-15-SF** **Matchotank Creek - Upper**

Location: Described in VDH Notice and Description of Shellfish Condemnation Number 080-013 C (effective 20121211).

City / County: Accomack Co.

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfishing Use is impaired due to the DSS shellfish direct harvesting condemnation # 080-013 C (effective 20121211). No TMDL.

Matchotank Creek - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Shellfishing			
Fecal Coliform - Total Impaired Size by Water Type:	**0.069**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C11R-01-BAC** **Joynes Branch**

Location: This cause encompasses Joynes Branch, eastern riverine tributary to the Central Branch of Onancock Creek

City / County: Accomack Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use impairment is based on the 2014 data collected at station 7-JOY000.59 with 2 viol / 9 obs. Previously this impairment had been maintained since the data collected was from 2005-2006 with an exceedance of the criteria for E.coli bacteria (4 violates / 9 obs.).

Joynes Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.37**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C12R-01-BEN** **Taylor Creek**

Location: This cause encompasses the riverine portion of Taylor Creek, from the point where stream forks north of Rt 180 downstream to the confluence of UT below Rt 178.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use impairment is due to monitored impacts to the stream's benthic population. Assessment is based on biological benthic monitoring with VCPMI [2013: S=17.3 & 2010: S=11.9, F=9.7] at Station 7-TAY003.11.

Taylor Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**0.90**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C12R-02-BEN** **Bull Branch**

Location: This cause encompasses the riverine portion of Bull Branch, from headwaters near Rt 609 (Accomack Co. Airport) downstream to confluence with eastern prong of upper Pungoteague Creek.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use impairment is retained for the 2014 IR due to impacts to the stream's benthic population. Benthic impairment assessment is based on biological benthic monitoring noting MI [MI: S&F-03, S-04; SI: F-04] at DEQ (BIO) station @ 7-BBR001.31.

Bull Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.25**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C13E-02-BAC** **Nassawadox Creek - Lower**

Location: This cause encompasses the lower mainstem of Nassawadox Creek. Portion of CBP segment CB7PH.

City / County: Northampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on Enterococcus bacteria data which exceeded the criteria. (5 violate / 32 obs.) at DEQ (AQM) station @ 7-NSS001.62. Use ID = VAT-C13E-02. This segment is not covered under TMDL for "Nassawadox Creek Watershed" (33777) EPA approved 9/20/2007.

Nassawadox Creek - Lower **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**2.108**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C13E-11-SF2** **Church Creek - Middle, UT North Cove [No TMDL]**

Location: This cause encompasses the area of Elliotts Neck. Tributary to Church Creek - Middle, UT North Cove. Portion of CBP segment.

City / County: Northampton Co.

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfishing Use is impaired due to the DSS shellfish direct harvesting condemnation # 085-185 A (effective 20111007).Not covered under TMDL for "Nassawadox Creek Watershed" (33777) EPA approved 9/20/2007. However, the AU impairment can be nested sin

Church Creek - Middle, UT North Cove [No TMDL]	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Shellfishing			
Fecal Coliform - Total Impaired Size by Water Type:	**0.059**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C13E-20-SF** **Nassawadox Creek - Middle, N. Shore Tribs**

Location: Described in VDH Notice and Description of Shellfish Condemnation Number 085-110 A, 10/7/2014.

City / County: Northampton Co.

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfishing Use is not supporting due to DSS shellfish direct harvesting condemnation # 085-110 A (effective 20111007). Not covered under TMDL for "Nassawadox Creek Watershed" (33777) EPA approved 10/20/2007.

Nassawadox Creek - Middle, N. Shore Tribs	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Shellfishing			
Fecal Coliform - Total Impaired Size by Water Type:	**0.140**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* C13R-01-BEN** **Taylor Branch - Occohannock Creek**

Location: This cause encompasses Taylor Branch, from the confluence of two branches upstream of station downstream to the confluence with Occohannock Creek.

City / County: Accomack Co. Northampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired due to impacts to the stream's benthic population. Assessment is based on biological benthic monitoring in 2010 using VCPMI scoring [2010_IM: S=11.9, F=9.7] at DEQ (BIO) station @ 7-TLR000.75.

Taylor Branch - Occohannock Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.31**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D01E-02-DO** **Little Mosquito Creek**

Location: This cause encompasses the upper and lower portions of the Creek.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Aquatic Life Use not supporting based on DO criteria exceedances with 5 violations / 35 observation at the downstream station. pH supports Aquatic Life Use with 0 violations / 35 observations. The data to assess the Aquatic Life Use is extrapolated from downstream station (DEQ-AQM station @ 7-LTM000.80).

Little Mosquito Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:	**0.208**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D01E-03-BAC** **Powells Bay**

Location: This cause encompasses the entirety of Powells Bay. NW of Wallops Island, between Watts and Bogues Bays.

City / County: Accomack Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreational Use impairment is maintained for this assessment. Three data points from 2005 are supporting Enterococci. No new data since listing station therefore segment will remain impaired until new data is collected.

Powells Bay		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation	Enterococcus - Total Impaired Size by Water Type:	**0.596**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D01E-04-DO** **Swan Gut Creek**

Location: This cause encompasses the entirety of Swan Gut Creek. From Virginia/Maryland state line downstream to Rivermile 0.13, above the confluence with Chincoteague Bay.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use will remain impaired for the 2014 Assessment. Data was collected within Assessment window in year 2012. Five surface samples were collected. Will wait for additional monitoring to propose for delist of DO. Current DO violations are 0 / 5.

Swan Gut Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:	**0.100**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D02E-01-DO** **Assawoman Creek**

Location: This cause encompasses the entirety of Assawoman Creek. This Creek is North of Assawoman Island and discharges to Womans Bay.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on DO concentrations that exceed the criteria for this parameter with 9 violates/ 36 obs. At Station 7-ASW003.36. The upper portion of Assawoman Creek assessed using downstream monitoring at Station 7-ASW003.36.

Assawoman Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:	**0.136**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D02E-11-SF** **Little Cat Creek**

Location: Described in VDH Notice and Description of Shellfish Condemnation Number 099-135B (effective 2013-10-24).

City / County: Accomack Co.

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfishing Use is not supporting with DSS shellfish harvesting condemnation # 099-135B (effective 2013-10-24).

Little Cat Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Shellfishing	Fecal Coliform - Total Impaired Size by Water Type:	**0.096**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D03E-07-BAC** **Wachapreague Channel**

Location: This cause encompasses a portion of Wachapreague Channel. Portion below Bunting Point Road to boat launch. Segment around area at Wachapreague Harbor.

City / County: Accomack Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

Recreational Use is not supported based on the Enterococci data which violates 2 out of 9 observations at DEQ station @ 7-WAS003.26 from 2012 IR. Current data is 1 viol / 5 obs.

Wachapreague Channel **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.055**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D03E-08-DO** **Northam Creek**

Location: This cause encompasses a portion of Northam narrows between Hog Neck Creek and Mud Narrows, below Assawoman Creek.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use impairment is retained due to dissolved oxygen concentrations from 2008 Assessment (3 violates / 3 obs.) below the criteria minimum.

Northam Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:	**0.028**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D03R-03-BEN** **Ross Branch**

Location: This cause encompasses the Riverine section of Ross Branch, segment begins at headwaters extending downstream to start of tidal waters. Located south of Accomack. Tributary to Folly Creek.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired due to impacts to the stream's benthic population. DEQ Streams Benthic-Macroinvertebrate Bioassessments using VCPMI at Station 7-RSS001.40.VCPMI [2014: F=26.4 2012: F=29.3, 2010: S=13.0, F=12.6] Site is often dominated by high numbers of scuds which drive down taxa richness scores. Site is possibly affected by agricultural runoff.

Ross Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.20**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D03R-04-BEN** **Unnamed tributary to Folly Creek**

Location: This cause encompasses the headwaters downstream to start of tidal waters. Located east of Accomack, near Edge Hill Cemetery.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on benthic VCPMI scores. Benthic population impacts were recorded at the following sample events: 7-XDE000.40 - VCPMI [2012: F=36.4] and [2014: F=50.4] and [2010_IM:S=14.1, F=54.0] and [2008: S=13.0, F=37.3] and [2007: S-12.2 and F = 29.7].Observations during benthic data collection - Stream has a petroleum smell .

Unnamed tributary to Folly Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.53**

Sources:

Leaking Underground Storage Tanks	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D03R-05-BEN** **Rattrap Creek**

Location: This cause encompasses the end of Finneys Creek near Locustville. Near Intersection of Drummond Rd and Locustville Rd, approx. 2.6 mi.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the streams Benthic population as recorded at the following sample event: 7-RTT000.49 with VCPMI [IM_ 2014: S=35.3 2013: F=31.6 2010: S=23.2, F=26.8].

Rattrap Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.73**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D03R-06-BEN** **North Fork**

Location: This cause encompasses the north Fork of Parker Creek. Near Parker Neck. From the end of tidal waters crossing US Route 13 to end of stream.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the benthic VCPMI scores collected at station 7-PNF001.98. Benthic Data IM [2011:S=39.4 F=10.0 2013: F=7.2 2014: S=16.4]. There is potential stress causing the low scores at this site. Physical habitat conditions may also be influencing diversity, as riparian zone width is suboptimal and there is noticeable sedimentation in the stream.

North Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.13**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D03R-07-BEN** **Custis Creek**

Location: This cause encompasses the riverine portion of Creek off of Burtons Bay near Locustville.

City / County: Accomack Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is not supported based on the benthic macroinvertebrate data collected at Station 7-CUS004.08. Benthic data was evaluated using the VCPMI index. Data was collected in 2013 with S=17.5 and F= 15.5. This is a small first order stream on the eastern shore similar to Ross Branch in habitat. Custis Creek site has limited instream habitat for colonization of benthic organisms and may be subject to agricultural runoff from nearby farm fields. The stream seems to be dominated by midges and fingernail clams. Both values are below the 40 VCPMI criteria and therefore this station is listed as impaired.

Custis Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.22**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D04E-01-DO** **Red Bank Creek**

Location: This cause encompasses all portions of Red Bank Creek. Tributary to Hog Island Bay.

City / County: Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use impairment is retained from 2008 Assessment. No new data within assessment window. Impaired (2 violates / 3 obs.) due to dissolved oxygen concentrations below the criteria minimum (4.0 mg/l).

Red Bank Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:	**0.003**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D04E-02-DO** **Unnamed tributary to Red Bank Creek**

Location: This cause encompasses a portion of an unnamed Tributary to Red Bank Creek. Southeast of Marionville, near Brick House Neck. Segment from first branching of creek (RM 0.3) downstream to confluence with Red Bank Creek. DSS shellfish direct harvesting condemnation

City / County: Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use impairment is retained based on DO violations. Previous Assessment: The Aquatic Life Use is impaired due to dissolved oxygen concentrations (2 violates / 4 obs.) below the criteria minimum (4.0 mg/l).

Unnamed tributary to Red Bank Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:	**0.009**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D04R-01-DO** **Red Bank Creek**

Location: This cause encompasses the area southeast of Marionville. Segment from headwaters downstream to end of tidal waters.

City / County: Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired for DO at Station 3-RBC003.87 with DO 5 viol /16 ob. pH is supported with 0 viol / 16 obs. Draft DO natural conditions evaluation for this impairment and Unnamed tributary to Red Bank Creek . Evaluate in 2018 IR

Red Bank Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.36**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D04R-03-BEN** **Frogstool Branch**

Location: This cause encompasses the area near Red Hill.

City / County: Accomack Co. Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Aquatic Life Use is impaired based on Benthic IM at Station 7-FRB001.94. VCPMI [2010_IM: S=24.9, F=38.8 2013: F=57.0 2014: S=18.3].

Frogstool Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.27**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D04R-04-BEN** **UT to Mill Creek**

Location: This cause encompasses the Unnamed trib to Mill Creek Stream. Stream is east of Treherneville crossing over Route 600.

City / County: Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The ALUS is not supported based on the benthic data collected in 2011 using the VCPMI. The Spring score was 20.9 and the Fall was 9.0. Habitat is adequate for colonization of a healthy benthic community, but pH is somewhat acidic and dissolved oxygen was very low in the spring. The stream was dominated by midge larvae, a frequent indicator of human disturbance.

UT to Mill Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.48**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D05E-01-HG** **Oyster Slip (Harbor) - Upper**

Location: This causes encompasses the area adjacent to Brockenberry Bay within upper portion of the harbor. Located in the town of Oyster, east of Cheriton.

City / County: Northampton Co.

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption is impaired based on Fish Tissue data collected for Mercury in Sandbar Shark in 2008.

Oyster Slip (Harbor) - Upper **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:	**0.034**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D05R-01-BAC** **Taylor Creek**

Location: This cause encompasses area from Penn Central RR crossing downstream to impoundment 0.1 mi. downstream of station. Located northeast of Simpkins.

City / County: Northampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The Recreation Use is impaired based on E.coli exceedance of the swimming criteria (17 violates / 23 obs.).

Taylor Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**1.26**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D05R-02-BAC** **Holt Creek**

Location: This cause encompasses the area from headwaters downstream to start of tidal waters. Located east of Martins Siding.

City / County: Northampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impairment is retained with E.coli concentrations exceeding the instantaneous swimming indicator criteria with 2 / 5 and previously with 4 violates/ 12 obs at station 7-HLT002.08.

Holt Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.74**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D05R-03-BAC** **Holt Creek Unnamed Tributary**

Location: This cause encompasses the area from Penn Central RR crossing near headwaters downstream to confluence with Holt Creek. Located east of Martins Siding.

City / County: Northampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use impairment is retained based on Fecal Coliform data. Current E.coli data collected is 1 violates / 1 obs. Previous (2006 IR) TMDL ID = VAT-D05R-03.

Holt Creek Unnamed Tributary **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.42**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D05R-03-BEN** **Holt Creek Unnamed Tributary**

Location: This cause encompasses the area from Penn Central RR crossing near headwaters downstream to confluence with Holt Creek. Located east of Martins Siding.

City / County: Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the benthic data collected at 7-XDI000.88 : IM VCPMI [2014: S=25.4] [2013: F=41.3] [2009_IM: S=8.6, F=48.4] Habitat is good at this site and there are no obvious point sources, so it is likely that non-point sources are responsible for impairment here. The scores at this site jump around a good bit with a tendency for higher scores in the fall indicating that seasonal effects are probably also being picked up by the metrics in addition to any anthropogenic effects.

Holt Creek Unnamed Tributary **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.42**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D06E-01-DO** **Magothy Bay - Lower**

Location: This cause encompasses the area east of Skidmore Island.

City / County: Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life use is impaired based on data from 2008 Assessment for the DO concentration exceeding the criteria for this parameter (4 violates / 21 obs.). Now data from 01 and 02 drop out therefore 2 /5 violate. Can not delist DO.

Magothy Bay - Lower **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:	**0.037**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D06E-02-PCB** **Raccoon Creek**

Location: This cause encompasses Raccoon Creek. The area southwest of Magothy Bay.

City / County: Northampton Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The Fish Consumption Use is impaired based on Fish Tissue data collected for PCBs with an observed effect for arsenic. Station 7-RAC000.00 is impaired for PCBs in FT found in Bass, Trout and Blue Crab.

Raccoon Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:	**0.004**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D06R-01-PH** **Mill Creek**

Location: This cause encompasses the area at the start of Mill Creek upstream of Penn central RR crossing and ends downstream of Rt 600 at the beginning of the impoundment upstream of tidal waters. Located north of Capeville.

City / County: Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The Aquatic Life use is impaired based on pH concentrations exceed the criteria for this parameter (4 violates / 23 obs.) at DEQ station @ 7-MCR002.00.

Mill Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**2.23**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D06R-02-BAC** **Narrow Channel Branch**

Location: This cause encompasses the area from headwaters downstream to start of tidal waters. Located east of Bayview.

City / County: Northampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired with 3 violations / 5 observations at Station 7-NCB000.97.

Narrow Channel Branch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.84**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D06R-02-BEN** **Narrow Channel Branch**

Location: This cause encompasses the area from headwaters downstream to start of tidal waters. Located east of Bayview.

City / County: Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use impairment is retained. No new data within the 2016 assessment window. The Aquatic Life Use is impaired due to impacts to the stream's benthic population. DEQ (Bio) monitoring determines impairment by benthic assessment ratings of SI (spring 2001) & MI (fall 2001).

Narrow Channel Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.84**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D06R-02-DO** **Narrow Channel Branch**

Location: This cause encompasses the area from headwaters downstream to start of tidal waters. Located east of Bayview.

City / County: Northampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on 2011 and 2012 data for DO that exceed the WQS with 2 viol/ 6 obs. Additional monitoring is requested.

Narrow Channel Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.84**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D06R-03-BAC** **Tommy's Ditch**

Location: This cause encompasses the entirety of Tommy's Ditch west of Kiptopeke State Park.

City / County: Northampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli criteria exceeded (7 viol / 15 obs) at DEQ station @ 7-TOM001.73.

Tommy's Ditch **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.44**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D07E-02-BAC** **Lake Rudee - Upper**

Location: This cause encompasses the upper portion of Lake Rudee, from end of Owl Creek downstream to approx. RM 0.4 (upstream of confluence of Lake Holly with Rudee Inlet canal).

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 5A

The Recreation Use impairment is retained for the 2016 Assessment. Data from the 2012 IR was collected in 2005 & 2006. Listing impairments dropped off for this assessment. Now data from monitoring in 2012 have 0 viol / 7 obs. But a larger data set is needed to determine if Recreational Use can be delisted.

Lake Rudee - Upper		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation	Enterococcus - Total Impaired Size by Water Type:	**0.099**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D07E-02-SF** **Lake Rudee - Upper**

Location: Described in VDH Notice and Description of Shellfish Direct Harvesting Condemnation # 073-074A (effective 2013-06-11).

City / County: Virginia Beach City

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfishing Use is not supporting with DSS shellfish condemnation # 073-074A (effective 2013-06-11)

Lake Rudee - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Shellfishing			
Fecal Coliform - Total Impaired Size by Water Type:	**0.099**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D07E-04-BAC** **Owl Creek - Upper & Lower**

Location: This cause encompasses the Headwaters of Owl Creek to tributary to Lake Rudee, located west of Lake Christine.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired due to Enterococcus bacteria concentrations exceeding (2 violates / 6 obs.) TMDL due date same as original FC impairment.

Owl Creek - Upper & Lower		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation	Enterococcus - Total Impaired Size by Water Type:	**0.025**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D07E-04-DO** **Owl Creek - Upper**

Location: This cause encompasses the upper portion of Owl Creek a tributary to Lake Rudee, located west of Lake Christine.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired due to dissolved oxygen concentrations at station 7-OWL000.77 and 7OWL-2-VAMSC with 2 violates / 6 obs. and 5 viol/ 9 obs below the criteria minimum (4.0 mg/l). This TMDL ID (VAT-D07E-05) is added for the 2006 IR.

Owl Creek - Upper **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:	**0.005**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D07E-04-SF** **Owl Creek - Upper & Lower**

Location: Described in VDH Notice and Description of Shellfish Direct Harvesting Condemnation # 073-074A (effective 2013-06-11).

City / County: Virginia Beach City

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfishing Use is not supporting with DSS shellfish condemnation # 073-074A (effective 2013-06-11).

Owl Creek - Upper & Lower **Shellfishing**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:	**0.025**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

Chesapeake Bay/Atlantic/Small Coastal Basins

***Cause Group Code:* D07E-10-SF** **Lake Rudee - Lower and Lake Wesley**

Location: Described in VDH Notice and Description of Shellfish Condemnation Number 073-074 A, 6/11/2013.

City / County: Virginia Beach City

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfish Use is impaired based on DSS Condemnation # 073-074 A effective date 2013-06-11.

Lake Rudee - Lower and Lake Wesley	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Shellfishing			
Fecal Coliform - Total Impaired Size by Water Type:	**0.060**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F01L-01-HG** **Lake Gordonsville**

Location: Includes the entirety of Lake Gordonsville, also known as Bowlers Mill Lake.

City / County: Louisa Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, mercury fish consumption advisory. The advisory, dated 09/30/04, limits largemouth bass consumption to no more than two meals per month.

Lake Gordonsville **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**77.31**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F01R-01-BEN** **South Anna River**

Location: Begins at the headwaters of an unnamed tributary, located approximately 1 mile downstream of the Route 860 bridge, to the South Anna River and continues downstream until the confluence with Dove Fork.

City / County: Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Four biological monitoring events from station 8-SAR097.82 in 2007 and 2008 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

South Anna River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.90**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F01R-02-BEN** **Wheeler Creek**

Location: Begins at the headwaters of Wheeler Creek and continues downstream until the confluence with Camp Creek.

City / County: Albemarle Co. Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Three biological monitoring events in 2009 and 2010 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Wheeler Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.00**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F01R-03-BEN** **Camp Creek**

Location: Begins at the confluence with Central Branch and continues downstream to the confluence with Wheeler Creek.

City / County: Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Three of three biological monitoring events in 2006 and 2008 from station 8-WLR000.31 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Camp Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.01**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F03R-01-BEN** **Cub Creek**

Location: Begins at the confluence with Turners Creek and continues downstream until the confluence with the South Anna River.

City / County: Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2012 at station 8-CUB002.73 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Cub Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F03R-02-BEN** **Taylors Creek**

Location: Begins at the headwaters of Taylors Creek and continues downstream until the confluence with the South Anna River.

City / County: Hanover Co. Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2013 at station 8-TLR005.30 and two biological monitoring events in 2014 at station 8-TLR014.44 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Taylors Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**16.54**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F03R-03-DO** **Cub Creek**

Location: Begins at the confluence with Turners Creek and continues downstream until the confluence with the South Anna River.

City / County: Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Excursions below the minimum dissolved oxygen criterion (4 of 12 samples - 33.3%) from station 3-CUB001.73, at Route 601.

Cub Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.10**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F04R-03-DO** **Stagg Creek**

Location: Headwaters to mouth at South Anna River

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2008 cycle, Stagg Creek was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/11 at 8-STG005.46 (Route 686).

Additional monitoring was conducted in the 2016 cycle, however the data was insufficient for assessment (1/9). In addition, 2009 sampling at freshwater probabilistic monitoring station 8-STG000.73 was acceptable; therefore, further monitoring is warranted.

Stagg Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.56**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F04R-03-PH** **Stagg Creek**

Location: Headwaters to mouth at South Anna River

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2016 cycle, Stagg Creek was impaired of the Aquatic Life Use due to a pH exceedance rate of 3/9 at 8-STG005.46 (Route 686) as well as 1/2 at 8-STG000.73.

Stagg Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**6.56**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F06R-04-BAC** **North Anna River**

Location: Begins at the confluence with Mountain Run and continues downstream until the confluence with White Oak Creek and begins again at the confluence with Beaver Creek and continues downstream until the confluence with Hickory Creek.

City / County: Louisa Co. Orange Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (12 of 34 samples - 35.3%) from station 8-NAR061.09, at Route 651. E. coli bacteria criterion excursions at citizen monitoring station 8HIK-EX5-LACA (2 of 7 samples - 28.6%). 2014 Assessment: E. coli bacteria criterion excursions (9 of 12 samples - 75.0%) from station 8-NAR066.42, at Route 639.

North Anna River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.57**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F06R-05-BAC** **Christopher Creek**

Location: Begins at an unnamed tributary to Christopher Creek and continues downstream until the confluence with Lake Anna.

City / County: Louisa Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2014 Assessment: E. coli bacteria criterion excursions (8 of 11 samples - 72.7%) from station 8-CRC001.82, at Route 613.

Christopher Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.98**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F06R-06-BAC** **Hickory Creek**

Location: Begins at the confluence with Fox Branch and continues downstream to the confluence with the North Anna River.

City / County: Louisa Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (5 of 12 samples - 41.7%) at station 8-HIK001.20, at Route 669. E. coli bacteria criterion excursions at citizen monitoring station 8HIK-EX2-LACA (9 of 11 samples - 81.8%).

Hickory Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.72**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F06R-08-BAC** **Duckinghoe Creek**

Location: Begins at the headwaters of Duckinghoe Creek and continues downstream until the confluence with Lake Anna.

City / County: Louisa Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (8 of 12 samples - 66.7%) from station 8-DKH001.44, at Route 613.

Duckinghoe Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.98**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F06R-09-BAC** **South Fork Hickory Creek**

Location: Begins at the headwaters of South Fork Hickory Creek and continues downstream until the confluence with the North Fork Hickory Creek

City / County: Louisa Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (2 of 12 samples - 16.7%) from station 8-HCS000.20, at Route 692.

South Fork Hickory Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.63**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F07L-01-BAC** **Goldmine Creek/Lake Anna**

Location: Segment includes the Gold Mine Creek arm of Lake Anna

City / County: Louisa Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

2014 Assessment: E. coli bacteria criterion excursions (3 of 28 samples - 10.7%) from station 8-MAR003.24, at the DEQ and LACA colocated lake monitoring station 8-GMC000.23/8GMC-13-LACA.

Goldmine Creek/Lake Anna **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:		**91.62**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F07L-01-BZOKFL Gold Mine Creek**

Location: Segment begins at the headwaters of Gold Mine Creek and continues downstream until the confluence with Lake Anna.

City / County: Louisa Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Benzo[k]fluoranthene / 5A

2010 Assessment: Excursions above the water quality criterion based fish tissue value (TV) of 5.5 parts per billion (ppb) for benzo(k)fluoranthene in fish tissue were recorded in two species (largemouth bass and carp) of fish sampled (2 total excursions) in 2003 at station 8-GMC001.43.

Gold Mine Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benzo[k]fluoranthene - Total Impaired Size by Water Type:		**91.62**	**7.53**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F07L-01-HG** **Lake Anna**

Location: Segment includes the lower portion of Lake Anna, beginning near the northern end of the Route 690 bridge, and continues downstream until the dam.

City / County: Louisa Co. Spotsylvania Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

2010 Assessment: Excursions above the fish tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue were recorded in tissue from one species of fish (carp) sampled in 2003 and in tissue from one species of fish (channel catfish) sampled in 2006 at monitoring station 8-NAR034.92.

Lake Anna **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**1,563.36**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F07L-01-PAHHMW Gold Mine Creek**

Location: Begins at the headwaters of Gold Mine Creek and continues downstream until the confluence with Lake Anna (impairment includes the Gold Mine Creek arm).

City / County: Louisa Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Benzo(a)pyrene (PAHs) / 5A

2010 Assessment: Excursions above the water quality criterion based fish tissue value (TV) of 5.5 parts per billion (ppb) for benzo(a)pyrene in fish tissue were recorded in two species (largemouth bass and carp) of fish sampled (2 total excursions) in 2003 at station 8-GMC001.43.

Gold Mine Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benzo(a)pyrene (PAHs) - Total Impaired Size by Water Type:		**91.62**	**7.53**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F07L-01-PCB** **Lake Anna and Contrary Creek, Goldmine Creek, and Terrys Run tributaries**

Location: Includes the entirety of Lake Anna, including its tributaries Terrys Run, Goldmine Creek, and Contrary Creek.

City / County: Louisa Co. Orange Co. Spotsylvania Co.

Use(s): Fish Consumption

Cause(s) / VA Category: PCB in Fish Tissue / 5A PCB in Water Column / 5A

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 6/15/04 and modified 12/13/04 and 08/31/07, limits consumption of bluegill sunfish, carp, channel catfish, largemouth bass, striped bass, white catfish, and white perch to no more than two meals per month. The advisory also bans the consumption of gizzard shad.

Lake Anna and Contrary Creek, Goldmine Creek, and Terrys Run tributaries **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		**9,596.81**	**23.06**

Lake Anna and Contrary Creek, Goldmine Creek, and Terrys Run tributaries **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:		**1,233.83**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F07L-02-HG** **Terrys Run/Lake Anna**

Location: Segment includes the Terrys Run arm of Lake Anna.

City / County: Orange Co. Spotsylvania Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

2010 Assessment: Excursions above the fish tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue were recorded in tissue from one species of fish (carp) sampled in 2003 and in tissue from one species of fish (largemouth bass - 2 excursions) sampled in 2006 at monitoring station 8-TRY001.33.

Terrys Run/Lake Anna **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**431.09**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F07L-02-PAHHMW Gold Mine Creek**

Location: Begins at the headwaters of Gold Mine Creek and continues downstream until the confluence with Lake Anna (impairment includes the Gold Mine Creek arm)..

City / County: Louisa Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Benzo[b]fluoranthene / 5A

2010 Assessment: Excursions above the water quality criterion based fish tissue value (TV) of 5.5 parts per billion (ppb) for benzo(b)fluoranthene in fish tissue were each recorded in two species (largemouth bass and carp) of fish sampled (2 total excursions) in 2003 at station 8-GMC001.43.

Gold Mine Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benzo[b]fluoranthene - Total Impaired Size by Water Type:		**91.62**	**7.53**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F07R-01-BEN** **Pamunkey Creek**

Location: Begins at the confluence of Tomahawk Creek and Church Creek, forming Pamunkey Creek, and continues downstream until the confluence with Clear Creek.

City / County: Orange Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events in 2010 at station 8-PMC014.75 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Pamunkey Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**7.21**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F08R-01-CD** **Contrary Creek**

Location: Begins at the headwaters of Contrary Creek and continues downstream until approximately rivermile 3.53, partially into the inundated waters of Lake Anna.

City / County: Louisa Co.

Use(s): Aquatic Life Wildlife

Cause(s) / VA Category: Cadmium / 5A

2012 Assessment: Sufficient excursions above the freshwater, acute criterion for cadmium (2 excursions in 2006) were recorded at station (8-CON005.38) at Route 522 and at station 8-CON003.86.

Contrary Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Cadmium - Total Impaired Size by Water Type:		**55.74**	**11.04**

Sources:

Impacts from Abandoned Mine Lands (Inactive)

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F08R-01-CU** **Contrary Creek**

Location: Begins at the headwaters of Contrary Creek and continues downstream until approximately rivermile 3.53, partially into the inundated waters of Lake Anna.

City / County: Louisa Co.

Use(s): Aquatic Life Wildlife

Cause(s) /
VA Category: Copper / 5A

2012 Assessment: Sufficient excursions above the freshwater, acute criterion for copper (3 excursions in 2006) were recorded at station (8-CON005.38) at Route 522 and 2 excursions in 2006 were recorded at station 8-CON003.86.

Contrary Creek **Wildlife**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Copper - Total Impaired Size by Water Type:		**55.74**	**11.04**

Sources:

Impacts from Abandoned Mine Lands (Inactive)

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F08R-01-PH** **Contrary Creek**

Location: Begins at the headwaters of Contrary Creek and continues downstream until approximately rivermile 3.53, partially into the inundated waters of Lake Anna.

City / County: Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Excursions below the lower limit of the pH criterion range (34 of 34 samples - 100.0%) from station 8-CON005.38.

Contrary Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:		**27.87**	**5.52**

Sources:

Impacts from Abandoned Mine Lands (Inactive)

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F08R-01-TEMP** **Contrary Creek**

Location: Begins at the headwaters of Contrary Creek and continues downstream until approximately rivermile 3.53, partially into the inundated waters of Lake Anna.

City / County: Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

Excursions above the maximum temperature criterion (4 of 34 samples - 11.8%) from station 8-CON005.38.

Contrary Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**5.52**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F08R-01-ZN** **Contrary Creek**

Location: Begins at the headwaters of Contrary Creek and continues downstream until approximately rivermile 3.53, partially into the inundated waters of Lake Anna.

City / County: Louisa Co.

Use(s): Aquatic Life Wildlife

Cause(s) / VA Category: Zinc / 5A

2012 Assessment: Sufficient excursions above the freshwater, acute criterion for zinc (3 excursions in 2006) were recorded at station (8-CON005.38) at Route 522 and 2 excursions in 2006 were recorded at station 8-CON003.86.

Contrary Creek **Wildlife**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Zinc - Total Impaired Size by Water Type:		**55.74**	**11.04**

Sources:

Impacts from Abandoned Mine Lands (Inactive)

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F09R-02-BEN** **North Anna River, UT (XHS)**

Location: Unnamed Tributary XHS from its headwaters to its mouth at the North Anna River

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The unnamed tributary was assessed as not supporting of the Aquatic Life Use in the 2008 cycle due to impairment of the benthic community at station 8-XHS000.72.

Additional 2011 and 2012 benthic monitoring at 8-XHS000.49 also showed benthic community impairment.

North Anna River, UT (XHS)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.09**

Sources:

Industrial Point Source Discharge	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F09R-03-PH** **North Anna River, UT (XIM)**

Location: Unnamed Tributary XIM from its mouth at the North Anna River to the first tributary (near Chandler Crossing)

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2010 cycle, the tributary was assessed as not supporting of the Aquatic Life Use due to a pH exceedance rate of 2/2 at freshwater probabilistic monitoring station 8-XIM000.53.

Additional monitoring was conducted during the 2016 cycle; the exceedance rate was 2/12.

North Anna River, UT (XIM)		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**0.70**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F09R-04-PH** **Mill Creek**

Location: Mill Creek in its entirety.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Mill Creek was impaired of the Aquatic Life Use due to a pH violation rate of 5/13 at the Route 652 bridge (8-MLL001.19).

Mill Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**4.37**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F09R-05-PH** **North Anna River, UT - XJP**

Location: Headwaters to mouth

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2016 cycle, tributary XJP was impaired of the Aquatic Life Use due to a pH exceedance rate of 6/7 at station 8-XJP000.01, which is located 15 meters above the mouth.

North Anna River, UT - XJP	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.01**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F10R-01-BAC** **Little River**

Location: Begins at the confluence with Hawkins Creek and continues downstream until the confluence with Locust Creek.

City / County: Louisa Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (10 of 34 samples - 29.4%) from station 8-LTL030.55, at Route 654 (Signboard Road).

Little River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.17**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F10R-02-BAC** **Little River**

Location: Begins at the outlet from Swift Millpond and continues downstream until the confluence with Long Creek.

City / County: Louisa Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (4 of 11 samples - 36.4%) from station 8-LTL035.32, at Route 609.

Little River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.29**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F10R-02-DO** **Long Creek**

Location: Begins at the headwaters of Long Creek and continues downstream until the confluence with Little River.

City / County: Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Excursions below the minimum dissolved oxygen criterion (2 of 10 samples - 20.0%) from station 8-LNG000.94 at Route 655.

Long Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**5.15**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F10R-03-BAC** **Long Creek**

Location: Begins at the headwaters of Long Creek and continues downstream until the confluence with Little River.

City / County: Louisa Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (4 of 11 samples - 36.4%) from station 8-LNG000.94 at Route 655.

Long Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.15**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F11R-01-BEN** **Locust Creek**

Location: Begins at the headwaters to of Locust Creek and continues downstream until the confluence with Little River.

City / County: Hanover Co. Louisa Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Two biological monitoring events in 2007 at station 8-LOC000.20 (0.9 miles upstream from Route 608) resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Locust Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.59**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F11R-01-DO** **Little River**

Location: The Little River from its confluence with Locust Creek downstream to the Fulcher Millpond dam.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2008 cycle, the Little River from Locust Creek downstream to Beaverdam Creek was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen violation rate of 2/9 at the Route 715 bridge (8-LTL024.86).

During the 2012 cycle, additional monitoring within the segment at station 8-LTL018.80 was acceptable; therefore, further monitoring was recommended.

The original listing station 8-LTL024.86 was subsequently monitored during the 2014 cycle. A dissolved oxygen impairment was confirmed with an exceedance rate of 10/16. The segment was shortened to end at the Fulcher Millpond dam because of the acceptable downstream dissolved oxygen levels and because of the probable impact caused by backwatering from the dam. The downstream segment was partially delisted.

Little River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.29**

Sources:

Dam or Impoundment Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F11R-02-PH** **Beaverdam Creek**

Location: Beaverdam Creek mainstem in its entirety.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

During the 2012 cycle, Beaverdam Creek was assessed as not supporting of the Aquatic Life Use due to a pH violation rate of 3/10 at the Route 601 bridge (8-BDC000.05).

Beaverdam Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**8.47**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F12R-05-DO** **Mechumps Creek**

Location: Headwaters to the confluence with unnamed tributary to XEG

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2010 cycle, Mechumps Creek from its headwaters to the confluence with tributary XEG was assessed as impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 4/23 at 8-MCP009.56, which is located at Arbor Oak Drive.

During the 2016 cycle, the exceedance rate was 3/10.

Mechumps Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.05**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F12R-05-PH** **Mechumps Creek**

Location: Headwaters to the confluence with unnamed tributary to XEG

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

During the 2006 cycle, Mechumps Creek from its headwaters to the confluence with tributary XEG was assessed as impaired of the Aquatic Life Use due to pH exceedances at 8-MCP009.56, which is located at Arbor Oak Drive.

During the 2016 cycle, the exceedance rate was 4/10.

Mechumps Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**1.05**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F12R-07-PH** **Crump Creek**

Location: The mainstem of Crump Creek.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2010 cycle, Crump Creek was assessed as not supporting of the Aquatic Life Use based on pH violations at the Route 605 bridge (8-CRU000.92). During the 2016 cycle, the violation rates in the segment were as follows:

5/24 at 8-CRU000.92
5/12 at 8-CRU005.61
10/12 at 8-CRU008.30

Crump Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**10.00**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F12R-10-PH** **Millpond Creek**

Location: The mainstem of Millpond Creek downstream of Gravatts Millpond.

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Millpond Creek was assessed as not supporting of the Aquatic Life Use based on pH exceedances at the Route 614 bridge (8-MLP002.74). The violation rate was 5/23 during the 2016 cycle.

Millpond Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.02**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F12R-11-PH** **Kersey Creek**

Location: Kersey Creek mainstem in its entirety.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Kersey Creek was assessed as impaired of the Aquatic Life Use due to a pH violation rate of 4/12 at the Route 301 bridge (8-KER001.31).

Kersey Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**3.32**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F12R-12-PH** **XJC - Crump Creek, UT**

Location: XJC mainstem in its entirety.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, XJC was assessed as impaired of the Aquatic Life Use due to a pH violation rate of 5/12 at the Route 301 bridge (8-XJC001.12).

XJC - Crump Creek, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.96**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F12R-13-PH** **Pollard Creek**

Location: Pollard Creek mainstem in its entirety.

City / County: Hanover Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Pollard Creek was assessed as impaired of the Aquatic Life Use due to a pH violation rate of 8/12 at the Route 647 bridge (8-PLD001.73).

Pollard Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**4.20**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F13R-04-PCB** **Moncuin Creek, Webb Creek**

Location: From the headwaters of Webb Creek downstream to the swampy area around river mile 2.0.

City / County: King William Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

During the 2010 cycle, Moncuin and Webb Creeks were assessed as impaired of the Fish Consumption Use due to exceedances of the PCB tissue value. PCBs exceeded in yellow bullhead catfish in 2003 and American eel in 2008.

Moncuin Creek, Webb Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**12.12**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F13R-06-DO** **Sullens Creek**

Location: Sullens Creek in its entirety.

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2012 cycle, Sullens Creek was impaired of the Aquatic Life Use due to dissolved oxygen violation rates of 5/14 at the Rt. 652 bridge (8-SLN001.46) and 2/12 at the Rt. 614 bridge (8-SLN003.07).

Sullens Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.60**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F13R-06-PH** **Sullens Creek**

Location: Sullens Creek in its entirety.

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Sullens Creek from the pond at Etna Mills downstream to its mouth at Mehixen Creek was initially assessed as not supporting of the Aquatic Life Use goal during the 2004 cycle based on pH exceedances at the Route 652 bridge (8-SLN001.46).

During the 2012 cycle, the impairment was expanded upstream to the headwaters based on a violation rate of 8/13 at 8-SLN001.46 and 6/11 at 8-SLN003.07.

Sullens Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.60**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F13R-09-PH** **XDX - UT to XDW (Pamunkey River, UT)**

Location: The mainstem of unnamed tributary XDX.

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The tributary was considered as not supporting of the Aquatic Life Use goal during the 2012 cycle based on a pH violation rate of 2/11 at the Route 604 bridge (8-XDX000.38).

XDX - UT to XDW (Pamunkey River, UT)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**3.85**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F13R-11-PH** **XDW - UT to Pamunkey River**

Location: The mainstem of unnamed tributary XDW.

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The tributary was assessed as not supporting of the Aquatic Life Use goal during the 2012 cycle based on pH exceedances at the Route 604 bridge (8-XDW000.67). The violation rate was 4/23 during the 2016 cycle.

XDW - UT to Pamunkey River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**5.51**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F13R-12-PH** **Judy Swamp**

Location: Judy Swamp from its headwaters to its mouth at the Pamunkey River.

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, Judy Swamp was impaired of the Aquatic Life Use due to pH exceedances at 8-JDY000.19 and at 8-JDY001.27, the Rt. 604 and Rt. 639 bridges.

The 2016 cycle's exceedance rates were 4/10 and 9/23, respectively.

Judy Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.33**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F13R-13-HG** **Pamunkey River**

Location: The Pamunkey River from Nelson Bridge Road (Route 15) downstream approximately 72 miles to the mouth at the York River.

City / County: Hanover Co. King William Co. New Kent Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

On 9/30/2004, VDH issued a fish consumption advisory from Nelson Bridge Road to Jacks Creek near Liberty Hall. The advisory recommends that no one eat more than 2 meals per month of blue catfish because of mercury contamination in the fish tissue.

This condemnation was expanded on 10/7/2009 and now extends downstream to the mouth at the York River.

The advisory is based on mercury fish tissue exceedances at DEQ monitoring stations 8-PMK056.87, 8-PMK032.00, and 8-PMK006.36.

Pamunkey River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:	**10.513**		**11.55**

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F13R-13-PCB** **Pamunkey River**

Location: The Pamunkey River from Nelson Bridge Road (Route 15) downstream approximately 72 miles to the mouth at the York River.

City / County: Hanover Co. King William Co. New Kent Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

On 10/7/2009, VDH issued a fish consumption advisory from Nelson Bridge Road to the mouth at West Point. The advisory recommends that no one eat more than 2 meals per month of gizzard shad because of PCB contamination in the fish tissue.

The advisory is based on PCB fish tissue exceedances at DEQ monitoring stations 8-PMK056.87, 8-PMK032.00, and 8-PMK006.36.

Pamunkey River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:	**10.513**		**11.55**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F13R-14-PH** **Mehixen Creek and tributary XIV**

Location: Headwaters to mouth at the Pamunkey River

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, the creeks were impaired of the Aquatic Life Use due to pH violation rates of 4/11 at stations 8-MHX001.50 and 8-XIV000.88, which are both located at Rt. 652.

Mehixen Creek and tributary XIV	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**6.44**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F14E-05-EBEN** **Pamunkey River**

Location: The oligohaline Pamunkey mainstem.

City / County: King William Co. New Kent Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

The oligohaline Pamunkey River mainstem initially failed the Chesapeake Bay Index of Biologic Integrity during the 2010 cycle. The impairment continued during the 2014 cycle.

In addition, a weight-of-evidence analysis at estuarine probabilistic monitoring station 8-PMK017.90 showed benthic alteration probably caused by metals in sediment (Category 5A).

Pamunkey River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**5.272**		

Sources:

- Contaminated Sediments
- Industrial Point Source Discharge
- Municipal Point Source Discharges
- Non-Point Source
- Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F14R-01-DO** **Cohoke Mill Creek**

Location: Cohoke Mill Stream mainstem from its headwaters downstream to Cohoke Millpond

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2010 cycle, Cohoke Mill Stream was assessed as not supporting of the Aquatic Life Use based on dissolved oxygen violations at 8-CMC005.16, which is located at the Route 626 bridge. The exceedance rate was 9/25 during the 2014 cycle.

Cohoke Mill Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**7.38**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F14R-02-DO** **Harrison Creek**

Location: Harrison Creek and tributary upstream of pond at Elsing Green upstream to nearest tributaries.

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2014 cycle, Harrison Creek was assessed as not supporting of the Aquatic Life Use based on a dissolved oxygen exceedance rate of 2/11 at the Route 632 bridge (8-HSN002.12). Monitoring at stations 8-HSN002.43 and 8-HSN003.93 was acceptable (1/11).

Harrison Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.80**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F14R-04-PH** **XJD - Harrison Creek, UT**

Location: Harrison Creek, UT from its headwaters to its mouth at Harrison Creek

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2012 cycle, XJD was impaired of the Aquatic Life Use due to pH exceedances at 8-XJD000.02. The violation rate was 5/11 during the 2014 cycle.

XJD - Harrison Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**0.16**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F15R-01-BEN** **Ni River**

Location: Begins at the confluence of an unnamed tributary to the Ni River, approximately 0.95 rivermiles downstream from the Route 608 bridge, and continues downstream until the confluence with the Po River, forming the Poni River.

City / County: Caroline Co. Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2014 Assessment: Three biological monitoring events in 2007 and 2008 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Ni River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**5.68**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F15R-01-DO** **Brock Run**

Location: Begins at the confluence with Aunt Sarah Spring Creek and continues downstream until the confluence with the Ni River.

City / County: Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Excursions below the minimum dissolved oxygen criterion (2 of 9 samples - 22.2%) from station 8-BRK000.06, at Jackson Train off Route 613, and excursions below the minimum dissolved oxygen criterion (8 of 51 samples - 15.7%) recorded at NPS's water quality monitoring station (8BRK-04-NPS) near Jackson Trail.

Brock Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.56**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F15R-01-PH** **Brock Run**

Location: Begins at the headwaters of Brock Run, and continues downstream to the confluence with Aunt Sarah Spring Creek.

City / County: Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Excursions below the lower limit of the pH criterion range (2 of 16 samples - 12.5%) recorded at NPS's water quality monitoring station (8BRK-17-NPS) in Wilderness Battlefield.

Brock Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.21**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F15R-02-DO** **Lewis Run**

Location: Begins at the outlet of Cool Spring Lake, and continues downstream to the confluence with the Ni River.

City / County: Caroline Co. Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Sufficient excursions below the minimum dissolved oxygen criterion (7 of 52 samples - 13.5%) were recorded at NPS's water quality monitoring station (8LWS-01-NPS) upstream of Sickles Drive.

Lewis Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.46**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F15R-02-PH** **Unnamed tributary to Cool Spring Lake**

Location: Begins at the headwaters of the unnamed tributary, and continues downstream to the inlet of Cool Spring Lake.

City / County: Caroline Co. Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

Sufficient excursions below the lower limit of the pH criterion range (6 of 51 samples - 11.8%) were recorded NPS's water quality monitoring station (8XJM-02-NPS) downstream of Stuart Drive.

Unnamed tributary to Cool Spring Lake	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			**1.29**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F15R-03-DO** **Unnamed tributary to Cool Spring Lake**

Location: Begins at the headwaters of the unnamed tributary, and continues downstream to the inlet of Cool Spring Lake.

City / County: Caroline Co. Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Sufficient excursions below the minimum dissolved oxygen criterion (9 of 30 samples - 30.0%) were recorded at NPS's water quality monitoring station (8XJM-02-NPS) downstream of Stuart Drive.

Unnamed tributary to Cool Spring Lake	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**1.29**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F17L-01-HG** **Bowies Pond**

Location: Includes all of Bowies Pond.

City / County: Caroline Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

2012 Assessment: Excursions above the fish tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue were recorded in tissue from three species (bowfin, chain pickerel, largemouth bass) of fish sampled (six total excursions) in 2005 at monitoring station 8-CAM001.00.

Bowies Pond **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**25.71**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F18R-01-DO** **Ta River**

Location: Begins at the confluence with Bluff Run, approximately 0.7 rivermile upstream from Route 738, and continues downstream until the confluence with the Mat River, forming the Matta River.

City / County: Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

2014 Assessment: Excursions below the minimum dissolved oxygen criterion (2 of 11 samples - 18.2%) from station (8-TAR002.40), at Route 738.

Ta River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**3.76**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F18R-02-PH** **Ta River**

Location: Begins at the confluence with Bluff Run, approximately 0.7 rivermile upstream from Route 738, and continues downstream until the confluence with the Mat River, forming the Matta River.

City / County: Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

2014 Assessment: Excursions below the lower limit of the pH criterion range (2 of 11 samples - 18.2%) from station 8-TAR002.40, at Route 738.

Ta River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.76**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F18R-03-BEN** **Matta River**

Location: Begins at the confluence of the Mat River and the Ta River and continues downstream until the confluence with an unnamed tributary to the Matta River, approximately 0.5 rivermile upstream from Route 646.

City / County: Spotsylvania Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2010 Assessment: One of two biological monitoring events in 2003 at station 8-MTA012.09 (upstream of Route 646) both resulted in a VSCI score which indicates an impaired macroinvertebrate community, as does the mean score of these two samples.

Matta River **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.24**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F20R-01-BEN** **Polecat Creek**

Location: Begins at the confluence with Hackett Creek, approximately 0.5 rivermile upstream from Route 207, and continues downstream until the confluence with the Mattaponi River.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events from station 8-PCT002.2 in 2011 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Polecat Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**6.97**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F20R-01-DO** **Polecat Creek**

Location: Begins at the confluence with Hackett Creek, approximately 0.5 rivermile upstream from Route 207, and continues downstream until the confluence with the Mattaponi River.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Excursions below the minimum dissolved oxygen criterion (5 of 8 samples - 50.0%) from station 8-PCT005.44, at Polecat Creek below Caroline County POTW, and excursions below the minimum dissolved oxygen criterion (5 of 8 samples - 62.5%) from station 8-PCT006.34, at Route 207.

Polecat Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.97**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F20R-02-PH** **Polecat Creek**

Location: Begins at the headwaters of Polecat Creek and continues downstream until the confluence with Stevens Mill Run.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Excursions below the lower limit of the pH criterion range (3 of 21 samples - 14.3%) from station 8-PCT010.10 at Route 652.

Polecat Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**5.31**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F21R-01-BEN** **Herring Creek**

Location: Begins at the headwaters of Herring Creek and continues downstream until the confluence with Millpond Creek.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

2008 Assessment: Two biological monitoring events in 2002 at station 8-HER012.99 (downstream of Route 601) resulted in a MACS score which indicates an impaired macroinvertebrate community.

Herring Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**4.75**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F21R-01-HG** **Herring Creek**

Location: Extends from the Route 628 bridge (Dorrell Road) to the confluence with the Mattaponi River.

City / County: King William Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, mercury fish consumption advisory. The advisory, dated 09/30/04, limits bluegill sunfish and yellow bullhead catfish consumption to no more than two meals per month.

Herring Creek **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**7.23**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F21R-02-BEN** **Reedy Creek**

Location: Begins at the headwaters of Reedy Creek and continues downstream until the start of Reedy Millpond. Class VII waters.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Two biological monitoring events from station 8-RDY003.43 in 2011 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

Reedy Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**12.69**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F21R-02-HG** **Mattaponi River**

Location: Extends from the Route 628 bridge and continues downstream approximately 55 miles, to the confluence with Pamunkey River near West Point.

City / County: King And Queen Co. King William Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

During the 2006 cycle, 2003 monitoring indicated three exceedances of the mercury screening value at 8-MPN041.41 (observed effect).

The VDH later issued a fish consumption advisory for mercury from the Route 628 bridge downstream about 40 miles to Melrose Landing at Rt. 602.

The advisory was revised on 10/7/2009. The advisory now extends from Route 628 downstream approximately 55 miles to the mouth of the Mattaponi at West Point. No more than two meals/month of largemouth bass are recommended because of mercury.

The advisory is based on the results of DEQ's fish tissue monitoring program, which indicated mercury exceedances at 8-MPN029.08, 8-MPN014.33 and 8-MPN041.41.

Mattaponi River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:	**6.965**		**15.70**

Sources:

Atmospheric Deposition - Toxics	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F21R-03-HG** **Reedy Creek and Reedy Millpond**

Location: Begins at the headwaters of Reedy Creek and continues downstream until the confluence with the Mattaponi River, includes all of Reedy Millpond.

City / County: Caroline Co. King And Queen Co. King William Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

2010 Assessment: excursions above the water quality criterion based fish tissue value (TV) of 300 parts per billion (ppb) for mercury in fish tissue were recorded in 4 species of fish (4 total samples); creek chubsucker (2003), bluegill sunfish (2008), redbreast sunfish (2008) and yellow bullhead catfish (2008), collected at monitoring station 8-RDY003.43. Also, the fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, mercury fish consumption advisory. The advisory, dated 10/07/09, limits redbreast sunfish and yellow bullhead catfish consumption to no more than two meals per month. The affected area extends from the Route 301 bridge crossing downstream to the confluence with the Mattaponi River.

Reedy Creek and Reedy Millpond **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**41.25**	**12.82**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F21R-04-PH** **Chapel Creek**

Location: Begins at the confluence with Beaver Branch and continues downstream until the confluence with the Mattaponi River.

City / County: King And Queen Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Excursions below the lower limit of the pH criterion range (4 of 30 samples - 13.3%) from station 8-CPL004.15, at Route 721.

Chapel Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.64**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F21R-05-BAC** **Herring Creek**

Location: Begins at the confluence with Dorrell Creek and continues downstream until the confluence with an unnamed tributary to Herring Creek, at rivermile 2.14.

City / County: King William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (2 of 12 samples - 16.7%) from station 8-HER005.12, at Route 609.

Herring Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**5.09**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F21R-06-BAC** **Mattaponi River**

Location: Begins at the confluence with Maracossic Creek and continues downstream until the confluence with Gravel Run.

City / County: King And Queen Co. King William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

E. coli bacteria criterion excursions (5 of 36 samples - 13.9%) from station 8-MPN054.17 at Route 628.

Mattaponi River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.00**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F22L-01-HG** **Collins Pond**

Location: Segment includes all of Collins Pond.

City / County: Caroline Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

2010 Assessment: Excursions above the fish tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue were recorded in tissue from two species (largemouth bass, yellow bullhead catfish) of fish samples (three total excursions) collected in 2003 at monitoring station 8-DOC003.63.

Collins Pond **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:		**63.93**	

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F22R-02-PH** **Root Swamp**

Location: Begins at the headwaters of Root Swamp and continues downstream until the confluence with Beverly Run.

City / County: King And Queen Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Excursions below the lower limit of the pH criterion range (3 of 19 samples - 15.8%) from station 8-ROT001.09, at Route 721, and excursions below the lower limit of the pH criterion range (5 of 11 samples - 45.5%) from station 8-ROT003.65, at Route 649.

Root Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**7.83**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F22R-03-DO** **Unnamed tributary to Root Swamp**

Location: Begins at the headwaters of an unnamed tributary to Root Swamp and continues downstream until the confluence with Root Swamp.

City / County: King And Queen Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

2008 Assessment: Excursions below the minimum dissolved oxygen criterion (2 of 6 samples - 33.3%) from station 8-XDY000.27, at Route 689.

Unnamed tributary to Root Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.70**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F22R-03-PH** **Unnamed tributary to Root Swamp**

Location: Begins at the headwaters of an unnamed tributary to Root Swamp and continues downstream until the confluence with Root Swamp.

City / County: King And Queen Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

2008 Assessment: Excursions below the lower limit of the pH criterion range (6 of 6 samples - 100%) from station 8-XDY000.27, at Route 689.

Unnamed tributary to Root Swamp		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**0.70**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F22R-04-PH** **Beverly Run**

Location: Begins at the confluence with Shady Grove Run and continues downstream until the confluence with Mason Swamp.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Excursions below the lower limit of the pH criterion range (6 of 11 samples - 54.5%) from station 8-BEV008.47, at Route 665.

Beverly Run **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**3.31**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F22R-05-PH** **Doctors Creek**

Location: Begins at the confluence with Tanyard Swamp and continues downstream until the confluence with Maracossic Creek.

City / County: Caroline Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Excursions below the lower limit of the pH criterion range (4 of 12 samples -33.3%) from station 8-DOC000.69, at Route 644.

Doctors Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**2.32**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23E-02-BAC** **Mattaponi River**

Location: The mainstem Mattaponi River from Ayletts Creek to the confluence with Garnetts Creek.

City / County: King And Queen Co. King William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle, the Mattaponi River from Ayletts Creek to Garnetts Creek was assessed as impaired of the Recreation Use due to an E. coli exceedance rate of 2/9 at 8-MPN034.33 (pier at Rosepont.)

Continued monitoring is recommended due to an acceptable exceedance rate (1/68) at 8-MPN029.08 (Rt. 629 bridge near Walkerton.)

Mattaponi River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:	**1.756**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-01-BAC** **Garnetts Creek**

Location: The mainstem of Garnetts Creek from the confluence with Dickeys Swamp to the tidal limit.

City / County: King And Queen Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2010 cycle, Garnetts Creek from the confluence with Dickeys Swamp downstream to the tidal limit was assessed as impaired of the Recreation Use due to E. coli violations at the Route 633 bridge (8-GNT001.54).

The exceedance rate was 6/23 during the 2014 cycle.

Garnetts Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.83**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-03-DO** **Walkerton Branch**

Location: Watershed upstream of Walkerton Millpond

City / County: King And Queen Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Walkerton Branch was initially assessed as not supporting of the Aquatic Life Use for dissolved oxygen in 2006 based on exceedances at Route 636 (8-WKN003.16). The DO TMDL is due in 2018.

Additional monitoring was conducted during the 2014 cycle. The segment remained impaired for dissolved oxygen with an exceedance rates of 3/11.

Walkerton Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**4.62**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-03-PH** **Walkerton Branch**

Location: Watershed upstream of Walkerton Millpond

City / County: King And Queen Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Walkerton Branch was initially assessed as not supporting of the Aquatic Life Use goal in 2004 based on pH exceedances at Route 636 (8-WKN003.16). The pH TMDL is due in 2016.

Additional monitoring was conducted during the 2014 cycle. The segment remained impaired for pH with an exceedance rate of 4/11.

Walkerton Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
pH - Total Impaired Size by Water Type:			**4.62**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-04-BAC** **Aylett Creek**

Location: The mainstem of Aylett Creek.

City / County: King William Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2012 cycle, Aylett Creek was impaired of the Recreation Use due to an E. coli violation rate of 3/11 at 8-AYL002.27, which is located at the Route 600 bridge.

Aylett Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation	Escherichia coli - Total Impaired Size by Water Type:			**6.83**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-04-PH** **Aylett Creek**

Location: The mainstem of Aylett Creek.

City / County: King William Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

Aylett Creek was impaired of the Aquatic Life Use during the 2012 cycle due to a pH exceedance rate of 6/13 at the Route 600 bridge (8-AYL002.27).

Aylett Creek		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life				
	pH - Total Impaired Size by Water Type:			**6.83**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-06-PCB** **Mattaponi River**

Location: The Mattaponi River from the Route 628 bridge downstream to the mouth at West Point.

City / County: King And Queen Co. King William Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

During the 1998 cycle, the Mattaponi River from Herring Creek to the tidal limit was considered fully supporting but threatened of the Fish Consumption Use due to exceedance of a PCB screening value in 1 species (white perch) in 1996.

During the 2006 cycle, 2003 monitoring at 8-MPN041.41 indicated exceedances of the fish tissue level for PCBs in 2 species. In addition, the VDH issued a fish consumption advisory on 12/13/2004 for PCBs from Herring Creek to Aylett Creek which recommends that adults eat no more than 2 meals/month of anadromous striped bass, white perch, and gizzard shad. The TMDL is due in 2018.

The advisory was revised on 10/7/2009. The advisory now extends from Route 628 downstream approximately 55 miles to the mouth of the Mattaponi at West Point. No more than two meals/month of anadromous (coastal) striped bass, white perch, and gizzard shad are recommended due to PCBs.

The advisory is based on the results of DEQ's fish tissue monitoring program, which indicated PCB exceedances at 8-MPN029.08, 8-MPN014.33 and 8-MPN041.41.

Note: In the 2002 cycle, PCBs were accidentally included as an impairment, however previous and current guidance states that confirmation is needed before an impairment; therefore, the listing was in error.

Mattaponi River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:	**6.965**		**15.70**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-08-BAC** **Dickeys Swamp**

Location: Dickeys Swamp from the confluence with Dogwoods Fork downstream to the Route 620 bridge.

City / County: King And Queen Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, Dickeys Swamp from Dogwoods Fork downstream to the Route 620 bridge was impaired of the Recreation Use due to an E. coli exceedance rate of 4/12 at station 8-DKW004.31.

Note: monitoring at station 8-DKW001.12 was acceptable (0/12).

Dickeys Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.33**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-09-BAC** **Market Swamp**

Location: Market Swamp from the Walker Coleman Pond dam downstream to its mouth.

City / County: King And Queen Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, Market Swamp below Walker Coleman Pond was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at station 8-MKT001.04, which is located at the Route 14 bridge .

Note: monitoring at station 8-MKT001.96 was acceptable (0/12).

Market Swamp **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.01**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-10-BAC** **XJG - Dickeys Swamp, UT**

Location: Tributary XJG in its entirety.

City / County: King And Queen Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, Dickeys Swamp UT XJG was considered impaired of the Recreation Use due to an E. coli exceedance rate of 5/12 at 8-XJG000.08.

XJG - Dickeys Swamp, UT **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**1.99**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-11-BAC** **Dogwood Fork**

Location: Dogwood Fork from its headwaters to its mouth at Dickeys Swamp

City / County: King And Queen Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2014 cycle, Dogwood Fork was impaired of the Recreation Use due to an E. coli exceedance rate of 4/12 at station 8-DWD000.77, which is located at the Route 621 bridge.

Dogwood Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			**2.91**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F23R-12-BAC** **XDN - Garnetts Creek, UT**

Location: Headwaters to mouth at Garnetts Creek

City / County: King And Queen Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Based on monitoring during the 2014 cycle, tributary XDN was impaired of the Recreation Use due to an E. coli exceedance rate of 2/11 at 8-XDN000.12, which is located at the Route 620 bridge. Unfortunately, the impairment was inadvertently left off in the 2014 cycle; although XDN will be first listed in the 2016 cycle, the TMDL will be 2026 to reflect the initial monitoring.

XDN - Garnetts Creek, UT **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.53**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F24R-03-BAC** **Courthouse Creek**

Location: Courthouse Creek from King and Queen Courthouse Pond to the tidal limit

City / County: King And Queen Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2016 cycle, Courthouse Creek downstream of King and Queen Courthouse Pond was impaired of the Recreation Use due to an E. coli exceedance rate of 3/12 at 8-CTH001.96, which is located at the Route 14 bridge.

Courthouse Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**0.72**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F24R-03-DO** **Courthouse Creek**

Location: Courthouse Creek from King and Queen Courthouse Pond to the tidal limit

City / County: King And Queen Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

During the 2014 cycle, Courthouse Creek downstream of King and Queen Courthouse Pond was impaired of the Aquatic Life Use due to dissolved oxygen exceedances at 8-CTH001.96, which is located at the Route 14 bridge.

The exceedance rate was 4/24 during the 2016 cycle.

Courthouse Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**0.72**

Sources:

Dam or Impoundment	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F25R-01-DO** **Tastine Swamp and Little Tastine Swamp**

Location: From the headwaters of Little Tastine Swamp down Tastine Swamp to Corbins Pond.

City / County: King And Queen Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2016 cycle, the segment was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/12 at 8-TST001.81 (Rt. 611 bridge.)

Tastine Swamp and Little Tastine Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**6.25**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F25R-02-DO** **Tastine Swamp**

Location: From the headwaters of Tastine Swamp downstream to the confluence with Little Tastine Swamp

City / County: King And Queen Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Tastine Swamp from its headwaters down to the confluence with Little Tastine Swamp was assessed as not supporting of the Aquatic Life Use in the 2010 cycle due to a dissolved oxygen violation rate of 2/12 at station 8-TST003.16.

Tastine Swamp **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			**2.15**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F26E-01-PCB** **York River, Queens Creek, Kings Creek**

Location: This cause encompasses the area from the confluence of the Mattaponi and Pamunkey Rivers down to the mouth of the York River including King and Queens Creek

City / County: Gloucester Co. James City Co. King And Queen Co. King William Co. New Kent Co.
Williamsburg City York Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: PCB in Fish Tissue / 5A

The segment is included under a 12/13/2004 VDH Fish Consumption Advisory due to polychlorinated biphenyls (PCBs) in fish tissue. The advisory recommends that adults eat no more than two meals/month of croaker, gizzard shad, and spot. High risk individual

York River, Queens Creek, Kings Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Fish Tissue - Total Impaired Size by Water Type:	**57.895**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F26E-06-SF** **Fox Creek**

Location: Described in VDH Notice and Description of Shellfish Direct Harvesting Condemnation #047-072 A, 6/19/2012.

City / County: Gloucester Co.

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

The Shellfishing Use is impaired based on the VDH-DSS condemnation 047-072A (20130815).

Fox Creek **Shellfishing**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:	**0.016**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F26E-10-SF** **Carter Creek**

Location: Described in VDH Notice and Description of Shellfish Direct Harvesting Condemnation # 050-079A, 6/25/2007.

City / County: James City Co. King And Queen Co. New Kent Co. York Co.

Use(s): Shellfishing

Cause(s) /
VA Category: Fecal Coliform / 5B

Portion of VDH-DSS condemnation 050-079A (20030912)Carter Creek has been impaired since the 2004 cycle due to a VDH condemnation. During the 2012 cycle, the condemnation extends into a portion of the York River.2006 70004 / 2008 F26E-10-SF

Carter Creek **Shellfishing**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:	**0.048**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F26L-01-DO** **Waller Mill Reservoir**

Location: This cause encompasses the headwater impounded portion of Queen Creek. North of Williamsburg in York County.

City / County: York Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Aquatic Life Use is not supporting based on samples taken at stations 8-QEN007.02, 8-QEN007.22, 8-QEN007.65, 8-QEN008.58 for dissolved oxygen with a pooled violation rate of 14.1% (30 violations/ 212 obs.). Individual exceedances include 8-QEN007.02 (4 vi

Waller Mill Reservoir **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:		**287.70**	

Sources:

Changes in Ordinary Stratification and Bottom Water Hypoxia/Anoxia	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F26R-01-BAC** **Carter Creek**

Location: This cause encompasses Carter Creek from the tidal limit upstream to the confluence with an unnamed tributary.

City / County: York Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

Carter Creek is impaired of the Recreation Use due to fecal coliform exceedances at 8-CTC003.78. The exceedance rate was 2/3 during the 2006 cycle. No additional monitoring has been conducted.

Carter Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			**3.38**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F26R-01-BEN** **Carter Creek**

Location: This cause encompasses Carter Creek from the tidal limit upstream to the confluence with an unnamed tributary.

City / County: York Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Benthic biological monitoring previously conducted at station 8-CTC003.78 (located at State Route 604) indicated the stream's benthic community was moderately impaired (Benthic MI: 1999, SI S&F 2000, MI F 2001]. As a result, DEQ's General Standard (VR680-21-01.2) is not met for the protection of benthic aquatic life and this segment is assessed as not supporting of the Clean Water Act's Aquatic Life Use. Impairment retained as no more recent data available since 2001.

Carter Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**3.38**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F26R-02-BEN** **XEA - Bland Creek, UT**

Location: This cause encompasses the tributary XEA from its headwater to its mouth at Bland Creek.

City / County: Gloucester Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic life use is not supporting based on benthic population diversity and abundance measures at this Freshwater Probabilistic Monitoring (FPM) station. The Aquatic Life Use is not supporting based on benthic population diversity and abundance measures at this Freshwater Probabilistic Monitoring (FPM) station, IM-carried forward as no data in cycle. The Aquatic Life Use is not supported based on the benthic data collected in 2001 (Benthic ProbMon-Benthic IM [MI: S&F-01]. Benthic biological monitoring at station 8-XEA000.12 (FPM) indicated the stream's benthic community was moderately impaired. As a result, DEQ's General Standard (VR680-21-01.2) is not met for the protection of benthic aquatic life and this segment is assessed as not supporting of the Clean Water Act's Aquatic Life Use.

XEA - Bland Creek, UT **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.23**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F26R-04-BEN** **Bird Creek**

Location: This cause encompasses Bird Creek from its headwater to its mouth at Ware Creek.

City / County: James City Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2012 cycle, Byrd Creek was impaired of the Aquatic Use due to a slightly impaired benthic community at freshwater probabilistic monitoring station 8-BRD000.43.

Bird Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.47**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F27E-06-BAC** **York River - Yorktown Beach**

Location: This cause encompasses Yorktown Beach VDH bathing area. CBP segment YRKPH. No DSS shellfish direct harvesting condemnation.

City / County: York Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

Enterococcus is impaired based on a monthly geometric mean violation in 2013 as well as multiple swimming advisories. Enterococcus data at VDHB station VA482894 had 1 geometric mean viol/ 20 obs.

York River - Yorktown Beach	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	**0.024**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

York River Basin

***Cause Group Code:* F27E-07-BAC** **York River - Gloucester Point Beach**

Location: This cause encompasses Gloucester Point Beach VDH bathing area. CBP segment YRKPH. Portion of DSS (OPEN) shellfish direct harvesting condemnation # 046-027 (effective 20120808).

City / County: Gloucester Co.

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

Enterococcus is impaired based on a monthly geometric mean violation at VDH Beach Program station VA714367 as well as multiple swimming advisories. Enterococcus data collected at station VA714367 had 1 viol/ 20 obs.

York River - Gloucester Point Beach **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Enterococcus - Total Impaired Size by Water Type:	**0.018**		

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N01R-01-BAC** **Big Horse Creek**

Location: Tributary to North Fork New River in North Carolina. This is a loop that flows into Virginia from North Carolina and back into North Carolina. This segment was previously BHC01A02 and BUR01A02.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The ambient water quality monitoring station 9-BHO017.70 had a 25% exceedance of the E. coli water quality standard.

Big Horse Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.90**

Big Horse Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**7.90**

Sources:

Animal Feeding Operations (NPS)	Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N01R-02-BAC** **Little Helton Creek**

Location: A tributary to Helton Creek. The segment extends from the Virginia state line upstream.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The ambient water quality monitoring station 9-LHC001.92 had a 58% exceedance of the E. coli water quality standard.

Little Helton Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.30**

Little Helton Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**6.30**

Sources:

Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N02R-02-BAC** **New River and Grassy Creek**

Location: This segment begins at the North Carolina state line, includes Fields Dam, and extends downstream to the New River confluence with Saddle Creek at the Route 601 bridge. Grassy Creek from the headwaters downstream to the North Carolina state line and Bridle Creek, a tributary of the New River west of Rt. 601.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station located at 9-NEW187.46 had an 18% exceedance of the E. coli water quality standard and station 9-NEW181.66 had a 25% exceedance. 9-NEW172.45 had 16% that exceeded WQS. Station 9-GRA003.36 had a 33% exceedance. Level III citizen data at station 9-BRL1-NCNR indicate a 46% violation rate.

New River and Grassy Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**19.67**

New River and Grassy Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**8.92**

Sources:

Grazing in Riparian or Shoreline Zones	Source Unknown	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N02R-02-HG** **New River**

Location: This segment begins at the upper mainstem at the North Carolina state line at river mile 189.06, and extends downstream to the Saddle Creek confluence, it includes the mainstem from the North Carolina line in N04 downstream to the confluence with Rock Creek and the mainstem from Buddle Branch downstream to the confluence with Reed Creek.

City / County: Grayson Co. Wythe Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

Station 9-NEW171.94 showed smallmouth bass, rock bass and carp exceeded the level of concern for Mercury; a second flathead catfish exceeded the Virginia Department of Health's level of concern. Station 9-NEW158.40 was monitored for sediment and fish tissue. Mercury exceeded the level of concern in several species. 9-NEW117.47 was monitored for sediment and fish tissue in 2004. Mercury was found in the fish tissue.

New River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			**30.12**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N02R-03-BAC** **Wilson Creek**

Location: This segment includes the Wilson Creek mainstem from the New River confluence upstream 8.8 miles.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station 9-WLS002.57 had a 27% exceedance of the E. coli water quality standard.

Wilson Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.90**

Wilson Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**8.90**

Sources:

- Grazing in Riparian or Shoreline Zones
- Livestock (Grazing or Feeding Operations)

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N03R-01-BAC** **Fox Creek**

Location: This segment includes the mainstem of Fox Creek from the Mill Creek confluence to the New River confluence, Middle Fox Creek from the Fox Creek confluence upstream 4.1 miles and Mill Creek from the confluence with Fox Creek upstream to the headwaters. Little Fox Creek is included in this segment and it extends from the Fox Creek confluence upstream 2.2 miles.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

Designated a natural trout stream. The AWQM station, 9-FXC003.35, had a 25% exceedance in the E. coli water quality standard, station 9-LFX000.06 had a 45% exceedance of the E.coli standards, stations 9-MIR000.13 and 9-MIR000.28 both had a 25% exceedance of the E. coli water quality standard.

Fox Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**19.11**

Fox Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**7.65**

Sources:

Grazing in Riparian or Shoreline Zones	Livestock (Grazing or Feeding Operations)	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N04R-02-BAC** **Little River**

Location: This segment includes the Little River mainstem from NC state line, river mile 5.20, to the confluence at New River.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station, 9-LVR001.34, had a 25% exceedance of the fecal coliform water quality standard in the 2004 WQA. The station was moved to 9-NEW002.65 in 2003 and had a 16% exceedance of the E. coli water quality standard. Station 9-LVR002.65 had a 16% exceedance of the E.coli water quality standard.

Little River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.55**

Sources:

Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N04R-03-BAC** **Peach Bottom Creek**

Location: This segment includes the mainstem from the headwaters downstream to the confluence with the New River. This also includes Rock Creek from the U.S. 21 crossing to the confluence with the New River.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station, 9-PBC001.12, had a 33% exceedance of the E.coli water quality standard, at 9-PBC008.61 25% exceed and at 9-RCK000.50 58% exceed.

Peach Bottom Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**22.01**

Peach Bottom Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**2.81**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N04R-07-BAC** **Saddle Creek**

Location: This segment includes the mainstem from the New River confluence upstream 3.09 miles, west of Independence.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station, 9-SDL000.05, had a 41% exceedance of the E.coli water quality standard.

Saddle Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.17**

Sources:

- Animal Feeding Operations (NPS)
- Livestock (Grazing or Feeding Operations)

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N05R-01-BEN** **Elk Creek**

Location: This segment includes the mainstem from the confluence of Comers Rock Branch downstream to Turkey Fork.

City / County: Grayson Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Probabilistic Monitoring station located at 9-EKC013.81 was impaired based on the VSCI score.

Elk Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**9.38**

Sources:

Animal Feeding Operations (NPS)	Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N06R-03-BAC** **Meadow Creek & New River**

Location: This segment includes Meadow Creek and its tributaries and New River from Elk Creek confluence downstream to Eagle Bottom Creek confluence.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

AWQM station located at 9-MCR000.20 had a 77% exceedance of the E. coli water quality standard. 9-NEW148.23 has E.coli exceedance rate of 25%.

Meadow Creek & New River		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation				
	Escherichia coli - Total Impaired Size by Water Type:			**20.94**

Sources:

Livestock (Grazing or Feeding Operations)	Rural (Residential Areas)	Source Unknown	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N06R-04-BAC** **Brush Creek**

Location: A New River tributary, north of Fries Junction, WQS Section 2.

City / County: Carroll Co. Grayson Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station 9-BRU003.59 had a 25% exceedance of the E. coli water quality standard.

Brush Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.29**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N07R-01-BAC** **Crooked Creek**

Location: This segment extends from the headwaters of Crooked Creek downstream to the confluence with New River at Byllesby.

City / County: Carroll Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station, 9-CRK020.79, had a 25% exceedance of the E. coli water quality standard. This segment is designated natural trout waters. Station 9-CRK015.69 had a 50% exceedance of the E.coli water quality standard. 9-CRK003.00 has 33% exceedance.

Crooked Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**27.90**

Crooked Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**23.54**

Sources:

Grazing in Riparian or Shoreline Zones	Source Unknown	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N07R-01-TEMP** **Crooked Creek**

Location: This segment of Crooked Creek begins at Route 707 and continues to Route 620.

City / County: Carroll Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

The AWQM station located at 9-CRK015.69 had a 25% exceedance of the temperature standard for natural trout streams.

Crooked Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**4.36**

Sources:

Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N08R-01-BAC** **New River**

Location: This bacteria impaired section of the New River is between the Reed Creek confluence and the backwaters of Claytor Lake near the Wythe/Pulaski county line.

City / County: Carroll Co. Pulaski Co. Wythe Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

Station 9-NEW107.51 was formally contained in the 1999 Federal Consent Decree Attachment B List for fecal coliform bacteria. The 2002 Assessment found the recreational use fully supported. Station 107.51 found only three of 52 samples in excess of the former WQS fecal coliform 1000 n/100 ml instantaneous criterion. The waters were therefore not 303(d) listed in 2002. The initial 303(d) Listing for fecal coliform bacteria occurs with the 2004 IR. The 2006 Assessment and 303(d) Listings replace fecal coliform bacteria with escherichia coli (E.coli) bacteria as the indicator with sufficient E.coli data as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters]. The waters were delisted with the 2014 assessment as E.coli excursions of the 235 cfu/100 ml instantaneous criterion are three of 35 observations. An 8.5% exceedance rate at station 9-NEW107.51 (Allisonia USGS Gage) results in the delisting of these 1999 Consent Decree waters. These waters are listed in the 2016 data window based on the information detailed below.

9-NEW107.51 (Allisonia USGS Gage) The 2016 Integrated Report finds five of 39 E.coli samples in excess of the WQS instantaneous criterion of 235 cfu/100 ml. Excessive values range from 280 cfu/100 ml to greater than 2000.

Station 9-PRN000.84 had a 41%(5/12) exceedance of the E. coli water quality standard. At 9-MRN000.31 58% exceeded WQS.

New River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**19.49**

New River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**4.37**

Sources:

Grazing in Riparian or Shoreline Zones	Livestock (Grazing or Feeding Operations)	Municipal (Urbanized High Density Area)	Source Unknown
Wastes from Pets	Wet Weather Discharges (Non-Point Source)	Wildlife Other than Waterfowl	

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N08R-03-BAC** **Shorts Creek and Unnamed Tributary**

Location: This segment includes Shorts Creek and continues until it enters New River at Jackson Ferry. This segment also includes an unnamed tributary to Shorts Creek that enters at Jackson Ferry and flows west from Rackettown.

City / County: Carroll Co. Wythe Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station, 9-SRT000.12, had a 100% exceedance of the E. coli water quality standard.

Shorts Creek and Unnamed Tributary **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**14.26**

Shorts Creek and Unnamed Tributary **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**10.95**

Sources:

- Animal Feeding Operations (NPS)
- Grazing in Riparian or Shoreline Zones
- Livestock (Grazing or Feeding Operations)
- Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N09R-03-BEN** **Dean Branch**

Location: A Cripple Creek tributary at Porters Crossroads.

City / County: Smyth Co. Wythe Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The freshwater probabilistic monitoring station at 9-DEN000.03 was impaired based on VSCI scores of 54.70 and 57.54.

Dean Branch **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.92**

Sources:

Animal Feeding Operations (NPS)	Livestock (Grazing or Feeding Operations)	Non-Point Source

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N10R-01-TEMP** **Reed Creek**

Location: Reed Creek mainstem from Venrick Run upstream to South Fork.

City / County: Wythe Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

Water temperature was exceeded for Class VI WQS at 9-RDC038.01 and at 9-RDC033.94.

Reed Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Temperature, water - Total Impaired Size by Water Type:			**1.43**

Sources:

- Grazing in Riparian or Shoreline Zones
- Loss of Riparian Habitat

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N11R-02-BEN** **Reed Creek tributary**

Location: This segment includes an unnamed tributary of Reed Creek that drains the Wytheville Community College at the east end of the town of Wytheville.

City / County: Wythe Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station 9-XES000.94 was impaired based on VSCI scores of 41 and 51.

Reed Creek tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.67**

Sources:

- Grazing in Riparian or Shoreline Zones
- Rural (Residential Areas)
- Streambank Modifications/destabilization
- Urban Runoff/Storm Sewers

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N13R-01-BAC** **Big Reed Island Creek**

Location: This segment begins at the headwaters of Big Reed Island Creek and continues downstream to the confluence with Pine Creek.

City / County: Carroll Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 9-RIC049.29 had a 50% exceedance of the E.coli water quality standard.

Big Reed Island Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**19.85**

Sources:

- Animal Feeding Operations (NPS)
- Grazing in Riparian or Shoreline Zones

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N13R-01-BEN** **Big Reed Island Creek**

Location: This segment begins at the headwaters of Big Reed Island Creek and continues downstream to the confluence with Pine Creek.

City / County: Carroll Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Probabilistic Monitoring station located at 9-RIC051.80 was impaired based on the VSCI scores of 53 for both Spring and Fall in 2004.

Big Reed Island Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**19.85**

Sources:

- Animal Feeding Operations (NPS)
- Grazing in Riparian or Shoreline Zones
- Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N13R-02-BAC** **Snake Creek**

Location: From the Big Reed Island confluence upstream 3.5 miles to near the Macey Branch confluence, WQS Section 2, iii.

City / County: Carroll Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 9-SKE000.98 had a 41% exceedance of the E.coli water quality standard.

Snake Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.54**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N14R-01-BAC** **Big Reed Island Creek**

Location: This segment includes the mainstem of Big Reed Island Creek from the confluence of Snake Creek downstream to the confluence with Bobbitt Creek, from Bobbitt Creek to the Greasy Creek confluence, and from the Island Creek confluence downstream to the Big Branch confluence.

City / County: Carroll Co. Pulaski Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station, 9-RIC029.23, had a 14% exceedance of the fecal coliform water quality standard and station 9-RIC018.90 had a 25% exceedance of the E. coli water quality standard.

Big Reed Island Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**13.81**

Big Reed Island Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**21.36**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N14R-02-BAC** **Greasy Creek**

Location: This segment begins at the Carroll county line and continues downstream to the confluence with Big Reed Island Creek.

City / County: Floyd Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 9-GSC000.03 had a 33% exceedance of the E.coli water quality standard.

Greasy Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**13.63**

Sources:

Grazing in Riparian or Shoreline Zones

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N14R-03-BAC** **Big Reed Island Creek**

Location: This segment includes the lower mainstem of Big Reed Island Creek from the Greasy Creek confluence downstream to the New River confluence.

City / County: Carroll Co. Pulaski Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The AWQM station located at 9-RIC000.50 had a 25% exceedance of the E. coli water quality standard.

Big Reed Island Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.85**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N14R-03-BEN** **Island Creek**

Location: A Big Reed Island Creek tributary northeast of Hillsville.

City / County: Carroll Co. Floyd Co. Pulaski Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Benthic sampling at 9-ISL003.05 indicated impairment of the aquatic life use. In spring 2010 VSCI was 55.

Island Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**13.35**

Sources:

- Grazing in Riparian or Shoreline Zones
- Livestock (Grazing or Feeding Operations)
- Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N15R-01-BAC** **Little Reed Island Creek**

Location: This segment begins 5 miles above the Hillsville public water intake and extends downstream to the confluence with Big Reed Island Creek.

City / County: Carroll Co. Pulaski Co. Wythe Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

AWQM station 9-LRI001.62 had a 36% exceedance of the E.coli water quality standard, station 9-LRI009.11 had a 22% exceedance, station 9-LRI017.64 had a 41% exceedance, station 9-LRI023.48 had a 50% exceedance, and station 9-LRI031.58 had a 25% exceedance of the E. coli water quality standard.

Little Reed Island Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**35.98**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N15R-01-TEMP** **Little Reed Island Creek**

Location: This segment begins approximately 1 mile below the Hillsville water intake and continues downstream to the Big Reed Island Creek confluence.

City / County: Carroll Co. Pulaski Co. Wythe Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Temperature, water / 5A

AWQM station 9-LRI017.64 had a 25% exceedance of the temperature standard.

Little Reed Island Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**19.70**

Sources:

Loss of Riparian Habitat

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N16R-01-BAC** **Big Macks Creek**

Location: Big Macks Creek mainstem from its confluence with the New River upstream to the Camp Powhatan Dam (NE42).

City / County: Pulaski Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

9-BMK001.11 (Rt. 693 Bridge, Julia Simpkins Rd.) There are no additional data beyond the 2014 Integrated Report (IR). This 2014 initial 303(d) Listing is a result of escherichia coli (E.coli) exceeding the 235 cfu/100 ml instantaneous criterion in two of 12 samples. Values in excess of the criterion are 250 and 575 cfu/100 ml.

Big Macks Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**3.78**

Sources:

- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N18R-02-BAC** **Connellys Run**

Location: Bacteria impairment begins near the headwaters of Connellys Run at an unnamed tributary (37°07'04" / 80°32'16") downstream to its mouth on the New River.

City / County: Radford City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Fecal coliform (FC) bacteria excursions of the former WQS 400 cfu/100 ml instantaneous criterion cause non-support of the Recreational Use for 2.85 miles. The impairment for the 2004 303(d) Listed water remains. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-CNL000.01 (Bissett Park Bridge, Radford) There are no additional data since the 2014 IR where escherichia coli (E.coli) data exceed the 235 cfu/100 ml instantaneous criterion in five of 24 samples. Excessive values range from 790 to greater than 2000 cfu/100 ml. 2012 and 2010 E.coli data exceed the 235 cfu/100 ml instantaneous criterion in four of 12 samples. Excessive values range from 260 to 1260 cfu/100 ml. The 2006 assessment finds FC exceedances of the former WQS instantaneous criterion of 400 cfu/100 ml in three of 11 observations. The range of excursions is from 500 to 1900 cfu/100 ml. The initial 2004 303(d) Listing is based on FC exceedances of the former WQS instantaneous criterion of 400 cfu/100 ml in three of nine observations with the range of exceedance the same as 2006.

Connellys Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.85**

Sources:

- Livestock (Grazing or Feeding Operations)
- Municipal (Urbanized High Density Area)
- Unspecified Domestic Waste
- Wastes from Pets
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N18R-03-BAC** **Plum Creek**

Location: The upstream limit is the headwaters of Plum Creek extending downstream to its mouth on the New River.

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This 2004 303(d) Listed water extends for 4.72 miles on Plum Creek. The original Listing basis is two of nine fecal coliform observations exceeding the former 400 cfu/100 ml instantaneous criterion. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-PLM000.60 (Rt. 11 just above the mouth of Plum Creek) No new data since the 2014 data window where Escherichia coli (E.coli) exceeds the WQS 235 cfu/100 ml instantaneous criterion in seven of 24 observations. Values in excess of the instantaneous criterion range from 240 to 1600 cfu/100 ml. Both the 2012 and 2010 assessments find E.coli exceeds the WQS 235 cfu/100 ml instantaneous criterion in four of 12 observations. Values in excess of the instantaneous criterion range from 240 to 1020 cfu/100 ml. Fecal coliform (FC) exceeds the former WQS 400 cfu/100 ml instantaneous criterion in two of 11 observations in 2006 and 2008. Values in excess of the former standard are 1100 and 1500 cfu/100 ml.

9PLM-2-NCNR (Plum Cr. Rd. Bridge Off Rt. 11) The 2012 assessment finds full support from E.coli results where no exceedances are recorded from 11 samples. This station is located near the headwaters of Plum Cr. The maximum E.coli result is 225 cfu/100 ml.

Plum Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**4.72**

Sources:

- Livestock (Grazing or Feeding Operations)
- Municipal (Urbanized High Density Area)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N22R-02-BAC** **Stroubles Creek**

Location: The upstream end is at the Duck Pond dam on the southwest end of the VPI&SU campus on the Blacksburg Quad. The downstream end is at the Slate Branch mouth on Stroubles Creek.

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Fecal coliform (FC) bacteria exceedances of the former 1000 cfu/100 ml WQS instantaneous criterion in 2002 cause impairment of the Recreational Use. Three of 23 observations exceed the former criterion at station 9-STE002.41 Rt. 705 Bridge (Coal Hollow Road). The 2004 IR at 9-STE002.41 records four exceedances from 35 samples in excess of the current 400 cfu/100 ml WQS instantaneous criterion. Escherichia coli (E.coli) bacteria replaced fecal coliform (FC) in 2006 as the indicator as required by Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters]. 2008 results find E.coli exceedances at 9-STE002.41 are three of 31 samples and resulted in 2.11 miles delisted with the 2008 IR. This 2.11 mile delisted portion (partial - length) returned with the 2010 303(d) Listing.

9-STE002.41- (Rt. 705 Bridge- Coal Hollow Road) The 2016 data window finds eleven of 36 escherichia coli (E.coli) samples exceed the 235 cfu/100 ml instantaneous criterion. Twelve of 36 samples exceeded that criterion in 2014. Values in excess of the instantaneous criterion range from 250 to greater than 2000 cfu/100 ml within the 2014 and 2016 data windows. The 2012 data window finds eight of 36 observations exceeding the 235 cfu/100 ml instantaneous criterion. Exceeding values range from 280 to greater than 2000 cfu/100 ml. 2010 E.coli samples find eight exceed the 235 cfu/100 ml instantaneous criterion from a total of 32 samples with the same range of exceedance.

9-STE007.29 (Rt. 657 Bridge below old B'Burg STP) There is no new data within the 2016 data window. Escherichia coli (E. coli) samples find eight exceed the 235 cfu/100 ml instantaneous criterion from a total of 24 samples. Exceeding values range from 280 to greater than 2000 cfu/100 ml within the 2014 data window. The 2012 IR reports eight E.coli samples exceed the instantaneous criterion from a total of 33. Exceeding values range from 280 to greater than 2000 cfu/100 ml. 2010 results find eight exceed from a total of 32 samples with the same range of exceedance as 2012. 2008 E.coli results exceed in five of 25 samples. The 2008 exceedance range is from 300 to greater than 2000 cfu/100 ml. 2006 E.coli samples reveal five exceed the instantaneous criterion from a total of 16. Exceeding values range from 490 to greater than 5000 cfu/100 ml.

Stroubles Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**7.19**

Sources:

Discharges from Municipal Separate Storm Sewer Systems (MS4)	Livestock (Grazing or Feeding Operations)	Municipal (Urbanized High Density Area)	Unspecified Domestic Waste
Wastes from Pets	Wet Weather Discharges (Non-Point Source)	Wildlife Other than Waterfowl	

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N22R-04-BAC** **Toms Creek**

Location: Toms Creek from the mouth of Big Run upstream to its headwaters.

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

This initial 2014 Listing is a result of bacteria data showing impairment of the Recreational Use.

9-TOM012.78- (Lower bike path off Deerfield Drive) Three of 12 escherichia coli (E.coli) samples exceed the 235 cfu/100 ml instantaneous criterion. Exceeding values range from 275 to 950 cfu/100 ml.
Note: Level 2 Citizen data indicates the impairment extends downstream to the Toms Creek confluence with the New River.

Toms Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**6.13**

Sources:

- Livestock (Grazing or Feeding Operations)
- Municipal (Urbanized High Density Area)
- Unspecified Domestic Waste
- Wastes from Pets
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N22R-04-TEMP** **Toms Creek**

Location: Toms Creek mainstem waters just below the Poverty Creek confluence upstream to its headwaters.

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The initial 2008 5.71 mile impairment is extends upstream 6.13 miles (2012) and downstream 4.56 miles (2014) with data provided by the National Committee for the New River (NCNR). The Aquatic Life Use is impaired for a total of 16.40 miles based on the initial 2008 temperature exceedances and 2012 / 2014 Citizen temperature measurements of the Class V 21°C stockable trout water criterion.

9TOM-1-NCNR (Off Glade Rd. at Heritage Park Trail Lv. 3) Seven temperature measurements exceed the Class V 21°C criterion ranging from at 21.5°C to 26.1°C from 32 measurements within the 2016 and 2014 data windows. Excursions occur during the summer months Lv. 3 [IM]. Two temperature measurements exceed the Class V 21°C criterion at 24.5°C on 7/19/2010 and 24.0°C on 8/19/2010 from 10 measurements for 2012.

9-TOM005.32- (Rt. 725 Bridge upstream of Poverty Creek) Both the 2010 and 2008 IRs find two temperature measurements exceed the Class V 21°C criterion from 13 observations. Exceedances occur on 8/15/2005 at 24.4°C and 21.4 °C on 8/15/2006. There are no additional data beyond the 2008 Integrated Report (IR).

9TOM-2-NCNR (Poverty Creek Rd. Bridge Lv. 3) The 2016 data window finds three of 11 temperature measurements exceed the Class V 21°C criterion. Excessive values range from 22 to 24.5°C and occur in the summer months. The 2012 Integrated Report (IR) finds three temperature exceedances of the Class V 21°C criterion occur on 6/16/2010 at 22°C; 7/19/2010 at 24.0°C and 8/16/2010 at 24.5°C from 11 measurements for 2012.

9TOM-3-NCNR (Mt. Zion Road Bridge Lv. 3) Seven temperature measurements exceed the Class V 21°C criterion ranging from at 22.0°C to 24.7°C from 33 measurements within the 2016 data window. Excursions occur during the summer months.

Toms Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**16.40**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N22R-05-BAC** **New River**

Location: New River mainstem from the Radford Army Arsenal Plant upstream intake/Pepper's Ferry Region POTW outfall downstream to the confluence with Back Creek (NE62).

City / County: Montgomery Co. Pulaski Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The initial 2016 303(d) Listing of these waters is a result of escherichia coli (E.Coli) excursions of the 235 cfu/100 ml instantaneous criterion in three of 23 samples. All three exceeding samples were found to have E.Coli concentrations of 250 cfu/100 ml. These waters are not meeting the Recreational Use.

9-NEW066.90 (New River at Whitethorne) Escherichia coli exceeds the 235 cfu/100 ml instantaneous criterion in three of 23 samples. Exceeding values were all 250 cfu/100 ml.

New River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**9.78**

Sources:

- Livestock (Grazing or Feeding Operations)
- Unspecified Domestic Waste
- Wastes from Pets
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N22R-06-BEN** **Unnamed Tributaries XEJ and XEH to Slate Branch**

Location: Unnamed Tributary XEH from its mouth on Slate Branch upstream to its headwaters. And Unnamed Tributary XEJ from its mouth on Unnamed Tributary XEH upstream to its headwaters.

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2008 assessment finds the Aquatic Life Use via the General Standard (Benthic) is impaired for a total of 2.51 miles. Unnamed Tributary to Slate Branch- XEH for 1.68 miles and Unnamed Tributary XEJ to XEH for 0.83 miles. There are no additional data for 9-XEH000.75 and 9-XEJ000.10 beyond the 2008 Integrated Report (IR). 9-XEH000.01 is a new station assessed in 2016.

9-XEH000.75- (Downstream of Villages Development at NRV Mall) There are no additional data beyond the 2008 IR. Bio 'IM' Two 2006 Virginia Stream Condition Index (VSCI) surveys with an average score of 23.1. This station was sampled at the request of the WCRO VWP program with the goal of collecting water quality data prior to new development immediately upstream near the New River Valley Mall complex. A crayfish/macro invertebrate kill in January 2006 impacted the stream with the source occurring somewhere above this station. The most noticeable difference between this site and the reference station is the low abundance of organisms collected in the spring sample compared to the reference site. The abundance increased in the fall and is comparable to the reference site (Falling Branch).

9-XEH000.01 (Near Huckleberry Trail, Downstream of XEJ) - This stream was originally sampled at a location upstream (9-XEH000.75). The 2016 IR finds four VSCI scores average 52.0 (2013-2014). The headwaters of Slate Branch are developed with residential and commercial properties as well as Rt. 460 and Peppers Ferry Road. Storm water runoff from these areas may have an impact on water quality at the sampling station which is about one mile downstream of the New River Valley Mall. Habitat scores at this station were relatively good considering the proximity to developed lands upstream and appear favorable for macroinvertebrates. Specific conductance was high at this site during all surveys. Periphyton and algal growth was always thick even during the fall surveys which may be an indication of excessive nutrients.

9-XEJ000.10- (North of NRV Mall) There are no additional data beyond the 2008 IR. Bio 'IM' Two 2006 VSCI surveys with an average score of 23.8. This station was sampled at the request of the WCRO VWP program with the goal of collecting water quality data prior to new development immediately upstream and north of the New River Valley Mall and above the Huckleberry Tail crossing. The main source of impact appears to be recent development and urban land use resulting in altered hydrology, excessive storm water runoff, sediment deposition, bank erosion, and riparian vegetation removal.

Unnamed Tributaries XEJ and XEH to Slate Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**2.51**

Sources:

Loss of Riparian Habitat	Municipal (Urbanized High Density Area)	Sediment Resuspension (Clean Sediment)	Streambank Modifications/destabilization

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N23R-01-BAC** **Sinking Creek**

Location: Sinking Creek mainstem waters from just downstream of the Rt. 778 Bridge upstream to the mouth of Gravel Hill Branch.

City / County: Craig Co. Giles Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The initial 21.03 mile 2010 303(d) Listing of these waters is due to bacteria excursions of the WQS instantaneous criterion for escherichia coli (E.coli).

9-SNK012.06 (Rt. 42 Bridge)- One exceedance of the E.Coli instantaneous criterion (235 cfu/100 ml) occurs within the 2016 data window at 600 cfu/100 ml. The 2010 IR found three of 12 E.coli samples exceed the 235 cfu/100 ml instantaneous criterion. The exceedance range is from 250 to greater than 2000 cfu/100 ml.

9-SNK005.38 (Rt. 778 Bridge)- There are no new data within the 2016 data window. E.coli excursions of the 235 cfu/100 ml instantaneous criterion occur in four of 23 observations within the 2014 data window. Values in excess of the instantaneous criterion range from 275 to 600 cfu/100 ml. E.coli excursions of the instantaneous criterion occur in two of 11 observations within the 2010 and 2012 data windows. Values in excess of the instantaneous criterion are 480 and 600 cfu/100 ml.

Sinking Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**21.03**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N25R-01-BAC** **Walker Creek**

Location: Walker Creek from the Route 52 crossing downstream to the confluence with Kimberling Creek and Town Creek from the headwaters downstream to the confluence with Crab Orchard Creek.

City / County: Bland Co. Giles Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station located at 9-WLK060.32 had a 20% and 9-WLK044.06 has 16% exceedance of the E. coli water quality standard and station 9-TNC000.53 had a 52% exceedance of the E. coli water quality standard.

Walker Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**37.93**

Walker Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**25.07**

Sources:

Grazing in Riparian or Shoreline Zones	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N26R-01-BAC** **East Wilderness Creek, Nobusiness Creek and Kimberling Creek**

Location: This segment includes the mainstem of Nobusiness Creek from the Kimberling Creek confluence upstream 6.4 miles, East Wilderness Creek from the confluence with Wolfpen Branch upstream 3.2 miles, and Kimberling Creek from the Nobusiness Creek confluence to the confluence with Walker Creek.

City / County: Bland Co. Giles Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station located at 9-KBL007.29 had a 17% exceedance and station 9-KBL001.67 had a 13% exceedance of the bacteria standard. AWQM station 9-EWL000.06 had 17% of the samples exceed the E.coli water quality standard. Station 9-NBS000.70 had a 63% exceedance of the E. coli water quality standard.

East Wilderness Creek, Nobusiness Creek and Kimberling Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**19.59**

East Wilderness Creek, Nobusiness Creek and Kimberling Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**6.83**

Sources:

Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N27R-01-BAC** **Little Walker Creek**

Location: Little Walker Creek mainstem from its confluence with Walker Creek upstream to the mouth of Spur Branch.

City / County: Pulaski Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The initial 2004 303(d) Listing of these waters is the result of fecal coliform (FC) bacteria exceedances (two exceeding from 18 observations) causing a 17.48 mile impairment. Escherichia coli (E.coli) replaces fecal coliform bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-LWK000.77 (Rt. 100 Bridge) Escherichia coli (E.coli) exceed the 235 cfu/100 ml instantaneous criterion in five of 22 samples within the 2016 data window. Exceedance range is 337 to greater than 2000 cfu/100 ml. The 2014 data window found three of 11 samples in exceedance of the instantaneous criterion. Values exceeding the criterion range from 275 to greater than 2000 cfu/100 ml. The 2008 through 2012 assessments find E.coli exceed the instantaneous criterion in five of 12 samples. Values exceeding the criterion range from 320 to 500 cfu/100 ml. Four of nine excursions are reported in 2006 with the range of exceedance from 350 to 500 cfu/100 ml.

Little Walker Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**17.48**

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N29R-01-BAC** **New River**

Location: New River mainstem waters from the confluence of Wolf Creek downstream to the backwaters of Bluestone Reservoir.

City / County: Giles Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The initial 2006 303(d) Listing of these waters is a result of escherichia coli (E.coli) excursions of the 235 cfu/100 ml instantaneous criterion in two of nine samples. The impairment was delisted in 2008 where two of 21 samples exceeded the 235 cfu/100 ml instantaneous criterion. The waters remained fully supporting the Recreational Use through 2010 and 2012 IRs. The bacteria impairment returns with the 2014 Integrated Report (IR) as described below.

9-NEW030.15 (Route 460 Bridge at Glen Lyn) The 2016 and 2014 data windows find that Escherichia coli exceed the 235 cfu/100 ml instantaneous criterion in four of 36 samples. Exceeding values range from 250 to 550 and from 250 to 620 cfu/100 ml within the 2016 and 2014 data windows, respectively.

New River **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**13.67**

Sources:

- Livestock (Grazing or Feeding Operations)
- Municipal (Urbanized High Density Area)
- Sanitary Sewer Overflows (Collection System Failures)
- Unspecified Domestic Waste
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N29R-01-PCB** **New River, Reed Creek, Claytor Lake, Peak Creek, Stony Creek, Walker Creek, And Unknown Tributary XAG.**

Location: The impairment begins at the I-77 bridge crossing the New River and extends downstream to the VA/WV State Line and includes the tributaries Peak Creek and Reed Creek as described below.

City / County: Giles Co. Montgomery Co. Pulaski Co. Radford City Wythe Co.

Use(s): Fish Consumption

Cause(s) / VA Category: PCB in Fish Tissue / 5A PCB in Water Column / 5A

The Virginia Department of Health (VDH) issued a fish consumption advisory on August 6, 2001 for polychlorinated biphenyls (PCBs) for the lower portion of the New River (Rt. 114 Bridge downstream to the VA / WV State Line - 52.0 miles) based on fish tissue collections from Carp. An Advisory extension to Claytor dam was issued 8/06/2003 (11.47 miles) recommends that no carp be consumed in these waters and no more than two meals per month of flathead and channel catfish. The VDH PCB Fish Consumption Advisory was further extended upstream on the New River (13 miles) to the I-77 Bridge to include the lower portions of Peak Creek (4.02 miles), Reed Creek (16.35 miles) and Claytor Lake (4,287 acres) on 12/02/2004. The VDH advises consumption should not exceed two meals per month for carp and smallmouth bass. Stony Creek is a 2010 Integrated Report (IR) addition to the original 2002 303(d) Listing. An unnamed tributary (XAG) is an addition with the 2016 IR. The VDH level of concern is 50 parts per billion (ppb) in fish tissue.

Water column data from 2010 thru 2016 are listed below where excursions of the WQS water column criterion of 640 pg/L are contravened causing an Observed Effect (OE) or 303(d) Listing for 'PCBs in Water Column'. Water column data collection is in support of TMDL development for PCBs in the New River drainage. Sample collections are made in both wet weather (WW) and dry weather (DW) conditions.

2012 & 2014 Fish tissue and water column data follow reporting exceedances of the WQS based 20 ppb fish tissue value (TV) (VDH Lower Level of Concern 50 ppb). And excursions of the WQS water column criterion of 640 pg/L. Fish tissue data are in addition to previous years collections. Fish tissue data are reviewed by the VDH in making an advisory determination. A complete listing of fish tissue collection sites and associated fish tissue data are available at http://www.deq.virginia.gov. A more detailed presentation of the data can also be found using an interactive mapping application at http://www.deq.virginia.gov. The VDH Advisory information is also available via the web at http://www.vdh.virginia.gov.

9-RDC009.00 (Near Rt. 619 at Grahams Forge) 2012 two species analyzed - Carp exceeds WQS TV of 20 ppb (5 fish composite [62.6 - 69.4 cm] at 68.24 ppb. Remaining species analyzed Smallmouth Bass (5 fish composite [21.8 - 26.6 cm] at 3.04 ppb.
2014 two species analyzed - Carp composites exceed WQS TV of 20 ppb (4 fish composite [67.9 - 76.5 cm] at 75.67 ppb and (5 fish composite [64.5 - 69.8] at 85.77. Remaining species analyzed Smallmouth Bass (5 fish composite [23.1 - 30.3 cm] at 2.46 ppb.

9-NEW107.51 (New River near Allisonia) 2014 fish tissue WQS TV of 20 ppb: Three species analyzed - Channel Catfish exceeds WQS TV of 20 ppb; 3 fish composite [61.2 - 69.5 cm] at 23.02 ppb; Smallmouth Bass (3 fish composite [40.1 - 49.6 cm]) at 2.45 ppb; Carp exceeds (5 fish composite [56.5 - 70.4 cm]) at 45.12 ppb; and Carp (5 fish composite [55.3 - 71.3 cm] at 8.79 ppb.

9-NEW098.32 (Rt. 672 Bridge, Lighthouse) 2012 four species analyzed - Channel Catfish exceeds WQS TV of 20 ppb; (2 fish composite [70.5 - 71.5 cm] at 65.15 ppb. Remaining species analyzed Largemouth Bass (5 fish composite [34.5 - 43.1]) at 7.76 ppb; Spotted Bass (5 fish composite [34.2 - 38.2 cm]) at 11.00 ppb; and Carp (3 fish composite [45.8 - 56.5]) at 6.04 ppb.

9-PKC009.53 (Upstream of XAG confluence) 2014 water column DW 197.02 pg/L- 'FS'; WW 799.75 pg/L- 'OE'.

9-XAG000.01 (Mouth of X-Trib XAG near former Allied Site) 2014- Water column PCB WQS criterion of 640 pg/L: DW 1,458.87 pg/L (7/31/2014); WW 1,754.02 pg/L (10/15/2014).

9-XFQ000.77 (Off Pierce Ave. near Calfee Park) 2014 water column PCB WQS criterion of 640 pg/L: DW 194.99 pg/L- 'FS'; WW 686.76 pg/L- 'OE'.

9-PKC007.82 (Route 99 Bridge) 2012 three species analyzed - Stoneroller exceeds WQS criterion of 20 ppb (15 fish comp. [14.3 - 16.0 cm] at 33.18 ppb. Remaining species analyzed Rock Bass (5 fish comp. [16.7 - 18.6 cm]); at 10.49 ppb) and

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Redbreast Sunfish (5 fish comp. [14.3 - 18.1 cm]; at 3.01 ppb).

2013 PCB water column excursions are DW 1,193.64 pg/L; WW 2,436.73 pg/L and 2014 one sample 'FS DW 389.51 pg/L and one excursion of the WQS 640 pg/L criterion at WW 1,252.42 pg/L.

9-PKC004.65 (Rt. 100 Bridge) 2012 four species analyzed. Channel catfish exceeds WQS criterion of 20 ppb (2 fish composite [63.1 - 69.0 cm] at 33.15 ppb. Remaining species analyzed Largemouth Bass (5 fish composite [33.4 - 40.8 cm]; at 2.68 ppb), Carp 2 sizes (4 fish composite [54.6 - 62.0 cm]; at 2.32 ppb) and (4 fish composite [54.6 - 62.0 cm]; at 9.16 ppb) and Smallmouth Bass (3 fish composite [35.3 - 42.6 cm]; at 6.90 ppb).

One 2014 water column sample exceeds the WQS criterion of 640 pg/L at 1,075.73 pg/L.

9-NEW088.86 (New River Claytor Lake at Dam) 2012 six species analyzed - Flathead Catfish exceeds WQS criterion of 20 ppb (2 fish composite [83.0 - 87.5 cm]) at 86.67 ppb. Remaining species analyzed Carp (4 fish composite [56.5 - 67.0 cm] at 2.05 ppb; Channel Catfish (1 fish [58.8 cm]) at 7.43 ppb; Largemouth Bass (5 fish composite [32.5 - 34.5 cm] at 0.36 ppb; Smallmouth Bass (4 fish composite [27.0 - 32.2 cm] at 0.88 ppb; Spotted Bass (3 fish composite [28.8 - 36.8 cm] at 0.00 ppb.

9-NEW085.94 (New River downstream of Claytor Dam) 2012 two species analyzed - Flathead Catfish exceeds WQS criterion of 20 ppb (5 fish composite [57.5 - 70.3 cm]) at 33.74 ppb. Remaining species analyzed Carp (5 fish composite [62.6 - 81.0 cm] at 11.27 ppb.

9-NEW081.72- (Route 11 Bridge - at Radford) 2010 water column PCB WQS criterion of 640 pg/L: DW 320 pg/L - 'FS'; WW exceeds at 4,739- 'OE'. 2011 water column WW 243.70 pg/L - 'FS'. 2013 water column WW exceeds at 647.88 pg/L- 'OE'.

9-NEW079.19 (New River below Radford University) 2012 one species two exceeding composites analyzed - Carp exceeds WQS criterion of 20 ppb (2 fish composite [67.5 - 76.5 cm] at 53.28 ppb and Carp exceeding (2 fish composite [76.8 - 83.6 cm] at 94.85 ppb.

9-NEW066.90 (New River at Whitethorne) 2012 one species analyzed exceeds WQS criterion of 20 ppb Carp (1 fish [72.0 cm] at 125.58 ppb.

9-LWK000.77 (Rt. 100 Bridge) 2011 PCB water column WW 642.4 pg/L- 'OE'; 2014 water column DW 39.79 pg/L- 'FS'.

9-WLK004.34 (Route 622 Bridge - Giles Co.) Water column samples find two excursions of the WQS criterion of 640 pg/L. 2010 WW at 1,706 pg/L and 2011 WW at 648.8 pg/L. And a third sample 2014 DW at 60.12 pg/L 'FS'.

9-NEW050.70 (New River near Pembroke) 2012 three species analyzed Carp exceeds WQS criterion of 20 ppb (2 fish composite [67.5 - 71.6 cm] at 419.87 ppb and Channel Catfish (1 fish [58.1 cm]) at 23.26 ppb. Remaining species analyzed Flathead Catfish (1 fish [51.4 cm] at 9.60 ppb.

9-SNC000.20- 2004 fish tissue finds with application of the new WQS TV for PCB (20 ppb) the addition of 3 species exceeding the new TV criterion. Rock Bass (10 fish composite [size 16-20 cm] at 25.21, Smallmouth Bass (3 fish composite [size 28.6 - 30.5 cm] at 22.13 and White sucker (1 fish [38.4 cm] at -0.08 ppb. Stony Creek is therefore a 2010 addition based on the new WQS PCB tissue value of 20 ppb.

9-NEW038.71 (New River below Celeanse) 2012 two species analyzed - Each of the following exceed the WQS criterion of 20 ppb. Carp (2 fish composite [68.1 - 69.0 cm] at 355.63 ppb and Flathead Catfish (1 fish [56.0 cm] at 25.39 ppb. 2010 water column PCB DW- 129 pg/L- 'FS; Wet 784 pg/L- 'OE' and 2011 water column PCB Wet- 222 pg/L- 'FS'

9-WFC003.69 (Route 724 Bridge at Gage) 2014 water column DW 114.7 pg/L- 'FS'; WW 1,527.45 pg/L- 'OE'.

9-WFC000.20 (Route 61 Bridge) 2011 water column WW 1,220.1 pg/L- 'OE'; 2013 water column WW 201.31 pg/L- 'FS'. 2014 water column WW 163.39 pg/L- 'FS'; DW 117.93 pg/L- 'FS'.

9-NEW030.15 (Route 460 Bridge at Glen Lyn) 2012 one species analyzed - Each of the following exceed the WQS criterion of 20 ppb. Carp 1 (1 fish [85.0 cm] at 234.01 ppb; Carp 2 (2 fish composite [72.5 - 74.8 cm]) at 448.15 ppb.

9-NEW031.00 (Above Glen Lyn) 2010 water column PCB DW- 66 pg/L 'FS'; WW- 841 pg/L 'OE'.

9-NEW028.95 (New River below Glen Lyn) 2010 water column PCB DW 177.5 pg/L- 'FS'; WW- 709.9 pg/L 'OE'. 2011 water

New River Basin

column PCB DW- 110.4 pg/L 'FS'; WW- 399.6 pg/l 'FS'. 2013 water column WW 284.08 pg/L- 'FS'; NA 116.76 pg/L- 'FS'. 2014 water column WW 529.48 pg/L- 'FS'; DW 121.59 pg/L- 'FS'.

New River, Reed Creek, Claytor Lake, Peak Creek, Stony Creek, Walker Creek, And Unknown Tributary XAG.	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Fish Tissue - Total Impaired Size by Water Type:		**4,304.56**	**105.03**

New River, Reed Creek, Claytor Lake, Peak Creek, Stony Creek, Walker Creek, And Unknown Tributary XAG.	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Water Column - Total Impaired Size by Water Type:			**15.08**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N30R-01-BAC** **Wolf Creek and Tributaries**

Location: This segment extends from the Burkes Garden Creek confluence downstream between the confluence with Clear Fork and Wilderness Creek and Little Creek, a Wolf Creek tributary upstream to the Tazewell County Sportsmen Club impoundment.

City / County: Bland Co. Tazewell Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station located at 9-WFC039.16 had a 65% exceedance of the E.coli water quality standard. Station 9-WFC050.16 had a 78% exceedance, 9-WFC032.47 had 34%, and station 9-WFC024.57 had a 22% exceedance. Station 9-LTL001.22 had a 50% exceedance of the E. coli water quality standard.

Wolf Creek and Tributaries **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**31.05**

Wolf Creek and Tributaries **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**9.11**

Sources:

Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N30R-01-BEN** **Little Creek**

Location: This segment includes the mainstem from the confluence with Wolf Creek upstream to the Tazewell County Sportsmens' Club impoundment.

City / County: Bland Co. Tazewell Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Benthic station 9-LTL001.22 was impaired based on VSCI scores of 33, 46, and 54 in 2007 and 2008.

Little Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**1.89**

Sources:

Grazing in Riparian or Shoreline Zones

Loss of Riparian Habitat

Unrestricted Cattle Access

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N32R-00-BAC** **Clear Fork**

Location: This segment included the Clear Fork mainstem from its confluence with Wolf Creek upstream 8.5 miles, parallel to Route 61.

City / County: Bland Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

The AWQM station located at 9-CLF000.06 had a 25% exceedance rate of the E. coli water quality standard.

Clear Fork **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.94**

Sources:

- Livestock (Grazing or Feeding Operations)
- Rural (Residential Areas)

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N32R-01-BAC** **Wolf Creek**

Location: Wolf Creek mainstem waters from the mouth of Clear Fork Creek downstream to the confluence of Wolf Creek with the New River.

City / County: Bland Co. Giles Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The originally listed 2004 portion of the overall extent described above began near the intersection of Routes 61 and 724 at the confluence of an unnamed tributary extending downstream to the mouth of Wolf Creek on the New River. A total of 5.60 miles.

The 2006 Integrated Report (IR) extends the 2004 303(d) Listed fecal coliform (FC) bacteria impairment 16.71 miles upstream. The total bacteria impairment is 22.31 miles. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-WFC017.31 (Bridge #6065 on Rt. 644 off Rt. 61) Six out of 36 E.Coli samples exceed the 235 cfu/100 ml instantaneous criterion within the 2016 data window. Exceedances range from 250 to greater than 2000 cfu/100 ml. Five exceeding values are found from 24 escherichia coli (E.coli) observations in 2014. The range of exceedance is from 250 to greater than 2000 cfu/100 ml. Two of 15 E.coli samples exceed the 235 cfu/100 ml criterion at 300 and 450 cfu/100 ml within the 2012 data window. The 2010 and 2008 assessments find two of 12 E.coli samples exceed the 235 cfu/100 ml criterion at 420 and 1000 cfu/100 ml. Two of nine E.coli samples exceed the criterion with the same exceedances in 2006.

9-WFC011.05- (Rt. 676 Bridge at Boxely) The 2016 data window finds two of 36 E.Coli samples exceed the 235 cfu/100 ml instantaneous criterion (400 cfu/100 ml and >2000 cfu/100 ml). One exceeding value of greater than 2000 cfu/100 ml exceeds the 235 cfu/100 ml instantaneous criterion from 12 observations within the 2014 data window. There were no additional data within the 2012 data window. Both the 2008 and 2010 assessments find E.coli bacteria exceed the instantaneous criterion in two of 10 samples. Exceeding values are both at 700 cfu/100 ml.

9-WFC005.61 (Rt. 673 Bridge at Penvir) Four of 35 E.Coli samples exceed the instantaneous criterion of 235 cfu/100 ml in the 2016 data window. Excursions range from 250 to 625 cfu/100 ml. The 2014 data window found two of 12 samples in exceedance of the 235 cfu/100 ml instantaneous criterion. Excessive values are 300 and 625 cfu/100 ml. There were no additional data within the 2012 data window. E.coli exceedances are found in five of 12 samples in 2008 and 2010. Values in excess of the 235 cfu/100 ml criterion range from 250 to greater than 2000. E.coli exceedances are found in three of nine samples and the same range of exceedance as in 2008.

9-WFC000.20 (Rt. 61 Bridge) The 2016 data window finds three of 48 samples exceed the 235 cfu/100 ml instantaneous criterion. Excursions range from 275 to 425 cfu/100 ml. Two of 24 escherichia coli (E.coli) samples exceed the 235 cfu/100 ml instantaneous criterion in 2014. The 2012 assessment finds one of 14 E.coli samples exceeding the instantaneous criterion of 235 cfu/100 ml at 1200. E.coli exceeds the instantaneous criterion in three of 12 samples in 2008 and 2010. Each excursion of the criterion is 520, 900 and 1200 cfu/100 ml. E.coli excursions in 2006 are two of nine samples with each excursion of the criterion at 520 and 900 cfu/100 ml. The 2004 Integrated Report (IR) finds FC exceedances of the 400 cfu/100 ml instantaneous criterion in two of 18 samples resulting in a 2004 impairment listing that remains. Exceeding values are 700 and 1500 cfu/100 ml.

Wolf Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**22.32**

Sources:

Livestock (Grazing or Feeding Operations)	Municipal (Urbanized High Density Area)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Unspecified Domestic Waste
Wastes from Pets	Wet Weather Discharges (Non-Point Source)	Wildlife Other than Waterfowl	

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N32R-01-TEMP** **Wolf Creek**

Location: Wolf Creek mainstem waters from the Bland/Giles County Line upstream to the confluence of Clear Fork Creek.

City / County: Bland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5C

The Aquatic Life Use impairment for temperature returns with the 2014 Integrated Report (IR).

9-WFC017.31 (Bridge #6065 on Rt. 644 off Rt. 61) The 2016 data window finds four of 36 exceedances of the 21°C Class V - Stockable Trout Waters criterion. One exceedance occurs at 22.9°C (7/23/13) in addition to the exceedances within the 2014 data window. Three of 24 temperature measurements exceed the WQS Class V - Stockable Trout water criterion of 21°C in 2014. Values in excess of the criterion are 24.7°C (7/12/2011), 23.0°C (6/25/2012) and 21.2°C (8/21/2012). These waters were delisted with the 2012 IR as temperature excursions of the WQS Class V criterion of 21°C are zero of 15 measurements or an exceedance rate of 0.0% at station 9-WFC017.31. Originally listed in 2008 these waters should have been listed in 2006 with two of nine exceeding values and a TMDL Schedule of 2018. Two of 12 temperature measurements exceed the Class V stockable trout water 21°C criterion within the 2008 and 2010 data windows. Exceeding values are 21.1°C on 8/4/2003 and 21.9°C on 8/30/2004.

Wolf Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**7.91**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N33R-01-BAC** **Laurel Creek**

Location: This segment extends from Wolf Creek upstream to the confluence of Dry Fork and from Dry Fork downstream to North Gap.

City / County: Bland Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station located at 9-LAC000.56 and 9-LAC002.17 had a 16% exceedance of the bacteria water quality standard while 9-DYF000.07 had 16% exceedance.

Laurel Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**8.20**

Laurel Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			**1.64**

Sources:

Grazing in Riparian or Shoreline Zones	Livestock (Grazing or Feeding Operations)	Rural (Residential Areas)	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N33R-01-TEMP** **Dry Fork**

Location: This segment includes Dry Fork downstream to north Gap, excluding the headwaters.

City / County: Bland Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water / 5A

The AWQM station located at 9-DYF000.07 has a 17% exceedance of the temperature.

Dry Fork **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**5.24**

Sources:

Grazing in Riparian or Shoreline Zones	Loss of Riparian Habitat

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N34R-01-BAC** **Rich Creek**

Location: The impaired waters begin just downstream of Peterstown, West Virginia at the mouth of Brush Creek on Rich Creek and extends to the Rich Creek confluence on the New River (Peterstown, WV Quad).

City / County: Giles Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The 2002 2.85 mile fecal coliform (FC) bacteria impairment remains. Escherichia coli (E.coli) replaces fecal coliform bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-RHC000.08 (Rt. 806 Bridge) 2014 and 2016 data windows escherichia coli exceedances occur in 14 of 35 observations. Exceedances range from 275 to 1575 cfu/100 ml. E.coli exceed the 235 cfu/100 ml instantaneous criterion in 14 of 32 samples within the 2012 data window. Exceedances range from 350 to 1010 cfu/100 ml. The 2010 assessment finds E.coli exceed the instantaneous criterion in 10 of 21 samples. Exceedances range from 400 to 1010 cfu/100 ml. E.coli exceed the instantaneous criterion in three of nine samples in 2008 ranging from 400 to 900 cfu/100 ml. Data within the 2006 data window exceed the former FC 400 cfu/100 ml instantaneous criterion in five of nine samples with an exceedance range of 1000 to 2800 cfu/100 ml. The 2004 IR reports FC exceeds the former instantaneous criterion in 10 of 18 samples. Exceeding values range from 500 to 2800 cfu/100 ml.

Rich Creek **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**2.85**

Sources:

- Municipal (Urbanized High Density Area)
- Unspecified Domestic Waste
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N35R-01-BAC** **Adair Run**

Location: The Adair Run impairment begins at the Virginia / West Virginia State Line and extends downstream to the Adair Run confluence with the New River.

City / County: Giles Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The 2004 303(d) Listed 0.37 mile bacteria impaired waters find the Recreational Use is not supported. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-ADR000.13 (Rt. 648 Bridge) There are no additional data within the 2016 data window. The 2014 assessment finds E.coli exceed the 235 cfu/100 ml WQS instantaneous criterion in five of 32 samples Values in excess of the criterion range from 325 to 1650 cfu/100 ml. There are no additional data within the 2012 data window. The 2010 assessment finds escherichia coli exceed the 235 cfu/100 ml WQS instantaneous criterion in three of 20 samples Values in excess of the criterion are 450, 1050 and 1200 cfu/100 ml. The 2004 IR reports fecal coliform exceeds the former 400 cfu/100 ml instantaneous criterion in six of 26 observations. Exceeding values range from 500 to 4200 cfu/100 ml. FC exceeds the former instantaneous criterion in six of 20 observations within the 2006 data window. Exceeding values range from 500 to 4200 cfu/100 ml. FC data within the 2008 data window find four of 14 samples exceeding the former instantaneous criterion.

Adair Run **Recreation**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:			**0.37**

Sources:

Unspecified Domestic Waste	Wildlife Other than Waterfowl

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N36R-01-CDANE** **Bluestone River**

Location: This segment includes the mainstem from the confluence with Big Branch downstream to West Virginia political boundary; may be found on the Bramwell quad sheet.

City / County: Tazewell Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Chlordane / 5A

The fish tissue and sediment sampling stations at 9-BST069.46 and 9-BST066.94 had total chlordane levels detected in the sediment in 2002 above DEQ's screening value.

Bluestone River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Chlordane - Total Impaired Size by Water Type:			**0.62**

Sources:

Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N36R-01-PCB** **Bluestone River**

Location: This segment begins at the Route 460 bridge downstream to the West Virginia political boundary. It also includes a segment of Beaverpond Creek that flows from West Virginia into Virginia, sometimes under city buildings and streets and into the Bluestone River and Brush Fork from the west Virginia state line to the confluence with the Bluestone River in Falls Mills.

City / County: Tazewell Co.

Use(s): Fish Consumption

Cause(s) / VA Category: PCB in Fish Tissue / 5A PCB in Water Column / 5A

In April 2004 a Special Study was conducted by DEQ and USGS. An SPMD deployed at station 9-BPB000.02 indicated Total PCBs in the water column at 3700 pg/l and 1300 pg/l in 2005. SPMDs deployed at stations 9-BST066.18, 9-BST068.98 and 9-BST072.65 indicated PCB values of 1800 pg/l, 800 pg/l and 230 pg/l. Fish tissue and sediment stations 9-BST0666.94 and 9-BST069.46 found PCB in exceedance of DEQ's screening values in white suckers. Station 9-BST069.46 also had sediment samples that exceeded the ER_M for PCBs. SPMD sampling in 2004 indicated PCB was 3500 pg/l at station 9-BFK003.14.

Bluestone River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:			**13.62**

Bluestone River **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:			**4.47**

Sources:

Inappropriate Waste Disposal	Source Unknown

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N37R-02-BEN** **Laurel Fork**

Location: Upstream of the Curran Branch confluence at Boissevain to headwaters (parallel to the West Virginia state line), WQS Section 1.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 5C

Probabilistic monitoring station at 9-LRR012.30 was impaired based on VSCI scores that were too low in 2012 and 2014.

Laurel Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			**8.30**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Fact Sheets for Impaired (Category 5) Waters in 2016

New River Basin

***Cause Group Code:* N37R-02-DO** **Laurel Fork**

Location: This segment extends from upstream of the Curran Branch confluence at Boissevain to the headwaters.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Additional investigation is recommended.

Laurel Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			**8.30**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

APPENDIX 6 SECTIONS FROM THE FEDERAL CLEAN WATER ACT

SECTION 305 WATER QUALITY INVENTORY

(b) (1) Each State shall prepare and submit to the Administrator by April 1, 1975, and shall bring up to date by April 1, 1976, and biennially thereafter, a report that shall include—

(A) a description of the water quality of all navigable waters in such State during the preceding year, with appropriate supplemental descriptions as shall be required to take into account seasonal, tidal, and other variations, correlated with the quality of water required by the objective of this ACT (as identified by the Administrator pursuant to criteria published under section 304(a) of this Act) and the water quality described in subparagraph (B) of this paragraph;

(B) an analysis of the extent to which all navigable waters of such State provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities in and on the water;

(C) an analysis of the extent to which the elimination of the discharge of pollutants and a level of water quality which provides for the protection and propagation of a balanced population of shellfish, fish, and wildlife and allows recreational activities in and on the water, have been or will be achieved by the requirements of this Act, together with recommendations as to additional action necessary to achieve such objectives and for what water such additional action is necessary;

(D) an estimate of (1) the environmental impact, (ii) the economic and social costs necessary to achieve the objective of this Act in such State, (iii) the economic and social benefits of such achievement, and (iv) an estimate of the date of such achievement; and

(E) a description of the nature and extent of nonpoint sources of pollutants, and recommendations as to the programs which must be undertaken to control each category of such sources, including an estimate of the costs of implementing such programs. (2) The Administrator shall transmit such State reports, together with an analysis thereof, to Congress on or before October 1, 1975, and October 1, 1976, and biennially thereafter.

SECTION 303 WATER QUALITY STANDARDS

303(d)(1)(A) Each State shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.

(B) Each State shall identify those waters or parts thereof within its boundaries for which controls on thermal discharges under section 301 are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

(C) Each State shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

(D) Each State shall estimate for the waters identified in paragraph (1)(D) of this subsection the total maximum daily thermal load required to assure protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife. Such estimates shall take into account the

normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any lack of knowledge concerning the development of thermal water quality criteria for such protection and propagation in the identified waters or parts thereof. (2) Each State shall submit to the Administrator from time to time, with the first such submission not later than one hundred and eighty days after the date of publication of the first identification of pollutants under section 304(a)(2)(D), for his approval the waters identified and the loads established under paragraphs (1)(A), (1)(B), (1)(C), and (1)(D) of this subsection. The Administrator shall either approve or disapprove such identification and **104 Sec. 303 FEDERAL WATER POLLUTION CONTROL ACT** load not later than thirty days after the date of submission. If the Administrator approves such identification and load, such State shall incorporate them into its current plan under subsection (e) of this section. If the Administrator disapproves such identification and load, he shall not later than thirty days after the date of such disapproval identify such waters in such State and establish such loads for such waters as he determines necessary to implement the water quality standards applicable to such waters and upon such identification and establishment the State shall incorporate them into its current plan under subsection (e) of this section. (3) For the specific purpose of developing information, each State shall identify all waters within its boundaries which it has not identified under paragraph (1)(A) and (1)(B) of this subsection and estimate for such waters the total maximum daily load with seasonal variations and margins of safety, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation and for thermal discharges, at a level that would assure protection and propagation of a balanced indigenous population of fish, shellfish and wildlife.

SECTION 106. GRANTS FOR POLLUTION CONTROL PROGRAMS

(e) Beginning in fiscal year 1974 the Administrator shall not make any grant under this section to any State which has not provided or is not carrying out as a part of its program—

(1) the establishment and operation of appropriate devices, methods, systems, and procedures necessary to monitor, and to compile and analyze data on (including classification according to eutrophic condition), the quality of navigable waters and to the extent practicable, ground waters including biological monitoring; and provision for annually updating such data and including it in the report required under section 305 of this Act;

SECTION 204 LIMITATION AND CONDITIONS

(a) Before approving grants for any projection for any treatment works under section 201(g)(1) the Administrator shall determine—

“that (A) the State in which the project is to be located (1) is implementing any required plan under section 303(e) of this Act and the proposed treatment works are in conformity with such plan, or (ii) is developing such a plan and the proposed treatment works will be in conformity with such plan, and (b) such State is in compliance with section 305(b) of this Act;”

SECTION 314. CLEAN LAKES

(a) Each State shall prepare or establish, and submit to the Administrator for his approval—

“(A) an identification and classification according to eutrophic condition of all publicly owned lakes in such State;
“(B) a description of procedures, processes, and methods (including land use requirements), to control sources of pollution of such lakes;
“(C) a description of methods and procedures, in conjunction with appropriate Federal agencies, to restore the quality of such lakes;

"(D) methods and procedures to mitigate the harmful effects of high acidity, including innovative methods of neutralizing and restoring buffering capacity of lakes and methods of removing from lakes toxic metals and other toxic substances mobilized by high acidity;
"(E) a list and description of those publicly owned lakes in such State for which uses are known to be impaired, including those lakes which are known not to meet applicable water quality standards or which require implementation of control programs to maintain compliance with applicable standards and those lakes in which water quality has deteriorated as a result of high acidity that may reasonably be due to acid deposition; and
"(F) an assessment of the status and trends of water quality in lakes in such State, including but not limited to, the nature and extent of pollution loading from point and nonpoint sources and the extent to which the uses of lakes is impaired as a result of such pollution, particularly with respect to toxic pollution.

"(2) SUBMISSION AS PART OF 305(b) (1) REPORT. – The information required under paragraph (1) shall be included in the report required under section 305(b) (1) of this Act, beginning with the report required under such section by April 1, 1988.

APPENDIX 7 SIGNIFICANT LAKES/RESERVOIRS BY REGION

Northern Regional Office – 17 Reservoirs/Lakes

Abel Lake	Stafford Co.	174 (Acres)	PWS
Aquia Reservoir (Smith Lake)	Stafford Co.	197	PWS
Beaverdam Reservoir	Loudoun Co.	301	PWS
Breckenridge Reservoir	Prince William Co.	47	PWS
Burke Lake	Fairfax Co.	208	VDGIF
Curtis Lake	Stafford Co.	86	PWS
Goose Creek Reservoir	Loudoun Co.	98	PWS
Hunting Run Reservoir	Spotsylvania Co.	421	PWS
Lake Anna	Louisa, Spotsylvania, Orange	9600	
Lake Manassas	Prince William Co.	686	PWS
Lake Pelham	Culpeper Co.	250	PWS
Lunga Reservoir	Prince William Co.	477	PWS
Motts Run Reservoir	Spotsylvania Co.	137	PWS
Mountain Run Lake	Culpeper Co.	73	PWS
Ni Reservoir	Spotsylvania Co.	408	PWS
Northeast Creek Reservoir	Louisa Co.	184	PWS
Occoquan Reservoir	Fairfax, Prince William Co.	1333	PWS

Piedmont Regional Office – 15 Reservoirs/Lakes

Amelia Lake	Amelia Co.	98	VDGIF
Brunswick Lake	Brunswick Co.	160	VDGIF
Chickahominy Lake	Charles City Co.	1050	PWS
Diascund Creek Reservoir	New Kent Co.	1056	PWS
Emporia Lake	Greensville Co.	264	PWS
Falling Creek Reservoir	Chesterfield Co.	88	
Great Creek Reservoir	Town of Lawrenceville	217	PWS
Harrison Lake	Charles City Co.	60	
Lake Chesdin	Chesterfield Co.	3164	PWS
Lake Nottoway (Lee Lake)	Nottoway Co.	161	
Lakeview Reservoir	Chesterfield Co.	43	
Little Creek Reservoir	James City Co.	944	PWS
Powhatan Lake (U&L)	Powhatan Co.	61	
Swift Creek Lake	Chesterfield Co.	108	
Swift Creek Reservoir	Chesterfield Co.	1579	PWS

Blue Ridge Regional Office-Lynchburg – 21 Reservoirs/Lakes

Briery Creek Lake	Prince Edward Co.	820	VDGIF
Cherrystone Reservoir	Pittsylvania Co.	104	PWS
Fort Pickett Reservoir	Nottoway, Brunswick Co.	319	PWS
Georges Creek Reservoir	Pittsylvania Co.	8	PWS
Graham Creek Reservoir	Amherst Co.	40	PWS
Holiday Lake	Appomattox Co.	113	
Kerr Reservoir (Va.'s portion)	Halifax Co.	33540	ACOE/PWS
Keysville Reservoir	Charlotte Co.	38	PWS

Lake Conner	Halifax Co.	102	VDGIF/PWS
Lake Gaston (Va.'s portion)	Brunswick Co.	5732	PWS
Lake Gordon	Mecklenburg Co.	107	VDGIF/PWS
Lunenburg Beach Lake	Town of Victoria	12	PWS
Mill Creek Reservoir	Amherst Co.	186	
Modest Creek Reservoir	Town of Victoria	19	PWS
Pedlar Lake	Amherst Co.	118	PWS
Phelps Creek Reservoir	Campbell Co.	15	PWS
Roaring Fork Reservoir	Pittsylvania Co.	20	PWS
Sandy River Reservoir	Prince Edward Co.	740	
Stonehouse Creek Reservoir	Amherst Co.	34	
Thrashers Creek Reservoir	Amherst Co.	32	
Troublesome Creek Reservoir	Buckingham Co.	53	PWS

Southwest Regional Office – 11 Reservoirs/Lakes

Bark Camp Lake	Scott Co.	41	USFS
Big Cherry Lake	Wise Co.	104	PWS
Hidden Valley Lake	Washington Co.	61	VDGIF
Hungry Mother Lake	Smyth Co.	103	DCR
J. W. Flannagan Reservoir	Dickenson Co.	1177	ACOE/PWS
Lake Keokee	Lee Co.	96	USFS
Laurel Bed Lake	Russell Co.	359	VDGIF
North Fork Pound Reservoir	Wise Co.	116	ACOE/PWS
Rural Retreat Lake	Wythe Co.	86	VDGIF
South Holston Reservoir	Washington Co.	1700	TVA/PWS
Wise Reservoir	Wise Co.	46	WISE/PWS

Tidewater Regional Office – 21 Reservoirs/Lakes

Airfield Pond	Sussex Co.	120	VDGIF
Harwood Mills Reservoir	York Co.	258	PWS
Lake Burnt Mills	Isle of Wight Co.	638	PWS
Lake Cohoon	Suffolk City	454	PWS
Lake Drummond	Suffolk City	3242	
Lake Kilby	Suffolk City	200	PWS
Lake Lawson	Virginia Beach City	74	PWS
Lake Meade	Suffolk City	490	PWS
Lake Prince	Suffolk City	715	PWS
Lake Smith	Virginia Beach City	185	PWS
Lake Whitehurst	Norfolk City	482	PWS
Lake Wright	Norfolk City	16	PWS
Lee Hall Reservoir	Newport News City	292	PWS
Little Creek Reservoir	Norfolk City	200	PWS
Lone Star Lake F (Crystal Lake)	Suffolk City	19	PWS
Lone Star Lake G (Crane Lake)	Suffolk City	90	PWS
Lone Star Lake I (Butler Lake)	Suffolk City	33	PWS
Speights Run Lake	Suffolk City	121	PWS
Stumpy Lake	Virginia Beach City	264	
Waller Mill Reservoir	York Co.	288	PWS
Western Branch Reservoir	Norfolk City	1210	PWS

Valley Regional Office – 21 Reservoirs/Lakes

Beaver Creek Reservoir	Albemarle Co.	96	PWS
Chris Green Lake	Albemarle Co.	57	PWS
Coles Run Reservoir	Augusta Co.	11	USFS/PWS
Douthat Lake	Bath Co.	47	
Elkhorn Lake	Augusta Co.	53	USFS/PWS
Fluvanna Ruritan Lake	Fluvanna Co.	51	
Lake Albemarle	Albemarle Co.	37	
Lake Arrowhead	Page Co.	36	
Lake Frederick	Frederick Co.	78	VDGIF
Lake Nelson	Nelson Co.	41	
Lake Robertson	Rockbridge Co.	25	
Mount Jackson Reservoir	Shenandoah Co.	1	
Ragged Mountain Reservoir	Albemarle Co.	71	PWS
Rivanna Reservoir	Albemarle Co.	399	PWS
Shenandoah Lake	Rockingham Co.	36	
Silver Lake	Rockingham Co.	11	PWS
Staunton Dam Lake	Augusta Co.	21	PWS
Strasburg Reservoir	Shenandoah Co.	5	PWS
Sugar Hollow Reservoir	Albemarle Co.	47	PWS
Switzer Lake	Rockingham Co.	101	USFS
Totier Creek Reservoir	Albemarle Co.	37	PWS

Blue Ridge Regional Office-Roanoke – 17 Reservoirs/Lakes

Beaverdam Creek Reservoir	Bedford Co.	67	PWS
Bedford (Stony Cr.) Reservoir	Bedford Co.	28	PWS
Carvin Cove Reservoir	Botetourt Co.	632	PWS
Claytor Lake	Pulaski Co.	4305	PWS
Clifton Forge (Smith Cr.) Reservoir	Alleghany Co.	11	PWS
Fairystone Lake	Henry Co.	130	
Gatewood Reservoir	Pulaski Co.	176	PWS
Hogan Lake	Pulaski Co.	34	PWS
Lake Moomaw	Bath Co.	2402	ACOE
Leesville Reservoir	Bedford Co.	2631	PWS
Little River Reservoir	Montgomery Co.	60	PWS
Martinsville (Beaver Cr.) Reservoir	Henry Co.	182	PWS
Philpott Reservoir	Henry Co.	2814	ACOE
Smith Mountain Lake	Bedford Co.	19814	PWS
Spring Hollow Reservoir	Roanoke Co.	121	PWS
Talbott Reservoir	Patrick Co.	141	
Townes Reservoir	Patrick Co.	28	

Total 123 Significant Reservoirs/Lakes statewide
ACOE = Army Corps of Engineers
PWS = Public Water Supply
TVA = Tennessee Valley Authority
VDGIF = Virginia Department of Game and Inland Fisheries
Bold = WQ Nutrient Standards apply

APPENDIX 8 CURRENT STATUS OF VIRGINIA'S TMDL PROGRAM

In 1997, the Virginia General Assembly enacted the Water Quality Monitoring, Information, and Restoration Act (WQMIRA), §62.1-44.19:4 through 19:8 of the Code of Virginia. This statute directs DEQ to develop a list of impaired waters, a Total Maximum Daily Load (TMDL) or TMDL alternative for each impairment, and implementation plans for these TMDLs.

During its 2013 Legislative Session, the General Assembly passed Chapters 756 (HB2048) and 793 (SB1279) of the 2013 Virginia Acts of Assembly which designated, effective July 1, 2013, the Virginia Department of Environmental Quality as the lead agency for nonpoint source programs in the Commonwealth of Virginia. Effective July 1, 2013 DEQ has the lead for the entire TMDL program, including implementation, for the Commonwealth of Virginia. The Department of Mines, Minerals, and Energy (DMME) has signed Memoranda of Understanding (MOU) with DEQ agreeing to a cooperative effort in the TMDL and Implementation Plan (IP) processes. DMME assists with the development and implementation of TMDLs involving pollutants from mineral extraction activities. The Virginia Department of Health also participates in a cooperative effort by assisting in the development of TMDLs and TMDL IPs for impaired shellfish waters.

Fulfillment of 1999 Consent Decree and Post-CD TMDL Development

In 1998, the American Canoe Association and the American Littoral Society filed a complaint against EPA for failure to comply with the provisions of §303(d) of the Clean Water Act in Virginia. As a result of this legal action, EPA signed a Consent Decree (CD) with the plaintiffs in 1999 that contained Virginia's TMDL development schedule through year 2010. Also under the CD, EPA agreed to develop TMDLs on these impaired waters to meet the schedule if Virginia failed to do so.

To meet the Consent Decree, Virginia completed TMDLs covering approximately 225 shellfish and 333 non-shellfish CD impairments, and approximately 185 non-CD impairments. In addition, Virginia completed TMDLs for 28 CD waters and 18 non-CD waters covered under the EPA-lead Chesapeake Bay TMDL. Virginia has also received credit under the CD for an additional 145 delisted or recategorized impairments.

Virginia continues to development TMDLs and estimates that over 1000 impaired waters will require TMDL development in the coming years. Virginia has developed several strategies to sustain this rigorous TMDL Development pace with level funding. These include a) developing TMDLs using a watershed approach to address multiple impairments in watersheds with similar characteristics, b) developing TMDLs in-house, c) identifying non-TMDL solutions, such as straight to implementation, to address impairments, and d) developing TMDLs that are more easily implemented. Virginia continues to explore tools and options for restoring and protecting water quality, both for environmental benefit and efficient program management.

TMDL Implementation

Once the TMDL is developed and approved Virginia state law under WQMIRA requires the development of a TMDL IP. The IP describes the measures that must be taken to reduce pollution levels in the stream, and includes a schedule of actions, costs, and monitoring. While there is not a mandated schedule for IP development, local or state agencies, as well as community watershed groups, can take the lead in developing IPs. The following table presents the state's TMDL implementation projects funded with federal 319(h) and/or state funds VNRCF and/or WQIF (current to F2016).

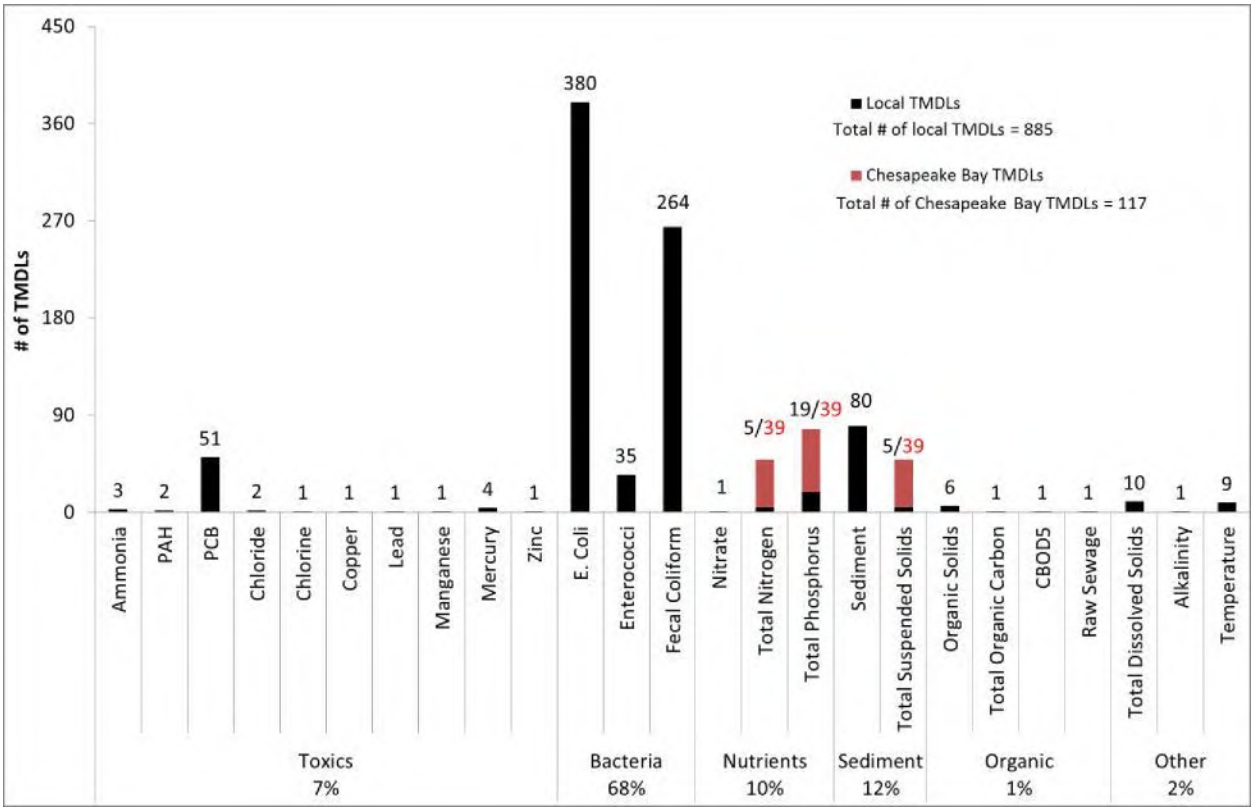
Watershed Area	TMDL Segment	Years of Implementation and Funding
28 Projects in 2016 that actively receiving targeted TMDL funds either from Federal §319(h) (19 projects), or only State WQIF/VNRCF (8 projects) for both BMP installation and technical assistance		
Willis River	VAC-H36R	§319(h): 2005-2015
Thumb, Great, Carter and Deep Runs	VAN-E01R, E02R & E10R	§319(h):2006-2015, VNRCF: 2011-2015)
Upper Hazel River	VAN-E03- 05R	§319(h):2009-2015, VNRCF: 2011-2015), WQIF RFP: 2007-2009
Craig Run, Browns Run and Marsh Run	VAN-E08R	§319(h)/VNRCF:2012-2015:, VNRCF-CBLEI (2011)
Slate River and Rock Island Creek		§319(h): 2010-2015
Guest River	VAS-P11R	§319(h)/VNRCF: 2012-2015:
Upper York River	VAN-F06R, F07R	§319(h): 2012-2015,VNRCF: 2012-2015:
Hays, Moffats, Otts, and Walker Creeks	VAN-I34R	§319(h): 2012-2015,VNRCF: 2012-2015:
Rockfish River	VAV-H09-10R, H13R	§319(h): 2013-2015
Spout Run	VAV-B57R	§319(h): 2014-2015
South Mayo River and North Fork Mayo River	VAW-L43R	§319(h)(2014+), VNRCF (2012-2015)
Lower Banister River	VAC-L67R, L70R, L71R	§319(h)(2014+), VNRCF (2012-2015)
James River	VAP-G01R, H39R	§319(h): 2014-2015
Middle Fork Holston River	VAS-O03R	§319(h): 2014-2015
Stroubles Creek	VAW-N22R	§319(h)(2014-2015), WQIF RFP: (2006-2008):
Greenvale, Payne and Beach Creeks	VAN-E25R	§319(h): 2014-2015
Flat, Nibbs, Deep and West Creeks	VAP-J08-09R, J11R	§319(h): 2015-2016 (septic only); WQIF/VNRCF: 2007-2015– Agriculture only
Linville Creek		§319(h): 2015-2016
Little Dark Run and Robinson River		§319(h): 2015-2016
Tye River		§319(h): 2015-2016
Falling River	VAW-L34R	WQIF/VNRCF: 2007-2015 – Agriculture only
Cub, Turnip and Buffalo Creeks	VAC-L36R, L37R,	WQIF/VNRCF: 2007-2015– Agriculture only
Pigg River	VAW-L13R- L18R	WQIF/VNRCF: 2007-2015– Agriculture only
Christians Creek and South River	VAV-B14, B30	WQIF/VNRCF: 2007-2015– Agriculture only
Briery, Little Sandy, Spring, Saylers Creeks and Bush River	VAC-J02- J06R	WQIF/VNRCF: 2007-2015– Agriculture only
Upper Bannister River	VAC-L65, L66, L68, L69	VNRCF: 2012-2015– Agriculture only
Hardware River		§319(h): 2015-2016
Moffett Creek, Middle River, Polecat Draft	VAV-B10, B13, B15	§319(h): 2015-2016: WQIF/VNRCF: 2007-2015– Agriculture only
Federal EPA Nonpoint Source Implementation Grant (319h); Watershed Improvement Fund Request for Proposals (WQIF RFP), State Virginia Natural Resources Commitment Fund (VNRCF), Virginia Natural Resources Commitment Fund - Chesapeake Bay Livestock Exclusion Initiative (VNRCF- CBLEI)		

Source: FY2016 The Chesapeake Bay and Virginia Waters Clean-Up Plan-Progress Report

TMDL Progress

As of June 2016, 12 TMDL equations, each representing a watershed area draining to impaired surface waters, have been EPA approved since July 2015. Another 33 (31 new, 2 revised) are complete, have been State Water Control Board approved, and submitted to EPA for final approval. The figure below shows the number of TMDL equations by pollutant set across Virginia since the inception of the TMDL program:

TMDL Equations by Pollutant[1]



TMDL Success Stories

The success of Virginia's Nonpoint Source Management Program and the TMDL Implementation Program is also documented by describing improvement of water quality conditions via NPS Success Stories. Through Section 319 Nonpoint Source Success Stories, EPA and DEQ document progress of partially or fully restoring waterbodies associated with NPS implementation actions.

Since 2002 Virginia's Nonpoint Source Management Program and associated TMDL Implementation Program and its partners have written 18 success stories that address delisting and/or water quality improvement of 27 impaired stream segments. These stories are classified into two types: Type 1 stories are related to partial or full restoration (delisting of impairments), Type 2 indicates significant water quality improvement.

[1] The graph includes TMDL equations reported previously, newly adopted equations, as well as corrections. The corrections reflect an internal review of the Water Quality Management Planning Regulation (9 VAC 25-720) that occurred in December, which resulted in changes to the number of TMDL equations by pollutant (e.g. PCBs, E. coli).

Type	# Segments delisted or WQ improved	Name of Success Story	Year Approved by EPA	Topic
2	1	Cabin Branch Mine Orphaned Land Project	2001	Mining
2	1	Toncrae Mine Orphaned Land Project	2002	Mining
2	1	Middle Fork Holston River (Three Creeks)	2005	TMDL Implementation
2	2	Muddy Creek and Lower Dry River	2007	TMDL Implementation
1	1	Batie Creek	2008	Karst Program
1	3	Lynnhaven, Broad and Linkhorn Bays	2009	Shellfish
2	1	Valzinco Mine Orphaned Land Project	2008	Mining
1	3	Willis River	2010	TMDL Implementation
1	1	Middle Creek	2012	Mining
2	1	Black Creek	2012	Mining
1	1	Muddy Creek	2012	TMDL Implementation
2	1	Carter Run	2013	TMDL Implementation
2	1	Flat Creek	2013	TMDL Implementation
1	1	Upper Clinch River	2014	TMDL Implementation
1	2	Cub Creek	2014	TMDL Implementation
1	2	Byers and Hutton Creeks	2015	TMDL Implementation
1	1	Little Sandy Creek	2015	TMDL Implementation
1	2	Blackwater River	2016	TMDL Implementation
2	1	Big Chestnut Creek	2016	TMDL Implementation
Total	**27**			

Monitoring Station Key	
Station Type	**Station Type Description**
A	DEQ Ambient Watershed Monitoring Station
B	DEQ Biological Monitoring Station
C	DEQ Fish Tissue Monitoring Station
C2	Ambient Estuarine Probabilistic Monitoring Station
CB	Chesapeake Bay (Tidal or Non-Tidal) Water Quality and Habitat Monitoring Station
CB-B	Chesapeake Bay Estuarine Benthic Probabilistic Monitoring Station
CMON	Citizen Monitoring Station
CR	Citizen Monitoring requests performed by DEQ (follow-up monitoring)
EPA	Environmental Protection Agency Monitoring Station
FOSR	Friends of the Shenandoah River Monitoring Station
FPM	DEQ Freshwater Probabilistic Monitoring Station
L	DEQ Lake Monitoring Station
MU	Municipal Monitoring Station
NONA	Non-DEQ agencies, industries, organizations not already listed
OWML	Occoquan Watershed Monitoring Lab Station
PA	DEQ Probabilistic Ambient Monitoring Station
PFWQ	DEQ Pfiesteria Monitoring Station (special study)
SS	DEQ Special Studies Monitoring Station
TE	DEQ Tidal Embayment Monitoring Station (special study)
TM	DEQ TMDL Monitoring Station (special study)
TR	DEQ Ambient Trend Program Station
USFS	United States Forest Service Monitoring Station
USFW	United States Fish and Wildlife Service Monitoring Station
USGS	United States Geological Survey Monitoring Station
USPS	United States Parks Service Monitoring Station
VDHB	Virginia Department of Health BEACH Program Monitoring Station
Ambient Monitoring Status Codes	
Status Code	**Status Code Description**
IM	Impaired
IN	Insufficient Data
IN/O	Insufficient Data with Observed Effects
O	Observed Effects
S	Supporting
Biological Monitoring Status Codes	
Status Code	**Status Code Description**
FS	Fully Supporting VSCI or CPMI
IM	Impaired for VSCI or CPMI
IN	Insufficient Data
J	Reserve Judgment / BPJ
HP	Citizen Monitoring - High Probability for Adverse Conditions (Insufficient Information but having Observed Effects)
LP	Citizen Monitoring - Low Probability for Adverse Conditions (Insufficient Information but indicating Fully Supporting)
MP	Citizen Monitoring - Medium Probability for Adverse Conditions (Insufficient Information but having Observed Effects)
UI	USFS MAIS - Impaired
UN	USFS MAIS - Not Impaired
UO	USFS MAIS - Slight Impairment (Observed Effects)
General Monitoring Status Codes	
Status Code	**Status Code Description**
NA	Not Applicable
W	Not Assessed

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chesapeake Bay, Atlantic Ocean and Small Coastal Basin																																					
7CCHI001.29	VAT-D01E_CHI01B08	C2,B	AO04				0	2	IN	0	2	IN				0	1	IN													FS							12 C2 Benthic ProbMon, WTOX=NH3
7CCHT001.31	VAT-D01E_CHT01A08	C2,B	AO04				0	2	IN	0	2	IN				0	1	IN	0	S	0	S									FS							11 C2 Benthic ProbMon
7CCHT001.75	VAT-D01E_CHT01A08	C2,B	AO02				0	2	IN	0	2	IN				0	1	IN													J							14 C2 Benthic ProbMon
7CCHT001.90	VAT-D01E_CHT01A08	C2,B	AO04				0	1	IN	0	1	IN				0	1	IN													FS							14 C2 Benthic ProbMon
7CCHT001.95	VAT-D01E_CHT01A08	C2,B	AO04				0	3	IN	0	3	IN				0	1	IN	0	S											FS							11 C2 Benthic ProbMon
7CCHT002.35	VAT-D01E_CHT01A08	C2,B	AO04				0	2	IN	0	2	IN				0	1	IN			0	IN									FS							12 C2 Benthic ProbMon, WTOX=S
7CCHT002.66	VAT-D01E_CHT01A08	C2,B	AO02				0	3	IN	0	3	IN				0	1	IN	0	O	0	IN									FS							11 C2 Benthic ProbMon, WTOX=NH3 WMET-Nickel violated chronic 2011
7CCHT003.50	VAT-D01E_CHT01A08	C2,B	AO04				0	2	IN	0	2	IN				0	1	IN			0	IN									FS							11 C2 Benthic ProbMon, WTOX=NH3
7CCHT003.62	VAT-D01E_CHT01A08	C2,B	AO04				0	1	IN	0	1	IN				0	1	IN													FS							13 C2 Benthic ProbMon
7CCHT004.00	VAT-D01E_CHT01A08	C2,B	AO02				0	3	IN	0	3	IN				0	1	IN													FS							13 C2 Benthic ProbMon
7CCHT004.21	VAT-D01E_CHT01A08	C2,B	AO04				0	1	IN	0	1	IN				0	1	IN													FS							14 C2 Benthic ProbMon
7CCHT004.53	VAT-D01E_CHT01A08	C2,B	AO02				0	3	IN	0	3	IN				0	1	IN	0	S	0	S									FS							11 C2 Benthic ProbMon, WTOX=NH3
7CCHT004.55	VAT-D01E_CHT01A08	C2,B	AO02				0	3	IN	0	3	IN				0	1	IN			0	S									FS							11 C2 Benthic ProbMon, WTOX=NH3
7CCHT005.29	VAT-D01E_CHT01A08	C2,B	AO02				0	1	IN	0	1	IN				0	1	IN			0	IN									FS							12 C2 Benthic ProbMon, WTOX=NH3
7CCHT005.48	VAT-D01E_CHT01A08	C2,B	AO02				0	2	IN	0	2	IN				0	1	IN			0	IN									FS							11 C2 Benthic ProbMon, WTOX=NH3
7CCHT005.63	VAT-D01E_CHT01A08	C2,B	AO03				0	1	IN	0	1	IN				0	1	IN													FS							13 C2 Benthic ProbMon
7CCHT006.22	VAT-D01E_CHT01A08	C2,B	AO03				0	1	IN	0	1	IN				0	1	IN													FS							14 C2 Benthic ProbMon
7CCHT006.52	VAT-D01E_CHT01A08	C2,B	AO03				0	1	IN	0	1	IN				0	1	IN			0	IN									FS							12 C2 Benthic ProbMon, WTOX=NH3
7CCUH000.62	VAT-D03E_BTB01A06	C2,B	AO11				0	4	IN	0	4	IN				0	1	IN													J							14 C2 Benthic ProbMon
7CEKC000.20	VAT-D05E_ZZZ01A00	C2,B	AO19				0	1	IN	0	1	IN				0	1	IN													J							13 C2 Benthic ProbMon
7CFII000.64	VAT-D06E_FII01A16	C2,B	AO21																												FS							14 C2 Benthic ProbMon
7CGMI000.39	VAT-D05E_ZZZ01A00	A,C2,B	AO15				0	4	IN	0	4	IN				0	1	IN	0	IN	0	IN			0	S					J							10 C2 Benthic ProbMon, WTOX=NH3
7CGMI003.58	VAT-D04E_ZZZ01A00	C2,B	AO15				0	2	IN	0	2	IN				0	1	IN													J							14 C2 Benthic ProbMon
7-CHA-D2-FCM	VAP-C01E_CHA01A08	CMON	CB05											13	NA																							Four Creek Monitors - level II E. coli; no data since 2014 cycle
7-CHA-D3-FCM	VAP-C01E_CHA01B12	CMON	CB05											13	NA																							Four Creek Monitors - level II E. coli; no data since 2014 cycle
7CHB-C1-CBCL	VAT-C08L_CHB01A14	CMON	CB26	2	25	IN/O				5	24	IN/O	2	25	IN/O																							Chub Lake- Non 187 , Chesapeake Beach Civic League
7CHB-C2-CBCL	VAT-C08L_CHB01A14	CMON	CB26	2	25	IN/O				8	24	IN/O	1	25	IN/O																							Chub Lake- Non 187 , Chesapeake Beach Civic League
7CHI-ASSA11-ASIS	VAT-D01E_CHI01A06	NONA	AO04				0	66	S	0	72	S																										Assateague Island National Seashore Station
7-CHN001.30	VAT-D01E_CHN01A08	C2,B	AO04				0	3	IN	0	3	IN				0	1	IN	0	IN	0	IN									J							09 C2 Benthic ProbMon, WTOX=NH3
7-CHS000.84	VAT-C07E_CHS02B06	A,C	CB21					34	S	0	35	S				5	33	IM												IM								MOBPH. 08-IM FTox PCBs-08 Gizzard Shad & Croaker; OE, FT_Met-As,Pb Blue Crab, Gizzard Shad; WTOX=NHx; MOBPH, DO is delisted = 2C
7-CHS001.88	VAT-C07E_CHS01A06	A,B	CB21					3	S	0	3	IN				0	1	IN													J							09 C2 Benthic ProbMon, MOBPH, WTOX=NH3
7CHS-19-ALL	VAT-C07E_CHS01A06	CMON	CB21					162	S	0	34	S																											MOBPH, Alliance for the Chesapeake Bay, L3 pH data. DO is delisted = 2C
7CHS-YC1-ALL	VAT-C07E_CHS02B06	CMON	CB21					2	S	0	2	S		1	NA																							MOBPH, Alliance for the Chesapeake Bay. DO is delisted = 2C
7-CHT003.03	VAT-D01E_CHT01A08	A,B	AO02				0	2	IN	0	2	IN				0	1	IN	0	IN	0	IN									J							09 C2 Benthic ProbMon, WTOX=NH3
7-CHT005.08	VAT-D01E_CHT01A08	C2,B	AO02				0	1	IN	0	1	IN				0	1	IN													FS							2009 C2 Benthic ProbMon
7-CHT005.14	VAT-D01E_CHT01A08	C2,B	AO02				0	3	IN	0	3	IN				0	1	IN	0	IN	0	IN									FS							2009 C2 Benthic ProbMon
7-CHT007.33	VAT-D01E_CHT01A08	A,B	AO03				0	2	IN	0	2	IN				0	1	IN	0	IN	0	IN									FS							09 C2 Benthic ProbMon, WTOX=NH3
7CHT-ASSA10-ASIS	VAT-D01E_CHT01A08	NONA	AO02				0	40	S	0	44	S																											Assateague Island National Seashore Station
16M01	VACB-R01E-CB8	CB-B	CB47		1	NA																																16M01, total depth=7.62 BIBI=3.67 sampled=7/20/2009 DO mg/l= 5.8
16M02	VACB-R01E-CB7S	CB-B	CB47		1	NA																																16M02, total depth=9.45 BIBI=3.67 sampled=7/20/2009 DO mg/l= 5.4
16M03	VACB-R01E-CB6S	CB-B	CB47		1	NA																																16M03, total depth=6.4 BIBI=4.67 sampled=7/22/2009 DO mg/l= 6.5
16M04	VACB-R01E-MOB	CB-B	CB47		1	NA																																16M04, total depth=4.88 BIBI=3.67 sampled=7/22/2009 DO mg/l= 6.6
16M06	VACB-R01E-CB6S	CB-B	CB47		1	NA																																16M06, total depth=11.28 BIBI=4.33 sampled=7/22/2009 DO mg/l= 6.3
16M07	VACB-R01E-CB7S	CB-B	CB47		1	NA																																16M07, total depth=11.58 BIBI=4.67 sampled=7/20/2009 DO mg/l= 5.1
16M08	VACB-R01E-CB6S	CB-B	CB47		1	NA																																16M08, total depth=11.28 BIBI=3.33 sampled=7/22/2009 DO mg/l= 5.1
16M09	VACB-R01E-CB7S	CB-B	CB47		1	NA																																16M09, total depth=10.67 BIBI=4 sampled=7/20/2009 DO mg/l= 5.3
16M11	VACB-R01E-CB6N	CB-B	CB47		1	NA																																16M11, total depth=9.45 BIBI=3.67 sampled=7/21/2009 DO mg/l= 6.6
16M12	VACB-R01E-CB7S	CB-B	CB47		1	NA																																16M12, total depth=8.23 BIBI=4.67 sampled=7/20/2009 DO mg/l= 4.7
16M13	VACB-R01E-CB6N	CB-B	CB47		1	NA																																16M13, total depth=14.63 BIBI=3 sampled=7/21/2009 DO mg/l= 4
16M14	VACB-R01E-CB6N	CB-B	CB47		1	NA																																16M14, total depth=13.72 BIBI=2.67 sampled=7/21/2009 DO mg/l= 3.4
16M15	VACB-R01E-CB7N	CB-B	CB47		1	NA																																16M15, total depth=13.72 BIBI=3.33 sampled=7/20/2009 DO mg/l= 2.5
16M17	VACB-R01E-CB7N	CB-B	CB47		1	NA																																16M17, total depth=9.14 BIBI=4 sampled=7/20/2009 DO mg/l= 6.5

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
16M18	VACB-R01E-CB7N	CB-B	CB47		1	NA																															16M18, total depth=9.45 BIBI=4.33 sampled=7/20/2009 DO mg/l= 7.1
16M19	VACB-R01E-CB7N	CB-B	CB47		1	NA																															16M19, total depth=3.66 BIBI=4.33 sampled=7/20/2009 DO mg/l= 7.6
16M20	VACB-R01E-CB5	CB-B	CB47		1	NA																															16M20, total depth=9.14 BIBI=4.33 sampled=7/20/2009 DO mg/l= 6
16M21	VACB-C10E-TAN	CB-B	CB40		1	NA																															16M21, total depth=3.35 BIBI=2.67 sampled=7/20/2009 DO mg/l= 7.8
16M22	VACB-C10E-TAN	CB-B	CB28		1	NA																															16M22, total depth=2.74 BIBI=3.33 sampled=7/20/2009 DO mg/l= 8
16M23	VACB-C10E-TAN	CB-B	CB29		1	NA																															16M23, total depth=9.14 BIBI=4.33 sampled=7/20/2009 DO mg/l= 6.3
16M24	VACB-C10E-TAN	CB-B	CB37		1	NA																															16M24, total depth=3.66 BIBI=4.67 sampled=7/20/2009 DO mg/l= 7
16M26	VAP-C03E_PNK05A02	CB-B	CB12		1	NA		1																													B-IBI = 1.67; PIAMHa
17M01	VACB-R01E-CB8	CB-B	CB47		1	NA		1																													17M01, total depth=7.31 BIBI=3 sampled=7/20/2010 DO mg/l= 4.5
17M03	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													17M03, total depth=6.71 BIBI=4 sampled=7/20/2010 DO mg/l= 4.7
17M04	VACB-R01E-CB6S	CB-B	CB47		1	NA		1																													17M04, total depth=10.67 BIBI=4.67 sampled=7/20/2010 DO mg/l= 4.9
17M05	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													17M05, total depth=12.19 BIBI=3.67 sampled=7/21/2010 DO mg/l= 4.1
17M06	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													17M06, total depth=11.58 BIBI=3 sampled=7/21/2010 DO mg/l= 4.1
17M07	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													17M07, total depth=12.19 BIBI=2.67 sampled=7/21/2010 DO mg/l= 3.4
17M08	VAP-C04E_WHI01B12	CB-B	CB12		1	NA		1																													B-IBI = 3; PIAMH-UA
17M09	VAP-C04E_STT05A10	CB-B	CB12		1	NA		1																													B-IBI = 3.5; PIAMH-UA
17M10	VAP-C04E_STT05A10	CB-B	CB12		1	NA		1																													B-IBI = 3.5; PIAMH-UA
17M12	VACB-R01E-CB7N	CB-B	CB47		1	NA		1																													17M12, total depth=15.54 BIBI=3.33 sampled=7/22/2010 DO mg/l= 4
17M13	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													17M13, total depth=15.24 BIBI=2.67 sampled=7/22/2010 DO mg/l= 1.9
17M14	VACB-R01E-CB7N	CB-B	CB47		1	NA		1																													17M14, total depth=5.79 BIBI=3 sampled=7/22/2010 DO mg/l= 5.3
17M15	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													17M15, total depth=3 BIBI=3.33 sampled=7/22/2010 DO mg/l= 6.8
17M51	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													17M51, total depth=4.7 BIBI=3.67 sampled=7/21/2010 DO mg/l= 6.8
17M53	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													17M53, total depth=9.5 BIBI=1 sampled=7/22/2010 DO mg/l= 5.6
17M54	VACB-R01E-CB6S	CB-B	CB47		1	NA		1																													17M54, total depth=9.4 BIBI=2.33 sampled=7/21/2010 DO mg/l= 4.3
17M55	VACB-R01E-CB7N	CB-B	CB47		1	NA		1																													17M55, total depth=11 BIBI=3 sampled=7/22/2010 DO mg/l= 4.5
17M57	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													17M57, total depth=5.3 BIBI=2.67 sampled=7/20/2010 DO mg/l= 6.8
17M59	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													17M59, total depth=2.9 BIBI=3 sampled=7/20/2010 DO mg/l= 6.6
17M60	VACB-R01E-MOB	CB-B	CB20		1	NA		1																													17M60, total depth=6.7 BIBI=2.67 sampled=7/21/2010 DO mg/l= 5.5
18M01	VAT-AO24_ATL01A12	CB-B	AO24																																		BIBI = 2.67
18M02	VACB-R01E-CB8	CB-B	CB47		1	NA																															18M02, total depth=9 BIBI=3 sampled=7/25/2011 DO mg/l= 5.07
18M03	VACB-R01E-CB6S	CB-B	CB47		1	NA																															18M03, total depth=7 BIBI=4.33 sampled=7/28/2011 DO mg/l= 2.15
18M04	VACB-R01E-CB7S	CB-B	CB47		1	NA																															18M04, total depth=11.25 BIBI=2.67 sampled=7/25/2011 DO mg/l= 5.68
18M05	VACB-R01E-CB6S	CB-B	CB47		1	NA																															18M05, total depth=10 BIBI=3.33 sampled=7/25/2011 DO mg/l= 1.05
18M06	VACB-R01E-CB7S	CB-B	CB47		1	NA																															18M06, total depth=12 BIBI=4 sampled=7/25/2011 DO mg/l= 1.87
18M07	VACB-R01E-CB7S	CB-B	CB47		1	NA																															18M07, total depth=13 BIBI=4 sampled=7/25/2011 DO mg/l= 2.7
18M08	VACB-R01E-CB6N	CB-B	CB47		1	NA																															18M08, total depth=5 BIBI=3.67 sampled=7/25/2011 DO mg/l= 6.2
18M09	VAP-C03E_PNK02A00	CB-B	CB11					1																													B-IBI = 1.33; PIAMHa
18M10	VACB-R01E-CB7S	CB-B	CB47		1	NA																															18M10, total depth=4 BIBI=4 sampled=7/26/2011 DO mg/l= 6.3
18M11	VACB-R01E-CB7S	CB-B	CB47		1	NA																															18M11, total depth=8 BIBI=4.33 sampled=7/26/2011 DO mg/l= 3.36
18M12	VACB-R01E-CB7S	CB-B	CB47		1	NA																															18M12, total depth=5 BIBI=3.33 sampled=7/26/2011 DO mg/l= 5.5
18M13	VACB-R01E-CB6N	CB-B	CB47		1	NA																															18M13, total depth=6 BIBI=4.33 sampled=7/26/2011 DO mg/l= 4.1

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
18M14	VACB-R01E-CB7N	CB-B	CB47		1	NA																															18M14, total depth=12 BIBI=4 sampled=7/26/2011 DO mg/l= 2.59
18M15	VACB-R01E-CB7N	CB-B	CB47		1	NA																															18M15, total depth=11 BIBI=3 sampled=7/26/2011 DO mg/l= 2.58
18M16	VACB-R01E-CB7N	CB-B	CB47		1	NA																															18M16, total depth=11 BIBI=4 sampled=7/26/2011 DO mg/l= 2.73
18M17	VACB-R01E-CB6N	CB-B	CB47		1	NA																															18M17, total depth=13 BIBI=1.67 sampled=7/26/2011 DO mg/l= 0.04
18M18	VACB-R01E-CB7N	CB-B	CB47		1	NA																															18M18, total depth=11 BIBI=3.33 sampled=7/26/2011 DO mg/l= 2.15
18M19	VACB-R01E-CB5	CB-B	CB47		1	NA																															18M19, total depth=12 BIBI=2 sampled=7/26/2011 DO mg/l= 0.1
18M20	VACB-R01E-CB7N	CB-B	CB47		1	NA																															18M20, total depth=12 BIBI=1.67 sampled=7/26/2011 DO mg/l= 1.9
18M23	VACB-C10E_TNN01A06	CB-B	CB28		1	NA																															18M23, total depth=2.8 BIBI=3.67 sampled=7/26/2011 DO mg/l= 6.54
18M26	VACB-R01E-CB7N	CB-B	CB47		1	NA																															18M26, total depth=12 BIBI=2.33 sampled=7/26/2011 DO mg/l= 1.95
18M27	VAT-C13E_NAN02A06	CB-B	CB42																																			BIBI = 4 CB7PH
19M01	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													19M01, total depth=11 BIBI=2.67 sampled=7/16/2012 DO mg/l= 5.7
19M02	VACB-R01E-CB8	CB-B	CB47		1	NA		1																													19M02, total depth=11.7 BIBI=3.33 sampled=7/16/2012 DO mg/l= 5.7
19M03	VACB-R01E-CB8	CB-B	CB47		1	NA		1																													19M03, total depth=5.5 BIBI=0 sampled=7/16/2012 DO mg/l= 4.9
19M04	VACB-R01E-CB8	CB-B	CB47		1	NA		1																													19M04, total depth=5.5 BIBI=40 sampled=7/16/2012 DO mg/l= 6
19M05	VACB-R01E-CB8	CB-B	CB47		1	NA		1																													19M05, total depth=7.3 BIBI=2.33 sampled=7/16/2012 DO mg/l= 6.7
19M06	VACB-R01E-CB8	CB-B	CB47		1	NA		1																													19M06, total depth=9 BIBI=4 sampled=7/16/2012 DO mg/l= 3.2
19M07	VAT-C07E_BTH01A08	CB-B	CB21																																			BIBI = 3. JMSMH
19M09	VACB-R01E-MOB	CB-B	CB20		1	NA		1																													19M09, total depth=6 BIBI=2.33 sampled=7/18/2012 DO mg/l= 6.2
19M10	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													19M10, total depth=12.5 BIBI=20.02 sampled=7/16/2012 DO mg/l= 4
19M11	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													19M11, total depth=12.8 BIBI=2.33 sampled=7/16/2012 DO mg/l= 3.6
19M12	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													19M12, total depth=11 BIBI=3.67 sampled=7/16/2012 DO mg/l= 3.1
19M13	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													19M13, total depth=11 BIBI=4 sampled=7/16/2012 DO mg/l= 3.27
19M14	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													19M14, total depth=11 BIBI=3.67 sampled=7/16/2012 DO mg/l= 3.7
19M15	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													19M15, total depth=3 BIBI=4.33 sampled=7/16/2012 DO mg/l= 3
19M16	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													19M16, total depth=5 BIBI=4.33 sampled=7/17/2012 DO mg/l= 2.8
19M17	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													19M17, total depth=15 BIBI=2.33 sampled=7/17/2012 DO mg/l= 1.4
19M18	VACB-R01E-CB7N	CB-B	CB47		1	NA		1																													19M18, total depth=7 BIBI=4.33 sampled=7/16/2012 DO mg/l= 5.8
19M19	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													19M19, total depth=9 BIBI=3.33 sampled=7/16/2012 DO mg/l= 1.9
19M21	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													19M21, total depth=5 BIBI=3.67 sampled=7/16/2012 DO mg/l= 7.4
19M22	VACB-C10E-TAN	CB-B	CB40		1	NA		1																													19M22, total depth=7.1 BIBI=3.33 sampled=9/11/2012 DO mg/l= 6.1
19M24	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													19M24, total depth=19 BIBI=2 sampled=7/16/2012 DO mg/l= 2
19M25	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													19M25, total depth=6 BIBI=4 sampled=7/16/2012 DO mg/l= 2.1
19M26	VACB-R01E-CB7N	CB-B	CB47		1	NA		1																													19M26, total depth=9 BIBI=3.33 sampled=7/16/2012 DO mg/l= 2.3
1ABRI000.43	VAP-A34E_LIS02A00	C2,B	CB01		4	NA		4		0	4	W				0	1	W	0	IN	0	IN	0	S	0	S					FS				1		1 sample event; WOE - 2009, Category 2A, HM-M scenario 2; no new data since 2012 cycle
1ALIS002.00	VAP-A34E_LIS03A98	A,TR	CB01		36	NA		36		0	36	S				0	36	S																		36		
1ALIS002.81	VAP-A34E_LIS02A00	C2,B	CB01		4	NA		4		0	4	W				0	1	W	0	IN	0	IN	0	S	0	S					J						One sample event; 2011 WOE: category 3B LM-M scenario 8; no data since 2014 cycle
1ALIS004.20	VAP-A34E_LIS01A02	TM	CB01		12	NA		12		0	12	S				2	12	IM																				No new data since 2012 cycle
20M01	VACB-R01E-CB8	CB-B	CB47		1	NA		1																													20M01, total depth=14 BIBI=3 sampled=7/22/2013 DO mg/l= 8.45
20M02	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													20M02, total depth=4 BIBI=19.98 sampled=7/22/2013 DO mg/l= 8.49
20M04	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													20M04, total depth=6 BIBI=66.6 sampled=7/22/2013 DO mg/l= 7.7
20M05	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													20M05, total depth=6.8 BIBI=3 sampled=7/22/2013 DO mg/l= 7.7

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
20M06	VACB-R01E-CB8	CB-B	CB47		1	NA		1																													20M06, total depth=8 BIBI=3.67 sampled=7/22/2013 DO mg/l= 6.3
20M07	VACB-R01E-CB8	CB-B	CB47		1	NA		1																													20M07, total depth=10 BIBI=4 sampled=7/22/2013 DO mg/l= 6.4
20M08	VACB-R01E-CB6S	CB-B	CB47		1	NA		1																													20M08, total depth=7 BIBI=3.67 sampled=7/24/2013 DO mg/l= 5.9
20M11	VACB-R01E-MOB	CB-B	CB20		1	NA		1																													20M11, total depth=7.2 BIBI=0 sampled=9/16/2013 DO mg/l= 5.5
20M12	VACB-R01E-CB6S	CB-B	CB47		1	NA		1																													20M12, total depth=11 BIBI=13.32 sampled=7/22/2013 DO mg/l= 3.67
20M13	VACB-R01E-CB6S	CB-B	CB47		1	NA		1																													20M13, total depth=6.5 BIBI=2.33 sampled=7/23/2013 DO mg/l= 3.92
20M14	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													20M14, total depth=17 BIBI=2.67 sampled=7/22/2013 DO mg/l= 4.98
20M15	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													20M15, total depth=11 BIBI=3.67 sampled=7/22/2013 DO mg/l= 3.58
20M16	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													20M16, total depth=16 BIBI=3.33 sampled=7/22/2013 DO mg/l= 3.61
20M18	VACB-R01E-CB7S	CB-B	CB47		1	NA		1																													20M18, total depth=6.5 BIBI=4.33 sampled=7/22/2013 DO mg/l= 4.28
20M19	VACB-R01E-CB6N	CB-B	CB47		1	NA		1																													20M19, total depth=7 BIBI=4 sampled=7/22/2013 DO mg/l= 5
20M20	VACB-R01E-CB5	CB-B	CB47		1	NA		1																													20M20, total depth=8.5 BIBI=1 sampled=7/22/2013 DO mg/l= 5.3
20M21	VACB-R01E-CB7N	CB-B	CB47		1	NA		1																													20M21, total depth=5.3 BIBI=33.3 sampled=7/22/2013 DO mg/l= 6.83
20M22	VACB-R01E-CB7N	CB-B	CB40		1	NA		1																													20M22, total depth=6.7 BIBI=4 sampled=8/26/2013 DO mg/l= 5.3
20M24	VACB-C10E-TAN	CB-B	CB37		1	NA		1																													20M24, total depth=2.2 BIBI=3.67 sampled=8/26/2013 DO mg/l= 7.4
20M25	VACB-C10E-TAN	CB-B	CB40		1	NA		1																													20M25, total depth=8.1 BIBI=2.67 sampled=8/26/2013 DO mg/l= 5.2
20M26	VACB-R01E-CB7N	CB-B	CB47		1	NA		1																													20M26, total depth=5 BIBI=4.33 sampled=7/22/2013 DO mg/l= 6.8
20M27	VACB-C10E-TAN	CB-B	CB28		1	NA		1																													20M27, total depth=2.5 BIBI=3.33 sampled=7/22/2013 DO mg/l= 7.26
21M01	VACB-R01E-CB8	CB-B	CB47																																		21M01, total depth=16 BIBI=3.666667 sampled=8/11/2014
21M02	VACB-R01E-CB8	CB-B	CB47																																		21M02, total depth=9.5 BIBI=3.666667 sampled=8/11/2014
21M03	VACB-R01E-CB8	CB-B	CB47																																		21M03, total depth=8 BIBI=4.666667 sampled=8/11/2014
21M04	VACB-R01E-CB8	CB-B	CB47																																		21M04, total depth=8 BIBI=4 sampled=8/11/2014
21M05	VACB-R01E-CB8	CB-B	CB47																																		21M05, total depth=6.5 BIBI=4.666667 sampled=8/11/2014
21M06	VACB-R01E-CB7S	CB-B	CB47																																		21M06, total depth=7 BIBI=4 sampled=8/11/2014
21M08	VACB-R01E-MOB	CB-B	CB47																																		21M08, total depth=4.5 BIBI=3.333333 sampled=8/11/2014
21M09	VACB-R01E-CB6S	CB-B	CB47																																		21M09, total depth=12 BIBI=4.333333 sampled=8/11/2014
21M10	VACB-R01E-CB6S	CB-B	CB47																																		21M10, total depth=9 BIBI=4.333333 sampled=8/13/2014
21M12	VACB-R01E-CB7S	CB-B	CB47																																		21M12, total depth=11 BIBI=4 sampled=8/11/2014
21M13	VACB-R01E-CB7S	CB-B	CB47																																		21M13, total depth=14 BIBI=4.333333 sampled=8/11/2014
21M14	VACB-R01E-CB7S	CB-B	CB47																																		21M14, total depth=14 BIBI=4 sampled=8/11/2014
21M15	VACB-R01E-CB6S	CB-B	CB47																																		21M15, total depth=8 BIBI=3.666667 sampled=8/11/2014
21M16	VACB-R01E-CB7S	CB-B	CB47																																		21M16, total depth=11 BIBI=3.666667 sampled=8/13/2014
21M17	VACB-R01E-CB6N	CB-B	CB47																																		21M17, total depth=13.5 BIBI=3.333333 sampled=8/13/2014
21M18	VACB-R01E-CB6N	CB-B	CB47																																		21M18, total depth=14 BIBI=3.333333 sampled=8/13/2014
21M19	VACB-R01E-CB7N	CB-B	CB47																																		21M19, total depth=13 BIBI=4.666667 sampled=8/13/2014
21M20	VACB-R01E-CB7N	CB-B	CB47																																		21M20, total depth=12 BIBI=4.333333 sampled=8/13/2014
21M21	VACB-R01E-CB7N	CB-B	CB40																																		21M21, total depth=11.5 BIBI=1.333333 sampled=8/13/2014
21M22	VACB-R01E-CB5	CB-B	CB47																																		21M22, total depth=8.5 BIBI=3.666667 sampled=8/13/2014
21M23	VACB-R01E-CB7N	CB-B	CB29																																		21M23, total depth=5 BIBI=3.666667 sampled=8/13/2014
21M26	VACB-R01E-CB7S	CB-B	CB47																0	S																	21M26, total depth=11 BIBI=3.666667 sampled=8/11/2014
7ACHE004.56	VACB-R01E-CB7S	C2	CB47		15	NA		15		0	15	S		1	NA	0	1	IN	0	IN	0	IN	0	IN	0	IN	0	IN						1			1	NA	sampled 7/20/2010; chlorophyll = 6.8 ug/L (exceeds recommended threshold for polyhaline waters). no sediment exceedences, no toxicity, degraded benthos
7ACHE013.34	VACB-R01E-CB7S	C2,B	CB47		9	NA		9		0	9	S		1	NA	0	1	IN	0	IN	0	IN	0	IN	0	IN	0	IN					FS	1			1	NA	sampled 7/20/2010; chlorophyll = 8.2 ug/l (exceeds recommended threshold for polyhaline waters).Total Hg exceeds saltwater chronic aquatic life criterion. no sediment exceedences, no toxicity, non-degraded benthos
7ACHE023.85	VACB-R01E-CB7S	C2	CB47		7	NA		7			7	S		1	NA	0	1	IN	0	IN	0	IN														1	NA	sampled 7/21/10. chlorophyll = 10.8 (exceeds recommended threshold for polyhaline waters). No water column metal exceedences
7ACHE025.90	VACB-R01E-CB7S	C2	CB47		4	NA		4			4	NA		1	NA	0	1	IN	0	IN	0	IN														1	NA	sampled 6/30/11. chlorophyll = 10.7 (exceeds recommended threshold for polyhaline waters). No water column metal exceedences
7ACHE026.06	VACB-R01E-CB6S	C2	CB47		24	NA		24		0	24	S		1	NA	0	1	IN	0	IN	0	IN	0	IN	0	IN	0	IN						1			1	NA	sampled 7/21/2010; chlorophyll = 13.8 ug/l (exceeds recommended threshold for polyhaline waters). no sediment exceedences, no toxicity, degraded benthos
7ACHE040.04	VACB-R01E-CB7N	C2,B	CB47		25	NA		25		0	25	S		1	NA	0	1	IN	0	IN	0	IN	0	IN	0	IN	0	IN					FS	1			1	NA	sampled 7/22/2010. chlorophyll = 7.2 ug/l (exceeds recommended threshold for polyhaline waters). no sediment exceedences, no toxicity, non-degraded benthos

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Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
7ACHE040.39	VACB-R01E-CB6N	C2	CB47		23	NA		23		0	23	S		1	NA	0	1	IN	0	IN	0	IN	0	IN	0	IN							1			1	NA	sampled 7/22/2010; chlorophyll = 18.9 ug/l (exceeds recommended threshold for polyhaline waters). no sediment exceedences, no toxicity, marginal benthos
7ACHE044.14	VACB-R01E-CB5	C2	CB47		24	NA		24		0	24	S		1	NA	0	1	IN	0	IN	0	IN	0	IN	0	IN							1			1	NA	sampled 7/22/2010; chlorophyll = 11.2 ug/l (exceeds recommended threshold for polyhaline e waters). no sediment exceedences, no toxicity, degraded benthos
7ACHE056.80	VACB-C10E-POC	C2	CB36		1	NA		1			1			1	NA	0	1	IN			0	IN														1	NA	sampled 9/24/2013. chlorophyll = 7.16 (exceeds recommended threshold for mesohaline waters) No water column metal exceedences
7AINN001.66	VAP-C01E_GWR03A06	C2,B	CB47		7	NA		7		0	7	W				0	1	W			0	IN	0	S	0	S					J					1		2013 WOE: PH-M scenario 5 Category 3B; one sample event
7-ANT001.50	VAP-C01E_ANT02A08	A	CB05		12	NA		12		0	12	S				0	11	S																	11		No new data since 2012 cycle
7-ANT-A1-FCM	VAP-C01E_ANT02A08	CMON	CB05											21	NA																						Four Creek Monitors - level II E. coli
7-ANT-A2-FCM	VAP-C01E_ANT02A08	CMON	CB05											21	NA																						Four Creek Monitors - level II E. coli
7-ANT-A3-FCM	VAP-C01E_ANT02A08	CMON	CB05											21	NA																						Four Creek Monitors - level II E. coli
7-ANT-W27-CGAF	VAP-C01E_ANT02A08	CMON	CB05		6	NA		6		0	6	S																									Coast Guard Auxiliary Flotilla 33 - level III; no data since 2014 cycle
7-ASC003.23	VAT-D01E_ASC01A06	A	AO03				1	24	O	1	24	S				1	22	O																			
7ASC-ASSA12-ASIS	VAT-D01E_ASC01A06	NONA	AO03				4	45	O	0	49	S																										Assateague Island National Seashore Station
7ASC-ASSA8-ASIS	VAT-D01E_ASC01A06	NONA	AO03				0	35	S	0	41	S																										Assateague Island National Seashore Station
7-ASH-D5-FCM	VAP-C01E_ASH01A10	CMON	CB05											25	NA																						Four Creek Monitors - level II E. coli
7-ASW003.36	VAT-D02E_ASW02A00	A,C	AO08				9	36	IM	0	36	S				16	34	IM												O							08-OE, FT_PCB Bluefish; Water Toxics = NH3
7-ASW008.88	VAT-D02R_ASW01A16	A,B	AO08				0	2	S	0	2	S																			FS							VCPMI FS [2011: S-26.7, F- 56.1 2013: F-64.6 2014: S-46.9]
7-BAK001.31	VAT-C07E_BAK02A14	A	CB24					12	S	0	12	S				1	12	O																			WTOX=NH3, MOBPH
7BBAK001.01	VAT-C07E_BAK01A00	C2,B	CB24					2	S	0	2	IN				0	1	IN													FS							11 C2 Benthic ProbMon = 2A, WTOX=NH3, MOBPH
7BBAK002.03	VAT-C07E_BAK01A00	C2,B	CB24					1	S	0	1	IN				0	1	IN													J							12 C2 Benthic ProbMon = 3B, WTOX=NH3, MOBPH
7BBAK002.94	VAT-C07E_BAK01A00	C2,B	CB24					3	S	0	3	IN				0	1	IN													J							12 C2 Benthic ProbMon = 3B, WTOX=NH3, MOBPH
7BBBY002.67	VAT-C08E_BBY01A14	C2,B	CB25					2	IM	0	2	IN				0	1	IN													FS							14 C2 Benthic ProbMon, LYNPH
7BBCA000.27	VAT-C07E_BCK02A06	C2,B	CB21					3	S	0	3	IN				0	1	IN													J							11 C2 Benthic ProbMon, WTOX=NH3, MOBPH, DO is delisted = 2C
7BBCE001.01	VAT-C13E_BCE01A08	C2,B	CB42					2	IM	0	2	IN				0	1	IN													J							14 C2 Benthic ProbMon, CB7PH
7BBEN000.65	VAT-C07E_BEN03A16	C2,B	CB21					2	S	0	2	IN				0	1	IN													FS							12 C2 Benthic ProbMon, WTOX=NH3, MOBPH
7BBLL000.24	VAP-C04E_BLL02A16	C2,B	CB12		3	NA		3		0	3	W				0	1	W			0	IN	0	S	0	S					J					1		WOE 2014: HM-S scenario 5, Category 3B; one sample event
7-BBY002.88	VAT-C08E_BBY01A14	A	CB25					27	IM	0	27	S				1	26	S																			WTOX=NH3, LYNPH
7BCHE020.03	VACB-R01E-MOB	C2	CB21		4	NA		4			4	s		1	NA	0	1	IN	0	IN	0	S												1			1	NA	SAMPLED 7/15/10; chlorophyll = 7.9 ug/l (exceeds recommended threshold for polyhaline waters)
7BCHE025.90	VACB-R01E-MOB	C2,B	CB20		17	NA		17		0	17	S		1	NA	0	1	IN	0	IN	0	IN	0	IN	0	IN					FS		1			1	NA	sampled 7/21/2010. chlorophyll = 8.7 ug/l (exceeds recommended threshold for polyhaline waters). no sediment exceedences, no toxicity, non-degraded benthos. Total PAHs may be high enough to have chronic effects on benthos.
7BCHE031.21	VACB-R01E-CB6S	C2	CB12		5	NA		5			5	S		1	NA	0	1	IN	0	IN	0	S												1			1	NA	sampled 7/21/10; chlorophyll = 10.6 ug/l (exceeded recommended threshold for polyhaline waters).
7BCHE039.81	VACB-R01E-CB7S	C2	CB42		4	NA		4			4	S		1	NA	0	1	IN	0	IN	0	S												1			1	NA	sampled 7/22/10; chlorophyll = 7.2 (exceeds recommended threshold for polyhaline waters).
7BCRS000.89	VAT-C15E_CRS01A06	C2,B	CB46					1	IM	0	1	IN				0	1	IN													FS							13 C2 Benthic ProbMon, CB7PH
7BCRS003.57	VAT-C15E_CRS01A06	C2,B	CB46					1	IM	0	1	IN				0	1	IN													J							14 C2 Benthic ProbMon, CB7PH
7BCSX000.14	VAT-C11E_CSX02A06	C2,B	CB39					2	IM	0	2	IN				0	1	IN													FS							12 C2 Benthic ProbMon, WTOX=NH3, CB7PH
7BCTT000.91	VACB-C10E-POC	C2,B	CB35		1	NA		1		0	2	S		1	NA	0	1	IN	0	IN	0	IN	0	IN	0	IN					FS		1			1	NA	sampled 8/7/2014; BIBI = 3.67; no sediment exceedences, no toxicity, non-degraded benthos
7BDEP000.11	VAT-C10E_DEP03A08	C2,B	CB38					2	IM	0	2	IN				0	1	IN			0	IN									FS							12 C2 Benthic ProbMon, WTOX=NH3, CB7PH
7BDEP000.86	VAT-C10E_DEP02A06	C2,B	CB38					1	IM	0	1	IN				0	1	IN													FS							14 C2 Benthic ProbMon. CB7PH
7BDIV002.38	VAP-C01E_DIV01A98	C2,B	CB04		4	NA		4		0	4	W				0	1	W			0	IN	0	S	0	S					J					1		WOE 2013: HM-S scenario 5, Category 3B; one sample event
7BDYM000.01	VAP-C01E_DYM03A06	C2,B	CB05		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE: category 3B HM-S scenario 5; no data since 2014 cycle
7-BEA000.40	VAP-C05E_WAR01A02	A	CB13		11	NA		11		0	11	S		11	NA																						Station determined to be tidally influenced.
7-BEN000.68	VAT-C07E_BEN03A16	A,B	CB21					3	S	0	3	IN				0	1	IN													J							09 C2 Benthic ProbMon, WTOX=NH3, MOBPH
7BEST000.55	VAP-C04E_EST02A00	C2,B	CB17		2	NA		2		0	2	W				0	1	W	0	IN			0	S	0	S					J					1		One sample event; 2011 WOE: category 3B HM-M scenario 8; no data since 2014 cycle
7BFLB001.85	VAP-C01E_FLB01A00	C2,B	CB05		6	NA		6		0	6	W				0	1	W			0	IN	0	S	0	S					FS					1		WOE 2014: HM-S scenario 5, Category 2A; one sample event
7BGWR005.15	VAP-C01E_GWR02A00	C2,B	CB02		2	NA		2		0	2	W				0	1	W			0	IN	0	S	0	S					J					1		2013 WOE: HM-M scenario 8, Category 3B; one sample event
7BGWR006.15	VAP-C01E_GWR02A00	C2,B	CB02		5	NA		5		0	5	W				0	1	W	0	IN	0	IN	0	S	0	S					J					1		One sample event; 2011 WOE: category 3B, HM-M scenario 5; no data since 2014 cycle
7BGWR012.24	VAP-C01E_GWR01A98	C2,B	CB02		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE category 3B HM-M scenario 8; no data since 2014 cycle
7BHAH002.19	VAP-C04E_HAH02A02	C2,B	CB18		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					FS					1		One sample event; 2012 WOE: category 2A PH-S scenario 3; no data since 2014 cycle
7BHUN000.17	VAT-C10E_HUN02A06	C2,B	CB36					2	S	0	2	IN				0	1	IN													FS							12 C2 Benthic ProbMon, WTOX=NH3, POCMH
7BHUN000.81	VAT-C10E_HUN02A06	C2,B	CB36					2	S	0	2	IN				0	1	IN													J							11 C2 Benthic ProbMon, POCMH
7BHUN001.08	VAT-C10E_HUN02A06	C2,B	CB36					1	S	0	1	IN				0	1	IN													FS							13 C2 Benthic ProbMon. POCMH
7BINN001.73	VAP-C01E_GWR03A06	C2,B	CB04		2	NA		2		0	2	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2011 WOE: category 3B, LM-S scenario 5; no data since 2014 cycle
7BINN001.85	VAP-C01E_GWR03A06	C2,B	CB04		5	NA		5		0	5	W				0	1	W	0	IN	0	IN	0	S	0	S					FS					1		1 sample event; WOE - 2009: HM-S Category 2A scenario 2; previously named 7-INN001.75; no new data since 2012 cycle
7BJAR000.30	VAP-C01E_JAR02A10	C2,B	CB04		5	NA		5		0	5	W				0	1	W			0	IN	0	S	0	S					J					1		WOE 2013: HM-M scenario 8, Category 3B; one sample event

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
7BLKN002.31	VAT-C08E_LKN02B10	C2,B	CB25					3	IM	1	3	O				0	1	IN													J							11 C2 Benthic ProbMon, LYNPH
7BLYN001.53	VAT-C08E_LYN01A06	C2,B	CB25					4	IM	0	4	IN				0	1	IN													FS							12 C2 Benthic ProbMon, WTOX-NH3, LYNPH
7BLYN001.96	VAT-C08E_LYN01B10	A,C2,B	CB25					2	IM	0	2	IN				0	1	IN													FS							LYNPH, 10 C2 Benthic ProbMon, WTOX=NH3
7BMJB008.09	VAP-C04E_NOR02A02	C2,B	CB16		4	NA		4		0	4	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE: category 3B PH-S scenario 5; no data since 2014 cycle
7BMLF000.65	VAP-C04E_MLF03A00	C2,B	CB12		4	NA		4		0	4	W				0	1	W			0	IN	0	S	0	S					FS					1		WOE 2014: HM-S scenario 2, Category 2A; one sample event
7-BMS002.08	VAP-C01E_BMS01A12	A,TM,SS	CB02		24	NA		24		0	24	S				4	12	IM																			previously called riverine; no data since 2014 cycle and no E. coli data since 2012 cycle
7BNSS004.49	VAT-C13E_NSS02A06	C2,B	CB44					1	IM	0	1	IN				0	1	IN													J							13 C2 Benthic ProbMon, CB7PH
7BNWB000.82	VAT-C07E_NWB02A06	C2,B	CB22					2	S	0	2	IN				0	1	IN													J							MOBPH. 14 C2 Benthic ProbMon, DO is delisted = 2C
7BOCH004.67	VAT-C13E_OCH02A06	C2,B	CB43					2	IM	0	2	IN				0	1	IN													J							13 C2 Benthic ProbMon, CB7PH
7BOCN001.14	VAT-C11E_OCN02A04	C2,B	CB39					5	IM	0	5	IN				0	1	IN													FS							11 C2 Benthic ProbMon, CB7PH
7BOCN001.89	VAT-C11E_OCN02A04	C2,B	CB39					5	IM	0	5	IN				0	1	IN													J							13 C2 Benthic ProbMon, CB7PH
7BOCN004.86	VAT-C11E_OCN01A04	C2,B	CB39					1	IM	0	1	IN				0	1	IN													FS							14 C2 Benthic ProbMon. CB7PH
7BOLC000.00	VACB-C10E-POC	C2	CB36		3	NA		3			3	S		1	NA	0	1	IN	0	IN	0	S											1		1	NA	sampled 7/23/13; chlorophyll = 8.2 ug/l (exceeds recommended threshold for mesohaline waters)
7BOLD000.12	VAP-C05E_OLD01A12	C2,B	CB15		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE category 3B PH-S scenario 5; no data since 2014 cycle
7BPKS000.40	VAT-C10E_POC01A08	A,C2,B	CB32					5	IM	0	5	S				1	2	O													J							POCOH, 10 C2 Benthic ProbMon (two visits - 2A, 3B) DO 4C
7BPKS001.55	VACB-C10E-POC	C2	CB33		2	NA		2			2	S		1	NA	0	1	IN	0	IN	0	S											1		1	NA	sampled 8/18/11; chlorophyll = 20.6 ug/l (exceeds recommended threshold for mesohaline waters).
7BPNK000.75	VAP-C03E_PNK05A02	C2,B	CB12		7	NA		7		0	7	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE: category 3B PH-M scenario 5; no data since 2014 cycle
7BPNK000.76	VAP-C03E_PNK05A02	C2,B	CB12		6	NA		6		0	6	W				0	1	W			0	IN	0	S	0	S					FS					1		One sample event; 2012 WOE: category 2A PH-S scenario 2; no data since 2014 cycle
7BPNK003.14	VAP-C03E_PNK04A00	C2,B	CB11		1	NA		1		0	1	W				0	1	W	0	IN			0	S	0	S					IM					1		One sample event; 2011 WOE: category 5A HM-S scenario 8; no data since 2014 cycle
7BPNK009.04	VAP-C03E_PNK02A00	C2,B	CB11		9	NA		9		0	9	W				0	1	W			0	IN	0	S	0	S					J					1		WOE 2013: HM-M scenario 8, Category 3B; one sample event
7BPNK010.38	VAP-C03E_PNK02B08	C2,B	CB10		6	NA		6		0	6	W				0	1	W			0	IN	0	S	0	S					J					1		WOE 2014: HM-M scenario 5, Category 3B; one sample event
7BPNK015.25	VAP-C03E_PNK01A02	C2,B	CB10		4	NA		4		0	4	W				0	1	W			0	IN	0	S	0	S					J					1		WOE 2014: LM-M scenario 5, Category 3B; one sample event
7BPNK016.89	VAP-C03E_PNK01A98	C2,B	CB10		1	NA		1		0	1	W				0	1	W			0	IN	1	O	0	S					IM					1		WOE 2013: OH-M scenario 8, Category 5A; Cd sediment >ER-M
7BPNK020.26	VAP-C03E_PNK01A98	C2,B	CB10		1	NA		1		0	1	W				0	1	W	0	IN	0	IN	0	S	0	S					J					1		One sample event; 2011 WOE: category 3B LM-M scenario 5
7BPUN000.26	VAT-C12E_PUN02A06	C2,B	CB41					5	IM	0	5	IN				0	1	IN													FS							11 C2 Benthic ProbMon, CB7PH
7-BRE000.77	VAP-C02R_BRE01A04	A	CB08	0	11	S	3	11	IM	0	12	S	1	12	S																						No new data since 2012 cycle
7-BRK004.14	VAT-C07E_BRK01A06	A	CB22					30	S	0	30	S				20	29	IM																			MOBPH. DO is delisted = 2C
7-BRN000.50	VAP-C04E_BRN01A04	PFWQ	CB12		1	NA		1		0	1	W																									supersaturated DO; brown water; no new data since 2012 cycle
7-BRS-4-14-DCA	VAP-C01E_BRS01A08	CMON	CB05		6	NA		6		0	6	S		6	NA																						Dividing Creek Association - Level 3 except E. coli; no data since 2014 cycle
7-BRS-4-15-DCA	VAP-C01E_BRS01A08	CMON	CB05		3	NA		3		0	3	S		3	NA																						Dividing Creek Association - Level 3 except E. coli; no data since 2014 cycle
7-BRS-4-9A-DCA	VAP-C01E_BRS01A08	CMON	CB05		30	NA		30		0	30	S		29	NA																						Dividing Creek Association - Level 3 except E. coli
7-BRS-I5-FCM	VAP-C01E_BRS01A08	CMON	CB05											13	NA																						Four Creek Monitors - level II E. coli; no data since 2014 cycle
7BSEN000.04	VAP-C06E_SEN02A06	C2,B	CB19		6	NA		6		0	6	W				0	1	W	0	IN			0	S	0	S					J					1		One sample event; 2011 WOE: category 3B PH-M scenario 5; no data since 2014 cycle
7BSTO000.62	VAP-C04E_STO01B14	C2,B	CB12		1	NA		1		0	1	W				0	1	W	0	IN	0	IN	0	S	0	S					J					1		One sample event; 2011 WOE: category 3B scenario 8; no data since 2014 cycle
7BSTT000.20	VAP-C04E_STT05A10	C2,B	CB12		2	NA		2		0	2	W				0	1	W			0	IN	0	S	0	S					FS				1			WOE 2014: HM-S scenario 2, Category 2A; one sample event
7BSWB001.59	VAT-C07E_SWB01A08	C2,B	CB23					2	S	0	2	IN				0	1	IN													J							11 C2 Benthic ProbMon, MOBPH, DO is delisted = 2C
7BTHF001.58	VAT-C10E_HUN02A06	C2,B	CB36					2	S	0	2	IN				0	1	IN													FS							12 C2 Benthic ProbMon, WTOX=NH3, POCMH
7-BUR001.19	VAP-C04E_BUR01A00	TM	CB16		12	NA		12		0	12	S				7	12	IM																			previously called riverine; no new data since 2012 cycle
7-BUR002.92	VAP-C04R_BUR01A12	TM	CB16	0	12	S	0	12	S	0	12	S	1	12	S																						No new data since 2012 cycle
7BWAR002.85	VAP-C05E_WAR02A02	C2,B	CB15		3	NA		3		0	3	W				0	1	W			0	IN	0	S	0	S					FS					1		WOE 2013: PH-S scenario 2, Category 2A
7BWCO000.66	VAP-C01E_WCO01A98	C2,B	CB02		3	NA		3		0	3	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE: category 3B HM-S scenario 5; no data since 2014 cycle
7BWES000.27	VAT-C08E_WES03A10	A,C2,B	CB25					4	IM	0	4	S				0	1	IN													FS							14 C2 Benthic ProbMon. LYNPH
7BWHH000.58	VAT-C07E_WHH01A06	C2,B	CB21					1	S	0	1	IN				0	1	IN													J							13 C2 Benthic ProbMon. MOBPH
7BWIN002.93	VAP-C04E_WIN03A06	C2,B	CB18		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					FS					1		WOE 2013: PH-S scenario 2, Category 2A; one sample event
7BWTT000.02	VAP-C06E_WTT01A08	C2,B	CB19		4	W		4		0	4	W				0	1	W	0	IN			0	S	0	S					J					1		One sample event; 2011 WOE: category 3B PH-M scenario 8; no data since 2014 cycle
7BXEX000.09	VAP-C01E_BAL01A02	C2,B	CB04		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					J					1		WOE 2014: HM-M scenario 5, Category 3B
7BXEZ000.04	VAP-C01E_IND01B10	C2,B	CB05		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					J					1		WOE 2014: HM-S scenario 5, Category 3B
7BXFA000.12	VAP-C04E_XFA03A14	C2	CB16		2	NA		2		0	2	W				0	1	W			0	IN	0	S	0	S										1		WOE 2014: PH-S scenario 2, Category 2A; one sample event
7C-AO05-10-001	VAT-AO06_ATL01A12	SS	AO06																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO05-10-033	VAT-AO06_ATL01A12	SS	AO06																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO05-10-034	VAT-AO05_ATL01B12	SS	AO05																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO05-10-050	VAT-AO05_ATL01B12	SS	AO05																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO06-10-005	VAT-AO06_ATL01A12	SS	AO06																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO06-10-017	VAT-AO06_ATL01A12	SS	AO06																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO06-10-021	VAT-AO06_ATL01A12	SS	AO06																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
7C-AO06-10-037	VAT-AO06_ATL01A12	SS	AO06																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO06-10-049	VAT-AO06_ATL01A12	SS	AO06																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO07-10-013	VAT-AO07_ATL01A12	SS	AO07																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO12-10-010	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2B, WTOX=NH3
7C-AO12-10-022	VAT-AO12_ATL01A12	SS	AO12																																		10 NS OCEANIC Benthic ProbMon = 2B, WTOX=NH3
7C-AO12-10-041	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO12-10-073	VAT-AO12_ATL01A12	SS	AO12																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO16-10-004	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO16-10-015	VAT-AO16_ATL01A12	SS	AO16																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO16-10-020	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2B, WTOX=NH3
7C-AO17-10-002	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO17-10-009	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2B, WTOX=NH3
7C-AO17-10-025	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO17-10-029	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO17-10-031	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO17-10-045	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO17-10-047	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO17-10-053	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO17-10-059	VAT-AO17_ATL01A12	SS	AO17																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO22-10-008	VAT-AO22_ATL01A12	SS	AO22																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO22-10-024	VAT-AO22_ATL01A12	SS	AO22																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO22-10-028	VAT-AO22_ATL01A12	SS	AO22																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO22-10-036	VAT-AO22_ATL01A12	SS	AO22																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO22-10-040	VAT-AO22_ATL01A12	SS	AO22																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO22-10-056	VAT-AO22_ATL01A12	SS	AO22																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO22-10-060	VAT-AO22_ATL01A12	SS	AO22																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO22-10-072	VAT-AO22_ATL01A12	SS	AO22																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO22-10-088	VAT-AO22_ATL01A12	SS	AO22																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO23-10-087	VAT-AO24_ATL01A12	SS	AO24																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO24-10-011	VAT-AO24_ATL01A12	SS	AO24																																		10 NS OCEANIC Benthic ProbMon = 2B, WTOX=NH3
7C-AO24-10-014	VAT-AO24_ATL01A12	SS	AO24																																		10 NS OCEANIC Benthic ProbMon = 2B, WTOX=NH3
7C-AO24-10-026	VAT-AO24_ATL01A12	SS	AO24																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO24-10-027	VAT-AO24_ATL01A12	SS	AO24																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO24-10-042	VAT-AO24_ATL01A12	SS	AO24																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7C-AO24-10-066	VAT-AO24_ATL01A12	SS	AO24																																		10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7C-AO24-10-090	VAT-AO24_ATL01A12	SS	AO24																																		10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7CASG000.06	VAT-D01E_ASC01A06	C2,B	AO03				0	1	IN	0	1	IN				0	1	IN												FS							11 C2 Benthic ProbMon
7-CAV001.62	VAP-C03R_CAV01A02	A,B	CB10	0	24	S	0	24	S	0	24	S	2	22	S																IN							2013 benthics
7-CCH000.43	VAT-C16E_CCH01A04	A	CB46					35	IM	0	35	S				1	32	O																				CB7PH
7CHT-ASSA13-ASIS	VAT-D01E_TMC01A08	NONA	AO03				1	58	O	0	63	S																										Assateague Island National Seashore Station
7CHT-ASSA9-ASIS	VAT-D01E_CHT01A08	NONA	AO02				1	45	S	0	53	S																										Assateague Island National Seashore Station
7CLGB001.74	VAT-D03E_ZZZ01A00	C2,B	AO10				0	2	IN	0	2	IN				0	1	IN	0	S										J							11 C2 Benthic ProbMon
7CMAC001.86	VAT-D04E_ZZZ01A00	C2,B	AO14				0	5	IN	0	5	IN				0	1	IN												J							13 C2 Benthic ProbMon
7CMAG000.74	VAT-D06E_ZZZ01A00	C2,B	AO21				0	4	IN	0	4	IN				0	1	IN												J							14 C2 Benthic ProbMon
7CMAG001.24	VAT-D06E_ZZZ01A00	C2,B	AO21				0	3	IN	0	3	IN				0	1	IN												J							13 C2 Benthic ProbMon
7CMAG002.57	VAT-D06E_MAG02A08	C2,B	AO21				0	2	IN	0	2	IN				0	1	IN												FS							14 C2 Benthic ProbMon
7CMAG003.68	VAT-D06E_MAG02A08	C2,B	AO21				0	2	IN	0	2	IN				0	1	IN												FS							13 C2 Benthic ProbMon ,
7CMAG006.85	VAT-D06E_MAG02A08	C2,B	AO21				0	2	IN	0	2	IN				0	1	IN	0	IN	0	IN								FS							11 C2 Benthic ProbMon, WTOX=NH3
7CMHC006.30	VAT-D06E_ZZZ01A00	C2,B	AO18				0	8	IN	0	8	IN				0	1	IN	0	IN	0	IN								J							11 C2 Benthic ProbMon, WTOX=NH3
7CMHC006.62	VAT-D06E_SSC01A12	C2,B	AO18				0	7	IN	0	7	IN				0	1	IN			0	IN								FS							12 C2 Benthic ProbMon, WTOX=NH3
7CMHC006.82	VAT-D06E_SSC01A12	C2,B	AO18				0	3	IN	0	3	IN				0	1	IN												FS							14 C2 Benthic ProbMon
7-CMS000.12	VAP-C01R_CMS01A00	A,TM,SS	CB02	0	12	S	0	12	S	1	12	S																									No new data since 2012 cycle
7-CMS002.00	VAP-C01R_CMS01A00	B,SS	CB02	0	14	S	3	14	IM	2	14	IM	2	12	IM															FS							2009 benthics; no new data since 2012 cycle
7CMSQ000.65	VAT-D01E_CHT01A08	C2,B	AO04				0	4	IN	0	4	IN				0	1	IN												FS							13 C2 Benthic ProbMon
7-CNY000.38	VAP-C05R_CNY01A10	TM	CB14	0	6	S	0	6	S	0	6	S	0	6	S																						No new data since 2012 cycle
7-CNY002.21	VAP-C05R_CNY01A10	TM	CB14	0	6	S	1	6	IN	1	6	IN	1	6	IN																						No new data since 2012 cycle
7-COC000.27	VAP-C01E_COC04B10	A,TR	CB03		24	NA		24		0	24	S				0	24	S																	24		No data since 2014 cycle
7-COC001.61	VAP-C01E_COC01A98	A,TR	CB03		36	NA		36		0	36	S				1	36	S																	36		Trend Station
7CQSC000.88	VAT-D01E_QSC01A08	C2,B	AO04				0	3	IN	0	3	IN				0	1	IN												FS							13 C2 Benthic ProbMon
7CQSC001.23	VAT-D01E_QSC01A08	C2,B	AO04				0	8	IN	0	8	IN				0	1	IN												J							13 C2 Benthic ProbMon
7CQSC002.02	VAT-D01E_QSC01A08	C2,B	AO04				0	6	IN	0	6	IN				0	1	IN			0	IN								J							12 C2 Benthic ProbMon, WTOX=NH3
7-CRY000.59	VAT-C08E_CRY01A00	A,TR	CB25					27	IM	0	27	S				0	26	S																			WTOX=NH3, LYNPH
7CSHC000.13	VAT-D03E_SHC01A16	C2,B	AO09				0	2	IN	0	2	IN																		FS							14 C2 Benthic ProbMon
7CSID002.98	VAT-D04E_SID01A10	C2,B	AO13				0	3	IN	0	3	IN				0	1	IN												FS							13 C2 Benthic ProbMon
7CSID003.83	VAT-D04E_ZZZ01A00	C2,B	AO13				0	7	IN	0	7	IN				0	1	IN	0	S										J							11 C2 Benthic ProbMon
7CSLP000.38	VAT-D04E_SLP01A08	C2,B	AO13				0	2	IN	0	2	IN				0	1	IN	0	S										FS							11 C2 Benthic ProbMon

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
7CSSC006.36	VAT-D06E_SSC01A12	C2,B	AO19				0	7	IN	0	7	IN				0	1	IN													FS							13 C2 Benthic ProbMon
7CUPS000.67	VAT-D04E_UPS01A06	C2,B	AO13				0	1	IN	0	1	IN				0	1	IN													FS							14 C2 Benthic ProbMon
7CUPS001.67	VAT-D04E_UPS01A06	C2,B	AO13				0	1	IN	0	1	IN				0	1	IN			0	IN									J							12 C2 Benthic ProbMon, WTOX=NH3
7-CUS004.08	VAT-D03R_CUS01A16	A,B	AO11																												IM							Benthic VCPMI IM [2013: S = 17.5 F= 15.5]
7CWAI002.57	VAT-D03E_WAI01A08	C2,B	AO11				0	5	IN	0	5	IN				0	1	IN	0	S											J							11 C2 Benthic ProbMon
7D-AO25-10-016	VAT-AO25_ATL01A08	SS	AO25																																			10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7D-AO25-10-032	VAT-AO25_ATL01A08	SS	AO25																																			10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7D-AO25-10-071	VAT-AO25_ATL01A08	SS	AO25																																			10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7D-AO25-10-080	VAT-AO26_ATL01A12	SS	AO26																																			10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7D-AO26-10-007	VAT-AO26_ATL01A12	SS	AO26																																			10 NS OCEANIC Benthic ProbMon = 2A, WTOX=NH3
7D-AO26-10-023	VAT-AO26_ATL01A12	SS	AO26																																			10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7D-AO26-10-048	VAT-AO26_ATL01A12	SS	AO26																																			10 NS OCEANIC Benthic ProbMon = 3B, WTOX=NH3
7-DEP000.24	VAT-C10E_DEP03A08	A,B	CB38					3	IM	0	3	IN				0	1	IN													FS							09 C2 Benthic ProbMon, CB7PH, WTOX=NH3. CB7PH
7-DEP001.38	VAT-C10E_DEP01A06	A	CB38					24	IM	0	24	S				4	21	IM																				CB7PH
7-DGN004.99	VAP-C02R_DGN01A06	SS	CB06	0	2	S	0	2	S	2	2	IM	1	2	IN						0	S																No new data since 2012 cycle
7-DGN005.03	VAP-C02R_DGN01A06	SS	CB06	0	2	S	0	2	S	2	2	IM	1	2	IN						0	S																No new data since 2012 cycle
7-DIV-15-11-DCA	VAP-C01E_DIV01B12	CMON	CB04		1	NA		1		0	1	W																										Dividing Creek Association - Level 3 except E. coli; no new data since 2012 cycle
7-DIV-15-14-DCA	VAP-C01E_DIV01B12	CMON	CB04		36	NA		36		0	36	S		34	NA																						Dividing Creek Association - Level 3 except E. coli
7-DIV-15-16-DCA	VAP-C01E_DIV01B12	CMON	CB04		43	NA		42		0	43	S		43	NA																						Dividing Creek Association - Level 3 except E. coli
7-DIV-15-17-DCA	VAP-C01E_DIV01B12	CMON	CB04		43	NA		42		0	42	S		43	NA																						Dividing Creek Association - Level 3 except E. coli
7-DIV-15-18-DCA	VAP-C01E_DIV01A98	CMON	CB04		43	NA		42		2	43	S		43	NA																						Dividing Creek Association - Level 3 except E. coli
7-DIV-15-19-DCA	VAP-C01E_DIV01A98	CMON	CB04		43	NA		43		0	43	S		43	NA																						Dividing Creek Association - Level 3 except E. coli
7-DIV-15-9-DCA	VAP-C01E_DIV03A00	CMON	CB04		19	NA		19		0	19	S		19	NA																						Dividing Creek Association - Level 3 except E. coli
7-DIV-1-DCA	VAP-C01E_DIV01A98	CMON	CB04		32	NA		30		0	32	S		32	NA																						Dividing Creek Association - Level 3 except E. coli
7-DIV-3-14-DCA	VAP-C01E_DIV03A00	CMON	CB04		17	NA		17		0	17	S		17	NA																						Dividing Creek Association - Level 3 except E. coli
7-DRN003.40	VAP-C02E_DRN01A02	A,SS,TM	CB09		11	NA		11		0	12	S				1	11	S																				No new data since 2012 cycle
7-DRN010.48	VAP-C02R_DRN01A98	A,CB,TR,TM,SS	CB09	0	89	S	13	88	IM	7	90	S	11	59	IM						0	S																Trend station - increasing pH
7-DRN015.51	VAP-C02R_DRN02A04	A	CB08	0	11	S	3	11	IM	0	12	S	1	12	S																							No new data since 2012 cycle
7-DRN024.19	VAP-C02R_DRN02A04	A	CB06	0	23	S	11	23	IM	6	24	IM	2	24	S																							No new data since 2012 cycle
7-DYM003.52	VAP-C01R_DYM01A14	B,A	CB05	0	2	S	0	2	S	0	2	S																			IM							2011 benthics; no data since 2014 cycle
7-DYM-D1-FCM	VAP-C01E_DYM01A98	CMON	CB05											17	NA																						Four Creek Monitors - level II E. coli
7-DYM-D4-FCM	VAP-C01E_DYM02A00	CMON	CB05											3	NA																						Four Creek Monitors - level II E. coli
7-EBL000.01	VAT-C08E_EBL02A08	A	CB25					28	IM	0	28	S				0	27	S																				WTOX=NH3, LYNPH
7-EBL001.15	VAT-C08E_EBL01B10	A	CB25					3	IM	0	3	S				1	3	O																				WTOX=NH3, LYNPH
7-EBL002.54	VAT-C08E_EBL01A06	A,C	CB25					25	IM	0	25	S				2	23	O													IM							08-IM FTox PCBs-08 Gizzard Shad & Croaker; OE, FT_Met-As,Pb Blue Crab, Gizzard Shad; WTOX=NHx; LYNPH
7-EST002.75	VAP-C04E_EST02A00	A	CB17		13	NA		13		0	13	S				0	12	S	0	IN																12		2013 metals
7-EST008.71	VAP-C04R_EST01A12	A	CB17	0	12	S	4	12	IM	8	12	IM	2	12	IM				1	O																		high salinity and conductivity readings indicate occasional tidal influence; water metals sampled 5 times 2009-2010 - selenium violated acute in 2010 (HH okay); no new data since 2012 cycle
7-EXE000.81	VAP-C02R_EXE01A06	A	CB07	0	12	S	5	12	IM	0	12	S	2	12	IM																							
7-FII000.64	VAT-D06E_FII01A16	C2	AO21				0	4	IN	0	4	IN				0	1	IN																				
7-FLL002.46	VAT-D03E_FLL01A08	A	AO10				4	36	IM	0	36	S				4	34	IM																				
7-FNC002.43	VAT-D03E_FNC01A04	A	AO11				1	11	O	0	11	S				7	11	IM																				
7-FOX002.49	VAP-C05R_FOX01A00	A,TM	CB14	0	6	S	0	6	S	0	6	S	0	6	S																							No new data since 2012 cycle
7-FOX003.22	VAP-C05R_FOX01A00	TM	CB14	0	6	S	0	6	S	0	6	S	2	6	IM																							Horses and cattle between 7-CNY000.38 and 7-FOX003.22; no new data since 2012 cycle
7-FOX004.68	VAP-C05R_FOX01A00	TM	CB14	0	6	S	0	6	S	0	6	S	1	6	IN																							No new data since 2012 cycle
7-FOX006.56	VAP-C05R_FOX01A00	TM	CB14	0	6	S	0	6	S	0	6	S	0	6	S																							No new data since 2012 cycle
7-FRB001.94	VAT-D04R_FRB01A12	A,B	AO14				0	2	S	0	2	S																			IM							VCPMI IM [2010: S=24.9 F=38.8 2013: F=57.0 2014: S = 18.3]
7-GAR001.80	VAT-D03E_GAR01A04	A	AO09				5	36	IM	0	36	S				3	35	O																				
7-GAR006.01	VAT-D03R_GAR01A02	A,B	AO09	0	2	IN	0	2	IN	0	2	IN																			FS							VCPMI FS [2010: S=21.4, F=51.2 2012: F=56.5 2013: F=58.8 2014: S= 21.7]
7-GMA000.39	VAT-D04E_ZZZ01A00	A,B	AO15				0	5	IN	0	5	IN				0	1	IN													FS							09 C2 Benthic ProbMon, Sed Tox-OE-Lindane
7-GRS002.29	VAT-D04R_GRS01A00	A,B	AO14	0	2	S	0	2	S	0	2	S																			FS							VCPMI FS [2009: S=27.5, F=70.6] 2014 Delist
7-GWR001.68	VAP-C01E_GWR03A06	C2,B	CB02		7	NA		7		0	7	W				0	1	W	0	IN	0	IN	0	S	0	S					J				1		1 sample event; WOE - 2009, Category 3B, scenario 7; no new data since 2012 cycle
7-GWR004.85	VAP-C01E_GWR02A00	A	CB02		12	NA		12		0	12	S				0	12	S																		12		No data since 2014 cycle
7-GWR008.41	VAP-C01E_GWR01A98	C2,B	CB02		4	NA		4		0	4	W				0	1	W	0	IN	0	IN	0	S	0	S					FS				3		One sample event; WOE - 2009 Category 2A, HM-M scenario 2; no new data since 2012 cycle
7-GWR008.89	VAP-C01E_GWR01A98	A	CB02		11	NA		11		0	11	S				1	11	S																		12		
7GWR-GW1-ALL	VAP-C01E_BMS01A12	CMON	CB02		39	NA		38		0	11	S																										ACB - Level 3; no new data since 2014 cycle
7-GWR-GW6-ALL	VAP-C01E_GWR01A98	CMON	CB02		1	NA		1		0	1	W																										ACB - level 3 temp and DO; level 2 pH; no new data since 2012 cycle
7-HAH002.96	VAP-C04E_HAH03A06	A,TM	CB18		12	NA		12		0	12	S				0	12	S																		12		No data since 2014 cycle
7-HEN-4-10-DCA	VAP-C01E_HEN01A00	CMON	CB05		22	NA		22		0	22	S		21	NA																						Dividing Creek Association - level 3 except E. coli
7-HEN-W21-CGAF	VAP-C01E_HEN02A14	CMON	CB05		4	NA		4		0	4	S																										Coast Guard Auxiliary Flotilla 33 - level 3; no data since 2014 cycle

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
7-HLD002.67	VAT-C10E_HLD01A06	A	CB32					37	O	0	37	S				26	35	IM																			WTOX=NH3, POCOH
7-HLT002.08	VAT-D05R_HLT01A04	A	AO15	0	5	S	0	5	S	0	5	S	2	5	IM																						
7-HRB000.54	VAP-C01E_HRB01A12	SS	CB02		12	NA		12		0	12	S				7	12	IM																			No new data since 2012 cycle
7-HUG001.24	VAT-C14E_HUG02A00	A	CB45					35	O	0	35	S				1	33	O																			CB7PH
7-HUN001.88	VAT-C10E_HUN01A00	A	CB36					35	S	0	35	S				10	35	IM																			POCMH
7-IND002.26	VAP-C01E_IND01A98	A,TR	CB05		36	NA		36		0	36	S				8	35	IM																	36		
7-IND-I1-FCM	VAP-C01E_IND01A98	CMON	CB05		5	NA		5		0	4	S		18	NA																						Four Creek Monitors - level II E. coli, Level III temp, pH, DO
7-IND-I2-FCM	VAP-C01E_IND01C10	CMON	CB05		5	NA		5		0	4	S		17	NA																						Four Creek Monitors - level II E. coli, Level III temp, pH, DO
7-IND-I3-FCM	VAP-C01E_IND01C10	CMON	CB05		3	NA		3		0	3	S		15	NA																						Four Creek Monitors - level II E. coli, Level III temp, pH, DO
7-IND-I4-FCM	VAP-C01E_IND03A00	CMON	CB05		1	NA		1						14	NA																						Four Creek Monitors - level II E. coli; Level III temp and DO
7-IND-W22-CGAF	VAP-C01E_IND03A00	CMON	CB05		8	NA		8		0	8	S																									Coast Guard Auxiliary Flotilla 33 - level III; no data since 2014 cycle
7-IND-W23-CGAF	VAP-C01E_IND03A00	CMON	CB05		8	NA		8		0	8	S																									Coast Guard Auxiliary Flotilla 33 - level III; no data since 2014 cycle
7-IND-W24-CGAF	VAP-C01E_IND01C10	CMON	CB05		8	NA		8		0	8	S																									Coast Guard Auxiliary Flotilla 33 - level III; no data since 2014 cycle
7-JAR-15-3A-DCA	VAP-C01E_JAR02A10	CMON	CB04		36	NA		35		0	36	S		35	NA																						Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
7-JAR-15-3B-DCA	VAP-C01E_JAR01B08	CMON	CB04		44	NA		43		1	44	S		43	NA																						Dividing Creek Association - level 3 except E. coli
7-JAR-15-3-DCA	VAP-C01E_JAR02A10	CMON	CB04		33	NA		32		0	33	S		32	NA																						Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
7-JAR-15-4A-DCA	VAP-C01E_JAR01A02	CMON	CB04		44	NA		43		0	44	S		42	NA																						Dividing Creek Association - level 3 except E. coli
7-JOH-D6-FCM	VAP-C01E_JOH01A06	CMON	CB05											19	NA																						Four Creek Monitors - level II E. coli
7-JOY000.59	VAT-C11R_JOY01A08	A	CB39	0	10	S	0	10	S	0	10	S	2	9	IM																						
7-KNS000.40	VAT-C15E_KNS03A08	A	CB46					35	IM	0	35	S				2	32	O																			CB7PH
7-LAE000.20	VAT-D07E_LAE01A06	A	AO23	0	6	S	0	6	S	0	6	S				0	6	S																			
7LAE-7-VAMSC	VAT-D07E_LAE01A06	CMON	AO23				0	13	S	0	43	S																										Virginia Aquarium and Marine Science Center
7-LAI000.04	VAT-D07E_LAI02A06	A	AO23	0	6	S	0	6	S	0	6	S				0	6	S																			
7-LAI000.18	VAT-D07E_LAI02A06	A	AO23	0	6	S	0	6	S	0	6	S				1	6	O																			
7-LAI000.56	VAT-D07E_LAI01A06	A	AO23	0	6	S	0	6	S	0	6	S				0	6	S																			
7LAI-3-VAMSC	VAT-D07E_LAI01A06	CMON	AO23				0	14	S	0	48	S																										Virginia Aquarium and Marine Science Center
7LAI-4-VAMSC	VAT-D07E_LAI01A06	CMON	AO23				0	14	S	0	43	S																										Virginia Aquarium and Marine Science Center
7LAI-5-VAMSC	VAT-D07E_LAI02A06	CMON	AO23				0	15	S	0	49	S																										Virginia Aquarium and Marine Science Center
7LAI-6-VAMSC	VAT-D07E_LAI01A06	CMON	AO23				0	14	S	0	43	S																										Virginia Aquarium and Marine Science Center
7LAJ-J1-CBCL	VAT-C08L_LAJ01A14	CMON	CB25	0	25	IN				11	25	IN/O	0	25	IN																						Lake Joyce- Non 187, Chesapeake Beach Civic League
7LAJ-J2-CBCL	VAT-C08L_LAJ01A14	CMON	CB25	0	25	IN				12	25	IN/O	1	25	IN/O																						Lake Joyce- Non 187, Chesapeake Beach Civic League
7LAJ-J3-CBCL	VAT-C08L_LAJ01A14	CMON	CB25	0	24	IN				9	24	IN/O	0	24	IN																						Lake Joyce- Non 187, Chesapeake Beach Civic League
7LAJ-J4-CBCL	VAT-C08L_LAJ01A14	CMON	CB25	0	24	IN				12	24	IN/O	0	24	IN																						Lake Joyce- Non 187, Chesapeake Beach Civic League
7LAJ-J5-CBCL	VAT-C08L_LAJ01A14	CMON	CB25	0	24	IN				10	24	IN/O	0	24	IN																						Lake Joyce- Non 187, Chesapeake Beach Civic League
7-LAS000.06	VAT-C08L_LAS01A08	L	CB26	0	14	S	0	14	IM	0	14	S	0	7	O						0	S										1	1	O	1	1	O	Lake Smith pooled nutrient data: TP & Chla (1 viol / 1 obs) IM RETAINED, 2011. Lake Smith pooled DO and pH data: DO (1 viol / 42 obs) IM RETAINED; pH (0 viol / 37 obs) S. Bacteria 2008 drop off = IM for 2011 data; Water Toxics - NH3=S
7-LAS001.03	VAT-C08L_LAS01A08	L	CB26	0	12	S	0	10	IM	0	12	S	2	6	O						0	S															Lake Smith pooled DO and pH data: DO (1 viol / 42 obs) IM RETAINED; pH (0 viol / 37 obs) S. Bacteria 2008 drop off = IM for 2011 data however only OE since no new data; Water Toxics - NH3=S
7-LAW000.04	VAT-C08L_LAW01A08	L	CB26	0	18	S	1	18	IM	0	18	S	0	6	S																			1	1	IM	1	1	IM	Lake Whitehurst pooled nutrient data: TP & Chla (1 viol / 1 obs) IM, 2011 IM RETAINED. Lake Whitehurst pooled DO and pH data: DO (13 viol / 93 obs) IM; pH (0 viol / 78 obs) S. Water Toxics - NH3=S
7-LAW001.24	VAT-C08L_LAW01A08	L	CB26	0	12	S	2	12	IM	0	12	S	0	6	S																						Lake Whitehurst pooled DO and pH data: DO (13 viol / 93 obs) IM; pH (0 viol / 78 obs) S. Water Toxics - NH3=S
7LKB-B2-CBCL	VAT-C08L_LKB01A14	CMON	CB26	0	11	IN				6	12	IN/O	1	12	IN/O																						Lake Bradford- Non 187 , Chesapeake Beach Civic League
7LKB-B4-CBCL	VAT-C08L_LKB01A14	CMON	CB26	0	11	IN				5	12	IN/O	1	12	IN/O																						Lake Bradford- Non 187 , Chesapeake Beach Civic League
7LKB-B5-CBCL	VAT-C08L_LKB01A14	CMON	CB26	0	11	IN				3	12	IN/O	1	12	IN/O																						Lake Bradford- Non 187 , Chesapeake Beach Civic League
7LKB-B6-CBCL	VAT-C08L_LKB01A14	CMON	CB26	0	11	IN				3	12	IN/O	1	12	IN/O																						Lake Bradford- Non 187 , Chesapeake Beach Civic League
7-LKN001.19	VAT-C08E_LKN02A10	A,TR	CB25					3	IM	0	3	S				0	3	S																			WTOX=NH3, LYNPH
7-LKN002.22	VAT-C08E_LKN02A10	A,B	CB25					5	IM	0	5	IN				0	1	IN													J						09 C2 Benthic ProbMon, LYNPH
7-LKN002.77	VAT-C08E_LKN01A00	A,C	CB25					27	IM	0	27	S				0	26	S										IM									08-IM FTox PCBs Spot, Gizzard Shad; WTOX=NHx, LYNPH, WTOX=NH3
7-LMB000.57	VAT-C10R_LMB01A16	A,B	CB36	0	2	S	0	2	S	0	2	S																		FS							VCPMI FS [2011: S=28.4, F=36.3 2013: F=52.1 2014: S= 29.2]
7-LNC000.68	VAT-C08E_LNC02A12	A	CB25					27	IM	0	27	S				0	26	S																			WTOX=NH3, LYNPH
7-LOB001.79	VAT-C08E_LOB01A00	A	CB25					36	IM	0	36	S				25	33	IM																			WTOX=NH3, LYNPH
7-LRC-15-12-DCA	VAP-C01E_LRC01A12	CMON	CB04		27	NA		27		1	27	S		26	NA																						Dividing Creek Association - Level 3 except E. coli
7-LRC-15-13A-DCA	VAP-C01E_LRC01A12	CMON	CB04		14	NA		14		0	14	S		13	NA																						Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
7-LRC-15-13B-DCA	VAP-C01E_LRC01A12	CMON	CB04		39	NA		39		0	39	S		36	NA																						Dividing Creek Association - Level 3 except E. coli
7-LRC-15-13-DCA	VAP-C01E_LRC01A12	CMON	CB04		36	NA		36		0	36	S		34	NA																						Dividing Creek Association - Level 3 except E. coli
7-LRC-4-DCA	VAP-C01R_ZZZ01C14	CMON	CB04										0	1	W																						Dividing Creek Association - level 2; no new data since 2012 cycle

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
7-LRC-5-DCA	VAP-C01R_ZZZ01C14	CMON	CB04										1	1	W																							Dividing Creek Association - level 2; no new data since 2012 cycle
7-LTM000.80	VAT-D01E_LTM02A04	A,C	AO04				5	35	IM	0	35	S				10	35	IM											S									08-OE, FT_Met-As Spot, Sea Bass, Blue Crab, Oyster; OE-Pb Mummichog
7-LTR000.04	VAT-C08L_LTR01A08	L	CB26	0	34	S	3	34	S	6	34	S	0	13	S						0	S											2	2	IM			Little Creek pooled nutrient data: Chla (2 viol / 2 obs) IM, 2011, 2014. Little Creek pooled DO and pH data: DO (7 viol / 78 obs) S - DELIST; pH (6 viol / 69 obs) S. Water Toxics - NH3=S
7-LTR000.95	VAT-C08L_LTR01A08	L	CB26	0	26	S	2	26	S	0	26	S	1	13	S						0	S																Little Creek pooled DO and pH data: DO (7 viol / 78 obs) S - DELIST; pH (6 viol / 69 obs) S. Water Toxics - NH3=S
7-LYN000.03	VAT-C08E_LYN01A06	A	CB25					4	IM	0	4	S				0	3	S																				WTOX=NH3, LYNPH
7-LYN001.50	VAT-C08E_LYN01A06	A,B	CB25					1	IM	0	1	IN				0	1	IN													J							07 C2 Benthic ProbMon, WTOX=NH3, LYNPH
7LYO-13-PCE	VAT-C07E_LYO01A06	CMON	CB21							0	2	S		2	NA																							Poquoson Citizens for the Environment, E.coli data not applicable to estuarine, MOBPH
7LYO-6.1-PCE	VAT-C07R_ZZZ01B14	CMON	CB21							0	11	S	8	11	IN/O																							Poquoson Citizens for the Environment, E.coli data insufficient based on Level II Citizen data
7LYO-6.6-PCE	VAT-C07R_ZZZ01B14	CMON	CB21							0	4	S	4	4	IN/O																							Poquoson Citizens for the Environment, E.coli data insufficient based on Level II Citizen data
7LYO-6.7-PCE	VAT-C07R_ZZZ01B14	CMON	CB21							0	2	S	2	2	IN/O																							Poquoson Citizens for the Environment, E.coli data insufficient based on Level II Citizen data
7LYO-6B-PCE	VAT-C07R_ZZZ01B14	CMON	CB21							0	2	S		2	IN																							Poquoson Citizens for the Environment, E.coli data insufficient based on Level II Citizen data
7LYO-6d-PCE	VAT-C07R_ZZZ01B14	CMON	CB21							0	2	S	2	2	IN/O																							Poquoson Citizens for the Environment, E.coli data insufficient based on Level II Citizen data
7LYO-6-PCE	VAT-C07E_LYO01A06	CMON	CB21							0	36	S		36	NA																							Poquoson Citizens for the Environment, E.coli data not applicable to estuarine. MOBPH
7-MAC000.42	VAT-D04E_ZZZ01A00	C2,B	AO14				0	5	IN	0	5	IN				0	1	IN			0	S									FS							09 C2 Benthic ProbMon, WTOX=NH3
7-MAG002.87	VAT-D06E_MAG02A08	C2,B	AO21				0	2	IN	0	2	IN				0	1	IN	0	IN	0	IN									FS							09 C2 Benthic ProbMon, WTOX=NH3
7-MAG004.06	VAT-D06E_MAG01A04	A	AO21				2	5	IM	0	5	S				1	5	O																				
7-MAG005.52	VAT-D06E_MAG02A08	C2,B	AO21				0	2	IN	0	2	IN							0	S											FS							09 C2 Benthic ProbMon
7-MAG005.60	VAT-D06E_MAG02A08	C2,B	AO21				0	2	IN	0	2	IN				0	1	IN	0	S											FS							09 C2 Benthic ProbMon
7-MCR002.00	VAT-D06R_MCR01A00	A	AO21	0	23	S	12	23	IM	4	23	IM	2	22	O																							
7-MES001.34	VAT-C10E_MES03A06	A,CB-B	CB35					5	S	0	5	S				1	5	IM																				POCMH BIBI = 1.67
7-MIL005.19	VAP-C01E_MIL01A98	A	CB04		12	NA		12		0	12	S				5	12	IM																				Previously called riverine; tidal during high tide; no new data since 2012 cycle
7-MLF000.52	VAP-C04E_MLF03A00	C2,B	CB12		1	NA		1		0	1	W				0	1	W	0	IN	0	IN	0	S	0	S					FS				1			WOE - 2009: Category 2A, HM-S scenario 2; no new data since 2012 cycle
7-MLF002.40	VAP-C04E_MLF03A00	A,TR	CB12		37	NA		37		0	37	S				1	35	S																	35			
7-MLF004.23	VAP-C04E_MLF04A06	C2,B	CB12		7	NA		7		0	7	W				0	1	W	0	IN	0	IN	0	S	0	S					J				3			1 sample event; WOE - 2009: category 3B, HM-M scenario 5; no new data since 2012 cycle
7-MUD000.20	VAT-C10E_MUD03A08	A,B	CB36					1	S	0	1	IN				0	1	IN													FS							09 C2 Benthic ProbMon, WTOX=NH3, POCMH
7-NAN001.09	VAT-C13E_NAN02A06	A,B	CB42					2	IM	0	2	IN				0	1	IN													J							09 C2 Benthic ProbMon, WTOX=NH3, CB7PH
7-NCB000.97	VAT-D06R_NCB01A04	A	AO18	0	6	S	2	6	IM	1	6	O	3	5	IM																							
7-NEW001.92	VAT-C07E_NEW02A02	A	CB23					30	S	0	30	S				8	28	IM																				MOBPH, DO is delisted = 2C
7-NEW005.44	VAT-C07R_NEW01A06	A,SS	CB23	0	12	S	3	12	IM	0	12	S	6	12	IM																							
7NEW-11-SCC	VAT-C07R_ZZZ01C14	CMON	CB23										6	8	IN/O																							Southeast CARE Coalition
7-NOR006.38	VAP-C04E_NOR01B08	A	CB16		2	NA		2		0	2	S				0	2	S																		2		
7-NPC-15-16A-DCA	VAP-C01E_NPC01A16	CMON	CB04		43	NA		43		0	43	S		43	NA																							Dividing Creek Association - Level 3 except E. coli
7-NSS001.62	VAT-C13E_NSS02A06	A	CB44					35	IM	0	35	S				5	32	IM																				CB7PH
7-OCH003.82	VAT-C13E_OCH02A06	A	CB43					35	IM	0	35	S				1	32	O																				CB7PH
7-OCN004.96	VAT-C11E_OCN01A04	A	CB39					24	O	0	24	S				6	23	IM																				CB7PH
7-OHC-15-10B-DCA	VAP-C01E_OHC01A08	CMON	CB04		39	NA		39		1	39	S		36	NA																							Dividing Creek Association - level 3 except E. coli
7-OLD000.56	VAP-C05E_OLD01A12	C2,B	CB15		1	NA		1		0	1	W				0	1	W	0	IN	0	IN	0	S	0	S					FS				1			1 sample event; WOE - 2009: Category 2A, PH-M scenario 5; no new data since 2012 cycle
7-OWL000.01	VAT-D07E_OWL02A02	A	AO23	0	6	S	0	6	S	0	6	S				1	5	O																				
7-OWL000.77	VAT-D07E_OWL01A02	A,C	AO23	0	6	S	2	6	IM	0	6	S				2	6	IM													S							08-OE, FT_Met-As Oyster, Water Toxics = NH3
7OWL-1-VAMSC	VAT-D07E_OWL02A02	CMON	AO23				1	63	S	0	633	S																										Virginia Aquarium and Marine Science Center- pH and DO Level II and III data
7OWL-2-VAMSC	VAT-D07E_OWL01A02	CMON	AO23				5	9	IM	0	23	S																										Virginia Aquarium and Marine Science Center
7-OWP000.00	VAP-C01E_OWP01A98	PFWQ	CB03		1	NA		1		0	1	W																										No new data since 2012 cycle
7-OWP000.46	VAP-C01E_OWP02C12	PFWQ	CB03		1	NA		1		0	1	W				1	1	W			1	IN/O																No new data since 2012 cycle - ammonia
7-PAR001.20	VAT-D03E_PAR01A06	A	AO10				0	11	S	0	11	S				4	11	IM																				
7-PAR003.09	VAT-D03R_PAR01A00	A,B	AO10	0	36	S	0	36	S	0	36	S	24	33	IM																	IM							VCPMI IM [2012: S=8.0, F=14.42013: S=10.7 F=15.5 2014: F=18.0] WTOX=NH3
7-PAR004.35	VAT-D03R_PAR01A00	A,B	AO10	0	2	S	0	2	S	0	2	S																			IM							VCPMI IM [2009: S=1.9 F=10.5 2010: S=12.7 F= 19.1 2011: S=16.5 F= 12.5 2012: S=13.2, F=31.2 2013: S=19.4 F = 17.6 2014: F=18.8] WTOX=NH3
7-PET000.80	VAT-D02R_PET01A00	A,B	AO08	0	38	S	0	38	S	0	38	S	23	35	IM																IM							VCPMI IM [2010: S=9.0, F=20.2 2013: F=14.4] WTOX=NH3
7PLH-P1-CBCL	VAT-C08L_PLH01A14	CMON	CB26	2	22	IN/O				9	22	IN/O	1	22	IN/O																							Pleasure House Lake- Non 187 , Chesapeake Beach Civic League
7PLH-P2-CBCL	VAT-C08L_PLH01A14	CMON	CB26	2	22	IN/O				11	22	IN/O	1	22	IN/O																							Pleasure House Lake- Non 187 , Chesapeake Beach Civic League
7PLH-PHP-CBCL	VAT-C08L_PLH01A14	CMON	CB26	1	22	IN/O				11	22	IN/O	3	22	IN/O																							Pleasure House Lake- Non 187 , Chesapeake Beach Civic League

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Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
7-PNF001.98	VAT-D03R_PNF01A14	A,B	AO10	0	2	S	0	2	S	0	2	S																			IM							VCPMI IM [2011: S=39.4, F=10.0 2013: F=7.2 2014: S=16.4]
7-PNK003.72	VAP-C03E_PNK04C06	C2,B	CB11		7	NA		7		0	7	W				0	1	W	0	IN	0	IN	0	S	0	S					J				3		One sample event; WOE - 2009: Category 3B, HM-M scenario 5; no new data since 2012 cycle
7-PNK005.78	VAP-C03E_PNK03A00	A	CB11		11	NA		11		0	11	S				2	11	IM																		11		
7-PNK010.39	VAP-C03E_PNK02B08	A	CB10		12	NA		12		0	12	S				4	12	IM																		12		No data since 2014 cycle
7-PNK014.33	VAP-C03E_PNK01B14	A	CB10		12	NA		12		0	12	S				1	12	S																		11		No new data since 2012 cycle
7-PNK-DR-ACB	VAP-C03E_PNK01A98	CMON	CB10		34	NA		34		0	30	S																										ACB - Level 3; no data since 2014 cycle
7-PNT-15-6-DCA	VAP-C01E_PNT02A02	CMON	CB04		2	NA		2		0	2	S		2	NA																							Dividing Creek Association - level 3 except E. coli; no new data since 2012 cycle
7-PNT-15-7B-DCA	VAP-C01E_PNT02A02	CMON	CB04		10	NA		10		0	10	S		9	NA																							Dividing Creek Association - level 3 except E. coli; no new data since 2012 cycle
7-PNT-15-7-DCA	VAP-C01E_PNT02A02	CMON	CB04		16	NA		16		0	16	S		16	NA																							Dividing Creek Association - level 3 except E. coli
7-PNT-15-8B-DCA	VAP-C01E_PNT03A02	CMON	CB04		18	NA		18		0	18	S		17	NA																							Dividing Creek Association - level 3 except E. coli
7-PNT-3-10-DCA	VAP-C01E_PNT03A02	CMON	CB04		17	NA		16		0	17	S		17	NA																							Dividing Creek Association - level 3 except E. coli; prev 10A; no data since 2014 cycle
7-PNT-3-11-DCA	VAP-C01E_PNT03A02	CMON	CB04		33	NA		33		0	33	S		33	NA																							Dividing Creek Association - level 3 except E. coli
7-PNT-3-15-DCA	VAP-C01E_PNT02A02	CMON	CB04		33	NA		33		1	33	S		33	NA																							Dividing Creek Association - level 3 except E. coli
7-PNT-3-16-DCA	VAP-C01E_PNT02A02	CMON	CB04		17	NA		17		0	17	S		17	NA																							Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
7-PNT-3-8-DCA	VAP-C01E_PNT03A02	CMON	CB04		4	NA		3		0	4	S		5	NA																							Dividing Creek Association - level 3 except E. coli; no new data since 2012 cycle
7-PNT-3-9-DCA	VAP-C01E_PNT03A02	CMON	CB04		38	NA		38		0	38	S		39	NA																							Dividing Creek Association - level 3 except E. coli
7-PNT-4-12-DCA	VAP-C01E_PNT02B10	CMON	CB04		19	NA		19		0	19	S		18	NA																							Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
7-PNT-4-6A-DCA	VAP-C01E_PNT02A02	CMON	CB04		34	NA		34		0	34	S		33	NA																							Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
7-PNT-4-7A-DCA	VAP-C01E_PNT02A02	CMON	CB04		26	NA		26		0	26	S		25	NA																							Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
7-PNT-4-8A-DCA	VAP-C01E_PNT02A02	CMON	CB04		31	NA		31		0	30	S		30	NA																							Dividing Creek Association - level 3 except E. coli
7-PNT-4-8C-DCA	VAP-C01E_PNT02B10	CMON	CB04		1	NA		1		0	1	W		1	NA																							Dividing Creek Association - level 3 except E. coli; no new data since 2012 cycle
7-PNT-7-DCA	VAP-C01R_ZZZ01C14	CMON	CB04										1	1	W																							Dividing Creek Association - level 2; no new data since 2012 cycle
7-POQ004.12	VAT-C07E_POQ01A06	A	CB21					35	S	0	35	S				23	34	IM																				MOBPH, DO is delisted = 2C
7-POQ005.72	VAT-C07L_POQ01A04	L	CB21	0	81	S	9	51	IM	1	81	S	0	14	S						0	S													0	2	S	Harwood Mills pooled nutrient data: Chla (0 viol / 2 obs) S, 2010, 2013. Harwood Mills pooled DO and pH data: DO (13 viol / 90 obs) IM ; pH (1 viol / 120 obs) S. Water Toxics - NH3=S
7-POQ006.84	VAT-C07L_POQ01A04	A	CB21	0	39	S	4	39	IM	0	39	S	0	12	S						0	S																Harwood Mills pooled DO and pH data: DO (13 viol / 90 obs) IM ; pH (1 viol / 120 obs) S. Water Toxics - NH3=S
7-PRT001.30	VAT-D04E_PRT03A08	A,C,TR	AO14				2	35	O	0	35	S				2	29	O													O							08-OE PCB Trout
7-PUN002.12	VAT-C12E_PUN02A06	A	CB41					35	IM	0	35	S				4	36	IM																				CB7PH
7-PUT000.26	VAP-C04E_PUT01C10	A	CB17		12	NA		12		0	12	S				1	12	S																		12		No new data since 2012 cycle
7-QUE001.52	VAP-C04E_QUE01A98	A	CB12		12	NA		12		0	12	S				1	12	S																		11		No data since 2014 cycle
7-RBC002.06	VAT-D04E_RBC02A08	A	AO14				0	11	S	0	11	S				0	10	S																				
7-RBC003.87	VAT-D04R_RBC01A04	A,SS	AO14	0	16	S	5	16	IM	0	16	S	1	16	O																							
7ROB-11.1-PCE	VAT-C07E_ROB01A04	CMON	CB21							0	35	S		34	NA																							Poquoson Citizens for the Environment, E.coli data not applicable to estuarine. MOBPH
7ROB-11-PCE	VAT-C07E_ROB01A04	CMON	CB21							0	3	S		3	NA																							Poquoson Citizens for the Environment, E.coli data not applicable to estuarine. MOBPH
7-RSS001.40	VAT-D03R_RSS01A02	A,B	AO10	0	2	S	0	2	S	0	2	S																			IM							VCPMI IM [2014: F=26.4 2012: F=29.3, 2010: S=13.0, F=12.6] WTOX=NH3
7-RTT000.74	VAT-D03R_RTT01A12	A,B	AO11	0	2	S	0	2	S	0	2	S																			IM							VCPMI IM [2010: S=23.2, F=26.8 2013: F=31.6 2014: S=35.3]
7-SBB000.17	VAT-C10R_SBB01A00	A,B	CB32	0	37	S	0	37	S	0	37	S	21	33	IM																IM							VCPMI IM [2012: S=31, F=35.5 2013: S=23.3 F=43.5 2014: F=65.3] WTOX=NH3
7-SEN001.35	VAP-C06E_SEN02A06	A	CB19		12	NA		12		0	12	S				3	12	IM																		12		
7-SEN004.04	VAP-C06E_SEN01A02	TM	CB19		6	NA		6		0	6	S				2	6	IM																				Tidally influenced - upstream extent; previously mistakenly called riverine; no new data since 2012 cycle
7-SEN004.78	VAP-C06R_SEN01A00	TM	CB19	0	6	S	1	6	IN	0	6	S	2	6	IM																							No new data since 2012 cycle
7-SGT002.46	VAT-D01E_SGT01A04	A	AO02				0	5	S	0	5	S				3	5	IM																				
7-SMI000.40	VAT-D06E_SMI01A08	C2,B	AO21				0	1	IN	0	1	IN				0	1	IN	0	S											J							09 C2 Benthic ProbMon
7-STT002.92	VAP-C04E_STT01C14	A	CB12		12	NA		12		0	12	S				0	12	S																		12		No data since 2014 cycle
7-TAL000.80	VAT-D05R_TAL01A02	A	AO18	0	25	S	0	25	S	1	25	O	17	23	IM																							
7-TAY003.11	VAT-C12R_TAY01A04	A,B	CB41	0	2	S	0	2	S	0	2	S																			IM							VCPMI IM [2013: S=17.3 2010: S=13.9, F=7.9] CB7PH
7-TBS001.69	VAP-C01E_TBS01A98	A	CB05		12	NA		12		0	12	S				2	12	IM																		11		No new data since 2012 cycle
7-TBS-T1-FCM	VAP-C01E_TBS01A14	CMON	CB05											13	NA																							Four Creek Monitors - level II E. coli; no data since 2014 cycle
7-TBS-T2-FCM	VAP-C01E_TBS01B10	CMON	CB05											12	NA																							Four Creek Monitors - level II E. coli; no data since 2014 cycle
7-TBS-W26-CGAF	VAP-C01E_TBS02A00	CMON	CB05		5	NA		5		0	5	S																										Coast Guard Auxiliary Flotilla 33 - level 3; no data since 2014 cycle
7-THA000.76	VAT-C08E_THA01A02	A	CB25					36	IM	0	36	S				28	36	IM																				WTOX=NH3, LYNPH
7-THG000.36	VAT-C14E_THG02A06	A	CB45					35	O	0	35	S				1	33	O																				CB7PH
7-TLR000.75	VAT-C13R_TLR01A08	B,A	CB43	0	2	S	0	2	S	0	2	S																			IM							VCPMI IM [2010: S=11.9, F=9.7]
7-TOM001.73	VAT-D06R_TOM01A08	A	AO21	0	15	S	1	15	O	0	15	S	7	15	IM																							

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
7-UPS001.97	VAT-D04E_UPS01A06	A	AO13				2	23	O	0	23	S				2	23	O																			
7-WAI002.13	VAT-D03E_WAI01A08	A,B	AO11				0	1	IN	0	1	IN				0	1	IN			0	IN									J							09 C2 Benthic ProbMon, WTOX=NH3
7-WAR000.00	VAP-C05E_WAR02A02	C2,B	CB20		8	NA		8		0	8	W				0	1	W	0	IN	0	IN	0	S	0	S					FS				1		1 sample event; WOE - 2009: Category 2A, PH-S scenario 5; no new data since 2012 cycle
7-WAR005.77	VAP-C05E_WAR01B08	A	CB15		12	NA		12		0	12	S				0	12	S																	12		
7-WAR-DN-ALL	VAP-C05E_WAR01B08	CMON	CB15		8	NA		8		0	5	S																									ACB - Level 3 temp, DO & some pH; Level 2 additional pH; no data since 2014 cycle
7-WAS003.26	VAT-D03E_WAS01A08	A	AO11				1	5	O	0	5	S				1	5	O																			
7-WES000.62	VAT-C08E_WES02A06	A	CB25					29	IM	0	29	S				2	28	S																			WTOX=NH3, LYNPH
7-WES001.68	VAT-C08E_WES01B16	A,CB	CB25					4	IM	0	4	S				0	4	S																			WTOX=NH3, LYNPH
7-WES002.58	VAT-C08E_WES01A06	A	CB25					28	IM	0	28	S				3	27	IM																			WTOX=NH3, LYNPH
7WHH-10-PCE	VAT-C07E_WHH01A06	CMON	CB21							0	30	S		30	NA																						Poquoson Citizens for the Environment, E.coli data not applicable to estuarine. MOBPH
7WHH-12-PCE	VAT-C07E_WHH01A06	CMON	CB21							0	24	S		24	NA																						Poquoson Citizens for the Environment, E.coli data not applicable to estuarine. MOBPH
7WHH-1-PCE	VAT-C07E_WHH01A06	CMON	CB21							0	36	S		36	NA																						Poquoson Citizens for the Environment, E.coli data not applicable to estuarine waters. MOBPH
7WHH-2-PCE	VAT-C07E_WHH01A06	CMON	CB21							0	33	S		33	NA																						Poquoson Citizens for the Environment, E.coli data not applicable to estuarine. MOBPH
7WHH-3-PCE	VAT-C07E_WHH01A06	CMON	CB21							0	36	S		36	NA																						Poquoson Citizens for the Environment, E.coli data not applicable to estuarine. MOBPH
7WHH-4-PCE	VAT-C07E_WHH01A06	CMON	CB21							0	36	S		35	NA																						Poquoson Citizens for the Environment, E.coli data not applicable to estuarine. MOBPH
7WHH-5.1-PCE	VAT-C07E_WHH01A06	CMON	CB21							0	10	S		10	NA																						Poquoson Citizens for the Environment, E.coli data not applicable to estuarine. MOBPH
7WHH-5-PCE	VAT-C07E_WHH01A06	CMON	CB21							0	36	S		36	NA																						Poquoson Citizens for the Environment, E.coli data not applicable to estuarine waters. MOBPH
7-WIN000.88	VAP-C04E_WIN02B06	A	CB18		12	NA		12		0	12	S				0	12	S																	12		
7-XAE001.42	VAT-C09R_XAE01A00	A	CB31	0	36	S	13	36	IM	6	36	IM	10	35	IM																						WTOX= NH3
7-XAZ000.30	VAT-C10R_XAZ01A00	A,B	CB32	0	3	S	0	3	S	0	3	S																			IM							VCPMI IM [2012: S=21.9, F=37.0 2013: S=10.8 F=7.7 2014: F= 31.9] WTOX=NH3
7-XBO001.30	VAT-C08E_XBO01A00	A	CB25					6	IM	0	6	S				5	6	IM																			WTOX=NH3, LYNPH- TREND DEACTIVATED
7-XCY000.46	VAP-C01R_XCY01A00	TM,B	CB02	0	2	S	0	2	S	0	2	S																			FS							2009 benthics; no new data since 2012 cycle
7-XDB000.08	VAP-C01E_DIV01A98	A	CB04		24	NA		24		0	24	S				7	24	IM																	24		
7-XDE000.40	VAT-D03R_XDE01A02	B,A	AO10	0	2	S	0	2	S	0	2	S																			IM							VCPMI IM [2010: S=14.1, F=54.0 2012: F= 36.4 2014: F=50.4] WTOX=NH3
7-XDI000.88	VAT-D05R_XDI01A04	A,B	AO15	0	2	S	0	2	S	0	2	S																			IM							VCPMI IM [2009: S=8.6, F=48.4 2013: F=41.3 2014: S=25.4] WTOX=NH3
7-XEE000.58	VAP-C06E_XEE01A10	TM	CB19		6	NA		6		0	6	S				1	6	IN																			slight oily sheen on downstream side of one culvert pipe; previously called riverine by mistake - near tidal limit; no new data since 2012 cycle
7-XEF001.35	VAP-C05R_XEF01A10	TM	CB14	0	6	S	0	6	S	0	6	S	0	6	S																						No new data since 2012 cycle
7-XEG000.27	VAP-C05R_XEG01A10	TM	CB14	0	6	S	0	6	S	0	6	S	1	6	IN																						No new data since 2012 cycle
7-XEP000.08	VAP-C04E_BRN01A04	PFWQ	CB12		1	NA		1		0	1	W				1	1	W			1	IN/O													1		acute ammonia violation; fish kill; no new data since 2012 cycle
7-XEQ000.85	VAP-C02R_XEQ01A14	FPM,B	CB06	0	2	S	0	2	S	1	2	IN	0	1	W				0	IN	0	S	0	S							IN							2011 probmon
7-XER001.03	VAT-D04R_XER01A14	B,A	AO15	0	2	S	1	2	O	1	2	O																			IM							VCPMI IM [2011: S=20.9, F=9.0]
7-XES-15-15-DCA	VAP-C01E_XES01A12	CMON	CB04		40	NA		39		0	40	S		38	NA																						Dividing Creek Association - Level 3 except E. coli
7-XES-2-DCA	VAP-C01R_ZZZ01C14	CMON	CB04										0	1	W																						Dividing Creek Association - level 2; no new data since 2012 cycle
7-XET-15-4B-DCA	VAP-C01E_JAR02A10	CMON	CB04		32	NA		31		0	32	S		32	NA																						Dividing Creek Association - level 3 except E. coli
7-XET-15-4-DCA	VAP-C01E_JAR02A10	CMON	CB04		36	NA		35		0	36	S		35	NA																						Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
7-XET-4-4A-DCA	VAP-C01E_JAR02A10	CMON	CB04		36	NA		36		0	36	S		35	NA																						Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
7-XEU-15-8A-DCA	VAP-C01E_XEU01A02	CMON	CB04		11	NA		11		0	11	S		10	NA																						Dividing Creek Association - level 3 except E. coli
7-XEU-3-13-DCA	VAP-C01E_XEU01A02	CMON	CB04		33	NA		33		0	33	S		32	NA																						Dividing Creek Association - level 3 except E. coli
7-XUC-15-10A-DCA	VAP-C01E_XUC01A98	CMON	CB04		38	NA		38		1	38	S		37	NA																						Dividing Creek Association - level 3 except E. coli
ANT000.44	VAP-C01E_ANT02A08	CB	CB05		57	NA		57		0	57	S																									VIMS
BAK000.09	VAT-C07E_BAK01A00	CB	CB24					172	S	0	172	S																									MOBPH, VIMS-ConMon, DO is delisted = 2C
BAK001.89	VAT-C07E_BAK01A00	CB	CB24							0	781	S																									VIMS-ConMon. MOBPH
BAK004.35	VAT-C07E_SWB01A08	CB	CB23					200	S	0	200	S																									MOBPH, VIMS, DO is delisted = 2C
CB5.4	VACB-R01E-CB5	CB	CB47		2012	NA		1068			2012	S									0	S													269	NA	
CB5.5	VACB-R01E-CB5	CB	CB47		1128	NA		585			1128	S									0	S													272	NA	
CB6.1	VACB-R01E-CB6N	CB	CB47		904	NA		475			904	S									0	S													291	NA	
CB6.2	VACB-R01E-CB6N	CB	CB47		757	NA		394			757	S									0	S													296	NA	
CB6.3	VACB-R01E-CB6S	CB	CB47		831	NA		438			831	S									0	S													297	NA	
CB6.4	VACB-R01E-CB6S	CB	CB47		736	NA		385			736	S									0	S													317	NA	
CB7.1	VACB-R01E-CB7N	CB	CB47		1258	NA		629			1258	S									0	S													135	NA	
CB7.1N	VACB-R01E-CB7N	CB	CB47		1576	NA		790			1576	S									0	S													136	NA	
CB7.1S	VACB-R01E-CB7N	CB	CB47		1086	NA		541			1086	S									0	S													139	NA	
CB7.2	VACB-R01E-CB7S	CB	CB47		1521	NA		780			1521	S									0	S													147	NA	

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
CB7.2E	VACB-R01E-CB7S	CB	CB47		913	NA		476			913	S									0	S														146	NA	
CB7.3	VACB-R01E-CB7S	CB	CB47		995	NA		509			995	S									0	S														303	NA	
CB7.3E	VACB-R01E-CB7S	CB	CB47		1521	NA		804			1521	S									0	S														156	NA	
CB7.4	VACB-R01E-CB8	CB	CB47		1106	NA		572			1106	S									0	S														296	NA	
CB7.4N	VACB-R01E-CB7S	CB	CB47		779	NA		407			779	S									0	S														298	NA	
CB8.1	VACB-R01E-CB8	CB	CB47		625	NA		323			624	S									0	S														152	NA	
CB8.1E	VACB-R01E-CB8	CB	CB47		1010	NA		530			996	S									0	S														142	NA	
COC001.57	VAP-C01E_COC01A98	CB	CB03		133	NA		133		0	133	S																										VIMS
DC1	VAT-C08L_LAW01A08	NONA	CB26	0	5	S	2	6	IM	0	5	S																										Lake Whitehurst pooled DO and pH data: DO (13 viol / 93 obs) IM; pH (0 viol / 78 obs) S. Water Toxics - NH3=S
DCA 4-11-DCA	VAP-C01E_XEW01A14	CMON	CB04		5	NA		5		0	5	S		5	NA																						Dividing Creek Association - level 3 except E. coli; no data since 2014 cycle
DIV000.41	VAP-C01E_DIV03A00	CB	CB04		323	NA		323		0	501	S																										VIMS ConMon
DP1	VAT-C08L_LAW01A08	NONA	CB26	0	13	S	4	17	IM	0	13	S																										Lake Whitehurst pooled DO and pH data: DO (13 viol / 93 obs) IM; pH (0 viol / 78 obs) S. Water Toxics - NH3=S
DYE000.80	VAP-C04E_DYE02A04	CB	CB18		400	NA		400		0	759	S																										VIMS ConMon
DYM000.93	VAP-C01E_DYM02A00	CB	CB05		67	NA		67		0	67	S																										VIMS
EE3.4	VACB-C10E-POC	CB	CB40		233	NA		125			233	S									0	S														120	NA	
EE3.5	VACB-R01E-CB7N	CB	CB40		1717	NA		874			1717	S									0	S														139	NA	
EST002.35	VAP-C04E_EST02A00	CB	CB17		167	NA		167		0	167	S																										VIMS Dataflow; no data since 2014 cycle
GW1	VAP-C01E_BMS01A12	NONA	CB02		6	NA		6																														HRSD; no data since 2014 cycle
GWR003.54	VAP-C01E_GWR02B06	CB	CB02		158	NA		158		0	158	S																										VIMS
GWR007.7	VAP-C01E_GWR02A00	CB	CB02		143	NA		143		0	143	S																										VIMS
HAH001.02	VAP-C04E_HAH02A02	CB	CB18		408	NA		408		0	754	S																										VIMS ConMon
HUN001.29	VAT-C10E_HUN02A06	CB	CB36					268	S	0	336	S																										VIMS-ConMon. POCMH
IND000.02	VAP-C01E_IND03A00	CB	CB05		406	NA		406		0	488	S																										VIMS ConMon
INN002.24	VAP-C01E_GWR03A06	CB	CB04		293	NA		293		0	450	S																										VIMS ConMon
LC1	VAT-C08L_LTR01A08	NONA	CB26	1	18	S	2	18	S	0	9	S																										Little Creek pooled DO and pH data: DO (7 viol / 78 obs) S - DELIST; pH (6 viol / 69 obs) S. Water Toxics - NH3=S
LE3.6	VACB-R01E-CB6N	CB	CB47		660	NA		352			660	S									0	S														146	NA	
LE3.7	VAP-C03E_PNK05A02	CB	CB12		463	NA		463		0	463	S																										ODU
LIS001.23	VAP-A34E_LIS04A00	CB	CB01		135	NA		135		0	135	S																										VIMS
LIS003.84	VAP-A34E_LIS01A02	CB	CB01		152	NA		152		0	152	S																										VIMS
MES001.26	VAT-C10E_MES03A06	CB	CB35					138	S	0	138	S																										VIMS. POCMH
MIL000.93	VAP-C01E_MIL03A08	CB	CB04		109	NA		109		0	109	S																										VIMS
MUD000.00	VAT-C10E_MUD03A08	CB	CB36					111	S	0	111	S																										VIMS. POCMH
NOR000.63	VAP-C04E_NOR02A02	CB	CB16		165	NA		165		0	165	S																										VIMS - no data since 2014 cycle
PKS008.81	VAT-C10E_POC01A08	CB	CB33							2	475	S																										VIMS-ConMon POCOH
POC003.01	VAT-C09E_POC01A06	CB	CB30					99	IM	0	99	S																										ODU, POCOH
POQ001.36	VAT-C07E_POQ02A06	CB	CB21					175	S	0	175	S																										ODU, MOBPH. DO is delisted = 2C
SEV003.38	VAP-C06E_SEV02A00	CB	CB19		259	NA		259		0	259	S																										VIMS Dataflow - no data since 2014 cycle
SM1	VAT-C08L_LAS01A08	NONA	CB26	0	18	S	1	18	IM	0	11	S																										Lake Smith pooled DO and pH data: DO (1 viol / 42 obs) IM RETAINED; pH (0 viol / 37 obs) S. Bacteria 2008 drop off = IM for 2011 data however only OE since no new data; Water Toxics - NH3=S
VA017488	VAT-C16E_KPT01A06	VDHB	CB46													0	20	S																				Monthly Geometric Mean used for Beach Bacteria data. CB7PH
VA152245	VAT-AO25_ATL01A08	VDHB	AO25													0	27	S																				Monthly Geometric Mean used for Beach Bacteria data.
VA153278	VAT-C10E_GSH01A06	VDHB	CB36													0	21	S																				Monthly Geometric Mean used for Beach Bacteria data. POCMH
VA197713	VAT-C08E_CBB04A16	VDHB	CB26													0	26	O																				Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories. CB8PH
VA209936	VAT-C08E_CBB04A16	VDHB	CB26													0	27	O																				Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories. CB8PH
VA307929	VAT-AO25_ATL01A08	VDHB	AO25													0	20	S																				Monthly Geometric Mean used for Beach Bacteria data.
VA323310	VAT-AO23_ATL01A06	VDHB	AO23													0	27	O																				Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories.
VA366712	VAT-AO25_ATL01A08	VDHB	AO25													0	27	O																				Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories.
VA441400	VAT-AO23_ATL01A06	VDHB	AO23													0	27	S																				Monthly Geometric Mean used for Beach Bacteria data.
VA509547	VAT-C08E_CBB01B14	VDHB	CB26													1	25	IM																				Monthly Geometric Mean violation in 2014 along with multiple swimming advisories; no event to associate so new impairment in 2016 IR. CB8PH
VA514504	VAT-AO23_ATL01A06	VDHB	AO23													0	25	S																				Monthly Geometric Mean used for Beach Bacteria data.
VA532597	VAT-C08E_CBB04A16	VDHB	CB26													0	26	O																				Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories. CB8PH
VA536165	VAT-C08E_CBB02A16	VDHB	CB26													0	18	O																				Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories. CB8PH
VA551311	VAT-AO25_ATL01A08	VDHB	AO25													0	27	S																				Monthly Geometric Mean used for Beach Bacteria data.
VA556096	VAT-AO23_ATL01A06	VDHB	AO23													0	4	O																				2007 data only - no new data within 2016 IR window. Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories.

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
VA582379	VAT-AO25_ATL01A08	VDHB	AO25													0	26	S																			Monthly Geometric Mean used for Beach Bacteria data.
VA591163	VAT-C08E_CBB04A16	VDHB	CB26													0	26	S																			Monthly Geometric Mean used for Beach Bacteria data. CB8PH
VA620108	VAT-AO23_ATL01A06	VDHB	AO24													0	20	S																			Monthly Geometric Mean used for Beach Bacteria data.
VA623963	VAT-C07E_FMB01A12	VDHB	CB24													0	19	S																			Monthly Geometric Mean used for Beach Bacteria data. CB8PH
VA695544	VAT-AO23_ATL01A06	VDHB	AO23													0	26	O																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories.
VA718451	VAT-C08E_CBB03A16	VDHB	CB26													1	25	IM																			Monthly Geometric Mean violation in 2014 along with multiple swimming advisories; no event to associate so new impairment in 2016 IR. CB8PH
VA723069	VAT-AO23_ATL01A06	VDHB	AO23													1	26	IM																			Monthly Geometric Mean violation in 2014 along with multiple swimming advisories; no event to associate so new impairment in 2016 IR.
VA742733	VAT-C08E_CBB01B14	VDHB	CB26													1	25	IM																			Monthly Geometric Mean violated the standard for Enterococci based on Beach Bacteria data. Geo Mean exceedance: 8/2011. OE for Swimming Advisories. CB8PH
VA800662	VAT-AO05_ATL01A06	VDHB	AO05													0	3	S																			Monthly Geometric Mean used for Beach Bacteria data.
VA818754	VAP-C04E_WHI01A08	VDHB	CB12													2	19	IM																			Festival Beach - geomean - instantaneous would be 12/111 (IM) - all swimming advisories
VA821032	VAT-C08E_CBB02A16	VDHB	CB26													0	24	O																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories. CB8PH
VA824084	VAT-AO23_ATL01A06	VDHB	AO23													0	26	O																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories.
VA845980	VAT-C08E_CBB01A06	VDHB	CB26													1	23	IM																			Monthly Geometric Mean violation in 2013 along with multiple swimming advisories; no event to associate so new impairment in 2016 IR. CB8PH
VA863269	VAT-AO25_ATL01A08	VDHB	AO25													0	26	S																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories.
VA864045	VAT-C08E_CBB02A16	VDHB	CB26													0	23	O																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories. CB8PH
VA884979	VAT-C07E_BCB01A06	VDHB	CB24													1	23	IM																			CB8PH. Monthly Geometric Mean violation in 2014 along with multiple swimming advisories; no event to associate so new impairment in 2016 IR.
VA888917	VAT-C08E_CBB02A16	VDHB	CB26													0	25	O																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories-multi years all in September. CB8PH
VA898733	VAT-AO23_ATL01B08	VDHB	AO23													0	25	O																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories.
VA912105	VAT-C08E_CBB01C16	VDHB	CB26													0	24	O																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories. CB8PH
VA927341	VAT-AO25_ATL01B10	VDHB	AO25													0	18	S																			Monthly Geometric Mean used for Beach Bacteria data.
VA938661	VAT-C07E_GRV02A10	VDHB	CB24													0	22	S																			Monthly Geometric Mean used for Beach Bacteria data. CB8PH
VA938849	VAT-C08E_CBB02A16	VDHB	CB26													0	24	O																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories. CB8PH
VA960898	VAT-C08E_CBB04A16	VDHB	CB26													0	26	O																			Monthly Geometric Mean used for Beach Bacteria data. OE for Swimming Advisories. CB8PH
VA963844	VAT-C15E_CCB01A06	VDHB	CB46													0	18	S																			Monthly Geometric Mean used for Beach Bacteria data. CB7PH
VA999541	VAT-AO25_ATL01B10	VDHB	AO25													0	18	S																			Monthly Geometric Mean used for Beach Bacteria data.
WAR001.58	VAP-C05E_WAR02A02	CB	CB15		379	NA		379		0	762	S																									VIMS ConMon - no data since 2014 cycle
WAR004.62	VAP-C05E_WAR01B08	CB	CB15		236	NA		236		0	236	S																									VIMS Dataflow - no data since 2014 cycle
WE4.1	VACB-R01E-MOB	CB	CB20		349	NA		174			349	S									0	S												153	NA		
WE4.3	VACB-R01E-MOB	CB	CB47		303	NA		158			303	S									0	S												153	NA		
WE4.4	VAT-C07E_BAK01A00	CB	CB24					312	S	0	318	S									0	S															Collected by ODU under contract to DEQ: MOBPH, WatTox=NHx, DO is delisted = 2C
WH1	VAT-C08L_LAW01A08	NONA	CB26	0	12	S	3	19	IM	0	12	S																									Lake Whitehurst pooled DO and pH data: DO (13 viol / 93 obs) IM; pH (0 viol / 78 obs) S. Water Toxics - NH3=S
WH4	VAT-C08L_LAW01A08	NONA	CB26	0	43	S	1	21	IM	0	18	S																									Lake Whitehurst pooled DO and pH data: DO (13 viol / 93 obs) IM; pH (0 viol / 78 obs) S. Water Toxics - NH3=S
WOTOMSN	VAT-AO05_ATL01A06	VDHB	AO05													0	9	S																			Monthly Geometric Mean used for Beach Bacteria data.
WR1	VAT-C08L_LAR01A06	NONA	CB26	0	8	S	4	8	IM	0	6	S																					3	O		2	O	Lake Wright DO and pH data: DO (4 viol / 8 obs) IM; pH (0 viol / 6 obs) S. Data dropped off from years 2008 & 2007. Pooled Chl a and TP violate WQS. They are Level II data and are given an OE in the assessment.

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
258WAL	VAT-K36R_ZZZ01B00	CMON	CU66							0	11	S	0	19	IN																						Black Water/Nottoway Riverkeeper, Level III pH Data
2POP-1-IRC	VAT-K33R_ZZZ01A00	CMON	CU62							0	12	IN																									Isle of Wight Ruritan Club, Level II pH Data
5AALN001.00	VAP-K05R_ALN01A08	A,PA	CM14	0	24	S	1	24	S	0	24	S	4	23	IM																						
5AALN001.50	VAP-K05R_ALN01A08	FPM,B	CM14	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									FS							2014 probmon
5AAND000.10	VAP-K24R_HQS01B08	TM	CU33	0	12	S		12	NA	0	12	S	1	12	S																						Class VII water
5AANG004.08	VAT-K27R_ANG01A12	A	CU41					24	NA	0	24	S	2	23	S																						
5AANT-1-BNR	VAT-K33R_ANT01A06	CMON	CU62							0	6	S	1	6	IN/O																						Blackwater Nottoway Riverkeeper pH Level III, E. coli Level II
5AASM018.61	VAP-K29R_ASM01A98	FPM,B	CU44	0	1	W		1	NA	0	1	W	0	1	W				0	IN	0	S	0	S							IN							2010 sed Probmon; no new data since 2012 cycle
5AASM021.22	VAP-K29R_ASM01A98	TM	CU44	0	13	S		13	NA	0	13	S									0	IN															Class VII; aka PL-7A
5AATH003.28	VAP-K23R_ATH01A08	A	CU26	0	12	S		12	NA	0	12	S	2	12	IM																						Class VII water; no data since 2014 cycle
5ABDD000.69	VAP-K10R_BDD01A10	TM	CM22	0	12	S	5	12	IM	0	12	S									0	S															
5ABDM-1-IRC	VAT-K36R_ZZZ01A00	CMON	CU69							0	4	IN																									Isle of Wight Ruritan Club, Level II pH Data
5ABEC000.37	VAC-K03R_BEC01A14	B	CM08	0	2	S	0	2	S	0	2	S																			FS							2011 Bio Bears Element Creek supports a healthy community of macroinvertebrates. Riparian vegetation and sediment scores are within the fair to good range.
5ABEC007.34	VAC-K03R_BEC01A14	B	CM08	0	1	W	0	1	W	0	1	W																			J							2013 Bio This stream was completely dry in fall 2013 and therefore couldn't be sampled. This site will be revisited in order to accurately assess the benthic community.
5ABHC003.73	VAC-K14R_BHC01B98	A,C,TM	CU03	0	12	S	0	12	S	0	12	S	2	12	IM						0	S					0	S	0	S								No New Data 2007 FT Sampling
5ABHC006.57	VAC-K14R_BHC01B98	B	CU03	0	2	S	0	2	S	0	2	S																			J							2013 Bio Big Hounds Creek exhibits seasonal variability around the assessment threshold, therefore further sampling is required to accurately assess water quality within this reach.
5ABHC009.91	VAC-K14L_BHC01L00	L	CU03	0	84	S	0	27	S	0	84	S	0	7	S						0	S												0	2	S		2005 & 2007 Lunenburg Beach Lake
5ABHC010.00	VAC-K14L_BHC01L00	C	CU03																							0	S	0	S								2007 FT Sampling
5A-BHC-LUN01-SSWCD	VAC-K14R_BHC01B98	CMON	CU03	0	10	S							6	35	IN/O																						Southside SWCD Station - Level II Coliscan Category 3C
5A-BHC-LUN02-SSWCD	VAC-K14R_BHC01B98	CMON	CU03	0	10	S							3	36	IN																						Southside SWCD Station - Level II Coliscan Category 3C
5A-BHC-LUN03-SSWCD	VAC-K14R_BHC01B98	CMON	CU03	0	10	S							4	36	IN/O																						Southside SWCD Station - Level II Coliscan Category 3C
5ABJC001.00	VAC-K02R_BJC01A98	A,TM,B	CM05	0	16	S	0	15	S	0	16	S	2	12	IM						0	S									FS							2008 Meherrin River TMDL 2011/2014 Bio Big Juniper Creek exhibits seasonal variability around the assessment threshold but fall scores show the stream is capable of supporting a healthy aquatic community. This site will be monitored in the future due to this fluctuation.
5ABKH003.89	VAT-K28R_BKH01B12	A	CU43	0	24	S	8	24	IM	3	24	IM	6	23	IM																						
5ABKR005.48	VAP-K31R_BKR01A98	TM	CU53	0	12	S		12	NA	0	12	S																									Class VII
5ABKR014.01	VAP-K31R_BKR01A98	TM	CU53	0	12	S		12	NA	0	12	S																									Class VII
5ABKS001.60	VAC-K01R_BKS01A16	B	CM03	0	2	S	2	0	S	2	0	S																			J							2013 Bio Blackstone Creek is very small and was experiencing low flows during the fall sampling event. This stream exhibits seasonal variability around the assessment threshold, therefore further sampling is required to accurately assess water quality within this reach.
5ABLC006.97	VAT-K36R_BLC02A10	A,B	CU67					12	NA	0	12	S	0	12	S																J							Benthic VCPMI =J [2014: F - 16.2]
5ABLW001.10	VAT-K36R_BLW05A08	A,B	CU70																		0	S									FS							Benthic VCPMI FS [2014: F= 33.6 2012: F= 44.5 2008: S = 55.2, F = 42.5], 2014 Partial Delist - Benthic
5ABLW004.09	VAT-K36R_BLW05A08	FPM,B	CU70	0	1	IN	0	1	IN	0	1	IN																			FS							Benthic ProbMon VCPMI FS [2010: F = 49.5], 2014 Partial Delist - Benthic
5ABLW009.14	VAT-K36R_BLW04C12	A,TR	CU70	0	36	S	9	36	IM	1	36	S	3	35	O																						
5ABLW009.80	VAT-K36R_BLW04D14	A,TR	CU70	0	34	S	12	34	IM	2	34	S	4	34	IM																						
5ABLW010.60	VAT-K36R_BLW04B12	A,TR	CU70	0	6	S	3	6	IM	0	6	S	0	6	S																						
5ABLW011.48	VAT-K36R_BLW04A08	A,TR	CU70	0	6	S	3	6	IM	0	6	S	0	6	S																						
5ABLW012.28	VAT-K36R_BLW04A08	A,TR	CU70	0	19	S	8	19	IM	2	19	O	4	19	IM																						
5ABLW012.96	VAT-K36R_BLW04A08	A,TR	CU70	0	6	S	3	6	IM	0	6	S	1	6	IM																						
5ABLW013.16	VAT-K36R_BLW04A08	A	CU68	0	34	S	11	34	IM	2	34	S	9	33	IM																						
5ABLW014.28	VAT-K36R_BLW03A08	A,TR	CU68	0	34	S	12	34	IM	2	34	S	1	33	S																						
5ABLW014.88	VAT-K36R_BLW03A08	A,TR	CU68	0	32	S	11	32	IM	2	32	S	1	31	S																						
5ABLW016.27	VAT-K36R_BLW02A08	A,TR	CU68	0	32	S	11	32	IM	2	32	S	2	32	S																						
5ABLW022.84	VAT-K36R_BLW02B08	A,C,TR	CU68	0	36	S	2	36	S	2	36	S	4	32	IM																						Retained: 07-IM, FT_Met-Hg, As, OE-Pb
5ABLW022.89	VAT-K36R_BLW02B08	B,FPM	CU68	0	2	S	0	2	S	0	2	S	0	1	IN																FS							Benthic ProbMon VCPMI FS[2009: S = 47.6, F = 46.4]; Sed = S, 2009, Partial Delist Benthic
5ABLW025.39	VAT-K36R_BLW01B08	FPM,B	CU68					1	NA	0	1	IN	0	1	IN																FS							Benthic ProbMon VCPMI FS [2011: F = 54.2], Sed = S, 2011
5ABLW040.22	VAT-K33R_BLW02A04	A,TR	CU62					35	NA	1	35	S	6	34	IM																						
5ABLW053.54	VAT-K33R_BLW01A00	C,CR,A	CU59					12	NA	0	12	S	1	12	S																						RETAINED 07-IM FT_Met-Hg, As Bowfin; 2013 E.coli data now S

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
5ABLW058.22	VAT-K32R_BLW01A08	A,TM,TR	CU59							3	41	S	4	35	IM																							
5ABLW074.66	VAP-K32R_BLW01B98	TM,TR,PA	CU55	0	47	S		47	NA	0	48	S	6	40	IM																						Class VII
5ABLW075.43	VAP-K32R_BLW01B98	FPM,B	CU55	0	1	W		1	NA	0	1	W	0	1	W				0	S	0	IN									IN						Class VII; 2014 benthics
5ABLW-1-IRC	VAT-K36R_BLW01A00	CMON	CU66							0	20	IN																									Isle of Wight Ruritan Club, Level II pH Data
5ABLW-2-IRC	VAT-K36R_BLW02B08	CMON	CU68							0	4	IN																									Isle of Wight Ruritan Club, Level II pH Data
5ABMS000.80	VAT-K33R_BMS01A12	FPM,B	CU62					2	NA	0	2	S	1	1	IN/O																IM						Benthic ProbMon VCPMI IM [2010: S = 18.9, F = 10.1]; Sed = S, 2010.
5ABMS-1-IRC	VAT-K33R_BMS01A12	CMON	CU62							0	11	IN																									Isle of Wight Ruritan Club, Level II pH Data
5ABNT002.70	VAT-K35R_BNT01A04	A,B	CU64					12	NA	0	12	S	0	12	S																J						VCPMI =J [2014: F - 27.7]
5ABPC000.12	VAC-K16R_BPC01A00	A,TM	CU11	0	23	S	0	22	S	0	24	S	13	24	IM						0	S															2006 Nottoway Basin TMDL
5ABRD002.09	VAC-K03R_BRD01A06	TM	CM10	0	8	S	0	8	S	0	8	S	2	9	IM																						No New Data 2006 Flat Rock Creek LDA
5ABSK000.60	VAP-K19R_BSK01A00	TM	CU16	0	24	S	1	24	S	0	24	S	7	24	IM																						
5ABSK004.32	VAP-K19R_BSK01A00	B,TM	CU16	0	27	S	2	27	S	0	27	S	4	23	IM						0	S									FS						2013-2014 benthics
5ABSK006.52	VAP-K19R_BSK01A00	TM	CU16	0	12	S	0	12	S	0	12	S	3	12	IM																						No new data since 2012 cycle
5ABSK007.40	VAP-K19R_BSK01B12	TM	CU16	0	24	S	3	24	IM	0	24	S	4	12	IM																						
5ABSK008.75	VAP-K19R_BSK01B12	A,TM	CU16	0	24	S	9	24	IM	0	24	S	3	23	IM						0	S															
5ABSK011.17	VAP-K19R_BSK01A00	TM	CU16	0	23	S	2	23	S	0	23	S	4	11	IM																						
5ABTR002.80	VAP-K20R_BTR03A06	TM	CU19	0	13	S	0	12	S	0	12	S	0	12	S																						
5ABVC000.48	VAP-K11R_BVC01A04	TM	CM25	0	12	S	1	12	S	0	12	S																									
5ABVC002.31	VAP-K11R_BVC01A04	TM	CM25	0	12	S	3	12	IM	0	12	S									0	S															
5ACBC000.58	VAP-K21R_CBC01A16	TM	CU22	0	12	S	1	12	S	2	12	IM																									
5ACBC003.31	VAP-K21R_CBC02A16	TM	CU22	0	12	S	0	12	S	0	12	S																									
5ACBC005.79	VAP-K21R_CBC03A16	TM	CU22	0	11	S	3	11	IM	5	11	IM																									
5ACDR000.30	VAC-K16L_NTW01L04	L	CU07	0	28	S	0	12	S	1	28	S	0	7	S						0	S	0	S	0	S											2002 & 2006 Fort Pickett Reservoir Not in Lacustrine Zone Pooled Data: DO - 2/48 Violation Rate pH - 1/82 Violation Rate
5ACDR001.08	VAC-K16L_NTW01L04	A	CU07	0	11	S	0	10	S	0	12	S	1	12	S						0	S															
5ACHP002.03	VAT-K38R_CHP01A04	A	CL02	0	6	S	2	6	IM	2	6	IM	2	6	IM																						
5ACHS003.42	VAC-K02R_CHS01A08	A,SS,B	CM06	0	20	S	0	20	S	0	20	S	4	12	IM						0	S									IM						2014 - New Bacteria Impairment 2008 Ammonia Special Study 2008-2013 Bio Cobble riffles were partially embedded. Periphyton was abundant, indicating nutrient enrichment.
5ACHS006.33	VAC-K02R_CHS01A08	B,SS	CM06	0	8	S	0	8	S	1	8	IM									1	O									IM						2008 Ammonia Study Station located downstream of Victoria West Lagoon. Single violation of the chronic ammonia std 2008-2010/2012/2013 Bio Couches Creek at this site had marginal habitat with a high rate of sediment deposition. Black fluffy material was present throughout stream.
5ACKD000.40	VAC-K16R_CKD01A00	A	CU07	0	12	S	0	12	S	0	12	S	1	12	S																						
5ACNY001.08	VAP-K12R_CNY01A00	FPM,B	CM27	0	1	W		1	NA	0	1	W	0	1	W				0	IN	0	IN	0	S							IN						Class VII; 2010 sed Probmon; no new data since 2012 cycle
5ACOB000.92	VAP-K23R_JNH01A98	TM	CU29	0	13	S		12	NA	0	13	S	2	12	IM																						Class VII water
5ACPP003.20	VAP-K32R_CPP01A98	A,TM	CU58	0	24	S		24	NA	0	24	S	0	12	S																						Class VII; no E. coli data since 2014 cycle
5ACPP013.64	VAP-K32R_CPP01A98	TM,B	CU58	0	14	S		14	NA	0	14	S									0	S									IN						Class VII; 2014 benthics
5ACPR000.41	VAC-K01R_CPR01A14	B	CM01	0	4	S	0	4	S	0	4	S																			FS						2011/2014 Bio Cruppers Run exhibits seasonal variability around the assessment threshold but fall scores show the stream is capable of supporting a healthy aquatic community. This site will be monitored in the future due to this fluctuation.
5ACRK003.63	VAC-K03R_CRK01A14	B	CM09	0	2	S	0	2	S	0	2	S																			FS						2011 Bio Crooked Creek exhibits seasonal variability around the assessment threshold but fall scores show the stream is capable of supporting a healthy aquatic community. This site will be monitored in the future due to this fluctuation.
5ACRY001.10	VAC-K15R_CRY01A06	TM	CU05	0	12	S	0	12	S	0	11	S	2	12	IM																						No New Data 2006 Nottoway Basin TMDL
5ACYP001.66	NC	A	CM28		10	NA		10	NA		11	NA		11	NA																						North Carolina; no new data since 2012 cycle
5ACYS001.92	VAT-K36R_CYS01A12	A	CU68					23	NA	0	23	S	5	23	IM																						
5ADKS000.09	VAT-K36R_DKS01A10	A	CU66					12	NA	0	12	S	0	12	S																						
5ADMR008.42	VAT-K30R_DMR01A02	A	CU50	0	34	S	18	34	IM	25	34	IM	8	32	IM																						
5ADRY002.85	VAC-K14R_DRY01A06	TM	CU01	0	12	S	0	12	S	0	11	S	1	11	S																						No New Data 2006 Nottoway Basin TMDL
5A-DRY-LUN04-SSWCD	VAC-K14R_DRY01A06	CMON	CU01	0	10	S							0	36	IN																						Southside SWCD Station - Level II Coliscan Category 3C
5ADUK001.42	VAP-K08R_DUK01A16	TM	CM18	0	12	S	0	12	S	0	12	S	4	12	IM																						
5AEVN000.96	VAP-K05R_EVN01A10	A	CM12	0	12	S	0	12	S	0	12	S	2	11	IM																						
5AFNY002.48	VAC-K01R_FNY01A08	A	CM02	0	12	S	0	12	S	0	12	S	1	12	S																						
5AFNY004.78	VAC-K01R_FNY01A08	FPM,B	CM02	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	W	0	W					IM						2005 Probabilistic Monitoring

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
																																					Stream ran through a pasture with active cattle access. Flow was minimal, sedimentation was extensive, organic solids were abundant in channel. Minimal habitat present.
5AFON014.38	VAP-K11R_FON03A98	A,TM	CM27	0	24	S	2	24	IM	0	24	S	1	12	S																						
5AFON021.35	VAP-K11R_FON01A10	TM	CM24	0	12	S	0	12	S	0	12	S																										
5AFON022.04	VAP-K11R_FON01A10	TM	CM24	0	12	S	0	12	S	0	12	S																										
5AFON025.64	VAP-K11R_FON01A10	TM,B	CM24	0	14	S	0	14	S	1	14	S																			FS							2010 benthics
5AFON027.33	VAP-K11R_FON01A02	TM	CM24	0	12	S	0	12	S	1	12	S									0	S																
5AFON033.05	VAP-K11R_FON01A02	TM	CM24	0	12	S	3	12	IM	0	12	S																										
5AFON037.89	VAP-K10R_FON01B10	TM	CM23	0	12	S	1	12	S	1	12	S																										
5AFON039.47	VAP-K10R_FON01A04	TM	CM23	0	12	S	2	12	IM	1	12	S																										
5AFRC002.98	VAC-K03R_FRC01A98	A,SS	CM10	0	12	S	0	12	S	0	12	S	2	12	S								0	S														No New Data
5AFRC007.54	VAC-K03R_FRC01A98	TM	CM10	0	8	S	0	8	S	0	8	S	2	9	IM																							No New Data 2006 Flat Rock Creek LDA
5AFRC009.53	VAC-K03R_FRC01A98	TM	CM10	0	8	S	0	8	S	0	8	S	2	9	IM																							No New Data 2006 Flat Rock Creek LDA
5AFRC011.93	VAC-K03R_FRC01A98	FPM,B	CM10	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							IM							2012 Probmon Beaver activity and sedimentation from within the watershed has limited habitat availability.
5AFRC013.25	VAC-K03R_FRC02A06	TM	CM10	0	8	S	0	8	S	0	8	S	4	9	IM																							No New Data 2006 Flat Rock Creek LDA
5AFRC014.70	VAC-K03R_FRC02A06	TM	CM10	0	8	S	0	8	S	0	8	S	4	9	IM																							No New Data 2006 Flat Rock Creek LDA
5AFTS002.93	VAT-K13R_FTS01A04	A,B	CM30					24	NA	0	24	S	3	23	IM																	J							Benthic VCPMI J [2014: F - 29.7]
5AFXB001.27	VAP-K23R_ROW03A06	TM	CU28	0	11	S		11	NA	0	11	S	2	11	IM																							Class VII water
5AGHB002.52	VAT-K34R_ZZZ01A00	FPM,B	CU60					1	NA	0	1	IN	0	1	IN																	IN							Benthic ProbMon VCPMI IN [2010: S = 10.4, F = dry N/A]; Sed = S, 2010.
5AGMN000.54	VAP-K29R_GMN01A02	TM,B	CU45	0	12	S		12	NA	0	12	S									0	S									IN							Class VII; aka PL-5B; 2014 benthics
5AGRC002.46	VAP-K17R_GRC01A16	TM	CU13	0	13	S	0	13	S	0	13	S	7	12	IM																							
5AGRV000.08	VAP-K23R_ROW01A98	A,B	CU27	0	14	S		14	NA	0	14	S	0	12	S																	FS							Class VII water; 2013 benthics
5AGRV004.35	VAP-K23R_ROW01A98	A	CU27	0	10	S		10	NA	0	12	S	0	12	S																							Class VII water; no new data since 2012 cycle
5AGSE001.35	VAP-K23R_GSE01A98	TM	CU30	0	12	S		12	NA	0	12	S	2	12	IM																							Class VII water; no data since 2014 cycle
5AGTC009.94	VAP-K06L_GTC03B00	L,C	CM16	0	83	S	3	41	S	1	83	S	0	14	S								0	S											0	2	S	Only 1 DO violation during NS period TSI(TP) = 45, TSI(CA) = 41, TSI(SD) = 55 2007 FT PCB ok, Pest ok, Metals Hg 1 sp(largemouth bass);
5AGTO001.16	VAP-K05R_GTO01A94	A	CM13	0	12	S	0	12	S	0	12	S	2	11	IM																							
5AHAY000.38	VAP-K05R_HAY01A10	TM	CM14	0	12	S	2	12	IM	0	12	S									0	S																
5AHAY003.23	VAP-K05R_HAY01A10	TM	CM14	0	12	S	1	12	S	1	12	S																										
5AHAY004.92	VAP-K05R_HAY01A10	TM	CM14	0	9	S	0	9	S	0	9	S																										
5AHCK000.96	VAC-K17R_HCK01A16	A,TM	CU11	0	12	S	2	12	IM	2	12	IM	1	12	S																							2013 PRO TMDL Station pH/DO - Category 5C PRO will do Natural Conditions TMDL
5AHQS003.38	VAP-K24R_HQS01B08	TM	CU33	0	12	S		12	NA	0	12	S	0	12	S																							Class VII water
5AHQS006.22	VAP-K24R_HQS01A98	A,TM	CU33	0	24	S		24	NA	0	24	S	4	24	IM																							Class VII water
5AHQS009.57	VAP-K24R_HQS01A98	TM	CU33	0	12	S		12	NA	0	12	S	5	12	IM																							Class VII water
5AHRA002.92	VAP-K23R_HRA01B10	TM	CU26	0	13	S		13		0	13	S	0	12	S																							Class VII water
5AHRA005.94	VAP-K23R_HRA01B10	FPM,B	CU26	0	2	S		2	NA	0	2	S	0	1	W				0	IN	0	S									IN							Class VII water; 2013 probmon
5AHRA-PETE-07-NPS	VAP-K23R_HRA01A04	NONA	CU26	0	46	S		41	NA	0	43	S																										NPS - level 3 - Class VII water
5AHRS002.04	VAP-K19R_HRS01A02	TM	CU17	0	13	S		12	NA	0	12	S																										Class VII water
5AHSP000.38	VAP-K22R_HSP01A00	TM	CU23	0	12	S	0	12	S	0	12	S									0	S																
5AHSP001.53	VAP-K22R_HSP01A00	TM	CU23	0	12	S	1	12	S	0	12	S																										
5AHUR001.91	VAC-K16R_HUR01A04	A	CU08	0	12	S	1	12	S	0	12	S																										2016 - Delist for DO
5AHUR004.26	VAC-K16R_HUR02A04	C	CU08																				0	S	1	O	0	S	0	S								02 Sed C-Dane
5AHZL000.77	VAP-K32R_CPP01B06	A,B	CU58	0	4	S		4	NA	0	4	S																			FS							2011 and 2014 benthics
5AJCK004.81	NC	A	CM26		10	NA		10	NA		10	NA																										North Carolina; no new data since 2012 cycle
5AJNH001.73	VAP-K23R_JNH01A98	A,B	CU29	0	26	S		25	NA	0	25	S	11	24	IM																	IN							Class VII water; 2013 benthics
5AJNH004.42	VAP-K23R_JNH01A98	TM	CU29	0	12	S		11	NA	0	12	S	2	12	IM																							Class VII water
5AJNH009.95	VAP-K23R_JNH01B16	TM	CU29	0	12	S		11	NA	0	12	S	0	12	S																							Class VII water
5AJNS001.89	VAT-K38R_JNS01A14	A	CL01					6	NA	0	6	S	2	6	IM																							
5AJOE003.92	VAP-K23R_JOE01A10	TM	CU31	0	11	S		11	NA	0	11	S	4	11	IM																							Class VII water
5AJOE007.38	VAP-K23R_JOE01A10	TM	CU31	0	12	S		11	NA	0	12	S	1	12	S																							Class VII water
5AKIT000.67	VAC-K02R_KIT01A06	TM,B,PA	CM07	0	16	S	0	16	S	0	16	S	0	12	S																	FS							2016 - Delist for EC 2008 Meherrin River TMDL 2012/2014 Bio Kits Creek exhibits seasonal variability around the assessment threshold but fall scores show the stream is capable of supporting a healthy aquatic community. This site will be monitored in the future due to this fluctuation.
5AKIT002.65	VAC-K02R_KIT01A06	FPM,B	CM07	0	4	S	0	4	S	0	4	S	1	2	IM				0	S	0	S	0	W	0	W					IM							2004-2005 Probabilistic Monitoring 2011/2013 Bio Limited instream habitat consisted of riffles dominated by

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
																																					bedrock. Excellent riparian zone. Reach may be subject to storm scour due to prevalence of bedrock substrate.
5AKTS002.63	VAC-K01R_KTS01A14	FPM,B	CM03	0	4	S	0	4	S	0	4	S							0	W											FS							2012/2014 FPM Kits Creek exhibits seasonal variability around the assessment threshold but fall scores show the stream is capable of supporting a healthy aquatic community. This site will be monitored in the future due to this fluctuation. The spring sample was dominated by the filterer FFG (Simuliidae) while the fall was more balanced among the FFG.
5ALDB000.03	VAC-K02R_LDB01A10	A	CM04	0	12	S	2	12	IM	0	12	S	8	12	IM																							No New Data Check 7Q10
5ALLD001.54	VAP-K18R_LLD01A10	A,B	CU14	0	4	S	0	4	S	0	4	S																			FS							2009-2010 benthics; no new data since 2012 cycle
5ALNG000.77	VAP-K10R_LNG01A10	TM	CM22	0	12	S	0	12	S	0	12	S									0	S																
5ALNT004.68	VAC-K15R_LNT01A00	A,TM	CU06	0	16	S	0	16	S	0	15	S	5	13	IM						0	S																No New Data 2006 Nottoway Basin TMDL
5ALNT009.80	VAC-K15R_LNT01A00	B,TM	CU06	0	2	S	0	2	S	0	2	S	3	12	IM																IM							2013 Bio This river was wide and shallow with stable banks and moderately low flow. 2006 Nottoway Basin TMDL
5ALTD005.10	VAT-K35L_LTD01A02	C,L	CU64	0	42	S	15	42	IM	5	42	S	0	14	S						0	S												1	2	IN/O	Airfield Pond pooled nutrient data: Chlorophyll a (1 viol / 2 obs) IN/O 2011, 2014 (no algaecide application). Airfield Pond pooled DO and pH data: DO (15 viol / 42 obs) and pH (5 viol / 42 obs) IM. 06-IM FT_Met-As, Hg Brown Bullhead Catfish, Largemouth Bass, Chain Pickerel, Bowfin & Bluegill Sunfish. Water Toxics: NH3 = S.
5ALTH001.58	VAC-K14R_LTH01A08	A	CU03	0	12	S	0	12	S	0	12	S	1	12	S						0	S																
5A-LTH-LUN05-SSWCD	VAC-K14R_LTH01A08	CMON	CU03	0	10	S							6	36	IN/O																							Southside SWCD Station - Level II Coliscan Category 3C
5ALTL001.38	VAP-K10R_LTL01A12	FPM,B	CM23	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S							IN							2009 Probmon; no new data since 2012 cycle
5ALZT000.12	VAC-K15L_LZT01L00	L,C	CU05	0	68	S	2	26	S	2	68	S	1	12	S						0	S	0	S	0	S	2	IM	0	S		1	2	IN/O	0	2	S	No New Data 2003 & 2008 Nottoway Pond 2007 FT Sampling Hg 2 Species
5ALZT001.39	VAC-K15R_LZT01A10	A	CU05	0	12	S	2	12	IM	0	12	S	2	12	IM						0	S																No New Data
5AMAR001.65	VAT-K38R_MAR01A06	A	CL03				3	6	IM	2	6	IM	1	6	O																							
5AMCC000.08	VAP-K26R_MCC01A00	A	CU38	0	10	S		10	NA	0	12	S	1	12	S																							Class VII; no new data since 2012 cycle
5AMDT001.20	VAC-K14R_MDT01B06	TM	CU02	0	12	S	0	12	S	0	11	S	0	12	S																							2006 Nottoway Basin TMDL
5AMDT004.94	VAC-K14L_MDT01L00	L,C	CU02	0	29	S	0	9	S	0	29	S	0	7	S						0	S	0	S	0	S	1	O	0	S					0	1	IN	No New Data 2007 Modest Creek Reservoir Only one sample year 2007 FT Sampling Hg 1 Species
5AMHN023.40	VAT-K13R_MHN01A00	A,TR	CM32	0	37	S	0	37	S	0	37	S	3	34	S																							
5AMHN026.54	VAP-K09R_MHN01D98	TM	CM21	0	12	S	0	12	S	0	12	S	2	12	IM																							
5AMHN052.34	VAP-K09R_MHN01D98	A,TR	CM20	0	40	S	3	40	S	0	42	S	4	36	IM																							Trend Station - increasing pH - decreasing TP, TSS
5AMHN053.29	VAP-K08L_MHN02C98	L	CM19	0	61	S	0	61	S	0	66	S	0	14	S						0	S																PWS; 2/19 in epilimnion/NS; 2002 sed - Cu (from algaecide application?) 1/2 in hypolimnion TSI(TP) = 50, TSI(SD) = 65
5AMHN060.95	VAP-K08R_MHN01B10	TM	CM19	0	12	S	0	12	S	0	12	S	1	12	S																							
5AMHN068.30	VAP-K05R_MHN03B98	TM	CM17	0	13	S	0	13	S	0	13	S	4	12	IM																							
5AMHN082.13	VAP-K05R_MHN01B98	A,TR	CM14	0	34	S	0	34	S	0	36	S	12	35	IM																							Trend Station - increasing pH, TN, TSS - decreasing SC
5AMHN098.80	VAP-K04R_MHN01A06	A,B	CM11	0	7	S	0	7	S	0	7	S																			FS							2012 and 2014 benthics
5AMHN102.61	VAC-K03R_MHN03A08	A,TM	CM09	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																2008 Meherrin River TMDL
5AMHN104.12	VAC-K03R_MHN03A08	FPM,B	CM09	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W	0	W					J							2009 FPM This site was monitored as part of the Probabilistic Monitoring Program. It was very wide and shallow, with decent epifaunal substrate and pronounced sediment deposition. Condition of stream drastically different seasonally, therefore an accurate assessment is not possible without collecting additional data. This site was part of the probabilistic monitoring program and can only be accessed via private land; therefore it will not be revisited. Follow-up monitoring will be conducting at a nearby bridge.
5AMHN105.36	VAC-K03R_MHN02A04	FPM,B	CM09																												J							2001 Probabilistic Monitoring Large river non-target for current DEQ sampling techniques; river is rarely wadeable at this site. Not assessed. Recommend future sampling with appropriate large river methods currently under development.
5AMHN108.37	VAC-K03R_MHN01A00	A	CM09	0	11	S	0	11	S	0	12	S	3	12	IM						0	S																
5AMLB000.23	VAP-K22R_MLB01A00	TM	CU23	0	12	S	0	12	S	0	12	S																										
5AMLL000.03	VAC-K15R_MLL01A06	FPM,B	CU05	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S									IM							2012 FPM Sediment metrics scored moderate to low with the presence of beaver activity and filamentous algae.
5AMLL001.27	VAC-K15R_MLL01A06	B	CU05	0	2	S	0	2	S	0	2	S																			IM							2014 Bio This is a small stream with eroded clay banks and

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
																																					excessive sedimentation. There is cattle access downstream of the bridge.
5AMLS000.77	VAP-K12R_MLS01A00	TM	CM27	0	12	S		12	NA	0	12	S																									Class VII
5AMMR000.69	VAC-K01R_MMR01A98	TM	CM01	0	12	S	0	12	S	0	12	S	3	12	IM						0	S															2008 Meherrin River TMDL
5AMMR008.77	VAC-K01R_MMR02A08	A,B	CM01	0	15	S	0	15	S	0	15	S	2	12	IM						0	S									IM						2012/2014 Bio The habitat assessment indicated that sediment deposition is occurring. Macroinvertebrates in the Filterer Functional Feeding Group dominate spring and fall samples indicating possible nutrient enrichment.
5AMRN000.38	VAP-K29R_MRN01A12	A,B	CU46	0	12	S	1	12	S	1	12	S	0	11	S															FS						2009 benthics; no new data since 2012 cycle
5AMRS002.31	VAP-K19R_MRS01A08	PA	CU17	0	13	S		12	NA	0	12	S	6	12	IM																					Class VII water
5AMRS002.93	VAP-K19R_MRS01A08	FPM,B	CU17	0	2	S		2	NA	0	2	S	1	1	W				0	IN	0	S									FS						Class VII water; 2013 probmon
5AMSA001.80	VAT-K38R_ZZZ01A00	FPM,B	CL03					2	NA	0	2	S	0	1	IN																J						Benthic ProbMon VCPMI J [2011: S= 15.5, F= 18.5]Sed = S, 2007
5AMSC002.30	VAC-K03R_MSC01A10	A,B	CM08	0	16	S	0	16	S	0	16	S	1	12	S						0	S									IM						2011/2014 Bio Habitat scores and Taxa lists indicated habitat was a limiting factor in Masons Creek in 2011. This site was more wadeable in 2014 and better habitat was accessible further upstream. Masons Creek will continue to be monitored in order to accurately characterize the benthic community.
5AMSN001.62	VAP-K19R_MSN01A10	A,TM	CU15	0	17	S	1	17	S	1	18	S	1	18	S						0	S															
5AMSN003.24	VAP-K19R_MSN01A10	TM	CU15	0	11	S	0	11	S	1	11	S	2	11	IM																						
5AMSP000.16	VAT-K28R_MSP01A06	A	CU47	0	24	S	4	24	IM	2	24	S	7	23	IM						0	S															
5AMSW006.77	VAT-K34R_MSW01A00	A	CU60					12	NA	0	12	S	3	12	IM																						
5AMTR001.65	VAP-K21R_MTR01A14	A	CU25	0	11	S	3	11	IM	5	11	IM	4	11	IM																						No data since 2014 cycle
5ANBT001.26	VAP-K23R_NBT02A00	TM	CU31	0	12	S		12	NA	0	12	S																									Class VII
5ANMR007.90	VAC-K02R_NMR02B04	B	CM07	0	3	S	0	3	S	0	3	S																			IM						2008/2009/2012 Bio - Tied to 2002 FPM This is a large incised stream with high sediment deposition that appears to flood often. Habitat is sparse and consists mostly of snags, and banks are moderately stable. Water was low for fall 2010 sample. Additional samples in 2012 indicate limited habitat may prevent a balanced community. Only wadeable when water is low, so perhaps this site is non-target.
5ANMR013.95	VAC-K02R_NMR01A98	A,TR,TM,B	CM07	0	36	S	0	35	S	0	37	S	4	36	IM						0	S									IM						2014 - Impaired for EC Trend Analysis Performed - No statistically significant trends were detected 2008 Meherrin River TMDL 2008 Bio This section of the North Meherrin River has incised banks and a high rate of sedimentation. Cobble surfaces in riffles were dominated by periphyton.
5ANMR029.33	VAC-K02R_NMR03A12	FPM,B	CM04	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							FS						2010 FPM This site was sampled as part of the Probabilistic Monitoring program. The stream had good epifaunal substrate but increased sediment deposition.
5ANTT002.96	VAT-K28R_NTT01A12	A	CU49	0	23	S	10	23	IM	10	23	IM	2	23	S																						
5ANTT-ORP-BNR	VAT-K28R_NTT01A12	CMON	CU49	0	37	IN	14	37	IN/O	7	24	IN/O	0	38	IN																						Black Water/Nottoway Riverkeeper, Level II pH Data
5ANTW003.30	VAT-K30R_NTW02B14	A,C,SS,TR	CU51				4	36	IM	0	36	S	0	32	S																						RETAINED 07-IM FT_Met Hg, As Largemouth Bass, Bowfin, Sunfish, Pickerel, Catfish & Longnose Gar, 07-FT_PCB
5ANTW013.76	VAT-K30R_NTW02A08	A,B	CU51				0	1	IN	0	1	IN	0	1	IN																FS						VCPMI FS [2009: S= 39.4, F= 35.1 2010: S = 30.2, F = 51.9 2011: S= 46.7, F= 28.2 2012: S= 23.4, F= 50.4 2013: S=34.1 F=41.1 2014: S=38.0 F= 29.9]
5ANTW015.60	VAT-K30R_NTW02A08	A,B	CU51				0	1	IN	0	1	IN	0	1	IN																FS						VCPMI FS [2009 - S = 42.5, F = 50.2, 2010- S= 56.8, F = 57.4, 2011 - S= 26.0, F = 71.7, 2012- S= 14.9, F = 83.6 2013: S=42.8 F= 44.1 2014: S= 16.4 F= 35.4]
5ANTW015.99	VAT-K30R_NTW01A08	A,TR	CU51				0	36	S	0	36	S	5	32	IM																						
5ANTW016.45	VAT-K28R_NTW03A00	A,B	CU48				0	1	IN	0	1	IN																			FS						Benthic VCPMI FS [2009 : S= 52.2, F = 59.9 2010: S = 51.7, F = 64.3, 2011: S = 29.4, F = 33.0, 2012: S = 28.1, F = 71.4 2013: S=50.0 F=60.9 2014: S= 20.3 F=39.8]
5ANTW029.65	VAT-K28R_NTW02A00	FPM,B	CU48	0	2	S	0	2	S	0	2	S	0	1	IN																FS						Benthic ProbMon VCPMI FS [2009: S= 68.7, F=65.7] Sed = S, 2009.
5ANTW035.44	VAT-K28R_NTW01A00	A,TR	CU43	0	36	S	0	36	S	1	36	S	1	35	S																						Retained: 07-IM, FT_Met Hg, As Bowfin, Largemouth Bass, Redhorse Sucker, Catfish & Sunfish 07-OE
5ANTW045.45	VAP-K24R_NTW04B00	TM	CU36	0	12	S	0	12	S	1	12	S																									
5ANTW052.83	VAP-K24R_NTW04B00	PA	CU32	0	12	S	0	12	S	0	12	S	3	12	IM																						
5ANTW054.10	VAP-K24R_NTW04B00	FPM,B	CU32	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									FS						2014 benthics
5ANTW066.34	VAP-K23R_NTW02B00	PA,TM	CU30	0	25	S	0	24	S	0	24	S									0	S															
5ANTW066.95	VAP-K23R_NTW02B00	FPM,PA,B	CU30	0	4	S	0	4	S	0	4	S	0	2	S				0	S	0	S									FS						2012 and 2014 benthics/metals
5ANTW078.20	VAP-K19R_NTW01B00	A,B,TR	CU18	0	37	S	0	36	S	0	38	S	3	36	S																FS						Trend Station - increasing pH - decreasing SC; 2013 benthics
5ANTW091.70	VAP-K19R_NTW01C08	A,TM	CU17	0	25	S	0	24	S	0	24	S	1	24	S																						
5ANTW098.82	VAP-K19R_NTW02A06	FPM,B	CU15	0	1	W	0	1	W	0	1	W	0	1	W				0	S	0	S	0	S							FS						2010 Probmon; no new data since 2012 cycle
5ANTW109.02	VAP-K17R_NTW01A00	A,TR	CU13	0	40	S	0	40	S	0	42	S	9	41	IM																						Trend Station - decreasing temp, SC, TP
5ANTW113.13	VAP-K17R_NTW01A00	TM	CU13	0	12	S	0	12	S	0	12	S	3	12	IM																						

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
5ANTW115.32	VAC-K16R_NTW01A02	A	CU11	0	12	S	0	12	S	0	12	S	0	12	S																						
5ANTW118.04	VAC-K16R_NTW01A02	C	CU11																				0	S	0	S	1	O	1	O								2007 FT Sampling OE - PCB 1 Species, As 1 Species, Hg 1 Species
5ANTW126.94	VAC-K16R_NTW01B04	A	CU09	0	10	S	0	10	S	0	12	S	2	12	IM						0	S																
5ANTW127.14	VAC-K16L_NTW01L04	L,C	CU09	0	60	S	3	47	S	0	60	S	0	21	S						0	S	0	S	0	S	1	O	0	S		2	3	IM	0	3	S	2006, 2009-2010 Fort Pickett Reservoir Algaecides Applied/Aerated Lake 2007 FT Sampling OE - As 1 Species & Pb 1 Species
5ANTW128.67	VAC-K16L_NTW01L04	L	CU07	0	24	S	2	18	IM	0	24	S	0	7	S						0	S	0	S	0	S												2006 Fort Pickett Reservoir Not in Lacustrine Zone Pooled Data: DO - 2/48 Violation Rate pH - 1/28 Violation Rate 2012 - Lake station dropped since not in lacustrine zone
5ANTW134.52	VAC-K14R_NTW01C98	FPM,B	CU04	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W	0	W					IM							2007 Probmon This section of the Nottoway River had very slow-moving water and limited habitat availability, mostly in the form of large woody debris. Sediment deposition in the river was relatively high and banks were marginally stable. The flow was low in the fall due to the drought.
5ANTW136.52	VAC-K14R_NTW01C98	C,TM	CU04	0	12	S	0	12	S	0	11	S	1	12	S								0	S	0	S	0	S	0	S								2006 Nottoway Basin TMDL 2002 FT/Sed; Previously listed as 5ANTW132.93
5ANTW142.08	VAC-K14R_NTW01B06	A	CU04	0	12	S	0	12	S	0	12	S	0	12	S																						
5ANTW143.06	VAC-K14L_NTW01L00	L,C	CU04	0	88	S	7	39	IM	5	88	S	2	14	IM						0	S					2	IM	0	S								2007/2011-2012 Nottoway Falls Lake Nutrients Not Assessed - Not in Regulation 2007 FT Sampling Hg 2 Species OE - As 1 Species
5ANTW153.04	VAC-K14R_NTW01A98	FPM,B	CU01	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W	0	W					FS							2009 FPM This site was sampled as part of the Probabilistic Monitoring program. The stream had marginal epifaunal substrate, marginally unstable banks, and increased sediment deposition .
5ANTW155.06	VAC-K14R_NTW01A98	A,TM,TR	CU01	0	36	S	0	36	S	0	36	S	6	36	IM						0	S																2006 Nottoway Basin TMDL
5A-NTW-LUN06-SSWCD	VAC-K14R_NTW01C98	CMON	CU04	0	10	S							2	34	IN																						Southside SWCD Station - Level II Coliscan Category 3C
5A-NTW-LUN07-SSWCD	VAC-K14R_NTW01A98	CMON	CU01	0	10	S							3	36	IN																						Southside SWCD Station - Level II Coliscan Category 3C
5AOTD004.31	VAP-K26R_OTD01A98	A	CU39	0	10	S		10	NA	0	12	S	1	12	S																						Class VII; no new data since 2012 cycle
5AOTR001.26	VAP-K32R_OTR02A00	A	CU56	0	12	S		12	NA	0	12	S	2	12	IM																						Class VII; aka PL-2C; no data since 2014 cycle
5AOTR004.21	VAP-K32R_OTR02A00	FPM,TM,B	CU56	0	2	S		2	NA	0	2	S	0	1	W				0	IN	0	IN									IN							Class VII; 2014 benthics
5AOTR004.31	VAP-K32R_OTR02A00	TM,B,PA	CU56	0	14	S		14	NA	0	14	S									0	S									IN							Class VII; 2013-2014 benthics; aka PL-6B
5AOTR008.07	VAP-K32R_OTR01A98	A,PA,TM	CU56	0	17	S		17	NA	0	17	S	3	12	IM						0	S																Class VII
5AQRL000.21	VAP-K10R_QRL01A10	FPM,B	CM23	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	IN									IN							2014 probmon
5AQRL000.54	VAP-K10R_QRL01A10	TM,PA	CM23	0	24	S	6	24	IM	3	24	IM	3	11	IM						0	S																
5ARCN003.36	VAP-K25R_RCN01A02	TM	CU35	0	13	S		13	NA	0	13	S									0	S																Class VI
5ARCN014.72	VAP-K25R_RCN01A02	A	CU35	0	12	S		12	NA	0	12	S	2	12	IM																						Class VII
5ARCY000.90	VAP-K10R_RCY01A10	TM	CM23	0	12	S	1	12	S	2	12	IM	0	11	S						0	S																
5ARDC001.51	VAP-K08R_RDC01A98	FPM,B	CM18	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S							FS							2010 Probmon; no new data since 2012 cycle
5ARDC007.30	VAP-K08L_RDC01A98	L,C	CM18	0	97	S	7	56	IM	10	102	S	0	21	S						0	S					1	O						2	3	IM	All DO violations in hypolimnion TSI(TP) = 64, TSI(CA) = 69, TSI(SD) = 66; 2007 FT PCB ok, Pest ok, Metals Hg 1 sp(largemouth bass).
5ARDC008.50	VAP-K08L_RDC01A98	TM	CM18	0	47	S	9	47	IM	1	47	S																									new station 2016 cycle
5ARKN006.40	VAT-K34R_RKN01A02	A,TR	CU61					36	NA	0	36	S	16	35	IM																						
5AROW002.41	VAP-K23R_ROW03B10	TM	CU28	0	13	S		12	NA	0	12	S	4	12	IM																						
5AROW004.72	VAP-K23R_ROW03B10	A,TM	CU28	0	22	S		22	NA	0	24	S	8	24	IM																						Class VII
5AROW007.62	VAP-K23R_ROW03B10	FPM,B	CU28	0	1	W		1	NA	0	1	W	0	1	W				0	IN	0	IN	0	S							IN							Class VII; 2010 sed Probmon; no new data since 2012 cycle
5AROW008.64	VAP-K23R_ROW03B10	TM	CU28	0	12	S		12	NA	0	12	S	0	12	S																						Class VII
5AROW013.14	VAP-K23R_ROW03B10	A	CU28	0	12	S		12	NA	0	12	S	2	12	IM																						Class VII - no data since 2014 cycle
5ARRC000.92	VAP-K20R_RRC01A00	A	CU21	0	12	S	1	12	S	1	12	S	1	10	S																						
5ARSE001.22	VAP-K07R_RSE01A96	A	CM15	0	12	S	0	12	S	0	12	S	2	12	IM																						No data since 2014 cycle
5ARSE009.30	VAP-K07R_RSE01A96	TM	CM15	0	1	W	1	1	W	0	1	W									0	IN																No new data since 2012 cycle
5ARSE009.70	VAP-K07R_RSE01A96	TM	CM15	0	1	W	1	1	W	0	1	W									0	IN																No new data since 2012 cycle
5ARSK003.08	VAP-K10R_RSK01A00	A,TM	CM22	0	24	S	0	24	S	0	24	S	1	12	S						0	S																
5ARSK006.97	VAP-K10R_RSK01A00	TM	CM22	0	12	S	3	12	IM	1	12	S																										
5ARSK009.28	VAP-K10R_RSK01A00	TM	CM22	0	12	S	4	12	IM	0	12	S																										
5ARSK011.59	VAP-K10R_RSK01A00	TM	CM22	0	12	S	0	12	S	0	12	S																										
5ARYC002.31	VAP-K17R_RYC01A16	PA,TM	CU13	0	25	S	4	25	IM	0	25	S	10	24	IM																						
5ARYC003.04	VAP-K17R_RYC01A16	FPM,B	CU13	0	2	S	0	2	S	0	2	S	1	1	W				0	IN	0	S									IN							2014 probmon
5ARYK002.34	VAC-K02R_RYK01A08	A,TM,B	CM07	0	14	S	0	14	S	0	14	S	2	12	IM																FS							2013 Bio This site had optimal habitat but banks became unstable

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
																																					further upstream. This stream exhibits seasonal variability around the assessment threshold but the fall score shows the stream is capable of supporting a healthy aquatic community. This site will be monitored in the future due to this fluctuation.
5ARYR000.62	VAP-K07R_RYR01A08	TM,B	CM15	0	11	S	0	11	S	0	11	S									0	S									IM							2012 benthics; no data since 2014 cycle
5ARYR001.23	VAP-K07R_RYR01A08	A,B	CM15	0	11	S	0	11	S	0	11	S									0	S									IM							2011 benthics; no data since 2014 cycle
5ASAP001.46	VAP-K22R_SAP01B00	A,TM	CU24	0	25	S	1	24	S	1	24	S	4	23	IM																							
5ASAP005.54	VAP-K22R_SAP01A00	A,TM	CU24	0	12	S	0	12	S	0	12	S	0	12	S																							
5ASAP013.69	VAP-K22R_SAP01A00	A,TM	CU23	0	22	S	0	22	S	0	23	S	5	23	IM																							
5ASAP021.69	VAP-K22R_SAP01C16	TM	CU23	0	12	S	0	12	S	0	12	S	0	12	S																							
5ASCK006.96	VAT-K35R_SCK02A08	A,TR	CU65					32	NA	0	32	S	8	29	IM																							
5ASCK013.24	VAT-K35R_SCK04A10	A	CU63					12	NA	0	12	S	1	12	O																							
5ASEC012.54	VAP-K31R_SEC01A04	TM	CU52	0	12	S		12	NA	0	12	S	3	12	IM																							Class VII
5ASGC007.19	VAP-K25R_SGC01A98	A	CU34	0	11	S		11	NA	0	11	S	1	11	S																							Class VII
5ASHN000.77	VAP-K04R_SHN01A06	A	CM11	0	12	S	0	12	S	0	12	S	6	11	IM																							No data since 2014 cycle
5ASMR007.48	VAC-K01R_SMR01A06	A,TM	CM03	0	11	S	0	11	S	0	12	S	3	12	IM								0	S															2008 Meherrin River TMDL
5ASMR017.13	VAC-K01R_SMR02A16	B	CM02	0	2	S	0	2	S	0	2	S																			J							2013 Bio In the spring there was good habitat but moderate deposition of sediment and moderate bank stability. In the fall, the stream had low flow and stagnant water in addition to lacking good leaf pack habitat. Seasonal low flow may have caused the low SCI score in the fall. This stream exhibits seasonal variability around the assessment threshold, therefore further sampling is required to accurately assess water quality within this reach.
5ASNY003.19	VAP-K04R_SNY01A96	FPM,B	CM11	0	3	S	0	3	S	0	3	S	0	1	W				0	IN	0	S	0	S							IN							2011 probmon; no data since 2014 cycle
5ASNY003.44	VAP-K04R_SNY01A96	A,B	CM11	0	2	S	0	2	S	0	2	S																			FS							2014 benthics
5ASRE002.12	VAP-K29R_SRE01A02	TM,B	CU45	0	13	S		13	NA	0	13	S									0	S									IN							Class VII; aka PL-4E; 2013-2014 benthics
5ASRN000.65	VAP-K32R_SRN01A94	TM	CU55	0	31	S		30	NA	7	36	IM	5	36	IM						0	S																Class VII; high pH violations; no data since 2014 cycle; chronic ammonia exceedance in 2014 is deleted 2016 b/c temp and pH were QF
5ASRN000.66	VAP-K32R_SRN01A94	TM	CU55	0	49	S		49	NA	14	54	IM									0	S																Class VII; high pH violations
5ASRN001.24	VAP-K32R_SRN01A94	B,TM	CU55	0	53	S		52	NA	0	58	S									0	S									IM							Class VII; 2009 and 2013 benthics
5ASRN001.90	VAP-K32R_SRN01A94	TM,B	CU55	0	53	S		53	NA	0	57	S									0	S									IM							Class VII; 2009 and 2013 benthics
5ASRN001.99	VAP-K32R_SRN01A94	TM	CU55	0	30	S		30	NA	0	35	S									0	S																Class VII; no data since 2014 cycle
5ASRN003.69	VAP-K32R_SRN01A94	TM	CU55	0	42	S		41	NA	0	42	S									0	S																Class VII
5ASRN003.82	VAP-K32R_SRN02A06	TM	CU55	0	36	S		35	NA	0	36	S									0	S																Class VII
5ASTG002.18	VAP-K18R_STG01A98	A,B,TM	CU14	0	28	S	0	28	S	0	28	S	1	12	S																	FS							2011 and 2014 benthics
5ASTG013.22	VAP-K18R_STG01B14	A	CU14	0	10	S	1	10	S	1	12	S	0	12	S																								No new data since 2012 cycle
5ASTH001.35	VAP-K17R_STH01A12	A	CU13	0	10	S	1	10	S	1	11	S	1	11	S																								No new data since 2012 cycle
5ASTN008.78	VAT-K38R_STN01A00	A,TR	CL03					36	NA	0	36	S	6	34	IM																								Benthic IM [04 - Retained]
5ASTO001.20	VAP-K21R_STO02B00	A,TR	CU25	0	36	S	0	36	S	0	36	S	3	36	S																								
5ASTO002.58	VAP-K21R_STO02B00	FPM	CU25	0	3	S	0	3	S	0	3	S	0	1	W				0	IN	0	S	0	S																2011 sed; no data since 2014 cycle
5ASTO006.99	VAP-K21R_STO01B00	TM	CU25	0	13	S	0	12	S	0	12	S	3	12	IM																								
5ASTO013.23	VAP-K21R_STO02C08	A	CU25	0	12	S	1	12	S	0	12	S	0	12	S																								No data since 2014 cycle
5ASTO022.61	VAP-K21R_STO02A00	TM,B	CU22	0	15	S	0	14	S	0	14	S	1	12	S																	IN							2012 benthics
5ASYC003.90	VAC-K16R_SYC01A14	B	CU07	0	3	S	0	3	S	0	3	S																			IM							2012/2013 Bio Seay Creek and its benthic community is limited by available habitat. Hardpan clay is dominant and banks show signs of frequent scouring events. Algae and brown floc observed in slower reached of the stream, indicating a potential for nutrient enrichment.
5ATEG001.77	VAP-K17R_TEG01A16	TM	CU13	0	12	S	0	12	S	0	12	S	6	12	IM																								
5ATLR006.84	VAP-K04R_TLR01A10	FPM,B	CM12	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S									FS							2010 sed Probmon; no new data since 2012 cycle
5ATMT006.63	VAC-K16R_TMT01A10	A	CU10	0	12	S	4	12	IM	0	12	S	2	12	IM						0	S																Check 7Q10 2016 - EC Impairment
5ATRE008.48	VAT-K27R_TRE02A00	A	CU42					36	NA	1	36	S	9	36	IM																								RETAIN 07-IM FT_Met Hg, As Largemouth Bass, Sunfish, Bowfin, Pickerel, Eel
5ATRE016.02	VAT-K27R_TRE01A00	A,C,TR	CU40					36	NA	0	36	S	11	35	IM																								
5ATRE038.07	VAP-K26R_TRE01A00	A	CU37	0	12	S	0	12	S	0	12	S	0	12	S																								No data since 2014 cycle
5ATRR002.50	VAT-K13R_TRR01A00	A,TR	CM31					36	NA	0	36	S	10	35	IM																								
5ATSK000.59	VAC-K02R_TSK01A14	B	CM04	0	4	S	0	4	S	0	4	S																			FS							2011/2014 Bio Tussekiah Creek exhibits high seasonal variability with a spring VSCI just below the impairment threshold. Bank condition and sediment scores indicate storm scour may be limiting habitat availability in spring.
5ATWT001.19	VAP-K24R_TWT01A16	TM	CU33	0	11	S		11	NA	0	11	S	4	11	IM																								Class VII water
5ATYD000.31	VAP-K05R_TYD01A16	TM	CM14	0	12	S	0	12	S	0	12	S																										
5AURH001.77	VAP-K26R_URH01A12	A	CU39	0	10	S		11	NA	0	11	S	0	11	S																								Class VII; no new data since 2012 cycle
5AWAC000.03	VAT-K36R_WAC01A08	A,TR	CU69	0	34	S	10	34	IM	1	34	S	5	34	IM																								
5AWAQ001.40	VAP-K17R_WAQ03A16	TM	CU12	0	12	S	0	12	S	0	12	S	2	12	IM																								
5AWAQ008.93	VAP-K17R_WAQ01A98	A	CU12	0	10	S	0	10	S	1	12	S	1	12	S																								No new data since 2012 cycle

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
5AWAQ019.29	VAP-K17R_WAQ02B16	TM	CU12	0	12	S	0	12	S	0	12	S	2	12	IM																						
5AWAQ020.52	VAP-K17R_WAQ01B00	A	CU12	0	10	S	0	10	S	1	12	S	3	12	IM																						No new data since 2012 cycle
5AWIL002.42	VAP-K08R_WIL01A10	A,B,TM,SS	CM18	0	46	S	3	46	S	5	48	S	7	24	IM				0	S	0	S									IM							Total Zn result exceeds dissolved Zn standard. Although not a violation, will be OE; High BOD; mulch operation, discolored water; 2009-2014 benthics
5AWKS001.00	VAP-K31R_WKS03A10	TM,B	CU54	0	2	S		2	NA	0	2	S																			IN							Class VII; 2009 benthics; no new data since 2012 cycle
5AWKS009.11	VAP-K31R_WKS01A00	TM	CU54	0	11	S		11	NA	0	11	S	3	11	IM																						Class VII; no data since 2014 cycle
5AWOK000.54	VAP-K20R_WOK01A00	A,TM	CU20	0	23	S	2	22	S	0	24	S	0	12	S																						aka PL-10A
5AWOK006.54	VAP-K20R_WOK01A00	TM	CU20	0	12	S	1	12	S	0	12	S	1	12	S																						
5AWRN000.42	VAP-K23R_ROW03A06	TM	CU28	0	12	S		12	NA	0	12	S	0	12	S																						Class VII water
5AWSN000.48	VAC-K15R_WSN01A08	A	CU06	0	11	S	0	11	S	0	11	S	2	11	IM																						
5AX**-PETE-06-NPS	VAP-K23R_ROW01A98	NONA	CU26	0	5	S		5	NA	0	5	S																									NPS - level 3 - Class VII water
5AX**-PETE-08-NPS	VAP-K23R_ROW01A98	NONA	CU26	0	10	S		8		0	10	S																									NPS - level 3 - Class VII water
5AXAD001.59	VAP-K19R_XAD01A12	TM	CU16	0	24	S	5	24	IM	2	24	S	1	12	S																						
5AXAL000.02	VAP-K32R_XAL01A08	TM	CU55	0	19	S		18	NA	0	23	S	7	24	IM						0	S																Class VII; previously called 5ASRN001.99 RBI; no data since 2014 cycle
5AXAW000.19	VAP-K32R_XAW01A08	TM	CU55	0	32	S		30	NA	0	37	S	17	36	IM						0	S																Class VII; elevated ammonia but no violations; no data since 2014 cycle
5AXBL000.80	VAC-K16R_XBL01A94	B,SS	CU08	0	10	S	0	10	S	0	10	S							0	S											IM							2008/2010-2012 Bio Below Blackstone WWTP
5AXBL001.18	VAC-K16R_XBL02A02	B,SS	CU08	0	10	S	0	10	S	0	10	S							0	S											IM							2008/2010-2012 Bio Above Blackstone WWTP
5AXEC000.76	VAT-K28R_XEC01A14	B,FPM	CU47	0	2	S	1	2	IN/O	2	2	IN/O	0	1	IN																	IM							Benthic ProbMon VCPMI IM [2012: S = 17.1, F = 37.5];
5AXED000.75	VAT-K35R_SCK04A14	B,FPM	CU65					2	NA	0	2	S	0	1	IN																	FS							Benthic ProbMon VCPMI FS [2012: S = 36.4, F = 53.9]
5AXEI000.27	VAC-K01R_XEI01A08	FPM,B	CM02																													J							2001 Probabilistic Monitoring Insufficient information prohibits an accurate assessment. Personnel who performed the spring 2002 monitoring are no longer with the agency, therefore pertinent information about the stream is unavailable. No water data recorded.
5AXEJ001.73	VAP-K19R_XEJ01A04	TM,B	CU17	0	1	W	0	1	W	0	1	W																			IN							2013 benthics
5AXET000.28	VAC-K02R_XET01A06	FPM,B	CM07	0	2	S	0	2	S	0	2	S	1	2	IN				0	S	0	S	0	S	0	S					FS							2003/2004 Probabilistic Monitoring Carry Over 2008 Bio This stream is very incised and dominated by sand. It has very high sediment deposition, low bank stability and poor bank vegetative protection. The riparian zone is small due to pasture on the left bank, but an electric fence keeps livestock out of stream. Drought conditions in fall 2008 caused the stream to be very stagnant.
5AXFG000.04	VAP-K32R_SRN02A06	TM,SS	CU55	0	36	S		36	NA	0	37	S									0	S																Class VII; elevated NH3 but no violations
5AXFH001.74	VAC-K03R_XFH01A06	TM	CM10	0	8	S	0	8	S	0	8	S	5	9	IM																						No New Data 2006 Flat Rock Creek LDA
5AXFI001.99	VAC-K03R_XFI01A06	TM	CM10	0	8	S	0	8	S	0	8	S	0	9	S																						No New Data 2006 Flat Rock Creek LDA
5AXGU000.35	VAP-K11R_XGU01A10	TM	CM24	0	11	S	4	11	IM	9	11	IM																									very low DO
5AXGW001.19	VAP-K11R_XGW01A10	TM	CM24	0	12	S	0	12	S	1	12	S																									
5AXHR000.32	VAC-K01R_XHR01A10	FPM,B	CM03	0	3	S	0	3	S	0	3	S	0	1	W				0	W	0	S	0	W	0	W					FS							2008 Probmon This stream had good habitat and an excellent riparian zone but was severely impacted by drought in the summer and fall of 2008 due to its small size. FS with observed effects for aquatic life use. Further sampling under normal flow conditions needed to accurately characterize stream benthic community; however this site was monitored as part of the probabilistic monitoring program, is accessed via private property, and will not be revisited.
5AXHW000.38	VAP-K19R_XHW01A12	TM	CU16	1	19	S	5	19	IM	1	11	S	1	11	S																						
5AXHX001.19	VAP-K19R_XHX01A12	TM	CU16	0	21	S	0	21	S	0	21	S	5	21	IM																						
5AXHY001.08	VAP-K19R_XHY01A12	TM	CU16	0	11	S	0	11	S	0	11	S	3	11	IM																						No new data since 2012 cycle
5AXIA000.48	VAC-K14R_XIA01A14	FPM,B	CU02	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S			0	W					FS							2011 FPM 5AXIA000.48 is a small stream greatly affected by flow during dry periods. Habitat scores and Taxa lists indicate the potential for a balanced community which is highly dependent on flow.
5AXIC-PETE-09-NPS	VAP-K23R_ROW01A98	NONA	CU26	0	11	S		5		0	12	S																									NPS - level 3 - Class VII water
5AXID002.19	VAP-K21R_XID01A12	TM	CU22	0	12	S	0	12	S	1	12	S									0	S																
5AXID-PETE-10-NPS	VAP-K21R_XID01A12	NONA	CU22	0	27	S	12	24	IM	27	27	IM																									NPS - Level 3
5AXII000.38	VAP-K08R_XII01A16	TM	CM18	0	10	S	0	10	S	1	10	S	3	10	IM																						
5AXIJ000.76	VAP-K23R_JNH01C16	TM	CU29	0	12	S		11	NA	0	12	S	0	12	S																						Class VII water
5AXIM000.04	VAP-K05R_XIM01A16	TM	CM14	0	9	S	0	9	S	0	9	S																									
5BBBC000.76	VAT-K42E_BBC01A04	A,TR	AS19				4	33	IM	1	30	S				6	34	IM																			
5BBKW002.50	VAT-K41R_BKW01A00	A,TR	AS16	0	35	S	4	34	IM	0	35	S	3	31	O																						07-OE-FT_Met As Longnose Gar Retained
5BBKY000.13	VAT-K42E_BKY04A14	C2,B	AS20				0	1	IN	0	1	IN				1	1	IN/O	0	IN	0	IN									FS							11 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
5BBKY000.86	VAT-K42E_BKY04A14	C2,B	AS20				0	1	IN	0	1	IN				1	1	IN/O			0	IN									FS							12 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY000.99	VAT-K42E_BKY04A14	A,TR	AS20				0	31	S	2	31	O				3	31	S																			
5BBKY002.42	VAT-K42E_BKY03A08	C2,B	AS20				0	3	IN	0	3	IN				0	1	IN													FS							14 C2 Benthic ProbMon
5BBKY002.53	VAT-K42E_BKY03A08	C2,B	AS20				0	2	IN	0	2	IN				0	1	IN	0	IN	0	IN									FS							11 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY003.11	VAT-K42E_BKY03A08	C2,B	AS20				0	2	IN	0	2	IN				0	2	IN													FS							13 C2 Benthic ProbMon
5BBKY003.47	VAT-K42E_BKY03A08	A,TR	AS20				0	32	S	0	32	S				0	32	S																			
5BBKY003.63	VAT-K42E_BKY03A08	C2,B	AS20				0	3	IN	0	3	IN				0	1	IN	0	IN	0	IN									FS							09 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY004.38	VAT-K42E_BKY03A08	C2,B	AS20				0	3	IN	0	3	IN				0	1	IN													J							14 C2 Benthic ProbMon
5BBKY004.73	VAT-K42E_BKY01A08	C2,B	AS20				0	2	IN	0	2	IN				0	1	IN													FS							14 C2 Benthic ProbMon (WOE)
5BBKY004.85	VAT-K42E_BKY01A08	C2,B	AS20				0	3	S	0	3	S				0	1	IN			0	IN									FS							12 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY004.97	VAT-K42E_BKY03A08	C2,B	AS20				0	2	IN	0	2	IN				0	1	IN	0	IN	0	IN									J							11 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY005.37	VAT-K42E_BKY03A08	C2,B	AS20				0	1	IN	0	1	IN				0	1	IN													FS							14 C2 Benthic ProbMon
5BBKY005.52	VAT-K42E_BKY03A08	C2,B	AS20				0	3	IN	0	3	IN				0	1	IN	0	IN	0	IN									FS							09 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY005.60	VAT-K42E_BKY01A08	C2,B	AS20				0	2	S	0	2	S				1	1	O	0	IN	0	IN									FS							09 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY005.73	VAT-K42E_BKY01A08	C2,B	AS20				0	1	IN	0	1	IN				0	1	IN	0	IN	0	IN									FS							11 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY005.75	VAT-K42E_BKY01A08	C2,B	AS20				0	3	IN	0	3	IN				0	1	IN	0	IN	0	IN									FS							09 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY005.78	VAT-K42E_BKY01A08	C2,B	AS20				0	3	IN	0	3	IN				0	1	IN	0	IN	0	IN									FS							10 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY005.83	VAT-K42E_BKY03A08	C2,B	AS20				0	2	IN	0	2	IN				0	1	IN			0	IN									FS							12 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BBKY006.37	VAT-K42E_BKY02A00	A,C,TR	AS20				0	32	S	0	32	S				2	32	S											O								07-OE, FT_Met As Blue Crab & 07-FT_PCB Carp
5BBKY006.48	VAT-K42E_BKY01A08	A,TR	AS20				0	31	S	2	31	S				0	31	S																			
5BBKY007.70	VAT-K42E_BKY01A08	C2,B	AS20				0	2	IN	0	2	IN				0	1	IN													FS							13 C2 Benthic ProbMon
5BBKY007.97	VAT-K42E_BKY01A08	C2,B	AS20				0	2	IN	0	2	IN				0	1	IN			0	IN									J							12 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BHPC000.00	VAT-K42E_HPC02A04	A,TR	AS18				1	32	S	0	32	S				3	32	S																			
5BHPC001.46	VAT-K42E_HPC01A00	A,TR	AS18				1	33	S	1	30	S				6	33	IM																			
5BIND001.15	VAT-K40R_IND01A02	A,TR	AS10				10	34	IM	1	35	S	9	29	IM																							
5BLKD000.02	VAT-K39L_LKD01A06	L	AS04	0	13	S	0	13	S	13	13	IM	0	13	S																				0	2	S	Lake Drummond pooled nutrient data: Chlorophyll a (0 viol / 2 obs) S 2009, 2012 (no algaecide application). Lake Drummond pooled DO and pH data: DO (3 viol / 126 obs) S, pH (126 viol / 126 obs) IM. Water Toxics: NH3 = S.
5BLKD000.03	VAT-K39L_LKD01A06	L	AS04	0	14	S	0	14	S	14	14	IM	0	14	S																				0	2	S	Lake Drummond pooled nutrient data: Chlorophyll a (0 viol / 2 obs) S 2009, 2012 (no algaecide application). Lake Drummond pooled DO and pH data: DO (3 viol / 126 obs) S, pH (126 viol / 126 obs) IM. Water Toxics: NH3 = S.
5BLKD000.08	VAT-K39L_LKD01A06	L	AS04	0	26	S	2	26	S	26	26	IM	0	14	S																				0	2	S	Lake Drummond pooled nutrient data: Chlorophyll a (0 viol / 2 obs) S 2009, 2012 (no algaecide application). Lake Drummond pooled DO and pH data: DO (3 viol / 126 obs) S, pH (126 viol / 126 obs) IM. Water Toxics: NH3 = S.
5BLKD001.15	VAT-K39L_LKD01A06	L	AS04	0	28	S	1	28	S	28	28	IM	0	14	S																				0	2	S	Lake Drummond pooled nutrient data: Chlorophyll a (0 viol / 2 obs) S 2009, 2012 (no algaecide application). Lake Drummond pooled DO and pH data: DO (3 viol / 126 obs) S, pH (126 viol / 126 obs) IM. Water Toxics: NH3 = S.
5BLKD001.40	VAT-K39L_LKD01A06	L	AS04	0	29	S	0	29	S	29	29	IM	0	14	S																				0	2	S	Lake Drummond pooled nutrient data: Chlorophyll a (0 viol / 2 obs) S 2009, 2012 (no algaecide application). Lake Drummond pooled DO and pH data: DO (3 viol / 126 obs) S, pH (126 viol / 126 obs) IM. Water Toxics: NH3 = S.
5BLKD002.15	VAT-K39L_LKD01A06	L	AS04	0	16	S	0	16	S	16	16	IM	0	14	S																				0	2	S	Lake Drummond pooled nutrient data: Chlorophyll a (0 viol / 2 obs) S 2009, 2012 (no algaecide application). Lake Drummond pooled DO and pH data: DO (3 viol / 126 obs) S, pH (126 viol / 126 obs) IM. Water Toxics: NH3 = S.
5BMDY000.00	VAT-K42E_MDY01A04	A,TR	AS19				0	33	S	0	33	S				7	34	IM																			
5BMLD001.92	VAT-K41R_MLD02A06	A,TR	AS17	0	35	S	11	34	IM	0	35	S	4	30	IM																							
5BNLR001.25	VAT-K41R_NLR04A08	C2,B	AS17	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	IN									FS							09 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BNLR003.44	VAT-K41R_NLR04A08	C2,B	AS17				0	1	IN	0	1	IN				0	1	IN													FS							14 C2 Benthic ProbMon (WOE) Conventional Data Insufficient - one sampling date
5BNLR003.87	VAT-K41R_NLR04A08	C2,B	AS16				0	2	S	0	2	IN				0	1	IN													FS							14 C2 Benthic ProbMon (WOE) Conventional Data Insufficient - one sampling date
5BNLR009.68	VAT-K41R_NLR04A08	C2,B	AS16	0	1	IN	0	1	IN	0	1	IN	0	1	IN				0	IN	0	IN									FS							09 C2 Benthic ProbMon (WoE), Conventional Data Insufficient-one sampling date.
5BNLR013.61	VAT-K41R_NLR02A06	A,TR	AS12	0	36	S	11	36	IM	0	36	S	2	35	S																							
5BNTH000.58	VAT-K42E_NTH01A00	C2,B	AS19				0	2	IN	0	2	IN				0	1	IN													FS							13 C2 Benthic ProbMon
5BNTW007.49	VAT-K40R_NTW04A08	A,TR	AS10	0	33	S	8	33	IM	0	33	S	3	33	O																							
5BNTW008.97	VAT-K40R_NTW03B10	A,TR	AS10	0	33	S	9	33	IM	1	33	S	2	31	S																							
5BNTW009.49	VAT-K40R_NTW03A08	A,TR	AS10	0	23	S	9	23	IM	1	23	S	3	32	O																							

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Chowan River and Dismal Swamp Basin																																					
5BNTW010.23	VAT-K40R_NTW03A08	A,TR	AS10	0	33	S	12	33	IM	1	33	S	4	32	IM																						
5BNTW011.90	VAT-K40R_NTW02A00	A,C,TR	AS09	0	33	S	20	33	IM	1	33	S	3	33	O															S							07-IM FT_Met Hg Largemouth Bass & Bowfin & FT_PCB
5BNTW012.86	VAT-K40R_NTW02A00	A,TR	AS09	0	33	S	22	33	IM	1	33	S	5	32	IM																						
5BNWN000.00	VAT-K42E_NWN02A00	A,TM,TR	AS20				6	33	IM	1	30	S				8	33	IM																			
5BNWN001.84	VAT-K42E_NWN01A00	A,TR	AS20				13	32	IM	0	30	S				11	31	IM																			
5BPCT001.79	VAT-K41R_PCT01A02	A,B,TR	AS15	0	35	S	16	34	IM	0	35	S	5	31	IM																						03 Benthic Retained
5BSHB000.57	VAT-K42E_SHB01A00	A,TR	AS19				0	31	S	0	31	S				2	31	O																			
5BSHB000.70	VAT-K42E_SHB01A00	C2,B	AS19				0	2	IN	0	2	IN				0	1	IN			0	IN									FS						12 C2 Benthic ProbMon, Conventional Data Insufficient due to one sampling date.
5BWNC001.73	VAT-K41R_WNC02A04	A,TR	AS14	0	36	S	2	36	S	0	36	S	1	33	S																						
5BWNC003.65	VAT-K41R_WNC01A00	A,TR	AS14	0	34	S	13	33	IM	1	30	O	0	3	S																						07-IM, FT_PCB & FT-OE, Met_As RETAINED
5BWNC010.02	VAT-C08E_WNC01A00	A	AS14					36	IM	1	36	S				22	35	IM																			WTOX=NH3, LYNPH
5BXAM000.60	VAT-K40R_XAM01A02	A,TR	AS09	0	33	S	20	30	IM	0	33	S	3	32	O																						
5BXAT000.30	VAT-K41R_XAT01A12	B,FPM	AS17	0	4	S	4	4	IM	0	4	S	1	2	O																	IM						Benthic ProbMon VCPMI IM [2009: S = 6.1, F = 11.3 2010: S = 12.2, F = 26.2]; Sed =S, 2009/2010.
5BXCK000.00	VAT-K39R_XCK01A00	A,TR	AS06					34	NA	1	35	S	0	31	S																						07-IM, FT_Met Hg & FT_PCB RETAINED
5NTW-D0000050-NCDENR	VAT-K30R_NTW02B14	NONA	CU51				5	18	IM	0	20	S																									NC Department of Natural Resources
614WAL	VAT-K36R_DKS01A10	CMON	CU66				5	13	IN	0	13	IN	0	13	IN																							Black Water/Nottoway Riverkeeper, Level II pH Data
619BLK	VAT-K36R_BLC01A06	CMON	CU67							0	55	IN	0	54	IN																							Black Water/Nottoway Riverkeeper, Level II pH Data
635SEA	VAT-K35R_ZZZ01A00	CMON	CU65							1	54	IN	0	53	IN																							Black Water/Nottoway Riverkeeper, Level II pH and E.coli Data, 07-IM FT_Met Hg, Largemouth Bass, Redear Sunfish, Bowfin, Chain Pickerel, White Catfish, Redhorse Sucker and Longnose Gar.
638CYP	VAT-K36R_CYS01A12	CMON	CU68							0	7	IN	0	7	IN																							Black Water/Nottoway Riverkeeper, Level II pH Data
640BER	VAT-K36R_CYS01A12	CMON	CU68							0	5	IN	0	5	IN																							Black Water/Nottoway Riverkeeper, Level II pH Data
687RND	VAT-K30R_ZZZ01A00	CMON	CU51	0	12	IN	0	10	IN	2	12	IN	0	11	IN																							Blackwater Nottoway Riverkeeper Level II data for pH, DO, and E. coli
Franklin	VAT-K36R_ZZZ01A00	CMON	CU70	0	13	IN		11	NA	0	13	IN	0	12	IN																							Black Water/Nottoway Riverkeeper, Level II pH Data

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2NAN-SNR0015.58-SUF	VAT-G13E_NAN01A00	NONA	JL48							0	71	S				42	75	IM																			City of Suffolk, JMSMH
2NAN-SNR0018.24-SUF	VAT-G13E_NAN01A00	NONA	JL48							0	69	S				45	74	IM																			City of Suffolk, JMSMH
2NAN-SNR0018.82-SUF	VAT-G13E_NAN01A00	NONA	JL48							0	69	S				43	75	IM																			City of Suffolk, JMSMH
2NAN-SNR0019.27-SUF	VAT-G13E_NAN01A00	NONA	JL48							0	57	S				25	61	IM																			City of Suffolk, JMSMH
2NAN-SNR0019.46-SUF	VAT-G13E_NAN01A00	NONA	JL48							0	56	S				26	59	IM																			City of Suffolk, JMSMH
2NAN-SNR002.86-SUF	VAT-G13E_NAN04A00	NONA	JL49							0	58	S				2	74	O																			City of Suffolk, JMSMH
2NAN-SNR007.88-SUF	VAT-G13E_NAN03A06	NONA	JL49							0	58	S				14	74	IM																			City of Suffolk, JMSMH
2NAN-SNR008.82-SUF	VAT-G13E_NAN03A06	NONA	JL49							0	57	S				13	73	IM																			City of Suffolk, JMSMH
2NPC-2-SCC	VAT-G15E_JMS05A06	CMON	JL58											9	NA																						Southeast CARE Coalition, JMSMH
2-NTR000.23	VAP-G05R_NTR01A00	FPM,B	JL18	0	2	S	0	2	S	0	2	S	1	1	W				0	IN	0	S	0	S							IM							2011 sed; 2011 benthics; no data since 2014 cycle
2NUB-1-IRC	VAT-G14R_ZZZ01B14	CMON	JL47	0	11	S	6	10	IN/O	0	4	IN																										Isle of Wight Ruritan Club
2-NWB002.93	VAT-G14L_NWB02A08	L	JL47	0	102	S	13	82	IM	0	102	S	0	6	S						0	S											2	2	IM	2	2	IM	Western Branch pooled nutrient data: TP & Chla (2 viol / 2 obs) IM 2009, 2012. Western Branch pooled DO and pH data: DO (105 viol / 828 obs) IM; pH (2 viol / 982 obs) S. Water Toxics - NH3=S
2-NWB004.67	VAT-G14L_NWB02A08	L	JL47	0	71	S	3	59	IM	0	71	S	0	6	S						0	S											2	2	IM	2	2	IM	Western Branch pooled nutrient data: TP & Chla (2 viol / 2 obs) IM 2009, 2012. Western Branch pooled DO and pH data: DO (105 viol / 828 obs) IM; pH (2 viol / 982 obs) S. Water Toxics - NH3=S
2-STJ002.00	VAT-G15E_STJ01A04	SS,TM	JL53							0	1	IN																										TMDL PCB Study, SBEMH
2TFR-COLOTT10-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					5	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT11-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT12-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT13-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					2	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT14-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					2	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT15-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					2	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT19-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT1-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					6	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT20-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT21-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					4	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT23-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					2	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT24-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					2	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CXBC-1-VMN	VAP-G05R_ZZZ01B02	CMON	JL18	0	18	IN	1	15	IN	4	18	IN/O	7	12	IN/O																						VMN - level 2
2CXBD000.15	VAP-G01R_XBD01B04	A,TM	JL03	0	10	S	3	10	IM	3	10	IM																										No data since 2014 cycle
2CXBD000.38	VAP-G01R_XBD01B04	A	JL03	0	5	S	1	5	IN	1	5	IN									0	S																No data since 2014 cycle
2CXBE000.69	VAP-G02R_XBE01A14	TM	JL06	0	10	S	0	10	S	4	10	IM																										No data since 2014 cycle
2CXBG000.02	VAP-G01R_XBG01A14	TM	JL01	0	1	W	0	1	W	0	1	W	1	1	W						1	IN/O																2012 PCB MS4 station - 1 sample > HH < ALUS; no data since 2014 cycle
2CXBL000.23	VAP-G03R_XBL01A14	TM	JL07																		0	IN																2012 PCB Study - 1 sample - ok
2CXBM000.12	VAP-G03R_XBM01A14	TM	JL07																		0	IN																2012 PCB Study - 1 sample - ok
2CXBP000.08	VAP-G05R_XBP01A14	TM	JL16	0	1	W	0	1	W	0	1	W									0	IN																No data since 2014 cycle
2CXBT000.69	VAP-G06R_XBT01A16	TM	JL19	0	12	S	1	12	S	0	12	S																										
2CXBT-BEV70-CSR	VAP-G06L_XBT01A14	CMON	JL19										0	3	IN																							Chickahominy Swamp Rats - Level II
2CXBW000.27	VAP-G06R_XBW01A16	SS	JL22	0	1	W	0	1	W	0	1	W							0	IN	0	IN																2013 metals, water organics - okay
2CXBX001.08	VAP-G01R_XYI01A06	TM	JL03	0	4	S	0	4	S	4	4	IM									0	S																
2CXBY000.19	VAP-G09R_XBY01A16	TM	JL26	0	12	S	6	12	IM	1	12	S									0	S																
2CXBZ-47-CWT	VAP-G01R_XBZ01A14	CMON	JL02	0	13	IN				0	13	IN																										Chesterfield Water Trends - level II
2CXCH-TUR20-CSR	VAP-G06R_XCH01A16	CMON	JL19										3	6	IN/O																							Chickahominy Swamp Rats - Level II
2CBKR-COLOBR4-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CBKR-COLOBR5-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CBKR-COLOBR6-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					2	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CBKR-COLOBR8-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					2	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CBKR-COLOBR9-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CBTS-BTS10-CSR	VAP-G06R_BTS01A02	CMON	JL19										1	8	IN/O																							Chickahominy Swamp Rats - Level II; co-located with 2-BTS002.62
2CBTS-BTS20-CSR	VAP-G06R_BTS01A02	CMON	JL19										2	9	IN/O																							Chickahominy Swamp Rats - Level II

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2CBTS-BTS30-CSR	VAP-G06R_BTS01A02	CMON	JL19										2	6	IN/O																							Chickahominy Swamp Rats - Level II
2-CCH001.54	VAP-G02R_CCH01A00	A,TM	JL05	0	12	S	4	12	IM	0	12	S																									No data since 2014 cycle
2CCHK004.74	VAP-G08E_CHK02A00	C2,B	JL29							0	3	W				1	1	W	0	IN	0	IN	0	S	0	S					J				1		One sample event; 2011 WOE: category 3B TF-M scenario 8; no data since 2014 cycle
2CCHK006.68	VAP-G08E_CHK02A00	C2,B	JL29		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					J				1		WOE 2014: TF-M scenario 4, Category 2B (slight but statistically sign mortality may be from cumulative metals contamination. No direct effects observed.)
2CCHK015.28	VAP-G08E_CHK02A00	C2,B	JL28		5	NA		5		0	5	W				0	1	W			0	IN	0	S	0	S					J				1		One sample event; WOE 2013: TF-M scenario 4, Category 2B (mortality induced by bacterial activity - pH drop, ammonia increase; potential chronic effects of metals & PAHs in sediment)
2CCHK019.81	VAP-G08E_CHK01A00	C2,B	JL25		6	NA		6		0	6	S				0	3	S			0	S	0	S	0	S					J				3		2012 WOE: Category 2B TF-M scenario 6 (medium risk of sed contamination primarily metals - significant mortality); 2013 WOE resampling: Category 2B, scenario 4 (toxicity probably of bacterial origin)
2CCHK071.66	VAP-G05R_CHK01C12	A	JL17	0	12	S	0	12	S	1	12	S	2	12	IM																						No new data since 2012 cycle
2CXAF000.46	VAP-G08R_XAF01A12	FPM,B	JL29	0	2	S		2	NA	0	2	S	0	1	W				1	IN/O	0	IN	0	S							IN						Class VII water; 2009 sed and benthics; 2009 dissolved Nickel chronic exceedance; no new data since 2012 cycle
2CXAG000.50	VAP-G05R_SNF02A12	TM	JL17	0	12	S	4	12	IM	6	12	IM	3	12	IM																						No new data since 2012 cycle
2CXAH000.35	VAP-G09R_XAH01A12	TM	JL26	0	9	S	4	9	IM	1	9	IN	2	6	IM						0	S															No data since 2014 cycle
2CXAI000.50	VAP-G09R_XAI01A12	TM	JL26	0	11	S	0	11	S	1	11	S																									No new data since 2012 cycle
2CXAJ000.69	VAP-G09R_XAJ01A12	TM	JL26	0	11	S	2	11	IM	1	11	S																									No new data since 2012 cycle
2CXAJ002.12	VAP-G09R_XAJ01A12	TM	JL26	0	1	W	0	1	W	1	1	W																									No new data since 2012 cycle
2CXAK000.08	VAP-G09R_XAK01A12	TM	JL26	0	11	S	2	11	IM	1	11	S																									No new data since 2012 cycle
2CXAL000.15	VAP-G09R_XAL01A12	TM	JL26	0	11	S	6	11	IM	2	11	IM																									No new data since 2012 cycle
2CXAM000.42	VAP-G09R_XAM01A12	TM	JL26	0	11	S	0	11	S	1	11	S																									No new data since 2012 cycle
2CXAN000.08	VAP-G03R_BER01A06	TM	JL07	0	1	W	1	1	W	0	1	W									1	IN/O															2009 PCB Study - 1 H2O sample - >HH
2CXAY000.23	VAP-G01R_XAY01A06	SS	JL01	0	1	W	1	1	W	0	1	W									1	IN/O															2009 water column PCB study - 1 sample > both HH & ALUS; no new data since 2012 cycle
2CXBB000.62	VAP-G04R_XBB01A14	A	JL14	0	12	S	1	12	S	0	12	S	2	12	IM																						No data since 2014 cycle
2-STJ000.81	VAT-G15E_STJ01A04	C,TM	JL53					2	IM																				4	IM							12-IM FTox PCBs - Croaker, Gizzard Shad, Mummichog, SBEMH
2-NAN019.14	VAT-G13E_NAN01A00	A,TR	JL48					36	O	0	36	S				26	34	IM																			JMSMH
2NAN-NR1-NRPA	VAT-G13E_NAN04A00	CMON	JL49					32	S					31	NA																						JMSMH, Nansemond River Preservation Alliance
2NAN-NR2-NRPA	VAT-G13E_NAN04A00	CMON	JL49					32	S					31	NA																						JMSMH, Nansemond River Preservation Alliance
2NAN-NR3-NRPA	VAT-G13E_NAN04A00	CMON	JL49					32	S					31	NA																						JMSMH, Nansemond River Preservation Alliance
2NAN-NR4-NRPA	VAT-G13E_NAN03A06	CMON	JL49					32	S					31	NA																						JMSMH, Nansemond River Preservation Alliance
2NAN-NR5-NRPA	VAT-G13E_NAN03A06	CMON	JL49					32	S					31	NA																						JMSMH, Nansemond River Preservation Alliance
2NAN-NR6-NRPA	VAT-G13E_NAN02A06	CMON	JL48					32	S					31	NA																						JMSMH, Nansemond River Preservation Alliance
2NAN-NR7-NRPA	VAT-G13E_NAN01A00	CMON	JL48					32	S					12	NA																						JMSMH, Nansemond River Preservation Alliance
2NAN-NR8-NRPA	VAT-G13E_NAN01A00	CMON	JL48					20	S					19	NA																						JMSMH, Nansemond River Preservation Alliance
2NAN-NR9-NRPA	VAT-G13E_NAN01A00	CMON	JL48					19	S					19	NA																						JMSMH, Nansemond River Preservation Alliance
2NAN-SNR000.20-SUF	VAT-G13E_NAN04A00	NONA	JL49							0	53	S				1	69	O																			City of Suffolk, JMSMH
2NAN-SNR001.48-SUF	VAT-G13E_NAN04A00	NONA	JL49							3	54	O				0	70	S																			City of Suffolk, JMSMH
2NAN-SNR0011.83-SUF	VAT-G13E_NAN03A06	NONA	JL49							0	70	S				28	74	IM																			City of Suffolk, JMSMH
2NAN-SNR0013.50-SUF	VAT-G13E_NAN02A06	NONA	JL48							0	70	S				35	75	IM																			City of Suffolk, JMSMH
2CCHK-CHK20-CSR	VAP-G06R_CHK02A14	CMON	JL20										1	4	IN/O																						Chickahominy Swamp Rats - Level II; co-located with 2-CHK049.59
2CCHK-CHK30-CSR	VAP-G06R_CHK01A98	CMON	JL19										0	12	IN																						Chickahominy Swamp Rats - Level II; co-located with 2-CHK055.04
2CCHK-CHK40-CSR	VAP-G06R_CHK01A98	CMON	JL19										0	2	IN																						Chickahominy Swamp Rats - Level II
2CCHK-CHK50-CSR	VAP-G06R_CHK01A98	CMON	JL19										0	5	IN																						Chickahominy Swamp Rats - Level II; co-located with 2-CHK062.57
2-CCH-RICH-06-NPS	VAP-G02R_CCH01A00	NONA	JL05	0	30	S	7	28	IM	2	29	S																									NPS - level 3; co-located with 2-CCH001.54
2CDER-DER10-CSR	VAP-G06R_DER01A04	CMON	JL21										0	4	IN																						Chickahominy Swamp Rats; Level 2
2CDPT000.15	VAT-G15E_DPT01A06	A,B	JL55					2	IM	0	2	IN				0	1	IN	0	IN	0	IN									J						WBEMH, 09 C2 Benthic ProbMon
2CDSC003.11	VAP-G08E_DSC01A00	C2,B	JL27		4	NA		4		0	4	W				0	1	W	0	IN			0	S	0	S					FS				1		2011 WOE: category 2A TF-S scenario 2; no data since 2014 cycle
2CEBE002.33	VAT-G15E_EBE02A06	C2,B	JL54					4	IM	0	4	IN																			FS						13 C2 Benthic ProbMon, EBEMH
2-CEL001.56	VAP-G01R_CEL01A04	A,SS	JL03	0	13	S	0	13	S	0	13	S	4	12	IM						0	IN															2009 PCB Study - 1 H2O sample - ok; no data since 2014 cycle
2-CEL004.03	VAP-G01R_CEL01A04	B,A	JL03	0	3	S	0	3	S	0	3	S																			FS						2012 and 2014 benthics
2CELI002.83	VAT-G15E_ELI03A08	C2,B	JL56					6	IM	0	6	IN				0	1	IN													FS						ELIPH, 12 C2 Benthic ProbMon
2CELI003.61	VAT-G15E_ELI02A06	A,C2,B	JL56					14	O	0	14	IN				0	1	IN													J						ELIPH, 10 C2 Benthic ProbMon
2CELI005.00	VAT-G15E_ELI02A06	C2,B	JL56					4	IM	0	4	IN				0	1	IN													FS						ELIPH, 12 C2 Benthic ProbMon
2CFAC-41-CWT	VAP-G01R_XDA01A12	CMON	JL02	0	5	IN				0	5	IN	0	4	IN																						Chesterfield Water Trends - level II
2CGRK-GC-ACB	VAP-G01R_GRK01A12	CMON	JL02	0	7	S	0	7	S	1	7	IN																									ACB - level III
2-CHK002.17	VAP-G08E_CHK02A00	A,C,TR	JL29		43	NA		43		0	43	S				0	33	S											1	IM					18		Trend Station; 2012 FT PCBs 3 sp (blue catfish, carp, and gizzard shad)
2-CHK006.14	VAP-G08E_CHK02A00	CB,TR	JL29		267	NA		249		0	267	S				6	69	S			0	S													69		Trend Station
2-CHK014.33	VAP-G08E_CHK02A00	A	JL28		24	NA		24		0	24	S				0	12	S																			

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2-CHK023.64	VAP-G08E_CHK01A00	A,TR	JL25		42	NA		42		0	42	S				2	33	S																	6		Trend Station
2-CHK025.15	VAP-G07L_CHK01A00	L	JL24	0	59	S	8	50	IM	0	59	S	0	14	S						0	S											0	2	S	pooled DO= 29 vios/166 obs (IM); pooled pH =0/197 obs (S), PWS no new data since 2014 cycle
2-CHK026.94	VAP-G07L_CHK01A00	L	JL24	0	70	S	9	54	IM	0	70	S	0	14	S						0	S											0	2	S	pooled DO= 29 vios/166 obs (IM); pooled pH =0/197 obs (S), PWS, no new data since 2014 cycle
2-CHK029.54	VAP-G07L_CHK01A00	L	JL24	0	68	S	12	62	IM	0	68	S	0	14	S						0	S														pooled DO= 29 vios/166 obs (IM); pooled pH =0/197 obs (S), PWS, no new data since 2014 cycle
2-CHK032.77	VAP-G07R_CHK01A00	TM	JL23	0	12	S	0	12	S	0	12	S																								No data since 2014 cycle
2-CHK035.26	VAP-G07R_CHK01A00	CB,TR	JL23	0	121	S	5	121	S	8	121	S	9	38	IM						0	S														Trend Station - decreasing DO %sat
2-CHK038.53 / 2CCHK038.53	VAP-G07R_CHK01A00	FPM,B	JL23	0	1	W	0	1	W	0	1	W	0	1	W				0	IN	0	IN	0	S							IN						2011 sed; 2011 benthics; no data since 2014 cycle
2-CNR001.54	VAP-G07R_CNR01A00	TM	JL24	0	6	S	0	6	S	1	6	IN	0	6	S																						No new data since 2012 cycle
2-CNR001.58	VAP-G07R_CNR01A00	TM	JL24	0	6	S	0	6	S	2	6	IM	1	6	IN																						No new data since 2012 cycle
2-CNR002.69	VAP-G07R_CNR01A00	TM	JL24	0	18	S	2	18	IM	4	18	IM	3	6	IM						0	S														No E. coli data collected since 2012 cycle.
2-CPN004.81	VAT-G11R_CPN01A00	A,B	JL40				0	2	IN	0	2	IN																			FS						VCPMI FS [2009: S=37.2, F=100] 2014 Delist Benthic
2CPN-1-IRC	VAT-G11R_CPN01A00	CMON	JL40	0	21	S	0	21	S	0	21	IN	1	19	IN/O																						Isle of Wight Ruritan Club
2CPRI-PC-ACB	VAP-G05R_ZZZ01B02	CMON	JL18	0	2	S	0	2	S	0	2	S																									ACB - Level 3
2CRIC000.14	VAT-G11E_JMS04A06	A,B	JL43					2	S	0	2	IN				0	1	IN													J						JMSMH, 09 C2 Benthic ProbMon
2CRIC000.41	VAT-G11E_JMS04A06	C2,B	JL43					2	S	0	2	IN				1	1	O													J						JMSMH, 12 C2 Benthic ProbMon
2-CRL001.83	VAT-G14R_CRL02A08	A,CR	JL46				11	36	IM	0	36	S	6	35	IM																						WTOX=NH3
2-CRL004.04	VAT-G14R_CRL01A08	A,B	JL46				0	2	S	1	2	O																			FS						VCPMI FS [2009: S=33.9, F=83.3] 2014 Delist Benthic, WTOX=NH3
2-CRT001.00	VAP-G03R_CRT01B00	A,B	JL10	0	16	S	1	16	S	1	16	S	3	12	IM																FS						2012 and 2014 benthics
2CSBE003.65	VAT-G15E_SBE02A06	C2,B	JL53					3	O	0	3	IN				0	1	IN													IM						13 C2 Benthic ProbMon, SBEMH
2CSBE005.84	VAT-G15E_SBE02A06	A,C2,B	JL53					12	O	0	12	IN				0	1	IN													IM						SBEMH, 10 C2 Benthic ProbMon (cumulative effects of multiple contaminants (metals & PAHs) most probable). All three benthic indices score degraded.
2CTFR000.62	VAT-G10E_ZZZ01A00	C2,B	JL33					2	S	0	2	IN				0	1	IN													J						14 C2 Benthic ProbMon, JMSOH
2CTHD002.54	VAP-G08E_THD01A16	C2,B	JL29		2	NA		2		0	2	W				1	1	W			0	IN	0	S	0	S					J			1			One sample event; WOE 2013: TF-M scenario 4, Category 2B (toxicity presumably of bacterial action)
2CUCK000.87	VAP-G04E_UCK01A06	C2,B	JL14		2	NA		2		0	2	W	0	1	W						0	IN	0	S	0	S					FS			1			WOE 2014: TF-M scenario 2, Category 2A
2CUCK003.62	VAP-G04E_UCK01A06	C2,B	JL14		2	NA		2		0	2	W	0	1	W						0	IN	0	S	0	S					FS			1			One sample event; 2012 WOE: category 2A TF-M scenario 2
2CUPM-UB1-ALL	VAP-G05R_UPM01A02	CMON	JL18	0	13	S	0	12	S	0	12	S	3	9	IM																						ACB level 3
2CUPM-UB2-ACB	VAP-G05R_UPM01A02	CMON	JL18	0	8	S	0	7	S	0	6	S																									ACB level 3
2CWBE000.00	VAT-G15E_ELI02A06	C2,B	JL56					5	IM	0	5	IN				0	1	IN													FS						14 C2 Benthic ProbMon, ELIPH
2CWBE000.70	VAT-G15E_WBE02A00	C2,B	JL55					7	IM	0	7	IN				0	1	IN													IM						WBEMH, 12 C2 Benthic ProbMon (High probability of chronic effects from sediment metals and PAH contamination)
2CWBE004.37	VAT-G15E_WBE01A02	C2,B	JL55					5	O	0	5	IN				1	1	O													J						WBEMH, 12 C2 Benthic ProbMon
2CWLY002.23	VAT-G15E_WLY01A06	A,C2,B	JL57					3	S	0	3	IN				1	1	O													J						JMSPH, 10 C2 Benthic ProbMon
2CWOS-WHI20-CSR	VAP-G06R_WOS01A98	CMON	JL21										1	4	IN																						
2CWWK002.14	VAT-G11E_WWK03A08	C2,B	JL38					3	S	0	3	IN				0	1	IN													J						13 C2 Benthic ProbMon, JMSMH
2CXAA000.08	VAP-G07R_XAA01A10	TM	JL23	0	6	S	0	6	S	2	6	IM																									No new data since 2012 cycle
2CXAB000.15	VAP-G07R_XAB01A10	TM	JL24	0	6	S	0	6	S	1	6	IN	1	6	IN																						No new data since 2012 cycle
2-CHK042.22	VAP-G06R_CHK03A02	TM	JL22	0	12	S	0	12	S	0	12	S	1	11	S						0	S														co-located with 2-CHK-CR3-NN
2-CHK049.59	VAP-G06R_CHK02A14	TM	JL20	0	12	S		12	NA	0	12	S	3	11	IM						0	S														Class VII water
2-CHK052.57	VAP-G06R_CHK02A14	A,B	JL20	0	3	S		3	NA	0	3	S																			IN						2012 benthics; Class VII
2-CHK055.04	VAP-G06R_CHK01A98	TM	JL19	0	12	S		12	NA	0	12	S																									Class VII water; no data since 2014 cycle
2-CHK056.68	VAP-G06R_CHK01A98	TM	JL19	0	2	S		2	NA	0	2	S	1	1	W						0	IN														Class VII water - 2012 PCB study - 1 sample - ok
2-CHK062.57	VAP-G06R_CHK01A98	A,TR	JL19	0	49	S		49	NA	0	49	S	9	36	IM																						Class VII water
2-CHK067.30	VAP-G05R_CHK02A04	A	JL17	0	12	S		12	NA	0	12	S	3	12	IM																						Class VII water; no new data since 2012 cycle
2-CHK071.75	VAP-G05R_CHK01C12	TM	JL17	0	13	S	0	13	S	1	13	S	3	12	IM						0	S														
2-CHK076.59	VAP-G05R_CHK01B10	A,CB,TR	JL17	0	37	S	1	37	S	7	37	IM	9	36	IM																						Trend Station
2-CHK079.23	VAP-G05R_CHK01A00	TM,B	JL16	0	32	S	1	32	S	0	36	S									0	S									IM						2010, 2012 and 2013 benthics
2-CHK079.68	VAP-G05R_CHK01A00	TM	JL16	0	1	W	0	1	W	0	1	W																									
2-CHK081.80	VAP-G05R_CHK01A00	TM,B	JL16	0	3	S	0	3	S	0	3	S																			IM						2012-2013 benthics
2-CHK082.52	VAP-G05R_CHK01A00	TM	JL16	0	1	W	0	1	W	0	1	W									0	IN														No data since 2014 cycle
2CHRN-HOR20-CSR	VAP-G06R_HRN01A02	CMON	JL19										8	13	IN/O																						Chickahominy Swamp Rats; Level 2
2CJMS055.04	VAP-G04E_JMS03A04	C2,B	JL13		8	NA		8		0	8	W	0	1	W				0	IN	0	IN	0	S	0	S					IM			1			1 sample event; 2010 water organics (HH only); no new data since 2012 cycle; 2010 WOE: category 5A OH-M scenario 8 (possible cumulative chronic effects of metals & PAHs in sed)
2CJMS057.69 / 2-JMS057.69	VAP-G04E_JMS01A02	C,TM	JL13		5	NA		5		0	5	S																	1	IM							2012 FT - PCBS 2 sp (gizzard shad, carp); 2012 sed - PCBs ok
2CJMS084.70	VAP-G02E_JMS02A00	C2,B	JL06		2	NA		2		0	2	W	0	1	W				0	IN	0	IN	0	S	0	S					IM			1			1 sample event; 2010 water organics (HH only); no new data since 2012 cycle; 2010 WOE: category 5A TF-M scenario 2 (possible cumulative chronic effects of metals & PAHs in sed)
2CJMS-49-CWT	VAP-G02E_JMC01A10	CMON	JL06		4	NA				0	4	IN																									Chesterfield Water Trends - level II
2CJMS-A01-JRA	VAP-G03E_JMS01A00	CMON	JL07		14	NA							2	14	IN/O																						James River Association; Level II E. coli and Level III temp

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2CJMS-J05-JRA	VAP-G04E_JMS02A02	CMON	JL30		14	NA								14	NA																						JRA - Level III temp and level II E. coli
2CJOG003.01	VAT-G11E_JOG01A08	C2,B	JL41					1	S	0	1	IN																			J						14 C2 Benthic ProbMon, JMSMH
2CJOP000.34	VAP-G05R_JOP01A14	FPM,B	JL18	0	3	S	0	3	S	0	3	S	1	1	W				0	IN	0	S									IM						2012 benthics/metals; no data since 2014 cycle
2CJOP-JB1-ACB	VAP-G05R_JOP01A14	CMON	JL18	0	2	S	0	1	W	0	2	S																										ADB level III
2CKMK000.05	VAT-G15E_KMK01A12	A,B	JL56					1	IM	0	1	IN				0	1	IN													J						LAFMH, 09 C2 Benthic ProbMon
2CKSL-53-CWT	VAP-G01R_KSL01A04	CMON	JL03	0	2	IN				0	2	IN																										Chesterfield Water Trends - level II
2CLAF001.07	VAT-G15E_LAF02A06	C2,B	JL56					2	IM	0	2	IN				0	1	IN													FS						13 C2 Benthic ProbMon, LAFMH
2CLAF004.35	VAT-G15E_LAF01A06	C2,B	JL56					1	IM	0	1	IN				0	1	IN													J						LAFMH, 11 C2 Benthic ProbMon
2-CLG000.23	VAT-G10E_CLG01A06	A,TR	JL34					35	S	0	35	S				1	33	O																			JMSOH,
2-CLG001.77	VAT-G10E_CLG01A06	A,B	JL34					3	S	0	3	IN				0	1	IN													J						JMSOH, 09 C2 Benthic ProbMon , JMSOH
2CLG-COLOCC1-NPSN	VAT-G10E_CLG01A06	NONA	JL34					12	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CLG-COLOCCUT1-NPSN	VAT-G10E_CLG01A06	NONA	JL34					2	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CMOC001.95	VAP-G08E_MOC01A02	C2,B	JL29		10	NA		10		0	10	S				1	2	IN	0	S	0	S	0	S	0	S					J				2		2010 water organics (HH only) - okay; no new data since 2012 cycle; 2010 WOE: (2 visits) category 3B OH-S scenario 8 & category 2A OH-S scenario 2
2CNAN000.58	VAT-G13E_NAN04A00	C2,B	JL49					1	S	0	1	IN				0	1	IN													FS						13 C2 Benthic ProbMon, JMSMH
2CNAN000.69	VAT-G13E_NAN04A00	C2,B	JL49					4	S	0	4	IN				0	1	IN													FS						JMSMH, 11 C2 Benthic ProbMon
2CNAN001.18	VAT-G13E_NAN04A00	A,C2,B	JL49					5	S	0	5	IN				0	1	IN													J						JMSMH, 10 C2 Benthic ProbMon
2CNAN002.00	VAT-G13E_NAN04A00	C2,B	JL49					4	S	0	4	IN				0	1	IN													J						JMSMH, 11 C2 Benthic ProbMon
2CNAN010.55	VAT-G13E_NAN03A06	A,B	JL49					4	S	0	4	IN				0	1	IN													J						JMSMH, 09 C2 Benthic ProbMon
2CNAN017.59	VAT-G13E_NAN01A00	C2,B	JL48					5	S	0	5	IN				1	1	O													FS						JMSMH, 12 C2 Benthic ProbMon
2-CNR000.66	VAP-G07R_CNR02A00	TM	JL24	0	6	S	0	6	S	1	6	S	0	6	S																							No new data since 2012 cycle
16J01	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 4.33 JMSPH
16J02	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 4.67 JMSPH
16J04	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 3.33 JMSPH
16J05	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 2 JMSPH
16J06	VAT-G15E_ELI02A06	CB-B	JL56																																			BIBI = 1.67 ELIPH
16J07	VAT-G15E_ELI02A06	CB-B	JL56																																			BIBI = 2.67 ELIPH
16J08	VAT-G13E_NAN04A00	CB-B	JL49																																			BIBI = 2.33 JMSMH
16J09	VAT-G13E_NAN03A06	CB-B	JL49																																			BIBI = 1.67 JMSMH
16J11	VAT-G11E_JMS02A06	CB-B	JL43																																			BIBI = 2.33 JMSMH
16J12	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 3 JMSMH
16J13	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 2.6 JMSMH
16J14	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 3.4 JMSMH
16J15	VAT-G11E_JMS01A06	CB-B	JL35																																			BIBI = 2 JMSMH
16J16	VAT-G11E_JMS01B08	CB-B	JL35																																			BIBI = 2 JMSOH
16J17	VAT-G10E_JMS02A06	CB-B	JL35																																			BIBI = 2.33 JMSOH
16J18	VAT-G10E_JMS01A06	CB-B	JL33																																			BIBI = 2.2 JMSOH
16J19	VAP-G04E_JMS02A02	CB-B	JL29		1	NA		1																														B-IBI = 2.0; JMSOHa
16J20	VAP-G04E_JMS03A04	CB-B	JL15		1	NA		1																														B-IBI = 2.67; JMSTFa
16J21	VAP-G04E_JMS03A04	CB-B	JL15		1	NA		1																														B-IBI = 4.2; JMSTFa
16J22	VAP-G04E_JMS03A04	CB-B	JL15		1	NA		1																														B-IBI = 2.67; JMSTFa
16J23	VAP-G04E_JMS01A02	CB-B	JL13		1	NA		1																														B-IBI = 3; JMSTFa
16J25	VAP-G04E_JMS01A02	CB-B	JL13		1	NA		1																														B-IBI = 2.33; JMSTFa
16J26	VAT-G11E_JMS02A06	CB-B	JL43																																			BIBI = 2.33 JMSMH
16J27	VAT-G11E_JMS02A06	CB-B	JL43																																			BIBI = 2.67 JMSMH
16J28	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 3.67 JMSPH
17J01	VAT-G15E_JMS01A00	CB-B	JL58																																			BIBI = 3 JMSPH
17J02	VAT-G15E_JMS01A00	CB-B	JL58																																			BIBI = 3 JMSPH
17J04	VAT-G11E_JMS04A06	CB-B	JL43																																			BIBI = 4.5 JMSMH
17J06	VAT-G11E_JMS02A06	CB-B	JL43																																			BIBI = 3.5 JMSMH
17J07	VAT-G11E_KIN01A06	CB-B	JL43																																			BIBI = 3.5, JMSMH
17J08	VAT-G11E_JMS02A06	CB-B	JL43																																			BIBI = 2.5 JMSMH
17J09	VAT-G11E_WWK03A08	CB-B	JL38																																			BIBI = 4 JMSMH
17J10	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 3.5 JMSMH
17J11	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 1.5 JMSMH
17J12	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 3.5 JMSMH
17J13	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 3.5 JMSMH
17J14	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 2.5 JMSMH
17J15	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 2 JMSMH
17J16	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 2 JMSMH
17J17	VAT-G11E_JMS01A06	CB-B	JL35																																			BIBI = 1.5 JMSMH
17J18	VAT-G11E_JMS01B08	CB-B	JL35																																			BIBI = 4.33 JMSOH
17J19	VAP-G04E_JMS02A02	CB-B	JL30		1	NA		1																														B-IBI = 3; JMSOHa
17J20	VAP-G04E_JMS02A02	CB-B	JL30		1	NA		1																														B-IBI = 2.33; JMSOHa

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
17J21	VAP-G04E_JMS02A02	CB-B	JL30		1	NA		1																													B-IBI = 3; JMSOHa
17J22	VAP-G08E_CHK02A00	CB-B	JL29		1	NA		1																													B-IBI = 3.67; CHKOHa
17J23	VAP-G04E_JMS03A04	CB-B	JL15		1	NA		1																													B-IBI = 1.67; JMSTFa
17J24	VAP-G04E_JMS01A02	CB-B	JL11		1	NA		1																													B-IBI = 2.33; JMSTFa
17J25	VAP-G02E_ZZZ02B14	CB-B	JL06		1	NA		1																													B-IBI = 3; JMSTF-UA
17J27	VAP-G03E_JMS01B10	CB-B	JL11		1	NA		1																													B-IBI = 3.67; JMSTFa
17J29	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 5 JMSPH
18J01	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 3.33 JMSPH
18J02	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 3.67 JMSPH
18J03	VAT-G15E_ELI03A08	CB-B	JL59																																			BIBI = 1.67 ELIPH
18J06	VAT-G15E_EBE01A00	CB-B	JL54																																			BIBI = 2.33, EBEMH
18J07	VAT-G15E_JMS01A00	CB-B	JL58																																			BIBI = 3 JMSPH
18J08	VAT-G13E_NAN04A00	CB-B	JL49																																			BIBI = 2.67 JMSMH
18J09	VAT-G11E_JMS04A06	CB-B	JL43																																			BIBI = 2.67 JMSMH
18J10	VAT-G11E_JMS03A06	CB-B	JL43																																			BIBI = 2 JMSMH
18J11	VAT-G11E_JMS03A06	CB-B	JL43																																			BIBI = 2.33 JMSMH
18J12	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 2 JMSMH
18J13	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 2.2 JMSMH
18J15	VAT-G11E_JMS01A06	CB-B	JL35																																			BIBI = 1.4 JMSMH
18J16	VAT-G11E_JMS01A06	CB-B	JL35																																			BIBI = 2.2 JMSMH
18J17	VAT-G11E_JMS01B08	CB-B	JL35																																			BIBI = 2.6 JMSOH
18J18	VAT-G10E_JMS01B08	CB-B	JL35																																			BIBI = 1.8 JMSOH
18J19	VAT-G10E_JMS01A06	CB-B	JL35																																			BIBI = 1.8 JMSOH
18J20	VAP-G04E_JMS02A02	CB-B	JL30					1																														B-IBI = 1.67; JMSOHa
18J21	VAP-G04E_JMS02A02	CB-B	JL30					1																														B-IBI = 2.0; JMSOHa
18J22	VAP-G04E_JMS02A02	CB-B	JL30					1																														B-IBI = 1.33; JMSOHa
18J24	VAP-G04E_JMS01A02	CB-B	JL11					1																														B-IBI = 1.0; JMSTFa
18J26	VAT-G11E_JMS04A06	CB-B	JL43																																			BIBI = 1.33 JMSMH
18J27	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 4 JMSPH
18J28	VAT-G15E_JMS01A00	CB-B	JL37																																			BIBI = 2.2 JMSPH
18J29	VAT-G15E_JMS05A06	CB-B	JL50																																			BIBI = 1.67 JMSMH
19J01	VAT-G15E_MIG01A10	CB-B	JL58																																			BIBI = 2.67 JMSPH
19J02	VAT-G15E_MIG01A10	CB-B	JL58																																			BIBI = 2.33 JMSPH
19J03	VAT-G15E_JMS01A00	CB-B	JL59																																			BIBI = 3 JMSPH
19J04	VAT-G15E_EBE02A06	CB-B	JL54																																			BIBI = 3 EBEMH
19J05	VAT-G15E_SBE02A06	CB-B	JL53																																			BIBI = 3.33 SBEMH
19J06	VAT-G15E_JMS01A00	CB-B	JL58																																			BIBI = 3.67 JMSPH
19J07	VAT-G11E_JMS04A06	CB-B	JL59																																			BIBI = 3 JMSMH
19J08	VAT-G11E_JMS04A06	CB-B	JL43																																			BIBI = 3 JMSMH
19J09	VAT-G11E_JMS02A06	CB-B	JL43																																			BIBI = 2.67 JMSMH
19J10	VAT-G11E_PGN02B14	CB-B	JL41																																			BIBI = 3 JMSMH
19J11	VAT-G11E_PGN02A08	CB-B	JL41																																			BIBI = 2.33 JMSMH
19J12	VAT-G11E_JMS02A06	CB-B	JL43																																			BIBI = 2 JMSMH
19J13	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 3 JMSMH
19J14	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 2.67 JMSMH
19J15	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 2.67 JMSMH
19J16	VAT-G11E_JMS01A06	CB-B	JL37																																			BIBI = 2.67 JMSMH
19J17	VAT-G11E_JMS01A06	CB-B	JL35																																			BIBI = 3.4 JMSMH
19J18	VAT-G11E_JMS01B08	CB-B	JL35																																			BIBI = 2.6 JMSOH
19J19	VAT-G10E_JMS02A06	CB-B	JL35																																			BIBI = 2.2 JMSOH
19J20	VAP-G04E_JMS02A02	CB-B	JL30		1	NA		1																													B-IBI = 2.67; JMSOHa
19J21	VAP-G04E_JMS01A02	CB-B	JL13		1	NA		1																													B-IBI = 3; JMSTFa
19J22	VAP-G03E_JMS01B10	CB-B	JL11		1	NA		1																													B-IBI = 2.5; JMSTFa
19J23	VAP-G03E_JMS01A00	CB-B	JL11		1	NA		1																													B-IBI = 1; JMSTFa
19J25	VAP-G03E_JMS01A00	CB-B	JL07		1	NA		1																													B-IBI = 2; JMSTFa
19J27	VAP-G08E_CHK02A00	CB-B	JL29		1	NA		1																													B-IBI = 2.6; CHKOHa
20J15	VAP-G04E_JMS02A02	CB-B	JL30					1																														
20J16	VAP-G04E_JMS02A02	CB-B	JL30					1																														
20J17	VAP-G04E_JMS02A02	CB-B	JL29					1																														
20J18	VAP-G04E_JMS02A02	CB-B	JL29					1																														
20J19	VAP-G08E_CHK02A00	CB-B	JL28					1																														
20J21	VAP-G03E_JMS01A00	CB-B	JL07					1																														
20J22	VAP-G03E_JMS01A00	CB-B	JL07					1																														
20J23	VAP-G03E_JMS01A00	CB-B	JL07					1																														
20J24	VAP-G02E_JMS03A06	CB-B	JL06					1																														

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
20J25	VAP-G02E_JMS02A00	CB-B	JL06					1																													
20J28	VAP-G08E_ZZZ01C14	CB-B	JL28					1																													
20J29	VAP-G08E_CHK02A00	CB-B	JL29					1																													
2-ALL000.04	VAP-G05R_ALL01A14	TM	JL16	0	1	W	0	1	W	0	1	W									0	IN															2012 water organics; no data since 2014 cycle
2-ALL000.19	VAP-G05R_ALL01A14	FPM,B	JL16	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									IM						2013 probmon
2-ALL001.11	VAP-G05R_ALL01A14	TM	JL16	0	2	S	0	2	S	0	2	S									0	IN															storm event site; no data since 2014 cycle
2-ALM000.42	VAP-G01R_ALM01A98	A,TM,SS	JL01	0	18	S	0	18	S	0	18	S	3	12	IM						1	IM															2009 PCB Study - 2 samples both >HH
2-BBR02.10-WH	VAP-G06R_BRA01A14	CMON	JL19	0	4	S							0	4	IN																						Westhaven HOA - level 3 temp, level 2 E. coli; no data since 2014 cycle
2-BDM003.16	VAP-G09R_BDM01A98	TM	JL26	0	11	S	2	11	IM	2	11	IM	3	9	IM																						SAV; no new data since 2012 cycle
2-BDM004.12	VAP-G09R_BDM01A98	TM	JL26	0	23	S	11	23	IM	1	23	S	3	9	IM						0	IN															PWS; tannic; no data since 2014 cycle
2-BDM004.60	VAP-G09R_BDM01A98	TM	JL26	0	23	S	14	23	IM	5	23	IM	3	9	IM						0	S															tannic; very black; no E. coli data since 2012 cycle
2-BDM005.70	VAP-G09R_BDM01A98	TM	JL26	0	23	S	0	23	S	2	23	S	5	9	IM						0	S															dark water; no E. coli data since 2012 cycle
2-BDY000.58	VAP-G06R_BDY01A04	TM	JL19	0	12	S	1	12	S	12	12	IM									0	S															No data since 2014 cycle
2-BDY-RICH-04-NPS	VAP-G06R_BDY01A04	NONA	JL19	0	51	S	0	51	S	33	51	IM																									NPS - level 3
2-BEN001.42	VAT-G13E_BEN01A04	A,TR	JL49					36	S	0	36	S				9	35	IM																			JMSMH
2BEN-SBC000.35-SUF	VAT-G13E_BEN01A04	NONA	JL49							2	56	O				16	72	IM																			City of Suffolk, JMSMH
2-BEV002.00	VAP-G06R_BEV01A00	A,TM,B	JL19	0	38	S	0	38	S	3	38	S	3	12	IM						0	S									FS						No E. coli data since 2012 cycle; 2009 benthics
2-BEV002.81	VAP-G06R_BEV01A00	TM	JL19	0	12	S	0	12	S	0	12	S																									
2-BEV003.39	VAP-G06R_BEV01A00	TM	JL19	0	12	S	0	12	S	0	12	S																									
2-BEV004.68	VAP-G06R_BEV01A00	TM	JL19	0	12	S	0	12	S	0	12	S																									
2-BEV005.10	VAP-G06R_BEV01A00	TM	JL19	0	13	S	0	13	S	0	13	S																									
2-BEV005.56	VAP-G06R_BEV01A00	TM	JL19	0	12	S	0	12	S	0	12	S																									
2-BEV006.75	VAP-G06R_BEV01B16	TM	JL19	0	13	S	1	13	S	7	13	IM																									
2-BEV-BEV10-CSR	VAP-G06R_BEV01A00	CMON	JL19										1	9	IN/O																						Chickahominy Swamp Rats - Level II; co-located with 2-BEV002.00
2-BEV-BEV20-CSR	VAP-G06R_BEV01A00	CMON	JL19										0	3	IN																						Chickahominy Swamp Rats - Level II
2-BEV-BEV30-CSR	VAP-G06R_BEV01A00	CMON	JL19										1	9	IN/O																						Chickahominy Swamp Rats - Level II; co-located with 2-BEV003.39
2-BEV-BEV50-CSR	VAP-G06R_BEV01A00	CMON	JL19										0	10	IN																						Chickahominy Swamp Rats - Level II; co-located with 2-BEV005.56
2-BEV-BEV60-CSR	VAP-G06R_BEV01A00	CMON	JL19										0	2	IN																						Chickahominy Swamp Rats - Level II; co-located with 2-BEV005.10
2-BEV-RICH-01-NPS	VAP-G06R_BEV01A00	NONA	JL19	0	51	S	0	51	S	0	51	S																									NPS - level 3
2-BLB002.23	VAP-G04R_BLB01A06	B,A	JL14	0	2	S	0	2	S	0	2	S																				FS						2010 benthics; no new data since 2012 cycle
2-BLY000.65	VAP-G03E_BLY01A98	A,TR,TM,C	JL07		43	NA		44		1	46	S	10	35	IM						2	IM							1	IM					32		2 chronic ammonia violations (OE); Trend Station; high pH; 2009 PCB Study - 2 samples both >HH
2-BLY003.42	VAP-G03R_BLY02A08	SS	JL07	0	14	S	0	14	S	0	14	S									0	S															2009 PCB Study - 2 H2O samples both ok
2-BLY005.73	VAP-G03R_BLY01A98	TM,B	JL07	0	13	S	0	13	S	1	14	S	2	12	IM						0	IN									IM						2009 PCB Study - 1 H2O sample - ok; 2011 benthics; no data since 2014 cycle
2-BRA000.10	VAP-G06R_BRA01A14	TM	JL19	0	12	S	0	12	S	1	12	S																									
2-BRL001.50	VAP-G07R_BRL01A00	SS	JL23	0	24	S	1	24	S	0	24	S									0	S															
2-BRO001.35	VAT-G15E_BRO01A02	A,C	JL54					36	IM	0	36	S				25	34	IM												2	IM							12-IM FTox PCBs - 12 Mummichog, Gizzard Shad, EBEMH
2-BRW002.50	VAP-G08R_BRW01A14	A	JL25	0	12	S	5	12	IM	1	12	S	6	12	IM																						No data since 2014 cycle
2-BTS002.62	VAP-G06R_BTS01A02	TM	JL19	0	12	S	0	12	S	5	12	IM									0	S															
2-BTS-RICH-03-NPS	VAP-G06R_BTS01A02	NONA	JL19	0	50	S	7	50	IM	0	50	S																									NPS - level 3
2-BVR03.00-WH	VAP-G06R_BEV01A00	CMON	JL19	0	8	S							0	7	IN																						Westhaven HOA - level 3 temp, level 2 E. coli; no data since 2014 cycle
2-BVR05.00-WH	VAP-G06R_BEV01A00	CMON	JL19	0	7	S							0	6	IN																						Westhaven HOA - level 3 temp, level 2 E. coli; no data since 2014 cycle
2-BVR07.00-WH	VAP-G06L_XBT01A14	CMON	JL19	3	7	IM							1	7	IN																						Westhaven Lake - Westhaven HOA - level 3 temp, level 2 E. coli; no data since 2014 cycle
2CBKR000.23	VAT-G10E_ZZZ01A00	C2,B	JL33					3	S	0	3	IN				0	1	IN													J						JMSOH; 11,12 C2 Benthic ProbMon, DO is delisted = 2C
2CBKR-COLOBR10-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CBKR-COLOBR11-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					5	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CBKR-COLOBR12-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					6	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CBKR-COLOBR15-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CBKR-COLOBR2-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					7	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2CXCJ-LSE-LSBG	VAP-G05R_XCJ01A16	CMON	JL18	0	18	S	2	18	IM	3	17	IM	4	19	IN/O						0	IN										4						Lewis Ginter Botanical Gardens - Level III temp, DO, pH, and TP; Level II E. coli, ammonia
2CXCJ-LSM-LSBG	VAP-G05R_XCJ01A16	CMON	JL18	0	18	S	0	18	S	0	17	S	2	19	IN						0	IN										4						Lewis Ginter Botanical Gardens - Level III temp, DO, pH, and TP; Level II E. coli, ammonia
2CXFU-PSC-ACB	VAP-G01R_XFU01A16	CMON	JL02	0	7	S	0	7	S	2	7	IM																										ACB - level 3
2CXVS-BRO30-CSR	VAP-G06R_XVS01A02	CMON	JL19										0	3	IN																						Chickahominy Swamp Rats - Level II
2CXVS-BRO40-CSR	VAP-G06R_XVS01A02	CMON	JL19										2	12	IN/O																						Chickahominy Swamp Rats - Level II

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2CXVS-BRO50-CSR	VAP-G06R_XVS01A02	CMON	JL19										2	11	IN/O																							Chickahominy Swamp Rats - Level II
2CXVS-BRO55-CSR	VAP-G06R_XVS01A02	CMON	JL19										0	4	IN																							Chickahominy Swamp Rats - Level II
2CXVT-CHK48-CSR	VAP-G06R_XVT01A06	CMON	JL19										0	6	IN																							Chickahominy Swamp Rats - Level II
2CYP-1-IRC	VAT-G11R_CYP01A14	CMON	JL40	0	21	S	1	21	O	0	21	IN	2	19	IN/O																							Isle of Wight Ruritan Club, Level II data except DO which is Level III
2CYP-CYP2-ALL	VAT-G11E_CYP01A06	CMON	JL40					3	S	0	3	IN																										Alliance for the Chesapeake Bay, JMSMH, pH level II
2-DEC000.54	VAT-G15E_DEC01A06	C	JL53																										2	IM								12-IM FTox PCBs - Mummichog, Gizzard Shad, SBEMH
2-DEP000.26	VAT-G11E_DEP01A02	A,TR	JL38					35	S	1	35	O				8	35	IM																				JMSMH
2-DKM000.04	VAP-G07R_DKM01A10	TM	JL24	0	6	S	0	6	S	0	6	S	0	6	S																							No new data since 2012 cycle
2-DSC003.19	VAP-G08E_DSC01A00	A,TM	JL27		12	NA		12		0	12	S				2	11	IM																				
2-DSC005.38	VAP-G08E_DSC01A00	TM	JL27		12	NA		12		1	12	S				5	12	IM																				
2-DSC005.91	VAP-G09L_DSC01A00	L	JL26	0	144	S	7	102	S	4	144	S	0	21	S						0	S												0	2	S		Low DO in hypolimnion only TSI(TP) = 49, TSI(CA) = 52, TSI(SD) = 61 pooled DO= 12/191 obs (S); pooled pH =7 vios/254 obs (S)PWS; no new data since 2012 cycle
2-DSC007.09	VAP-G09L_DSC01A00	L	JL26	0	110	S	5	89	S	3	110	S	0	20	S						0	S												0	2	S		Epilimnion/nonstratified = DO 2/20, (Assume stratification in July per 2-DSC005.91 TSIs during stratified periods = TSI(TP) = 52, TSI(CA) = 56, TSI(SD) = 63 pooled DO= 12/191 obs (S); pooled pH =7 vios/254 obs (S)PWS; no new data since 2012 cycle
2-DSC011.33	VAP-G09R_DSC01A00	TM	JL26	0	11	S	5	11	IM	2	11	IM																										No new data since 2012 cycle
2-DSC012.67	VAP-G09R_DSC01A00	TM	JL26	0	35	S	1	35	S	1	35	S	0	12	S						0	S																PWS
2-DSC014.53	VAP-G09R_DSC01A00	TM	JL26	0	11	S	5	11	IM	1	11	S																										beaver dam, dark water; no new data since 2012 cycle
2-DSC015.32	VAP-G09R_DSC01A00	TM	JL26	0	11	S	4	11	IM	2	11	IM																										No new data since 2012 cycle
2-EBE000.40	VAT-G15E_EBE02A06	A,SS	JL54					381	O	0	388	S				6	55	IM																				EBEMH
2-EBE002.98	VAT-G15E_EBE02A06	A,TR,TM,C	JL54					405	O	0	405	S				7	60	IM							0	S			2	IM								12-IM FTox PCBs - 12 Mummichog, Gizzard Shad, 12-SedTox PCBs, EBEMH
2-EBE004.96	VAT-G15E_EBE01A00	A,TM	JL54					1	IM	0	1	IN																										EBEMH
2-EBE008.25	VAT-G15E_ZZZ03A08	SS,TM	JL54							0	1	IN																										TMDL PCB Study, EBEMH
2ECL-1-IRC	VAT-G11L_SFP01A16	CMON	JL40	0	12	S	3	12	IM	0	12	IN	2	12	IN/O																							Isle of Wight Ruritan Club. Level III DO data.
2-ELI000.68	VAT-G15E_ELI03A08	A,TM,SS	JL59					2	IM	0	2	IN																										12-SedTox PCBs, ELIPH
2-ELI000.69	VAT-G15E_ELI03A08	C,TM,SS	JL59																						0	S			3	IM								12-IM FTox PCBs -12 Croaker, Gizzard Shad, Spot, 12-SedTox PCBs, ELIPH
2-ELI002.00	VAT-G15E_ELI03A08	A,TR	JL59					871	O	0	871	S				0	61	S																				ELIPH
2-ELI003.52	VAT-G15E_ELI02A06	A	JL56					622	O	0	634	S				0	49	S																				ELIPH
2-ELI004.79	VAT-G15E_ELI02A06	A,C,TR	JL56					408	O	0	420	S				1	63	O			0	S							1	O								12-O FTox PCBs -12 Mummichog, ELIPH, WTOX=NH3, ELIPH
2-ELI006.92	VAT-G15E_ELI01A06	A,TR	JL56					836	O	0	824	S				4	64	O																				ELIPH, WTOX=NH3
2-ETR000.50	VAP-G03R_WER01A00	TM	JL09	0	12	S	0	12	S	5	12	IM																										
2-ETR003.00	VAP-G03R_WER01A00	TM	JL09	0	12	S	4	12	IM	5	12	IM																										
2-FAC000.85	VAP-G01R_FAC01A00	A,SS,TR	JL02	0	16	S	0	16	S	0	16	S	0	12	S						0	S																Trend Station; 2009 PCB Study - 2 H2O samples both ok; no data since 2014 cycle
2-FAC003.85	VAP-G01L_FAC01A98	L	JL02	0	78	S	11	43	IM	4	78	S	0	13	S						0	S												1	2	IN		DO 13/14 in hypolimnion, 1/23 in top layer TSI(TP) = 59, TSI(CA) = 53, TSI(SD) = 62;'DO= 11 vios/43 obs (IM); pH =4 vios/ 78 obs (S); E.coli 0/13(S)
2-FAC008.17	VAP-G01R_FAC02C08	A	JL02	0	4	S	0	4	S	0	4	S																										No new data since 2012 cycle
2-FAC009.46	VAP-G01R_FAC02C08	A,TR,TM	JL02	0	36	S	0	36	S	0	38	S	3	36	S																							
2-FAC012.96	VAP-G01R_FAC02B08	TM	JL02	0	6	S	5	6	IM	1	6	IN																										
2-FAC013.25	VAP-G01R_FAC02B08	TM	JL02	0	2	S	2	2	IM	0	2	S																										
2-FAC013.34	VAP-G01R_FAC02A04	TM	JL02	0	2	S	0	2	S	1	2	IN																										
2-FAC013.35	VAP-G01R_FAC02A04	TM	JL02	0	1	W	1	1	W	0	1	W																										
2-FAC-18-CWT	VAP-G01R_FAC02C08	CMON	JL02	0	37	IN	1	10	IN	0	49	IN																										Chesterfield Water Trends - level II; previously 2-FAC-18-FOCR
2-FAC-19-CWT	VAP-G01R_FAC01A00	CMON	JL02	0	33	IN	0	17	IN	0	42	IN																										previously 2-FAC-19-FOCR - Chesterfield WaterTrends - level 2
2-FAC-201-CWT	VAP-G01R_XDA01A12	CMON	JL02	0	11	IN																																Walton Lake - previously 2-FAC-201-FOCR - Chesterfield WaterTrends - level 2 - no new data since 2012 cycle
2-FAC-202-CWT	VAP-G01R_XDA01A12	CMON	JL02	0	35	IN	4	19	IN/O	0	35	IN																										Walton Lake - previously 2-FAC-202-FOCR - Chesterfield WaterTrends level 2
2-FAC-203-CWT	VAP-G01R_XDA01A12	CMON	JL02	0	11	IN																																Walton Lake - previously 2-FAC-203-FOCR - Chesterfield WaterTrends level 2 - no new data since 2012 cycle
2-FAC-204-CWT	VAP-G01R_XDA01A12	CMON	JL02	0	35	IN	3	19	IN/O	0	35	IN																										Walton Lake - previously 2-FAC-204-FOCR - Chesterfield WaterTrends level 2
2-FAC-38-CWT	VAP-G01R_FAC02A04	CMON	JL02							0	2	IN																										Lake Salisbury - Chesterfield WaterTrends - level 2
2-FDH004.54	VAP-G04R_FDH01A16	A	JL11	0	7	S	1	7	IN	0	7	S	3	7	IM																							
2-FOM003.60	VAP-G02R_FOM01A02	A	JL04	0	12	S		12	NA	0	12	S	8	12	IM																							Class VII
2-GIL000.42	VAP-G01R_GIL01A04	A,TM,SS	JL01	0	36	S	0	36	S	3	37	S	16	31	IM						1	IM																E. coli geomean 2/2 (IM) - however many below detection; pH high; 2009 PCB Study - 2 samples both >HH
2-GIL001.77	VAP-G01R_GIL01A04	TM	JL01	0	14	S	0	14	S	1	15	S	14	15	IM																							pH violation was below standard; E. coli geomean 1/1 (OE) - no new data since 2012 cycle
2-GIL002.29	VAP-G01R_GIL01A04	SS	JL01																0	IN																		2014 metals

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2-GIL002.84	VAP-G01R_GIL01A04	SS	JL01																0	IN																		2014 metals
2-GOD000.77	VAP-G01R_GOD01A00	A,TM,SS	JL01	0	15	S	0	15	S	0	15	S	8	12	IM						1	IM																2009 PCB Study - 2 samples both >HH
2-GOR000.35	VAP-G08E_GOR01A06	A	JL29		20	NA		19		0	20	S				2	22	S																			
2-GRB006.96	VAP-G10R_GRB01A16	A,B	JL32	0	14	S	0	14	S	0	14	S	0	14	S																FS							2013 benthics
2-GRC000.96	VAP-G05R_GRC01A04	TM,B	JL16	0	32	S	8	32	IM	2	34	S									0	S									IN							2010 benthics - later determination that variability due to small impoundment. VSCI not designed for that situation; no data since 2014 cycle
2-GRK000.35	VAP-G01R_GRK01A12	SS	JL02	0	1	W	0	1	W	0	1	W									1	IN/O																2009 PCB Study - 1 H2O sample - >HH
2-GRV000.01	VAP-G03E_GRV01A02	SS	JL07		4	NA		4		0	4	S									1	O																2009 PCB Study - 2 H2O sample - one ok, other >HH
2GRW-2-IRC	VAT-G14R_ZZZ01B14	CMON	JL47	0	12	S	9	12	IN/O	7	12	IN/O																										Isle of Wight Ruritan Club. Level II DO data.
2GRW-3-IRC	VAT-G14L_NWB01A08	CMON	JL47	0	9	IN	5	9	IM	2	9	IN/O	0	7	IN																							Lake Burnt Mills pooled DO and pH data: DO (41 viol / 207 obs) IM; pH (79 viol / 588 obs)S. Isle of Wight Ruritan Club, Level II data except DO which is Level III
2-GTB000.46	VAP-G01R_GTB01A12	A,CR	JL03	0	10	S	2	10	IM	1	10	S	2	10	IM						0	S																
2-GTB000.65	VAP-G01R_GTB01A12	A	JL03	0	10	S	1	10	S	1	12	S	1	12	S																							
2-GTB-25-CWT	VAP-G01R_GTB01A12	CMON	JL03	0	16	IN	1	7	IN/O	1	24	IN																										Chesterfield WaterTrends - level II
2-GUN004.00	VAP-G03R_GUN01A00	A	JL10	0	12	S		12	NA	0	12	S	0	11	S						0	S																Class VII water
2HAG-HR2-ALL	VAT-G15E_ELI01A06	CMON	JL56					7	O	0	7	S		7	NA																								Alliance for the Chesapeake Bay, ELIPH
2-HAI000.64	VAT-G15E_HAI01A06	A	JL58					12	S	0	12	S				0	11	S																				JMSPH, WTOX=NH3
2-HAO-21-CWT	VAP-G01R_HAO01A08	CMON	JL02	1	48	IN	0	24	IN	0	70	IN																										previously 2-HAO-21-FOCR - Chesterfield WaterTrends - level 2
2-HOF000.44	VAT-G15E_HOF01A06	A,TR,CR	JL50					5	O	0	5	S				2	4	O																				JMSMH
2HOF-HCWF PIER	VAT-G15E_HOF01A06	CMON	JL50					68	IM	2	71	IN																										JMSMH, Hoffler Creek Wildlife Refuge
2-HRN-HC-ACB	VAP-G06R_HRN01A02	CMON	JL19	0	14	S	0	12	S	0	14	S	1	13	IN																							ACB - level 3 temp, DO, and pH; level 2 E. coli
2-HVC000.06	VAT-G15E_LAF01A06	A,SS	JL56					7	O	0	7	S				3	14	IM																				LAFMH
2-IND000.98	VAT-G15E_IND01A02	A,TR	JL54					34	IM	0	35	S				19	32	IM																				EBEMH
2-JMS000.50	VAT-G15E_JMS01A00	SS,TM	JL59					1	S	0	1	IN																										TMDL PCB Study, JMSPH
2-JMS005.72	VAT-G15E_JMS01A00	A,CB,TR	JL59					1058	S	0	1026	S				0	64	S																				JMSPH
2-JMS006.68	VAT-G15E_JMS01A00	SS,TM	JL59					2	S																													TMDL PCB Study, JMSPH
2-JMS013.10	VAT-G11E_JMS04A06	A,CB,TR,C	JL43					392	S	0	386	S				0	64	S			0	S									2	IM						12-IM FTox PCBs - 12 Mummichog, Gizzard Shad, 12-SedTox PCBs, JMSMH
2-JMS021.04	VAT-G11E_JMS01A06	A,CB,TR	JL37					547	S	0	539	S				0	61	S																				JMSMH
2-JMS032.59	VAT-G10E_JMS01B08	A,CB,TR	JL35					634	S	3	625	O				0	61	S																				JMSOH
2-JMS040.03	VAT-G10E_JMS01A06	C,TM,SS	JL33																						0	S			0	S								12-SedTox PCBs, 12-FT PCBs, JMSOH
2-JMS041.27	VAT-G10E_JMS01A06	A,SS	JL33					10	IM	0	11	S				0	12	S																				JMSOH
2-JMS042.92	VAT-G10E_JMS01A06	A,CB,TR	JL30					608	O	0	598	S				1	61	S																				JMSOH
2-JMS050.57	VAP-G04E_JMS02A02	A,TM	JL15		75	NA		69		1	75	S				1	68	S																				
2-JMS052.02	VAP-G04E_JMS03A04	A	JL15		10	NA		10		0	11	S	0	12	S																							No new data since 2012 cycle
2-JMS052.67	VAP-G04E_JMS03A04	C	JL15																						0	S			1	IM								2012 FT - PCBS 3 sp (gizzard shad, carp, blue catfish); 2012 sed - PCBs ok
2-JMS052.68	VAP-G04E_JMS03A04	C	JL15																						0	S												2012 sed - PCBs ok
2-JMS055.94	VAP-G04E_JMS03A04	CB,TR	JL13		624	NA		579		0	624	S	1	69	S						0	S																Trend Station
2-JMS066.88	VAP-G03E_JMS01B10	A,SS,C	JL11		4	NA		4		0	4	S									0	S			0	S			1	IM								2009 PCB Study - 2 samples both ok; 2012 FT - PCBs 2 sp (gizzard shad, blue catfish); 2012 sed - PCBs ok
2-JMS069.08	VAP-G03E_JMS01B10	CB,TR	JL11		584	NA		541		2	585	S	2	68	S						0	S																Trend Station
2-JMS074.44	VAP-G03E_JMS01A00	A,C,TR	JL07		81	NA		76		0	80	S	1	3	IM						0	S			0	S			1	IM								E. coli geomean 1/3 if couldn't be calculated would be 7/43 (IM); 2009 PCB Study - 2 samples both ok; 2012 FT - PCBs 3 sp (blue catfish, gizzard shad, carp); 2012 sed - PCBs ok
2-JMS074.45	VAP-G03E_JMS01A00	C	JL07																						0	S												2012 sed - PCBs ok
2-JMS075.04	VAP-G03E_JMS01A00	CB,TR	JL07		618	NA		573		3	618	S	11	69	IM						0	S																Trend Station
2-JMS079.11	VAP-G02E_JMS02A00	TM	JL06		12	NA		12		0	11	S	3	3	IM																								Geomean 3/3 -some nondetects - if couldn't be calculated would be 7/12 (IM); no new data since 2012 cycle
2-JMS087.01	VAP-G02E_JMS02A00	A,C	JL06		69	NA		64		1	69	S	7	67	S						1	IM			0	S			1	IM								PWS - NO3 ok; 2009 PCB Study - 2 samples both >HH
2-JMS093.21	VAP-G02E_JMS02A00	TM	JL06		12	NA		12		0	11	S	1	3	IM																								Geomean 1/3 (2/12 instantaneous); no new data since 2012 cycle
2-JMS097.41	VAP-G02E_JMS01A00	TM	JL06		12	NA		12		0	11	S	1	3	IM																								Geomean 1/3 - (3/12 instantaneous); no new data since 2012 cycle
2-JMS097.77	VAP-G02E_JMS01A00	C	JL06																										1	IM								2012 FT - PCBs 3 sp (carp, gizzard shad, channel catfish)
2-JMS099.30	VAP-G01E_JMS03A02	CB,TR	JL03		682	NA		636		6	681	S	7	68	S						0	S																Trend station
2-JMS104.16	VAP-G01E_JMS03A02	CB,TR	JL01		492	NA		462		0	484	S	12	68	IM						0	S																Trend Station
2-JMS104.58	VAP-G01E_JMS03A02	TM	JL01		12	NA		12		1	11	S	3	3	IM																								Geomean 2/3 but most were nondetects (3/12 instantaneous); no new data since 2012 cycle
2-JMS106.55	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																								No new data since 2012 cycle
2-JMS107.32	VAP-G01E_JMS03A02	TM	JL01		12	NA		12		0	11	S	2	3	IM																								Geomean 2/3 but many nondetects (3/12 instantaneous); no new data since 2012 cycle
2-JMS107.94	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																								No new data since 2012 cycle
2-JMS108.27	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																								No new data since 2012 cycle
2-JMS108.28	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																								No new data since 2012 cycle
2-JMS108.29	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																								No new data since 2012 cycle
2-JMS108.32	VAP-G01E_JMS03A02	TM	JL01		10	NA		10		0	11	S	8	11	IM																								Geomean 1/1; no new data since 2012 cycle

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2-JMS108.33	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.52	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.53	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.54	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.55	VAP-G01E_JMS03A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.68	VAP-G01E_JMS02A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.69	VAP-G01E_JMS02A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.70	VAP-G01E_JMS02A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.72	VAP-G01E_JMS02A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.73	VAP-G01E_JMS02A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.74	VAP-G01E_JMS02A02	TM	JL01		14	NA		14		0	15	S	13	15	IM																						Geomean 1/1 (OE); no new data since 2012 cycle
2-JMS108.83	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						believed to be in the Richmond WWTP effluent mix; no new data since 2012 cycle
2-JMS108.84	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.85	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.92	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		1	1	W	1	1	W																						In Richmond WWTP effluent; no new data since 2012 cycle
2-JMS108.93	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS108.94	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS108.95	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS108.96	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS108.97	VAP-G01E_JMS01A02	TM	JL01		19	NA		19		0	20	S	2	2	IM																						Geomean 2/2; 16/19 instantaneous (IM); no new data since 2012 cycle
2-JMS108.98	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS108.99	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS109.00	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS109.01	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS109.02	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS109.03	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS109.04	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.05	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS109.06	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS109.07	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.08	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS109.09	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.10	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	4	4	IM																						No new data since 2012 cycle
2-JMS109.11	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS109.12	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.13	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.14	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	2	2	IM																						No new data since 2012 cycle
2-JMS109.15	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.16	VAP-G01E_JMS01A02	TM	JL01		33	NA		33		0	33	S	6	6	IM																						Geomean 6/6; 24/34 instantaneous (IM); no data since 2014 cycle
2-JMS109.17	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.18	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.19	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.20	VAP-G01E_JMS01A02	TM	JL01		4	NA		4		0	4	S	4	4	IM																						No new data since 2012 cycle
2-JMS109.21	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS109.22	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS109.35	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS109.36	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS109.37	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2-JMS109.38	VAP-G01E_JMS01A02	TM	JL01		2	NA		2		0	2	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.39	VAP-G01E_JMS01A02	TM	JL01		13	NA		13		0	14	S	12	14	IM																						Geomean 1/1 (OE); no new data since 2012 cycle
2-JMS109.40	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.41	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.42	VAP-G01E_JMS01A02	TM	JL01		3	NA		3		0	3	S	3	3	IM																						No new data since 2012 cycle
2-JMS109.45	VAP-G01E_JMS01A02	TM	JL01		13	NA		13		0	14	S	12	14	IM																						Geomean 1/1 (OE); no new data since 2012 cycle
2-JMS109.47	VAP-G01E_JMS01A02	TM	JL01		16	NA		16		0	17	S	11	15	IM																						Geomean 1/1 (OE); no new data since 2012 cycle
2-JMS109.90	VAP-G01E_JMS01A02	TM	JL01		1	NA		1		0	1	W	1	1	W																						No new data since 2012 cycle
2JMS-3A-SCC	VAT-G15E_JMS01A00	CMON	JL58											2	NA																						Southeast CARE Coalition, JMSPH
2JMS-3-SSC	VAT-G15E_JMS01A00	CMON	JL43											6	NA																						Southeast CARE Coalition, JMSPH
2JMS-4-SSC	VAT-G15E_JMS01B06	CMON	JL58											9	NA																						Southeast CARE Coalition, JMSPH
2JMS-7-SCC	VAT-G15E_JMS01A00	CMON	JL58											9	NA																						Southeast CARE Coalition, JMSPH
2JMS-8AA-SCC	VAT-G15E_JMS01A00	CMON	JL58											6	NA																						Southeast CARE Coalition, JMSPH
2-JMS-8-CWT	VAP-G02E_JMS02A00	CMON	JL06		162	NA		126		0	162	IN	7	28	IN/O																						previously 2-JMS-FOCRE-ALL - Chesterfield WaterTrends - Level II
2JMS-HB1-PMN	VAT-G11E_JMS03B06	CMON	JL43											8	NA																						Peninsula Chapter Virginia Master Naturalists, JMSMH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2JMS-RB1-PMN	VAT-G11E_JMS03A06	CMON	JL43											17	NA																							Peninsula Chapter Virginia Master Naturalists, JMSMH
2-JOG000.62	VAT-G11E_JOG02A08	A,TR	JL41					32	O	0	32	S				3	31	O																				JMSMH
2-JRN000.81	VAP-G07R_JRN01A00	A	JL23	0	12	S	0	12	S	0	12	S																										No data since 2014 cycle
2-KAN000.03	VAP-G01E_KAN01A14	SS	JL01		2	NA		2		0	2	S									1	O																2009 PCB Study - 2 H2O samples - one ok, other exceeds both HH and ALUS; no new data since 2012 cycle
2-KMG003.11	VAP-G03R_KMG01A02	TM	JL07																		0	IN																2012 PCB Study - 1 sample - ok
2KMK-10-FNE	VAT-G15E_KMK01A12	CMON	JL56													3	12	IM																				LAFMH, Friends of Norfolk Environment
2KMK-11-FNE	VAT-G15E_LAF01A06	CMON	JL56													1	12	O																				LAFMH, Friends of Norfolk Environment
2KMK-1-FNE	VAT-G15E_KMK01A12	CMON	JL56													6	12	IM																				LAFMH, Friends of Norfolk Environment
2KMK-2-FNE	VAT-G15E_KMK01A12	CMON	JL56													4	12	IM																				LAFMH, Friends of Norfolk Environment
2KMK-3-FNE	VAT-G15E_KMK01A12	CMON	JL56													3	12	IM																				LAFMH, Friends of Norfolk Environment
2KMK-4-FNE	VAT-G15E_KMK01A12	CMON	JL56													3	12	IM																				LAFMH, Friends of Norfolk Environment
2KMK-5-FNE	VAT-G15E_KMK01A12	CMON	JL56													2	12	IM																				LAFMH, Friends of Norfolk Environment
2KMK-6-FNE	VAT-G15E_KMK01A12	CMON	JL56													3	12	IM																				LAFMH, Friends of Norfolk Environment
2KMK-7-FNE	VAT-G15E_KMK01A12	CMON	JL56													3	12	IM																				LAFMH, Friends of Norfolk Environment
2KMK-8-FNE	VAT-G15E_KMK01A12	CMON	JL56													3	12	IM																				LAFMH, Friends of Norfolk Environment
2KMK-9-FNE	VAT-G15E_KMK01A12	CMON	JL56													4	12	IM																				LAFMH, Friends of Norfolk Environment
2KNC-SKC000.05-SUF	VAT-G13E_KNC01A00	NONA	JL49							0	39	S				15	55	IM																				City of Suffolk, JMSMH
2-KSL002.62	VAP-G01R_KSL01A04	A,SS	JL03	0	1	W	0	1	W	0	1	W									1	IN/O																No new data since 2012 cycle; 2009 PCB Study - 1 H2O sample - >HH <ALUS
2-KSL003.95	VAP-G01R_KSL01A04	FPM,B	JL03	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									FS							2013 probmon
2-KSL004.42	VAP-G01R_KSL01A04	PA	JL03	0	13	S	0	13	S	2	13	IM	7	12	IM																							
2-LAF001.15	VAT-G15E_LAF02A06	A,CB,TR	JL56					209	IM	0	209	S				1	66	O																				LAFMH
2-LAF001.65	VAT-G15E_LAF01A06	A,SS	JL56					7	O	0	7	S				2	13	IM																				LAFMH
2-LAF001.78	VAT-G15E_LAF01A06	A,SS	JL56					7	IM	0	7	S				3	13	IM																				LAFMH
2-LAF001.95	VAT-G15E_LAF01A06	A,SS	JL56					7	O	0	7	S				4	13	IM																				LAFMH
2-LAF002.21	VAT-G15E_LAF01A06	A,SS	JL56					7	IM	0	7	S				2	13	IM																				LAFMH
2-LAF002.81	VAT-G15E_LAF01A06	A,SS	JL56					7	O	0	7	S				2	13	IM																				LAFMH
2-LAF003.35	VAT-G15E_LAF01A06	A,SS	JL56					7	O	0	7	S				3	14	IM																				LAFMH
2-LAF003.40	VAT-G15E_LAF01A06	A,SS	JL56					7	O	0	7	S				3	12	IM																				LAFMH
2-LAF003.83	VAT-G15E_LAF01A06	A,C,TR	JL56					202	O	0	202	S				7	67	O			0	S			0	S			3	IM								12-IM FTox PCBs - 12 Croaker, Gizzard Shad, Mummichog, 12-Sed , WTOX=NH3, LAFMH
2-LAF004.07	VAT-G15E_LAF01A06	A,SS	JL56					7	O	0	7	S				3	14	IM																				LAFMH
2-LAF004.58	VAT-G15E_LAF01A06	A,SS	JL56					7	O	0	7	S				3	13	IM																				LAFMH
2-LAF005.01	VAT-G15E_LAF01A06	SS,TM	JL56					1	IM	0	1	IN																										TMDL PCB Study LAFMH
2-LAW000.42	VAT-G11E_LAW01A00	A	JL36					12	S	0	12	S				3	11	IM																				WTOX-NH3, JMSMH
2-LCN000.20	VAT-G12L_LCN01A06	L	JL45	0	110	S	13	40	IM	4	110	S	0	14	S						0	S													0	2	S	Lake Cohoon pooled nutrient data: Chla (0 viol / 2 obs) S 2009,2012. Lake Cohoon pooled DO and pH data: DO (13 viol / 40 obs) IM; pH (4 viol / 110 obs) S. Water Toxics - NH3=S
2-LHR001.76	VAT-G11L_LHR01A08	L	JL38	0	42	S	7	40	IM	0	40	S	0	14	S						0	S											0	2	S	0	2	S	Lee Hall pooled nutrient data: Chla and TP (0 viol / 2 obs) S 2013,2010 . Lee Hall pooled DO and pH data: DO (12 viol / 72 obs) IM; pH. (0 viol / 72 obs) S. Water Toxics - NH3=S
2-LHR002.56	VAT-G11L_LHR01A08	L	JL38	0	32	S	5	32	IM	0	32	S	0	13	S						0	S																Lee Hall pooled DO and pH data: DO (12 viol / 72 obs) IM; pH (1 viol / 72 obs) S. Water Toxics - NH3=S
2-LKH000.04	VAP-G05R_SNF02A12	TM	JL17	0	12	S	0	12	S	2	12	IM	2	12	IM																							No new data since 2012 cycle
2-LKH001.00	VAP-G05R_SNF02A12	TM	JL17	0	12	S	3	12	IM	2	12	IM	1	12	S																							No new data since 2012 cycle
2-LKH001.46	VAP-G05R_SNF02A12	TM	JL17	0	12	S	0	12	S	1	12	S	2	12	IM																							No new data since 2012 cycle
2-LKH002.42	VAP-G05R_SNF02A12	TM	JL17	0	12	S	2	12	IM	2	12	IM	4	12	IM																							No new data since 2012 cycle
2-LKH003.42	VAP-G05R_SNF02A12	TM	JL17	0	12	S	1	12	S	2	12	IM	2	12	IM																							No new data since 2012 cycle
2-LMD000.02	VAT-G12L_LMD01A06	L	JL45	0	78	S	7	54	IM	0	78	S	0	14	S						0	S											2	2	IM	0	2	S	Lake Meade pooled nutrient data: TP & Chla (2 viol / 2 obs) IM 2009,2012 (algaecide application- use TP data). Lake Cohoon pooled DO and pH. data: DO (14 viol / 102 obs) IM; pH. (0 viol / 143 obs) S. Water Toxics - NH3=S
2-LMD001.41	VAT-G12L_LMD01A06	L	JL45	0	65	S	7	48	IM	0	65	S	0	13	S						0	S																Lake Meade pooled DO and pH data: DO (14 viol / 102 obs) IM; pH (0 viol / 143 obs) S. Water Toxics - NH3=S
2-LPR000.02	VAT-G14L_LPR01A06	L	JL46	0	100	S	6	47	IM	0	100	S	0	13	S						0	S											0	2	S	0	2	S	Lake Prince pooled nutrient data: TP & Chla (0 viol / 2 obs) S 2009, 2012. Lake Prince pooled DO and pH data: DO (157 viol / 968 obs) IM; pH (1 viol / 1362 obs) S. Water Toxics - NH3=S
2-LSL000.04	VAT-G11L_LSL01G06	L	JL42	0	100	S	3	100	S	0	100	S	0	14	S						0	S													0	2	S	Lone Star Lake G pooled nutrient data: Chla (0 viol / 2 obs) S 2014,2011 . Lone Star Lake G pooled DO and pH data: DO (3 viol / 100 obs) S- DELIST; pH (0 viol / 100 obs) S. Water Toxics - NH3=S
2-LSL000.16	VAT-G11L_LSL01F06	L	JL42	0	52	S	0	43	S	0	52	S	0	14	S						0	S											0	2	S	0	2	S	Lone Star Lake F pooled nutrient data: TP & Chla (0 viol / 2 obs) S 2011, 2014 algaecide app. Lone Star Lake F pooled DO and pH data: DO (0 viol / 43 obs) S; pH (0 viol / 52 obs) S. Water Toxics - NH3=S
2-LSL000.20	VAT-G11L_LSL01I06	L	JL42	0	85	S	5	63	S	0	85	S	0	14	S						0	S											0	2	S	0	2	S	Lone Star Lake I pooled nutrient data: TP & Chla (0 viol / 2 obs) S 2014, 2011 algaecide app (DELIST). Lone Star Lake I pooled DO and pH data: DO (5 viol / 63 obs) S; pH (0 viol / 85 obs) S. Water Toxics - NH3=S

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2-LTL001.20	VAP-G08L_LTL01A06	L	JL28	0	193	S	2	124	S	0	193	S	0	14	S						0	S												0	2	S	PWS; previously assessed by TRO (Little Creek Reservoir); Pooled DO=1/230(S) pH=0/576(S) no new data since 2012 cycle
2-LTL001.60	VAP-G08L_LTL01A06	L	JL28	0	209	S	0	117	S	0	209	S	0	14	S						0	S												0	2	S	PWS; previously assessed by TRO (Little Creek Reservoir); Pooled DO=1/230(S) pH=0/576(S); no new data since 2012 cycle
2-LTL002.46	VAP-G08L_LTL01A06	L	JL28	0	174	S	0	102	S	0	174	S	0	13	S						0	S												0	2	S	PWS; previously assessed by TRO (Little Creek Reservoir); Pooled DO=1/230(S) pH=0/576(S); no new data since 2012 cycle
2-MCR002.38	VAP-G08R_MCR01A04	A,TM	JL27	0	36	S	3	36	S	1	36	S	6	24	IM						0	S															
2-MDT000.10	VAP-G05R_MDT01A02	TM	JL16	0	2	S	1	2	IN	0	2	S									0	IN															No data since 2014 cycle
2-MDT001.72	VAP-G05R_MDT01A02	TM	JL16	0	1	W	0	1	W	0	1	W									0	IN															No data since 2014 cycle
2-MIC000.03	VAT-G10E_MIC01A00	A,TM,TR	JL33					35	S	0	35	S				17	35	IM																			JMSOH
2MIC-COLOMC1-NPSN	VAT-G10E_MIC01A00	NONA	JL33					8	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2MIC-COLOMC2-NPSN	VAT-G10E_MIC01A00	NONA	JL33					6	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2MIC-MCLP01-JCCS	VAT-G10R_ZZZ01A00	NONA	JL33										3	12	IN/O																						James City County Storm water Division, E. coli Level II
2MIC-MCMS02-JCCS	VAT-G10R_ZZZ01A00	NONA	JL33										9	27	IN/O																						James City County Storm water Division, E. coli Level II
2MIC-MCPW01-JCCS	VAT-G10E_MIC01A00	NONA	JL33											12	NA																						James City County Storm water Division, JMSOH
2MIC-MCUT03-JCCS	VAT-G10R_ZZZ01A00	NONA	JL33										7	12	IN/O																						James City County Storm water Division, E. coli Level II
2-NWB006.06	VAT-G14L_NWB02A08	L	JL47	0	85	S	7	60	IM	0	85	S	0	6	S						0	S										2	2	IM	2	2	IM	Western Branch pooled nutrient data: TP & Chla (2 viol / 2 obs) IM 2009, 2012. Western Branch pooled DO and pH data: DO (105 viol / 828 obs) IM; pH (2 viol / 982 obs) S. Water Toxics - NH3=S
2-NWB007.04	VAT-G14L_NWB01A08	L	JL47	0	130	S	4	40	IM	27	130	IM	0	17	S						0	S												0	2	S	Lake Burnt Mills pooled nutrient data: Chla (0 viol / 2 obs) S 2010, 2013. Lake Burnt Mills pooled DO and pH data: DO (41 viol / 207 obs) IM; pH (79 viol / 588 obs)IM. Water Toxics - NH3=S
2-NWB009.48	VAT-G14L_NWB01A08	L	JL47	0	12	S	1	3	IM	0	12	IM	0	2	S						0	S															Lake Burnt Mills pooled DO and pH data: DO (41 viol / 207 obs) IM; pH (79 viol / 588 obs)IM. Water Toxics - NH3=S
2-NWB010.54	VAT-G14L_NWB01A08	L	JL47	0	9	S	1	4	IM	0	9	IM	0	2	S						0	S															Lake Burnt Mills pooled DO and pH data: DO (41 viol / 207 obs) IM; pH (79 viol / 588 obs)IM. Water Toxics - NH3=S
2-PAR000.12	VAT-G15E_PAR02A10	A,TR,CR	JL53					64	O	0	64	S				15	60	IM																			WTOX=NH3, SBEMH
2-PAR000.77	VAT-G15E_PAR01A06	A,C,TR	JL53					49	IM	0	49	S				14	46	IM			0	S							2	IM							12-IM FTox PCBs - 12 Mummichog, Gizzard Shad, WTOX=NH3, SBEMH
2-PAR001.77	VAT-G15E_PAR01A06	A,C,TR	JL53					12	IM	0	12	S				12	12	IM												O							12-IM FTox PCBs - 12 Gizzard Shad, WTOX=NH3, SBEMH
2-PCT002.46	VAP-G01R_PCT01A06	A,SS,TM,B	JL03	0	35	S	0	35	S	2	35	S	1	12	S						0	IN									IM							2011 benthics; 2009 PCB Study - 1 H2O sample - ok; no data since 2014 cycle
2-PEL000.77	VAP-G07R_PEL01B10	TM	JL23	0	6	S	2	6	IM	1	6	IN																									station at upstream side of large beaver dam; no new data since 2012 cycle
2-PEL001.92	VAP-G07R_PEL01A10	TM	JL23	0	6	S	0	6	S	0	6	S																									No new data since 2012 cycle
2-PGN000.00	VAT-G11E_PGN03A10	A,TR	JL41					5	S	0	5	S				0	5	S																			JMSMH
2-PGN000.80	VAT-G11E_PGN03A10	A,TR	JL41					5	S	0	5	S				0	5	S																			JMSMH
2-PGN001.19	VAT-G11E_PGN02B14	A,TR	JL41					32	S	0	32	S				3	32	O																			JMSMH
2-PGN002.58	VAT-G11E_PGN02A08	A,TR	JL41					4	S	0	4	S				0	4	S																			JMSMH
2-PGN003.57	VAT-G11E_PGN02A08	A,TR	JL41					32	S	0	32	S				3	30	O																			JMSMH
2-PGN004.57	VAT-G11E_PGN02A08	A,TR	JL39					32	S	0	32	S				3	30	O																			JMSMH
2-PGN005.46	VAT-G11E_PGN01A08	A,TR	JL39					32	O	1	32	O				5	32	IM																			JMSMH
2-PGN006.65	VAT-G11E_PGN01A08	A,TR	JL39					32	O	0	32	S				4	31	IM																			JMSMH
2-PGN007.44	VAT-G11E_PGN01A08	A,TR	JL39					5	S	0	5	S				0	5	S																			JMSMH
2-PGN008.42	VAT-G11E_PGN01A08	A,TR	JL39					32	O	0	32	S				11	31	IM																			JMSMH
2-PGN010.07	VAT-G11R_PGN01A04	A,TR	JL39				0	36	S	0	36	S	13	36	IM																							WTOX=NH3
2PGN-32-ALL	VAT-G11E_PGN01A08	CMON	JL39					9	S	0	9	IN																										Alliance for the Chesapeake Bay, Level II pH data. JMSMH
2PGN-GP1-ALL	VAT-G11E_PGN02B14	CMON	JL41					25	S	0	25	IN																										Alliance for the Chesapeake Bay, Level II pH data JMSMH
2-PKC001.84	VAT-G12L_LKK01A06	L	JL44	0	77	S	10	32	IM	8	77	S	0	14	S						0	S										2	2	IM	0	2	S	Lake Kilby pooled nutrient data: TP (2 viol / 2 obs) IM 2009, 2012 (algaecide application) . Lake Kilby pooled DO and pH data: DO (10 viol / 32 obs) IM; pH (8 viol / 77 obs) S. Water Toxics - NH3=S
2-POS000.47	VAP-G06R_POS01A00	TM	JL22	0	12	S	0	12	S	1	12	S									0	S															
2-POW000.60	VAT-G10E_POW01A02	A,TR	JL31					34	S	0	34	S				16	32	IM																			JMSOH
2POW-COLOPC2-NPSN	VAT-G10E_POW01A02	NONA	JL31					12	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2POW-COLOPC5-NPSN	VAT-G10E_POW01A02	NONA	JL31					2	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2POW-PCCR02-JCCS	VAT-G10R_POW01A00	NONA	JL31										4	12	IN/O																						James City County Storm water Division, E. coli Level II
2POW-PCJR01-JCCS	VAT-G10E_POW01A02	NONA	JL31											12	NA																						James City County Storm water Division, JMSOH
2POW-PCLF01-JCCS	VAT-G10E_POW01A02	NONA	JL31											10	NA																						James City County Storm water Division, JMSOH
2POW-PCMB01-JCCS	VAT-G10R_POW01A00	NONA	JL31										1	12	IN																						James City County Storm water Division, E. coli Level II
2POW-PCMS05-JCCS	VAT-G10R_POW01A00	NONA	JL31										0	10	IN																						James City County Storm water Division, E. coli Level II
2POW-PCPW01-JCCS	VAT-G10E_POW01A02	NONA	JL31											12	NA																						James City County Storm water Division, JMSOH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2-PSK-20-CWT	VAP-G01R_PSK01A04	CMON	JL02	0	11	IN	0	11	IN	0	10	IN																									previously 2-PSK-20-FOCR - Chesterfield WaterTrends - level 2; no data since 2014 cycle
2PSM-COLOPC1-NPSN	VAT-G10E_MIC01A00	NONA	JL33					6	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2-PTH000.23	VAP-G03E_PTH01A00	C	JL07																										1	IM							2012 FT - PCBs 2 sp (green sunfish, pumpkinseed sunfish)
2-PTH000.42	VAP-G03R_PTH01A10	SS	JL07	0	2	S	0	2	S	0	2	S									1	IM															2009 PCB Study - 2 samples >> both HH & ALUS; no new data since 2012 cycle
2-PWH002.12	VAP-G06R_PWH01A02	A,TM	JL19	0	14	S	2	14	IM	0	14	S																									
2-PWH002.18	VAP-G06R_PWH01A02	TM	JL19	0	1	W	0	1	W	0	1	W																									
2-PWH002.19	VAP-G06R_PWH01A02	TM	JL19	0	2	S	1	2	IN	0	2	S																									
2-PWH002.20	VAP-G06R_PWH01A02	TM	JL19	0	2	S	1	2	IN	0	2	S																									
2-RDK000.77	VAP-G01R_RDK01A12	A	JL03	0	9	S	0	9	S	1	11	S	4	11	IM																						No new data since 2012 cycle
2-RDW000.50	VAP-G01R_RDW01A06	SS	JL03	0	1	W	0	1	W	0	1	W									0	IN															2009 PCB Study - 1 H2O sample - ok; no new data since 2012 cycle
2RIC-RIC-ALL	VAT-G11E_RIC01A06	CMON	JL43					58	S	0	59	IN																									Alliance for the Chesapeake Bay, Level II pH data JMSMH
2-ROT001.15	VAP-G02R_ROT02A00	A,TM	JL06	0	12	S	0	12	S	0	12	S									0	S															No data since 2014 cycle
2-ROT003.15	VAP-G02R_ROT01A00	A,TM	JL06	0	12	S	3	12	IM	2	12	IM																									No data since 2014 cycle
2-RTY000.54	VAP-G05R_ZZZ01A14	TM	JL16	0	1	W	0	1	W	0	1	W																									No data since 2014 cycle
2-RUM002.46	VAP-G07R_RUM01B14	A,TM	JL23	0	24	S	13	24	IM	4	24	IM	0	12	S						0	S															No data since 2014 cycle
2-RUM004.38	VAP-G07R_RUM01A98	TM	JL23	0	12	S	4	12	IM	3	12	IM									0	S															No new data since 2012 cycle
2-RUM005.54	VAP-G07R_RUM01A98	TM	JL23	0	6	S	2	6	IM	5	6	IM																									No new data since 2012 cycle
2SAN-COLOBR1-NPSN	VAT-G10E_POW01A02	NONA	JL33					4	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2SAN-COLOSB2-NPSN	VAT-G10E_POW01A02	NONA	JL33					4	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2SAT-10-SCC	VAT-G15R_ZZZ01A06	CMON	JL58										5	7	IN/O																						Southeast CARE Coalition, JMSPH
2SAT-8-SCC	VAT-G15R_ZZZ01A06	CMON	JL58											9	NA																						Southeast CARE Coalition, JMSPH
2SAT-9-SCC	VAT-G15R_ZZZ01A06	CMON	JL58										8	8	IN/O																						Southeast CARE Coalition, JMSPH
2-SBE000.57	VAT-G15E_SBE03A06	SS,TM	JL53					1	IM	0	1	IN																										TMDL PCB Study, SBEMH
2-SBE001.53	VAT-G15E_SBE03A06	A,TR	JL53													2	12	IM																			TREND BUT NO DATA SINCE 09 - 5/19/2010 AND NO PH / DO DATA, SBEMH
2-SBE001.98	VAT-G15E_SBE03A06	A	JL53					670	IM	0	680	S				7	56	IM																			WTOX=NH3, SBEMH
2-SBE006.00	VAT-G15E_SBE02A06	C	JL53																										3	IM							12-IM FTox PCBs - 12 Croaker, Gizzard Shad, Mummichog, SBEMH
2-SBE006.26	VAT-G15E_SBE02A06	A	JL53					253	IM	0	258	S				6	52	IM																			12-SedTox PCBs, WTOX=NH3, SBEMH
2-SBE008.40	VAT-G15E_SBE01A00	SS,TM	JL51					1	IM	0	1	IN																										TMDL PCB Study, SBEMH
2SFL-1-IRC	VAT-G11R_MHC01A16	CMON	JL39				0	12	S	0	12	IN	2	12	IN/O																						Isle of Wight Ruritan Club. Level III DO data.
2-SGL001.00	VAT-G13E_SGL01A00	A,TR	JL48					36	S	8	36	IM				29	34	IM																			JMSMH
2SGL-SSC000.24-SUF	VAT-G13E_SGL01A00	NONA	JL48							4	46	O				38	53	IM																			City of Suffolk, JMSMH
2-SKC001.17	VAP-G04L_SKC01A08	A	JL15	0	12	S	3	12	IM	0	12	S	2	12	IM																						
2-SLM001.23	VAP-G03R_WER01A00	TM	JL09	0	12	S	3	12	IM	6	12	IM																									
2-SMN001.42	VAP-G07R_SMN01A00	A	JL23	0	12	S	3	12	IM	4	12	IM	3	12	IM																						No new data since 2012 cycle
2-SMN002.19	VAP-G07R_SMN01A00	B	JL23	0	1	W	0	1	W	0	1	W																		IN							2010 benthics; no new data since 2012 cycle
2-SNF000.04	VAP-G05R_SNF01A02	TM	JL17	0	12	S	1	12	S	1	12	S	2	12	IM																						No new data since 2012 cycle
2-SNF000.23	VAP-G05R_SNF02A12	TM	JL17	0	12	S	1	12	S	0	12	S	3	12	IM																						No new data since 2012 cycle
2-SNF000.87	VAP-G05R_SNF02A12	TM	JL17	0	12	S	0	12	S	2	12	IM	1	12	S																						No new data since 2012 cycle
2-SNF001.27	VAP-G05R_SNF02A12	TM	JL17	0	12	S	0	12	S	3	12	IM	3	12	IM																						No new data since 2012 cycle
2-SNF001.58	VAP-G05R_SNF02A12	TM	JL17	0	12	S	1	12	S	3	12	IM	5	11	IM																						No new data since 2012 cycle
2-SNF003.70	VAP-G05R_SNF02A12	TM	JL17	0	12	S	3	12	IM	4	12	IM	3	12	IM																						No new data since 2012 cycle
2-SNF005.59	VAP-G05R_SNF02A12	TM	JL17	0	10	S	1	10	S	4	10	IM	6	10	IM																						No new data since 2012 cycle
2-SNF006.44	VAP-G05R_SNF02A12	TM	JL17	0	10	S	1	10	S	5	10	IM	1	10	S																						No new data since 2012 cycle
2-SPE000.17	VAT-G12L_SPE01A06	L	JL44	0	83	S	19	43	IM	1	43	S	0	13	S						0	S												2	2	IM	Speights Run pooled nutrient data: Chla (2 viol / 2 obs) IM 2009, 2012. Speights Run pooled DO and pH. data: DO (37 viol / 83 obs) IM; pH. (1 viol / 83 obs) S. Water Toxics - NH3=S
2-SPE001.18	VAT-G12L_SPE01A06	L	JL44	0	43	S	18	40	IM	0	40	S	0	13	S						0	S															Speights Run pooled DO and pH. data: DO (37 viol / 83 obs) IM; pH. (1 viol / 83 obs) S. Water Toxics - NH3=S
2TFR-COLOTT2-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					8	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT3-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					9	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT4-NPSN	VAT-G10E_JMS01A06	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2TFR-COLOTT6-NPSN	VAT-G10E_ZZZ01A00	NONA	JL33					3	S																												JMSOH, National Park Service Northeast Coastal & Barrier Network, Delisted for DO = 2C
2-THR-TBE-LSBG	VAP-G05R_ZZZ01B02	CMON	JL18	0	17	S	0	17	S	0	16	S	6	18	IN/O						0	IN											3				Lewis Ginter Botanical Gardens - Level III temp, DO, pH, and TP; Level II E. coli, ammonia
2-THR-TBM-LSBG	VAP-G05R_ZZZ01B02	CMON	JL18	0	17	S	0	17	S	0	16	S	5	18	IN/O						0	IN											4				Lewis Ginter Botanical Gardens - Level III temp, DO, pH, and TP; Level II E. coli, ammonia
2-TIC002.69	VAP-G02R_TIC01A00	A	JL05	0	12	S	1	12	S	0	12	S	2	12	IM																						PWS; no data since 2014 cycle
2-TIC009.23	VAP-G02R_TIC01B16	TM	JL05	0	12	S	0	12	S	5	12	IM																									PWS

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
2-TIS000.77	VAP-G06R_TIS01A00	A	JL22	0	12	S	1	12	S	0	12	S	1	12	S																						
2TTS-TC1-ALL	VAT-G11E_TTS01A16	CMON	JL41					26	S	0	26	IN	2	2	IN																						JMSMH, Alliance for the Chesapeake Bay
2-UCK007.73	VAP-G04R_UCK01A08	A	JL14	0	12	S	0	12	S	0	12	S	1	12	S																						
2-UPM000.26	VAP-G05R_UPM01A02	TM	JL18	0	12	S	0	12	S	0	12	S																									No data since 2014 cycle
2-UPM001.35	VAP-G05R_UPM01A02	A	JL18	0	12	S	0	12	S	0	12	S	4	12	IM																						No data since 2014 cycle
2-UPM003.12	VAP-G05R_UPM01A02	B,TM	JL18	0	2	S	0	2	S	0	2	S																		IM							2014 benthics
2-UPM-2-VMN	VAP-G05R_UPM01A02	CMON	JL18	0	14	IN	1	14	IN	3	14	IN/O	7	13	IN/O																						VMN - level 2
2-UPM-4-VMN	VAP-G05R_UPM01A02	CMON	JL18	0	20	IN	1	18	IN	4	19	IN/O	9	18	IN/O																						VMN - level 2
2-UPM-5-VMN	VAP-G05R_UPM01A02	CMON	JL18	0	16	IN	0	16	IN	2	16	IN/O	10	17	IN/O																						VMN - level 2
2-UPM-6-VMN	VAP-G05R_UPM01A02	CMON	JL18	0	16	IN	0	17	IN	4	15	IN/O	11	17	IN/O																						VMN - level 2
2-WAS002.69	VAP-G09R_WAS01A00	TM	JL26	0	12	S	6	12	IM	0	12	S																									No data since 2014 cycle
2-WBE002.11	VAT-G15E_WBE02A00	A,C	JL55					181	O	0	181	S				2	11	IM			0	S			0	S			2	IM							12-IM FTox PCBs - 12 Gizzard Shad, Mummichog, 12-SedTox -PCBs, WTOX=NH3, WBEMH
2-WBE004.44	VAT-G15E_WBE01A02	A,CB,TR	JL55					252	O	0	247	S				6	66	O																			WTOX=NH3, WBEMH
2WBN-SWB000.30-SUF	VAT-G13E_WBN01A06	NONA	JL48							0	70	S				36	74	IM																			City of Suffolk, JMSMH
2-WER000.02	VAP-G03L_WER04A06	L	JL09	0	37	S	24	67	IM	18	67	IM	0	14	S						0	S															previously called 2-WER002.06.
2-WER001.93	VAP-G03R_WER03A00	TM,B	JL09	0	15	S	0	15	S	7	15	IM									0	S									FS						2013 benthics
2-WER002.89	VAP-G03R_WER01A00	TM	JL09	0	12	S	2	12	IM	8	12	IM																									
2-WER004.42	VAP-G03R_WER01A00	TM	JL09	0	12	S	7	12	IM	7	12	IM																									
2-WER005.35	VAP-G03R_WER01A00	TM	JL09	0	12	S	4	12	IM	7	12	IM																									
2-WER006.35	VAP-G03R_WER01A00	TM	JL09	0	12	S	3	12	IM	1	12	S																									
2-WLR000.42	VAP-G03R_WLR01A06	A	JL08	0	10	S	0	10	S	0	11	S	4	11	IM																						No new data since 2012 cycle
2-WOS002.69	VAP-G06R_WOS01A98	TM	JL21	0	12	S		12		0	12	S																									Class VII water; no data since 2014 cycle
2-WRD005.40	VAP-G04R_WRD01A00	A,B,TR	JL12	0	34	S	0	36	S	1	37	S	3	35	S																	FS						2009 benthics
2-WSN000.85	VAP-G02R_WSN01A00	TM	JL05	0	12	S	0	12	S	3	12	IM									0	S															
2-WSN-RICH-07-NPS	VAP-G02R_WSN01A00	NONA	JL05	0	50	S	2	50	S	1	50	S																									NPS - level 3 - co-located with 2-WSN000.85
2-WWK003.98	VAT-G11E_WWK02A08	A,TR	JL38					35	O	0	35	S				6	35	IM																			JMSMH
2-XAQ-2-CWT	VAP-G01R_XAQ01A10	CMON	JL02	0	82	IN	3	60	IN	0	96	IN																									previously 2FAC-FOCRRNC-ALL; Chesterfield Water Trends - level II
2-XAR-CR5-ACB	VAP-G05R_XAR03A06	CMON	JL18	0	39	S	0	35	S	2	39	S	10	38	IN/O																						ACB - level 3 temp, DO, and pH - level 2 E. coli
2-XBZ-22-CWT	VAP-G01R_XBZ01A14	CMON	JL02	0	6	IN	0	5	IN	0	7	IN																									Chesterfield Water Trends - level II
2-XCI-31-CWT	VAP-G01R_XCI01A16	CMON	JL02	0	4	IN	0	1	W	0	4	IN																									Chesterfield Water Trends - level II
2-XDA-3-CWT	VAP-G01R_XDA01A12	CMON	JL02	0	68	IN	3	51	IN	0	68	IN	0	10	IN																						previously 2-XDA-3-FOCR - Chesterfield Water Trends - level 2
2-XDD000.01	VAP-G05R_XDD01A98	TM	JL16	0	1	W	1	1	W	1	1	W																									No data since 2014 cycle
2-XDD000.32	VAP-G05R_XDD01A98	TM	JL16	1	35	S	0	35	S	16	39	IM									1	O															1 chronic ammonia exceedance; elevated pH; no data since 2014 cycle
2-XDD000.40	VAP-G05R_XDD01A98	TM	JL16	2	55	S	0	54	S	26	59	IM									0	S															high pH and DO
2-XDD000.64	VAP-G05R_XDD01A98	TM	JL16	0	2	S	0	2	S	0	2	S																									No data since 2014 cycle
2-XDD000.84	VAP-G05R_XDD01A98	B,TM	JL16	0	56	S	0	56	S	0	60	S									1	O								IM							2 chronic ammonia exceedances; 2010 benthics
2-XDD000.91	VAP-G05R_XDD01A98	TM	JL16	0	35	S	2	35	S	0	39	S									1	O															3 chronic ammonia exceedances; no data since 2014 cycle
2-XDD001.23	VAP-G05R_XDD02A06	TM	JL16	0	25	S	10	25	IM	20	25	IM									0	S															low pH; no data since 2014 cycle
2-XDM-RICH-02-NPS	VAP-G06R_XDM01A04	NONA	JL19	0	50	S	0	50	S	0	50	S																									NPS - level 3
2-XHC000.12	VAP-G10R_XHC01A08	A,SS	JL32	0	9	S	1	9	IN	1	10	S	3	11	IM																						No new data since 2012 cycle
2-XJK000.23	VAT-G15E_LAF01A06	A,SS	JL56					7	O	0	7	S				3	14	IM																			LAFMH
2-XJK000.78	VAT-G15E_LAF01A06	A,SS	JL56					3	IM	0	3	IN				0	1	IN																			LAFMH
2-XOI000.65	VAP-G05R_SNF02A12	TM	JL17	0	12	S	3	12	IM	3	12	IM	2	12	IM																						No new data since 2012 cycle
2XOY-MCMS05-JCCS	VAT-G10R_ZZZ01A00	NONA	JL33										9	12	IN/O																						James City County Storm water Division, E. coli Level II
2-XPF-RICH-08-NPS	VAP-G01R_XBD01B04	NONA	JL03	0	18	S	1	18	S	0	18	S																									NPS - level 3 - co-located with 2CXBD000.15
2-XSZ001.58	VAP-G01R_XSZ01A04	TM	JL03	0	13	S	0	13	S	0	13	S	5	11	IM																						No data since 2014 cycle
2-XSZ002.04	VAP-G01R_XSZ01A04	SS	JL03	0	1	W	0	1	W	0	1	W									1	IN/O															2009 PCB Study - 1 H2O sample - >HH
2-XUD000.35	VAP-G03R_XUD01A06	TM	JL09	0	12	S	5	12	IM	12	12	IM																									
2-XVP000.04	VAP-G01R_XVP01A08	SS	JL01	0	2	S	0	2	S	1	2	IN							4	IM																	2009 - acute Cu and Zn, chronic Cd and Ni (OE); no new data since 2012 cycle - prev pH, Cu, Zi impairments
2-XWS000.85	VAP-G07R_XWS01A10	TM	JL23	0	12	S	3	12	IM	3	12	IM									0	S															Tannic, comments of black water, murky water, upstream filamentous algae; no new data since 2012 cycle
2-XXP000.23	VAP-G05R_XXP01A08	TM	JL18	0	12	S	5	12	IM	0	12	S									0	S															
2-XXQ-3-VMN	VAP-G05R_ZZZ01B02	CMON	JL18	0	15	IN	0	12	IN	1	15	IN	6	13	IN/O																						VMN - level 2
2-XYO000.03	VAP-G03R_XYO01A06	SS	JL07	0	2	S	1	2	IN	1	2	IN									1	IM															2009 PCB Study - 2 samples both >HH
2-XYS000.15	VAP-G01R_XYS01A12	SS	JL01	0	1	W	1	1	W	0	1	W									1	IN/O															2009 PCB Study - 1 H2O sample - >HH
2-XZK000.06	VAT-G10R_XZK01A10	A,CR	JL33				0	12	S	0	12	S	6	12	IM																						WTOX=NH3
2-YRM004.96	VAP-G08R_YRM01A12	A,TM	JL28	0	36	S	5	36	IM	0	36	S	2	23	S						0	S															
BM1	VAT-G14L_NWB01A08	L	JL47	3	313	S	15	99	IM	29	264	IM																									Lake Burnt Mills pooled DO and pH data: DO (41 viol / 207 obs) IM; pH (79 viol / 588 obs)IM. Water Toxics - NH3=S
BM2	VAT-G14L_NWB01A08	L	JL47	1	173	S	15	52	IM	23	173	IM																									Lake Burnt Mills pooled DO and pH data: DO (41 viol / 207 obs) IM; pH (79 viol / 588 obs)IM. Water Toxics - NH3=S
EBE1	VAT-G15E_EBE02A06	CB	JL54					13	IM	0	79	S									0	S															EBEMH, ODU STATION(2009)
ELI2	VAT-G15E_ELI02A06	CB	JL56					24	IM	0	146	S																									ELIPH, ODU STATION(2009)

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
ER1	VAT-G15E_LAF01A06	CB	JL56					106	IM	0	87	S																									LAFMH, Collected by HRSD under contract to DEQ
ER10	VAT-G15E_ELI03A08	CB	JL59					87	IM	0	81	S																									ELIPH, Collected by HRSD under contract to DEQ
ER12	VAT-G15E_ELI02A06	CB	JL56					85	IM	0	83	S																									ELIPH, Collected by HRSD under contract to DEQ
ER39	VAT-G15E_ELI02A06	CB	JL56					82	IM	0	77	S																									ELIPH, Collected by HRSD under contract to DEQ
ER6	VAT-G15E_LAF02A06	CB	JL56					99	IM	0	82	S																									LAFMH, Collected by HRSD under contract to DEQ
ERAC	VAT-G15E_LAF01A06	CB	JL56							0	5	S																									LAFMH, Collected by HRSD under contract to DEQ
ERNYCC	VAT-G15E_LAF01A06	CB	JL56							0	10	S																									LAFMH, Collected by HRSD under contract to DEQ
FC-01L-01	VAP-G01L_FAC01A98	CMON	JL02	0	13	IN	0	13	IN	0	13	IN																									Chesterfield Water Trends Level II data; no new data since 2014 cycle
FC-01L-02	VAP-G01L_FAC01A98	CMON	JL02	0	13	IN	0	13	IN	0	14	IN																									Chesterfield Water Trends Level II data; no new data since 2014 cycle
FC-01L-03	VAP-G01L_FAC01A98	CMON	JL02	0	13	IN	0	14	IN	0	12	IN																									Chesterfield Water Trends Level II data; no new data since 2014 cycle
FC-01L-04	VAP-G01L_FAC01A98	CMON	JL02	0	9	IN	0	9	IN	0	9	IN																									Chesterfield Water Trends Level II data; no new data since 2014 cycle
FC-01L-05	VAP-G01L_FAC01A98	CMON	JL02	0	16	IN	0	16	IN	0	16	IN																									Chesterfield Water Trends Level II data; no new data since 2014 cycle
FC-01L-06	VAP-G01L_FAC01A98	CMON	JL02	0	7	IN	0	7	IN	0	7	IN																									Chesterfield Water Trends Level II data; no new data since 2012 cycle
HAVENCR	VAT-G15E_LAF01A06	SS	JL56					1	IM	0	1	IN				5	9	O																			LAFMH
JMS017.96	VAT-G11E_JMS03A06	A,CB	JL43					291	S	0	291	S																									JMSMH, VIMS
JMS032.59	VAT-G11E_JMS01D14	A	JL35					320	S	0	320	S																									JMSOH, VIMS, Delisted for DO = 2C
JMS042.92	VAT-G10E_JMS01A06	A	JL33					280	S	0	280	S																									JMSOH, VIMS, Delisted for DO = 2C
JMS043.78	VAP-G04E_JMS02A02	CB	JL30		178	NA		178		0	178	S																									VIMS
JMS048.03	VAP-G04E_JMS02A02	CB	JL30		290	NA		290		0	290	S																									VIMS
JMS050.74	VAP-G04E_JMS02A02	CB	JL30		209	NA		209		0	209	S																									VIMS
JMSMH_16M	VAT-G11E_JMS04A06	CB	JL59					84	S	0	79	S																									JMSMH, HRSD
JMSMH_1A_M	VAT-G11E_JMS04A06	CB	JL43					86	S	0	84	S																									JMSMH, HRSD
JMSMH_20M	VAT-G11E_JMS01A06	CB	JL37					83	S	0	80	S																									JMSMH, HRSD
JMSMH_23M	VAT-G11E_JMS01B08	CB	JL35					82	S	0	80	S																									JMSMH, HRSD, Delisted for DO = 2C
JMSMH_8M	VAT-G11E_JMS01A06	CB	JL37					84	S	0	78	S																									JMSMH, HRSD
JMSPH_12P	VAT-G15E_JMS01A00	CB	JL59					91	S	0	86	S																									JMSPH, HRSD
JMSPH_13P	VAT-G15E_JMS01A00	CB	JL59					92	S	0	89	S																									JMSPH, HRSD
JMSPH_21P	VAT-G15E_JMS01A00	CB	JL59					91	S	0	86	S																									JMSPH, HRSD
JMSPH_5P	VAT-G15E_JMS05A06	CB	JL59					93	S	0	89	S																									JMSPH, HRSD
JMSPH_9P	VAT-G15E_JMS01A00	CB	JL59					94	S	0	90	S																									JMSPH, HRSD
LAF001.63	VAT-G15E_LAF01A06	CB	JL56							0	576	S																									VIMS-ConMon, LAFMH
LAF004.70	VAT-G15E_LAF01A06	CB	JL56							0	454	S																									VIMS-ConMon, LAFMH
LE5.5-W	VAT-G15E_JMS01A00	A,CB	JL58					556	S	0	556	S																									JMSPH, ODU
LP1	VAT-G14L_LPR01A06	L	JL46	0	331	S	24	196	IM	0	287	S																									Lake Prince pooled DO and pH data: DO (157 viol / 968 obs) IM; pH (1 viol / 1362 obs) S. Water Toxics - NH3=S
LP2	VAT-G14L_LPR01A06	L	JL46	0	273	S	22	167	IM	0	237	S																									Lake Prince pooled DO and pH data: DO (157 viol / 968 obs) IM; pH (1 viol / 1362 obs) S. Water Toxics - NH3=S
LP3	VAT-G14L_LPR01A06	L	JL46	0	296	S	52	185	IM	0	257	S																									Lake Prince pooled DO and pH data: DO (157 viol / 968 obs) IM; pH (1 viol / 1362 obs) S. Water Toxics - NH3=S
LP4	VAT-G14L_LPR01A06	L	JL46	0	142	S	17	89	IM	1	125	S																									Lake Prince pooled DO and pH data: DO (157 viol / 968 obs) IM; pH (1 viol / 1362 obs) S. Water Toxics - NH3=S
LP5	VAT-G14L_LPR01A06	L	JL46	0	172	S	17	96	IM	0	144	S																									Lake Prince pooled DO and pH data: DO (157 viol / 968 obs) IM; pH (1 viol / 1362 obs) S. Water Toxics - NH3=S
RET5.2	VAP-G04E_JMS02A02	CB-B	JL30																																	B-IBI = multiple; JMSOH
SBE2	VAT-G15E_SBE03A06	A,CB	JL53					14	IM	0	68	S																									SBEMH, Collected by ODU under contract to DEQ
SBE5	VAT-G15E_SBE02A06	A,CB	JL53					16	IM	0	102	S																									SBEMH, Collected by ODU under contract to DEQ
SIMSCR	VAP-G01R_XAY01A06	SS	JL01	0	1	W	1	1	W	0	1	W									1	IN/O															2009 PCB Study - 1 H2O sample - >HH
TF5.5	VAP-G03E_JMS01A00	CB-B	JL07		1	NA		2																													B-IBI = multiple; JMSTF
VA523358	VAT-G15E_JMS01C06	VDHB	JL58													2	20	IM																			Monthly Geometric Mean violated the standard for Enterococci based on Beach Bacteria data. Geo Mean exceedance: 6/2010 and 7/2010. OE for Swimming Advisories. JMSPH
VA722627	VAT-G15E_JMS01B06	VDHB	JL58													2	20	IM																			Monthly Geometric Mean violated the standard for Enterococci based on Beach Bacteria data. Geo Mean exceedance: 6/2010, 8/2014. Multiple Swimming Advisories. JMSPH
VA747813	VAT-G11E_JMS03C06	VDHB	JL43													4	23	IM																			Monthly Geometric Mean violated the standard for Enterococci based on Beach Bacteria data. Geo Mean exceedance: 9/2010, 7/2011, 7/2013, and 5/2014. Multiple Swimming Advisories. JMSMH
VA747818	VAT-G11E_JMS03B06	VDHB	JL43													10	22	IM																			Monthly Geometric Mean violated the standard for Enterococci based on Beach Bacteria data. Multiple Swimming Advisories. JMSMH
VA862384	VAT-G15E_WLY03A06	VDHB	JL57													1	15	IM																			Monthly Geometric Mean violated the standard for Enterococci based on Beach Bacteria data. Geo Mean exceedance: 9/2011. OE for Swimming Advisories. JMSPH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Lower)																																					
WB1	VAT-G14L_NWB02A08	NONA	JL47	0	323	S	29	253	IM	0	280	S																										Western Branch pooled DO and pH data: DO (105 viol / 828 obs) IM; pH (2 viol / 982 obs) S. Water Toxics - NH3=S
WB2	VAT-G14L_NWB02A08	NONA	JL47	1	296	S	36	231	IM	0	257	S																										Western Branch pooled DO and pH data: DO (105 viol / 828 obs) IM; pH (2 viol / 982 obs) S. Water Toxics - NH3=S
WB3	VAT-G14L_LPR01A06	L	JL46	0	53	S	19	188	IM	0	212	S																										Lake Prince pooled DO and pH data: DO (157 viol / 968 obs) IM; pH (1 viol / 1362 obs) S. Water Toxics - NH3=S
WB4	VAT-G14L_NWB02A08	NONA	JL47	1	227	S	17	143	IM	2	187	S																										Western Branch pooled DO and pH data: DO (105 viol / 828 obs) IM; pH (2 viol / 982 obs) S. Water Toxics - NH3=S
WBE1	VAT-G15E_WBE02A00	A,CB	JL55					6	IM	0	35	S																										WBEMH, ODU

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), “Exceed” refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and “Samples” represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia’s portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA										BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH				E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status		Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																							
2-IVC-IVC01-SW	VAV-H26R_IVC02A00	CMON	JR07																													IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-IVC-IVC09-SW	VAV-H26R_IVC03A00	CMON	JR07																													IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10j: Class III: Special Standards:
2-JAK-JCK01-SW	VAV-H30R_JAK01A12	CMON	JR18																													IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10s: Class III: Special Standards: PWS
2-JCB000.80	VAV-H27L_JCB01A08	L	JR11	0	136	S	0	52	S	0	136	S	0	12	S						0	S													0	2	S	WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-JCB-JAC01-SW	VAV-H29R_JCB01A12	CMON	JR16																													FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10m: Class III: Special Standards: PWS
2-JMP-JMU01-SW	VAV-H26R_JMP02A12	CMON	JR07																													J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-JMS110.00	VAP-G01E_JMS01A02	C	JM86																						0	S			1	IM									2012 FT - 4 sp (striped bass, carp, blue catfish, flathead catfish); 2012 sed - PCBs ok
2-JMS110.30	VAP-G01E_JMS01A02	A,CB,TR,SS	JM86		70	NA		65		0	70	S	12	67	IM						0	S														68		Trend Station - (station actually slightly tidal); 2014 water organics okay
2-JMS110.34	VAP-H39R_JMS03A98	B,TM,SS	JM86	0	94	S	0	94	S	0	94	S	15	72	IM						1	O											FS							2009-2010 benthics; 2009 PCB study - 2 samples - 1 of which exceeded HH,
2-JMS110.44	VAP-H39R_JMS03A98	B,TM	JM86	0	94	S	0	94	S	0	95	S	23	81	IM						0	S											FS							2007-2013 benthics; 2009 PCB study - 1 sample - ok; E. coli geomean 1/1 but 3 out of 4 were nondetects
2-JMS110.90	VAP-H39R_JMS03A98	TM	JM86	0	1	W	0	1	W	0	1	W	1	1	W																								No new data since 2012 cycle
2-JMS111.17	VAP-H39R_JMS03A98	TM	JM86	0	48	S	0	48	S	0	47	S	11	47	IM																								E. coli geomean 1/3 (OE), but lot of nondetects
2-JMS111.47	VAP-H39R_JMS03A98	TM	JM86	0	35	S	0	35	S	0	35	S	7	34	IM																								
2-SCM000.23	VAC-H14R_SCM01A00	B	JM35	0	2	S	0	2	S	0	2	S																					FS							2013 Bio
2-JMS111.48	VAP-H39R_JMS03B14	TM	JM86	0	60	S	10	60	IM	0	60	S																											
2-JMS112.33	VAP-H39R_JMS03A98	TM	JM86	0	37	S	0	37	S	0	37	S	5	36	IM																								
2-JMS112.37	VAP-H39R_JMS03A98	TM	JM86	0	70	S	1	70	S	0	70	S																											high pH
2-JMS112.79	VAP-H39R_JMS03A98	A,TM	JM86	0	49	S	0	49	S	2	49	S	6	47	IM																								high pH
2-JMS113.20	VAP-H39R_JMS02A98	CB	JM86	0	124	S	0	124	S	0	123	S									0	S																	2014 water organics (2 visits) - okay
2-JMS115.29	VAP-H39R_JMS02A98	A,TM,B	JM86	2	107	S	0	107	S	1	106	S	5	82	S						0	S											FS							2009-2013 benthics; E. coli geomean 0/3
2-JMS117.35	VAP-H39R_JMS01A98	A,CB,TR	JM86	0	39	S	0	39	S	1	41	S	4	38	S																								Trend Station; PWS
2-JMS123.79	VAP-H39R_JMS01A98	A	JM85	0	2	S	0	2	S	0	2	S	1	2	IN																								No new data since 2012 cycle
2-JMS127.50/ 2BJMS127.50	VAP-H39R_JMS02B04	A,TM,C	JM83	0	14	S	0	14	S	0	14	S													0	S			1	IM									PWS; 2014 sediment PCBs okay; 2014 FT PCBs - blue catfish, flathead catfish, and gizzard shad
2-JMS140.00/ 2BJMS140.00	VAP-H38R_JMS02A04	A,TM,C	JM78	0	14	S	0	14	S	0	14	S									0	S			0	S			1	IM									2014 sediment PCBs okay; 2014 FT PCBs - blue catfish, carp, channel catfish; 2014 water organics - okay
2-JMS157.28/ 2BJMS157.28	VAP-H33R_JMS01A98	A,CB,TM,TR,C	JM72	0	164	S	0	164	S	0	164	S	8	48	IM						0	S			0	S			1	IM									Trend Station - increasing chlorophyll a, pH - decreasing TN; 2014 sediment PCBs okay; 2014 FT PCBs - carp, flathead catfish, channel catfish, quillback carpsucker; 2014 water organics (2 visits) - okay
2-JMS176.63	VAC-H20R_JMS01A02	A,C,TR	JM58	0	36	S	0	36	S	0	38	S	11	36	IM						0	S	0	S	0	S	0	S	2	IM									Trend Analysis Performed - Statistically significant trends were detected for pH (increasing) 2014 FT/Sediment PCBs - 1 Species 2005 FT/Sed Station PCBs - 2 Species James River PCB Fishing Advisory
2-JMS189.31	VAC-H17R_JMS01A00	A,TR,CMON,C	JM45	0	51	S	0	36	S	0	38	S	6	36	IM						0	S							2	IM									2014 FT/Sediment PCBs 4 Species Trend Analysis Performed - Statistically significant trends were detected (TP, decreasing) Colocated DEQ/CMON station James River Association Level III Temp Data & Level II Bacteria Data 4/15 - E. coli violations
2-JMS-1-CWT	VAP-H39R_JMS01A98	CMON	JM85	1	79	IN	0	58	IN	0	91	IN																											previously 2JMS-FOCRROB-ALL - Chesterfield WaterTrends - level 2
2-JMS201.34	VAC-H14R_JMS01A00	A	JM35	0	10	S	0	10	S	0	12	S	1	12	S						0	S																	
2-JMS213.00	VAC-H14R_JMS01A00	C	JM35																						0	S	0	S	1	IM	1	IM							2005 FT/Sediment - Hg 2 Species, PCBs 3 Species James River PCB Fishing Advisory New FT Impairment for Mercury
2-JMS229.14	VAC-H08R_JMS01A00	A,TR	JM20	0	12	S	0	12	S	0	12	S	3	12	IM						0	S	0	S	0	S			1	O									2014 FT/Sediment PCBs 1 Species Trend Analysis Performed - Statistically significant trends were detected for Nitrogen Oxides (declining) and Total Phosphorous (declining) USGS Temperature Data Level III - 0/11
2-JMS258.54	VAC-H03R_JMS01A00	A,C,TR	JM11	0	34	S	0	34	S	0	36	S	8	35	IM						0	S	0	S	0	S	1	O	2	IM				O					01 PCB 4 Species 2005 FT/Sediment Hg 1 Species, PCBs 4 Species 2014 FT/Sediment PCBs 5 Species James River PCB Fishing Advisory Trend Analysis Performed - Statistically significant trends were detected in Bacteria (declining), DO (increasing), and Nitrogen Oxides (declining) 2006 Observed Effects - Carry over (2008 - TP = 3/50)

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA										BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH				E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status		Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																							
2-JMS270.84	VAC-H03R_JMS06A02	A,TR	JM07	0	34	S	0	34	S	0	36	S		5	36	IM						0	S												O				2006 Observed effects - carry over (2008 - 2/34) USGS Temperature Data Level III - 0/9
2-JMS275.75	VAW-H01R_JMS02A00	A,TR	JM03	0	36	S	0	36	S	0	36	S		5	36	IM						0	S	0	S	0	S						1	36	IN				VDH Fish Consumption Advisory PCB 2004. Bacteria 1998 303(d) De-list in 2002. Trend Analysis.
2-JMS279.41	VAW-H01R_JMS04A00	CB,C,TR	JM01	0	121	S	0	120	S	0	121	S		2	47	S						0	S	0	S	0	S	2	IM				7	84	IN				CB Trend. '05 FT/Sed total arsenic (As) [Apx E-2] 1 sp. and mercury (Hg) [Apx E-1] 2 sp. (SM Bass @ 0.46 ppm & LM Bass @ 0.40 ppm); lead (Pb) detected 2 sp.; sediment no PEC exceedances. Field data integrated horizontally; chem data vertically.
2-JMS282.28	VAW-H01R_JMS04A00	A,TR	JM01	0	24	S	0	24	S	0	24	S		6	24	IM						0	S	0	S	0	S						0	24	IN				Bacteria 1998 303(d) De-list in 2002. Trend Analysis.
2JMS-35-ALL	VAP-H39R_JMS03A98	CMON	JM86	0	13	S	0	13	S	0	13	S		5	11	IN/O																							ACB station - Level 3 temp, pH, DO; no data since 2014 cycle
2JMS-J35-JRA	VAC-H03R_JMS01A00	CMON	JM11	0	15	S								1	15	IN																							James River Association Level III Temp Data & Level II Bacteria Data 1/15 - E. coli violations
2-JOD001.19	VAP-G02R_JOD01A04	TM	JA45	0	12	S	2	12	IM	5	15	IM																											
2-JOD001.96	VAP-G02R_JOD01A04	TM	JA45	0	15	S	0	15	S	4	15	IM										0	S																
2-JOD002.69	VAP-G02R_JOD01A04	TM	JA45	0	12	S	0	12	S	1	12	S																											
2-JOD003.05	VAP-G02R_JOD01A04	TM	JA45	0	12	S	0	12	S	4	12	IM																											
2-JOD004.15	VAP-G02R_JOD01A04	TM	JA45	0	11	S	1	12	S	6	12	IM																											
2-JOD005.04	VAP-G02R_JOD01A04	TM	JA45	0	11	S	0	12	S	2	12	IM																											
2-JOD-12-CWT	VAP-G02R_JOD01A04	CMON	JA45	0	30	IN	0	12	IN	3	36	IN																											Chesterfield Water Trends - level II
2-JOH004.04	VAP-H39R_JOH01A08	A	JM81	0	10	S	0	10	S	0	12	S		3	11	IM																							No new data since 2012 cycle
2-JOH004.23	VAP-H39R_JOH01A08	TM,B	JM81	0	3	S	0	3	S	1	3	IN																				IM							PWS; 2012-2013 benthics
2-JTH001.52	VAC-H03R_JTH01A06	A,CMON,B	JM07	0	17	S	0	17	S	0	18	S		1	12	IM						0	S									FS							No New Data - remains impaired 2008-2010 Bio Co-located DEQ/CMON Station Alliance for the Chesapeake Bay Level III - Field Data & Level II - Bacteria Data 2/5 - E. coli violations
2-JTH006.53	VAC-H03R_JTH01A06	A,B	JM07	0	14	S	0	14	S	0	14	S		8	12	IM						0	S									IM							2008/2011 Bio This stream is small and has unstable banks with little vegetative protection.
2-LDJ000.60	VAP-J11L_LDJ01A98	L	JA30	0	133	S	8	76	S	1	133	S		0	21	S						0	S													0	3	S	PWS
2-LDJ002.96	VAP-J11R_LDJ01A10	A,TM	JA30	0	43	S	2	41	S	1	42	S		13	42	IM																							
2-LID001.90	VAC-J06R_LID01A00	A	JA18	0	12	S	0	12	S	0	12	S		1	12	S						0	S																No New Data
2-LIF000.08	VAC-H02R_LIF01A02	B	JM05	0	4	S	0	4	S	0	4	S																				FS							2008-2010 Bio This monitoring station on Little Irish Creek was completely dry one month before sampling occurred in 2008 and typically dries completely each summer.
2-LIF000.62	VAC-H02R_LIF01A02	B	JM05	0	4	S	0	4	S	0	4	S																				FS							2008-2010 Bio Excellent habitat and bank stability. Site located in National Forest.
2-LIF-5115-USFS	VAC-H02R_LIF01A02	USFS	JM05																													UN							USFS Level III Bio Assessment
2-LIT002.40	VAC-J03R_LIT01A02	A,TM,SS,B	JA14	0	25	S	0	25	S	0	26	S		2	24	S						0	S									FS							Hog Farm Special Study Station 2009 Bio - FS
2-LIT004.77	VAC-J03R_LIT01A02	FPM,B	JA14	0	2	S	0	2	S	0	2	S		0	1	W				0	W	0	S									J							2012 Probmon Biologist notes indicated heavy algae growth was clogging the riffles and an upstream beaver dam was affecting the flow. This stream also had unstable banks, and excessive sedimentation.
2-LIT005.43	VAC-J03R_LIT01A02	B,TM	JA14	0	2	S	0	2	S	0	2	S		4	12	IM																FS							2014 Bio This site was sampled as a follow-up to a probabilistic monitoring site 2-LIT004.77, which was located on private property that could not be revisited.
2-LIU000.70	VAC-J06R_LIU01A02	TM	JA15											5	10	IM																							NO NEW DATA Appomattox Basin TMDL
2-LIU002.75	VAC-J06R_LIU01A02	TM	JA15											4	10	IM																							NO NEW DATA Appomattox Basin TMDL
2LIU-SAY5-CVW	VAC-J06R_LIU01A02	CMON	JA15											31	52	IM																							Clean Virginia Waterways Station Formerly 2LIU-A-CVW
2LIU-SAY6-CVW	VAC-J06R_LIU01A02	CMON	JA15											16	33	IM																							Clean Virginia Waterways Station Formerly 2LIU-B-CVW
2-LIX-33-FOCR	VAP-J16R_LIX01A14	CMON	JA41	0	7	IN	0	7	IN	0	7	IN		0	6	IN																							Chesterfield Water Trends Level II data; no new data since 2014 cycle
2-LIY001.73	VAP-H39R_LIY01A00	A	JM84	0	11	S	2	11	IM	1	11	S		6	11	IM																							PWS; no data since 2014 cycle
2-LKN000.02	VAV-H23R_LKN01A00	A,B	JR02	0	9	S	0	9	S	0	9	S		1	6	IN/O																IM							WQS - Basin 2B: Section 10h: Class III: Special Standards:
2-LKN-LKN01-SW	VAV-H23R_LKN01A00	CMON	JR02																													IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10h: Class III: Special Standards:
2-LLI000.58	VAP-H38R_LLI01A12	A	JM78	0	10	S	0	10	S	2	12	IM		2	11	IM																							No new data since 2012 cycle
2-LNS000.69	VAP-J17R_LNS01A10	A,TM	JA44	0	11	S	4	11	IM	2	11	IM										0	S																

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA										BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH				E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status		Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																							
2-LOB000.37	VAC-H11R_LOB01A04	TM,B	JM28	0	16	S	0	16	S	1	16	S								0	S	0	S	0	W	0	W					IM							2009-2012 Bio TMDL Sampling This stream has embedded riffles, noticeable sediment deposition, and is bordered on one side by a cow pasture. 2001 Probabilistic Monitoring Seasonal difference noted for biological sampling.
2-LSD001.24	VAV-H31R_LSD01A02	A,B	JR22	0	1	W	0	1	W	0	1	W																				FS							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-APP037.08	VAP-J12R_APP01A08	A	JA36	0	24	S	0	24	S	2	24	S	5	24	IM																								
2-APP050.23	VAP-J10R_APP01A98	A,TR	JA28	0	33	S	0	33	S	0	35	S	7	32	IM																								TREND Station;
2-APP068.93	VAP-J07R_APP01A98	A	JA21	0	12	S	0	12	S	0	12	S	3	11	IM							0	S																no new data since 11/2012
2-APP081.04	VAP-J07R_APP01A98	A,B	JA21	0	14	S	0	14	S	0	14	S	4	12	IM							0	S									FS							2013 Benthic
2-APP085.85	VAC-J06R_APP05A02	A,TM,TR	JA19	0	35	S	0	35	S	0	36	S	11	36	IM							0	S																Appomattox Basin TMDL
2-APP110.93	VAC-J01R_APP05A04	A,TM,TR	JA09	0	87	S	0	86	S	0	91	S	13	71	IM							0	S																Appomattox River Basinwide TMDL Study Trend Analysis Performed - Statistically significant trends were detected (TSS, increasing) USGS Temperature Data Level 3 - 0/14
2-APP118.04	VAC-J01R_APP03A02	A,TM,C,TR	JA05	0	34	S	0	34	S	0	36	S	6	36	IM							0	S	0	S	0	S	2	O	1	O								Appomattox River Basinwide TMDL Study Trend Analysis Performed - No Statistically significant trends were detected 2005 FT/Sediment - As 2 Species, Hg 1 Species OE - PCB 1 Species
2-APP122.15	VAC-J01R_APP03A02	A	JA05	0	10	S	0	10	S	0	12	S	2	12	IM							0	S																
2-APP127.08	VAC-J01R_APP02A02	TM	JA03	0	0	W	0	0	W	0	0	W	4	10	IM																								NO NEW DATA Appomattox River Basinwide TMDL Study
2-APP137.55	VAC-J01R_APP02A02	A	JA03	0	10	S	0	10	S	0	12	S	2	12	IM							0	S																
2-APP143.57	VAC-J01R_APP02A02	A,B,C	JA02	0	3	S	0	3	S	0	3	S										0	S	0	S	0	S	1	O	0	S	FS							2010/2012 BIO This section of the Appomattox River was wadeable with numerous riffles. There was sedimentation occurring, but the macroinvertebrate habitat was optimal. 2005 FT/Sediment OE - Hg 1 Species, PB 2 Species, As 1 Species 2006 FC bacteria: 3/9 = IM
2-APP152.57	VAC-J01R_APP01B04	A	JA01	0	12	S	0	12	S	0	12	S	2	12	IM							0	S																
2-APP-46-FOCR	VAP-J15R_APP01A12	CMON	JA40	0	20	IN				0	20	IN		5	13	IM																							Chesterfield Water Trends Level II data
2-APP-A02-JRA	VAP-J15E_APP01A98	CMON	JA40	0	14	S							5	13	IM																								James River Association Level III
02035000	VAP-H33R_JMS01A98	USGS	JM72	53	1974	S	0	961	S	13	1913	S																											collocated with 2-JMS157.28 - USGS ConMon
2-ABL001.40	VAV-H31R_ABL01A00	A	JR22	0	12	S	0	11	S	0	12	S	1	12	S																								WQS: Basin 2B: Section 11: Class III: Special Standards:
2-ANG001.27	VAC-J06R_ANG02A00	TM,SS	JA16	0	2	S	0	2	S	0	2	S	3	10	IM							0	S																Alliance for the Chesapeake Bay Level III - Field Data & Level II - Bacteria Data
2-ANG003.35	VAC-J06R_ANG01A00	B,TM,SS	JA16	0	3	S	0	3	S	0	3	S	0	0	IM							0	S									FS							NO NEW BACTERIA DATA Hog Farm Special Study Station Appomattox Basin TMDL Regional Biological Station - Water of Concern FS Biologist notes on field form: 11/20/2007: Recent drought conditions (highly impacted). Suspect stream dried completely or nearly completely during drought. Biologist notes on field form 11/17/2008: Locals said Angola Creek downstream was dry within past month. Additional fall sampling needed to accurately characterize the benthic community in non-drought conditions. In general, this stream tends to score lower in the fall as a result of low water during summer seasons.
2ANG-ANG17-CVW	VAC-J06R_ANG02A00	CMON	JA16										11	36	IM																								Clean Virginia Waterways Station
2-APP001.53	VAP-J15E_APP02A98	CB,C,TR	JA45	1	417	S	0	386	S	0	417	S	11	68	IM							0	S	0	S	0	S	0	S	1	IM								TREND Station; 2012 FT: PAHs ok, PCBs 3 sp (striped bass, gizzard shad, carp), pest ok, metals ok; 2009 PCB Special Study 0/2(S)
2-APP009.52	VAP-J15E_APP01A98	A	JA40	0			0	13	S	0	13	S	1	12	S																								no new data since 12/2012
2-APP012.79	VAP-J15R_APP01A12	A,B,C,TR	JA40	0	39	S	0	39	S	1	41	S	2	36	S							0	S							2	S	FS							TREND Station; 2009 PCB Special Study 0/2(S)
2-APP016.38	VAP-J15R_APP01A98	A,CB,TR	JA40	0	119	S	0	117	S	0	119	S	1	36	S							0	S																Same as USGS 02041650; Trend Station
2-APP020.23	VAP-J14L_APP01A00	L	JA39	0	124	S	17	94	IM	0	124	S	0	13	S							0	S													0	2	S	0	2	S	5A; Top 10/41 (24.4%); bottom 26/26 (100%). PWS; pooled DO= 22 vios/253 obs (S); pooled pH =0 vios/191 obs (S) no new data since 2012
2-APP023.27	VAP-J14L_APP01A00	L	JA39	0	67	S	4	57	S	0	67	S	0	11	S							0	S													0	2	S	0	2	S	5A; Top 7/36 (19.4%); bottom 8/10 (80%); PWS;pooled DO= 22 vios/253 obs (S); pooled pH =0 vios/191 obs (S) no new data since 2012
2-APP026.67	VAP-J14L_APP01A00	L	JA39	0	59	S	1	49	S	0	59	S	0	11	S							0	S													0	2	S	0	2	S	5A Top 5/28 (17.8%); bottom 0/3; PWS;pooled DO= 22 vios/253 obs (S); pooled pH =0 vios/191 obs (S) no new data since 2012
2-APP028.58	VAP-J14L_APP01A00	L	JA39	0	33	S	0	33	S	0	33	S	1	9	S							0	S																PWS; non lacustrinepooled DO= 22 vios/253 obs (S); pooled pH =0 vios/191 obs (S) no new data since 2012 cycle
2-APP029.23	VAP-J14L_APP01A00	L	JA36	0	20	S	0	20	S	0	20	S	0	6	S							0	S																PWS non lacustrinepooled DO= 22 vios/253 obs (S); pooled pH =0 vios/191 obs (S) no new data since 2012 cycle

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA										BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH				E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status		Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																							
2-APP-APCO-01-NPS	VAC-J01R_APP01B04	CMON	JA01	0	5	S	0	5	S	0	5	S																											Level III NPS Data
2-APP-APCO-03-NPS	VAC-J01R_APP01B04	CMON	JA01	0	5	S	0	5	S	0	5	S																											Level III NPS Data
2APP-APP1-CVW	VAC-J01R_APP02A02	CMON	JA03										1	34	S																								Clean Virginia Waterways Station
2APP-APP2-CVW	VAC-J01R_APP05A04	CMON	JA09										7	60	IM																								Clean Virginia Waterways Station Formerly Station 2AAP-F-CVW
2-ARS000.11	VAC-J01R_ARS01A04	A	JA01	0	0	W	0	0	W	0	0	W	3	12	IM							0	S																Assessment Drops Out
2-AUS001.12	VAC-H21R_AUS01A00	B,SS	JM52	0	2	S	0	2	S	0	2	S	0	0	W							0	W										J						2013 Bio Austin Creek exhibits seasonal variability around the assessment threshold, therefore further sampling is required to accurately assess water quality within this reach.
2BACH000.09	VAC-H05R_ACH01A16	A	JM13	0	12	S	0	12	S	0	12	S	5	12	IM																								
2-BAG002.25	VAV-H31R_BAG01A06	A	JR21	0	12	S	0	12	S	1	12	S	1	12	S																								WQS - Basin 2B: Section 11: Class III: Special Standards:
2-BAG-BAG01-SW	VAV-H31R_BAG01A06	CMON	JR21																													J						Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-BAG-BAG02-SW	VAV-H31R_BAG01A06	CMON	JR21																													J						Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2BANC000.09	VAC-H05R_ANC01A16	A	JM17	0	12	S	0	12	S	0	12	S	5	12	IM																								
2BBAA003.06	VAC-H36R_BAA01A12	FPM,B	JM68	0	2	S	0	2	S	0	2	S	0	1	W						0	W	0	S	0	W							FS	0	1	W	0	1	W	2010 FPM This site was sampled as part of the probabilistic monitoring program. This stream had optimal habitat, with slight embeddedness and pronounced sedimentation.
2BBKF002.05	VAC-H06R_BKF01A16	B	JM16	0	2	S	0	2	S	0	2	S																					FS						2014 Bio
2BBNC001.23	VAC-H02R_BNC01A02	B	JM05	0	4	S	0	4	S	0	4	S																					FS						2009-2010/2012 BIO This stream is in the George Washington National Forest and has optimal riffle habitat. The stream experiences more sedimentation and embeddedness than others in the area due to road crossings upstream. The USFS sampled this site in spring 2008 and calculated an SCI score of 62.7. 2BBNC-5042-USFS Level III Assessment - FS
2BBNC-5042-USFS	VAC-H02R_BNC01A02	CMON	JM05																													UN						USFS Benthic Samples
2BBOB000.19	VAV-H13R_BOB01A10	A	JM32	0	12	S	0	12	S	0	12	S	5	12	IM																								WQS - Basin 2B: Section 11d: Class III: Special Standards:
2BBYN000.59	VAC-H21R_BYN01A12	B	JM53	0	6	S	0	5	S	0	6	S																					FS						2009/2012/2014 BIO This stream had adequate epifaunal substrate and relatively stable banks, but was experiencing some sediment deposition.
2BBYR000.08	VAP-H34R_BYR01A98	FPM,B	JM61	0	2	S	0	2	S	0	2	S	0	1	W						0	IN	0	S	0	S							FS						2011 sed; 2011 benthics; no data since 2014 cycle
2BCBL002.86	VAV-H09R_CBL01A00	PA,B	JM22	0	13	S	0	13	S	0	13	S	1	12	S						0	W	0	S									FS						WQS - Basin 2A: Section 11: Class VI: Special Standards:
2-BCM000.79	VAP-J16R_BCM01A04	TM	JA41	0	12	S	4	12	IM	1	12	S											0	S															New Station in 2016 cycle
2-BCR000.20	VAC-H05R_BCR01A00	A	JM12	0	0	W	0	0	W	0	0	W	3	24	IM								0	W	0	W	0	W											
2-BCR007.68	VAC-H05R_BCR01A00	FPM,B	JM12	0	2	S	0	2	S	0	2	S	0	1	W						0	W	0	S			0	W					FS						2012 FPM There is some sedimentation and bank erosion occurring in Beaver Creek, but otherwise it has optimal habitat.
2-BDC000.79	VAP-H38R_BDC01A98	A,TM	JM79	0	24	S	0	24	S	1	24	S	5	12	IM																								PWS; no E. coli data since 2014 cycle
2BECH000.53	VAC-H02R_ECH01A02	B	JM05	0	4	S	0	4	S	0	4	S																					FS						2009-2010 BIO This stream is in the George Washington National Forest and has optimal habitat.
2-BEK000.10	VAC-H05R_BEK01A06	A	JM14	0	12	S	0	12	S	0	12	S	6	12	IM								0	S															
2-BEK001.40	VAC-H05R_BEK01A06	B	JM14	0	3	S	0	3	S	0	3	S																					FS						2009-2010 Bio The riffles in this section of Beck Creek were mostly bedrock covered in an algal film. The watershed is mostly forested with some agriculture and a gravel road bordered the stream on the left bank.
2-BEP-BVE01-SW	VAV-H30R_BEP01A12	CMON	JR18																													IM						Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10s: Class III: Special Standards: PWS
2-BFC001.11	VAC-H36R_BFC01A08	A,B	JM66	0	14	S	0	14	S	0	14	S	1	12	IM								0	S									IM						2013 Bio New IM - Buffalo Creek had marginal habitat availability and moderate sediment deposition.
2-BFL002.00	VAC-J02R_BFL02A02	A,B,TM	JA08	0	3	S	0	3	S	0	3	S	0	0	W								0	W	0	W	0	W					FS						2010/2014 Bio Appomattox River Basinwide TMDL Study SCI scores are higher in the fall season due to increased leaf pack availability. Habitat very dependent on large woody debris, which trap leaf packs. The spring 2005 sample was taken in June, which may have excluded early emergent families. This may have caused an inconsistent SCI score for this sample. Spring 2006 was uncharacteristically dry, which may account for the slightly low SCI score for that sample. These data are reflected in the upstream sample at site 2-BFL009.69. This site has pronounced sediment deposition, and marginal/suboptimal epifaunal substrate. Need additional data in order to accurately characterize this stream; Will revisit site.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-BFL009.69	VAC-J02R_BFL02A02	B,CR,A	JA08	0	2	S	0	2	S	0	2	S																			FS							Citizen Monitoring Request 2012 Biomon SCI scores are higher in the fall season due to increased leaf pack availability. Habitat very dependent on large woody debris, which trap leaf packs. 2010 samples were collected in early September, Stream had abundant new-fall and stable habitat in 2012 with good flows.
2-BFL011.03	VAC-J02R_BFL02A02	A,TM,TR	JA08	0	34	S	0	34	S	0	36	S	8	35	IM						0	S															Appomattox River Basinwide TMDL Study Trend Analysis Performed - Statistically significant trends detected (TN - increasing)
2-BFL011.64	VAC-J02R_BFL03A06	FPM,B	JA08	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W	0	W					FS							2008 FPM
2-BFL016.60	VAC-J02R_BFL03A06	A	JA07	0	12	S	0	12	S	0	12	S	3	12	IM						0	S																
2-BFL016.79	VAC-J02R_BFL03A06	FPM,B	JA07	0	1	W	0	1	W	0	1	W							0	W	0	W	0	W	0	W					FS							2012 Carryover Prob Mon
2BFL-BUF0-CVW	VAC-J02R_BFL02A02	CMON	JA08										7	27	IM																							Clean Virginia Waterways Station
2BFL-BUF15-CVW	VAC-J02R_BFL02A02	CMON	JA08										3	33	IM																							Clean Virginia Waterways Station Formerly 2BFL-B-CVW
2BFL-BUF3-CVW	VAC-J02R_BFL02A02	CMON	JA08										2	36	S																							Clean Virginia Waterways Station Formerly 2BFF-B-CVW
2-BGC000.58	VAC-H20R_BGC01A98	A,B	JM58	0	2	S	0	2	S	0	2	S	2	12	IM						0	S									FS							2013 Bio
2-BGC005.37	VAC-H20R_BGC02A04	SS,A,C	JM58	0	12	S	0	12	S	0	12	S									0	S							0	S								2008 Ammonia Special Study
2BGOW000.76	VAV-H15R_GOW01A16	PA	JM36	0	11	S	0	11	S	0	11	S	5	10	IM																							WQS - Basin 2B: Section 10: Class III: Special Standards:
2BGOW001.00	VAV-H15R_GOW01A16	A,B,FPM	JM36	0	2	S	0	2	S	0	2	S	2	2	IM				0	W											FS							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-BGU001.39	VAC-J06R_BGU01A98	A,TM	JA18	0	0	W	0	0	W	0	0	W	2	9	IM						0	W	0	W	0	S												Appomattox Basin TMDL
2-BGU005.67	VAC-J06R_BGU01A98	A,B	JA18	0	14	S	0	14	S	0	14	S	5	12	IM						0	S									FS							2013 Bio This stream exhibits seasonal variability around the assessment threshold. Because of the lower spring SCI score this site will be sampled again in the future to determine if degradation is occurring.
2BHOX000.62	VAC-H21R_HOX01A08	B,PA	JM53	0	16	S	0	15	S	0	16	S	2	12	IM																IM							2009/2012 BIO Biologist notes from 2009 indicated that the riffles were highly embedded and unstable, which was likely a result of relatively unstable stream banks and heavy local watershed erosion. Sediment is a likely stressor in this stream.
2-BID002.11	VAV-H29R_BID01A00	A	JR16	0	12	S	0	12	S	0	12	S	2	12	IM																							WQS - Basin 2B: Section 10m: Class III: Special Standards: PWS
2-BID-BKI01-SW	VAV-H29R_BID01A00	CMON	JR16																												IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10m: Class III: Special Standards: PWS
2-BID-BKX01-SW	VAV-H29R_BID02A00	CMON	JR16																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10m: Class III: Special Standards: PWS
2-BIO000.45	VAC-H36R_BIO01A08	A,B	JM70	0	16	S	0	16	S	0	16	S	0	12	S						0	S									IM							2009/2014 Bio This site is in the Cumberland State Forest and had marginal bank stability, pronounced sediment deposition, and suboptimal epifaunal substrate.
2BJMS110.53	VAP-H39R_JMS03A98	TM,B	JM86	0	9	S	0	9	S	0	9	S																			FS							2009-2013 benthics
2BJMS113.47	VAP-H39R_JMS02A98	FPM,B	JM86	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S							FS							2009 Probmon; no new data since 2012 cycle
2BJMS118.99	VAP-H39R_JMS01A98	C	JM85																						0	S			1	IM							2014 sediment PCBs ok; 2014 FT PCBs - blue catfish, flathead catfish, carp, gizzard shad
2BJMS136.77	VAP-H38R_JMS02A04	FPM,TM,B	JM78	0	15	S	0	15	S	0	15	S	0	2	S				0	S	0	S	0	S							FS							2010 Probmon; 2010 and 2014 benthics/metals
2BJMS143.23	VAP-H38R_JMS01A06	FPM,B	JM78	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S							IN							2011 probmon; no data since 2014 cycle
2BJMS181.54	VAC-H20R_JMS01A02	FPM	JM50	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W																2012 FPM - Large River
2BJMS182.94	VAC-H17R_JMS01A00	C	JM45																										2	IM							2014 FT/Sediment PCBs 3 Species
2BJMS195.54	VAC-H17R_JMS01A00	PA	JM42	0	12	S	0	12	S	0	12	S	2	12	IM																							
2BJMS196.16	VAC-H17R_JMS01A00	FPM,B	JM42	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	S									J							2013 Boatable Probmon Large rivers are non-target for current DEQ sampling techniques. No assessment tool is available for large river benthic communities.
2BJMS211.77	VAC-H14R_JMS01A00	C	JM35																										1	O							2014 FT/Sediment PCBs 1 Species
2BJMS264.58	VAC-H03R_JMS06A02	FPM,B	JM07	0	2	S	0	2	S	0	2	S	0	1	W			NA	0	W	0	S	0	W							J							2010 FPM This section of the James River was sampled as part of the probabilistic monitoring program. Large river non-target for current DEQ sampling techniques. No assessment tool available for large river benthic communities.
2BJMS-53-ACB	VAP-H39R_JMS01A98	CMON	JM86	1	43	S	0	42	S	0	39	S																										ACB - level 3
2BJMS-J25-JRA	VAP-H38R_JMS02A04	CMON	JM78	0	13	S							6	12	IN/O																							James River Association; Level II E. coli and Level III temp
2-BKC001.43	VAV-H09R_BKC01A14	A,B	JM24	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 2B: Section 11c: Class III: Special Standards: PWS
2-BKC001.55	VAV-H09R_BKC01A14	B	JM24	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 2B: Section 11c: Class III: Special Standards: PWS
2-BKM002.01	VAV-H25R_BKM01A00	A	JR06	0	12	S	0	11	S	0	12	S	2	12	IM																							WQS - Basin 2B: Section 10j: Class III: Special Standards:
2-BKM004.79	VAV-H25R_BKM01A00	A,B	JR06	0	2	S	0	2	S	0	2	S																			FS							WQS - Basin 2B: Section 10j: Class III: Special Standards:
2-BKM-BKM01-SW	VAV-H25R_BKM01A00	CMON	JR06																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-BKM-BKM04-SW	VAV-H25R_BKM01A00	CMON	JR06																											J							WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-BKM-BKM06-SW	VAV-H25R_BKM01A00	CMON	JR06																											FS							WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-BKM-BKU03-SW	VAV-H25R_BKM01A00	CMON	JR06																											FS							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-BKW000.40	VAC-H03R_BKW01A00	A,TM,B	JM10	0	4	S	0	4	S	0	4	S			IM						0	S	0	S	0	S					IM							Bacteria data dropped out, still impaired (4/12 last count) Lynchburg CSO/Urban Non-Point Source 2007 Lynchburg TMDL 2007/2011 Bio Habitat assessment scores at this site were low for epifaunal substrate, sediment deposition, bank stability and bank vegetative protection. Blackwater Creek is an urban stream with many non-point sources of pollution, in addition to scouring and high sediment loads during rain events. It has a uniform stream bottom with little instream habitat.
2-BKW004.87	VAC-H03R_BKW01A00	B	JM10	0	5	S	0	5	S	0	5	S									0	W									IM							2007, 2009-2011 Bio This section of Blackwater Creek has an excellent riparian zone for an urban area, but has poor bank stability, increased embeddedness and sediment deposition, and marginal epifaunal substrate. The fall 2011 SCI score shows improvement and monitoring will continue at this site.
2-BKW005.95	VAC-H03R_BKW01A00	A	JM10	0	10	S	0	10	S	0	10	S	3	12	IM						0	S																Urban Non-Point Source
2-BKW006.76	VAC-H03R_BKW01A00	C	JM10																				0	S	0	S	0	S	1	O								2005 FT/Sediment Station OE - PCB 1 Species
2-BKW007.19	VAC-H03R_BKW01A00	TM	JM10			W			W			W	4	12	IM						0	W																
2BKW-MJ-BC-ACB	VAC-H03R_BKW01A00	CMON	JM10	0	1	W	0	1	W	0	1	W	0	1	IN																							Alliance for the Chesapeake Bay Level III - Field Data & Level II - Bacteria Data
2-BLG012.33	VAP-H37R_BLG02A08	TM	JM77	0	11	S	0	11	S	0	11	S	0	11	S						0	S																
2BLIR007.16	VAV-H10R_LIR01A00	A,B,FPM	JM25	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	S									FS							WQS - Basin 2B: Section 11d: Class VI: Special Standards:
2-BLO001.85	VAP-J11R_BLO01A00	A,TM	JA30	0	48	S	15	46	IM	3	47	S	6	48	IM						0	S																
2-BLR003.00	VAC-H17R_BLR01A00	A,TM	JM42			W			W			W	3	18	IM						0	S																
2-BLU-BLU02-SW	VAV-H27R_BLU01A04	CMON	JR10																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2BMAR-36-CWT	VAP-H39R_MAR01A08	CMON	JM83	0	18	IN				0	28	IN																										Chesterfield WaterTrends - level II
2BMCM014.13	VAV-H23R_MCM01B10	FPM	JR01	0	3	S	0	3	S	0	3	S	0	2	S				0	S	0	S																WQS - Basin 2B: Section 10h: Class III: Special Standards:
2BMNF000.10	VAV-H24R_MNF01A00	A	JR03	2	6	IM	0	6	S	1	6	IN	0	6	S																							WQS - Basin 2B: Section 10i, Class VI: Special Standards:
2BMSC002.46	VAV-H28R_MSC01A00	SS	JR15																						0	S												WQS - Basin 2B: Section 10: Class III: Special Standards:
2BMSC003.06	VAV-H28R_MSC01B12	SS	JR15																						0	S												WQS - Basin 2B: Section 10: Class III: Special Standards:
2-BNF003.52	VAC-H11R_BNF02A02	FPM,B	JM28	0	2	S	0	2	S	0	2	S							0	W	0	S	0	W	0	W					FS							2001 Probabilistic Monitoring - 2007-2008/2010 Follow-up This is a high gradient stream in the national forest.
2-BNF-5123-USFS	VAC-H11R_BNF03A06	USFS	JM28																											UN							USFS Level III Bio Assessments
2-BNP-BVD01-SW	VAV-H27R_BVM01A00	CMON	JR09																											J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-BOR000.02	VAP-H39R_BOR01A02	A,TM	JM83	0	3	S	0	3	S	0	3	S	3	3	IM																							No data since 2014 cycle
2-BOR001.73	VAP-H39R_BOR01A02	A,TM	JM83	0	27	S	4	27	IM	1	27	S	4	15	IM																							PWS
2-BOT-BST01-SW	VAV-H31R_BOT01A12	CMON	JR19																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-BOW001.99	VAC-J01R_BOW01A10	TM,B	JA02	0	2	S	0	2	S	0	2	S			W																FS							2013 Bio
2BOWN002.52	VAC-H08R_OWN01A06	A	JM20	0	12	S	0	12	S	0	12	S	1	12	S																							
2BPRS001.90	VAV-H10R_PRS01A00	B,PA,FPM	JM25	0	12	S	0	11	S	0	12	S	0	12	S				0	W	0	S									FS							WQS - Basin 2B: Section 11: Class VI: Special Standards:
2-BRI001.00	VAC-J05R_BRI01A98	A,TM	JA10	0	12	S	0	12	S	0	12	S	2	12	IM						0	S																
2-BRI004.01	VAC-J05R_BRI01A98	TM	JA10			W			W			W	2	11	IM																							
2-BRI007.80	VAC-J05R_BRI01A98	FPM,B	JA10	0	1	W	0	1	W	0	1	W			W				0	W	0	W	0	W	0	W					IM							2009 Bio This stream has marginal bank stability, increased sediment deposition, and decent epifaunal substrate. 2009 biologist field notes indicate that the snags were full of sediment and the stream appears to get high flows relatively often. Additional data needed to accurately characterize the benthic community.
2-BRI010.78	VAC-J05L_BRI01L98	L	JA10	0	296	S	3	122	S	4	296	S	0	20	S						0	S	0	S	0	S								0	2	S		2009-2013 Briery Creek Lake Pooled Data: DO - 7/184
2-BRI013.12	VAC-J05L_BRI01L98	L	JA10	0	189	S	9	124	S	0	189	S	0	28	S						0	S	0	S	0	S												2009-2013 Briery Creek Lake Not in Lacustrine Zone Pooled Data: DO - 7/184
2-BRK001.00	VAC-H36R_BRK01A08	A,B	JM68	0	16	S	0	16	S	0	16	S	0	12	S						0	S									FS							2009 BIO This site is in the Cumberland State Forest and exhibited marginal bank stability, pronounced sediment deposition, and marginal epifaunal substrate.
2BRKR012.86	VAV-H13R_RKR01A00	PA,B	JM32	0	12	S	0	11	S	0	12	S	7	12	IM				0	W	0	S									FS							WQS - Basin 2B: Section 11d: Class III: Special Standards:
2BRTS001.97	VAP-H34R_RTS01A14	B,A	JM59	0	2	S	0	2	S	0	2	S																			FS							2012 benthics

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2BRVN039.91	VAV-H28R_RVN01A00	SS	JR14																					0	S												WQS - Basin 2B: Section 10: Class III: Special Standards:
2BRVN040.04	VAV-H28R_RVN01A00	SS	JR14																					0	S												WQS - Basin 2B: Section 10: Class III: Special Standards:
2-BRX000.66	VAV-H23R_BRX01A00	B	JR01	0	4	S	0	4	S	0	4	S																			IM							Benthic MI in 2004 (improved) WQS - Basin 2B: Section 10: Class III: Special Standards:
2-BSC-BSC01-SW	VAV-H28R_BSC01A00	CMON	JR15																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2BSNK001.20	VAV-H28R_SNK01A02	SS	JR14																					0	S												WQS - Basin 2B: Section 10: Class III: Special Standards:
2-BSR002.82	VAC-J03R_BSR03A02	A,TM	JA13	0	12	S	0	12	S	0	12	S	2	12	IM						0	S															
2-BSR012.33	VAC-J04R_BSR01B10	FPM,B	JA11	0	2	S	0	2	S	0	2	S	0	1	W						0	W									FS							2014 FPM
2-BSR017.69	VAC-J04R_BSR01B10	PA,B	JA11	0	12	S	0	12	S	0	12	S	3	12	IM																IM							2008 Bio Station This site was monitored in order to supplement probabilistic monitoring data from probabilistic monitoring site 2-BSR018.10, which can only be accessed via private land and cannot be revisited. Bush River has evidence of extremely high flows with very high sedimentation occurring instream. The habitat assessment scores very low for bank stability and bank vegetative protection. In the fall of 2008 a new clear-cut was noted on the right bank. The riffles had become more embedded, reducing available habitat for benthic macroinvertebrates.
2-BSR018.10	VAC-J04R_BSR01B10	FPM,B	JA11			W			W			W			W					W		W		W		W				J							2005 Probabilistic Monitoring Condition of stream drastically different seasonally, therefore an accurate assessment is not possible without additional data. This site was part of the probabilistic monitoring program and can only be accessed via private land, therefore it will not be revisited. Seasonal difference noted. Abundant algal floc dominated riffles in spring but was not present in fall.
2-BTC000.16	VAC-H07R_BTC01A00	A,TM	JM18	0	12	S	0	12	S	0	12	S	2	12	IM						0	S		W		W											
2BTYS000.85	VAV-H09R_TYS01A00	B	JM21																												FS							WQS - Basin 2B: Section 11: Class VI: Special Standards:
2-BUF002.10	VAC-H12R_BUF01A00	A,B,TR	JM31	0	48	S	0	48	S	0	48	S	14	48	IM						0	S		W		W						FS							Trend Analysis Performed - Statistically significant trends were detected (TN-decreasing & TSS, decreasing) 2010 - Nelson County Master Gardeners Site #16 0/6 EC - Level II Data
2-BUF011.95	VAC-H11R_BUF01A00	TM	JM29	0	11	S	0	11	S	0	11	S	4	12	IM						0	S																Buffalo River TMDL station
2-BUF013.53	VAC-H11R_BUF01A00	A	JM29	0	12	S	0	12	S	0	12	S	2	12	IM						0	S	0	S	0	S												
2-BUF023.21	VAC-H11R_BUF03A00	A	JM29	0	22	S	0	22	S	0	24	S	5	24	IM						0	S	0	W	0	W												
2-BUF026.43	VAC-H11R_BUF04A08	B,TM	JM28	0	27	S	0	27	S	0	27	S	9	12	IM					0	S										IM							TMDL Monitoring 2006/2009-2011 Bio Mon. This stream has good riffles but algae are dominant, indicating potential nutrient enrichment. It also has excessive sediment deposition, likely due to its location in an agricultural watershed with pasture adjacent to the left bank.
2-BUF026.58	VAC-H11R_BUF04A08	TM	JM28	0	13	S	0	13	S	0	13	S	7	12	IM					0	S	0	S															Buffalo River TMDL station
2-BUF030.41	VAC-H11R_BNF01A02	TM,B	JM28	0	13	S	0	13	S	1	13	S	1	12	S						0	S									FS							2011 Bio This section of the Buffalo River is characterized by excellent cobble riffles and optimal habitat. Buffalo River TMDL station
2-BUN000.04	VAC-H03R_BUN01A06	B	JM10	0	2	S	0	2	S	0	2	S																			IM							2007 & 2011 Bio Station Burton Creek suffers from heavy algal growth in addition to fine sediments covering the stream bottom. Habitat assessment scores were low for bank stability and bank vegetative protection. An abundance of trash was noted in the stream at the time of sampling.
2-BUN001.64	VAC-H03R_BUN01A06	A,TM	JM10	0	10	S	0	10	S	0	10	S	1	12	IM						0	S																No New Data, remains impaired Urban Non-Point Source
2-BVC000.83	VAV-H16R_BVC01A04	A	JM41	0	11	S	0	11	S	0	11	S	2	12	IM																							WQS - Basin 2B: Section 10: Class III: Special Standards
2-BVP006.58	VAP-J11R_BVP01A00	A	JA33	0	9	S	0	9	S	0	11	S	3	11	IM																							no new data since 2012 cycle
2-BVR002.19	VAV-H23L_00	L	JR02	1	162	S	1	56	S	4	162	S	0	14	S						0	S													0	2	S	WQS - Basin 2B: Section 10g: Class III: Special Standards: PWS
2-BVR-BVV02-SW	VAV-H23R_BVR02A04	CMON	JR02																												J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10g: Class III: Special Standards: PWS
2BWTN007.39	VAC-H21R_WTN01A08	FPM,B	JM54	0	2	S	0	2	S	0	2	S	0	1	W					0	W			0	W				0	W	FS							2010 FPM This site was sampled as part of the probabilistic monitoring program and is also 0.4 miles downstream of a dam on Walton Lake.
2BXAC000.38	VAC-H14R_XAC01A12	FPM,B	JM34	0	2	S	0	2	S	0	2	S	0	1	W					0	W	0	S	0	W						FS							2010 FPM This site was sampled as part of the probabilistic monitoring program.
2BXAD000.07	VAC-H17R_XAD01A14	FPM,B	JM45	0	2	S	0	2	S	0	2	S	0	1	W					0	W	0	S			0	S				FS							2011 FPM This small stream had optimal habitat.
2BXAJ-10-CWT	VAP-H39R_XAJ01A12	CMON	JM86	0	53	IN	0	29	IN	0	53	IN	2	29	IN																							previously 2BXAJ-10-FOCR - Chesterfield WaterTrends level 2
2BXAK-11-CWT	VAP-H39R_XAK01A12	CMON	JM86	0	67	IN	0	44	IN	1	67	IN	0	26	IN																							previously 2BXAK-11-FOCR - Chesterfield WaterTrends level 2
2BXAM000.19	VAP-H39R_XAM01A14	TM	JM84	0	19	S	0	19	S	0	19	S									0	S																PWS - NO3 okay

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2BXAM000.77	VAP-H39R_XAM01A14	TM	JM84	0	1	W	0	1	W	0	1	W									0	IN																No data since 2014 cycle
2BXAP001.46	VAP-H37R_XAP01A16	FPM,B	JM76	0	2	S	0	2	S	1	2	IN	0	1	W				0	IN	0	S									FS							2013 probmon
2BXAQ001.17	VAP-H33R_XAQ01A16	A	JM73	0	11	S	0	11	S	0	11	S	2	11	IM																							
2BXAS-37-CWT	VAP-H39R_XAS01A14	CMON	JM83	0	44	IN				0	57	IN																										Chesterfield WaterTrends - level II
2BXAT-26-CWT	VAP-H39R_XAT01A14	CMON	JM83	0	47	IN	0	25	IN	0	47	IN	3	19	IN/O																							Chesterfield WaterTrends - level II
2BXAV000.08	VAP-H38R_XAV01A16	B	JM78	0	1	W	0	1	W	0	1	W																			FS							2014 benthics
2BXAY-48-CWT	VAP-H39R_XAY01A16	CMON	JM86	0	9	IN				0	9	IN																										Chesterfield WaterTrends - level II
2BXBH000.12	VAP-H39R_XBH01A14	TM	JM86	0	1	W	0	1	W	0	1	W	1	1	W						1	IN/O																2012 PCB Study - 1 sample - > HH < ALUS; no data since 2014 cycle
2BXBH-UT1-ACB	VAP-H39R_XBH01A14	CMON	JM86	0	14	S	2	13	IM	0	14	S	12	13	IM																							ACB - level 3
2BXDI-32-CWT	VAP-H39R_XDI01A14	CMON	JM86	0	2	IN				0	13	IN																										Chesterfield WaterTrends - level II
2BXMC000.10	VAV-H28R_XRC01A04	SS	JR15																						0	S												WQS - Basin 2B: Section 10: Class III: Special Standards:
2BXRK001.64	VAV-H16R_XRK01A14	PA,B,FPM	JM40	0	14	S	0	14	S	0	13	S	2	13	IM				0	W	0	S									FS							WQS - Basin 2B: Section 10: Class III: Special Standards:
2BXZF000.38	VAC-H21R_XZF01A10	B	JM53	0	2	S	0	2	S	0	2	S																			FS							2011 Biomon Some sedimentation but good habitat present.
2-BYN001.90	VAC-H21R_BYN01A12	FPM,B	JM53	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	W									FS							2014 FPM
2-BYR003.35	VAP-H34R_BYR01A98	A	JM60	0	23	S	0	23	S	1	23	S	4	22	IM																							
2-BYR018.04	VAP-H34R_BYR01A98	B,A	JM60	0	4	S	0	4	S	0	4	S																			IN							2012 and 2014 benthics
2-CBH000.29	VAC-J01R_CBH01A10	A,B	JA04	0	2	S	0	2	S	0	2	S	0	0	W						0	W									FS							2013 Bio
2-CCC001.15	VAP-J14R_CCC01A06	TM	JA39	0	16	S	0	16	S	1	16	S									0	S																PWS
2-CFK001.31	VAV-H32R_CFK01A00	B	JR20	0	4	S	0	4	S	0	4	S																			IM							WQS: Basin 2B: Section 11: Class III Special Standards:
2-CFK004.34	VAV-H32L_00	L	JR20	0	122	S	6	42	IM	11	115	S	0	13	S						0	S												0	2	S		Remains impaired for DO in 2016. WQS - Basin 2B: Section 11: Class III Special Standards:
2CJMS-J10-JRA	VAP-G01E_JMS01A02	CMON	JM86		14	NA							2	13	IN/O																							James River Association; Level II E. coli and Level III temp
2CJMS-J15-JRA	VAP-G01E_JMS01A02	CMON	JM86		14	NA							2	13	IN/O																							James River Association; Level II E. coli and Level III temp
2CJMS-J20-JRA	VAP-H39R_JMS03A98	CMON	JM86	0	14	S							2	13	IN/O																							James River Association; Level II E. coli and Level III temp
2-CKD-CB1-ACB	VAP-H39R_XCK01A14	CMON	JM86	0	37	S	1	35	S	1	37	S	9	35	IM																		18					ACB - level 3
2-CKD-CB2-ACB	VAP-H39R_XCK01A14	CMON	JM86	0	5	S	0	4	S	0	5	S																										ACB - level 3
2-CLC000.62	VAP-J15R_CLC01A12	A	JA40	0	10	S	0	10	S	0	12	S	5	12	IM																							no new data since 2012 cycle
2-CLR001.23	VAP-J11R_CLR01B10	TM	JA30	0	48	S	14	46	IM	2	47	S	6	48	IM						0	S																
2-CLR007.04	VAP-J11R_CLR01A00	TM	JA30	0	48	S	4	6	S	0	47	S	12	46	IM																							
2-CMN-XNM01-SW	VAV-H32R_XPA01A06	CMON	JR20																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-CNE000.96	VAC-J01R_CNE01A10	B	JA04	0	6	S	0	6	S	0	6	S			IM						0	S									IM							Vaughns Creek LDA TMDL Monitoring 2008/2012/2013/2014 Bio Dairy cows have access to stream, though it is a very wooded area. Habitat consisted of numerous log jams, some good cobble riffles and some gravel riffles. The riffles weren't very embedded but sedimentation was high throughout the rest of the stream. Nitrogen concentrations in the stream were high, indicating a nutrient problem. Extreme seasonal variation in SCI scores, therefore additional monitoring is needed to accurately assess water quality in this stream reach.
2-CNM001.75	VAV-H32R_CNM01A00	A,B	JR20	0	3	S	0	3	S	0	3	S																			IM							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-CNM004.16	VAV-H32R_CNM02A04	A	JR20																																			WQS - Basin 2B: Section 11: Class III: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-CNM-CNM07-SW	VAV-H32R_CNM01A00	CMON	JR20																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-COO002.35	VAC-H21R_COO01A08	B	JM53	0	2	S	0	2	S	0	2	S									0	S	0	W	0	W					FS							Previous FPM Station - Regional Bio Most habitat metrics were optimal.
2-COV003.44	VAV-H16R_COV01A00	A	JM39	0	11	S	0	11	S	0	11	S	7	12	IM																							WQS - Basin 2B: Section 10: Class III: Special Standards:
2CPWT-PWC-ACB	VAP-H39R_PWT01A98	CMON	JM86	0	1	W	0	1	W	0	1	W																										ACB - Level 3
2-CRR000.27	VAV-H29R_CAR01A06	A,B	JR17	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 2B: Section 10m: Class III: Special Standards:
2-CRR-CRL01-SW	VAV-H29R_CAR01A06	CMON	JR17																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10m: Class III: Special Standards: PWS
2-CRY000.69	VAV-H31R_CRY01A08	A,B	JR22	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-CRY-CYC01-SW	VAV-H31R_CRY01A08	CMON	JR22																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-CUR001.58	VAP-J17R_CUR01A08	A,TM	JA44	0	14	S	0	14	S	11	14	IM									0	S																no new data since 2012 cycle
2-CVE000.03	VAC-H11R_CVE01A06	B	JM28	0	2	S	0	2	S	0	2	S																			FS							2010 Bio Tier III stream in National Forest.
2-CXB000.86	VAV-H32R_CXB01A00	A,B	JR20	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 2B: Section 11: Class III: Special Standards: change from IM in 2012. Benthics status change from 2014.
2-CXB005.39	VAV-H32R_CXB01A00	A	JR20	0	12	S	0	11	S	0	12	S	0	12	S																							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-CXB-CXB02-SW	VAV-H32R_CXB01A00	CMON	JR20																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-CXB-CXB04-SW	VAV-H32R_CXB01A00	CMON	JR20																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2CXBI000.23	VAP-G02R_JOD01A04	TM	JA45																		0	IN																2012 PCB Study - 1 sample - ok

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2CXBJ000.19	VAP-J15R_XBJ01A14	C,TM	JA40																		1	O							1	O								New station 2014 cycle 2012 PCB violation (1/1) OE Fish Consumption
2CXBK000.08	VAP-J15R_XBK01A14	C,TM	JA40																		0	S							0	S								New station 2014 cycle 2012 PCB 0/1(S)
2CXBR000.10	VAP-G02R_JOD01A04	TM	JA45	0	11	S	0	12	S	3	12	IM																										
2CXBR000.68	VAP-G02R_JOD01A04	TM	JA45	0	11	S	1	12	S	4	12	IM																										
2CXBR001.15	VAP-G02R_JOD01A04	TM	JA45	0	12	S	0	12	S	4	12	IM																										
2CXBS000.62	VAP-G02R_JOD01A04	TM	JA45	0	11	S	4	11	IM	6	11	IM																										
2CXBS002.85	VAP-G02R_JOD01A04	TM	JA45	0	10	S	1	10	S	7	10	IM																										
2DAPP001.12	VAP-J15E_APP02A98	A,SS	JA45	0	1	W	0	1	W	0	1	W							0	S			0	S														2009 sed, water metals, no new data since 2012 cycle
2DAPP001.49	VAP-J15E_APP02A98	A,SS	JA45	0	1	W	0	1	W	0	1	W							0	S			0	S														2009 sed, water metals, no new data since 2012 cycle
2DAPP001.91	VAP-J15E_APP02A98	C2,SS	JA45	0	1	S	0	1	S	0	1	S							0	S			0	S														1 sample event/WOE 2006 Category 5A TF-M Scenario1, 2009 sed, water metals, no new data since 2012 cycle
2DAPP003.27	VAP-J15E_APP02A98	CB,FPM	JA45	0	8	W	0	8	W	0	8	W	1	1	W				0	S	0	IN																water metals 2011; WOE scenario 3 Category 2B OE-PAH; no new data since 2014 cycle
2DAPP005.53	VAP-J15E_APP02B12	C2	JA45	0	1	W	0	1	W	0	1	W	0	1	S				0	S	0	IN																2009 water metals WOE 2009 Category 3B TF Scenario 8. no new data since 2012 cycle
2DAPP015.51	VAP-J15R_APP01A98	A,FPM,B	JA40	0	2	W	0	2	W	0	2	W	0	1	IN				0	S	0	S	0	S							IM							2009 sed, water metals, benthic, no new data since 2012 cycle
2DAPP050.84	VAP-J10R_APP01A98	A,FPM,B	JA28	0	2	W	0	2	W	0	2	W	0	1	W				0	S	0	S	0	S							FS							2009 sed, water metals, benthic, no new data since 2012 cycle
2DAPP055.68	VAP-J07R_APP01A98	A,FPM,B	JA23	0	1	W	0	1	W	0	1	W									0	IN									FS							Benthic 2011; no new data since 2014 cycle
2DAPP112.19	VAC-J01R_APP05A04	FPM,B	JA05	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	S									FS							2013 Boatable FPM The Appomattox River is wadeable in this section.
2DBRI007.10	VAC-J05R_BRI01A98	B,A	JA10	0	14	S	0	14	S	0	14	S	2	14	IM																IM							2009/2012/2013/2014 Bio This stream has marginal bank stability, increased sediment deposition, and decent epifaunal substrate. 2009 biologist field notes indicate that the snags were full of sediment and the stream appears to get high flows relatively often.
2-DCR003.00	VAP-H33R_DCR01A98	A	JM74	0	23	S	3	23	IM	0	23	S	2	23	S																							Cont monitoring - no DO violations since 2012
2-DCW-30-FOCR	VAP-J16R_DRY01A14	CMON	JA41	0	20	IN				0	28	IN																										Chesterfield Water Trends Level II data
2DFSP000.30	VAC-J01R_FSP01A06	FPM,B	JA03	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							FS							2009 FPM This site was sampled as part of the probabilistic monitoring program.
2DHAW000.81	VAP-J08R_HAW01A12	A,FPM,B	JA27	0	2	W	0	2	W	0	2	W	0	1	W				0	S	0	S	0	S							IN							2009 sed, water metals, no new data since 2012 cycle
2-DKR001.68	VAC-J01R_DKR01A12	A	JA05	0	10	S	0	10	S	0	10	S	4	12	IM																							
2-DMG000.58	VAC-H03R_DMG01A08	TM	JM10										3	12	IM																							NO NEW DATA Remains impaired for bacteria, ALUS assessment drops out
2DNBX002.33	VAP-J09R_NBB01A12	A,FPM,B	JA26	0	3	S	0	3	S	0	3	S	1	1	W				0	S	0	S	0	S							IM							2011 water metals benthic and sediment metals; no new data since 2014 cycle
2-DNC-5090-USFS	VAC-H02R_DNC01A02	USFS	JM05																												UN							USFS Level III Bio Assessment
2DOTD002.52	VAP-J16R_OTD01A14	A,B	JA41	0	2	S	0	2	S	1	2	IN																			IN							2011 Benthic; no new data since 2014 cycle
2-DPC000.59	VAP-J11R_DPC01C02	TM	JA33	0	51	S	0	49	S	1	50	S	16	48	IM						0	S																
2-DPC005.20	VAP-J11R_DPC01B00	A,CB,TM,TR	JA32	0	115	S	3	113	S	4	114	S	11	114	S						0	S																trend station
2-DPC017.07	VAP-J11R_DPC02A00	A	JA29	0	12	S	8	12	IM	0	12	S	1	12	S																							Class VII water
2-DPC019.03	VAP-J11R_DPC02A00	PA,TM	JA29	0	62	S	27	60	IM	0	61	S	4	60	S						0	S																Class VII water
2-DPR001.00	VAP-H39R_DPR02A00	A	JM84	0	10	S	2	10	IM	1	12	S	5	12	IM																							PWS; no new data since 2012 cycle
2-DPR002.46	VAP-H39R_DPR01A00	TM	JM84	0	8	S	0	8	S	0	8	S									0	S																PWS
2-DPR003.75	VAP-H39R_DPR01A00	TM,FPM,B	JM84	0	9	S	0	9	S	0	9	S	0	1	W				0	IN	0	S									IM							PWS; 2014 benthics, metals
2DRCE001.21	VAC-J04R_RCE01A12	FPM,B	JA11	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							J							2009 FPM This site was sampled as part of the Probabilistic Monitoring program and is immediately downstream of a dam. The next bridge is approximately 0.25 miles downstream. Non-target due to proximity to dam. Will follow up at nearest bridge if accessible.
2DRCE002.44	VAC-J04R_RCE01A12	B	JA11	0	2	S	0	2	S	0	2	S																			IM							2012 Bio This site has unstable banks and sediment deposition. Habitat availability improved somewhat in the fall. This site was monitored as a follow-up to probabilistic station 2DRCE001.21 that was located on private property and could not be revisited.
2DSDY008.80	VAC-J03R_SDY02A12	B	JA14	0	4	S	0	4	S	0	4	S																			IM							2009 & 2012 Bio This stream had marginal bank stability, obvious sediment deposition, and marginal epifaunal substrate. 2009 biologist field notes indicate that every surface was covered in algae. The water was very sluggish and there were beaver dams upstream and downstream.
2DSTY001.96	VAP-J14R_STY01A08	A,TM	JA39	0	14	S	0	14	S	2	14	IM									0	S																PWS
2DTRO001.88	VAP-J17R_TRO01A00	A,B	JA42	0	2	S	0	2	S	1	2	IN																			FS							2011 Benthic; no new data since 2014 cycle
2-DVD000.23	VAC-H08R_DVD01A00	A,B	JM19	0	12	S	0	12	S	0	12	S	4	12	IM						0	S									FS							2012 - New EC Impairment Good riffles with plenty of available habitat.
2-DVS001.23	VAP-H33R_DVS01A00	A	JM71	0	10	S	0	10	S	1	12	S	2	12	IM																							No new data since 2012 cycle
2DWDY005.35	VAP-J11R_WDY01A00	A,FPM,B	JA29	0	4	S	0	4	S	0	4	S	2	2	IM				0	S	0	S	0	S							FS							2009,2010 sed, water metals, benthic no new data since 2012 cycle

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2DXAH000.79	VAC-J06R_XAH01A16	FPM,B	JA18	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S									J							2011 FPM This stream had moderate sediment deposition occurring in addition to having relatively unstable banks. This site was part of the probabilistic monitoring program and can only be accessed via private land, therefore it will not be revisited.
2-DYC000.19	VAP-J16L_SFT02A98	L	JA41	0	63	S	3	59	S	1	63	S	0	12	S						0	S										0	2	S	0	2	S	4C: Top 0/31; bottom 3/5; TSIs
2-DYL-DOU02-SW	VAV-H24R_DYL02A10	CMON	JR04																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class IV: Special Standards:
2-DYL-DOU03-SW	VAV-H24R_DYL02A10	CMON	JR04																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class IV: Special Standards:
2-DYL-DOU04-SW	VAV-H24R_DYL02A10	CMON	JR04																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class IV: Special Standards:
2-DYL-DOY01-SW	VAV-H24R_DYL01A00	CMON	JR04																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-ECH-5100-USFS	VAC-H02R_ECH01A02	USFS	JM05																											UN							USFS Level III Bio Assessment
2-EFK001.55	VAP-H34R_EFK01A10	B,A	JM59	0	1	W	0	1	W	0	1	W																		FS							2010 benthics; no new data since 2012 cycle
2-FIN000.81	VAP-H38R_FIN01A98	A,TM,SS,TR	JM80	0	48	S	0	48	S	0	50	S	3	38	S						0	S																PWS; Trend analysis - increasing DO, pH - decreasing SC
2-FLA001.95	VAP-J08R_FLA01A00	A,TM	JA27	0	49	S	0	47	S	0	48	S	20	48	IM																							
2-FLA013.95	VAP-J08R_FLA02A02	A,TM	JA25	0	48	S	4	46	S	0	47	S	8	48	IM																							
2-FLA018.71	VAP-J08R_FLA02A02	A	JA25	0	12	S	1	12	S	0	12	S	3	12	IM																							no new data since 11/2012
2-FLA028.98	VAP-J08R_FLA02A02	A,TM	JA24	0	47	S	0	45	S	0	46	S	15	47	IM																							
2-FNK001.12	VAP-J17R_FNK01A00	TM	JA44	0	12	S	0	12	S	0	12	S									0	S																
2-FRY000.35	VAC-H21R_FRY01A00	B	JM51	0	2	S	0	2	S	0	2	S									0	S									FS							2013 Bio Beaver activity in the spring may have caused the reduction in SCI score. Because of the lower spring SCI score this site will be sampled again in the future to determine if degradation is occurring.
2-FSG000.85	VAC-H03R_FSG01A00	A,TM	JM11	0	11	S	0	11	S	0	11	S	5	12	IM						0	S	0	S	0	S												Urban Non-Point Source
2-FSH-FSH01-SW	VAV-H26R_FSH01A12	CMON	JR08																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-FSH-FSH02-SW	VAV-H26R_FSH01A12	CMON	JR08																											J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-FSP000.53	VAC-J01R_FSP01A06	A,B,TR	JA03	0	35	S	0	35	S	0	37	S	17	36	IM						0	S									FS							2011 Bio Sedimentation increased in 2006 due to unknown activities. This is a reference stream for the south central region that will be monitored in the future.
2-GDC000.52	VAP-H33R_GDC01A14	B,SS	JM75	0	4	S	0	4	S	0	4	S																		FS							2010-2011 and 2013-2014 benthics
2-GEN000.69	VAP-H39R_GEN01A00	A	JM82	0	12	S	0	12	S	1	12	S	4	12	IM																							PWS; no data since 2014 cycle
2-GOC001.19	VAP-J10R_GOC01A08	A	JA28	0	9	S	1	9	IM	0	11	S	1	11	S																							no new data since 2012 cycle
2-GRA000.40	VAC-H04L_GRA01A02	L	JM08	0	48	S	1	22	S	0	48	S									0	S	0	S	0	S						0	1	IN	0	1	IN	2002 Graham Creek Reservoir - No New Data 2006 FC bacteria: 0/7 = S Algaecides Applied Only one sampling year
2-GRA002.89	VAC-H04R_GRA02A02	A	JM08																																		No New Data! 2006 FC bacteria: 2/3 = IM
2-GRD001.62	VAC-H21R_GRD01A08	A	JM51	0	12	S	0	12	S	0	12	S	2	12	IM						0	S																
2-GRF000.98	VAC-J06R_GRF01A04	A	JA16	0	12	S	0	12	S	0	12	S	7	12	IM						0	S																
2GRF-GRE16-CVW	VAC-J06R_GRF01A04	CMON	JA16										27	50	IM																							Clean Virginia Waterways Station
2GSK-APP-CVW	VAC-J01R_GSK01A08	CMON	JA09										3	11	IM																							Clean Virginia Waterways Station
2GSK-BLA-CVW	VAC-J01R_GSK01A08	CMON	JA09										1	8	IN																							Clean Virginia Waterways Station
2GSK-GORRVS-CVW	VAC-J01R_XZO01A08	CMON	JA09										10	30	IM																							Clean Virginia Waterways Station
2GSK-GRO2-CVW	VAC-J01R_GSK01A08	CMON	JA09										32	43	IM																							Clean Virginia Waterways Station
2GSK-GRO3-CVW	VAC-J01R_GSK01A08	CMON	JA09										29	37	IM																							Clean Virginia Waterways Station
2GSK-GRO4-CVW	VAC-J01R_GSK01A08	CMON	JA09										29	41	IM																							Clean Virginia Waterways Station
2GSK-GROCL-CVW	VAC-J01R_GSK01A08	CMON	JA09										3	11	IM																							Clean Virginia Waterways Station
2GSK-GROFRA-CVW	VAC-J01R_XZO01A08	CMON	JA09										16	29	IM																							Clean Virginia Waterways Station
2GSK-GROLWA-CVW	VAC-J01R_XZO01A08	CMON	JA09										10	15	IM																							Clean Virginia Waterways Station
2GSK-GROLWU-CVW	VAC-J01R_XZO01A08	CMON	JA09										15	33	IM																							Clean Virginia Waterways Station
2GSK-GROPUT-CVW	VAC-J01R_GSK01A08	CMON	JA09										25	40	IM																							Clean Virginia Waterways Station
2GSK-GRORSA-CVW	VAC-J01R_XZO01A08	CMON	JA09										4	7	IM																							Clean Virginia Waterways Station
2GSK-GRORSS-CVW	VAC-J01R_XZO01A08	CMON	JA09										0	4	S																							Clean Virginia Waterways Station
2-HAK001.34	VAV-H18R_HAK01A00	A	JM47	0	12	S	0	12	S	0	12	S	1	12	S																							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-HAK-4B-TJSWCD	VAV-H18R_HAK01A00	CMON	JM47	0	6	S							1	6	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-HAK-5A-TJSWCD	VAV-H18R_HAK01A00	CMON	JM47	0	6	S							1	6	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-HAK-5B-TJSWCD	VAV-H18R_HAK01A00	CMON	JM47	0	6	S							1	6	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-HAK-8-TJSWCD	VAV-H18R_HAK01A00	CMON	JM47	0	13	S							1	27	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-HAT000.14	VAV-H09R_HAT01A04	A,B	JM23	0	39	S	0	38	S	0	38	S	22	36	IM																	IM							WQS - Basin 2B: Section 11d: Class III: Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																						
2-HAZ000.04	VAC-H04R_HAZ01A00	A	JM08	0	12	S	0	12	S	0	12	S	1	12	S						0	S	0	S	0	S												
2-HAZ007.16	VAC-H04R_HAZ01A00	B	JM08	0	4	S	0	4	S	0	4	S									0	S									FS							2011/2014 Bio Field notes indicate that habitat is lacking and/or unstable. The channel was mostly very wide and uniformly shallow, and the leaf packs were full of sand. Ammonia Special Study
2-HAZ010.92	VAC-H04R_HAZ02A08	A	JM08	0	12	S	0	12	S	0	12	S	3	12	IM						0	S																
2-HCH004.81	VAC-H36R_HCH01A04	A	JM67	0	12	S	0	12	S	0	12	S	2	12	IM						0	S																
2-HEN-HEN01-SW	VAV-H29R_HEN01A12	CMON	JR17																											J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-HNF000.10	VAV-H18R_HNF01A00	A	JM46	0	12	S	0	12	S	0	12	S	3	12	IM																							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-HNF005.03	VAV-H18R_HNF01A00	A	JM46	0	12	S	0	12	S	0	12	S	2	12	IM																							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-HNF-10-TJSWCD	VAV-H18R_HNF01A00	CMON	JM46	0	13	S							14	28	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-HNF-7-TJSWCD	VAV-H18R_HNF01A00	CMON	JM46	0	13	S							3	28	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-HNF-9-TJSWCD	VAV-H18R_HNF01A00	CMON	JM46	0	13	S							3	28	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-HNS-11-TJSWCD	VAV-H18R_HNS01A08	CMON	JM46	0	13	S							5	27	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-HOI001.85	VAP-J12R_HOI01A00	TM	JA34	0	7	S	1	7	IN	1	7	IN									0	S																New Station in 2016 cycle
2-HOL001.05	VAC-J01L_HOL01A06	L,C	JA03	0	106	S	0	50	S	4	106	S	0	14	S						0	S	0	S	0	S	1	O	0	S					0	2	S	2013-2014 Holiday Lake Only one sampling year 2005 FT/Sediment OE - Hg 1 Species
2-HOL003.15	VAC-J01R_HOL01B04	FPM,B,TR	JA03	0	38	S	0	38	S	0	40	S	5	36	IM				0	W	0	S									FS							2016 - EC Impairment Added 2004 Probabilistic Monitoring This is a targeted reference site and ambient trend. 2010-2011 Bio This is a targeted reference site.
2-HOX003.60	VAC-H21R_HOX01A08	A	JM53	0	1	W	0	1	W	0	1	W																										DGIF Data Collection Site - Alkalinity/Hardness
2-HRA-PETE-02-NPS	VAP-J15R_HRA01A04	NONA	JA40	0	47	S	0	42	S	0	45	S																										NPS data level III
2-HRA-PETE-03-NPS	VAP-J15R_HRA01A04	NONA	JA40	0	42	S	0	38	S	1	42	S																										NPS data level III
2-HRC-HER01-SW	VAV-H27R_HRC01A12	CMON	JR11																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-HRD000.36	VAV-H19R_HRD01A00	A	JM49	0	11	S	0	11	S	0	11	S	1	11	S																							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-HRD002.06	VAV-H19R_HRD01A00	A,B,FPM	JM49	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	S							FS							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-HRD011.57	VAV-H19R_HRD01A00	A,TR	JM48	0	36	S	0	35	S	0	36	S	14	36	IM																							WQS - Basin 2B: Section 11: Class III: Special Standards: Trend analysis was performed at station 2-HRD011.57 in the 2006 cycle. No statistically significant trends were detected.
2-HRD-01-TJSWCD	VAV-H19R_HRD01A00	CMON	JM49	0	13	S							2	27	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 11: Class III: Special Standards
2-HRD-02-TJSWCD	VAV-H19R_HRD01A00	CMON	JM49	0	13	S							2	28	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 11: Class III: Special Standards
2-HRD-03-TJSWCD	VAV-H19R_HRD01A00	CMON	JM49	0	13	S							5	27	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 11: Class III: Special Standards
2-HRD-4-TJSWCD	VAV-H19R_HRD02A10	CMON	JM48	0	13	S							1	28	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 11: Class III: Special Standards
2-HRD-5-TJSWCD	VAV-H19R_HRD02A10	CMON	JM48	0	13	S							2	27	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 11: Class III: Special Standards
2-HRD-6-TJSWCD	VAV-H19R_HRD02A10	CMON	JM48	0	13	S							3	28	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 11: Class III: Special Standards
2-HRE000.44	VAC-J01R_HRE01A04	B,TM	JA05	0	2	S	0	2	S	0	2	S	3	11	IM						0	S									IM							2013 Bio This stream had moderate deposition of sediment and moderately unstable banks. No New EC Data
2-HRP000.42	VAC-J06R_HRP01A00	TM,SS,B	JA18	0	5	S	0	5	S	0	5	S	2	10	IM						1	O									IM			IN/O				1 Violation Chronic NH4 Observed Effects 2007-2012 Bio Small, sandy stream in low area that is likely inundated often and may dry during drought. The benthic macroinvertebrate population is probably influenced by these flow fluctuations. Habitat scores were low for sediment deposition, pool variability, bank stability, bank vegetative protection and epifaunal substrate. SCI scores straddled the impairment threshold until 2012. Sediment and organic pollution are likely stressors in this stream.
2-HUO005.87	VAW-H01R_HUO02A02	B,A	JM01	0	4	S	0	4	S	0	4	S																			FS	0	2	IN				2016 Cycle: Four VSCI surveys (2013-2014) with an average score of 76.7. Sampled as a reference site.
2-HUS002.24	VAC-H22R_HUS01A06	A,B	JM57	0	14	S	0	14	S	0	14	S	2	12	IM						0	S									FS							2013 Bio This stream exhibited high seasonal variability with the spring score being affected by a natural seasonal occurrence of black flies. This site will be monitored in the future due to this fluctuation.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-IVA000.05	VAC-H03R_IVA01A00	B	JM09	0	2	S	0	2	S	0	2	S									0	W									IM							2007 & 2011 Bio Ivy Creek had very low flow during the spring 2007 sampling event. Ivy Creek is an urban stream with obvious dumping of trash and debris, including bricks, tires, and metal objects. The upstream portion of the sample reach has homes, lawns, and construction present up to the edges of the banks.
2-IVA000.22	VAC-H03R_IVA01A00	A,TM	JM09	0	12	S	0	12	S	0	12	S	2	12	IM						0	S	0	S	0	S												Urban Non-point Source
2-IVA005.43	VAC-H03R_IVA01A00	A,CMON	JM09	0	7	S	0	7	S	0	7	S	2	12	IM						0	S																Co-located DEQ/CMON Station Alliance for the Chesapeake Bay Level III - Field Data & Level II - Bacteria Data 1/6 - E. coli violations
2-IVA005.75	VAC-H03R_IVA01A00	B	JM09	0	1	W	0	1	W	0	1	W									0	W									FS							2007 & 2011 Bio Ivy Creek flows through a city park and has high sediment deposition, however, satellite imagery shows that much of the upstream riparian zone is wooded or consists of fields and low intensity residential areas. Additional development will threaten the biological integrity of this stream.
2-IVA006.38	VAC-H03R_IVA01A00	TM	JM09			W			W			W	2	12	IM							W															
2-IVA012.13	VAC-H03R_IVA01A00	A,B	JM09	0	14	S	0	14	S	0	14	S	5	12	IM						0	S									IM							2007/2011 Bio Heavy, fresh sediment deposition noted in stream at time of sampling. Available habitat was heavily embedded in sediment. This watershed is being rapidly developed and will likely degrade further due to increased runoff from new neighborhoods.
2-IVC005.19	VAV-H26R_IVC02A00	B	JR07	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 2B: Section 10j: Class III: Special Standards:
2-IVC008.09	VAV-H26R_IVC02A00	A	JR07	0	12	S	0	12	S	0	12	S	4	12	IM																							WQS - Basin 2B: Section 10j: Section III: Special Standards: PWS
2-SFT004.92	VAP-J17R_SFT01C98	A,TM	JA44	0	13	S	0	13	S	0	13	S	0	12	S																							no new data since 2014 cycle(12/2012)
2-SFT006.10	VAP-J17L_SFT02A08	L	JA44	0	70	S	2	59	S	0	70	S	3	14	IM						0	S													0	2	S	
2-SFT012.84	VAP-J17R_SFT02B00	TM,B	JA44	0	2	S	0	2	S	0	2	S																			FS							2014 benthic data
2-SFT019.02	VAP-J17R_SFT01B98	FPM,B	JA42	0	2	IN	0	2	IN	0	2	IN	0	1	S				0	S	0	IN	0	S							IM							2009 SED, no new data since 2012 cycle
2-SFT019.15	VAP-J17R_SFT01B98	TM,FPM,B	JA42	0	2	IN	0	2	IN	0	2	IN																			IM							no new data since 2012 cycle
2-SFT025.32	VAP-J17R_SFT02A00	TM,FPM,B	JA42	0	3	IN	0	3	IN	0	3	IN																			IM							no new data since 2012 cycle
2-SFT031.08	VAP-J16L_SFT02A98	L	JA41	0	79	S	6	73	S	0	79	S	0	14	S						0	S										0	2	S	0	2	S	4C; top 0/23; bottom 12/14 (85.7%); TSI
2-SFT033.42	VAP-J16L_SFT02A98	L	JA41	0	66	S	2	66	S	2	66	S	0	14	S						0	S										0	2	S	0	2	S	4C; top 1/21; bottom 2/2; TSI >60: phos=52; chla=55; secchi=61; PWS; no new data since 2014 cyclepooled DO= 12 vios/262 obs (S); pooled pH =3 vios/272 obs (S)
2-SFT034.38	VAP-J16L_SFT02A98	L	JA41	0	64	S	2	64	S	0	64	S	0	14	S						0	S																PWS; no new data since 2014 cyclepooled DO= 12 vios/262 obs (S); pooled pH =3 vios/272 obs (S)
2-SFT037.95	VAP-J16R_SFT03A12	A	JA41	0	9	S	0	9	S	0	11	S	1	11	S																							no new data since 2012 cycle
2-SFT-24-FOCR	VAP-J17R_SFT01B98	CMON	JA42	0	4	IN	1	4	IN/O	0	8	IN																										Chesterfield Water Trends Level II data; no new data since 2014 cycle
2-SFT-35.1-FOCR	VAP-J17L_SFT01A98	CMON	JA42	0	7	IN				0	7	IN																										Chesterfield Water Trends Level II data
2-SFT-35-FOCR	VAP-J17L_SFT01A98	CMON	JA42	0	9	IN				0	19	IN																										Chesterfield Water Trends Level II data
2SFT-FOCRBB-ALL	VAP-J17R_SFT01A00	CMON	JA42	0	80	IN	4	57	IN	0	98	IN																										Chesterfield water trends level II data
2-SFT-SCL-BD-DCR	VAP-J17L_SFT01A98	NONA	JA42										3	29	S																							DCR beach program Level II
2-SFT-SCL-BR-DCR	VAP-J17L_SFT01A98	NONA	JA42										1	30	S																							DCR beach program Level II
2-SFT-SCL-CD-DCR	VAP-J17L_SFT01A98	NONA	JA42										0	29	S																							DCR beach program Level II
2-SHN-51-CWT	VAP-G02R_SHN01A16	CMON	JA45	0	3	IN				0	3	IN																										Chesterfield Water Trends - level II
2-SHR004.96	VAC-H22R_SHR01A10	TM	JM56	0	11	S	0	11	S	0	10	S	1	12	S																							Slate TMDL Monitoring
2-SHS001.00	VAC-H11L_SHS01A02	L,C	JM29	0	80	S	5	38	IM	12	80	IM	1	14	S						0	S							1	O	0	S			0	2	S	2011/2012 Stonehouse Creek Reservoir pH Violation due to Natural Conditions 2005 FT/Sediment - As 2 Species (OE)
2-SIN000.44	VAV-H23L_SIN01A04	L	JR02	0	115	S	6	39	IM	9	114	S	0	14	S						0	S													2	2	IM	Newly impaired for nutrients and DO in 2016. WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-SKM001.47	VAV-H23R_SKM01A10	A	JR01	0	12	S	0	12	S	1	12	S	8	12	IM																							WQS - Basin 2B: Section 10h: Class III: Special Standards:
2-SKM001.63	VAV-H23R_SKM01A10	A,B,FPM	JR01	0	4	S	0	4	S	0	4	S																			FS							WQS - Basin 2B: Section 10h: Class III: Special Standards:
2-SKM-STU01-SW	VAV-H23R_SKM01A10	CMON	JR01																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10h: Class III: Special Standards: PWS
2-SKM-STU03-SW	VAV-H23R_SKM01A10	CMON	JR01																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10h: Class III: Special Standards: PWS
2-SLB-SLB01-SW	VAV-H23R_SLB01A08	CMON	JR02																																			Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10h: Class III: Special Standards: PWS. Station used for use support/non-support in previous cycles. No 2016 data.
2-SLE002.65	VAP-H33R_SLE01A00	A,B	JM74	0	16	S	0	16	S	0	16	S	4	12	IM																	FS							2011 and 2014 benthics
2-SLT000.20	VAC-H22R_SLT03A02	C	JM57																				0	S	0	S	0	S	1	O								01 PCB 1 species FT/Sed
2-IVC010.20	VAV-H26R_IVC03A00	A,B	JR07	0	4	S	0	4	S	0	4	IM																			IM							WQS - Basin 2B: Section 10j: Class III: Special Standards: pH Impaired in 2016, remains impaired due to no new data. Water toxics not assessed based on only one sample available for assessment.
2-RKN003.31	VAP-J11R_RKN01A12	A,TM	JA33	0	42	S	1	40	S	2	41	S	14	41	IM																							
2-RKR000.02	VAV-H13R_RKR01A00	A	JM32	0	30	S	0	30	S	0	29	S	5	30	IM																							WQS - Basin 2B: Section 11d: Class III: Special Standards:
2-RKR011.46	VAV-H13R_RKR01A00	A	JM32	0	12	S	0	12	S	0	12	S	4	12	IM																							WQS - Basin 2B: Section 11d: Class III: Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-RLD000.48	VAC-H36R_RLD01A06	A,B	JM70	0	14	S	0	14	S	0	16	S	3	12	IM						0	S									IM	0	12	W				2009/2012 Bio This stream is in the Cumberland State Forest. It is characterized by marginal bank stability, excessive sediment deposition, and marginal epifaunal substrate. Biologist notes from 2009 and 2012 indicate very unstable habitat, mostly consisting of leaf packs and woody debris that were covered in sediment. Heavy local watershed erosion was also noted. In 2012 there was noted beaver activity affecting habitat availability.
2-RND000.32	VAC-H36R_RND02A06	A	JM69	0	12	S	0	10	S	0	10	S	0	12	S						0	S																
2-RND003.57	VAC-H36R_RND01A00	FPM,B	JM69																											IM							2001 Probabilistic Monitoring Habitat assessment indicates sediment impacts.
2-RND004.39	VAC-H36R_RND01A00	A,SS	JM69	0	10	S	0	10	S	0	12	S	4	12	IM						0	S																Hog Farm Special Study Station
2-RND007.12	VAC-H36R_RND01A00	SS	JM69										1	1	IM																							Hog Farm Special Study Station - No New Data! 2006 FC bacteria: 1/1 = IM
2-ROC-RKY01-SW	VAV-H24R_ROC01A12	CMON	JR05																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10i: Class III: Special Standards: PWS
2-RRN002.19	VAV-H27R_RRN01A00	A,B	JR13	0	62	S	0	58	S	0	61	S	14	57	IM						0	S									FS							WQS - Basin 2B: Section 10: Class III: Special Standards: PWS
2-RRN010.92	VAV-H27R_RRN02A00	A	JR11	0	12	S	0	12	S	0	12	S	2	12	IM																							WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS No new bacteria data, remains impaired.
2-RRN012.89	VAV-H27R_RRN02A00	A,B	JR11	0	5	S	0	4	S	0	5	S																			IM							WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS. Benthic status change form 2014.
2-RRN015.61	VAV-H27R_RRN03A10	A	JR09	0	12	S	0	12	S	0	12	S	1	12	S																							WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS,
2-RRN-RRN03-SW	VAV-H27R_RRN01A00	CMON	JR13																											J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-SDH-SHD01-SW	VAV-H29R_SHD01A12	CMON	JR17																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-SDV001.02	VAV-H27R_SDV01A14	A,B,FPM	JR10	0	2	S	0	2	S	0	2	S	1	1	W				0	W	0	S									IM							WQS - Basin 2B: Section 10o: Class III; Special Standards: PWS
2-SDV-SDV04-SW	VAV-H27R_SDV01A14	CMON	JR10																											IM							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-SDY003.00	VAC-J03R_SDY01A00	A	JA14	0	24	S	0	24	S	0	24	S	3	24	IM						0	S																
2-SDY004.27	VAC-J03L_SDY01A06	L,C	JA14	0	167	S	12	78	IM	2	202	S	0	21	S						0	S	0	S	0	S	1	O	0	S					0	3	S	2009/2011/2013 Sandy River Reservoir Pooled Data: DO 23/252 2005 FT/Sediment - Hg 1 Species
2-SDY005.85	VAC-J03L_SDY01A06	L	JA14	0	125	S	7	80	S	1	129	S	0	21	S						0	S													0	3	S	2009/2011/2013 Sandy River Reservoir Pooled Data: DO 23/252
2-SDY011.08	VAC-J03L_SDY02A06	L,C	JA14	0	42	S	0	19	S	0	42	S	0	7	S						0	S	0	S	0	S	1	O										2004 Prince Edward Lake Not listed in Reg 2005 FT/Sediment - Hg 1 Species
2-SEC004.81	VAP-J17R_SEC01A00	A	JA43	0	12	S	0	12	S	0	12	S	0	12	S																							New Station in 2016 cycle
2-SEC008.84	VAP-J17R_SEC01B06	A,TM	JA43	0	16	S	2	16	IM	1	16	S									0	S																no new data since 2012 cycle
2-SEC-13-FOCR	VAP-J17R_SEC01B06	CMON	JA43	0	19	IN	1	11	IN	6	23	IN/O																										Chesterfield Water Trends Level II data
2-SEC-34-FOCR	VAP-J17R_SEC01C14	CMON	JA43	0	22	IN				9	33	IN/O																										Chesterfield Water Trends Level II data
2-SFR000.60	VAV-H27R_SFR01A00	A,B	JR10	0	14	S	0	14	S	0	14	S	2	12	IM																	FS							WQS - Basin 2B: Section 10: Class III: Special Standards: change from IM in 2012
2-SFR-SFR01-SW	VAV-H27R_SFR01A00	CMON	JR10																												IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-RVN001.55	VAV-H31R_RVN01A00	A,B,FPM	JR22	0	3	S	0	3	S	0	3	S																			FS							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-RVN015.97	VAV-H31R_RVN02A00	A,B,TR	JR19	0	157	S	0	154	S	0	155	S	10	66	IM						0	S									FS							WQS - Basin 2B: Section 11: Class III: Special Standards: Impaired for bacteria in 2016.Trend analysis was performed at station 2-RVN015.97 in the 2006 cycle. Statistically significant trends were detected for the following parameter(s): Oxidized Nitro
2-RVN023.01	VAV-H31R_RVN02A00	A,B	JR19	0	10	S	0	10	S	0	10	S	1	6	IN/O																FS							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-RVN033.65	VAV-H29R_RVN04A00	A,B	JR17	0	16	S	0	16	S	0	16	S	1	12	S																IM							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RVN-RVN01-SW	VAV-H29R_RVN04A00	CMON	JR17																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RVN-RVN05-SW	VAV-H31R_RVN01A00	CMON	JR22																											J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-RVN-RVN10-SW	VAV-H31R_RVN02A00	CMON	JR19																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-RVN-RVN11-SW	VAV-H28R_RVN01A00	CMON	JR14																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RVN-RVN18-SW	VAV-H31R_RVN01A00	CMON	JR22																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-SAL000.12	VAP-H39R_SAL01A08	A	JM85	0	10	S	0	10	S	0	12	S	4	12	IM																							PWS; no new data since 2012 cycle
2-SAL001.93	VAP-H39R_XAB01A10	A	JM85	0	10	S	1	10	S	5	12	IM	3	11	IM																							PWS; no new data since 2012 cycle
2SAY*-SAY7-CVW	VAC-J06R_SYL01A98	CMON	JA15										7	32	IM																							Clean Virginia Waterways Station
2SAY*-SAY8-CVW	VAC-J06R_SYL02A06	CMON	JA15										5	29	IN																							Clean Virginia Waterways Station
2-SCK002.24	VAC-J06R_SCK01A06	A	JA20	0	10	S	0	10	S	0	12	S	6	12	IM						0	S																
2-SLT003.00	VAC-H22R_SLT03A02	B	JM57	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	W	0	W					FS							2007 Large River Probmon This site had optimal habitat and an excellent riparian zone.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-SLT003.68	VAC-H22R_SLT02A02	A,TM,TR	JM57	0	34	S	0	34	S	0	36	S	10	35	IM						0	S																Slate River Basin TMDL Station
2-SLT014.52	VAC-H22R_SLT01A06	A,TM,B	JM56	0	12	S	0	12	S	0	14	S	4	12	IM						0	S									FS							2007/2012 Bio Optimal habitat with excellent riparian zone.
2-SLT018.85	VAC-H21R_SLT01A00	A	JM55			W			W			W	1	13	IM							W																No New Data - Keep EC Impairment
2-SLT024.72	VAC-H21R_SLT01A00	SS	JM53	0	10	S	0	10	S	0	12	S	4	12	IM						0	S																Hog Farm Special Study & Follow-up
2-SLT030.19	VAC-H21R_SLT01A00	SS	JM53	0	17	S	0	17	S	0	16	S	0	6	S						0	S																No New Data Hog Farm Special Study & Follow-up
2-SLT036.92	VAC-H21R_SLT03A08	TM	JM51	0	11	S	0	11	S	0	10	S	0	12	S						0	S																No New Data Slate River TMDL
2-SMC000.51	VAC-H02R_SMC01A02	B,USFS	JM04	0	1	W	0	1	W	0	1	W																			FS							2010 Regional Bio Tier III stream in National Forest. USFS sampled this site in spring 2005 and calculated an SCI score of 74.79. 2-SMC-5058-USFS Level III Assessment - FS
2-SMK006.57	VAP-J10R_SMK01A06	A	JA28	0	9	S	3	9	IM	0	11	S	3	11	IM																							no new data since 2012 cycle
2-SNC-23-FOCR	VAP-J17R_SNC01A00	CMON	JA42	0	1	IN	0	1	IN	0	8	IN																										Chesterfield Water Trends Level II data
2-SNC-39-FOCR	VAP-J17R_SNC01A00	CMON	JA42	0	12	IN				0	24	IN																										Chesterfield Water Trends Level II data
2-SNC-6-FOCR	VAP-J17R_SNC01A00	CMON	JA42	0	125	IN	0	94	IN	0	124	IN	12	20	IN/O																							ACB level II data
2-SND002.08	VAC-J06R_SND01A04	TM	JA17	0	12	S	0	12	S	0	12	S	4	12	IM																							
2-SNJ000.19	VAP-H39R_SNJ02A04	TM,B	JM84	0	9	S	1	9	IN	0	9	S									0	S									IM							PWS - NO3 okay; 2014 benthics
2-SNJ001.41	VAP-H39R_SNJ02A04	TM	JM84	0	1	W	0	1	W	0	1	W									0	IN																PWS - NO3 okay; no data since 2014 cycle
2-SNJ001.77	VAP-H39R_SNJ01A04	TM,B	JM84	0	22	S	0	22	S	0	22	S							0	IN	0	S	0	S							IM							2012 benthics; PWS - NO3 okay
2-SNJ001.90	VAP-H39R_SNJ01A04	TM	JM84	0	21	S	0	21	S	0	21	S									0	S																PWS - NO3 okay
2-SNK000.02	VAV-H28R_SNK01A02	A	JR14																						0	S												WQS - Basin 2B: Section 10: Class III: Special Standards:
2-SNK000.88	VAV-H28R_SNK01A02	A,B	JR14	0	47	S	0	46	S	0	46	S									0	S					1	O			IM							Continuous monitoring data available for Temp. and DO. DO evaluated based on the 5 mg/l daily average standard. 0 of 8 days violated the daily standard. 1 Sediment Sample exceeded the screening value for Pyrene. 'WQS - Basin 2B: Section 10: Class III:
2-SNK001.02	VAV-H28R_SNK01A02	A	JR14																						1	O												WQS - Basin 2B: Section 10: Class III: Special Standards: 1 sediment sample exceeds the screening value for Chlordane
2-SNK-SHV01-SW	VAV-H28R_SNK01A02	CMON	JR14																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-SPA001.46	VAC-J02R_SPA01A02	A,TM	JA06	0	10	S	0	10	S	0	12	S	2	12	IM						0	S																
2-SPA006.48	VAC-J02R_SPA02A04	C,TM	JA06			W			W			W	4	11	IM								0	S	0	S	0	S										2001 FT/Sed; Appomattox River Basinwide TMDL Study
2-SQC001.85	VAV-H29R_SQC01A08	A	JR16																																			WQS - Basin 2B: Section 10m: Class III: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-SQT001.54	VAP-J07R_SQT01A00	A,TM	JA23	0	12	S	6	12	IM	0	12	S	1	12	S						0	S																Class VII water, no new data since 2014 cycle
2SRC-1-SOS	VAC-H02R_SRC01A02	CMON	JM04																												LP							Category 3D
2-SRC-5111-USFS	VAC-H02R_SRC01A02	USFS	JM04																												UN							MAIS = 16
2-LSD-LSD01-SW	VAV-H31R_LSD01A02	CMON	JR22																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-LTA001.23	VAP-J11R_LTA01A00	A	JA29	0	9	S	0	11	S	0	9	S	1	11	S																							no new data since 2012 cycle
2-LTC001.35	VAP-J15R_LTC01A08	A	JA40	0	10	S	0	10	S	0	12	S	3	12	IM																							no new data since 2012 cycle
2-LTJ000.16	VAC-H05R_LTJ01A10	TM	JM12	0	12	S	0	12	S	0	12	S	3	12	IM						0	S																No New Data
2-LTP002.00	VAP-H34R_LTP01A04	B,SS	JM61	0	10	S	0	10	S	0	10	S									0	S									FS							2011 benthics; no data since 2014 cycle
2-LTP004.81	VAP-H34R_LTP01A04	A	JM61	0	11	S	0	11	S	0	11	S	1	11	S																							
2-LTU000.02	VAC-H11R_LTU01A02	B	JM28	0	2	S	0	2	S	0	2	S																			FS							2010 Bio Tier III stream in National Forest
2-LWW004.14	VAC-H35R_LWW01A08	A,PA	JM65	0	23	S	2	23	S	0	23	S	3	23	IM						0	S																2016 - Delist for DO
2-LYN002.77	VAV-H27R_LYN01A04	A,B	JR09	0	3	S	0	3	S	0	3	S																			FS							WQS - Basin 2B: Section 10o: Class III: Special Standards:
2-LYN-LCH01-SW	VAV-H27R_LYN01A04	CMON	JR09																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-MAN000.19	VAP-H39R_MAN01A12	TM	JM86	0	2	S	0	2	S	0	2	S	2	2	IM						1	IN/O																Manchester Canal; 2009 PCB study - >HH WQS - ALUS ok; no new data since 2012 cycle
2-MAR-MSH01-SW	VAV-H27R_MAR01A10	CMON	JR11																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-MAR-XZY01-SW	VAV-H27R_MAR01A10	CMON	JR11																												IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-MBN000.96	VAC-J03L_SDY01A06	L	JA14	0	129	S	4	94	S	3	160	S	0	21	S						0	S													0	3	S	2009/2011/2013 Sandy River Reservoir Pooled Data: DO 23/252
2-MCK000.40	VAV-H30R_MCK01A00	A	JR18	0	12	S	0	12	S	0	12	S	0	12	S																							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-MCK007.47	VAV-H30R_MCK02A10	A,B	JR18	0	3	S	0	3	S	0	3	S																			IM							Site has degraded for benthics since 2010 assessment. WQS - Basin 2B: Section 10s: Class III: Special Standards: PWS
2-MCK011.68	VAV-H30R_MCK02A10	A,B	JR18	0	10	S	0	10	S	0	10	S	0	6	S																FS							WQS - Basin 2B: Section 10s: Class III: Special Standards: PWS
2-MCK-MCK02-SW	VAV-H30R_MCK02A10	CMON	JR18																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10s: Class III: Special Standards: PWS

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-MCK-MCV01-SW	VAV-H30R_MCK02A10	CMON	JR18																												FS							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10s: Class III: Special Standards: PWS
2-MCM000.92	VAV-H23R_MCM01A00	A,B	JR02	0	2	S	0	2	S	0	2	S																			FS							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MCM003.32	VAV-H23R_MCM01A00	A,B,FPM	JR02	0	3	S	0	3	S	0	3	S	0	1	W				0	W	0	S	0	S							FS							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MCM005.12	VAV-H23R_MCM01A00	A,TR	JR02	0	140	S	0	138	S	0	137	S	13	71	IM						0	S																WQS - Basin 2B: Section 10: Class III: Special Standards:Trend analysis was performed at station 2-MCM005.12 in the 2006 cycle. Statistically significant trends were detected for the following parameter(s): Nitrogen (declining trend); Oxidized N
2-MCM010.84	VAV-H23R_MCM01A00	A	JR02	0	6	S	0	6	S	0	6	S	0	6	S																							WQS - Basin 2B: Section 10h: Class III: Special Standards:
2-MCM018.92	VAV-H23R_MCM02A00	A,B	JR01	0	61	S	0	57	S	0	61	S	21	57	IM																IM							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MCM-MCM04-SW	VAV-H23R_MCM01A00	CMON	JR02																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MCM-MCM11-SW	VAV-H23R_MCM02B10	CMON	JR01																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MCU002.95	VAP-H39R_MCU01A12	A	JM83	0	10	S	0	10	S	1	12	S	4	12	IM																							No new data since 2012 cycle
2-MEA000.75	VAC-H21R_MEA01A08	B	JM52	0	2	S	0	2	S	0	2	S																			J							2013 Bio Both sampling events resulted in SCI scores at the impairment threshold. This stream had decent habitat despite sedimentation occurring. Additional sampling is required to accurately assess the water quality within this reach.
2-MFK000.93	VAP-H34R_MFK01A06	B,A	JM59	0	3	S	0	3	S	0	3	S																			FS							VRO 2007-2012 benthic site; no data since 2014 cycle
2-MIN000.98	VAC-H11L_MIN01A06	L	JM29	0	117	S	2	49	S	16	117	IM	0	14	S						0	S													1	2	IN	2011/2012 Mill Creek Reservoir
2-MIN002.00	VAC-H11L_MIN01A06	C	JM29																									1	O	0	S							2005 FT/Sediment - As 2 Species (OE)
2-MIN002.25	VAC-H11R_MIN01A08	SS,CR	JM29	0	12	S	0	12	S	0	12	S	5	12	IM																							Citizen Monitoring Follow-up (Sweet Briar Bacteria Study)
2-MLY005.39	VAC-H14R_MLY01A14	B	JM34	0	3	S	0	3	S	1	3	IN																			IM							2012/2014 Bio This site had optimal habitat but satellite imagery shows considerable clearcutting upstream in the watershed. Sediment metrics were rated high suboptimal, indicating that sedimentation may not be the primary problem.
2-MNF-MNF02-SW	VAV-H24R_MNF01A00	CMON	JR03																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10i: Class VI: Special Standards:
2-MNR000.39	VAV-H24R_MNR01A00	A	JR05	0	12	S	0	11	S	0	12	S	1	12	S																							WQS - Basin 2B: Section 10i: Class III: Special Standards:
2-MNR011.69	VAV-H24R_MNR01A00	A	JR03	0	12	S	0	11	S	0	12	S	0	12	S																							WQS - Basin 2B: Section 10i: Class III: Special Standards:
2-MNR014.50	VAV-H24L_MNR01A04	L	JR03	0	209	S	3	65	S	0	209	S	0	11	S						0	S													0	2	S	WQS - Basin 2B: Section 10i: Class III: Special Standards:
2-MNR-MRN03-SW	VAV-H24R_MNR01A00	CMON	JR05																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10i: Class III: Special Standards: PWS
2-MNR-MRN08-SW	VAV-H24R_MNR01A00	CMON	JR05																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10i: Class III: Special Standards: PWS
2-MNR-MRN11-SW	VAV-H24R_MNR02A10	CMON	JR03																												J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10i: Class III: Special Standards: PWS
2-MNR-MRN12-SW	VAV-H24R_MNR02A10	CMON	JR03																												J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10i: Class III: Special Standards: PWS
2-MNR-MRS02-SW	VAV-H24R_MNK01A00	CMON	JR03																																			Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10i: Class III: Special Standards: PWS. Station used for use support/non-support in previous cycles. No 2016 data.
2-MOH001.73	VAP-H38R_MOH01A12	A	JM78	0	10	S	0	10	S	0	12	S	4	12	IM																							No new data since 2012 cycle
2-MOY-MRY01-SW	VAV-H28R_MOY01A02	CMON	JR15																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MSB000.01	VAV-H09R_MSB01A00	TM	JM21																																			WQS - Basin 2B: Section 10: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-MSC000.11	VAV-H28R_MSC01A00	A	JR15																						0	S												WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MSC000.60	VAV-H28R_MSC01A00	A,B,TM	JR15	0	33	S	0	31	S	0	32	S	8	29	IM				0	W	0	S					0	S				IM							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MSC-MSC04-SW	VAV-H28R_MSC01A00	CMON	JR15																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MSC-MSV12-SW	VAV-H28R_MSC01A00	CMON	JR15																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MSC-MSX10-SW	VAV-H28R_MSC02A00	CMON	JR15																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MTC001.24	VAC-J04R_MTC01A10	A,B	JA12	0	14	S	0	14	S	0	14	S	1	11	S						0	S										IM							2014 Bio This monitoring station was characterized by sluggish flow, marginal habitat, considerable sediment deposition, and unstable banks with little vegetative protection. Dam/lake approximately one mile upstream of this site.
2-MTC005.27	VAC-J04R_MTC01A10	B	JA12	0	2	S	0	2	S	0	2	S																			FS							2014 Bio This site had decent habitat but sedimentation was occurring.
2-MWC000.04	VAV-H28R_MWC01A00	SS	JR14																						9	O												1 sediment sample of ANTHRACENE BENZO_A_PYRENE BENZO_A_ANTHRACENE CHRYSENE FLUORANTHENE FLUORENE PAH_TOTALS PHENANTHRENE PYRENE exceeded the sediment screening value, WQS - Basin 2B: Section 10: Class III: Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-MWC000.60	VAV-H28R_MWC01A00	A,B	JR14	0	45	S	0	42	S	0	44	S	8	17	IM						0	S			0	S					IM							Continuous monitoring data available for Temp. and DO. DO evaluated based on the daily average of 5 mg/l standard. 0 of 8 days violated the daily standard. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MWC001.16	VAV-H28R_MWC01A00	SS	JR14																						0	S											WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MWC001.28	VAV-H28R_MWC01A00	SS	JR14																						0	S											WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MWC-MWC03-SW	VAV-H28R_MWC01A00	CMON	JR14																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MWC-MWC05-SW	VAV-H28R_MWC01A00	CMON	JR14																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MWC-MWC06-SW	VAV-H28R_MWC01A00	CMON	JR14																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MWC-MWC07-SW	VAV-H28R_MWC01A00	CMON	JR14																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MWC-MWC08-SW	VAV-H28R_MWC01A00	CMON	JR14																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MWC-MWC09-SW	VAV-H28R_MWC01A00	CMON	JR14																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MWC-MWC10-SW	VAV-H28R_MWC01A00	CMON	JR14																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-MYC000.50	VAC-H22R_MYC01A08	A	JM55	0	12	S	0	12	S	0	12	S	6	12	IM						0	S																
2-NBB001.54	VAP-J09R_NBB01A98	TM,SS,B,FPM	JA26	0	2	W	0	2	W	0	2	W	0	1	W				0	S	0	O	0	S							FS							No new data since 2010 cycle, 2009 Benthic data, 2009 sed, 2009 water metals
2-NBB002.92	VAP-J09R_NBB01A98	A,SS	JA26	0	9	S	0	9	S	0	11	S	3	11	IM						0	S									FS							no new data since 2012 cycle
2-NBB003.65	VAP-J09R_NBB01A98	SS,A	JA26	0	8	S	0	8	S	1	8	S							0	S	0	S																2011,2012,2013 water metals
2-NBB005.84	VAP-J09R_NBB01B10	A,TM,SS	JA26	0	57	S	0	55	S	0	56	S	18	47	IM				0	S	0	S																2011,2012,2013 water metals
2-NBS000.92	VAC-J02R_NBS01A08	B	JA06	0	2	S	0	2	S	0	2	S																			FS							2008/2010 Bio This site was monitored in order to supplement probabilistic monitoring data from probabilistic monitoring site 2-NBS001.56, which can only be accessed via private land and cannot be revisited. The stream had heavy sediment deposition and marginally stable banks. Drought conditions in 2008 may have affected the benthic community.
2-NBS001.56	VAC-J02R_NBS01A08	FPM,B	JA06	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W	0	W					FS							2006 Probabilistic Monitoring The spring sample was taken after an extended dry period, which could account for the lower SCI score when compared to fall. Livestock fenced out but present on right bank, and a nursery withdraws water from the stream on an unknown basis.
2-NBX001.10	VAP-J09R_NBB01A12	A	JA26	0	9	S	0	9	S	0	11	S	8	11	IM																							no new data since 2012 cycle
2-NKD-NKD02-SW	VAV-H26R_NKD01A10	CMON	JR08																												IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-NMZ011.69	VAP-J13R_NMZ01A00	A	JA37	0	12	S	6	12	IM	1	12	S	0	11	S																							New Station in 2016 cycle
2-NOR000.20	VAC-H20R_NOR02A02	A,B	JM58	0	113	S	0	112	S	0	25	S							0	S	0	S									IM							2009 Diurnal Study 2007-2014 Bio Fall 2009 bio notes: Flow very low. Stream dried completely prior to fall 2010 sample. Biologist notes from the spring 2014 sample indicated that high flows that season caused streambank failures and resulting sediment deposition that changed the channel morphology. This site will be sampled again in 2016 in order to accurately assess the benthic community.
2-NOR003.28	VAC-H20R_NOR01A02	A,SS,B,TM	JM58	0	223	S	0	222	S	0	25	S	1	1	IN/O				0	S	0	S	0	S							IM	1	1	IN/O				2009 Diurnal Study 2007-2013 Bio - Carryover TP OE This site is characterized by bedrock and cobble riffles that are embedded in sediment and covered in algae.
2-NOR003.59	VAC-H20R_NOR01A02	A,SS,B	JM58	0	121	S	0	120	S	0	25	S							0	S	0	S									IM							2009 Diurnal Study 2007-2013 Bio This stream has unstable banks, a high rate of sediment deposition, and substrate covered with abundant filamentous algae.
2-NOR003.75	VAC-H20R_NOR01A02	TM,B	JM58	0	14	S	0	13	S	0	14	S									0	S									FS							2012-2013 Bio North Creek TMDL This stream is incised with unstable banks and little bank vegetation. Available habitat was marginal. This site likely has a legacy erosion problem but currently the upstream watershed is forested with some open fields.
2-NOT001.59	VAC-H06R_NOT01A10	TM	JM16	0	12	S	0	12	S	0	12	S	10	12	IM						0	S																No New Data Beaver Creek/James River TMDL Monitoring
2-NTH001.65	VAC-H21R_NTH01A00	A,SS	JM52	0	12	S	0	12	S	0	12	S	1	12	S						0	S													0			No New Data Hog Farm Special Study & Follow-up
2-NTH003.88	VAC-H21R_NTH01A00	SS	JM52	0	12	S	0	12	S	0	12	S	4	12	IM																							NO NEW DATA Hog Farm Special Study & Follow-up
2-NUT000.62	VAP-J17R_NUT01A06	FPM,B	JA42	0	2	S	0	2	S	0	2	S	1	1	W				0	S	0	S	0	S							IM							2010 sed, water metals, no new data since 2012 cycle
2-NUT002.22	VAP-J17R_NUT01A06	A,TM	JA42	0	16	S	3	16	IM	0	16	S									0	S																no new data since 2012 cycle
2-NUT-5-FOCR	VAP-J17R_NUT01A06	CMON	JA42	0	37	IN	0	30	IN	13	54	IN/O																										Chesterfield water trends level II data
2-NWD002.27	VAP-H39R_NWD01B12	A,TM	JM81	0	22	S	0	22	S	0	24	S	2	12	IM																							PWS
2-NWD005.84	VAP-H39R_NWD01B12	A	JM81	0	12	S	0	12	S	1	12	S	3	12	IM																							PWS; no data since 2014 cycle
2-OPP000.16	VAC-H05R_OPP01A00	A	JM11	0	24	S	0	24	S	0	24	S	3	24	IM						0	S																No New Data

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-OPP007.03	VAC-H05R_OPP01A00	B	JM11	0	8	S	0	8	S	0	8	S																	0	S	FS							2007-2012 Bio Stable banks and excellent riffle habitat.
2-OTC005.38	VAP-J15R_OTC01B08	A,TM	JA40	0	16	S	2	16	IM	0	16	S									0	S															
2-OTC-28-FOCR	VAP-J15R_OTC01A00	CMON	JA40	0	22	IN				0	35	IN																									Chesterfield Water Trends Level II data
2-OTD-29-FOCR	VAP-J16R_OTD01A14	CMON	JA41	0	21	IN	0	1	IN	0	31	IN																									Chesterfield Water Trends Level II data
2-OWN000.10	VAC-H08R_OWN01A06	A	JM20	0	3	S	0	3	S	0	3	S	0	3	S						0	S															No New Data
2-PDG000.12	VAC-H05R_PDG01A06	A	JM14	0	12	S	0	12	S	0	12	S	5	12	IM						0	S															
2-PHL003.97	VAP-H34R_PHL01A08	B,A	JM59	0	4	S	0	4	S	0	4	S																			IM						VRO 2010-2012 benthic site; no data since 2014 cycle
2-PKR-PKR01-SW	VAV-H27R_PKR01A10	CMON	JR09																												J						Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-PLC001.49	VAV-H26R_PLC01A10	A,B	JR08	0	4	S	0	4	S	0	4	S																			IM						WQS - Basin 2B: Section 10j: Class III: Special Standards:
2-PLC-PWL01-SW	VAV-H26R_PLC01A10	CMON	JR08																												IM						Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-PLP002.08	VAC-H06R_PLP01A08	B	JM16	0	2	S	0	2	S	0	2	S																			IM						No New Data 2008 Bio Incised stream. Past cattle access likely, though they are currently fenced out of stream. Good riffles but algae covered most rocks. High rate of sediment deposition.
2-PNY003.06	VAV-H10R_PNY01A00	A	JM25	0	12	S	0	12	S	0	12	S	2	12	IM																						WQS - Basin 2B: Section 11d: Class III: Special Standards:
2-PNY005.29	VAV-H10R_PNY01A00	A,TR	JM25	0	52	S	0	52	S	0	49	S	6	42	IM						0	S															WQS - Basin 2B: Section 11d: Class III: Special Standards: Trend analysis was performed at station 2-PNY005.29 in the 2006 cycle. No statistically significant trends were detected.
2-PNY005.30	VAV-H10R_PNY01A00	B,A	JM25																												FS						WQS - Basin 2B: Section 11d: Class III: Special Standards:
2-POL000.04	VAC-H02R_POL01A00	A	JM06	0	12	S	0	12	S	0	12	S	2	12	IM				0	S	0	S										3	22	O				2016 - EC Impairment Carry over 2006 OE (2008 - 2/15)
2-POL007.20	VAC-H02R_POL01B14	TM	JM05	0	12	S	0	12	S	0	12	S	3	12	IM						0	S															Pedlar TMDL Station
2-POL008.53	VAC-H02R_POL02A00	A,B	JM05	0	21	S	0	21	S	0	23	S	3	23	IM						0	S									FS						2004 Bio This site was sampled as a potential reference station based on water quality data and instream habitat.
2-POL010.11	VAC-H02R_POL03A02	FPM,B	JM05	0	16	S	0	16	S	0	16	S	2	12	IM				0	W	0	S	0	S	0	S					FS						2009-2010 Bio 2008 Probabilistic Monitoring This site is characterized by stable banks, cobble substrate, and a good riparian zone.
2-POL017.59	VAC-H02L_POL01A02	L	JM04	0	345	S	1	81	S	16	190	S									0	S	0	S	0	S								0	2	S	2004 & 2005 Pedlar Special Study to determine Natural Conditions for pH Pooled Data: DO - 1/165 Violation Rate pH - 25/441 Violation Rate
2-POL018.71	VAC-H02L_POL01A02	L	JM04	0	251	S	0	84	S	9	251	S									0	S												0	1	W	Not in Lacustrine zone Pooled Data: DO - 1/165 Violation Rate pH - 25/441 Violation Rate
2-POL019.63	VAC-H02R_POL05B02	B,SS	JM04	0	4	S	0	4	S	0	4	S																			FS						2009-2010 Bio Tier III stream in National Forest
2-POL028.68	VAC-H02R_POL07B02	A	JM04	0	12	S	0	12	S	0	12	S	2	12	IM																						2016 - Impaired for EC
2-POR-PETE-04-NPS	VAP-J15R_POR01A04	NONA	JA40	0	44	S	2	39	S	2	43	S																									NPS data level III
2-POR-PETE-05-NPS	VAP-J15R_POR01A04	NONA	JA40	0	47	S	0	42	S	0	45	S																									NPS data level III
2-PRB000.53	VAC-J01R_PRB01A04	B	JA01	0	2	S	0	2	S	0	2	S																			FS						2014 Bio
2-PRB-APCO-02-NPS	VAC-J01R_PRB01A04	CMON	JA01	0	5	S	0	5	S	0	5	S																									Level III NPS Data
2-PRD000.21	VAV-H27R_PRD01A00	A	JR11	0	12	S	0	11	S	0	12	S	4	12	IM																						WQS - Basin 2B: Section 10: Class III: Special Standards: Remains impaired for bacteria in 2014, no new data.
2-PRD006.35	VAV-H27R_PRD02A06	A,B	JR12	0	3	S	0	3	S	0	3	S																			IM						WQS - Basin 2B: Section 10: Class III: Special Standards:
2-PRD-BRN01-SW	VAV-H27R_PRD01A00	CMON	JR12																												IM						WQS - Basin 2B: Section 10: Class III: Special Standards:
2-PRD-PRD01-SW	VAV-H27R_PRD02A06	CMON	JR12																												IM						Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-PRS003.23	VAV-H10R_PRS01A00	A,B,FPM	JM25	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	S							FS						WQS - Basin 2B: Section 11: Class VI: Special Standards:
2-PUM000.29	VAC-J01R_PUM01A08	A,B	JA05	0	14	S	0	14	S	0	14	S	4	12	IM						0	S									J						2013 Bio A road follows the stream very closely, resulting in a scoured and incised bank. The stream had good leaf packs and swift-moving water for a low-gradient system. The latest SCI score was so close to the impairment threshold that one more year of data will be collected in order to accurately assess water quality in this stream reach.
2-PWC-POW02-SW	VAV-H23R_PWC01A10	CMON	JR02																												J						Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10h: Class III: Special Standards: PWS
2-PWC-PWL03-SW	VAV-H26R_PLC01A10	CMON	JR08																												IM						Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-PWT000.57	VAP-H39R_PWT01A98	A	JM86	0	13	S	0	13	S	0	13	S	1	12	S																						No data since 2014 cycle
2-PWT001.23	VAP-H39R_PWT01A98	B,A	JM86	0	2	S	0	2	S	0	2	S																			IM						2012-2013 benthics - replaced station 2-PWT001.97 b/c more appropriate stream type
2-PWT-17-CWT	VAP-H39R_PWT01A98	CMON	JM86				0	1	W	0	1	W																									previously 2-PWT-17-FOCR - Chesterfield WaterTrends level 2; no new data since 2012 cycle
2-QTR-QTR03-SW	VAV-H27R_QTR01A16	CMON	JR10																												IM						Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10o: Class III: Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-RBT000.59	VAC-H02R_RBT01A00	B	JM04	0	1	W	0	1	W	0	1	W																			FS							2010 Bio - Fall Only Tier III stream in National Forest
2-RCC000.91	VAV-H31R_RCN01A08	A,B	JR22	0	1	W	0	1	W	0	1	W																			FS							WQS - Basin 2B: Section 11: Class III: Special Standards:
2-RCC-RCN01-SW	VAV-H31R_RCN01A08	CMON	JR22																												FS							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-RCH001.25	VAV-H27R_RCH01A00	A,B	JR09	0	3	S	0	3	S	0	3	S																			FS							WQS - Basin 2B: Section 10o: Class III: Special Standards: 2008 FC bacteria 1/12 = S
2-RCH-RCH01-SW	VAV-H27R_RCH01A00	CMON	JR09																												IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-RCH-RHU01-SW	VAV-H27R_RCH01A00	CMON	JR09																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-RDD000.76	VAP-H39R_RDD01C10	A,TM	JM86	0	25	S	0	25	S	0	25	S	4	11	IM																							
2-RDD-RC1-ACB	VAP-H39R_RDD01C10	CMON	JM86	0	23	S	0	23	S	0	23	S	15	25	IM																		13						ACB - Level 3
2-RDD-RC3-ACB	VAP-H39R_RDD01A00	CMON	JM86	0	25	S	2	24	S	0	25	S	18	24	IM																		13						ACB - level 3; co-located with 2-RDD001.57
2-RDD-RC4-ACB	VAP-H39R_RDD01A00	CMON	JM86	0	21	S	0	21	S	0	21	S	13	24	IM																		13						ACB - level 3
2-RED000.16	VAW-H01R_RED01A00	A,TM	JM02	0	12	S	0	12	S	0	12	S	6	12	IM						0	S	0	S										0	12	IN				Reed Cr. Bacteria TMDL Study Approved 06/21/2004 [Fed. ID. 7763 / 21565] and SWCB approved 12/02/2004 for these 1998 303(d) Listed waters.
2-RED003.65	VAW-H01R_RED01A00	FPM,B	JM02	0	4	S	0	4	S	0	4	S	1	2	IN						0	IN	0	S	0	S							FS	0	4	IN	0	2	IN	FW08VA009- 2 surveys 2011. Avg. VSCI 66.3. No 2011 sediment PEC SV excursions- metals only.
2-RED005.36	VAW-H01R_RED01A00	TM	JM02	0	3	S	0	3	S	0	3	S	3	3	IM								0	S															No additional data beyond the 2008 IR. Bacteria impairment carries. Reed Cr. Bacteria TMDL Study Approved 06/21/2004 [Fed. ID. 7763 / 21565] and SWCB approved 12/02/2004 for these 1998 303(d) Listed waters.
2-RED008.22	VAW-H01R_RED01A00	TM	JM02	0	3	S	0	3	S	0	3	S	1	3	IM								0	S															No additional data beyond the 2008 IR. Bacteria impairment carried. Reed Cr. Bacteria TMDL Study Approved 06/21/2004 [Fed. ID. 7763 / 21565] and SWCB approved 12/02/2004 for these 1998 303(d) Listed waters.
2-RED008.96	VAW-H01R_RED02A02	B,A	JM02	0	2	S	0	2	S	0	2	S																			FS	0	2	IN				Sampled as a reference site. Two 2013 VSCI scores averaging 83.1.
2RED-BE03-UVA	VAW-H01R_RED02A02	CMON	JM02							0	1	IN																										Temp & pH Lv.2.
2-RFD002.58	VAP-J07R_RFD01A00	A	JA22	0	12	S	0	12	S	0	12	S	6	12	IM								0	S															no new data since 2014 cycle(11/2012)
2-RFN000.52	VAV-H15R_RFN01A00	A	JM36	0	58	S	0	53	S	0	58	S	21	59	IM																								WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RFS001.00	VAV-H15R_RFS01A00	A	JM37	0	59	S	0	54	S	1	59	S	14	59	IM																								WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RFS004.40	VAV-H15R_RFS01A00	A,B	JM37	0	18	S	0	17	S	1	18	S	2	12	IM																	FS							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RFS005.66	VAV-H15R_RFS01A00	A	JM37	0	12	S	0	11	S	0	12	S	1	12	S																								WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RGH000.35	VAC-J01R_RGH01A04	A,B	JA02	0	2	S	0	2	S	0	2	S	3	12	IM								0	S								FS							2013 Bio
2-RHC000.58	VAP-J15R_RHC01A06	A,FPM,B	JA40	0	2	S	0	2	S	0	2	S	0	1	IN				0	S	0	S	0	S								IM							2010 sed, water metals, no new data since 2012 cycle
2-RHC002.23	VAP-J15R_RHC01A06	A	JA40	0	10	S	0	10	S	0	12	S	1	12	S				0	S																			2009, 2010 water metals, no new data since 2012 cycle
2-RKF000.19	VAV-H16R_RKF01A00	A	JM41	0	11	S	0	11	S	0	11	S	1	12	S																								WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RKF001.91	VAV-H16R_RKF01A00	FPM	JM41	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	S															WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RKF007.28	VAV-H16R_RKF01B10	A	JM40	0	11	S	0	11	S	0	11	S	2	12	IM																								WQS - Basin 2B: Section 10: Class III: Special Standards
2-RKF014.71	VAV-H16R_RKF01C10	A	JM38	0	11	S	0	11	S	0	11	S	2	12	IM																								WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RKF026.42	VAV-H16R_RKF02A00	A	JM38	0	47	S	0	43	S	0	47	S	9	47	IM																								WQS - Basin 2B: Section 10: Class III: Special Standards: .
2-RKF-Rt6-SOS	VAV-H16R_RKF02A00	CMON	JM38																												LP							SOS data Level II. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RKI003.40	VAC-H17R_RKI01A00	TM,B	JM43	0	14	S	0	14	S	0	14	S	1	12	IM								0	S								FS							2016 - EC Delist candidate 2008/2010 Bio This site has stable banks, optimal habitat, and little sediment deposition. This is a targeted reference stream.
2-RRN-RRN04-SW	VAV-H27R_RRN02A00	CMON	JR11																												J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-RRN-RRN06-SW	VAV-H27R_RRN02A00	CMON	JR11																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-RRN-RRN07-SW	VAV-H27R_RRN01A00	CMON	JR13																												J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-RRS001.81	VAV-H26R_RRS01A00	A,B	JR08	0	2	S	0	2	S	0	2	S																			IM							WQS - Basin 2B: Section 10j: Class III: Special Standards:
2-RRS003.12	VAV-H26R_RRS01A00	A	JR08	0	57	S	0	54	S	0	57	S	3	57	S								0	S															WQS - Basin 2B: Section 10j: Class III: Special Standards:
2-RRS003.59	VAV-H26L_01	L	JR08	0	159	S	1	52	S	0	159	S	0	13	S								0	S												0	2	S	SF Rivanna Reservoir pooled DO/pH/Temp/E-coli results for Station 2-RRS003.59 & 2-RRS005.62 = 91 obs / 1 exceeds, 262 obs / 1 exceeds, 262 obs / 0 exceeds, 26 obs / 1 exceeds. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-RRS005.62	VAV-H26L_01	L	JR08	0	103	S	0	39	S	1	103	S	0	13	S								0	S												0	2	S	SF Rivanna Reservoir pooled DO/pH/Temp/E-coli results for Station 2-RRS003.59 & 2-RRS005.62 = 91 obs/ 1 exceeds, 262 obs / 1 exceeds, 262 obs / 0 exceeds, 26 obs / 1 exceeds. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-RRS-RVN31-SW	VAV-H26R_RRS01A00	CMON	JR08																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-RSM000.58	VAP-H34R_RSM01A08	TM,B	JM61	0	32	S	0	31	S	0	32	S											0	S								FS							2011, 2012 and 2014 benthics; monitored in lieu of 2-RSM001.88
2-RSM001.88	VAP-H34R_RSM01A08	FPM,B	JM61	0	1	W	0	1	W	0	1	W											0	IN								FS							intermittent; 2011 benthics (later benthics sampled at 2-RSM001.88)

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-RTD003.08	VAC-H12R_RTD01A00	A,B	JM30	0	24	S	0	24	S	0	24	S	8	24	IM				0	S	1	O									IM	5	15	O				1 Chronic Violation in 3 years Ammonia - No new Ammonia problems TP OE Carryover 2007/2011 Bio This site was highly embedded with unstable banks and poor bank vegetative protection. Available habitat was covered with periphyton and filamentous algae.
2-RTD003.30	VAC-H12R_RTD02A00	A,B	JM30	0	13	S	0	13	S	0	13	S	1	12	S				0	S	0	S									FS							2011 Bio The riparian zone at this site is more intact than at the downstream site 2-RTD003.08. It also had more stable banks and less sediment deposition than downstream.
2-RTD007.61	VAC-H12R_RTD03A14	TM	JM30	0	11	S	0	11	S	0	11	S	3	12	IM						0	S																
2-SSX001.39	VAC-H20R_SSX01A08	A	JM58	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																
2-STG000.21	VAP-H33L_STG01A12	L	JM74	0	66	S	5	40	IM	1	66	S	0	14	S						0	S													2	2	IM	TSI(TP) = 60, TSI(CA) = 62, TSI(SD) = 63; CAT 5A, Eutrophic; pooled DO 11/92(IM) pH 6/139(S);no new data since 2014 cycle
2-STG000.79	VAP-H33R_STG01A00	A	JM74	0	8	S	0	8	S	0	8	S	1	8	IN																							No new data since 2012 cycle
2-STG000.91	VAP-H33L_STG01A12	L	JM74	0	73	S	6	52	IM	5	73	S	0	14	S						0	S													2	2	IM	TSI(TP) = 60, TSI(CA) = 62, TSI(SD) = 63; CAT 5A, Eutrophic; pooled DO 11/92(IM) pH 6/139(S); no new data since 2014 cycle
2-STG002.00	VAP-H33R_STG01A00	A	JM74	0	8	S	0	8	S	0	8	S	1	8	IN																							No new data since 2012 cycle
2-STI-STG01-SW	VAV-H31R_STI01A12	CMON	JR19																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-STW001.72	VAC-H05R_STW01A08	A,PA,TM	JM14	0	24	S	0	24	S	0	24	S	6	24	IM						0	S																
2-STW004.84	VAC-H05R_STW01A08	FPM,B	JM14	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S			0	W					FS							2011 Bio This stream had some sediment deposition but overall had good habitat.
2-SUA001.54	VAC-J01R_SUA01A04	A,PA,B	JA02	0	16	S	0	16	S	0	19	S	4	12	IM						0	S									FS							2012-2014 Bio This stream had increased sediment deposition but had optimal habitat. 2007 Suanee TMDL Monitoring
2-SUA003.80	VAC-J01R_SUA01A04	A,B	JA02	0	14	S	1	14	S	0	14	S	4	12	IM						0	S									J							2007 Suanee TMDL Monitoring 2012-2013 Bio The condition of this stream fluctuates seasonally. Additional data are needed in order to accurately characterize the benthic community.
2-SWT000.81	VAP-J11R_SWT01A00	TM	JA32	0	46	S	1	44	S	2	45	S	8	45	IM																							
2-SYC000.40	VAV-H15R_SYC01A06	A	JM37																																			WQS - Basin 2B: Section 10: Class III: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
2-SYL001.26	VAC-J06R_SYL01A98	A,TM	JA15	0	24	S	0	24	S	0	24	S	9	23	IM						0	S																Appomattox Basin TMDL
2-TBM000.92	VAC-H21L_TBM01A06	L	JM53	0	83	S	8	65	IM	0	83	S	0	14	S						0	S										0	2	S	0	2	S	2013/2014 Troublesome Creek Reservoir Aerated Impoundment - Treated with Algaecide
2-TBY001.54	VAP-J17R_TBY01A06	A,TM	JA44	0	16	S	0	16	S	1	16	S									0	S																
2-TBY-27-FOCR	VAP-J17R_TBY01A06	CMON	JA44							0	10	IN																										Chesterfield Water Trends Level II data; no new data since 2014 cycle
2-THK000.03	VAC-H03R_THK01A06	B,FPM	JM10	0	2	S	0	2	S	0	2	S	0	1	W				0	W			0	W							IM							2007/2009 Bio Tomahawk Creek is an urban stream with highly embedded substrate and unstable banks.
2-THK001.31	VAC-H03R_THK01A06	TM	JM10	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																No New Data
2-THK002.33	VAC-H03R_THK01A06	A	JM10	0	10	S	0	10	S	0	12	S	2	12	IM						0	S																Urban Non-Point Source
2-TKO003.42	VAP-H39R_TKO03A98	TM	JM84	0	12	S		12	NA	0	12	S																										Class VII water
2-TKO004.69	VAP-H39R_TKO03A98	A	JM84	0	11	S		11		0	11	S	3	11	IM																								Class VII water; no data since 2014 cycle
2-TKO010.64	VAP-H39R_TKO01A98	A	JM84	0	10	S	0	10	S	1	12	S	4	12	IM																								PWS; no new data since 2012 cycle
2-TLR000.03	VAV-H15R_TLR01A08	A,B	JM36	0	7	S	0	7	S	0	7	S																			IM							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-TLR000.05	VAV-H15R_TLR01A08	A	JM36	0	41	S	0	38	S	0	41	S	17	41	IM						0	S																WQS - Basin 2B: Section 10: Class III: Special Standards:
2-TNR000.25	VAC-H12R_TNR01A08	A,B	JM29	0	26	S	0	26	S	0	26	S	8	24	IM						0	S									FS							
2-TNY000.51	VAC-J05R_TNY01A04	A,TM	JA10	2	10	IM	0	10	S	1	10	S	2	10	IM																								No New Data Temperatures exceedances connected to upstream lake discharge. Stream assumed intermittent Appomattox Basin TMDL
2-TOT000.08	VAV-H17R_TOT01A00	FPM	JM44																																			WQS - Basin 2B: Section 11: Class III: Special Standards: PWS. Station used for use support/non-support in previous cycles. No 2016 data.
2-TOT001.01	VAV-H17L_TOT01A04	L	JM44	0	65	S	5	30	IM	0	65	S	0	13	S						0	S													1	2	IN	Insufficient to assess for nutrients, one year supporting, one non-supporting, need more data. Remains impaired for DO in 2016. WQS - Basin 2B: Section 10e: Class III Special Standards: PWS
2-TOT002.61	VAV-H17R_TOT02A00	A	JM44	0	12	S	0	11	S	0	12	S	2	12	IM																							WQS - Basin 2B: Section 10e: Class III: Special Standards: PWS
2-TPN003.59	VAC-H22R_TPN01A08	FPM,B	JM55	0	2	S	0	2	S	0	2	S	4	12	IM				0	W	0	S									FS							2013 FPM There are residences on one bank but otherwise this stream has excellent riffles and some bedrock. Phosphorus consistently high - OE
2-TRH000.40	VAC-H11L_TRH01A02	L	JM28	0	99	S	1	33	S	24	99	IM	1	14	S						0	S	0	S	0	S									2	2	O	2011-2012 Thrashers Creek Reservoir Both years exceed 90th percentile for Chl A pH Violation due to Natural Conditions

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-TSC-TKY01-SW	VAV-H30R_TSC01A14	CMON	JR18																												FS							WQS - Basin 2B: Section 10s: Class III: Special Standards: PWS
2-TWN-TWN01-SW	VAV-H28R_TWN01A10	CMON	JR14																												IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-TYE000.30	VAV-H13R_TYE01A00	A	JM33	0	12	S	0	12	S	0	12	S	0	12	S																							WQS - Basin 2B: Section 11d: Class III: Special Standards:
2-TYE008.77	VAV-H09R_TYE01A00	PA,B,TM	JM27	0	39	S	0	38	S	0	39	S	7	37	IM				0	S	0	S	0	S							FS							WQS - Basin 2B: Section 11d: Class III: Special Standards:
2-TYE017.67	VAV-H09R_TYE02A00	A	JM24	0	12	S	0	12	S	0	12	S	3	12	IM																							WQS - Basin 2B: Section 11d: Class III: Special Standards:
2-TYE020.67	VAV-H09R_TYE02A00	A,B,TR	JM24	0	38	S	0	38	S	0	37	S	8	36	IM																	FS							WQS - Basin 2B: Section 11d: Class III: Special Standards: Trend Station
2-TYE024.88	VAV-H09R_TYE03A00	A,B	JM22	0	3	S	0	3	S	0	3	S																			FS							WQS - Basin 2B: Section 11d: Class III: Special Standards:
2-TYE028.94	VAV-H09R_TYE03A00	A,B	JM22	0	10	S	0	10	S	0	10	S	0	2	S				0	S	0	S	0	S							IM							WQS - Basin 2B: Section 11d: Class III: Special Standards:
2-TYE032.15	VAV-H09R_TYE04A04	A	JM22	0	12	S	0	11	S	0	12	S	0	12	S																							WQS - Basin 2B: Section 11: Class V: Special Standards:
2-TYE-MJ-TR-ACB	VAV-H09R_TYE01A00	CMON	JM27	0	8	S	0	5	S	0	8	S	1	8	IN/O																							WQS - Basin 2B: Section 11d: Class III: Special Standards: Field parameters Level III. 3 DO samples deemed Level II data due to thiosulfate being too strong. Still able to provide use determination based on 5 good samples. Bacteria samples Level II.
2-TYS002.04	VAV-H09R_TYS01A00	A	JM21																																			WQS - Basin 2B: Section 11: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2VGN-CVW	VAC-J01R_VNS01A02	CMON	JA04										4	31	IM																							Clean Virginia Waterways Station Formerly 2VGN-CVW
2-VNS000.31	VAC-J01R_VNS01A02	A,TM,B	JA04	0	4	S	0	4	S	0	4	S	1	12	IM						0	S									FS							Appomattox River Basinwide TMDL Study 2008/2012/2014 Bio This stream had increased sediment deposition and moderately unstable banks.
2-VNS002.45	VAC-J01R_VNS01A02	FPM,B	JA04																0	W											J							2003 Probabilistic Monitoring Need additional data in order to accurately characterize this stream; however this site was monitored as part of the probabilistic monitoring program, is accessed via private property, and will not be revisited. The SCI score was near the cutoff for being assessed as fully supporting. Landowner denied access for further sampling.
2-VNS003.75	VAC-J01R_VNS01A02	A	JA04	0	12	S	0	12	S	0	12	S	3	12	IM																							
2-VNS007.73	VAC-J01R_VNS01A02	A	JA04	0	12	S	0	12	S	0	12	S	8	12	IM						0	S																
2-WAL000.44	VAP-J15R_WAL01A12	A	JA40	0	10	S	1	10	S	0	12	S	1	12	S																							no new data since 2012 cycle
2-WDC-WDU01-SW	VAV-H24R_WDC01A06	CMON	JR05																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10i: Class III: Special Standards: PWS
2-WDY003.04	VAP-J11R_WDY01A00	TM,FPM	JA29	0	48	S	5	46	IM	1	47	S	11	47	IM																							
2-WET004.96	VAP-J11R_WET02A00	TM	JA31	0	12	S	0	11	S	0	11	S	2	11	IM						0	S																New Station in 2016 cycle
2-WGM003.15	VAP-J11R_WGM01A00	A	JA29	0	9	S	0	9	S	0	11	S	6	11	IM																							no new data since 2012 cycle
2-WHC000.46	VAP-H37R_BLG01A98	A	JM76	0	11	S	0	11	S	0	11	S	0	11	S																							
2-WIC000.40	VAC-H06R_WIC01A00	A,B	JM16	0	12	S	0	12	S	0	12	S	6	12	IM						0	S	0	S	0	S					FS							James H05 TMDL Monitoring
2-WIC005.69	VAC-H06R_WIC01A00	B	JM16	0	2	S	0	2	S	0	2	S																			FS							2014 Bio
2-WIC012.60	VAC-H06R_WIC02A10	TM	JM16	0	12	S	0	12	S	0	12	S	6	12	IM						0	S																No New Data James H05 TMDL Monitoring
2-WKF000.72	VAC-H05R_WKF01A10	A	JM15	0	12	S	0	12	S	0	12	S	1	12	S						0	S																2016 - Delist for EC
2-WLL001.83	VAC-H12R_WLL01A10	FPM,B	JM30	0	3	S	0	3	S	0	3	S							0	W	0	W	0	W	0	W					FS							2007/2009-2010 FPM Low SCI score in fall likely caused by drought that dried riffles within one month of sampling.
2-WLM000.69	VAC-H03R_WLM01A02	FPM,B	JM11	0	6	S	0	6	S	0	6	S	0	2	S				0	W	0	S	0	S	0	S					FS							2007-2008 Bio Excellent habitat and riparian zone. Periphyton and filamentous algae often dominant.
2-WLM002.69	VAC-H03R_WLM01A02	A	JM11	0	11	S	0	11	S	0	12	S	2	12	IM						0	S																Urban Non-Point Source
2-WLS004.27	VAC-H36R_WLS01A00	A,TM,TR	JM70	0	34	S	0	34	S	0	36	S	6	36	IM						0	S																Willis River TMDL EPA Approved 5/31/02
2-WLS021.48	VAC-H36R_WLS01B08	A	JM68	0	12	S	0	12	S	0	12	S	1	12	S						0	S																
2-WLS023.10	VAC-H36R_WLS01B08	FPM,B	JM68	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W			0	W					J							2011 Large River FPM Large river non-target for current DEQ sampling techniques. No assessment tool available for large river benthic communities.
2-WLS024.61	VAC-H36R_WLS01B08	FPM,B	JM68	0	3	S	0	3	S	0	3	S							0	S	0	S	0	S	0	S					J	0	2	S	0	2	S	2001-02 Carryover Probabilistic Monitoring - change benthic assessment to J 2006 FC bacteria: 1/2 = IN 2011 FPM Large river non-target for current DEQ sampling techniques. No assessment tool available for large river benthic communities
2-WLS025.32	VAC-H36R_WLS01B08	A,TM,TR	JM68	0	34	S	1	34	S	0	36	S	7	36	IM						0	S																Willis River TMDL EPA Approved 5/31/02
2-WLS030.32	VAC-H36R_WLS01B08	A	JM66	0	10	S	0	10	S	0	12	S	5	12	IM						0	S																
2-WLS034.22	VAC-H36R_WLS02A06	A,TM	JM66	0	12	S	1	12	S	0	12	S	0	12	S						0	S																No New Data Willis River TMDL EPA Approved 5/31/02
2-WLS038.90	VAC-H36R_WLS02A06	A	JM66	0	12	S	0	12	S	0	12	S	0	12	S						0	S																
2-WLS042.78	VAC-H35R_WLS02A04	A,TR	JM64	0	34	S	0	34	S	0	36	S	10	36	IM						0	S																

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-WLS044.78	VAC-H35R_WLS02A04	A,TM	JM64	0	12	S	0	12	S	0	12	S	1	12	S						0	S	0	S	0	S												No New Data Willis River TMDL EPA Approved 5/31/02
2-WLS055.54	VAC-H35R_WLS01A04	B,SS	JM63	0	14	S	0	14	S	0	14	S	4	12	IM																J							2006 FC bacteria: 1/1 = IM 2014 Bio This stream was found to have an impoundment approximately 300 meters upstream and therefore cannot be assessed.
2-WLS057.34	VAC-H35R_WLS01A04	SS	JM63																																		2006 FC bacteria: 1/1 = IM
2-WNK003.38	VAP-J14R_WNK01A00	A	JA38	0	23	S	3	23	IM	1	23	S	5	23	IM																							PWS
2-WNT-6A-TJSWCD	VAV-H18R_WNT02A16	CMON	JM47	0	6	S							1	6	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-WNT-6B-TJSWCD	VAV-H18R_WNT02A16	CMON	JM47	0	6	S							0	6	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-WPK003.23	VAP-J12R_WPK01A98	A	JA35	0	12	S	5	12	IM	0	12	S	1	12	S																							Class VII; New Station in 2016 cycle
2-WPK-15-FOCR	VAP-J12R_WPK01A98	CMON	JA35	0	57	IN	14	44	IN/O	0	58	IN	2	15	IN/O																							Chesterfield Water Trends; level II data; Class VII
2-WSP001.95	VAC-H35R_WSP01A08	A,C	JM64	0	12	S	0	12	S	0	12	S	4	12	IM																0	S						
2-WTK001.50	VAP-J12R_WTK02A00	TM,B	JA34	0	2	IN	0	2	IN	1	2	IN									0	S									IM							2013 Benthic; Class VII water
2-WTK006.35	VAP-J12R_WTK01A00	A	JA34	0	12	S	2	12	IM	0	12	S	1	11	S																							Class VII; New Station in 2016 cycle
2-WTN001.23	VAC-H21R_WTN01A08	A,C	JM54	0	12	S	0	12	S	0	12	S	1	12	S																0	S						No New Data
2-WTN002.50	VAC-H21R_WTN01A08	B	JM54	0	2	S	0	2	S	0	2	S									0	S									IM							2013 Bio This stream had riffles consisting of mostly gravel and a little cobble. There was excessive sedimentation throughout the stream and an abundance of periphyton.
2-XBG-XBG01-SW	VAV-H31R_BAG01A06	CMON	JR21																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-XBI-WIN01-SW	VAV-H29R_XBI01A12	CMON	JR16																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10m: Class III: Special Standards: PWS
2-XBK-XAB01-SW	VAV-H31R_XBK01A12	CMON	JR19																												FS							WQS: Class III - Piedmont Zones Waters; Section 11
2-XBK-XAB02-SW	VAV-H31R_XBK01A12	CMON	JR19																												FS							WQS: Class III - Piedmont Zones Waters; Section 11
2-XBK-XAB03-SW	VAV-H31R_XBK01A12	CMON	JR19																												J							WQS: Class III - Piedmont Zones Waters; Section 11
2-XBM-ELK01-SW	VAV-H25R_XBM01A12	CMON	JR06																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-XBR-XBB01-SW	VAV-H31R_XBR01A12	CMON	JR19																												J							WQS: Class III - Piedmont Zones Waters; Section 11
2-XCF-XCF01-SW	VAV-H32R_XCF01A10	CMON	JR20																												IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-XDC-8A-TJSWCD	VAV-H19R_XDC01A16	CMON	JM49	0	6	S							0	6	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 11: Class III: Special Standards
2-XDC-8B-TJSWCD	VAV-H19R_XDC01A16	CMON	JM49	0	6	S							0	6	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 11: Class III: Special Standards
2-XDL-XDY01-SW	VAV-H24R_XDL01A12	CMON	JR04																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10i: Class III: Special Standards: PWS
2-XDW-PETE-01-NPS	VAP-J15R_XDW01A12	NONA	JA40	0	20	S	0	17	S	2	19	S																										NPS data level III
2-XEP000.44	VAC-J03L_XEP01A06	L	JA14	0	69	S	1	35	IM	1	69	S	0	7	S						0	S																2013/2014 Goodwin Lake - Delist Not listed in nutrient reg
2-XFT000.62	VAP-J11R_XFT01A10	TM	JA29	0	48	S	0	46	S	0	47	S	16	48	IM																							
2-XHK-4A-TJSWCD	VAV-H18R_XHK01A16	CMON	JM47	0	6	S							0	6	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-XHM-2A-TJSWCD	VAV-H18R_XHM01A16	CMON	JM46	0	6	S							4	6	IN/O																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-XHR-7A-TJSWCD	VAV-H19R_XHR01A16	CMON	JM48	0	6	S							0	6	IN																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 11: Class III: Special Standards
2-XIJ-14-CWT	VAP-H39R_XIJ01A12	CMON	JM85	0	47	IN	0	23	IN	0	60	IN																										previously 2-XIJ-14-FOCR - Chesterfield WaterTrends level 2
2-XKL000.37	VAV-H27R_FTB01A08	A,B	JR11	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XLI-XLI01-SW	VAV-H26R_XLI01A16	CMON	JR07																												IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 10j: Class III: Special Standards:
2-XLK-XLV01-SW	VAV-H23R_LKN01A00	CMON	JR02																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10h: Class III: Special Standards: PWS
2-XLU000.10	VAV-H13L_XLU01A04	L	JM32	2	118	S	12	52	IM	6	118	S	0	13	S						0	S													0	2	S	Remains impaired for DO in 2016. WQS: Class III Special Standards:
2-XLV002.27	VAV-H28L_XLV01A04	L	JR15	0	122	S	0	30	S	0	122	S	0	7	S						0	S													0	1	IN	Only one year of Chlor A data, unable to assess for nutrients. WQS: Class III Special Standards: PWS
2-XLW000.60	VAP-J07L_XLW01A00	L	JA21	0	122	S	4	70	S	21	122	IM	0	14	S						0	S													0	2	S	Amelia Lake 'TSI
2-XMH-1A-TJSWCD	VAV-H18R_XMH01A16	CMON	JM46	0	6	S							0	6	S																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-XMH-1B-TJSWCD	VAV-H18R_XMH01A16	CMON	JM46	0	6	S							0	6	S																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-XMH-1C-TJSWCD	VAV-H18R_XMH01A16	CMON	JM46	0	6	S							0	6	S																							TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-XMM01-SW	VAV-H23R_XMM01A10	CMON	JR02																												FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XMR-XMR01-SW	VAV-H28R_XMR01A12	CMON	JR15																												IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
2-XMW-XMW01-SW	VAV-H28R_XMW01A10	CMON	JR14																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XNH-3A-TJSWCD	VAV-H18R_XNH01A10	CMON	JM46	0	6	S							1	6	IN/O																						TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-XNH-3B-TJSWCD	VAV-H18R_XNH01A10	CMON	JM46	0	6	S							0	6	IN																						TJSWCD Level II Coli-scan Data WQS - Basin 2B: Section 10: Class III: Special Standards
2-XPR-XPR01-SW	VAV-H27R_XPR01A14	CMON	JR12																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XPT-XPT01-SW	VAV-H23R_XPT01A10	CMON	JR02																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10g: Class III: Special Standards: PWS
2-XPY-XPY01-SW	VAV-H25R_XPY01A12	CMON	JR06																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-XPY-XPY02-SW	VAV-H25R_XPY01A12	CMON	JR06																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-XQM000.03	VAC-H35R_XQM01A00	SS	JM63	0	4	S	0	4	S	0	6	S																			0	1	W				Hog Farm Special Study Station 2006 FC bacteria: 1/1 = IM
2-XQT-QTR01-SW	VAV-H27R_XQT01A14	CMON	JR10																											J							WQS - Basin 2B: Section 10o: Class III: Special Standards: PWS
2-XRC001.15	VAV-H28R_XRC01A04	B	JR15	0	2	S	0	2	S	0	2	S																			IM							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XRC-XRC01-SW	VAV-H28R_XRC01A04	CMON	JR15																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XRD-XRD01-SW	VAV-H28R_XRD01A12	CMON	JR14																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XRN-FOS01-SW	VAV-H27R_FOS01A12	CMON	JR13																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XRN-XZZ01-SW	VAV-H31R_XRN01A10	CMON	JR19																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-XRT-XRT01-SW	VAV-H29R_XRT01A12	CMON	JR17																											J							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XRV-XZW01-SW	VAV-H26R_XRV01A10	CMON	JR08																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10j: Class III: Special Standards: PWS
2-XRZ-ZRZ01-SW	VAV-H28R_XRZ01A12	CMON	JR14																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XSI-XSI01-SW	VAV-H23R_SIN02A10	CMON	JR02																											IM							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10h: Class III: Special Standards: PWS
2-XSN000.04	VAV-H28R_SNK01A02	SS	JR14																						8	O											Sediment samples exceeded the screening value for Benzo_A_Pyrene, Chrysene, Fluoranthene, Phenanthrene, and Pyrene WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XSN000.08	VAV-H28R_SNK01A02	A,B	JR14	0	24	S	0	24	S	0	24	S	6	6	IM						0	S									IM							WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XSN000.19	VAV-H28R_SNK01A02	SS	JR14																						8	O											Sediment samples exceeded the screening value for Benzo_A_Pyrene, Benzo_A_Anthracene, Chrysene, Fluoranthene, PAH_Totals, Phenanthrene and Pyrene. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XTI-5056-USFS	VAC-H02R_XTI01A12	USFS	JM05																		0	S									UN							USFS Level III Bio Assessment
2-XUT000.62	VAP-H39R_XUT01A04	TM	JM84	0	11	S	1	11	S	0	11	S									0	S															PWS - NO3 okay
2-XVX000.62	VAP-H37R_XVX01A06	FPM,B	JM76	0	6	S	0	6	S	1	6	IN	0	2	S				0	S	0	S	0	S							IN							2011 and 2013 probmon
2-XWT-XWT01-SW	VAV-H23R_WTB01A12	CMON	JR01																											FS							Stream Watch Benthic Data Level III. WQS - Basin 2B: Section 10: Class III: Special Standards:
2-XXA001.43	VAC-H03R_XXA01A08	TM	JM10	0	12	S	0	12	S	0	12	S	4	12	IM						0	S															No New Data Lynchburg Area TMDL
2-XXM000.01	VAV-H09R_MSB01A00	B	JM21																																		WQS - Basin 2B: Section 10: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-XYT000.10	VAP-H39R_XYT01A08	TM	JM84	0	21	S	0	21	S	0	21	S									0	S															PWS - NO3 okay
2-XYT000.83	VAP-H39R_XYT01A08	TM	JM84	0	21	S	0	21	S	0	21	S									0	S															PWS - NO3 okay
2-XYX-XYX01-SW	VAV-H31R_XYX01A10	CMON	JR19																											IM							Stream Watch Benthic Data Level III; Bacteria Level II. WQS - Basin 2B: Section 11: Class III: Special Standards:
2-XZF000.85	VAC-H21R_XZF01A10	FPM,B	JM53	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	W	0	W					J							2007 FPM UT Bryant Creek is a small stream dominated by beaver activity in a silvicultural watershed. This stream was too dry to sample in fall 2007. Need additional data in order to accurately characterize this stream; however this site was monitored as part of the probabilistic monitoring program, is accessed via private property, and will not be revisited.
2-XZN001.15	VAP-J11R_XZN01A10	TM	JA29	0	49	S	4	47	S	0	48	S	48	48	IM						0	O															OE for Total Ammonia
5024	VAC-H11R_BNF02A02	CMON	JM28																											UN							USFS Single Benthic Sample
5027	VAW-H01R_TRR01A02	USFS	JM01																											UN							5 spring surveys (2008-2012) average score 74.9- 'FS'. 1 survey '05 (MAIS 17 VG) Lv. 3.
5078	VAV-H10R_GGO01A02	USFS	JM25																																		Assessment Based on SCI Score - WQS - Basin 2B: Section 11d: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
5105	VAV-H10R_PRS01A00	USFS	JM25																											FS							Assessment Based on SCI Score - WQS - Basin 2B: Section 11: Class VI: Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Middle)																																					
AB01-UVA	VAV-H24R_MNF01A00	NONA	JR03							0	1	W																									WQS - Basin 2B: Section 10i: Class VI Special Standards: PWS
AB02-UVA	VAV-H24R_MNF01A00	NONA	JR03							0	1	W																									WQS - Basin 2B: Section 10i: Class VI Special Standards: PWS
AB04-UVA	VAV-H24R_MNF01A00	NONA	JR03							0	1	W																									WQS - Basin 2B: Section 10i: Class VI Special Standards: PWS
AB05-UVA	VAV-H24R_MNF01A00	NONA	JR03							0	1	W																									WQS - Basin 2B: Section 10i: Class VI Special Standards: PWS
AB06-UVA	VAV-H24R_DYL02A10	NONA	JR04							0	1	W																									WQS - Basin 2B: Section 10: Class VI Special Standards:
AB07-UVA	VAV-H24R_XDY01A10	NONA	JR04							0	1	W																									WQS - Basin 2B: Section 10: Class VI Special Standards:
AB08-UVA	VAV-H24R_MNK01A00	NONA	JR03							0	1	W																									WQS - Basin 2B: Section 10i: Class VI Special Standards: PWS
AB09-UVA	VAV-H24R_PRG01A10	NONA	JR03							0	1	W																									WQS - Basin 2B: Section 10i: Class VI Special Standards: PWS
AM05-UVA	VAV-H10R_PRS01A00	NONA	JM25							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
AM06-UVA	VAV-H10R_LIR01A00	NONA	JM25							0	1	W																									WQS - Basin 2B: Section 11d: Class VI Special Standards:
AM07-UVA	VAV-H10R_LIR01A00	NONA	JM25							0	1	W																									WQS - Basin 2B: Section 11d: Class VI Special Standards:
AM24-UVA	VAV-H10R_LIR01A00	NONA	JM25							0	1	W																									WQS - Basin 2B: Section 11d: Class VI Special Standards:
B4	VAC-H11R_ZZZ01A00	CMON	JM28										0	1	W																						Sweet Briar College Station
B5	VAC-H11R_ZZZ01A00	CMON	JM28										0	1	W																						Sweet Briar College Station
B8	VAC-H11R_ZZZ01A00	CMON	JM28										0	1	W																						Sweet Briar College Station
B9	VAC-H11R_ZZZ01A00	CMON	JM28										0	1	W																						Sweet Briar College Station
GR08-UVA	VAV-H27R_IVI01A04	NONA	JR09							0	1	W																									WQS - Basin 2B: Section 10: Class VI Special Standards:
GR09-UVA	VAV-H27R_SFR02A00	NONA	JR10							0	1	W																									WQS - Basin 2B: Section 10o: Class III Special Standards:
M2	VAC-H11R_MIN01A08	CMON	JM29										0	1	W																						Sweet Briar College Station
NE01-UVA	VAV-H15R_XML01A10	NONA	JM36							0	1	W																									WQS - Basin 2B: Section 10: Class VI Special Standards:
NE02-UVA	VAV-H15R_XRD01A10	NONA	JM36							0	1	W																									WQS - Basin 2B: Section 10: Class VI Special Standards:
NE03-UVA	VAV-H15R_SYC02A10	NONA	JM37							0	1	W																									WQS - Basin 2B: Section 10: Class VI Special Standards:
NE04-UVA	VAV-H15R_SPC02A10	NONA	JM37							0	1	W																									WQS - Basin 2B: Section 10: Class VI Special Standards:
NE05-UVA	VAV-H09R_WHB01A10	NONA	JM21							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE06-UVA	VAV-H09R_DHM01A10	NONA	JM21							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE07-UVA	VAV-H09R_TYN02A10	NONA	JM21							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE08-UVA	VAV-H09R_MIO01A00	NONA	JM21							0	1	W																									WQS - Basin 2B: Section 10: Class VI Special Standards:
NE10-UVA	VAV-H10R_PRN01A02	NONA	JM25							1	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE11-UVA	VAV-H10R_LSB01A10	NONA	JM25							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE13-UVA	VAV-H10R_PNY03A04	NONA	JM25							0	1	W																									WQS - Basin 2B: Section 11d: Class III Special Standards:
NE14-UVA	VAV-H10R_PRN01A02	NONA	JM25							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE15-UVA	VAV-H10R_PRS01A00	NONA	JM25							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE16-UVA	VAV-H09R_RCN01A10	NONA	JM22							0	1	W																									WQS - Basin 2B: Section 11d: Class VI Special Standards:
NE17-UVA	VAV-H09R_SLV01A10	NONA	JM22							0	1	W																									WQS - Basin 2B: Section 11d: Class VI Special Standards:
NE18-UVA	VAV-H09R_XSY01A02	NONA	JM22							0	1	W																									WQS - Basin 2B: Section 11d: Class VI Special Standards:
NE21-UVA	VAV-H09R_TYS01A00	NONA	JM22							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE22-UVA	VAV-H09R_CBL01A00	NONA	JM22							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE23-UVA	VAV-H09R_TYN01A00	NONA	JM21							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE24-UVA	VAV-H09R_TYS01A00	NONA	JM21							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE25-UVA	VAV-H09R_TYS01A00	NONA	JM21							0	1	W																									WQS - Basin 2B: Section 11: Class VI Special Standards:
NE26-UVA	VAV-H15R_XPL01A10	NONA	JM36							0	1	W																									WQS - Basin 2B: Section 10: Class VI Special Standards:
NE27-UVA	VAV-H09R_CHB01A10	NONA	JM22							0	1	W																									WQS - Basin 2B: Section 11d: Class VI Special Standards:
P1	VAC-H11R_PPY01A06	CMON	JM28										1	1	IN																UN						Sweet Briar College Station E Coli Result Too Numerous To Count 6/17/2004 - Category 3B
VT43-UVA	VAV-H10R_GRE01A02	NONA	JM25	1	15	IN				2	15	IN/O																									WQS - Basin 2B: Section 11: Class VI Special Standards:
VT44-UVA	VAV-H10R_GGO01A02	NONA	JM25	1	15	IN				0	15	IN																									WQS - Basin 2B: Section 11b: Class VI Special Standards:
VT63-UVA	VAV-H10R_SHO01A00	NONA	JM25	1	15	IN				0	15	IN																									WQS - Basin 2B: Section 11: Class VI Special Standards:
VT64-UVA	VAV-H09R_CRB01A00	NONA	JM21	2	15	IN/O				0	15	IN																									WQS - Basin 2B: Section 11: Class VI Special Standards:
VT65-UVA	VAV-H09R_MDC01A02	NONA	JM21	2	16	IN/O				0	16	IN																									WQS - Basin 2B: Section 11: Class VI Special Standards:

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
1001	VAV-I29R_RAM01A00	USFS	JU62																												FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
1002	VAV-I12R_BES01A00	USFS	JU27																												FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards
1006	VAV-I30R_CFP03A10	USFS	JU63																																			Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1010	VAV-I29R_XEG01A02	USFS	JU61																																			Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1019	VAV-I30R_LIL01A02	USFS	JU66																																			Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2ABLD014.73	VAV-I38R_BLD03A10	PA,B	JU85	0	12	S	0	11	S	0	12	S	2	12	IM				0	W	0	S									IM							WQS - Basin 2A: Section 12: Class V: Special Standards: pH
2ACWP070.45	VAV-I12R_CWP01A00	A	JU27	0	7	S	0	6	S	0	7	S	0	7	S																							WQS - Basin 2A: Section 12: Class V: Special Standards:
2ADUN002.72	VAV-I14R_DUN02A10	A	JU31	0	10	S	0	10	S	0	10	S	0	10	S																							WQS - Basin 2A: Section 12: Class VI: Special Standards:
2AHAM000.02	VAV-I30R_HAM01A16	A	JU64	0	12	S	0	12	S	0	12	S	8	12	IM																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2AMLC000.84	VAV-I36R_MLC01A14	A,B,FPM	JU78	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	S							FS							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2AWDS000.10	VAV-I35R_WOS01A00	A	JU76	0	6	S	0	6	S	0	6	S	2	6	IM																							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2AXEM000.35	VAV-I36R_MRL01A00	B,A	JU80	0	2	S	0	2	S	0	2	S																			IM							WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2-BAR010.10	VAW-I23R_BAR01A02	A	JU47	0	12	S	0	12	S	0	12	S	0	11	S																	0	12	S				2012 Temp Delist. No additional data beyond the 2012 IR.
2BAR-CR08-UVA	VAW-I23R_BAR01A02	CMON	JU47							0	1	IN																										
2BAR-CR11-UVA	VAW-I23R_BAR01A02	CMON	JU47							0	1	IN																										
2BAS-CR09-UVA	VAW-I23R_ZZZ01A00	CMON	JU47							0	1	IN																										
2-BCC004.71	VAV-I02R_BCC01A00	A,TR	JU07	0	139	S	0	128	S	0	137	S	1	71	S						0	S																	WQS - Basin 2A: Section 12: Class VI: Special Standards:Trend analysis was performed at station 2-BCC004.71 in the 2006 cycle. No statistically significant trends were detected.
2-BCC010.31	VAV-I02R_BCC02A00	A	JU05	0	12	S	0	11	S	0	12	S	1	12	S																							WQS - Basin 2A: Section 12: Class VI: Special Standards:
2-BCC020.81	VAV-I02R_BCC02A00	B	JU05	0	1	W	0	1	W	0	1	W																			FS							Benthic SL in 2004 (improved) WQS - Basin 2A: Section 12: Class VI: Special Standards:
2-BCC026.08	VAV-I02R_BCC03A00	A	JU04	0	12	S	0	11	S	0	12	S	2	12	IM																							WQS - Basin 2A: Section 12: Class VI: Special Standards:
2-BFN000.07	VAV-I38R_NBF01A00	A	JU83																																			WQS - Basin 2A: Section 12: Class V: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-BFS000.15	VAV-I38R_SBF01A00	A	JU82	0	36	S	0	32	S	0	36	S	11	36	IM																							WQS - Basin 2A: Section 12: Class VI: Special Standards:
2BGN-BO03-UVA	VAW-I22R_BGN01A02	CMON	JU48							1	1	IN																										
2-BKL000.15	VAW-I18R_BKL01A02	A	JU40	0	10	S	0	10	S	0	10	S	1	10	IN						0	S											0	10	S				
2-BLD000.22	VAV-I38R_BLD01A00	A,B,TM	JU85	0	45	S	0	42	S	0	45	S	6	42	IM																FS							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-BLD004.25	VAV-I38R_BLD01A00	A	JU85	0	11	S	0	11	S	0	11	S	2	12	IM																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-BLD009.49	VAV-I38R_BLD01A00	A,B,FPM	JU85	0	2	S	0	2	S	0	2	S																			FS							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-BLD011.90	VAV-I38R_BLD02A04	A	JU85	0	42	S	0	39	S	0	42	S	9	42	IM																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-BLD-1-SOS	VAV-I38R_BLD02A04	CMON	JU85																												LP							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-BLD-Kygers Mill-SOS	VAV-I38R_BLD03A10	CMON	JU85																												LP							SOS data Level II. WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2-BLP000.79	VAV-I13R_BLP01A00	A,B,TR	JU29	15	136	IM	0	125	S	0	134	S	1	69	S						0	S									FS							WQS - Basin 2A: Section 12: Class V: Special Standards:Trend analysis was performed at station 2-BLP000.79 in the 2006 cycle. No statistically significant trends were detected.
2-BLP015.32	VAV-I13R_BLP02A10	A	JU28	3	11	IM	0	11	S	0	11	S	0	12	IM																							WQS - Basin 2A: Section 12: Class V: Special Standards: No new bacteria data for 2016, remains impaired.
2-BLP-BP0.1-CRPA	VAV-I13R_BLP01A00	CMON	JU29										0	24	IN																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class V: Special Standards:
2-BLP-BP3.0-CRPA	VAV-I13R_BLP01A00	CMON	JU29										0	23	IN																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class V: Special Standards:
2-BLP-BP9.5-CRPA	VAV-I13R_BLP01A00	CMON	JU29										1	23	IN																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class V: Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
2-BLP-CCL-CRPA	VAV-I13R_BLP01A00	CMON	JU29	5	23	IN/O	0	2	IN	0	5	IN	0	18	IN																						WQS - Basin 2A: Section 12: Class V: Special Standards:
2-BLP-CCL-SOS	VAV-I13R_BLP01A00	CMON	JU29																											LP							WQS - Basin 2A: Section 12: Class V: Special Standards:
2-BLP-LBP-CRPA	VAV-I13R_BLP02A10	CMON	JU28	5	21	IN/O	0	1	W	0	5	IN	3	16	IN/O																						WQS - Basin 2A: Section 12: Class V: Special Standards:
2-BLP-McDowell-SOS	VAV-I13R_BLP02A10	CMON	JU28																											LP							WQS - Basin 2A: Section 12: Class V: Special Standards:
2-BLP-UBP-CRPA	VAV-I13R_BLP02A10	CMON	JU28	5	19	IN/O	0	1	W	0	5	IN	3	15	IN/O																						WQS - Basin 2A: Section 12: Class V: Special Standards:
2-BOL000.97	VAV-I01R_BOL01A04	A	JU02																																		WQS - Basin 2A: Section 12: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-BRT000.94	VAV-I31R_BRT01A00	A,B	JU67	0	4	S	0	4	S	0	4	S																			FS							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-BRT004.01	VAV-I31R_BRT01A00	B	JU67	0	2	S	0	2	S	0	2	S																			FS							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-BRT-6-SOS	VAV-I31R_BRT01A00	CMON	JU67																											LP							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-BSB000.20	VAW-I17R_BSB01A08	A,B	JU36	0	2	S	0	2	S	0	2	S									0	S									FS	0	2	S				2 surveys 2012 Avg. VSCI 81.1.
2BSB-VT17-UVA	VAW-I17R_BSB01A08	CMON	JU36							0	1	IN																										
2-CAT000.34	VAW-I25R_CAT01A00	A	JU53	0	12	S	0	12	S	0	12	S	1	12	S						0	S										0	12	S				Bacteria Delist 2014.
2-CAT023.83	VAW-I25R_CAT04A04	A	JU52	0	12	S	0	12	S	0	12	S	6	12	IM						0	S										0	12	S				
2-CAT025.14	VAW-I25R_CAT04C04	B,TM,FPM	JU52	0	5	S	0	5	S	0	5	S																			FS							5 surveys (2011-2013) with average VSCI score of 65.9. 3 surveys 2011-2012 VSCI 69.1. 2012 Delist Gen. Std. Benthic.
2-CAT028.98	VAW-I25R_CAT05A02	FPM,B	JU52	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-304 (2010). No Sediment PEC exceedances from 2010 data, metals only. 2012 Benthic Delist.
2-CAT034.61	VAW-I25R_CAT06A08	B,SS	JU52	0	1	IN	0	1	IN	0	1	IN																			FS							1 VSCI survey (2010). 2012 Gen. Std. Benthic Delist.
2CAT-3-SOS	VAW-I25R_CAT06A08	CMON	JU52																											LP							SOS 4 surveys 2009-2010 [3D] Lv. 2- One survey Outside Acceptable Date Range.
2CAT-5-SOS	VAW-I25R_CAT05A02	CMON	JU52																											LP							SOS 2 surveys 2010 [3D] Lv. 2- One survey Outside Acceptable Date Range.
2-CEC000.04	VAV-I28R_CEC01A00	A	JU59	0	66	S	0	60	S	0	66	S	9	66	IM																						WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CEC003.60	VAV-I28R_CEC01A00	A	JU59	0	66	S	0	60	S	0	66	S	29	66	IM																						WQS - Basin 2A: Section 12: Class IV: Special Standards:
2CES-VT22-UVA	VAW-I27R_CES01A02	CMON	JU57	2	16	IN/O				0	16	S																										
2-CFP000.02	VAV-I30R_CFP01A00	B	JU68	0	4	S	0	4	S	0	4	S																			FS							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CFP001.18	VAV-I30R_CFP01A00	A	JU68	0	12	S	0	12	S	0	12	S	1	12	S																						WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CFP004.67	VAV-I30R_CFP02A00	A,TR	JU68	0	139	S	0	129	S	0	137	S	2	71	S						0	S																WQS - Basin 2A: Section 12: Class IV Special Standards:Trend analysis was performed at station 2-CFP004.67 in the 2006 cycle. No statistically significant trends were detected.
2-CFP024.20	VAV-I30R_CFP03A10	A	JU63																																		WQS - Basin 2A: Section 12: Class IV: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-CFP029.18	VAV-I29R_CFP01A00	A	JU63																																		WQS - Basin 2A: Section 12: Class IV: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-CFP036.20	VAV-I29R_CFP02A00	A	JU61	0	12	S	0	12	S	0	12	S	0	12	S																						WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CFP-1-SOS	VAV-I30R_CFP01A00	CMON	JU68																											LP							WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2-CGB001.80	VAV-I33R_CGB01A00	A	JU74	0	5	S	0	4	S	1	5	S	3	5	IM																						WQS - Basin 2A: Section 12a: Class IV: Special Standards: No new data in 2014, pH was 1 of 21 in 2012, still fully supporting.
2-CLL001.99	VAV-I38R_CLL01A00	A	JU84	0	36	S	0	32	S	0	36	S	5	36	IM																						WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2-CLL003.21	VAV-I38R_CLL01A00	A,B,FPM	JU84	0	6	S	0	5	S	0	6	S																			IM							WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2CNB-CR14-UVA	VAW-I21R_JOB05A02	CMON	JU44							1	1	IN/O																										
2COW-AG05-UVA	VAW-I07R_COW01A02	CMON	JU13							0	1	IN																										Temp and pH Lv.2.
2-CRE002.37	VAV-I05R_CRE01A06	A	JU09	1	12	S	0	11	S	0	12	S	1	12	S																						WQS - Basin 2A: Section 12: Class VI: Special Standards: Delist for Temp in 2016.
2-CRG001.20	VAW-I22R_CRG01A00	A	JU50	0	12	S	0	12	S	0	12	S	2	11	S						0	S	1	O								0	12	S				AQ 2000 nickel (Ni) in Sediment. No additional data beyond the 2010 IR.
2-CRG015.50	VAW-I22R_CRG02B10	FPM,B	JU48	0	2	S	0	1	IN	0	2	S	0	1	IN																FS	0	2	S	0	1	IN	
2-CRG016.90	VAW-I22R_CRG03A14	PA	JU48	0	12	S	0	12	S	0	12	S	2	11	IN																	0	12	S				
2-CRG042.34	VAW-I22R_CRG05A02	A	JU48	0	12	S	0	12	S	0	12	S	0	12	S						0	S										0	12	S				
2-CRG047.95	VAW-I22R_CRG05A02	FPM,B	JU46	0	2	S	0	2	S	0	2	S	0	1	IN						0	S	0	S							FS	0	2	S	0	1	IN	2 surveys 2011. Avg. VSCI 70.6. VARS11-232.
2-CRG048.53	VAW-I22R_CRG05A02	A	JU46	0	12	S	0	12	S	1	12	S	2	12	IM						0	S										0	12	S				2012 E.coli initial Listing. No additional data beyond the 2012 IR.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
2-CRG062.29	VAW-I19R_CRG02A02	A	JU43	0	12	S	0	12	S	0	12	S	5	12	IM						0	S										0	12	S				2004 Bacteria Listed station. 3/27.
2-CRG074.32	VAW-I19R_CRG03A02	FPM,B	JU41	0	1	IN	0	1	IN	0	1	IN	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	2 surveys 2010 VSCI Avg. 69.0.
2-CRG074.47	VAW-I19R_CRG03A02	A	JU41	0	7	S	0	7	S	1	7	IN	1	7	IN						0	S										0	7	S				No additional data beyond the 2012 IR.
2-CRU-CR-CRPA	VAV-I13R_CRU01A06	CMON	JU28	2	21	IN	0	1	W	0	5	IN	0	15	IN																							WQS - Basin 2A: Section 12: Class VI: Special Standards:
2-CSR003.94	VAW-I11R_CSR01A02	B,FPM	JU19	0	2	S	0	2	S	0	2	S																			FS	0	2	S				Two 2014 VSCI surveys with average score of 80.2. Site sampled as a reference station.
2CVA-VT25-UVA	VAW-I23R_CVA01A02	CMON	JU47	1	16	S				16	16	IN/O																										
2-CWP002.58	VAW-I17R_CWP01A00	A,B,TR	JU36	0	32	S	0	32	S	0	31	S	1	30	S																FS	0	32	S				2 surveys 2011 Avg. VSCI 78.3. Trend Station.
2-CWP015.77	VAV-I16R_CWP01A00	A	JU34	0	12	S	0	12	S	0	12	S	1	12	S																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP045.86	VAV-I14R_CWP01A00	A	JU32	0	12	S	0	11	S	0	12	S	1	12	S																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP050.66	VAV-I14R_CWP02A04	A,B	JU30	0	12	S	0	11	S	0	12	S	0	12	S																FS							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP075.64	VAV-I12R_CWP02A10	A	JU25	0	12	S	0	11	S	0	12	S	2	12	IM																							WQS - Basin 2A: Section 12: Class V: Special Standards:
2CWP-1-SOS	VAW-I17R_CWP01A00	CMON	JU36																												LP							SOS 1 survey 2012 [3D] Lv.2. One survey Outside Acceptable Date Range.
2-CWP-CLL-CRPA	VAV-I12R_CWP01A00	CMON	JU27	0	20	IN	0	2	IN	0	5	IN	0	15	IN																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP-CLU-CRPA	VAV-I12R_CWP02A10	CMON	JU25	0	20	IN	0	2	IN	0	5	IN	2	15	IN/O																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class IV: Special Standards:
2-CWP-CP10.0-CRPA	VAW-I17R_CWP02A08	CMON	JU36	0	23	S	0	2	S	0	5	S	1	18	S																							E.coli Lv. 2
2-CWP-CP13.5-CRPA	VAW-I17R_CWP02A08	CMON	JU36										0	25	S																							
2-CWP-CP25.3-CRPA	VAV-I16R_CWP01A00	CMON	JU34										0	23	IN																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class IV: Special Standards:
2-CWP-CP27.2-CRPA	VAV-I16R_CWP01A00	CMON	JU34										0	1	W																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class IV: Special Standards:
2-CWP-CP36.6-CRPA	VAV-I16R_CWP01A00	CMON	JU34	0	24	IN	0	2	IN	0	5	IN	0	45	IN																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class IV: Special Standards:
2-CWP-CP37.6-CRPA	VAV-I14R_CWP01A00	CMON	JU32	0	19	IN							0	47	IN																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class IV: Special Standards:
2-CWP-CP5.8-CRPA	VAW-I17R_CWP01A00	CMON	JU36										0	48	S																							E.coli Lv. 2.
2-CWP-CP64.8-CRPA	VAV-I12R_CWP01A00	CMON	JU27										0	23	IN																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class IV: Special Standards:
2-CWP-Cpr 37.5-SOS	VAV-I16R_CWP01A00	CMON	JU34																												MP							SOS data Level II. WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP-CPR59.8-CRPA	VAV-I14R_CWP02A04	CMON	JU30	0	24	IN	0	2	IN	0	5	IN	0	43	IN																							CRPA Level II Coli-scan Data WQS - Basin 2A; Section 12: Class IV: Special Standards:
2-CWP-CPR59.8-SOS	VAV-I14R_CWP02A04	CMON	JU30																												LP							SOS data Level II. WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP-CpR-SOS	VAV-I12R_CWP01A00	CMON	JU27																												LP							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP-Walton Tract-SOS	VAV-I16R_CWP01A00	CMON	JU34																												MP							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP-WC Lower-SOS	VAV-I16R_CWP01A00	CMON	JU34																												LP							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP-Windy Cove-SOS	VAV-I16R_CWP01A00	CMON	JU34																												LP							SOS data Level II. WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-CWP-WT-CRPA	VAV-I16R_CWP01A00	CMON	JU34	0	26	IN	0	2	IN	0	5	IN	0	21	IN																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-DCK003.94	VAW-I21R_DCK01A06	FPM,B,PA	JU44	0	16	S	0	16	S	0	16	S	0	14	IN				0	IN	0	S	0	S							FS	0	16	S	0	2	S	2 surveys 2011 Avg. VSCI 72.7. FW08VA005.
2-DDY000.75	VAV-I30R_DDY01A06	PA,B,FPM	JU63	0	14	S	0	13	S	0	14	S	0	13	S				0	S	0	S	0	S							FS							WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2-DNP001.98	VAW-I07R_DNP01A00	A,TR	JU15	0	36	S	0	36	S	0	36	S	2	36	S						0	S										0	36	IN				2012 Bacteria Delist.
2-DNP018.47	VAW-I07R_DNP05A06	A	JU13	0	12	S	0	12	S	0	12	S	0	12	S						0	S										0	12	IN				2011-2012 Ambient station.
2DWN-AG10-UVA	VAW-I17R_DWN01A08	CMON	JU36							0	1	IN																										
2ELB-CR02-UVA	VAW-I21R_JOB30A02	CMON	JU44							0	1	IN																										
2-ELK001.37	VAV-I28R_ELK01A00	A	JU60	0	10	S	0	10	S	0	10	S	2	10	IM																							WQS - Basin 2A: Section 12: Class IV: Special Standards: This station also used to assess AU VAV-I28R_ELK04A10.
2-ELS000.08	VAW-I26R_ELS01A02	TM	JU55	0	12	S	0	12	S	0	12	S	3	12	IM						0	S										0	12	S				No additional data beyond 2008 IR. Nested Bacteria TMDL Load Duration Study EPA Approved 06/21/2004. TMDL IP SWCB approved 4/28/2009. No additional Temp data beyond 2008 IR. 2004 Temp: 2/18- 'IM'.
2-FAS000.20	VAW-I04R_FAS01A00	B,A,SS	JU10	0	2	S	0	2	S	0	2	S																			W							Bio 'W' for FAS as Falling Spring flows from a warm spring and exhibits a large amount of mineral precipitation on all instream materials limiting available habitat for benthic macroinvertebrates.
2-FAS001.08	VAW-I04R_FAS01A00	B,A,SS	JU10	0	4	S	0	3	S	0	4	S																			W							Bio 'W' for FAS as Falling Spring flows from a warm spring and exhibits a large amount of mineral precipitation on all instream materials limiting available habitat for benthic macroinvertebrates.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
2-FAS002.67	VAW-I04R_FAS01A00	B,A,SS	JU10	0	4	S	0	3	S	0	4	S																			W							Bio 'W' for FAS as Falling Spring flows from a warm spring and exhibits a large amount of mineral precipitation on all instream materials limiting available habitat for benthic macroinvertebrates.
2-FAS002.75	VAW-I04R_FAS01A00	B,A,SS	JU10	0	4	S	0	3	S	0	4	S																			W							Bio 'W' for FAS as Falling Spring flows from a warm spring and exhibits a large amount of mineral precipitation on all instream materials limiting available habitat for benthic macroinvertebrates.
2FAW-BO13-UVA	VAW-I27R_FAW01A02	CMON	JU57							0	1	IN																										
2FAW-VT23-UVA	VAW-I27R_FAW01A02	CMON	JU57	2	16	S				0	16	S																										
2FUR-BO04-UVA	VAW-I22R_FUR01A02	CMON	JU48							0	1	IN																										
2-GIM002.52	VAV-I33R_GIM01A12	A,B,FPM	JU75	0	1	W	0	1	W	0	1	W	1	1	W				0	W	0	W	0	S							FS							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2-HAM000.37	VAW-I25R_HAM01A02	FPM,B,PA	JU52	0	17	S	0	17	S	0	17	S	0	13	S				0	IN	0	S									FS	0	16	S	0	2	S	VARS11-015 - 3 surveys 2012. Avg. VSCI 73.1.
2HIP-BO02-UVA	VAW-I22R_HIP01A02	CMON	JU48							0	1	IN																										
2HIP-VT20-UVA	VAW-I22R_HIP01A02	CMON	JU48							0	1	IN																										
2-HKY001.26	VAW-I03R_HKY01A12	FPM,B	JU08	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	IN	0	1	IN	VAW05547-272 (2009). Two 2009 VSCI surveys scoring spring 84.8 and fall 80.3. DO, Temp, pH, water column toxics- 'FS'. 2009 sediment collection (metals only) no PEC SV exceedances.
2-HYS000.10	VAV-I34R_HYS01A00	A,B	JU73	0	4	S	0	4	S	0	4	S																			FS							WQS - Basin 2A: Section 12a: Class V-hh: Special Standards: pH
2-HYS001.41	VAV-I34R_HYS01A00	A	JU73	0	65	S	0	59	S	0	65	S	15	65	IM																							WQS - Basin 2A: Section 12a: Class V-hh: Special Standards: pH
2-HYS002.83	VAV-I34R_HYS01A00	B	JU73	0	1	W	0	1	W	0	1	W																			FS							WQS - Basin 2A: Section 12a: Class V-hh: Special Standards: pH
2-HYS003.45	VAV-I34R_HYS01A00	B	JU73	0	1	W	0	1	W	0	1	W																			FS							WQS - Basin 2A: Section 12a: Class V-hh: Special Standards: pH
2-HYS005.45	VAV-I34R_HYS01A00	A,B,FPM	JU73	0	4	S	0	4	S	0	4	S																			FS							WQS - Basin 2A: Section 12a: Class V-hh: Special Standards: pH
2-HYS007.46	VAV-I34R_HYS01A00	A	JU73	0	12	S	0	11	S	0	11	S	8	11	IM																							WQS - Basin 2A: Section 12a: Class V-hh: Special Standards: pH
2-ISH000.02	VAV-I36R_ISH01A00	A	JU79	0	12	S	0	11	S	0	12	S	1	12	S																							WQS - Basin 2A: Section 12a: Class V: Special Standards: pH, Delist for Temp in 2016
2-JED008.07	VAW-I07R_JED01A02	A,FPM,B	JU13	0	14	S	0	14	S	0	13	S	0	13	S				0	IN	0	S									FS	0	14	IN	0	1	IN	A 2014 Probabilistic monitoring site (VARS11-156-PA). Single water column metals sample with no exceeds but insufficient to assess.
2-JES000.80	VAW-I27R_JES01A00	A,B	JU57	0	12	S	0	12	S	0	12	S	0	12	S						0	S									FS	0	12	S				1 survey (2008) VSCI 72.6. Nutrient Criteria Special Study in 2008. No additional data beyond the 2010 IR.
2-JES002.87	VAW-I27R_JES01A08	B,A	JU57	1	2	IN/O	0	2	S	0	2	S																			FS	0	2	S				Average VSCI score from two samples is 70.9. Sampled as a reference station.
2JES-BO12-UVA	VAW-I27R_JES02A08	CMON	JU57							0	1	IN																										
2-JKS000.38	VAW-I09R_JKS01A00	A,C,TR	JU24	0	36	S	0	36	S	0	36	S	3	36	S						0	S	1	O	0	S	1	O				0	36	S				Bacteria DELIST 2014. '05 FT/Sed total arsenic (As) [Apx E-2] 2 sp.; '05 Sediment exceeds nickel (Ni) SV - 48.6 ppm @ 50.3 ppm. Trend Analysis.
2-JKS006.67	VAW-I09R_JKS03A00	A,B,FPM,TM	JU24	0	43	S	0	43	S	0	41	S							0	IN	0	S	1	O							FS	0	12	S				7 VSCI surveys (2007-2008 & 2010-2012) Avg. VSCI 64.6. (Benthic Delisted 2012). FPM Boatable-No Index. 2012. 2000 sediment exceeds nickel (Ni) PEC SV.
2-JKS013.29	VAW-I09R_JKS04A00	A,B,TM	JU21	0	48	S	0	48	S	0	46	S							0	S	0	S									IM	2	13	IN				5 VSCI surveys (2007-2008 & 2010-2012) Avg. VSCI 53.1.
2-JKS015.60	VAW-I09R_JKS04A00	A	JU21	0	12	S	0	12	S	0	12	S	2	12	IM						0	S																No additional data beyond the 2010 IR.
2-JKS018.68	VAW-I09R_JKS04A00	A,B,TM	JU21	0	63	S	0	63	S	0	61	S	6	24	IM				0	S	0	S									IM	2	31	IN				6 surveys (2007-2008 & 2010-2012) Avg. VSCI 49.4.
2-JKS020.41	VAW-I09R_JKS05A00	FPM,B	JU21	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							IM							VAW05547-088 (2007). Avg. VSCI 48.1. No PEC sediment exceedances from 2007 data; metals only.
2-JKS023.61	VAW-I09R_JKS06A00	A,B,FPM,TM,TR	JU21	0	73	S	0	73	S	0	71	S	14	36	IM				0	S	0	S									IM	4	38	IN	0	1	IN	7 VSCI surveys (2007-2008 & 2010-2012) Avg. VSCI 34.4. FPM Boatable-No Index. Bacteria (FC) De-List 2004; basis E. coli (I04 & I09 EPA approved 10/2005). Returns 2008 Listed E. coli. 2012 Trend Analysis.
2-JKS023.88	VAW-I09R_JKS06A00	C	JU21																				1	O	0	S	0	S	1	IM							'05 FT/Sed PCB [Apx E-1] 1 sp. 5 sizes; sediment zinc (Zn).
2-JKS026.01	VAW-I04R_JKS03A00	A,TM	JU11	1	26	S	0	25	S	0	24	S																										2016 Cycle: Station used in Jackson River Special Study (#10018).
2-JKS028.69	VAW-I04R_JKS03A00	FPM,B	JU11	0	2	S	0	2	S	0	2	S	0	2	IN				0	IN	0	S	0	S							W	0	2	IN	0	2	IN	PWS. VAEQ99-431 (2004, 2010)- No 2011 sediment excursions of metals PEC SVs. Single water column metals (2011/2013) 'FS'. 2 VSCI surveys (2004). No PEC exceedances from 2004 data. FPM Boatable-No Index. Not assessed.
2-JKS030.65	VAW-I04R_JKS03A00	A,B,PA,TM,TR	JU11	0	49	S	0	50	S	0	48	S	4	42	S				0	S	0	S									FS	1	43	IN				Multiple water column metals (2010-2011) 'FS'. Five VSCI surveys (2010-2014) with an average score of 72.7. 2 VSCI surveys (2007 & 2010). 2012 Trend Analysis.
2-JKS036.11	VAW-I04R_JKS04A00	TM	JU10	0	3	S	0	3	S	0	3	S									0	S										0	3	IN				Assessment carries 2014 & 2016 IR. No additional data beyond 2012 IR.
2-JKS038.61	VAW-I04R_JKS05A02	FPM,B	JU10	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							W	0	2	IN	0	1	IN	FPM Boatable-No Index VAW05547-216 (2009). Bio not assessed. No 2009 sediment PEC SV excursions for metals.
2-JKS044.10	VAW-I04R_JKS05A02	A,TM	JU10	0	12	S	0	12	S	0	12	S							0	S	0	S										0	10	IN				Water column metals (2010-2011) - 'FS'. Iron and Manganese exceed but station is not located at a PWS intake.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
2-JKS044.60	VAW-I03L_JKS01A02	A,L	JU08	0	628	S	2	370	S	0	38	S	0	21	S						0	S										0	2	S	Lake Moomaw 2016 Pooled Data: Temp 0 / 1,623 (S); DO 7 / 1,032 (S); pH 1 / 132 (S); LZ Nutrients Pooled (2 stations) CHLa 0 / 2 (S) - 90 %tile 2013- 2.66 µg/L; 2014- 3.19 µg/L.
2-JKS046.40	VAW-I03L_JKS01A02	A,L	JU08	0	528	S	4	346	S	0	35	S	0	21	S						0	S										0	2	S	Lake Moomaw 2016 Pooled Data: Temp 0 / 1,623 (S); DO 7 / 1,032 (S); pH 1 / 132 (S); LZ Nutrients Pooled (2 stations) CHLa 0 / 2 (S) -90 %tile 2013- 2.66 µg/L; 2014- 3.19 µg/L.
2-JKS048.90	VAW-I03L_JKS02A02	A,L	JU08	0	394	S	1	243	S	0	37	S	0	21	S						0	S										0	2	S	Lake Moomaw 2016 Pooled Data: Temp 0 / 1,623 (S); DO 7 / 1,032 (S); pH 1 / 132 (S); LZ Nutrients Pooled (2 stations) CHLa 0 / 2 (S) - 90 %tile 2013- 2.42 µg/L; 2014- 3.62 µg/L.
2-JKS053.48	VAW-I03L_JKS03A02	A,L	JU08	0	73	S	0	73	S	1	22	S	0	19	S						0	S															Lake Moomaw 2016 Pooled Data: Temp 0 / 1,623 (S); DO 7 / 1,032 (S); pH 1 / 132 (S); LZ Nutrients Pooled (2 stations) CHLa 0 / 2 (S) - 90 %tile 2013- 2.42 µg/L; 2014- 3.62 µg/L.
2-JKS058.60	VAV-I01R_JKS01A00	A,TR	JU03	7	36	IM	0	35	S	0	36	S	3	35	S																						WQS - Basin 2A: Section 12: Class V: Special Standards:Trend analysis was performed at station 2-JKS058.60 in the 2006 cycle. No statistically significant trends were detected.
2-JKS067.00	VAV-I01R_JKS01A00	B	JU03	0	2	S	0	2	S	0	2	S																			FS							WQS - Basin 2A: Section 12: Class V: Special Standards: 2008 FC bacteria 0/11 = S
2-JKS076.16	VAV-I01R_JKS02A00	A,B,FPM	JU02	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	S							FS							WQS - Basin 2A: Section 12: Class V: Special Standards:
2-JKS086.01	VAV-I01R_JKS02A00	A	JU02	0	12	S	0	11	S	0	12	S	0	12	S																							WQS - Basin 2A: Section 12: Class V: Special Standards:
2-JKS090.90	VAV-I01R_JKS03A04	A	JU01	0	12	S	0	11	S	0	12	S	0	12	S																							WQS - Basin 2A: Section 12: Class V: Special Standards:
2-JKS-6-SOS	VAV-I01R_JKS04A10	CMON	JU01																												LP							WQS - Basin 2A: Section 12: Class VI: Special Standards:
2-JMS290.85	VAV-I28R_JMS01A00	A	JU60	0	12	S	0	12	S	0	12	S	1	12	S																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-JMS298.17	VAW-I27R_JMS01A00	PA	JU58	0	12	S	0	12	S	0	12	S	2	12	IM																	0	12	S				
2-JMS299.59	VAW-I27R_JMS01A00	FPM,B	JU58	0	1	IN	0	1	IN	0	1	IN	0	1	IN						0	S	0	S							IN	0	1	IN	0	1	IN	FPM 2009 Boatable-No Index. No 2009 sediment PEC SV excursions metals only.
2-JMS302.85	VAW-I27R_JMS01A00	A	JU58	0	12	S	0	12	S	0	12	S	0	12	S																	0	12	S				Delisted 2008 for pH. Abnormal fish lesions reported in this area.
2-JMS309.13	VAW-I27R_JMS02A14	A	JU56	0	24	S	0	24	S	0	24	S	6	24	IM				0	S												1	24	IN				Outside Data Window: '05 FT/Sed no exceedances PCB only.
2-JMS312.32	VAW-I24R_JMS01A10	FPM,B	JU54	0	1	IN	0	1	IN	0	1	IN	0	1	IN				0	IN	0	IN	1	O							IN	0	1	IN	0	1	IN	Boatable- no index. VARS11-036. 2011 sediment exceeds nickel PEC SV (48.6) at 48.9.
2-JMS313.85	VAW-I24R_JMS01A10	A	JU54	0	13	S	0	13	S	0	13	S	1	12	S						0	S										0	13	S				Abnormal fish lesions reported in this area 'OE'. No additional data beyond the 2012 IR.
2-JMS345.73	VAW-I18R_JMS01A00	A,B	JU37	0	26	S	0	26	S	0	25	S	3	24	S						0	S									FS	0	24	S				2 surveys 2007. Avg. VSCI 61.3. Gen. STD. (Benthic) Delisted 2008 IR. No additional data beyond the 2010 IR.
2-JMS346.34	VAW-I18R_JMS02A00	FPM	JU37	0	1	IN	0	1	IN	0	1	IN	0	1	IN																	0	1	IN	0	1	IN	
2JMS-J40-JRA	VAW-I27R_JMS02A14	CMON	JU56	0	13	S							9	13	IM																							
2-JOB000.39	VAW-I21R_JOB01A00	A,B	JU45	0	14	S	0	14	S	0	14	S	1	12	S						0	S									FS	0	14	S				2014 IR DELIST bacteria. Two 2012 VSCI scores averaging 75.1. 2004 FC bacteria: 2/18- 'IM'. No additional data beyond 2008 IR. No E.coli delist
2-MIA000.79	VAW-I26R_MIA01A04	A,TM	JU55	0	12	S	0	12	S	0	12	S	1	12	IM						0	S										1	12	S				There are no additional data beyond the 2008 IR. Nested Bacteria TMDL Load Duration Study EPA Approved 06/21/2004. TMDL IP SWCB approved 4/28/2009. No additional data beyond 2008 IR.
2MIA-1-SOS	VAW-I26R_MIA01A04	CMON	JU55																												LP							SOS 2 surveys 2012 [3D] Lv. 2. One survey Outside Acceptable Date Range.
2-MIS000.04	VAV-I35R_MIS01A00	A,B	JU76	0	5	S	0	5	S	0	5	S																			IM							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH. Benthic status change from 2014.
2-MIT000.04	VAV-I30R_MIT01A02	A	JU66	0	12	S	0	12	S	0	12	S	0	11	S																							WQS - Basin 2A: Section 12: Class IV: Special Standards: Bacteria is a delist in 2016.
2-MIT010.74	VAV-I30R_MIT02A10	A	JU33																																			WQS - Bain 2A: Section 12: Class VI: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
2-MIU000.77	VAW-I22R_MIU01A02	B,A	JU48	0	5	S	0	5	S	0	5	S																			FS							Five surveys (2011-2013) with average VSCI score of 74.2. 2014 DELIST Gen. Std. Benthic. 3 surveys 2011-2012. VSCI Avg. 76.5.
2-MIU001.75	VAW-I22R_MIU01A02	B,A	JU48	0	3	S	0	3	S	1	3	IN																			FS							2014 DELIST Gen. Std. Benthic. 3 surveys 2010-2011. Avg. VSCI 63.4.
2-MIU002.97	VAW-I22R_MIU02A02	B,A	JU48	0	3	S	0	3	S	3	3	IM																			W							2014 DELIST Gen. Std. Benthic. 1 VSCI survey 2010 unsuitable for VSCI application-Not assessed. 2012 pH remains Listed.
2-MIV000.39	VAW-I18R_MIV01A00	A,B	JU39	0	14	S	0	14	S	0	14	S	0	11	S						0	S									FS	0	14	S				2004 Bacteria FC Listed. 3/17-IM. 2012 Bacteria Delist. No additional data beyond the 2012 IR.
2-MIW003.45	VAV-I16R_MIW02A10	B	JU34																												FS							WQS - Basin 2A: Section 12: Class VI: Special Standards:
2MIX-BA28-UVA	VAW-I03R_MIX01A02	CMON	JU08							0	1	IN																										2MIX-BA28-UVA - 2016 IR finds one 2019 pH measurement of 7.3 (Lv.2) - 'IN'.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
2-MOR003.60	VAV-I38L_MOR01A10	L	JU83	0	66	S	19	66	IM	18	66	IM																									Chlor A not evaluated, lake not in 187 Regulation. This lake has a DO impairment in the Hypolimnion that is natural. 0/42 vio of DO in epilimnion, 19/66 vio in hypolimnion. All TSI OK (< 60) Lake is impaired for pH. WQS - Basin 2A: Section 12: Class
2-MOR003.60	VAV-I38L_MOR01A10	L	JU83	0	41	S	0	42	S	0	42	S	0	7	S																					Chlor A not evaluated, lake not in 187 Regulation. This lake has a DO impairment in the Hypolimnion that is natural. 0/42 vio of DO in epilimnion, 19/66 vio in hypolimnion. All TSI OK (< 60) Lake is impaired for pH. WQS - Basin 2A: Section 12:
2-MOU-MOU-01-SOS	VAV-I33R_MOU01A14	CMON	JU74																											LP							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2-MRC002.14	VAV-I36R_MRC01A00	A,B	JU78	0	3	S	0	3	S	0	3	S																			IM							WQS - Basin 2B: Section 12: Class IV: Special Standards: pH
2-MRC003.82	VAV-I36R_MRC01A00	A,B	JU78	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 2B: Section 12: Class IV: Special Standards: pH
2-MRL002.62	VAV-I36R_MRL01A00	B	JU80	0	2	S	0	2	S	0	2	S																			IM							WQS - Basin 2B: Section 12: Class IV: Special Standards: pH
2-MRY000.09	VAV-I37R_MRY01A00	A,C	JU86	0	43	S	0	40	S	0	43	S	2	42	S																					VDH Fish Consumption Advisory (PCB) Data outside 2016 window. WQS - Basin 2B: Section 12: Class IV: Special Standards:
2-MRY002.25	VAV-I37R_MRY01A00	A,B	JU86	0	1	W	0	1	W	0	1	W																			FS							VDH Fish Consumption (PCB) Advisory WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-MRY005.39	VAV-I37R_MRY02A00	A	JU81	0	42	S	0	39	S	0	42	S	1	42	S																					VDH Fish Consumption (PCB) Advisory WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-MRY005.58	VAV-I37R_MRY02A00	A,B	JU81	0	3	S	0	3	S	0	3	S																			FS							01 PCBs 3 sp 05 PCBs 3 sp VDH Fish Consumption (PCB) Advisory WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-MRY009.77	VAV-I37R_MRY02A00	A,B	JU81	0	4	S	0	4	S	0	4	S																			FS							04 PCBs VDH Fish Consumption Advisory (PCB) WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-MRY013.88	VAV-I37R_MRY03A00	FPM	JU81	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	S														WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2-MRY014.78	VAV-I37R_MRY03A00	A,TR	JU81	0	140	S	0	135	S	0	140	S	6	71	S						0	S																WQS - Basin 2A: Section 12: Class IV: Special Standards: pHTrend analysis was performed at 2-MRY014.78 in the 2006 cycle. No statistically significant trends were detected.
2-MRY016.62	VAV-I35R_MRY01A00	A,B	JU76	0	16	S	0	16	S	0	16	S	0	12	S																FS							WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2-MRY029.32	VAV-I33R_MRY01A00	A	JU74	0	13	S	0	13	S	0	12	S	2	12	S																					WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH. No new bacteria data for 2016, full support carries forward.
2-MRY038.29	VAV-I33R_MRY02A04	A,TR	JU71	0	35	S	0	32	S	0	34	S	3	34	S																					WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH. Trend analysis was performed at station 2-MRY038.29 in the 2012 cycle. Statistically significant trends were detected for the following parameter(s): Temperature (decreasing trend) Bacteria de
2-MRY043.64	VAV-I33R_MRY02A04	B	JU71	0	4	S	0	4	S	0	4	S																			FS							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2-MRY-2-SOS	VAV-I33R_MRY01B10	CMON	JU74																											LP							WQS - Basin 2B: Section 12b: Class IV: Special Standards: pH, PWS
2-MRY-C-SOS	VAV-I33R_MRY02A04	CMON	JU71																											LP							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2NGB-CR03-UVA	VAW-I21R_JOB30A02	CMON	JU44							0	1	IN																									
2-NRT001.14	VAW-I27R_NRT02A08	B,A	JU57	0	2	S	0	2	S	0	2	S																			FS	0	2	S				2016 Cycle: Bio 'FS' with two VSCI surveys (2014) with an average score of 73.1. This station was surveyed as a regional reference site based on historical surveys and knowledge that the stream is in a Tier III watershed.
2NRT-BO08-UVA	VAW-I27R_NRT02A08	CMON	JU57							0	1	IN																									
2NRT-BO10-UVA	VAW-I27R_NRT01A02	CMON	JU57							0	1	IN																									
2NSE-AG07-UVA	VAW-I10R_NSE01A16	CMON	JU18							0	1	IN																									
2-OGL000.23	VAW-I08R_OGL01A00	A	JU14	0	12	S	0	12	S	0	12	S	1	12	S																	0	13	IN				Sampled monthly 2013. Cycle last reported: 2006 IR.
2-OGL005.53	VAW-I08R_OGL02A02	B,FPM	JU14	0	2	S	0	2	S	0	2	S																			FS	0	2	IN				2016 Cycle: Two 2013 surveys yield VSCI scores of 67.3 (spring) and 70.1 (fall). Sampled as a 2013 reference station. Probabilistic station 2001-2002 (VAEQ99-001).
2-OTS000.45	VAV-I34R_OTS01A00	A	JU73	2	60	S	0	55	S	0	59	S	24	59	IM																					WQS - Basin 2A: Section 12a: Class VI: Special Standards:
2-PGH002.44	VAV-I37R_PGH01A00	A	JU86	0	12	S	0	12	S	0	12	S	5	12	IM																					WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-PMC000.59	VAW-I09R_PMC01A02	FPM,B	JU21	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	1	O							FS	0	2	S	0	1	IN	VAW05547-316 (2010). Avg. VSCI 77.3.
2PMC-AG01-UVA	VAW-I09R_PMC01A02	CMON	JU21							0	1	IN																									
2PNE-AG04-UVA	VAW-I09R_PNE01A02	CMON	JU24							0	1	IN																									
2-POT000.12	VAW-I11R_POT01A00	A,TR	JU20	0	36	S	0	36	S	0	36	S	3	36	S						0	S										0	36	S				Trend Analysis.
2-POT007.48	VAW-I11R_POT02A02	A	JU19	0	12	S	0	12	S	0	12	S	2	12	S						0	S										0	12	S				2012 IR. E.coli (2/21- S). No additional data.
2-POT030.66	VAW-I10R_POT03A02	A	JU18	2	12	IM	0	12	S	0	12	S	0	12	S						0	S										0	12	IN				2016 pH delist. 2004 (2/4-IM) pH Listed. Data insufficient to delist 2012 no additional data (2/16 total records) beyond 2008 IR. 2006 Temp exceeds in July (2) and Sept. (1). Bacteria Listed 2006 (2/8).
2-POT031.78	VAW-I10R_POT02A02	FPM,B	JU18	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-244. 2 (2009) surveys. Avg. VSCI 74.2.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
2-PTR007.37	VAW-I22R_PTR01B06	B,A	JU49	0	4	S	0	3	S	0	4	S																		FS							5 surveys 2010-2011. VSCI Avg. VSCI 75.9.
2-PTR008.43	VAW-I22R_PTR01B06	B,A	JU49	0	5	S	0	4	S	0	5	S																		FS	0	2	S				2 surveys 2010-2012. VSCI Avg. 75.5.
2-PTY000.36	VAV-I14R_PTY01A00	A	JU30	0	2	S	0	2	S	0	2	S																									WQS - Basin 2A: Section 12: Class V: Special Standards: P&T
2PXT-CR12-UVA	VAW-I21R_PXT01A02	CMON	JU45							1	1	IN/O																									
2-RAM000.26	VAV-I29R_RAM01A00	A	JU62	2	12	IM	0	12	S	0	12	S	0	12	S																							WQS - Basin 2A: Section 12: Class VI: Special Standards: New impairment for Temp in 2016.
2-RAM007.29	VAV-I29R_RAM01A00	A	JU62	0	1	W	0	1	W	0	1	W																									WQS - Basin 2A: Section 12: Class VI: Special Standards: New impairment for Temp in 2016.
2ROE-BO06-UVA	VAW-I18R_SKG20A02	CMON	JU38							0	1	IN																									
2-RWN000.29	VAV-I01R_RWN01A00	A	JU03																																			WQS - Basin 2A: Section 12: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-SBF-1-SOS	VAV-I38R_SBF01A00	CMON	JU82																											LP							SOS data Level II. WQS - Basin 2A: Section 12: Class VI: Special Standards:
2-SHW000.04	VAV-I12R_SHW01A00	A	JU26	0	12	S	0	11	S	0	12	S	0	12	S																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-SHW-SF-CRPA	VAV-I12R_SHW01A00	CMON	JU27	0	19	IN	0	2	IN	0	5	IN	0	15	IN																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-SKG001.04	VAW-I18R_SKG01A00	A	JU38	0	12	S	0	12	S	0	12	S	2	12	S						0	S										0	13	S				E.coli initial 303(d) List 2014.
2SKG-BO05-UVA	VAW-I18R_SKG02A02	CMON	JU38							0	1	IN																									
2-SMH003.43	VAW-I09L_SMH01A02	A,L	JU24	0	68	S	0	44	S	0	22	S	0	7	S						0	S													0	1	IN	Smith Cr. Reservoir Pooled Data: Temp 0 / 68 (S); DO 0 / 44 (S); pH 0 / 22 (S); CHL A 0 / 1 (IN). No additional data.
2SMH-AG03-UVA	VAW-I09R_SMH04A00	CMON	JU24							0	1	IN																									
2-SMR001.52	VAV-I36R_SMR01A00	B	JU77	0	3	IM	0	3	S	1	3	IM																		FS							WQS - Basin 2A: Section 12: Class VI: Special Standards: pH, Temp and pH remain impaired in 2016, no new data.
2SMT-BO07-UVA	VAW-I18R_SMT01A12	CMON	JU39							0	1	IN																									
2SNM-BO01-UVA	VAW-I22R_SNM01A02	CMON	JU48							0	1	IN																									
2SNM-VT21-UVA	VAW-I22R_SNM01A02	CMON	JU48							0	1	IN																									
2SPO-VT16-UVA	VAW-I17R_SPO01A08	CMON	JU36	2	16	S				2	16	IM																									
2-SSC000.25	VAW-I06R_SSC01A02	A	JU12	0	12	S	0	12	S	0	12	S	1	12	S						0	S										0	12	IN				2010 DELIST TEMP. 2014 Ambient station.
2-STH000.21	VAV-I36R_STH01A00	A,B	JU80	0	15	S	0	15	S	0	15	S	0	12	S															FS							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-STH011.28	VAV-I36R_STH02A10	A	JU78	0	12	S	0	11	S	0	11	S	2	11	IM																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-STH014.78	VAV-I36R_STH03A12	A	JU78																																			WQS - Basin 2A: Section 12: Class IV: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-STH-13-SOS	VAV-I36R_STH01A00	CMON	JU80																											MP							SOS data Level II. WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2-STU000.29	VAV-I15R_STU01A00	A	JU33	0	11	S	0	11	S	0	11	S	1	11	S																							WQS - Basin 2A: Section 12: Class IV: Special Standards:
2STV-VT24-UVA	VAW-I10R_STV01A02	CMON	JU18	0	16	S				1	16	S																									
2-TMP002.90	VAV-I14R_TMP01A02	A	JU32																																			WQS - Basin 2B: Section 10: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-TTC001.14	VAW-I19R_TTC01A02	B,A	JU41	0	2	S	0	2	S	0	2	S																		FS	0	2	S				
2VLY-CR05-UVA	VAW-I10R_VLY01A02	CMON	JU18							0	1	IN/O																									
2WAR-GL01-UVA	VAW-I21R_WAR01A02	CMON	JU44							1	1	IN/O																									
2WAR-VT29-UVA	VAW-I21R_WAR01A02	CMON	JU44	0	16	S				16	16	IN/O																									
2-WDS000.12	VAV-I35R_WOS01A00	A,B	JU76	0	4	S	0	3	S	0	4	S																		IM							WQS - Basin 2A: Section 12a: Class IV Special Standards: pH
2-WDS001.12	VAV-I35R_WOS01A00	A	JU76	0	5	S	1	5	IN	0	5	S									0	S															WQS - Basin 2A: Section 12a: Class IV Special Standards: pH
2-WDS002.08	VAV-I35R_WOS01A00	A,B	JU76	0	4	S	0	3	S	0	4	S																		IM							Site degraded since 2006 assessment. WQS - Basin 2A: Section 12a: Class IV Special Standards: pH
2-WKS001.03	VAV-I34R_WKS01A06	A	JU72	0	65	S	0	59	S	0	65	S	15	65	IM																							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2-WKS004.59	VAV-I34R_WKS01A06	A	JU72	0	5	S	0	4	S	0	5	S	1	5	IN/O																							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2-WKS-WKS-5-SOS	VAV-I34R_WKS01A06	CMON	JU72																											LP							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2-WLN007.36	VAV-I09L_WLN01A00	L	JU23	0	148	S	4	78	S	1	148	S	0	12	S						0	S										0	2	S				WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-WLN009.07	VAV-I09R_WLN03A06	A,B	JU23	0	1	W	0	1	W	0	1	W																		FS							WQS - Basin 2A: Section 12: Class VI: Special Standards:
2-WLN-D-CB-VDH	VAV-I09L_WLN01A00	NONA	JU23										1	27	IN																							WQS - Basin 2A: Section 12: Class IV: Special Standards: DCR Beach data from VDH-Level II
2-WLN-D-LB-VDH	VAV-I09L_WLN01A00	NONA	JU23										0	19	IN																							WQS - Basin 2A: Section 12: Class IV: Special Standards: DCR Beach data from VDH-Level II
2-WLN-D-RB-VDH	VAV-I09L_WLN01A00	NONA	JU23										1	19	IN																							WQS - Basin 2A: Section 12: Class IV: Special Standards: DCR Beach data from VDH-Level II

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
2-WLN-Wilson3-SOS	VAV-I09R_WLN03A06	CMON	JU23																											LP							WQS - Basin 2A: Section 12: Class VI: Special Standards:
2-WOS*-12-SOS	VAV-I35R_WOS01A00	CMON	JU76																											HP							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2-WOS*-2-SOS	VAV-I35R_WOS01A00	CMON	JU76																											LP							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2WOS-Woo-11-SOS	VAV-I35R_WOS01A00	CMON	JU76																											LP							WQS - Basin 2A: Section 12a: Class IV: Special Standards: pH
2-WSR001.59	VAV-I01R_WSR01A06	A	JU03																																		WQS - Basin 2A: Section 12: Class IV: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-WST-11-SOS	VAV-I35R_WST01A00	CMON	JU76																											LP							SOS data Level II. WQS - Basin 2A: Section 12b: Class VI: Special Standards: pH, PWS
2-WST-1-SOS	VAV-I35R_WST01A00	CMON	JU76																											LP							SOS data Level II. WQS - Basin 2A: Section 12b: Class VI: Special Standards: pH, PWS
2-XMO000.64	VAV-I32R_XMO01A00	A	JU70	0	1	W	0	1	W	0	1	W																									WQS - Basin 2A: Section 12: Class IV: Special Standards:
2-XMW000.72	VAV-I38L_XMW01A04	L	JU84	0	166	S	0	63	S	0	166	S	0	14	S						0	S											0	2	S			WQS - Basin 2A: Section 12: Class IV: Special Standards: pH
2-XQO000.02	VAV-I34R_XQO01A04	B	JU73																																		WQS - Basin 2A: Section 12a: Class IV: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
2-XSP000.97	VAW-I17R_XSP01A02	FPM	JU36	0	1	IN	0	1	IN	1	1	IN/O	0	1	IN																	0	1	IN	0	1	IN	
2-XUL000.10	VAW-I26R_XUL01A10	B,A	JU55	0	4	S	0	4	S	0	4	S																		J							
2-XUL001.67	VAW-I26R_XUL01A10	FPM,B	JU55	0	2	S	0	2	S	0	2	S	1	1	IN				0	IN	0	S	0	S							IM							VAW05547-168 (2008). Carry Over. 2 surveys 2008. Avg. VSCI 42.4. No 2008 sediment PEC exceedances metals only.
2-XXF000.01	VAV-I38R_XXF01A16	A	JU83	0	2	S	0	2	S	0	2	S																									WQS - Basin 2A: Section 12: Class V: Special Standards:
2-XZQ000.76	VAW-I19R_XZQ01A08	B,A	JU43	0	1	IN	0	1	IN																					IN							2014 DELIST Gen. Std. Delist Benthic- Headwater VSCI not applicable. USFS 6578 Lv. 3 Listed 2008.
2ZAB-4-SOS	VAW-I25R_ZAB01A12	CMON	JU52																											LP							SOS 1 survey 2009 [3D] Lv.2
2-ZAE000.24	VAW-I11R_ZAE01A12	B,A	JU19	0	1	IN	0	1	IN	0	1	IN																			FS							1 survey 2012 VSCI 77.0.
2ZAJ-98-056-UVA	VAW-I19R_ZZZ01A00	CMON	JU43	0	2	S				2	2	IN/O																									
3029	VAW-I18R_TRB01A02	USFS	JU38																											UN							1 survey 2011 (VSCI 75.5) Lv. 3.
3040	VAW-I11R_LLB02A02	USFS	JU20																											UN							4 surveys 2007-2010 (Avg. VSCI 83.3) Lv. 3.
3050	VAW-I17R_SPO01A08	USFS	JU36																											UN							
3057	VAW-I17R_DWN01A08	USFS	JU36																											UN							1 survey 2011 (VSCI 81.2). Lv. 3
3058	VAW-I17R_BSB01A08	USFS	JU36																											UN							1 survey 2011 (VSCI 78.2). Lv. 3
3089	VAW-I17R_SPN02A08	USFS	JU36																											UN							
3091	VAW-I17R_SPO01A08	USFS	JU36																											UN							2 surveys 2007 & 2009-2010 (Avg. VSCI 75.9). Lv. 3.
3096	VAV-I31R_BKN01A02	USFS	JU67																																		Assessment Based on SCI Score - WQS - Basin 2A: Section 5: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
3097	VAV-I31R_XBR01A12	USFS	JU67																																		Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
3098	VAV-I09R_XWC01A12	USFS	JU23																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class IV: Special Standards:
3099	VAV-I09R_XWL01A12	USFS	JU23																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class IV: Special Standards:
5001	VAV-I36R_SMR01A00	USFS	JU77																											FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
5014	VAV-I36R_BMC01A00	USFS	JU78																																		Assessment Based on SCI Score - WQS - Basin 2A: Section 12a: Class VI: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
5026	VAV-I36R_BBC01A02	USFS	JU79																																		Assessment Based on SCI Score - WQS - Basin 2A: Section 12a: Class VI: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
5065	VAV-I37R_BNR01A02	USFS	JU81																																		Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
5095	VAV-I36R_SMR03A10	USFS	JU77																											FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 3: Class VI: Special Standards: pH
5096	VAV-I36R_SMR03A10	USFS	JU77																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards: pH
5097	VAV-I36R_SMR02A02	USFS	JU77																											FS							Assessment Based on SCI Score - WQS - Basin 2B: Section 11d: Class VI: Special Standards:
5124	VAV-I37R_PCR01A02	USFS	JU81																																		Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
5507	VAV-I28R_BLF01A02	USFS	JU60																																		Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
5584	VAV-I28R_XRQ01A02	USFS	JU60																																		Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class IV: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
6006	VAV-I02R_BVN01A02	USFS	JU05																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6008	VAV-I17R_PDS01A02	USFS	JU35																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class V: Special Standards:
6009	VAV-I14R_MRE01A00	USFS	JU32																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6011	VAV-I09R_WLN03A06	USFS	JU23																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class IV: Special Standards:
6015	VAV-I02R_XSB01A02	USFS	JU04																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class V: Special Standards:
6018	VAV-I14R_PNR01A02	USFS	JU32																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6019	VAV-I01R_MYY01A02	USFS	JU03																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6032	VAV-I01R_XSE01A02	USFS	JU02																																		Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
6039	VAV-I01R_JKS01A00	USFS	JU02																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class V: Special Standards:
6043	VAV-I02R_PLB01A12	USFS	JU05																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6059	VAV-I14R_CUN01A02	USFS	JU31																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6060	VAV-I14R_BNY01A02	USFS	JU32																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6062	VAV-I15R_LIK01A02	USFS	JU33																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6065	VAV-I02R_FDR01A02	USFS	JU05																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6068	VAV-I01R_KLY01A02	USFS	JU02																											J							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class VI: Special Standards:
6091	VAV-I02R_XSF01A16	USFS	JU04																											FS							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class IV: Special Standards:
6092	VAV-I02R_XSF01A16	USFS	JU04																											J							Assessment Based on SCI Score - WQS - Basin 2A: Section 12: Class IV: Special Standards:
6515	VAW-I22R_MIU02A02	USFS	JU48																											UN							
6580	VAW-I22R_PTR01B06	USFS	JU49																											UN							2 surveys 2008 & 2010 (Avg. VSCI 75.5). Lv. 3.
6582	VAW-I22R_ZAG01A12	USFS	JU49																											UN							4 surveys 2007-2010 (Avg. VSCI 75.8). Lv. 3.
6583	VAW-I22R_SNM01A02	USFS	JU48																											UN							4 surveys 2007-2010 (Avg. VSCI 79.8). Lv. 3.
6584	VAW-I22R_ZAH02A12	USFS	JU48																											UN							3 surveys 2007 & 2009-2010 (Avg. VSCI 79.5). Lv. 3.
AU04-UVA	VAV-I29R_RDL01A02	NONA	JU62							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
AU05-UVA	VAV-I29R_RRP01A02	NONA	JU62							1	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
AU06-UVA	VAV-I29R_JEA01A02	NONA	JU62							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
AU07-UVA	VAV-I29R_RAM01A00	NONA	JU62							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
AU08-UVA	VAV-I29R_CLH01A16	NONA	JU62							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
AU09-UVA	VAV-I30R_JER01A02	NONA	JU64							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
AU10-UVA	VAV-I30R_STL01A02	NONA	JU63							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
AU29-UVA	VAV-I36R_SUR01A02	NONA	JU77							0	1	W																									WQS - Basin 2A: Section 12a: Class VI Special Standards:
BA01-UVA	VAV-I02R_BLN01A02	NONA	JU06							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA02-UVA	VAV-I02R_BIR01A16	NONA	JU06							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA08-UVA	VAV-I14R_BNY01A02	NONA	JU32							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA09-UVA	VAV-I14R_CUN01A02	NONA	JU31							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA11-UVA	VAV-I14R_DUN02A10	NONA	JU31							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA12-UVA	VAV-I14R_JOO01A10	NONA	JU32							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
BA16-UVA	VAV-I09R_WLN01A06	NONA	JU23							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
BA17-UVA	VAV-I09R_WNL01A02	NONA	JU23							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA18-UVA	VAV-I09R_WLN01A06	NONA	JU23							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
BA21-UVA	VAV-I02R_LSR01A02	NONA	JU06							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA22-UVA	VAV-I02R_WLH01A16	NONA	JU06							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA23-UVA	VAV-I02R_FDR01A02	NONA	JU05							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA24-UVA	VAV-I02R_BVN01A02	NONA	JU05							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
BA25-UVA	VAV-I02R_SAW01A16	NONA	JU05							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
BA26-UVA	VAV-I02R_SPI01A16	NONA	JU05							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
BA27-UVA	VAV-I02R_JIR01A16	NONA	JU05							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
HI12-UVA	VAV-I12R_BES01A00	NONA	JU27							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
HI13-UVA	VAV-I12R_LPB01A16	NONA	JU27							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
HI14-UVA	VAV-I12R_RPB01A16	NONA	JU27							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
HI15-UVA	VAV-I13R_XDR01A16	NONA	JU28							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
M036-UVA	VAV-I28R_EKE02A10	NONA	JU60							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
M037-UVA	VAV-I28R_XRS01A02	NONA	JU60							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
M038-UVA	VAV-I28R_HLG01A02	NONA	JU60							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
M039-UVA	VAV-I28R_LIE01A02	NONA	JU60							1	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
RB01-UVA	VAV-I36R_NSB01A10	NONA	JU79							0	1	W																									WQS - Basin 2A: Section 12a: Class VI Special Standards: pH
RB02-UVA	VAV-I36R_NTL01A02	NONA	JU79							0	1	W																									WQS - Basin 2A: Section 12a: Class VI Special Standards: pH
RB03-UVA	VAV-I36R_ISH02A10	NONA	JU79							0	1	W																									WQS - Basin 2A: Section 12a: Class VI Special Standards: pH
RB04-UVA	VAV-I36R_BMC01A00	NONA	JU78							0	1	W																									WQS - Basin 2A: Section 12a: Class VI Special Standards:
RB05-UVA	VAV-I36R_DHK01A16	NONA	JU79							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards: pH
RB06-UVA	VAV-I36R_BBC01A02	NONA	JU79							0	1	W																									WQS - Basin 2A: Section 12a: Class VI Special Standards:
RB07-UVA	VAV-I31R_XBA01A10	NONA	JU67							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
RB08-UVA	VAV-I30R_XGR01A06	NONA	JU68							1	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards:
RB09-UVA	VAV-I30R_GUY01A10	NONA	JU68							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
RB11-UVA	VAV-I38R_SBF01A00	NONA	JU82							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards: pH
RB12-UVA	VAV-I28R_CEC02A10	NONA	JU59							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
RB13-UVA	VAV-I37R_NFB01A16	NONA	JU81							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards: pH
RB14-UVA	VAV-I37R_SFB01A16	NONA	JU81							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards: pH
RB15-UVA	VAV-I37R_PCR01A02	NONA	JU81							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards: pH
RB16-UVA	VAV-I37R_LWR02A10	NONA	JU81							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards: pH
RB17-UVA	VAV-I37R_XXS01A04	NONA	JU81							0	1	W																									WQS - Basin 2A: Section 12: Class IV Special Standards: pH
RB18-UVA	VAV-I37R_PGP02A10	NONA	JU81							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards: pH
RB19-UVA	VAV-I28R_EKE02A10	NONA	JU60							0	1	W																									WQS - Basin 2A: Section 12: Class VI Special Standards:
RB20-UVA	VAV-I34R_SNL01A16	NONA	JU72							0	1	W																									WQS - Basin 2A: Section 12a: Class IV Special Standards: pH
RB26-UVA	VAV-I36R_LIJ01A02	NONA	JU78							0	1	W																									WQS - Basin 2A: Section 12a: Class VI Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
James River Basin (Upper)																																					
RB28-UVA	VAV-I37R_BLV01A04	NONA	JU81							0	1	W																										WQS - Basin 2A: Section 12: Class IV Special Standards: pH
RB29-UVA	VAV-I31R_ALU02A10	NONA	JU67							0	1	W																										WQS - Basin 2A: Section 12: Class IV Special Standards:
RB30-UVA	VAV-I31R_BRT02A02	NONA	JU67							0	1	W																										WQS - Basin 2A: Section 12: Class VI Special Standards:
SK01-UVA	VAV-I01R_XXJ01A16	NONA	JU01	0	13	IN				1	14	IN																										WQS - Basin 2A: Section 12: Class IV Special Standards:
VA 555-UVA	VAV-I30R_LIL01A02	NONA	JU66	0	2	IN				0	2	IN																										WQS - Basin 2A: Section 12: Class VI Special Standards:
VT10-UVA	VAV-I14R_LAA01A02	NONA	JU31	0	15	IN				2	15	IN/O																										WQS - Basin 2A: Section 12: Class VI: Special Standards:
VT11-UVA	VAV-I14R_MRE01A00	NONA	JU32	0	16	IN				5	16	IN/O																										WQS - Basin 2A: Section 12: Class VI Special Standards:
VT12-UVA	VAV-I14R_PNR01A02	NONA	JU32	3	16	IN/O				0	16	IN																										WQS - Basin 2A: Section 12: Class VI Special Standards:
VT13-UVA	VAV-I14R_XXP01A04	NONA	JU31							0	1	W																										WQS - Basin 2A: Section 12: Class VI Special Standards:
VT14-UVA	VAV-I16R_LWL02A10	NONA	JU34	3	16	IN/O				4	16	IN/O																										WQS - Basin 2A: Section 12: Class VI Special Standards:
VT15-UVA	VAV-I16R_XRI01A02	NONA	JU34	3	16	IN/O				1	16	IN																										WQS - Basin 2A: Section 12: Class VI: Special Standards:
VT33-UVA	VAV-I30R_GUY01A10	NONA	JU68	1	16	IN				0	16	IN																										WQS - Basin 2A: Section 12: Class VI Special Standards:
VT34-UVA	VAV-I33R_LAR01A10	NONA	JU71	1	16	IN				6	16	IN/O																										WQS - Basin 2A: Section 12a: Class VI Special Standards: pH, PWS
VT38-UVA	VAV-I29R_RAM01A00	NONA	JU62	0	16	IN				0	16	IN																										WQS - Basin 2A: Section 12: Class VI Special Standards:
VT41-UVA	VAV-I36R_SMR01A00	NONA	JU77	3	16	IN/O				7	16	IN/O																										WQS - Basin 2A: Section 12a: Class VI Special Standards: pH
VT68-UVA	VAV-I36R_SMR01A00	NONA	JU77							0	1	W																										WQS - Basin 2A: Section 12a: Class VI Special Standards: pH
VT69-UVA	VAV-I36R_CHM01A02	NONA	JU77							0	1	W																										WQS - Basin 2A: Section 12a: Class VI Special Standards: pH
VT70-UVA	VAV-I36R_XRZ01A02	NONA	JU77							0	1	W																										WQS - Basin 2A: Section 12a: Class VI Special Standards: pH
VT71-UVA	VAV-I36R_MBC01A02	NONA	JU77							0	1	W																										WQS - Basin 2A: Section 12a: Class VI Special Standards:
VT72-UVA	VAV-I36R_HOB01A10	NONA	JU77							0	1	W																										WQS - Basin 2A: Section 12a: Class VI Special Standards:
VT73-UVA	VAV-I36R_XRY01A02	NONA	JU77							0	1	W																										WQS - Basin 2A: Section 12a: Class VI Special Standards:
VT74-UVA	VAV-I36R_SMR01A00	NONA	JU77							0	1	W																										WQS - Basin 2A: Section 12a: Class VI Special Standards: pH
VT76-UVA	VAV-I28R_BLF01A02	NONA	JU60	0	10	IN				12	12	IN/O																										WQS - Basin 2A: Section 12: Class IV Special Standards:

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
03165500	VAS-N08R_NEW02B00	USGS	NE21																		0	S										0	14	S				Carryover from 2014 IR: New River At Ivanhoe, VA Water Toxic Cl 12 measurements
03167000	VAS-N11R_RDC03B04	USGS	NE31																		0	S										0	14	S				Carryover from 2014 IR: Reed Creek At Grahams Forge, VA Water Toxic Cl 12 measurements
7001	VAS-N09R_KLN01A00	USFS	NE22																												UN							Carryover from VSCI: 5/7/2008 85
8023	VAS-N26R_DML01A00	USFS	NE70																												UN							VSCI: 05/12/2012 75 05/20/2011 64 05/20/2010 77 06/07/2007 74
8128	VAW-N28R_SNC05A00	USFS	NE75																												UN							3 surveys 2010-2012. (Avg. VSCI 82.0). Lv. 3.
8145	VAW-N28R_XFJ01A12	USFS	NE75																												UN							2 surveys 2008-2009 (Avg. VSCI 66.6). Lv. 3
8160	VAS-N31R_LWC01A04	USFS	NE77																												UN							Carryover from Class V VSCI: 05/20/2008 71.33 05/23/2007 78.63
8165	VAW-N28R_LLB01A04	USFS	NE75																												UN							5 surveys 2007 & 2009-2012 (Avg. VSCI 75.3). Lv.3
9000	VAS-N01R_HTN01A98	USFS	NE02																												UN							Carryover from VSCI: 6/05/2007 80
9003	VAS-N09R_DEF01A02	USFS	NE23																												UN							VSCI: 5/05/2009 90
9004	VAS-N06R_BOU01A02	USFS	NE18																												UN							VSCI: 5/05/2009 84
9005	VAS-N02R_WLS01A04	USFS	NE03																												UN							Carryover from Class VI VSCI: 5/14/2008 81 6/07/2007 74
9008	VAS-N02R_LWN01A02	USFS	NE03																												UN							Carryover from VSCI: 6/07/2007 88
9018	VAS-N02R_WLS02A02	USFS	NE03																												UO							Carryover from VSCI: 6/05/2007 57
9019	VAS-N02R_BWC01A02	USFS	NE03																												UN							Carryover from VSCI: 5/14/2008 86 6/05/2007 85
9068	VAS-N09R_DWF01A02	USFS	NE23																												UN							VSCI: 5/05/2009 85
9074	VAS-N09R_FMC01A02	USFS	NE23																												UN							VSCI: 5/05/2009 88
9090	VAS-N08R_PMB01A04	USFS	NE21																												UN							Carryover from VSCI: 4/30/2008 82
9-ADR000.13	VAW-N35R_ADR01A00	A,TM	NE85	0	12	S	0	12	S	0	12	S	2	12	IM						0	S										0	12	S				Initial Listing 2010 IR.
9-BBR1-NCNR	VAS-N09R_BBR01A12	CMON	NE23	0	11	S	0	6	S		11	IN		8	IN																						At Cedar Springs Road SR 749, Additional Level II pH 0/11 3D EC 2/8 3C
9BCC-PU04-UVA	VAW-N16R_BMK02A02	CMON	NE42							0	1	IN																										2016 Cycle: Temp and pH are Level II. One 2010 pH measurement.
9-BCK000.74	VAW-N22R_BCK01A00	A,TM	NE61	0	12	S	1	12	S	0	12	S	5	12	IM						0	S										0	12	S				Back Creek Bacteria [Fed ID 24564] and Benthic [Fed. ID 24565] TMDL Studies U.S. EPA approved 6/21/2004. SWCB approved 12/02/2004. Bacteria/Benthic Implementation Plan SWCB approved 7/31/2008. Bacteria originally 303(d) Listed 1996. Benthic originally
9-BCK009.47	VAW-N22R_BCK01A00	A,B,TM,TR	NE61	0	14	S	1	14	S	0	14	S	12	12	IM						0	S									IM	1	12	S				4 surveys 2010-2011. Avg. VSCI 32.6. Back Creek Bacteria [Fed ID 24564] and Benthic [Fed. ID 24565] TMDL Studies U.S. EPA approved 6/21/2004. SWCB approved 12/02/2004. Bacteria/Benthic Implementation Plan SWCB approved 7/31/2008.
9-BCK015.88	VAW-N22R_BCK02A08	B,TM,FPM	NE61	0	4	S	0	4	S	0	4	S																			IM							
9-BCK015.98	VAW-N22R_BCK02A08	A,B,TM	NE61	0	16	S	1	16	S	0	16	S	8	13	IM				0	IN	0	S									IM	0	14	S	0	1	IN	4 surveys 2011 (RB)-2012 (FPM). Avg. VSCI 42.9. No 2012 sediment collection.
9-BFK000.02	VAS-N36R_BFK01A06	SS	NE86	0	1	IN	0	1	IN	0	1	IN																										
9-BIC000.14	VAW-N21R_BIC01A02	A,TM,B	NE54	2	14	IM	0	14	S	0	14	S	6	12	IM						0	S									FS	0	14	S				Temp re-Listed 2014. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. 2010 IR E.coli exceeds in 4/12- 'IM'. 2004 Temp °C Listed.
9-BMK001.11	VAW-N16R_BMK01A02	A,B	NE42	0	14	S	0	14	S	0	14	S	2	12	IM						0	S									FS	0	14	S				2 surveys 2011. Avg. VSCI 68.5.
9BMK-1-NCNR	VAW-N16R_BMK01A02	CMON	NE42	0	6	S	0	6	S	0	6	S	0	6	S																						DO, Temp & pH Lv. 3 'FS'/E.coli [3C] Lv. 2.
9BMK-PU03-UVA	VAW-N16R_BMK02A02	CMON	NE42							0	1	IN																										
9BMK-VT48-UVA	VAW-N16R_BMK02A02	CMON	NE42	2	15	IM				0	16	S																										
9-BPB003.17	VAS-N36R_BPB01A06	TM	NE86	0	1	IN	0	1	IN	0	1	IN																										Near state line downstream resurgence; part of RARE study in cooperation with WVDEP.
9-BRF017.34	VAS-N14R_BRF01A04	B	NE38	0	2	S	0	2	S	0	2	S																			FS	0	2	IN				
9-BRL1-NCNR	VAS-N02R_BRL01A10	CMON	NE07	0	33	S				0	2	S	20	43	IM																								Carryover from 2014 SR 711 parking lot at the Bridle Creek low water bridge, Additional Level II 2/1 violations 3C
9-BRU003.59	VAS-N06R_BRU01A08	A	NE18	0	12	S	0	12	S	0	12	S	3	12	IM																	0	12	S				Rt. 94 bridge #1010 off 52
9-BSH000.05	VAW-N21R_BSH01A04	A,B	NE52	0	15	S	0	15	S	0	15	S	6	11	IM						0	S									FS	0	11	S				4 surveys 2009-2010. Avg. VSCI 66.3. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. Bacteria '04 Listed for FC.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
9-BST064.69	VAS-N37R_BST01A96	C	NE88																		3	IM							3	IM								2014 fish collections: White Sucker 46.653 Carp 1178.536 Carp 1244.441
9-BST065.06	VAS-N37R_BST01A96	SS	NE88	0	1	IN	0	1	IN	0	1	IN																										Downstream RR trestle in WV
9-BST066.80	VAS-N36R_BST04A02	A,B,TR,TM	NE86	0	30	S	0	29	S	0	30	S	11	30	IM																IM	1	30	S				SR 717 bridge off Rt 102 @ gage Carryover from VSCI: 11/06/2008 31.66 05/28/2008 26.05
9-BST069.66	VAS-N36R_BST04A02	C	NE86																										3	IM								2014 Fish collection: White Sucker 32.138 Carp 23.582 Carp 33.317
9-BST072.65	VAS-N36R_BST04B02	SS	NE86	0	1	IN	0	1	IN	0	1	IN																										Downstream Bluefield WTP, @ withdrawal
9-BST073.32	VAS-N36R_BST05A02	C	NE86																		0	S							0	S								2014 fish collection for PCB: Rock bass 0.000 White Sucker 2.280 VDH maintains a fish consumption ban for carp and an advisory for white sucker, rock bass, and largemouth bass of no more than 2 meals per month due to PCBs in fish tissue.
9-BST10-NCNR	VAS-N36R_BST05A02	CMON	NE86	0	11	S	0	11	S		12	IN		11	IN																								Off of Route 460 at unnamed street bridge, EC 8/11
9-BST1-NCNR	VAS-N36R_BST05A02	CMON	NE86	0	10	S		10	S		10	IN		10	IN/O																								South 460/19 left onto Augenbaugh bridge, Level II EC 7/12
9-BST2.2-NCNR	VAS-N37R_LRR01A94	CMON	NE88	0	8	S	0	8	S		8	IN		8	IN/O																								Hwy 102 sample on bridge .10 from VA/WV line, EC 8/8
9-BST2-NCNR	VAS-N37R_LRR01A94	CMON	NE88	0	2	S	0	2	S		2	IN		2	IN/O																								On Hwy 102 77.5 yards from State Route 741 EC 1/2
9-BST3.2-NCNR	VAS-N36R_BST04A02	CMON	NE88	0	3	S	0	3	S		3	IN		3	IN/O																								0.12 Miles N on Hwy 102 from state route 643 EC 2/3
9-BST3-NCNR	VAS-N36R_BST04A02	CMON	NE88	0	7	S	0	7	S		7	IN		7	IN/O																								Where SR 643 and 102 come together, EC 7/7
9-BST4-NCNR	VAS-N36R_WVC01A06	CMON	NE86	0	10	S	0	10	S		10	IN		10	IN/O																								From Trail of the Lonesome Pine/19 turn onto Mill St. at the first low water bridge, Additional Level II E.coli 6/10
9-BST5-NCNR	VAS-N36R_BST03A00	CMON	NE86	0	9	S	0	9	S		9	IN		10	IN/O																								Camp Joy Road at first bridge from Rt 19 S, Additional Level II E.coli 4/10
9-CAB000.02	VAS-N01R_CAB01A02	B	NE02	0	2	S	0	2	S	0	2	S																			FS							Class VI East of Mount Rogers School, off Rt. 58; just above con. w/Helton Creek, Class VI VSCI: 10/24/2011 84.97 06/01/2011 80.34
9-CBC001.00	VAW-N18R_CBC01A00	A,B,TM	NE58	0	12	S	0	12	S	0	12	S	4	12	IM						0	S									IM	1	12	S				2 surveys 2008. Avg. VSCI 55.0. Bacteria [Fed ID: 18594 / 23406] & Benthic[Fed ID 18595 / 23406] Crab Creek General Standard - Benthic TMDL Study U.S. EPA approved 8/10/2004. SWCB approved 12/02/2004.
9-CBC004.38	VAW-N18R_CBC03A00	A,B,TM	NE58	0	14	S	0	14	S	0	13	S	4	12	IM						0	S									IM							2 surveys 2008. Avg. VSCI 53.0. No additional data beyond the 2010 IR where Ecoli exceeds in 14 / 35- 'IM'. Bacteria & Benthic (Sediment) TMDLs Approved 08/10/2004. No additional data beyond the 2010 IR.
9-CBC006.35	VAW-N18R_CBC04A00	A,B,TM	NE58	0	14	S	0	14	S	0	13	S	4	12	IM						0	S									IM							2 surveys 2008. Avg. VSCI 39.4. No additional data beyond 2010 IR; Carried Status to '08. Bacteria & Benthic (Sediment) TMDLs Approved 08/10/2004.
9-CBC007.55	VAW-N18R_CBC04A00	B,TM	NE58	0	1	IN	0	1	IN	0	1	IN																			IM							
9-CBC009.81	VAW-N18R_CBC04A00	A,TM	NE58																																				Bacteria Impairment carries. No additional data beyond the 2008 IR where E.coli exceeds in 4 / 15- 'IM'. Bacteria & Benthic (Sediment) TMDLs Approved 08/10/2004.
9-CLF000.06	VAS-N32R_CLF01A08	A	NE79	0	12	S	0	12	S	0	12	S	3	12	IM																		0	12	S				SR 665 bridge #6114 off Rt 52, Class V
9-CNL000.01	VAW-N18R_CNL01A02	A,TM	NE57	0	12	S	0	12	S	0	12	S	1	12	IM						0	S											0	12	S				2016 IR E.Coli exceedance of >2000 cfu/100 ml. 2010 IR E.coli exceeds in 4/12- 'IM'.
9-CPL2-NCNR	VAS-N09R_CPL02A98	CMON	NE23	0	14	S	0	14	S		14	IN		14	IN																								heading North on Hwy 21 in Speedwell turn right on SR 619/Saint Peters Rd. Travel 2 miles and monitoring site at bridge, Level II pH 3D EC 3C
9-CPL4-NCNR	VAS-N09R_CPL01A04	CMON	NE22	0	1	IN	0	1	IN		1	IN		1	IN																								One mile upstream of confluence with Big Spring Creek, Class VI, Additional Level II pH 1/ 0 viol 3D EC 1/ 0 viol 3D
9-CRK003.00	VAS-N07R_CRK01A98	A	NE20	0	12	S	0	12	S	0	12	S	4	12	IM																		0	12	S				SR 635 bridge, Class VI
9-CRK020.79	VAS-N07R_CRK01A04	A	NE20	0	12	S	0	12	S	0	12	S	3	12	IM																		0	12	S				near Woodlawn SR 620 bridge #6490, Class VI
9CRV-98-050-UVA	VAW-N29R_CRV01A02	CMON	NE83	0	2	S				2	2	IN/O																											2016 Cycle: Temp and pH are Level II. Two temp and pH measurements (2011, 2012). Both pH measurements "observed effects" at 4.9 SU.
9-CST002.64	VAS-N06R_CST01A94	A,B	NE17	0	14	S	0	12	S	0	14	S	3	12	IM																FS	1	12	S				SR 793 bridge #6002 off SR 607 off 721 VSCI: 05/13/2010 67.38 04/28/2009 66.88

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
9-CST005.73	VAS-N06R_CST01A94	FPM,PA,B	NE17	0	4	S	0	4	S	0	4	S	0	1	IN	0	1	NA	0	S	0	S	0	S							J	0	2	S				SE Chestnut Yard VSCI: 10/22/2014 65.92 05/06/2014 49.57 11/16/2009 70.20 04/28/2009 51.06 Manganese exceeded PWS standard in one sample.
9-CST012.63	VAS-N06R_CST02A94	FPM,B	NE17	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S									IM	0	2	S				Pvt. Bridge. Off SR 608 off 97 VSCI: 10/03/2013 50.78 04/24/2013 56.90
9-CST012.75	VAS-N06R_CST02A94	PA	NE17	0	12	S	0	12	S	0	12	S	6	12	IM																	0	12	S				Pvt. Bridge. off SR 608 off 97
9-CVR003.88	VAS-N12R_CVR01A00	A	NE30	0	11	S	0	11	S	0	11	S	5	11	IM																	0	11	S				SR 647 bridge #6030 off Rt 610
9-CVR013.36	VAS-N12R_CVR01A00	A	NE30	0	1	IN	0	1	IN	0	1	IN	0	1	IN																	0	1	IN				SR 603 bridge #6005, Class V
9-DDD001.00	VAW-N20R_DDD01A00	A,TM	NE51	3	24	IM	0	24	S	0	24	S	9	24	IM						0	S										0	24	S				Dodd Creek Bacteria TMDL Study U.S. EPA approved on 12/11/2002. Fed ID 9456 / 23407. SWCB approved 6/17/2004. Bacteria Implementation Plan complete 7/2007. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID
9-DDD002.62	VAW-N20R_DDD01A00	A,TM,C	NE51	3	24	IM	0	24	S	0	24	S	12	24	IM						0	S	0	S	1	O	0	S				0	24	S				Dodd Creek Bacteria TMDL Study U.S. EPA approved on 12/11/2002. Fed ID 9456 / 23407. SWCB approved 6/17/2004. Bacteria Implementation Plan complete 7/2007. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID
9-DDD004.64	VAW-N20R_DDD02A00	A	NE51	1	9	IN	0	9	S	0	9	S	2	9	IM				0	S	0	S																No additional data beyond the 2008 IR where E.coli exceed in 2 / 9- 'IM'. Bacteria '98 Listed station. Dodd Creek Bacteria TMDL Study U.S. EPA approved on 12/11/2002. Fed ID 9456 / 23407. SWCB approved 6/17/2004. Bacteria Implementation Plan complete
9DDD-1-NCNR	VAW-N20R_DDD03A02	CMON	NE51	0	7	IM	0	7	S	0	7	S	0	7	IN																							NCNR data DO and pH Lv. 3- 'FS'; Temp 2012 Lv. 3 'IM'. E.coli [3C] Lv. 2. Dodd Creek Bacteria TMDL Study U.S. EPA approved on 12/11/2002. Fed ID 9456 / 23407. SWCB approved 6/17/2004. Bacteria Implementation Plan complete 7/2007.
9-DDW000.02	VAW-N20R_DDW01A02	A,TM	NE51	3	24	IM	0	24	S	0	24	S	13	24	IM						0	S										0	24					Dodd Creek Bacteria TMDL Study U.S. EPA approved on 12/11/2002. Fed ID 9456 / 23407. SWCB approved 6/17/2004. Bacteria Implementation Plan complete 7/2007. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID
9-DEN000.03	VAS-N09R_DEN01A10	PA,TM,B	NE24	0	12	S	0	12	S	0	12	S	4	12	IM																IM	0	12	S				South of Porters Crossroads, Class VI Biological monitoring VSCI: 09/05/2013 54.70 04/18/2013 57.54 06/12/2008 60.44
9-DEN000.39	VAS-N09R_DEN01A10	FPM,TM,B	NE24	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S									IM	0	2	S				South of Porters Crossroads, Class VI. VSCI: 09/05/2013 54.70 04/18/2013 57.54
9DIS-GL10-UVA	VAW-N28R_SNC20A14	CMON	NE75							1	1	IN/O																										
9-DPW002.31	VAS-N14R_DPW01A10	FPM,B	NE40	0	1	IN	0	1	IN	0	1	IN											0	S							FS							Carryover from South of Bullard Knob VSCI: 04/23/2008 81.29
9DXN-GL24 -UVA	VAW-N28R_SNC20A14	CMON	NE75							1	1	IN/O																										
9-DYF000.07	VAS-N33R_DYF01A12	A,TM	NE80	3	24	IM	0	24	S	0	24	S	4	24	IM																	0	12	S				Off 52 on SR 613 bridge #6124 @Rocky Gap, Class VI
9-DYR1-NCNR	VAS-N09R_DYR01A04	CMON	NE23	0	6	S	0	5	S		6	IN		6	IN																							4,000 feet downstream of west and east forks, Additional Level II pH 3D EC 3D
9-ECM001.01	VAS-N05R_ECM01A14	FPM,PA,B	NE13	0	14	S	0	14	S	0	14	S	10	13	IM	0	1	NA	0	S	0	S	0	S							FS	0	14	S				Off SR 658 VSCI: 08/29/2011 66.58 05/31/2011 73.01 Fe exceeded PWS standard in one sample.
9-ECN2-NCNR	VAS-N05R_ECN01A02	CMON	NE13	0	4	S	0	4	S		4	IN		4	IN																							Site 20 yards upstream from confluence of the South and North Branches, Class VI
9-ECS1-NCNR	VAS-N05R_ECS01A02	CMON	NE13	0	5	S	0	5	S		5	IN		5	IN																							Site 10 yards upstream from confluence of the South and North Branches, Class VI
9-EKC000.11	VAS-N05R_EKC01A00	A	NE14	0	12	S	0	12	S	0	12	S	3	12	IM																	1	11	S				SR 274 bridge #1009 off Rt 94
9-EKC010.47	VAS-N05R_EKC02A00	A	NE14	0	12	S	0	12	S	0	12	S	6	12	IM																	1	11	S				SR 654 bridge #6031 off SR 660, Class V
9-EKC012.13	VAS-N05R_EKC03A02	A	NE13	0	12	S	0	12	S	0	12	S	8	12	IM																	1	11	S				Wooden bridge on SR 696 off Rt 21, Class V
9-EKC013.81	VAS-N05R_EKC03A02	B,TM	NE13	0	2	S	0	2	S	0	2	S																			J							SW of Lower Elk Creek, Class V VSCI: 05/13/2010 63.22 06/10/2009 51.32 10/13/2005 30.03 04/19/2005 56.00 In EDAS as 9-ELK013.81
9-EKC017.51	VAS-N05R_EKC03A02	A,TM	NE13	0	12	S	0	12	S	0	12	S	7	12	IM																	0	11	S				Carryover from SR 658 bridge # 6041 on Rt 663, Class V
9-EWL000.06	VAS-N26R_EWL01A10	A,TM	NE68	0	24	S	0	24	S	0	24	S	4	23	IM																	0	12	S				SR 612 Bridge #6055 crossing near Holly Brook

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																						
9FEP-FL02-UVA	VAW-N20R_ZZZ01A00	CMON	NE50							0	1	IN																										
9-FMC3-NCNR	VAS-N09R_FMC01A02	CMON	NE23	0	1	IN	0	1	IN		1	IN		1	IN																							At intersection with Francis Mill and Cripple Creek Road, Additional Level II pH 3D EC 3D
9-FRS000.16	VAS-N04R_FRS01A10	FPM,B	NE09	0	2	S	0	2	S	0	2	S	0	1	IN								0	S							FS							Carryover from 2014 WQA: VSCI: 10/08/2008 80.27 04/01/2008 78.39
9-FXC017.18	VAS-N03R_FXC01B02	B,TM	NE05	0	2	S	0	2	S	0	2	S																			FS							Upstream of horse camp at Appalachian Trail, Class VI VSCI: 11/24/2009 85.64 06/09/2009 78.40
9-GLN000.13	VAS-N10R_GLN01A04	A	NE26	0	24	S	0	24	S	1	24	S	2	24	S																							SR 625 bridge #6023, Class V
9-GRP001.29	VAS-N10R_GRP01A14	B,FPM	NE26	0	1	IN	0	1	IN	0	1	IN	0	1	IN	0	1	NA	0	S	0	IN									W	0	1	IN				An intermittent stream, north of SR 656, Class VI VSCI: 04/24/2012 79.02
9-GSC000.03	VAS-N14R_GSC01A08	A	NE40	0	11	S	0	11	S	0	11	S	4	12	IM																	0	12	S				SR 764 bridge #6194 off SR 693, Class VI
9-GSC000.44	VAS-N14R_GSC01A08	FPM,B	NE40	0	2	S	0	2	S	0	2	S											0	S							FS							Carryover from VSCI: 11/13/2007 69.81 05/02/2007 66.01
9-HCC001.40	VAS-N31R_HCC01A00	A	NE77	0	11	S	0	11	S	0	11	S	2	11	IM																	0	11	S				Bridge #1009 on Rt. 52/21 off I77, Class VI
9-HCC005.57	VAS-N31R_HCC01A00	A	NE77	0	11	S	0	11	S	0	11	S	1	11	S																	0	11	S				Bridge #6067 on Rt. 646 off Rt. 615, Class VI VSCI: 10/13/11
9-HCC007.83	VAS-N31R_HCC01A00	B,TM	NE77	0	2	S	0	2	S	0	2	S																			J							Last bridge before Rt. 618 is gated, Class VI VSCI: 10/13/2011 57.23 05/05/2011 64.04
9-HOL000.74	VAS-N10R_HOL01A12	A	NE26	0	12	S	0	12	S	0	12	S	8	12	IM																	0	12	S				Boyer Well Drilling private bridge off Rt 617, Class VI
9-ISL003.05	VAS-N14R_ISL01A12	FPM,PA,B	NE39	0	2	S	0	2	S	0	2	S	1	1	IN/O	0	1	NA	0	S	0	S	0	S							J	0	2	S				Between SR 886 and US 221 VSCI: 10/12/2010 72.87 05/13/2010 54.82 Fe exceeded PWS standard in one sample.
9-KBL001.67	VAS-N26R_KBL01A00	A,TM,CMON	NE70	0	24	S	0	24	S	0	24	S	3	23	IM																	0	12	S				bridge Rt 667, Bland Correctional Farm
9-KBL007.29	VAS-N26R_KBL02A00	TM	NE70	0	24	S	0	24	S	0	24	S	4	23	IM																	0	12	S				STEEL BRIDGE ON RT 607, 1 MI OFF RT 606
9-KBL1-NCNR	VAS-N26R_KBL01A00	CMON	NE70	0	51	S	0	53	S		53	IN		51	IN/O																							Off Wilderness Rd. in Bland County, 0.08 miles upstream from 42 Bridge, Additional Level II pH 3D EC 9/51 3C
9-KNB000.03	VAS-N05R_KNB01A06	A,TM	NE14	0	12	S	0	12	S	0	12	S	7	12	IM																	1	11	S				Bridge # 6028 on 650 off Rt 660, Class V
9-KNB003.98	VAS-N05R_KNB01A06	FPM,B	NE14	0	2	S	0	2	S	0	2	S							0	IN			0	S							FS							Carryover from East of The Pilot VSCI: 10/14/2008 64.46 04/01/2008 66.78
9-KNS002.44	VAS-N09R_KNS01A02	FPM,PA,B	NE22	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S	0	S							FS	0	2	S				S of Groseclose Chapel, Class VI VSCI: 11/03/2009 78.18 05/27/2009 81.53
9-LAC000.56	VAS-N33R_LAC01A00	A,TM	NE80	0	24	S	0	24	S	0	24	S	4	24	IM																	0	12	S				Bridge #6120 on Rt. 652 off Rt. 628, Class VI
9-LAC002.17	VAS-N33R_LAC01A04	A	NE80	0	24	S	0	24	S	0	24	S	4	24	IM																	0	12	S				Private bridge @Laurel Fork Baptist Church @Rocky Gap, Class V
9LAU-CR13-UVA	VAW-N23R_LAU02A02	CMON	NE64							1	1	IN/O																										
9LCR-VT32-UVA	VAW-N24R_LCR01A00	CMON	NE74	0	16	S				12	16	IN/O																										
9-LFK005.39	VAS-N33R_LAC01B04	B,TM	NE80	0	2	S	0	2	S	0	2	S																			FS							Near Camp Laurel, Class VI VSCI: 12/07/2009 68.73 05/21/2009 77.08 Historically: 10/28/2008 68.70 04/16/2008 76.77 9-LAC005.39 is correct station ID.
9LLB-GL15-UVA	VAW-N28R_LLB01A04	CMON	NE75							0	1	IN																										
9-LLK005.25	VAS-N13R_LLK01A04	A	NE35	0	11	S	0	11	S	0	11	S	1	12	S																	0	12	S				Bridge. # 6052 on Rt. 654 off Rt. 58, Class VI
9-LLL000.05	VAW-N21R_LLL01A04	A,B	NE52	0	16	S	0	16	S	0	16	S	5	12	IM						0	S									FS	0	12					4 surveys 2009-2010 & 2012. Avg. VSCI 66.8. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. Bacteria '04 Listed. No additional da
9LMK-PU02-UVA	VAW-N16R_LMK01A02	CMON	NE42							0	1	IN																										
9-LPR3-NCNR	VAS-N08R_LPR01A12	CMON	NE32	0	14	S	0	15	S		15	IN		15	IN/O																							3,100 feet upstream of I-81 50 feet upstream of first bridge of Conners Valley Road, Additional Level II pH 3D EC 12/15 3C
9-LRI001.62	VAS-N15R_LRI01A98	A	NE34	0	12	S	0	12	S	0	12	S	4	11	IM																	0	11	S				Bridge. # 6176 on Rt. 607 off 100, Class VI

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
9-LRI017.64	VAS-N15R_LRI02A08	A	NE34	3	12	IM	0	12	S	0	12	S	5	12	IM																	0	12	S				Low water Bridge. on Rt. 772 off 749 off 52, Class VI
9-LRI023.48	VAS-N15R_LRI02A08	A	NE34	0	12	S	0	12	S	0	12	S	6	12	IM																	0	12	S				Bridge. # 6167 on Rt. 881 off 52, Class VI
9-LRI031.58	VAS-N15R_LRI01B98	A	NE33	0	12	S	0	12	S	0	12	S	3	12	IM																	0	12	S				Bridge. # 6107 on Rt. 703 off 58/221
9-LRR001.39	VAS-N37R_LRR01A94	A	NE88	0	12	S	0	11	S	0	12	S	10	12	IM																	0	12	S				Bridge #1046 on Rt 102/644
9-LRR012.30	VAS-N37R_LRR02A02	B,PA	NE88	0	16	S	0	16	S	0	16	S	2	14	IM	0	2	NA	0	S	0	S									IM	0	4	S				SR 758 near WVA VSCI: 09/22/2014 44.47 04/02/2014 38.56 09/24/2012 58.38 05/23/2012 48.87 Manganese exceeded PWS standard in two samples.
9-LRV000.34	VAW-N21R_LRV01A00	A,TM,C	NE56	0	4	S	0	4	S	0	4	S									0	S					0	S									No additional data beyond the 2010 IR. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. Listed 2004 FC bacteria: 4/26- 'IM'.
9-LRV000.44	VAW-N21L_LRV01A02	A,L	NE56	0	28	S	0	28	S	0	13	S	2	7	IM						0	S													0	1	W	No additional data beyond the 2012 IR. Little River Reservoir: Temp 0 / 28 (S); DO 0 / 28 (S); pH 0 / 13 (S); CHL A 0 / 1 (IN). Should be considered for removal from 187 List - max depth 6 meters. Little River Bacteria (Fed ID: 41519), Benthic (Sediment
9-LRV009.11	VAW-N21R_LRV05A00	A,B,TM,TR	NE55	0	39	S	0	39	S	0	39	S	10	36	IM						0	S									FS	3	36	IN				3 surveys 2009-2010. Avg. VSCI 62.4. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. Listed 2006 FC bacteria: 2/11- 'IM'.
9-LRV012.58	VAW-N21R_LRV05A00	PA	NE55	0	12	S	0	12	S	0	12	S	3	12	IM																	1	12	IN				
9-LRV012.98	VAW-N21R_LRV05A00	FPM	NE55	0	2	S	0	2	S	0	2	S	0	1	IN																	0	2	S	0	1	IN	
9-LRV016.68	VAW-N21R_LRV06A00	A	NE53	0	12	S	0	12	S	0	12	S	2	12	IM						0	S										0	12	S				No additional data beyond the 2012 IR. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. Listed 2006 FC bacteria: 2/10- 'IM'.
9-LRV032.72	VAW-N21R_LRV06A04	A,B	NE53	0	5	S	0	5	S	0	5	S									0	S									FS							2014 DELIST Gen. Std. Benthic. 5 surveys 2009-2010 & 2012. Avg. VSCI 68.1. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. Listed
9-LRV044.49	VAW-N19R_LRV01A00	A	NE49	3	12	IM	0	12	S	0	12	S	4	12	IM						0	S										0	12	S				Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. Dodd Cr. SS. Bacteria TMDL Approved 12/11/2002. 2008 IR Temp exceeds in 2 /12 and
9-LRV056.74	VAW-N19R_LRV02A00	A,B	NE49	0	4	S	0	4	S	0	4	S									0	S									FS							4 surveys 2009-2010. Avg. VSCI 63.0. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. 2002 Temp Listing (3/16). Bacteria (FC) 2004
9-LRV065.57	VAW-N19R_LRV03A00	A,B	NE48	1	16	S	0	16	S	0	16	S	6	12	IM						0	S									FS	0	12	S				4 surveys 2009-2010. Avg. VSCI 68.2. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. Bacteria (E.coli) 2006 Listed 3 / 9. Temp 200
9-LRV069.88	VAW-N19R_LRV03A00	A	NE48	0	3	S	0	3	S	0	3	S	1	3	IM						0	S																No additional data beyond the 2008 IR where E.coli exceeds in 4 / 12- 'IM'. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012. SWCB approved 3/25/2013. Bacteria
9-LRY000.28	VAW-N24R_LRY01A00	A	NE74	0	11	S	0	11	S	0	11	S	0	11	S						0	S										0	11	S				Bacteria 2002 Listed 3/17. Bacteria De-Listed 2008 IR for E.coli. No additional data beyond the 2010 IR.
9-LRY004.64	VAW-N24R_LRY02A00	A,B	NE74	0	2	S	0	2	S	0	2	S									0	S									FS	0	2	S				2 surveys 2012. Avg. VSCI 82.0.
9-LRY007.02	VAW-N24R_LRY02B16	B,SS	NE74	0	2	S	0	2	S	0	2	S																			J							Regional Monitoring Network station RMN-VA-9LRY007.02. Two 2014 benthic samples with average VSCI score of 58.4 (J).
9LRY-1-NCNR	VAW-N24R_LRY02A00	CMON	NE74	0	1	IN	0	1	IN	0	1	IN	0	1	IN																							NCNR data Temp, DO and pH Lv. 3 'FS'. E.coli [IN] Lv. 2.
9LRY-GL05-UVA	VAW-N24R_LRY02B16	CMON	NE74							0	1	IN																										
9LRY-GL16-UVA	VAW-N24R_LRY02A00	CMON	NE74							0	1	IN																										
9-LTL001.22	VAS-N30R_LTL02A10	A,FPM,B	NE78	0	16	S	0	16	S	0	16	S	6	12	IM						0	S	0	S							IM	0	12	S				Downstream Tazewell Co. Sportsmen Club Lake, Class VI VSCI: 11/08/2012 64.84 04/23/2012 52.26 05/26/2011 58.56 Historically: 05/27/2008 54.01 10/02/2007 33.41 04/11/2007 45.59
9-LVR002.65	VAS-N04R_LVR01A98	A	NE11	0	24	S	0	24	S	0	24	S	4	24	IM																	1	24	S				Rt 632 low water bridge off Rt 626, Class VI
9-LVR007.16	VAS-N04R_LVR01A98	FPM,PA,B	NE11	0	14	S	0	14	S	0	14	S	4	14	IM	0	1	NA			0	S									FS	0	14	S				Rt 632 low water bridge off Rt 626, Class VI. VSCI: 09/25/2014 77.52 05/05/2014 63.01
9-LWF004.55	VAW-N20R_LWF01A00	A	NE50	1	12	S	0	12	S	0	12	S	5	12	IM																	0	12	S				2012 initial E.coli Listing 5/12- 'IM'. No additional data beyond the 2012 IR.
9-LWK000.77	VAW-N27R_LWK01A00	A,TM	NE72	1	26	S	0	26	S	0	26	S	5	22	IM						1	O										0	24	S				2011 PCB water column WQS 640 pg/L- Wet- 642 pg/L- 'OE'. 2008 IR E.coli exceeds in 5 / 12- 'IM'.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
9-LWK004.04	VAW-N27R_LWK01A00	TM	NE72	0	2	S	0	2	S	0	2	S									0	IN															2011 PCB water column WQS 640 pg/L- Wet- 539.3 pg/L- 'IN' (single sample). VAW05547-059 (2006). No PEC sediment excursions from 2006 data.
9-MCE000.37	VAS-N10R_MCE01A02	A	NE26	0	12	S	0	12	S	0	12	S	8	12	IM																	0	12	S				Bridge # 6049 on Rt 830 off Rt 680, Class VI
9-MDR000.34	VAW-N19R_MDR01A04	A	NE48	1	12	S	0	12	S	0	12	S	8	12	IM						0	S										0	12	S				No additional data beyond the 2012 IR where nine of 15 escherichia coli (E.coli) samples exceed. Bacteria (E.coli) 2006 Listed 3 / 9. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S.
9MDT-GL06-UVA	VAW-N24R_LRY03B04	CMON	NE74																																		
9-MDW004.62	VAW-N21R_MDW01A00	A	NE56	0	11	S	0	11	S	0	10	S	6	12	IM						0	S																No additional data beyond the 2010 IR where E.coli exceeds 6 / 12- 'IM'. Mill Creek Bacteria TMDL Study U.S. EPA approved on 6/05/2002. Fed ID 9453 / 19986 / 23409. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 6/27/2007. Mill Cr.
9-MER000.09	VAS-N11R_MER01A06	A	NE31	0	11	S	0	11	S	0	11	S	5	11	IM																	0	11	S				Bridge #6197 on Rt. 614 off Rt. 121
9-MER000.85	VAS-N11R_MER02A10	A	NE31	0	10	S	1	10	S	0	10	S	2	10	IM																	0	10	S				Rt 610, bridge #6010 @Max Meadows
9-MER002.99	VAS-N11R_MER02A10	FPM,PA,B	NE31	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	IN	0	S							FS	0	1	IN				Off Rt. 712 VSCI: 11/13/2012 85.06 05/02/2012 72.87
9MFB-GL04-UVA	VAW-N24R_LRY03B04	CMON	NE74							1	1	IN/O																										
9-MGV000.37	VAS-N11R_MGV01A12	A	NE31	0	11	S	0	11	S	0	11	S	2	11	IM																	0	11	S				Rt 618 culvert @ private drive
9-MLC000.17	VAW-N21R_MLC01A00	TM	NE56	0	1	IN	0	1	IN	0	1	IN	1	1	IN						0	S																Mill Creek Bacteria TMDL Study U.S. EPA approved on 6/05/2002. Fed ID 9453 / 19986 / 23409. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 6/27/2007. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temp
9-MLC001.53	VAW-N21R_MLC01A00	A,TM	NE56	0	24	S	0	24	S	0	24	S	11	24	IM						0	S										0	24	S				Mill Creek Bacteria TMDL Study U.S. EPA approved on 6/05/2002. Fed ID 9453 / 19986 / 23409. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 6/27/2007. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Tem
9-MLC002.59	VAW-N21R_MLC01A00	TM	NE56	0	24	S	0	24	S	0	24	S	16	24	IM						0	S										0	24	S				Mill Creek Bacteria TMDL Study U.S. EPA approved on 6/05/2002. Fed ID 9453 / 19986 / 23409. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 6/27/2007. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temp
9-MLC005.44	VAW-N21R_MLC02A00	A,B,TM	NE56	0	24	S	0	24	S	0	24	S	14	24	IM						0	S									FS	0	24	S				1 survey 2008. VSCI 62.3. Bacteria '98 Listed. Bacteria TMDL Approved 06/05/2002. No additional data beyond 2006 IR.
9MLC-2-NCNR	VAW-N21R_MLC01A00	CMON	NE56	0	20	S	0	16	S	0	20	S	8	18	IM																							NCNR data Temp, DO and pH Lv. 3 'FS'. E.coli [3C] Lv. 2. Mill Creek Bacteria TMDL Study U.S. EPA approved on 6/05/2002. Fed ID 9453 / 19986 / 23409. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 6/27/2007.
9-MLL000.90	VAW-N32R_MLL01A00	FPM,B	NE81	0	2	S	0	2	S	0	2	S	0	1	IN				0	S	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-228- 2 surveys 2009. Avg. VSCI 70.6
9MLL-GL22-UVA	VAW-N32R_MLL02A00	CMON	NE81							1	1	IN/O																										
9MRC-GL23-UVA	VAW-N32R_MRC01A00	CMON	NE81							1	1	IN/O																										
9-MUD000.05	VAS-N36R_MFK01A06	A	NE87	0	12	S	0	11	S	0	12	S	0	12	S																	0	12	S				Bridge. # 1047 on Rt. 102 off Rt. 460
9-NBS000.70	VAS-N26R_NBS01B04	A,TM,B	NE69	0	23	S	0	23	S	0	23	S	14	22	IM																FS	1	11	S				Rt 606 bridge W of Holly Brook, Class VI Carryover from VSCI: 09/23/2008 62.93
9-NEW028.95	VAW-N29R_NEW01A02	TM	NE85	0	9	S	0	9	S	0	9	S									1	O																VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2010-2011 PCB water column WQS 640 pg/l- 2010 Wet- 710 pg/l- 'OE'; 399.6 pg/L- 'IN'; 110.4 pg/L- 'FS'.
9-NEW030.15	VAW-N29R_NEW02A02	C,TM,TR	NE83	2	36	S	1	36	S	0	36	S	4	36	IM				0	S	0	S	0	S			0	S	1	IM		0	36	S				VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2012 FT 1 sp. Carp exceed WQS 20 ppb criterion at 234.0 (1 fish) and 448.1 ppb (2 fish composite). E.coli Delist '08. Trend Analysis.
9-NEW031.00	VAW-N29R_NEW01A02	TM	NE83	0	2	S	0	2	S	0	2	S									1	O																VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2010 PCB water column WQS 640 pg/l- Dry- 66 pg/l- 'FS'; Wet- 841 pg/l- 'OE'.
9-NEW038.71	VAW-N29R_NEW03A02	TM	NE83	0	4	S	0	4	S	0	4	S									1	O			0	S			1	IM								VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2010-2011 PCB water column WQS 640 pg/l 2010 Dry- 129 pg/l- 'FS' Wet 784 pg/l- 'OE'; 2011 Wet 222 pg/L- 'FS'. 2012 FT 2 sp. Exceed Carp (2 fish composite) at 355.6 ppb) and Flathead Catfish (1 fish) at
9-NEW039.98	VAW-N29R_NEW04A02	TM	NE83	0	2	S	0	2	S	0	2	S									0	S																VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2010 PCB water column WQS 640 pg/l Dry- 175 pg/l- 'FS' Wet 451 pg/l- 'FS'.
9-NEW047.77	VAW-N24R_NEW01A00	TM	NE74	0	4	S	0	4	S	0	4	S									0	S																VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2010-2011 PCB water column WQS 640 pg/L- 2010 Dry- 123 pg/L; 2011 Wet 260 pg/L- 'FS'. 2012 DELIST FT DDE, DDT & H.epoxide station 9-NEW050.70 (2004 List)
9-NEW050.70	VAW-N24R_NEW01A00	C,TM	NE74																						0	S			1	IM								VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2012 FT/Sed 3 sp. Analyzed Carp exceeds WQS criterion of 20 ppb (2 fish composite [67.5 - 71.6 cm] at 419.87 ppb and Channel Catfish (1 fish [58.1 cm] at 23.26 ppb. Remaining species analyzed Flathead Ca
9-NEW056.22	VAW-N22R_NEW01A00	A	NE63	0	12	S	0	12	S	0	12	S	0	12	S						0	S										0	12	S				VDH Fish Consumption Advisory PCBs.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
9-NEW063.06	VAW-N22R_NEW01A00	FPM,TM,B	NE62	0	9	S	0	9	S	1	9	S	1	2	IN/O				0	S	0	S	0	S							W	0	2	S	0	2		VAW05547-251- Boatable-No Index. VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2010-2011 PCB water column WQS 640 pg/l- 2010 Dry- 184 pg/l- 'FS'; Wet 637 pg/l- 'FS'; 2011 Dry 186.9- 'FS'; Wet 201.9 pg/L- 'FS'. FPM
9-NEW066.90	VAW-N22R_NEW02A00	A,C,PA,TM	NE62	0	25	S	0	25	S	0	25	S	3	23	IM						0	IN			0	S			1	IM		0	24	S				VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2011 PCB water column WQS 640 pg/L- Wet- 460.2 pg/L- 'IN'. 2012 FT/Sed One Carp (1 fish [72 cm]) exceeds the WQS PCB TV at 125.58 ppb. No 2012 excursions of the PCB sediment PEC SV of 676 ppb.
9-NEW070.80	VAW-N22R_NEW03A00	FPM,TM,B	NE59	0	3	S	0	3	S	0	3	S	0	2	IN				0	IN	0	IN									W	0	2	S	0	2		VARS11-027- Boatable- No Index. VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2011 PCB water column WQS 640 pg/L; 262.7 pg/L- 'IN'.
9-NEW075.53	VAW-N22R_NEW05A00	A,C,TM	NE59	0	4	S	0	4	S	0	4	s									0	S	0	S	0	S			1	IM								VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2010-2011 PCB water column WQS 640 pg/L- 2010 Dry- 127 pg/L- 'FS'; Wet 265 pg/L- 'FS'; 2011 Wet 107.9 pg/L- 'FS'. PWS. VDH Fish Consumption Advisory (PCB). '04 FT PCB [Apx E-1] 1 sp.; sediment no PEC exceed
9-NEW079.19	VAW-N22R_NEW05A00	C,TM	NE59																						0	S			1	IM								VDH Fish Consumption Advisory issued 8/06/01 PCBs. 2012 FT/Sed 1 sp. with two exceeding composites analyzed - Carp exceeds WQS criterion of 20 ppb (2 fish composite [67.5 - 76.5 cm] at 53.28 ppb and Carp exceeding (2 fish composite [76.8 - 83.6 cm] at 94.
9-NEW081.72	VAW-N18R_NEW01A00	A,TR	NE57	0	41	S	0	41	S	0	41	S	2	36	S				0	S	1	O	1	O	0	S						0	36	S				VDH Fish Consumption Advisory issued 12/02/2004 PCBs. 2010-2011 PCB water column WQS 640 pg/l- 2010 Dry 320 - 'FS'; Wet exceeds at 4,739- 'OE; 2011 Wet 243.7 pg/L. Trend Analysis. AQ 2000 sediment zinc (Zn). VDH Fish Consumption Advisory (PCB).
9-NEW084.34	VAW-N18R_NEW03A00	TM	NE57	0	8	S	0	8	S	0	8	S							0	S	0	S																VDH Fish Consumption Advisory issued 12/02/2004 PCBs. 2010 PCB water column WQS 640 pg/L- 2010 Dry 45.7 pg/L- 'FS'; Wet 65.0 pg/L- 'FS'; 2011 Wet 243.10 pg/L- 'FS'; Dry 139.6 pg/L- 'FS'.
9-NEW087.14	VAW-N16L_NEW01A02	A,L,TR	NE47	0	1329	S	104	869	IM	7	79	S	0	40	S						0	S										0	2	S	0	2	S	Claytor 2016 Pooled Data: Temp 2 / 5,608 (FS); DO 365 / 3,920 (S); pH 22 / 488 (FS). TP 0 / 2 (S); CHL a 0 /2 (S). Lacustrine Zone 2016 Pooled: DO 162 / 1675- Exceedance rate- 9.67%- 'S'. Nutrient Assessment: Overall nutrient 2 year assessment - '
9-NEW089.34	VAW-N16L_NEW01A02	A,L,TR	NE47	0	1093	S	58	806	S	7	79	S	1	40	S						0	S										0	2	S	0	2	S	2016 Cycle: NEW-4. VDH Fish Consumption Advisory issued PCBs 12/02/2004. Claytor 2016 Pooled Data: Temp 2 / 5,608 (FS); DO 365 / 3,920 (S); pH 22 / 488 (FS). TP 0 / 2 (S); CHL a 0 /2 (S). Lacustrine Zone 2016 Pooled: DO 162 / 1675- Exceedance
9-NEW092.66	VAW-N16L_NEW01B14	A,L,TR	NE47	0	1121	S	68	851	S	3	80	S	0	40	S						0	S																2016 Cycle: PWS. NEW-4. VDH Fish Consumption Advisory issued PCBs 12/02/2004. Claytor 2016 Pooled Data: Temp 2 / 5,608 (FS); DO 365 / 3,920 (S); pH 22 / 488 (FS). TP 0 / 2 (S); CHL a 0 /2 (S). Lacustrine Zone 2016 Pooled: DO 162 / 1675-
9-NEW098.32	VAW-N16L_NEW06A02	L,TR	NE43	1	495	S	19	486	S	0	115	S	5	75	S						1	IM			0	S												Claytor Lake Pooled data: Temp 2 / 5,608 (FS); DO 365 / 3,920 (S); pH 22 / 488 (FS). TP 0 / 2 (S); CHL a 0 /2 (S). Lacustrine Zone 2016 Pooled: DO 162 / 1675- Excd rate- 9.67%- 'S'. Nuts 'FS' 2016 2 station pool 28 samples.
9-NEW107.50	VAW-N16R_NEW01A00	FPM	NE43	0	1	IN	0	1	IN	0	1	IN	0	1	IN																0	1	IN	0	1	IN	
9-NEW107.51	VAW-N16R_NEW01A00	TM,C,PA,TR	NE43	0	44	S	0	44	S	0	44	S	5	44	IM				0	S	0	S					2	IM				1	40	S				STA #25 ALLSONIA 2014 DELIST Bacteria. Trend Analysis. VDH Fish Consumption Advisory issued 12/02/2004 PCBs.
9-NEW111.92	VAS-N08R_NEW01A02	A	NE32	0	4	S	0	4	S	0	4	S																										STA #25 ALLSONIA
9-NEW117.60	VAS-N08R_NEW03A06	A	NE25	0	5	S	0	5	S	0	5	S							0	S																		STA #25 ALLSONIA Fe exceeded PWS standard in one sample.
9-NEW120.38	VAS-N08R_NEW02A02	C	NE25																						0	S			0	S								@ I-77 bridge 8/28/2012 analyzed for PCB, 2012
9-NEW127.49	VAS-N08R_NEW02B00	A,TR	NE21	0	37	S	0	37	S	0	37	S	4	35	IM																	0	35	S				RT 764 OF RT 94 AT IVANHOE APPROX 100 YD
9-NEW148.23	VAS-N06R_NEW01A00	A,TR	NE16	0	35	S	0	35	S	1	35	S	9	35	IM																	1	35	S				RT. 94 BRIDGE W OF GALAX AT GAGE
9-NEW172.45	VAS-N04R_NEW01A98	A	NE10	0	12	S	0	12	S	0	12	S	2	12	IM																	1	12	S				Public boat landing on Rt 700 off 701
9-NEW181.66	VAS-N02R_NEW03C04	A	NE08	0	12	S	0	12	S	1	12	S	3	12	IM																							Rt 601 Bridge Cox Chapel Road
9-PBC001.12	VAS-N04R_PBC01A98	A	NE09	0	12	S	0	12	S	0	12	S	4	12	IM																	1	12	S				Bridge #6064 on Rt. 700 off Rt. 697, Class V
9-PBC008.61	VAS-N04R_PBC01B02	A	NE09	0	12	S	0	12	S	0	12	S	3	12	IM																	0	12	S				, Class V
9PCB-PU05-UVA	VAW-N16R_BMK02A02	CMON	NE42							0	1	IN																										
9-PKC000.00	VAW-N17L_PKC01A10	A,L,TR	NE46	0	912	S	116	791	IM	3	78	S	0	40	S						0	S	0	S															Claytor 2016 Pooled Data: Temp 2 / 5,608 (FS); DO 365 / 3,920 (S); pH 22 / 488 (FS). TP 0 / 2 (S); CHL a 0 /2 (S). Lacustrine Zone 2016 Pooled: DO 162 / 1675- Exceedance rate- 9.67%- 'S'. Nutrient Assessment: Overall nutrient 2 year assessment

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
9-PKC004.16	VAW-N17L_PKC02A10	A,L,TR	NE46	1	118	S	0	117	S	2	43	S	0	38	S						0	S																Claytor 2016 Pooled Data: Temp 2 / 5,608 (FS); DO 365 / 3,920 (S); pH 22 / 488 (FS). TP 0 / 2 (S); CHL a 0 /2 (S). Lacustrine Zone 2016 Pooled: DO 162 / 1675- Exceedance rate-9.67%- 'S'. Nutrient Assessment: Overall nutrient 2 year assessment
9-PKC004.65	VAW-N17L_PKC01A10	C,TR	NE46	0	24	S	0	24	S	0	24	S	1	23	S						0	S	2	O	0	S			1	IM		0	22	S				VDH Fish Consumption Advisory issued 12/02/2004 PCBs. 2012 FT/Sed: Channel catfish exceeds WQS criterion of 20 ppb at 33.15 ppb. 5 sp.- LM Bass (5 fish composite [33.4 - 40.8 cm]; @2.68 ppb), Carp 2 sizes (4 fish composite [54.6 - 62.0 cm]; @2.32 ppb) a
9-PKC007.80	VAW-N17R_PKC01A00	FPM,B,TR	NE46	0	17	S	0	17	S	0	17	S	8	13	IM																IM	1	14	S	0	1	IN	2 surveys 2011. Avg. VSCI 46.1. Bacteria & Benthic (Cu/Zn) Peak Creek Benthic TMDL FED ID 7823. US EPA approved 8/30/2004 and SWCB approved 12/02/2004.
9-PKC007.82	VAW-N17R_PKC01A00	C,TM	NE46	0	4	S	0	4	S	0	4	S													0	S			1	IM								VDH Fish Consumption Advisory issued 12/02/2004 PCBs. 2012 FT/Sed: 3 sp. analyzed -Stoneroller exceeds WQS TV of 20 ppb (15 fish comp. [14.3 - 16.0 cm] at 33.18 ppb, Rock Bass (5 fish comp. [16.7 - 18.6 cm]; @10.49 ppb) and Redbreast Sunfish (5 fish comp
9-PKC009.29	VAW-N17R_PKC01A00	A,B,TM	NE46	0	2	S	0	2	S	0	2	S									0	S	2	O	0	S					IM							2 surveys 2011. Avg. VSCI 34.5. Bacteria & Benthic (Cu/Zn) Peak Creek Bacteria TMDL FED ID 7824. US EPA approved 8/30/2004 and SWCB approved 12/02/2004. No additional data beyond the 2008 IR.
9-PKC009.53	VAW-N17R_PKC03A00	TM	NE46	0	2	S	0	2	S	0	2	S									1	IN			0	IN												
9-PKC010.19	VAW-N17R_PKC03A00	TM	NE46	0	4	S	0	4	S	0	4	S																										
9-PKC011.11	VAW-N17R_PKC03A00	A,B,TM	NE44	0	18	S	0	18	S	0	18	S	2	11	IM						0	S	1	O	2	O					FS	0	12	S				2 surveys 2011. Avg. VSCI 54.1. Bacteria & Benthic (Cu/Zn) Peak Creek Bacteria TMDL FED ID 7824. US EPA approved 8/30/2004 and SWCB approved 12/02/2004. 2012 PCB water column WQS 640 pg/L Dry 193.4 pg/L; Wet 175.4 pg/L. AQ 2000 sediment exceedances of PE
9-PKC011.70	VAW-N17R_PKC04A00	TM	NE44	0	1	IN	0	1	IN	0	1	IN									0	IN																
9-PKC016.91	VAW-N17L_PKC01A02	A,L	NE44	0	97	S	0	46	S	0	13	S	0	7	S						0	S													0	1	IN	Gatewood Reservoir Pooled Data: Temp 0 / 151 (S); DO 0 / 83 (S); pH 0 / 27 (S); CHL A 0 / 1 (IN). PWS. No additional data.
9-PKC017.71	VAW-N17L_PKC01A02	A,L	NE44	0	101	S	15	101	IM	0	26	S	0	13	S						0	S																2016 Cycle: Gatewood Reservoir Pooled Data: Temp 0 / 284 (S); DO 0 / 180 (S); pH 0 / 26 (S); CHL A 0 / 2 (S). PWS.
9PKC-WY06-UVA	VAW-N17R_PKC08A04	CMON	NE44							0	1	IN																										
9-PLK000.79	VAW-N17R_PLK01A04	FPM,B	NE45	0	2	S	0	2	S	0	2	S	0	1	IN																FS	0	2	S	0	1	IN	
9-PLK001.39	VAW-N17R_PLK01A04	PA	NE45	0	12	S	0	12	S	0	12	S	0	12	S																	0	12	S				
9-PLM000.60	VAW-N18R_PLM01A00	A	NE57	0	12	S	0	12	S	0	12	S	3	12	IM						1	O										0	12	S				2010 IR E.coli exceeds in 4/12- 'IM'. 9-PLM000.35- (FPM-VAEQ99-302 (2003)) SPMD deployment finds mirex present above the WQS chronic criterion of zero.
9PLM-2-NCNR	VAW-N18R_PLM02A02	CMON	NE57	0	12	S	0	12	S	0	12	S	0	11	S																						NCNR data Temp, DO and pH Lv. 3 'FS'. E.coli [3D] Lv. 2. No additional data beyond 2012 IR.
9-PNC000.69	VAW-N19R_PNC01A06	A	NE49																																		Temp & Bacteria impairments carried. No additional data beyond the 2008 IR where Temp exceeds in 2 / 12 and E.coli exceed in 3 / 11- 'IM'. Bacteria (E.coli) 2006 Listed 3 / 8 & Temp 2 / 12 2008 Listed.
9-PNR1-NCNR	VAS-N08R_PNR01A10	CMON	NE32	0	14	S	0	14	S		14	IN		14	IN/O																						2,000 feet downstream of Wysor Road (Route 100) bridge, Additional Level II pH 3D EC 12/14 3C
9-PNR2-NCNR	VAS-N08R_PNR01A10	CMON	NE32	0	1	IN	0	1	IN		1	IN		1	IN/O																						850 feet downstream of Wysor Road (Route 100) bridge, Additional Level II pH I 3D EC 1/ 1 3C
9-PNR4-NCNR	VAS-N08R_PNR01A12	CMON	NE32	0	14	S	0	14	S		14	IN		15	IN/O																						At Graham Road (Route 662) bridge, Additional Level II pH 3D EC 12/15 3C
9-PRN000.04	VAS-N10R_PRN01A12	A	NE28	0	12	S	0	12	S	0	12	S	8	12	IM																	0	14	S				2,000 feet downstream of Wysor Road (Route 100) bridge, Class VI
9PSB-VT26-UVA	VAW-N28R_PSB01A16	CMON	NE75	0	16	S				16	16	IN/O																										
9-PTY001.72	VAW-N22R_PTY01A00	A,B	NE60	0	2	S	0	2	S	0	2	S									0	S									FS	0	2	S				2 surveys 2011. Avg. VSCI 83.1.
9-RCK000.50	VAS-N04R_RCK01A12	A	NE12	0	12	S	0	12	S	0	12	S	7	12	IM																	1	12	S				Bridge on Roy's Lane off Rt 274
9-RDC000.79	VAS-N11R_RDC03B04	A	NE31	0	15	S	0	15	S	0	15	S	0	11	S																	0	11	S				Swing bridge #9000 on Rt 618 off 81 exit 86
9-RDC009.00	VAS-N11R_RDC03B04	A,C,TR	NE31	0	39	S	0	39	S	0	39	S	1	35	S										0	S			2	IM		0	35	S				RT. 619 AT GAGING STATION Two composite carp samples were found with greater than the VDH lower level of concern in 2014 fish collection. Analysis of a composite sample of 5 carp" VDH lower level of concern for PCB was exceeded, 69.24 ppb, sample collection 8/30/2012. VDH fish consumption restriction for carp and smallmouth bass due to PCBs was imposed Dec 13.2004. Three carp samples exceeded the VDH level of concern and the Department of Environmental Quality screening value.
9-RDC016.84	VAS-N11R_RDC01B00	A	NE31	0	2	S	0	2	S	0	2	S																										

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
9-RDC023.24	VAS-N11R_RDC01B00	A	NE29	0	13	S	0	13	S	0	13	S	3	11	IM																0	11	S				Bridge #6032 on Rt 649 @ transfer station
9-RDC033.78	VAS-N10R_RDC01A00	A	NE28	0	3	S	0	3	S	0	3	S	1	3	IN																0	3	S				Pull off on Rt 655 off Rt 684 off 21, Class VI
9-RDC033.94	VAS-N10R_RDC01A02	A	NE28	0	9	S	0	9	S	0	9	S	2	9	IM																1	9	S				RT. 667 Bridge upstream SF Reed Creek confluence, Class VI
9-RDC038.01	VAS-N10R_RDC01A02	A	NE28	0	12	S	0	12	S	0	12	S	3	12	IM																						Private drive off Rt 663 off Rt 11 gas pipeline, Class VI
9-RDC046.65	VAS-N10R_RDC01B00	A	NE26	0	12	S	0	12	S	0	12	S	4	12	IM																0	12	S				Bridge #6022 on Rt 625 off Rt 680, Class VI
9-RDC048.97	VAS-N10R_RDC01B00	A	NE26	0	1	IN	0	1	IN	0	1	IN	0	1	IN																0	1	IN				FS road off Rt 625, Class VI.
9-RDC049.02	VAS-N10R_RDC01B00	A,PA,B	NE26	0	13	S	0	13	S	0	13	S	0	13	S	0	1	NA	0	S	0	S								J	0	13	S				FS road off Rt 625, Class VI. VSCI: 10/03/2013 52.69 04/24/2013 67.88
9-RDC049.82	VAS-N10R_RDC01C02	A,B	NE26	0	14	S	0	14	S	1	14	S	3	12	IM															FS	0	12	S				FS road off Rt 625, Class VI VSCI: 11/17/2010 67.02 06/03/2010 68.93
9-RDC1-NCNR	VAS-N11R_RDC01C02	CMON	NE29	0	5	S	0	5	S		5	IN	5	5	IN/O																						1,600 feet upstream of the Edgemont Center Inc. WWTP pH 3D EC 5/ 5 3C
9-RDC2-NCNR	VAS-N11R_RDC03B04	CMON	NE31	0	15	S	0	13	S		15	IN		15	IN																						8,500 feet upstream of confluence with the New River, Additional Level II pH 3D EC 8/15 3C
9-RHC000.08	VAW-N34R_RHC01A00	A,TM,PA,SS	NE82	0	38	S	1	38	S	0	38	S	14	35	IM						0	S															2011 PCB water column WQS 640 pg/L Wet 553.3 pg/L- 'IN'. 2002 Bacteria (FC 7/21) Listed.
9-RHC002.85	VAW-N34R_RHC02A00	FPM,B	NE82	0	2	S	0	2	S	0	2	S	0	1	IN															J	0	2	S	0	1	IN	A 2014 probabilistic monitoring station. Temp, DO, pH, NH3-N - 'FS' . Bio 'J' - Two 2014 VSCI scores of 44.3 (S) and 73.0 (F) averaging 58.6.
9-RIC000.50	VAS-N14R_RIC01B98	A	NE41	0	11	S	0	11	S	0	11	S	3	12	IM																0	12	S				Bridge. # 6143 on Rt. 607 off Rt. 100
9-RIC018.90	VAS-N14R_RIC01B04	A	NE39	0	11	S	0	11	S	0	11	S	3	12	IM																0	12	S				Bridge. # 6483 on Rt. 753 off Rt. 221, Class VI
9-RIC038.67	VAS-N13R_RIC01A00	FPM,B	NE36	0	3	S	0	3	S	0	3	S	0	1	IN								0	S						FS							Carryover from S of Stone Mountain Church, Class VI VSCI: 11/01/2007 83.61 05/09/2007 76.79
9-RIC049.29	VAS-N13R_RIC01B04	A	NE36	0	11	S	0	11	S	0	11	S	6	12	IM																0	12	S				Bridge. # 6189 on Rt. 648 off Rt. 58, Class VI
9-RIC1-NCNR	VAS-N14R_RIC01A00	CMON	NE39	5	50	S	0	33	S		52	IN		48	IN																						From River Rd verge left and travel 0.7 miles. Sample site at the wooden stair rail, Class VI. Additional Level II pH EC 5/48
9-RIC2-NCNR	VAS-N13R_RIC01B04	CMON	NE36	0	10	S	0	8	S		10	IN		10	IN																						176 yards from gravel driveway. Driveway off Terry Miller's Road, Class VI. Additional Level II pH 3D EC 3D
9-RIC3-NCNR	VAS-N14R_RIC01B98	CMON	NE39	0	51	S	0	34	S		53	IN		49	IN																						At mouth of Big Reed Island Creek, Additional Level II pH 3D EC 4/49 3D
9-ROC1-NCNR	VAS-N15R_ROC01A14	CMON	NE34	0	8	S	0	9	S		9	IN		9	IN																						Upstream side of Rock Creek Road, Additional Previously 9-RCK1-NCNR
9-RSF000.08	VAS-N10R_RSF01A00	A	NE28	0	12	S	0	12	S	0	12	S	8	12	IM																1	12	S				Off Rt. 667 on Avery Lane, S of RR, Class VI
9-RSF006.78	VAS-N10R_RSF01A00	A	NE28	0	12	S	0	12	S	0	12	S	8	12	IM																2	12	O				Rt 666 low water bridge NE Groseclose, Class V
9-SDL000.05	VAS-N04R_SDL01A06	A	NE08	0	12	S	0	12	S	0	12	S	5	12	IM																1	12	S				Bridge #6071 on Rt. 711 off Rt. 58
9-SFK000.28	VAS-N10R_SFK01A02	A	NE27	0	12	S	0	12	S	0	12	S	5	11	IM																0	12	S				Bridge #6187 on Rt 664 off Rt 666 off 11, Class V
9-SFK001.10	VAS-N10R_SFK01A02	B,TM	NE27	0	2	S	0	1	IN	0	2	S																		FS							Near Favonia Off Rt. 52 and 680, Class V VSCI: 11/02/2009 80.83 05/28/2009 75.62
9-SFK001.51	VAS-N10R_SFK01A02	A	NE27	1	12	S	0	12	S	0	12	S	6	12	IM																0	12	S				House #4999 off US 21/52, Class V
9-SFK003.38	VAS-N10R_SFK01A12	FPM,PA,B	NE27	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S	0	S						FS	0	2	S				North of Favonia off 21/52 in Nat'l Forest, Class V VSCI: 11/09/2010 83.70 05/05/2010 59.44
9-SGG000.07	VAW-N25R_SGG01A14	TM	NE73	0	2	S	0	2	S	0	2	S									1	O			0	IN										2014/2016 Cycle: PCB water column uncensored WQS criterion 640 pg/L: WW- 662.30 pg/L (9/06/2011) - 'OE'; DW 97.63 pg/L (7/31/2014).
9-SGG000.52	VAW-N25R_SGG01A14	TM	NE73	0	2	S	0	2	S	0	2	S									1	O			0	IN										2011 PCB water column WQS 640 pg/L WW- 621.30 pg/L.
9-SKE000.98	VAS-N13R_SKE01A04	A	NE37	0	12	S	0	12	S	1	12	S	5	12	IM																0	12	S				Bridge. # 1003 on Rt. 58, Class VI
9-SLK001.24	VAS-N12R_SLK01A04	A	NE30	0	13	S	0	13	S	0	13	S	10	12	IM																1	13	S				Rt 600 @ Rt 658 bridge #6001, Class V
9-SLT000.50	VAW-N22R_SLT01A08	A,B	NE59	0	4	S	0	4	S	0	4	S									0	S								FS							4 surveys 2007-2009. Avg. VSCI 69.4. 2012 Benthic Delist.
9-SLT004.49	VAW-N22R_SLT01A08	B,TM	NE59	0	4	S	0	4	S	0	4	S																		IM							
9-SNC000.20	VAW-N28R_SNC01A00	A,B,C	NE75	0	13	S	0	13	S	0	13	S	1	11	S						0	S					1	O	1	IM	FS						1 survey 2010. VSCI 70.5. 2010 PCB water column WQS 640 pg/L Wet 347.3 pg/L- 'IN'. No VDH Fish Consumption Advisory. '04 FT PCB >20 ppb [Apx E-1] 3 sp ; arsenic (As) [Apx E-2] 1 sp.; lead (Pb) detected 2 sp.; sediment no PEC exceedances. FC 1/16 'S' 2004
9-SNC002.58	VAW-N28R_SNC02A00	TM	NE75	0	1	IN	0	1	IN	0	1	IN									0	IN															
9-SNC002.88	VAW-N28R_SNC03A00	B,TM	NE75	0	6	S	0	6	S	0	6	S																		FS							Six VSCI scores averaging 63 (2010-2014).4 surveys 2010-2012. Avg. VSCI 59.1

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
9-SNC005.04	VAW-N28R_SNC04A00	B,SS	NE75	0	1	IN	0	1	IN	0	1	IN																			FS							This station was established as a part of the USEPA's Regional Monitoring Network project and as a potential reference station for development of a genus level VSCI. 1 VSCI survey 2010. VSCI 82.2. No additional data beyond 2012 IR where
9-SNC008.04	VAW-N28R_SNC04A00	FPM,B	NE75	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS							VAW05547-292- 2 surveys 2010. Avg. VSCI 77.7.
9SNF-98-018-UVA	VAW-N28R_SNF01A04	CMON	NE75	0	2	IN				2	2	IN/O																										
9SNF-GL08-UVA	VAW-N28R_SNF01A04	CMON	NE75	0	0	IN				1	1	IN/O																										
9SNF-VT28-UVA	VAW-N28R_SNF01A04	CMON	NE75	0	16	IN				15	16	IN/O																										
9-SNK005.38	VAW-N23R_SNK01B10	A	NE65	0	12	S	0	12	S	0	12	S	2	12	IM																	0	12	S				2014/2016 Cycle: Initial 303(d) Listing of E.coli and Temperature 2010 (3/11). Outside Data Window: 2006 & 2008 assessments find single excursions for Temperature (26°C) and DO (3.59 mg/L). No data available to determine stream flow conditions on 1
9-SNK012.06	VAW-N23R_SNK02A00	A,B	NE64	0	12	S	0	12	S	0	12	S	1	12	IM						0	S									FS	0	12	S				1 survey 2008. VSCI 62.6. No additional data beyond the 2010 IR.
9SNK-1-VAK	VAW-N23R_SNK01B10	CMON	NE65	0	2	S	0	2	S	0	2	S	1	2	IN																							Temp, DO and pH Lv. 3 [3D]. E.coli [3D] Lv. 2 'IN'. No additional data beyond 2012 IR.
9-SRT1-NCNR	VAS-N08R_SRT01B04	CMON	NE25	0	6	S	0	6	S		6	IN		6	IN/O																							At mouth of Shorts Creek, Additional Level II EC 4/6
9-STE002.05	VAW-N22R_STE02A00	TM	NE59	0	1	IN	0	1	IN	0	1	IN									0	IN																2010 PCB water column WQS 640 pg/l- Wet- 267.8 pg/l- 'IN'.
9-STE002.41	VAW-N22R_STE03A00	A,B,TR	NE59	0	38	S	0	38	S	0	38	S	11	36	IM						0	S									FS	2	36	S				3 surveys 2008 & 2012. Avg. VSCI 71.6. Benthic (Sediment) TMDL Approved 01/28/2004. Bacteria Delist 2008. Trend Analysis.
9-STE007.29	VAW-N22R_STE04A00	A,B,TM	NE59	0	17	S	0	15	S	0	17	S	4	12	IM						0	S									IM							9 surveys 2007-2012. Avg. VSCI 47.4. Benthic (Sediment) TMDL Approved 01/28/2004. Bacteria 2002 Listing remains.
9-TAT000.46	VAS-N10R_TAT01A06	A	NE28	0	12	S	0	12	S	0	12	S	7	12	IM																	0	12	S				Bridge #6039 on Rt 655 off Rt 684 off 21, Class VI
9-TCK000.50	VAW-N17R_TCK01A00	A	NE45	0	14	S	0	14	S	0	14	S	7	12	IM						0	S			0	IN						0	12	S				2010 E.coli initial Listing. Bacteria & Benthic (Cu/Zn) Peak Creek Bacteria TMDL FED ID 7824. US EPA approved 8/30/2004 and SWCB approved 12/02/2004. No additional data beyond 2012 IR.
9TCK-PU01-UVA	VAW-N17R_TCK03A00	CMON	NE45				0	1	IN																												
9-TNC000.53	VAS-N25R_TNC01A10	A,TM	NE66	0	24	S	0	24	S	0	24	S	12	23	IM																	0	12	S				Rt 659 bridge # 6052 off Rt 52
9-TOM005.32	VAW-N22R_TOM02A00	A,B	NE60	2	10	IM	0	8	S	0	9	S	1	9	IM						0	S									FS							2 VSCI surveys (2005 & 2006). Temp 2008 IR Listed 2 / 13- 'IM'. No additional data beyond the 2008 IR.
9-TOM011.49	VAW-N22R_TOM03A08	B,A	NE60	0	3	S	0	3	S	0	3	S																			FS							3 surveys (2009-2014). Avg VSCI 69.1. Riparian Restoration Study. 3 RBP II surveys (2003 Spring-2004). No additional data beyond 2006 IR.
9-TOM012.78	VAW-N22R_TOM03A08	A	NE60	0	12	S	0	12	S	0	12	S	3	12	IM						0	S																2014 Bacteria initial Listing.
9TOM-1-NCNR	VAW-N22R_TOM03A08	CMON	NE60	7	32	IM	0	30	S	0	33	S	12	29	IN/O																							NCNR data DO and pH Lv. 3- 'FS'; Temp 2012 Lv. 3 'IM'. E.coli [3C] Lv. 2
9TOM-2-NCNR	VAW-N22R_TOM02A00	CMON	NE60	3	11	IM	0	9	S	0	11	S	3	9	IN/O																							NCNR data DO and pH Lv. 3- 'FS'; Temp 2012 Lv. 3 'IM'. E.coli [3C] Lv. 2. No additional data beyond the 2012 IR.
9TOM-3-NCNR	VAW-N22R_TOM01A00	CMON	NE60	7	33	IM	0	30	S	0	33	S	10	29	IN/O																							2016 Cycle: NCNR data DO and pH Lv. 3-'FS; Temp 2014 Lv. 3 'IM' (7/32) [5C]. E.coli Lv. 2 (10/28) [3C] 'HP' High probability for adverse conditions - 'OE'.
9TSB-1-VAK	VAW-N17R_TSB01A12	CMON	NE46	0	6	S	0	6	S	0	6	S	2	5	IN/O																							Temp, DO and pH Lv. 3 [3D]. E.coli [3C] Lv. 2 'IN'. No additional data beyond 2012 IR.
9-VLY000.64	VAW-N17R_VLY01A16	TM	NE46	0	2	S	0	2	S	0	2	S									0	S			0	IN												2016 Cycle: PCB water column sample uncensored: WQS PCB water column criterion 640 pg/L. DW 127.23 pg/L (7/31/2014); WW 302.54 pg/L (10/15/2014). No 2014 PCB excursions of the PEC SV of 676 ppb.
9-VNK000.15	VAS-N10R_VNK02A04	A	NE29	0	12	S	0	12	S	0	12	S	1	12	S																	0	12	S				Private bridge off Rt 655
9WAB-1-VAK	VAW-N25R_WAB01A12	CMON	NE73	0	1	IN	0	1	IN	0	1	IN	0	1	IN																							Temp, DO and pH Lv. 3 [3A]. E.coli [3A] Lv. 2 'IN'. No additional data beyond 2012 IR.
9-WFC000.20	VAW-N32R_WFC01A00	A,TR	NE81	0	53	S	0	53	S	0	53	S	3	48	S						1	O										0	48	S				2011 PCB water column WQS 640 pg/L- Wet 1220.10 pg/L- 'OE'. Bacteria 2004 (FC 2/18) Listed. 2004 FT 1 sp; rock bass exceeds PCB WQS TV of 20 ppb (4 fish size 18.7-20.4 cm) at 22.09 ppb.
9-WFC003.69	VAW-N32R_WFC01A00	C,TM	NE81	0	3	S	0	3	S	0	3	S									1	O			0	S			0	S								2012 FT/Sed 2 sp. Rock Bass and Stoneroller find no exceeding PCB tissue values and no 2012 sediment excursions of the PEC SVs.
9-WFC005.61	VAW-N32R_WFC02A00	A	NE81	0	36	S	0	36	S	0	36	S	4	35	IM						0	S										0	36	S				Bacteria 2006 IR (E.coli 3/9) Listed.
9-WFC010.66	VAW-N32R_WFC03A00	B,FPM,TM	NE81	0	2	S	0	2	S	0	2	S																			FS	0	2	S				Two 2014 VSCI scores of 65.6 and 80.9
9-WFC011.05	VAW-N32R_WFC03A00	A	NE81	0	36	S	0	36	S	0	36	S	2	36	S						0	S										1	36	IN				Bacteria (E/coli) 2008 Listed. Waters remain impaired- single exceeding value greater than 2000 cfu/100 ml. Up and downstream stations show continued impairment.
9-WFC017.31	VAW-N32R_WFC04A00	A	NE81	4	36	IM	0	36	S	0	36	S	6	36	IM						0	S										1	36	IN				Temp Listing returns with 2014 IR. 2012 Temp Delist.
9-WFC024.57	VAS-N30R_WFC01B06	A,TM	NE78	0	35	S	0	35	S	0	35	S	8	35	IM																	0	22	S				Bridge #6125 on Rt 606 off US 52, Class V
9-WFC032.47	VAS-N30R_WFC01A00	A,TM	NE78	0	23	S	0	23	S	0	23	S	8	23	IM																	0	11	S				PVT. BRIDGE Guthrie Drive off Rt 614
9-WFC034.82	VAS-N30R_WFC01A00	B	NE78	0	2	S	0	2	S	0	2	S																			FS	0	2	S				At Camp Roland VSCI: 11/20/2012 79.69 06/05/2012 69.13
9-WFC039.16	VAS-N30R_WFC01A00	A,TM	NE78	0	23	S	0	23	S	0	23	S	15	23	IM																	0	11	S				At Camp Roland
9-WFC050.16	VAS-N30R_WFC01A06	A,TM	NE78	0	23	S	0	23	S	0	23	S	18	23	IM																	0	11	S				Bridge #6205 on Rt. 666 off Rt. 623, Class V

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																						
9-WLK004.34	VAW-N25R_WLK01A00	A,TM,TR	NE73	0	36	S	0	36	S	0	36	S	0	36	S						2	IM			1	O												2014 DELIST Bacteria. 2010 Water column PCBs: WQS 640 pg/l- 2010 Wet- 1,706 pg/l; 2011 Wet 648.8 pg/L. AQ 2000 sediment exceeds of PCB at 880 ppb (PEC SV 676 ppb). Trend Analysis.
9-WLK016.78	VAW-N25R_WLK02A00	FPM,B	NE73	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S									FS							VARS11-251- 2 surveys 2012. Avg. VSCI 68.4. No sediment collection.
9-WLK030.56	VAW-N25R_WLK03A00	A	NE71	0	12	S	0	12	S	0	12	S	1	12	S																							
9-WLK033.29	VAW-N25R_WLK03A00	FPM,B	NE71	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							J							VARS11-055- 2 surveys 2011. Avg. VSCI 60.9.
9-WLK033.90	VAS-N25R_WLK04A00	A	NE71	0	34	S	0	33	S	0	34	S	2	33	S						0	S										0	22	IN				2014 DELIST Bacteria.
9-WLK044.06	VAS-N25R_WLK04B12	A,TM	NE67	0	12	S	0	12	S	0	12	S	2	12	IM																							Rt 605 bridge #6010 E of Bland
9-WLK060.32	VAS-N25R_WLK04B12	A,TM	NE67	0	24	S	0	24	S	0	24	S	5	24	IM																	0	12	S				Rt 605 bridge #6010 E of Bland
9-WLS006.45	VAS-N02R_WLS01A98	B	NE03	0	3	S	0	3	S	0	3	S																			FS	0	2	S				West of Volney, off Rt. 58, Class VI VSCI: 06/06/2011 75.38 10/24/ 2011 80.62
9-WNS001.03	VAS-N26R_EWL01A10	FPM,PA,B	NE68	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S	0	S							FS	0	2	S				@ Jehu Hollow, Class VI VSCI: 10/05/2009 63.23 05/21/2009 62.65
9WRB-GL03-UVA	VAW-N28R_WRB01A04	CMON	NE75	0	0	NA	0	0	NA	0	1	IN																										
9-XAG000.01	VAW-N17R_XAG01A02	TM	NE46	0	0	NA	0	2	S	0	2	S									2	IM			0	S												
9-XBL000.20	VAS-N10L_XBL01A02	L	NE28	0	75	S	29	75	IM	2	75	S	0	6	S						0	S										0	7	S				Rural Retreat Lake - Station #1 @Dam, monitored in 2011.
9-XDP000.55	VAS-N04R_XDP01A06	B,TM	NE12	0	1	IN	0	1	IN	0	1	IN																			FS							N of Chestnut Hill Church, jeep trail VSCI: 11/19/2009 65.32 05/28/2009 67.74
9-XDP000.65	VAS-N04R_XDP01A06	TM	NE12	0	1	IN	0	1	IN	0	1	IN																										North of Independence, Class VI
9-XEH000.01	VAW-N22R_XEH01A08	TM,B	NE59	0	4	S	0	4	S	0	4	S																			FS							
9-XEH000.75	VAW-N22R_XEH01A08	B,TM	NE59	0	2	S	0	2	S	0	2	S																			IM							2 VSCI surveys (2006).
9-XEJ000.10	VAW-N22R_XEJ01A08	B,TM	NE59	0	2	S	0	2	S	0	2	S																			IM							2 VSCI surveys (2006).
9-XEM000.30	VAW-N20R_XEM01A08	A,B	NE51	0	2	S	0	2	S	0	2	S																			FS							2 surveys 2011-2012. Avg. VSCI 70.8. Little River Bacteria (Fed ID: 41519), Benthic (Sediment Fed ID: 41517) and Temperature (Fed ID: 41518) TMDL Study U.S. EPA approved on 3/14/2012.
9-XEO000.57	VAS-N13R_XEO01A10	FPM,B	NE35	0	2	S	0	2	S	0	2	S																			FS							Carryover from S of Liberty Bible Church, off Rt 638, Class VI VSCI: 10/25/2007 78.70 04/26/2007 71.54
9-XFD1-NCNR	VAS-N11R_XFD01A12	CMON	NE31	0	1	IN	0	1	IN		1	IN		1	IN																							40 feet upstream of Sunny Road, Level II pH 1/ 0 viol 3D EC 1/ 0 viol 3D
9-XFH000.92	VAS-N04R_XFH01A14	FPM,PA,B	NE09	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S									W	2	2	NA				Not assessed Intermittent stream, off Rt. 654 VSCI: 10/22/2012 21.82 04/25/2012 37.35
9XFI-GL12-UVA	VAW-N28R_XFI01A12	CMON	NE75	0	0	NA				0	1	IN																										
9-XFP000.32	VAW-N27R_XFP01A16	TM	NE72	0	1	IN	0	1	IN	0	1	IN																										
9-XFQ000.77	VAW-N17R_XFQ01A16	TM	NE46	0	2	S	0	2	S	0	2	S																										
9XFU-VT27-UVA	VAW-N28R_SNC20A14	CMON	NE75	0	0	NA				0	1	IN																										
9XFV-VA524-UVA	VAW-N28R_XFV01A16	CMON	NE75	0	2	S				2	2	IN																										
9XLW-VA042-UVA	VAW-N27R_ZZZ01A00	CMON	NE72	0	2	S				2	2	IN																										
BD01-UVA	VAS-N33R_DYF01A04	NONA	NE80								1	IN									0	IN																Level III Chloride Level II pH 1/1
BD02-UVA	VAS-N33R_LAC01B04	NONA	NE80								1	IN									0	IN																Level III Chloride Level II pH 0/1
BD03-UVA	VAS-N26R_DNG01A04	NONA	NE69			IN					1	IN									0	IN																Level III Chloride Level II pH 0/1
BD04-UVA	VAS-N31R_HCC01B04	NONA	NE77								1	IN									0	IN																Level III Chloride Level II pH 0/1
FL01-UVA	VAS-N13R_LLK01B04	NONA	NE35								1	IN									0	IN																Level III Chloride Level II pH 0/1
GL18-UVA	VAS-N26R_PDB01A04	NONA	NE69								1	IN									0	IN																Level III Chloride Level II pH 0/1
GL20-UVA	VAS-N26R_SDR01A00	NONA	NE70								1	IN									0	IN																Level III Chloride Level II pH 0/1
GL21-UVA	VAS-N26R_DML01A00	NONA	NE70								1	IN									0	IN																Level III Chloride Level II pH 0/1
GY04-UVA	VAS-N03R_XFR01A16	NONA	NE05								1	IN									0	IN																Fox Creek tributary from Hurricane Mountain, headwaters. Level III Chloride Level II pH 0/1 3D
GY05-UVA	VAS-N03R_OPM01A02	NONA	NE05								1	IN									0	IN																Level III Chloride Level II pH 0/1
GY06-UVA	VAS-N03R_SLM01A02	NONA	NE05								1	IN									0	IN																Level III Chloride Level II pH 0/1
GY07-UVA	VAS-N03R_MIR01A02	NONA	NE05								1	IN									0	IN																Level III Chloride Level II pH 0/1

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
GY08-UVA	VAS-N03R_RPK01A02	NONA	NE05								1	IN								0	IN																Level III Chloride Level II pH 0/1
GY09-UVA	VAS-N03R_XFS01A16	NONA	NE05								1	IN								0	IN																South of Hickory Ridge Level III Chloride Level II pH 0/1 3D
GY10-UVA	VAS-N02R_WLS01A04	NONA	NE03								1	IN								0	IN																Level III Chloride Level II pH 0/1
GY11-UVA	VAS-N02R_WLB01A02	NONA	NE03								1	IN								0	IN																Level III Chloride, Ammonia Level II pH 0/1
GY13-UVA	VAS-N03R_JER01A02	NONA	NE06								1	IN								0	IN																Level III Chloride Level II pH 0/1
GY14-UVA	VAS-N01R_BHO01A02	NONA	NE01								1	IN								0	IN																Level III Chloride Level II pH 0/1
GY16-UVA	VAS-N06R_BOU01A02	NONA	NE18								1	IN								0	IN																Level III Chloride Level II pH 0/1
PU06-UVA	VAS-N14R_RCR01A04	NONA	NE41								1	IN								0	IN																Level III Chloride Level II pH 0/1
SY09-UVA	VAS-N09R_DRC01A02	NONA	NE22								1	IN								0	IN																Level III Chloride Level II pH 0/1
SY10-UVA	VAS-N09R_CGG01A02	NONA	NE22								1	IN								0	IN																Level III Chloride Level II pH 0/1
SY11-UVA	VAS-N09R_MID01A02	NONA	NE22								1	IN								0	IN																Level III Chloride Level II pH 0/1
SY12-UVA	VAS-N09R_RCN01A04	NONA	NE22								1	IN								0	IN																Level III Chloride Level II pH 0/1
SY13-UVA	VAS-N09R_RCN01A04	NONA	NE22								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA01-UVA	VAS-N32R_COX01A10	NONA	NE79								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA02-UVA	VAS-N32R_CVC01A10	NONA	NE79								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA03-UVA	VAS-N32R_CVC01A10	NONA	NE79								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA04-UVA	VAS-N32R_CVC01A10	NONA	NE79								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA05-UVA	VAS-N32R_CVC01A10	NONA	NE79								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA06-UVA	VAS-N32R_CVC01A10	NONA	NE79								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA07-UVA	VAS-N32R_CVC01A10	NONA	NE79								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA08-UVA	VAS-N30R_LTL01A04	NONA	NE78								1	IN								0	IN																Level III Chloride Level II pH 0/1
TIME 98-004-UVA	VAS-N30R_XFE01A12	NONA	NE78		2	IN					2	IN								0	S																Level III Chloride Level II temp 0/2, pH 2/2
VT01-UVA	VAS-N01R_HTN01A98	NONA	NE02		15	IN					15	IN								0	S																At end of Helton Creek Lane Level III Chloride, Ammonia Level II temp 0/15, pH 0/15
VT02-UVA	VAS-N03R_LWS02A02	NONA	NE05		15	IN					16	IN								0	S																3000 feet upstream of Fairwood Road Level III Chloride Level II temp 0/15, pH 1/16
VT03-UVA	VAS-N03R_FXC01B02	NONA	NE05		16	IN					16	IN								0	S																1 mile from confluence with Lewis Fork Level III Chloride, Ammonia Level II temp 0/16, pH 0/16
VT04-UVA	VAS-N02R_LWN01A02	NONA	NE03		15	IN					15	IN								0	S																At US Forestry Service sampling station 9008 Level III Chloride Level II temp 0/15, pH 1/15
VT30-UVA	VAS-N26R_PTB01A00	NONA	NE70								1	IN								0	IN																Level III Chloride Level II pH 0/1
VT31-UVA	VAS-N26R_NBS01A00	NONA	NE69		16	IN					16	IN/O								0	S																At Route 677 bridge Level III Chloride, Ammonia Level II temp 0/16, pH 16/16
VT67-UVA	VAS-N06R_CEF01A02	NONA	NE17		11	IN					11	IN								0	S																At Blue Ridge Parkway National Park boundary Level III Chloride Level II temp 0/11, pH 0/11
VT81-UVA	VAS-N06R_XFT01A16	NONA	NE17		15	IN					15	IN								0	S																At Carroll and Grayson county line Level III Chloride Level II temp 0/15, pH 0/15 3D
WY01-UVA	VAS-N10R_VNK01A04	NONA	NE29								1	IN								0	IN																Level III Chloride Level II pH 0/1
WY02-UVA	VAS-N09R_KNS01A02	NONA	NE22								1	IN								0	IN																Level III Chloride Level II pH 0/1
WY03-UVA	VAS-N09R_DWF01A02	NONA	NE23								1	IN								0	IN																Level III Chloride Level II pH 0/1
WY04-UVA	VAS-N09R_DWF01A02	NONA	NE23								1	IN								0	IN																Level III Chloride Level II pH 0/1
WY05-UVA	VAS-N09R_JNC01A02	NONA	NE22								1	IN								0	IN																Level III Chloride Level II pH 0/1

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
New River Basin																																					
WY07-UVA	VAS-N09R_FMC01A02	NONA	NE23								1	IN								0	IN																Level III Chloride Level II pH 0/1

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), “Exceed” refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and “Samples” represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia’s portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
0164425950	VAN-A09R_HPR01A00	USGS	PL18	0	19	S	0	19	S	0	19	S								0	S																
01644343	VAN-A10R_OFT01A14	USGS	PL21	0	19	S	0	19	S	0	19	S								0	S																
01645704	VAN-A11R_DIF04A02	USGS	PL22	0	40	S	0	40	S	0	40	S								0	S																Continuous Monitoring Data - Temp: 2011 (0/348, 0%), 2012 (0/357, 0%), 2013 (0/356, 0%), 2014 (0/363, 0%). Temp (hourly max change): 2011 (0/33,331, 0%), 2012 (0/34,390, 0%), 2013 (0/34,040, 0%), 2014 (0/34,658, 0%). DO: 2011 (0/321, 0%), 2012 (2/341, 0.6
01645745	VAN-A11R_LID01A02	USGS	PL22	0	39	S	0	39	S	0	39	S								0	S																
01645762	VAN-A11R_SOL01A02	USGS	PL22	0	39	S	0	39	S	0	39	S								0	S																Continuous Monitoring Data - Temp: 2011 (0/358, 0%), 2012 (0/362, 0%), 2013 (0/352, 0%), 2014 (0/355, 0%). Temp (hourly max change): 2011 (0/34,301, 0%), 2012 (1/34,875, 0%), 2013 (6/33,650, 0.02%), 2014 (4/33,952, 0.01%). DO: 2011 (0/159, 0%), 2012 (0/35
01645844	VAN-A11R_OCS01A04	USGS	PL22	0	39	S	0	39	S	0	39	S								0	S																
01645940	VAN-A11R_CAH01A04	USGS	PL22	0	40	S	0	40	S	0	40	S								0	S																
01646000	VAN-A11R_DIF01A00	USGS	PL22	0	6	S	0	6	S	0	6	S								0	S																Continuous Monitoring Data - Temp: 2013 (0/358, 0%), 2014 (0/357, 0%). Temp (hourly max change): 2013 (88/34,897, 0.25%), 2014 (111/34,780, 0.32%). DO: 2013 (0/337, 0%), 2014 (2/328, 0.61%). pH: 2013 (0/361, 0%), 2014 (0/361, 0%).
01646305	VAN-A11R_DEA01A04	USGS	PL23	0	39	S	0	39	S	0	39	S								0	S																Continuous Monitoring Data - Temp: 2011 (0/355, 0%), 2012 (0/358, 0%), 2013 (0/356, 0%). Temp (hourly max change): 2011 (3/34,087, 0.01%), 2012 (2/34,630, 0.01%), 2013 (12/34,077, 0.04%). DO: 2012 (0/258, 0%), 2013 (0/351, 0%). pH: 2011 (0/340, 0%), 2012
01652789	VAN-A13R_INA01A06	USGS	PL26	0	39	S	0	39	S	0	39	S								0	S																
01652860	VAN-A13R_TUC01A14	USGS	PL26	0	40	S	0	40	S	0	40	S								0	S																
01653717	VAN-A14R_PAU01A04	USGS	PL28	0	42	S	6	42	IM	0	42	S								0	S																
01653844	VAN-A14R_XMS01A14	USGS	PL27	0	21	S	0	21	S	2	21	S								0	S																
0165389205	VAN-A15R_ACO05A04	USGS	PL30																																		Continuous Monitoring Data - Temp: 2013 (0/359, 0%), 2014 (0/353, 0%). Temp (hourly max change): 2013 (10/34,663, 0.03%), 2014 (8/33,805, 0.02%). DO: 2013 (4/360, 1.11%), 2014 (1/299, 0.33%). pH: 2013 (0/355, 0%), 2014 (0/303, 0%).
01654500	VAN-A15R_LOE01A02	USGS	PL30	0	19	S	0	19	S	0	19	S								0	S																Continuous Monitoring Data - Temp: 2014 (0/351, 0%). Temp (hourly max change): 2014 (5/33,534, 0.01%). DO: 2014 (0/322, 0%). pH: 2014 (0/348, 0%).
01655305	VAN-A16R_XMT01A14	USGS	PL29	0	19	S	0	19	S	1	19	S								0	S																
01656903	VAN-A22R_FLL02A14	USGS	PL45	0	38	S	0	38	S	0	38	S								0	S																Continuous Monitoring Data - Temp: 2011 (0/361, 0%), 2012 (0/354, 0%), 2013 (0/359, 0%), 2014 (0/359, 0%). Temp (hourly max change): 2011 (0/34,690, 0%), 2012 (0/34,102, 0%), 2013 (4/34,666, 0.01%), 2014 (0/34,862, 0.01%). DO: 2012 (5/265, 1.9%), 2013 (0/
0165690673	VAN-A22R_FRB01A14	USGS	PL45	0	39	S	1	39	S	0	39	S								0	S																
0165694286	VAN-A22R_BIR02A02	USGS	PL45	0	37	S	0	37	S	0	37	S								0	S																
01657100	VAN-A23R_WIO01A14	USGS	PL46	0	18	S	0	18	S	0	18	S								0	S																
01657322	VAN-A23R_XMU01A14	USGS	PL46	0	41	S	0	40	S	0	41	S								0	S																
01657394	VAN-A23R_CAT01A14	USGS	PL46	0	41	S	0	40	S	0	41	S								0	S																
01658500	VAN-A26R_SOQ01B02	USGS	PL52	0	32	S	0	31	S	1	32	S	3	28	IM					0	S																Level II data: DO (0/1). Colocated with DEQ station 1aSOQ006.73.
01659000	VAN-A26R_NOR01A02	USGS	PL53	0	24	S	0	23	S	1	24	S	2	22	S					0	S																Colocated with DEQ station 1aNOR009.87
01659500	VAN-A26R_MIP01A12	USGS	PL53	0	4	S	0	4	S	0	4	S	0	4	S					0	S																
01659700	VAN-A26L_CHO01A08	USGS	PL53	0	7	S	0	7	S	0	7	S	0	7	S					0	S																Breckenridge Reservoir pooled data, non-lacustrine. All non-nutrient data pooled. DO (0/21) S, Temp (0/21) S, pH (0/21) S.
01660000	VAN-A26R_SOB01A12	USGS	PL53	0	4	S	0	4	S	1	4	IN	0	4	S					0	S																
01660020	VAN-A26L_CHO01A08	USGS	PL53	0	7	S	0	7	S	0	7	S	0	6	S					0	S																Breckenridge Reservoir pooled data, non-lacustrine. All non-nutrient data pooled. DO (0/21) S, Temp (0/21) S, pH (0/21) S.
01660030	VAN-A26L_CHO01A08	USGS	PL53	0	7	S	0	7	S	0	7	S	0	7	S					0	S																Breckenridge Reservoir pooled data, lacustrine. All non-nutrient data pooled. DO (0/21) S, Temp (0/21) S, pH (0/21) S. No Chla data; algaecides not applied.
1AACC000.52	VAN-A29E_ACC01A00	C2,TM	PL58		1	NA		1	NA	0	1	IN				0	1	W		0	IN																WOE - 2012 (2B)
1AACC006.13	VAN-A29R_ACC01A00	A,TM	PL58	0	12	S	0	12	S	0	12	S	2	12	IM																						
1AACC-SCDOBE-ALL	VAN-A29E_ACC01A00	CMON	PL58		7	NA		6	NA	0	7	IN																									Level II data: DO (0/1).
1AACC-SCRAVEN-ALL	VAN-A29R_ACC01A00	CMON	PL58	0	21	S	0	21	S	0	20	IN																									
1AACO004.84	VAN-A15R_ACO01A00	A,TM	PL30	0	12	S	0	12	S	0	12	S	4	12	IM																						
1AACO014.57	VAN-A15R_ACO02A00	A,CB,TR	PL30	0	86	S	0	86	S	0	86	S	19	60	IM					0	S																USGS sampling
1AACO-1654000-MD	VAN-A15R_ACO02A00	USGS	PL30	0	96	S	0	94	S	1	96	S								3	IM																Routine sampling by MD USGS (1654000); 3 chloride acute exceedances; ammonia (0/18)
1AACO-ACC14-SOS	VAN-A15R_ACO02A00	CMON	PL30																												HP						6 sampling event (6u).
1AACO-ACC6-SOS	VAN-A15R_ACO02A00	CMON	PL30																												HP						2 sampling events (2u).
1AACO-ACC9-SOS	VAN-A15R_ACO03A02	CMON	PL30																												HP						4 sampling events (4u).
1AANT001.31	VAP-A32R_ANT01A14	TM	PL68	0	5	S	0	5	S	4	5	IM	0	5	S																						No data since 2014 cycle
1AAUA000.22	VAN-A28E_AUA01A14	A	PL61		2	NA		2	NA	0	2	S								0	IN																
1AAUA000.65	VAN-A28E_AUA01A14	A	PL57		21	NA		21	NA	0	21	S				0	1	W		0	S																

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
1AAUA001.39	VAN-A28E_AUA01B06	A,CB,TM,TR	PL57		74	NA		74	NA	3	74	S				0	15	S			0	S															
1AAUA002.04	VAN-A28E_AUA01B06	C2	PL57		3	NA		3	NA	3	3	IM				0	1	W	0	IN	0	IN															WOE - 2011 (2A)
1AAUA003.71	VAN-A28E_AUA01C00	A,TE,CB,TR	PL57		133	NA		133	NA	13	133	S				1	38	S			0	S															
1AAUA-003.71-VIMS	VAN-A28E_AUA01C00	NONA	PL57		41	NA		41	NA	0	41	S																									
1AAUA004.62	VAN-A28E_AUA01D06	C2	PL57		1	NA		1	NA	0	1	W				0	1	W			0	IN															WOE - 2012 (2B)
1AAUA005.35	VAN-A28E_AUA01D06	A,TE,SS	PL57		57	NA		57	NA	0	57	S				0	4	S																			
1AAUA007.92	VAN-A28E_AUA02A04	A,TM	PL57		12	NA		12	NA	0	12	S																									
1AAUA012.15	VAN-A27L_AUA01A02	L	PL56	0	213	S	0	35	S	25	213	S	1	14	S						0	S										0	2	S	0	2	S	Smith Lake (Aquia Reservoir), lacustrine: Chla & TP FS (algaecides applied) 2014, 2014. Non-nutrient data pooled (1AAUA012.15, 1AAUA012.55, 1ABED000.19) DO (0/55) S, Temp (0/329), pH (32/329), Wat_Tox (0/23), E.coli (1/23)
1AAUA012.55	VAN-A27L_AUA01A02	L	PL56	0	49	S	0	9	S	3	49	S	0	4	S						0	S															Smith Lake (Aquia Reservoir), non-lacustrine: Non-nutrient data pooled (1AAUA012.15, 1AAUA012.55, 1ABED000.19) DO (0/55) S, Temp (0/329), pH (32/329), Wat_Tox (0/23), E.coli (1/23)
1AAUA014.51	VAN-A27R_AUA01A00	A,TR	PL56	0	33	S	0	32	S	0	33	S	4	32	IM																						Colocated with citizen station 1aAUA-SCONVILLE-ALL.
1AAUA023.09	VAN-A27R_AUA02A02	A	PL56	0	10	S	0	10	S	0	10	S	2	10	IM																						
1AAUA-A1-ALL	VAN-A28E_AUA02A04	CMON	PL57		11	NA	0	11	IN	0	4	S																									Level II data: pH(0/8).
1AAUA-A2-ALL	VAN-A28E_AUA02A04	CMON	PL57		12	NA	1	11	IN	0	4	S																									Level II data: pH(0/8).
1AAUA-A3-ALL	VAN-A28E_AUA02A04	CMON	PL57		12	NA	1	11	IN	0	4	S																									Level II data: pH(0/8).
1AAUA-SC3085-ALL	VAN-A28E_AUA02A04	CMON	PL57		10	NA		10	NA	0	10	IN																									
1AAUA-SCHARB-ALL	VAN-A28E_AUA02A04	CMON	PL57		9	NA		9	NA	0	9	IN																									
1AAUA-SCONVILLE-ALL	VAN-A27R_AUA01A00	CMON	PL56	0	22	S	0	20	S	0	21	IN																									Colocated with DEQ station 1aAUA014.51.
1AAUA-SCSHORE-ALL	VAN-A28E_AUA01B06	CMON	PL57		22	NA		22	NA	0	22	IN																									
1AAUS000.49	VAN-A28R_AUS01A04	A,TM	PL57	0	12	S	0	12	S	0	12	S	2	12	IM																						
1AAUS001.60	VAN-A28R_AUS02A06	A	PL57	0	12	S	0	11	S	0	12	S	3	12	IM																						
1AAUS-B1-ALL	VAN-A28R_AUS01A04	CMON	PL57	0	12	S	1	11	IN	0	3	S	5	11	IN/O																						Level II data: pH (0/9).
1AAUS-B2-ALL	VAN-A28R_AUS01A04	CMON	PL57	0	12	S	0	11	IN	0	4	S	5	11	IN/O																						Level II data: pH (0/8).
1AAUS-B3-ALL	VAN-A28R_AUS01A04	CMON	PL57	0	12	S	1	11	IN	0	3	S	6	11	IN/O																						Level II data: pH (0/9).
1AAUS-SCAUST-ALL	VAN-A28R_AUS02A06	CMON	PL57	0	6	S	0	6	S	0	6	IN																									
1ABAL001.40	VAN-A13R_BAL01A00	A	PL26	0	11	S	0	11	S	0	11	S	3	11	IM																						
1ABAN001.34	VAP-A32R_BAN01A14	TM	PL68	0	12	S	3	12	IM	5	12	IM	3	12	IM																						No data since 2014 cycle
1ABAO-16-SOS	VAN-A08R_BAO01A06	CMON	PL13	0	15	S	0	8	IN	0	3	S	3	15	IN/O																	LP					Level II data: pH (1/5). 1 sampling event (1a).
1ABEA000.77	VAP-A32R_BEA01A04	TM	PL68	0	12	S	0	12	S	1	12	S	1	12	S																						No data since 2014 cycle
1ABEC004.76	VAN-A07R_BEC01A00	A,B,TR	PL11	0	34	S	0	33	S	0	34	S	5	31	IM																	FS					
1ABEC011.76	VAN-A07R_BEC03A12	A	PL11	0	12	S	0	12	S	0	12	S	6	12	IM																						
1ABED000.19	VAN-A27L_AUA01A02	L	PL55	0	67	S	0	11	S	4	67	S	0	5	S						0	S															Smith Lake (Aquia Reservoir), non-lacustrine: Non-nutrient data pooled (1AAUA012.15, 1AAUA012.55, 1ABED000.19) DO (0/55) S, Temp (0/329), pH (32/329), Wat_Tox (0/23), E.coli (1/23)
1ABED009.37	VAN-A27R_BED02A16	FPM,B	PL55	0	2	S	0	2	S	0	2	S	0	1	W						0	S															
1ABEM000.60	VAN-A09R_BEM01A04	A,TM,B	PL19	0	16	S	0	16	S	0	16	S	3	12	IM				0	S	0	S															
1ABEM-13C-SOS	VAN-A09R_BEM02B10	CMON	PL19																												HP					2 sampling events (1g/1u).
1ABIB000.69	VAN-A08R_BIB01A14	A	PL14	0	9	S	0	9	S	0	9	S	3	9	IM																						
1ABIR002.19	VAN-A22R_BIR01A02	A	PL45	0	10	S	0	10	S	0	10	S	4	10	IM																						
1ABIR-CR17-SOS	VAN-A22R_BIR02A02	CMON	PL45																												HP					9 sampling events (1a/3g/5u).
1ABIR-CR4-SOS	VAN-A22R_BIR02A02	CMON	PL45																												HP					1 sampling event (1u).
1ABIR-CR5-SOS	VAN-A22R_BIR01A02	CMON	PL45																												HP					8 sampling events (8u).
1ABOL000.05	VAN-A04R_BOL01A04	A	PL07	0	6	S	0	6	S	0	6	S	2	6	IM																						
1ABOL-18-SOS	VAN-A04R_BOL01A04	CMON	PL07	0	10	S	0	4	IN	0	4	IN	1	9	IN/O																	LP					3 sampling events (2a/1g).
1ABOL-9-SOS	VAN-A04R_BOL01A04	CMON	PL07	0	8	S	0	1	IN	0	1	W	0	9	IN																	LP					5 sampling events (3a/1g/1u).
1ABOM000.46	VAP-A33E_BOM01A98	A	PL70		12	NA		12		0	12	S				4	12	IM																6		No new data since 2012 cycle
1ABRB002.15	VAN-A09R_BRB01A00	A,TR,B,FPM,TM	PL19	0	43	S	0	43	S	0	43	S	7	40	IM				0	S	0	S															
1ABRB006.33	VAN-A09R_BRB03A06	A,TM	PL19	0	12	S	1	12	S	0	12	S	2	12	IM				0	S	0	S															
1ABRB006.97	VAN-A09R_BRB03A06	B	PL19	0	3	S	0	3	S	0	3	S																				IM					
1ABRB015.38	VAN-A09R_BRB04A08	A,TM	PL17	0	23	S	0	23	S	0	23	S	6	23	IM				0	S	0	S															
1ABRB015.43	VAN-A09R_BRB04A08	B	PL17	0	4	S	0	4	S	0	4	S																				IM					
1ABRB018.07	VAN-A09R_BRB05A12	FPM	PL17	0	1	W	0	1	W	0	1	W	1	1	W				0	IN	0	IN	0	S													
1ABRB-BR1-SOS	VAN-A09R_BRB01A00	CMON	PL19																												HP					1 sampling event (1u). FKA 1aBRB-BR1-LWC.
1ABRB-LWC19-SOS	VAN-A09R_BRB03C10	CMON	PL17																												HP					3 sampling events (3u).
1ABRB-NFBR1-SOS	VAN-A09R_BRB04A08	CMON	PL17																												MP					2 sampling events (1a/1u).
1ABRG000.15	VAP-A31E_BRG01A04	TM	PL67		36	NA		36		1	36	S				26	35	IM																		Connection between Bridges and Potomac sometimes blocked
1ABRG002.69	VAP-A31R_BRG01A12	TM	PL67	0	3	S	0	3	S	0	3	S	0	3	S																						No new data since 2012 cycle
1ABRU001.59	VAN-A19R_BRU01A04	A,TR	PL34	0	33	S	0	33	S	0	33	S	7	32	IM																						
1ABRU026.40	VAN-A19R_BRU08A04	A	PL31	0	12	S	0	12	S	0	12	S	3	12	IM																						
1ABRU-1-PWSWCD	VAN-A19R_BRU01A04	CMON	PL34										1	9	IN/O																						

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
1ABRU-LM01-OWML	VAN-A19L_BRU02A02	OWML	PL32	0	1669	S	57	985	S	4	1669	S																						0	2	S	Lake Manassas, lacustrine, data pooled. Chla FS 2013, 2014 (LM01, LM02, LM03, LM04, LM05, LM06) (TP not assessed, no algaecide application). Non-nutrient data pooled thru-out lake. DO (168/5445) S, Temp (0/8749) S, pH (10/8749) S
1ABRU-LM04-OWML	VAN-A19L_BRU03A02	OWML	PL32	0	1404	S	36	822	S	2	1404	S																						0	2	S	Lake Manassas, lacustrine, data pooled. Chla FS 2013, 2014 (LM01, LM02, LM03, LM04, LM05, LM06) (TP not assessed, no algaecide application). Non-nutrient data pooled thru-out lake. DO (168/5445) S, Temp (0/8749) S, pH (10/8749) S
1ABRU-LM05-OWML	VAN-A19L_BRU03A02	OWML	PL32	0	947	S	9	657	S	0	947	S																						0	2	S	Lake Manassas, lacustrine, data pooled. Chla FS 2013, 2014 (LM01, LM02, LM03, LM04, LM05, LM06) (TP not assessed, no algaecide application). Non-nutrient data pooled thru-out lake. DO (168/5445) S, Temp (0/8749) S, pH (10/8749) S
1ABRU-LM06-OWML	VAN-A19L_BRU04A02	OWML	PL32	0	854	S	5	526	S	2	854	S																						0	2	S	Lake Manassas, lacustrine, data pooled. Chla FS 2013, 2014 (LM01, LM02, LM03, LM04, LM05, LM06) (TP not assessed, no algaecide application). Non-nutrient data pooled thru-out lake. DO (168/5445) S, Temp (0/8749) S, pH (10/8749) S
1ABRU-LM07-OWML	VAN-A19L_BRU07A12	OWML	PL32	0	602	S	2	401	S	0	602	S																									Lake Manassas, non-lacustrine. Non-nutrient data pooled. DO (168/5445) S, Temp (0/8749) S, pH (10/8749) S
1ABRU-LM08-OWML	VAN-A19L_BRU06A12	OWML	PL32	0	874	S	7	517	S	0	874	S																									Lake Manassas, non-lacustrine. Non-nutrient data pooled. DO (168/5445) S, Temp (0/8749) S, pH (10/8749) S
1ABSC-BIGSP1-SOS	VAN-A03R_BSC01A06	CMON	PL05																												HP							3 sampling events (1g/2u).
1ABUL016.31	VAN-A21R_BUL01D08	A,CR	PL44	0	12	S	0	12	S	0	12	S	2	12	IM																							
1ABUL025.94	VAN-A21R_BUL02A00	A,B,TR	PL42	0	34	S	0	34	S	0	34	S	3	32	S																		IM						
1ABUN-BULL01-SOS	VAN-A11R_BUN01A02	CMON	PL23																												MP							4 sampling events (1a/2g/1u).
1ABUP001.19	VAP-A31R_POP01A00	TM	PL67	0	12	S	0	12	S	6	12	IM																									No new data since 2012 cycle
1ABUV000.15	VAP-A32R_BUV01A14	TM	PL68	0	12	S	0	12	S	3	12	IM	3	12	IM																							No data since 2014 cycle
1ACAA001.18	VAN-A21R_CAA01A02	B	PL43	0	2	S	0	2	S	0	2	S																				IM						
1ACAA007.34	VAN-A21R_CAA02A08	B	PL43	0	2	S	0	1	W	0	2	S																				FS						
1ACAA-CREW-SOS	VAN-A21R_CAA01A02	CMON	PL43																												MP							11 sampling events (4a/2g/5u).
1ACAB-CB01-SOS	VAN-A09R_CAB01A12	CMON	PL19																												HP							1 sampling event (1u).
1ACAM002.92	VAN-A13R_CAM01A04	A,TR	PL26	0	34	S	0	34	S	0	33	S	2	33	S																							
1ACAS000.58	VAP-A31R_CAS01A00	A	PL67	0	12	S	5	12	IM	3	12	IM	1	12	S																							No new data since 2012 cycle
1ACAX003.81	VAN-A02R_CAX01A00	FPM,B	PL03	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S										FS							
1ACAX004.57	VAN-A02R_CAX01A00	A,TR,CB,B	PL03	0	61	S	0	59	S	0	60	S	10	57	IM						0	S										FS							Colocated with citizen station 1aCAX-4.57-LWC
1ACAX-4.57-LWC	VAN-A02R_CAX01A00	CMON	PL03										5	6	IN/O																							Colocated with DEQ station 1aCAX004.57
1ACAX-6.50-LWC	VAN-A02R_CAX02A08	CMON	PL03										5	6	IN/O																							
1ACER006.00	VAN-A18R_CER01A02	A,TR	PL40	0	33	S	0	32	S	0	33	S	8	33	IM																							
1ACER012.66	VAN-A18R_CER02A02	FPM,B	PL38	0	1	W				0	1	W	0	1	W				0	IN	0	IN										IN							
1ACER016.46	VAN-A17R_CER02A02	A,TR	PL38	0	33	S	0	32	S	0	33	S	9	32	IM																							
1ACER030.62	VAN-A17R_CER03C12	A	PL35	0	23	S	0	23	S	0	23	S	7	23	IM																							
1ACHC001.50	VAP-A32R_CHC01A14	TM	PL69	1	12	S	1	12	S	0	12	S	0	12	S																							No data since 2014 cycle
1ACHN002.97	VAN-A29E_CHN02A10	A	PL62		12	NA		12	NA	0	12	S				3	12	IM																			
1ACHO000.47	VAN-A26E_CHO01A04	A,CB,TR	PL53		62	NA		62	NA	0	62	S									0	S															
1ACHO003.47	VAN-A26R_CHO01A02	FPM,B	PL53	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S								FS							
1ACHO003.65	VAN-A26R_CHO01A02	A,TM	PL53	0	12	S	0	11	S	0	12	S	1	12	S																							
1ACHT000.84	VAN-A21R_CHT01A14	A	PL42	0	7	S	0	7	S	0	7	S	1	7	IN																							
1ACLK002.40	VAN-A03R_CLK01A08	A,B	PL04	0	4	S	0	3	S	0	4	S																				FS							
1ACLK-CLRK01-SOS	VAN-A03R_CLK01A08	CMON	PL04																												LP							1 sampling event (1a).
1ACOA001.44	VAP-A34E_COA02A02	A,TR	PL72		37	NA		37		0	37	S				1	36	S																		35		
1ACOA002.52	VAP-A34E_COA02A02	C2,B	PL72		5	NA		5		0	5	W				0	1	W			0	IN	0	S	0	S						J					1		One sample event; 2012 WOE: category 3B HM-M scenario 8; no data since 2014 cycle
1ACOA004.12	VAP-A34E_COA01B16	TM	PL72		12	NA		12		0	12	S				2	12	IM																				No new data since 2012 cycle
1ACOC000.42	VAP-A34E_COC02A14	A	PL73		12	NA		12		0	12	S				1	12	S																		6		No new data since 2012 cycle; green
1ACON000.96	VAP-A34E_COA01A98	TM	PL72		19	NA		19		2	19	S				8	18	IM																				Previously considered riverine; no new data since 2012 cycle
1ACON002.88	VAP-A34R_CON01B10	TM,B	PL72	0	20	S	0	20	S	0	20	S	1	6	IN						0	S										FS							2010 benthics; no new E. coli since 2012 cycle
1ACOV-DR27-SOS	VAN-A11R_COV02A02	CMON	PL22																												HP							16 sampling events (2a/1g/13u).
1ACOV-DR28-SOS	VAN-A11R_COV02A02	CMON	PL22																												LP							14 sampling events (11a/1g/2u).
1aCOV-DR35-SOS	VAN-A11R_COV01B06	CMON	PL22																												HP							3 sampling events (3u).
1ACOW000.38	VAP-A31R_MAO01A98	B,A	PL66	0	2	S	0	2	S	1	2	IN																				FS							previous pH impairment; 2012 benthics; no data since 2014 cycle
1ACRA000.42	VAN-A04R_CRA01A04	A	PL07	0	6	S	0	6	S	0	6	S	2	6	IM																							
1ACRA-10-SOS	VAN-A04R_CRA02A08	CMON	PL07	0	10	S	0	4	IN	0	4	IN	1	10	IN																							5 sampling events (5a).
1ACRE000.06	VAN-A20R_CRE01A16	B	PL41	0	2	S	0	2	S	0	2	S																				FS							
1ACRF001.18	VAN-A06R_CRF01A02	A,B	PL12	0	11	S	0	11	S	0	11	S	4	9	IM																							Colocated with citizen station 1ACRF-3-SOS.
1ACRF-3-SOS	VAN-A06R_CRF01A02	CMON	PL12																												LP							2 sampling events (2a). Colocated with DEQ station 1ACRF001.18.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																						
1ACRF-6-SOS	VAN-A06R_CRF01A02	CMON	PL12																												LP							11 sampling events (10a/1g).
1ACRM001.20	VAN-A05R_CRM01A00	A	PL09	0	12	S	0	12	S	0	12	S	3	12	IM																							
1ACRM005.39	VAN-A05R_CRM02A06	A	PL09	0	16	S	1	16	S	0	16	S	6	16	IM																							
1ACRM-14-SOS	VAN-A05R_CRM02A06	CMON	PL09																												LP							1 sampling events (1a).
1ACRM-15A-SOS	VAN-A05R_CRM02A06	CMON	PL09	0	15	S	0	8	IN	0	3	S	2	15	IN/O																MP							6 sampling events (3a/2g/1u). Level II data: pH (1/5).
1ACUB002.61	VAN-A22R_CUB01A00	A,TR	PL45	0	33	S	0	33	S	0	33	S	6	32	IM																							Colocated with citizen station 1aCUB-CR13-SOS.
1ACUB004.63	VAN-A22R_CUB01A00	FPM,B	PL45	0	3	S	0	3	S	0	3	S	0	2	S				0	S	0	S									IM							
1ACUB-CR13-SOS	VAN-A22R_CUB01A00	CMON	PL45																												HP							4 sampling events (4u). Colocated with DEQ station 1aCUB002.61.
1ACUB-CR2-HPSOS	VAN-A22R_CUB02A02	CMON	PL45																												HP							1 sampling event (1u).
1ACUB-CR6-SOS	VAN-A22R_CUB01A00	CMON	PL45																												MP							14 sampling events (6a/1g/7u).
1ACUR002.58	VAP-A32E_CRB03A14	C2,B	PL69		3	NA		3		0	3	W				0	1	W	0	IN	0	IN	0	S	0	S					J				1			One sample event; 2011 WOE: category 3B LM-S scenario 8; no data since 2014 cycle
1ACUT000.58	VAP-A34E_CUT01A98	A	PL73		12	NA		12		0	12	S				0	12	S																		6			No new data since 2012 cycle; green
1ACWB-9-PWSWCD	VAN-A25R_CWB01A12	CMON	PL49										1	3	IN/O																							
1ADBR001.37	VAN-A29R_DBR01A10	A	PL61	0	7	S	0	7	S	0	7	S	1	7	IN																							
1ADEA-DEA-SOS	VAN-A11R_DEA01A04	CMON	PL23																												HP							1 sampling event (1u).
1ADED000.29	VAN-A11R_DEA01A04	B	PL23	0	2	S	0	2	S	0	2	S																			IM							
1ADIF000.86	VAN-A11R_DIF01A00	A,TM,TR,CB	PL22	0	92	S	0	92	S	0	91	S	21	54	IM						0	S																USGS sampling
1ADIF-DR25-SOS	VAN-A11R_DIF04A02	CMON	PL22																												HP							1 sampling event (1u).
1ADIF-DR34-SOS	VAN-A11R_DIF01A00	CMON	PL22																												MP							4 sampling events (1a/3g).
1ADIF-DR37-SOS	VAN-A11R_DIF02A02	CMON	PL22																												HP							1 sampling event (1u).
1ADIF-DR38-SOS	VAN-A11R_DIF01A00	CMON	PL22																												HP							3 sampling events (1g/2u).
1ADOU000.60	VAN-A14E_DOU01A00	A,TE,TR,CB	PL27		94	NA		94	NA	2	94	S	1	47	S						0	S															
1ADOU001.02	VAN-A14E_DOU01A00	C	PL27																										2	IM							FTT: IM for PCBs (2014; NSH)
1ADOU003.17	VAN-A14R_DOU01A04	A	PL27	0	12	S	0	12	S	0	12	S	6	12	IM																							
1ADRL001.00	VAN-A08R_DRL01A16	B	PL16	0	4	S	0	4	S	0	4	S																			J							
1AELC001.39	VAN-A22R_ELC01A04	A,B	PL45	0	12	S	0	12	S	0	12	S	3	10	IM																	IM							
1AELK000.10	VAN-A18R_ELK01A08	A	PL39	0	8	S	0	8	S	0	8	S	4	8	IM																							
1AFLL000.88	VAN-A22R_FLL01A04	A	PL45	0	10	S	0	10	S	0	10	S	4	10	IM																							
1AFOU000.19	VAN-A12E_FOU01A00	A,TR	PL25		34	NA		34	NA	0	33	S	12	33	IM																							
1AFOU001.92	VAN-A12R_FOU01A00	A,TR	PL25	0	34	S	0	34	S	3	33	S	13	33	IM																							
1AFOU005.60	VAN-A12R_FOU01A00	A	PL25	0	5	S	0	5	S	0	5	S	3	5	IM																							
1AFOX000.23	VAP-A31R_POP01A00	TM	PL67	0	12	S	2	12	IM	11	12	IM																										No new data since 2012 cycle
1AGAD000.77	VAP-A33E_GAD01A98	A	PL70		12	NA		12		0	12	S				1	12	S																		6			No new data since 2012 cycle
1AGAD001.73	VAP-A33R_GAD01A10	TM	PL70	0	6	S	1	6	IN	6	6	IM	1	6	IN		6	NA																				High salinity values during approximately half of sampling events. Salinity comes through gravel under culverts. No new data since 2012 cycle.
1AGAD002.54	VAP-A33R_GAD01A10	TM	PL70	0	11	S	3	11	IM	11	11	IM	0	7	S						0	S																
1AGAM003.50	VAN-A30E_GAM01A02	A	PL63		9	NA		9	NA	3	9	IM																										
1AGAM003.83	VAN-A30R_GAM01A04	A	PL63	0	5	S	4	5	IM	2	5	IM																										
1AGAR002.24	VAN-A04R_GAR01A04	A	PL07	0	15	S	0	15	S	0	15	S	6	15	IM																							
1AGAR-8-SOS	VAN-A04R_GAR01A04	CMON	PL07	0	4	S	0	1	IN	0	1	W	0	4	IN																MP							2 sampling events (1a/1u).
1AGIL000.85	VAN-A25R_GIL01A04	A,TM	PL48	0	12	S	0	12	S	0	12	S	2	12	IM																							
1AGIL003.10	VAN-A25R_GIL01A04	B	PL48	0	1	W	0	1	W	0	1	W																			IM							
1AGIL-GR1-SOS	VAN-A25R_GIL01A04	CMON	PL48																												MP							1 sampling event (1g).
1AGLB001.40	VAP-A34E_GLE03A00	C2,B	PL72		5	NA		5		0	5	W				0	1	W	0	IN	0	IN	0	S	0	S					J				1			One sample event; 2011 WOE: category 3B LM-M scenario 8; no data since 2014 cycle
1AGLE001.56	VAP-A34E_GLE03A00	C2,B	PL72		3	NA		3		0	3	W				0	1	W	0	IN	0	IN	0	S	0	S					J				1			1 sample event; WOE - 2009 Category 3B, HM-M scenario 5; no new data since 2012 cycle
1AGOO000.50	VAN-A08R_GOO01A00	FPM	PL16	0	1	W	0	1	W	0	1	W									0	IN															
1AGOO002.38	VAN-A08R_GOO01A00	A,B,TR	PL16	0	37	S	0	36	S	0	37	S	5	35	IM																IM							
1AGOO011.23	VAN-A08R_GOO03A02	A,B,TR	PL14	0	37	S	0	37	S	0	37	S	5	33	IM																J							
1AGOO018.17	VAN-A05R_GOO01A00	FPM,B	PL10	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									FS							
1AGOO022.44	VAN-A05R_GOO01A00	A,B	PL10	0	4	S	0	4	S	0	4	S																			FS							
1AGOO030.75	VAN-A05R_GOO02A06	A,B,TR	PL10	0	36	S	0	36	S	0	36	S	5	33	IM																FS							
1AGOO036.61	VAN-A05R_GOO02C04	PA	PL07	0	12	S	0	12	S	0	12	S	2	12	IM																							
1AGOO039.63	VAN-A04R_GOO01A08	FPM,B	PL07	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									FS							
1AGOO044.36	VAN-A04R_GOO01B00	A,TR	PL07	0	33	S	0	33	S	0	33	S	5	33	IM																							
1AGOO-10-SOS	VAN-A05R_GOO01A00	CMON	PL10	0	11	S	0	5	IN	0	3	S	0	13	IN																MP							1 sampling event (1u). Level II data: pH (1/2).
1AGOO-1-SOS	VAN-A05R_GOO02B06	CMON	PL07																												HP							1 sampling event (1u).
1AGOO-20-SOS	VAN-A08R_GOO04A08	CMON	PL14	0	9	S	0	3	IN	0	3	S	0	10	IN																							
1AGOO-21-SOS	VAN-A05R_GOO02A06	CMON	PL10	0	9	S	0	3	IN	0	3	IN	1	9	IN/O																MP							6 sampling events (3a/1g/2u).
1AGOO-2-SOS	VAN-A05R_GOO02B06	CMON	PL07	0	8	S	0	1	IN	0	1	W	0	9	IN																							
1AGOO-3-SOS	VAN-A05R_GOO02C04	CMON	PL07	0	7	S	0	1	IN	0	1	IN	0	8	IN																MP							3 sampling events (2a/1u).
1AGOO-4-SOS	VAN-A04R_GOO01A08	CMON	PL07	0	8	S	0	1	IN	0	1	IN	0	9	IN																MP							1 sampling event (1g).
1AGOO-5-SOS	VAN-A04R_GOO01B00	CMON	PL06	0	7	S	0	1	IN	0	1	IN	0	8	IN																LP							1 sampling event (1a).

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
1AGOO-6-SOS	VAN-A04R_GOO02A04	CMON	PL06	0	5	S	0	1	IN	0	1	IN	0	5	IN															LP							1 sampling event (1a).
1AGOO-7-SOS	VAN-A04R_GOO02A04	CMON	PL06	0	5	S	0	1	IN	0	1	IN	0	5	IN															LP							4 sampling events (3a/1g).
1AGRU000.02	VAP-A31R_POP01A00	TM	PL67	0	12	S	0	12	S	11	12	IM																									No new data since 2012 cycle
1AHAC000.96	VAP-A34E_HAC01A00	A	PL73		11	NA		11		0	11	S				2	11	IM																	6		No new data since 2012 cycle
1AHAM001.92	VAP-A33E_HAM01A02	A	PL71		12	NA		12		0	12	S				3	11	IM																	6		No new data since 2012 cycle
1AHAM003.07	VAP-A33R_HAM01A16	TM	PL71	0	11	S	0	11	S	0	11	S	0	11	S																						No data since 2014 cycle; small stream section between dam and exact head of tide at base of riprap immediately downstream of Rt. 617 in the main and auxiliary channels.
1AHAM003.08	VAP-A33L_HAM01A12	L	PL71	0	69	S	13	69	IM	4	69	S	0	13	S						0	S															Used to be station 1AHAM001.97; no new data since 2014 cycle (check may have switched Temp/DO violations)
1AHED-6-PWSWCD	VAN-A25R_HED01A12	CMON	PL49										2	10	IN/O																						
1AHOO000.34	VAN-A24R_HOO01A02	A,TM	PL47	0	20	S	1	20	S	0	20	S	6	20	IM																						
1AHOR005.48	VAN-A13R_HOR01B00	A,B,TM	PL26	0	20	S	0	20	S	0	20	S	11	17	IM				0	S	0	S									IM							
1AHOR-HR2-SOS	VAN-A13R_HOR01B00	CMON	PL26																											HP							10 sampling events (1a/9u).
1AHOR-HR3-SOS	VAN-A13R_HOR01A00	CMON	PL26																											HP							6 sampling events (6u).
1AHPR003.87	VAN-A09R_HPR01A00	A,TM	PL18	0	17	S	0	17	S	0	17	S	2	17	IM				0	S	0	S																
1AHPR003.93	VAN-A09R_HPR01A00	B	PL18	0	6	S	0	6	S	3	6	IM																			IM							
1AHPR-HP04-SOS	VAN-A09R_HPR01A00	CMON	PL18																											HP							1 sampling event (1u).
1AHUL004.80	VAP-A34R_HUL01A14	A	PL73	0	24	S	0	24	S	1	24	S	0	23	S																						
1AHUN-17a-SOS	VAN-A08R_HUN01A06	CMON	PL13	0	13	S	0	8	IN	0	2	S	2	14	IN/O															LP							Level II data: pH (1/5). 1 sampling event (1a)
1AHUN-96-SOS	VAN-A08R_HUN01A06	CMON	PL13	0	2	S	0	2	IN	1	2	IN/O	0	2	IN																						
1AHUN-97-SOS	VAN-A08R_HUN01A06	CMON	PL13	0	1	W	0	1	IN	1	1	IN/O	0	2	IN																						
1AHUT000.01	VAN-A13E_HUT01A02	A,TR	PL26		34	NA		34	NA	0	33	S	15	33	IM																						
1AINI000.80	VAN-A09R_INI01A14	A	PL18	0	15	S	0	15	S	0	15	S	5	15	IM						0	S																
1AJEE000.23	VAN-A05R_JEE01A16	A,B,TM	PL08	0	24	S	0	24	S	0	24	S	9	20	IM				0	S	0	S									J							
1AJEE002.22	VAN-A05R_JEE02A08	A,TM,B	PL08	0	28	S	0	28	S	1	28	S	8	20	IM				0	S	0	S									IM							
1AJEE-22-SOS	VAN-A05R_JEE02A08	CMON	PL08	0	10	S	0	7	IN	0	2	S	1	10	IN																MP							Level II data: pH (1/5). 6 sampling events (4a/1g/1u).
1AJEE-94-SOS	VAN-A05R_JEE02A08	CMON	PL08	0	1	W	0	1	IN	0	1	IN	0	2	IN																						
1AKET002.06	VAN-A19R_KET01A00	A	PL33	0	10	S	0	10	S	0	10	S	3	10	IM																						
1AKET009.91	VAN-A19R_KET01B12	A	PL33	0	10	S	0	10	S	0	10	S	4	10	IM																						
1AKET012.03	VAN-A19R_KET02A04	PA	PL33	0	12	S	0	12	S	0	12	S	2	12	IM																						
1AKET012.22	VAN-A19R_KET02A04	FPM,B	PL33	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									IN							
1AKET-2-PWSWCD	VAN-A19R_KET01A00	CMON	PL33										2	11	IN/O																						
1AKET-3B-PWSWCD	VAN-A19R_KET01A00	CMON	PL33										4	9	IN/O																						
1AKET-5-PWSWCD	VAN-A19R_KET01B12	CMON	PL33										1	10	IN																						
1ALBR000.04	VAN-A12R_LBR01A08	A	PL25	0	5	S	0	5	S	0	5	S	2	5	IM																						
1ALEC001.18	VAP-A32R_LEC01A10	TM	PL70	0	20	S	2	20	S	0	20	S	4	8	IM						0	S																No E. coli data since 2012 cycle
1ALID-DR4-SOS	VAN-A11R_LID02A02	CMON	PL22																											HP							1 sampling event (1u).
1ALID-DR7-SOS	VAN-A11R_LID02A02	CMON	PL22																											MP							2 sampling events (1a/1g).
1ALIE000.52	VAN-A26R_LIE01A02	A,TM	PL52	0	10	S	0	9	S	0	10	S	1	10	S																						
1ALIF000.19	VAN-A14E_LIF01A00	A,TR	PL28		34	NA		34	NA	0	33	S	2	34	S																						
1ALII-CRNB-SOS	VAN-A21R_LII01A02	CMON	PL43																											LP							4 sampling events (3a/1u).
1ALIL001.43	VAN-A17R_LIL01A00	A	PL37	0	12	S	0	12	S	0	12	S	5	12	IM																						
1ALIL008.29	VAN-A17R_LIL02A04	B	PL37	0	2	S	0	2	S	0	2	S																			FS							
1ALIM001.16	VAN-A03R_LIM01A00	A,B,TR	PL05	0	38	S	0	36	S	0	38	S	14	34	IM																						
1ALIM001.80	VAN-A03R_LIM01A00	A,SS,CR	PL05	0	10	S	0	10	S	1	10	S	5	10	IM																						
1ALIO000.15	VAN-A12R_LIO01A10	A,CR	PL24	0	11	S	0	11	S	0	11	S	3	11	IM																						
1ALIO001.50	VAN-A12R_LIO01A10	A,CR	PL24	0	23	S	0	23	S	0	23	S	9	23	IM																						
1ALIO-LPRBR-SOS	VAN-A12R_LIO01A10	CMON	PL24																											HP							9 sampling events (1g/8u).
1ALIV004.78	VAN-A08R_LIV01A00	PA	PL13	0	12	S	0	12	S	0	12	S	3	12	IM																						
1ALIV004.79	VAN-A08R_LIV01A00	FPM,B	PL13	0	2	S	0	2	S	0	2	S	1	1	W				0	IN	0	S									FS							
1ALIV012.12	VAN-A08R_LIV02B10	A,B	PL13	0	20	S	0	20	S	0	20	S	6	18	IM																						
1ALIV-12-SOS	VAN-A08R_LIV03A06	CMON	PL13	0	15	S	0	8	IN	0	3	S	2	15	IN/O																						
1ALIV-23-SOS	VAN-A08R_LIV03A06	CMON	PL13	0	8	S	0	3	IN	0	3	S	0	9	IN																						
1ALOA000.17	VAN-A15R_LOA01A08	A	PL30	0	11	S	0	11	S	0	11	S	3	11	IM																						
1ALOG001.10	VAP-A33E_LOG02A98	C2	PL71		1	NA		1		0	1	W				0	1	W			0	IN													1		No data since 2014 cycle
1ALOG001.20	VAP-A33E_LOG02A98	A,TR	PL71		37	NA		37		0	37	S				4	35	IM																	36		
1ALOG003.30	VAP-A33R_LOG01A04	A,TM	PL71	0	9	S	2	9	IM	0	9	S	2	9	IM																						No data since 2014 cycle
1ALOG003.45	VAP-A33R_LOG01A04	TM	PL71	0	3	S	0	3	S	0	3	S	0	3	S																						No data since 2014 cycle
1ALOI000.27	VAP-A33E_WES02A06	C2,B	PL71		3	NA		3		0	3	W				1	1	W			0	IN	0	S	0	S					J				1		One sample event; 2012 WOE: category 3B HM-S scenario 8; no data since 2014 cycle
1ALOW000.66	VAP-A32E_LOW02D16	C2,B	PL74		7	NA		7		0	7	W				0	1	W			0	IN	0	S	0	S					J				1		WOE 2013: HM-M scenario 5, Category 3B; one sample event
1ALOW002.18	VAP-A32E_LOW02B16	C2,B	PL70		5	NA		5		0	5	W				1	1	W			0	IN	0	S	0	S					IM				1		WOE 2013: HM-S scenario 8, Category 5A (high potential chronic benthic risk due to PAHs in sediment); one sample event

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
1ALOW003.10	VAP-A32E_LOW02A00	C2,B	PL70		5	NA		5		0	5	W				0	1	W			0	IN	0	S	0	S					J				1		WOE 2014: LM-M scenario 8, Category 3B; one sample event
1ALOW004.77	VAP-A32E_LOW01A04	A,PFWQ,TR	PL70		36	NA		36		0	36	S				0	35	S																	35		
1AMAE000.21	VAN-A25E_MAE01A16	A	PL48		17	NA		17	NA	3	17	O	0	6	S																						
1AMAO000.07	VAP-A31E_MAO02A00	C2,B	PL67		2	NA		2		0	2	W				0	1	W	0	IN	0	IN	0	S	0	S					J				1		1 sample event; WOE - 2009 category 3B, LM-S scenario 8 (strong possibility of PAHs); no new data since 2012 cycle
1AMAO004.08	VAP-A31E_MAO01B10	TM,PFWQ	PL66		13	NA		13		0	13	S				5	12	IM																	12		No data since 2014 cycle
1AMAO007.46	VAP-A31R_MAO01A98	A	PL66	0	12	S	2	12	IM	3	12	IM	1	11	S																						No data since 2014 cycle
1AMAR000.62	VAP-A32R_MAR01A14	TM	PL68	0	12	S	2	12	IM	2	12	IM	4	12	IM																						No data since 2014 cycle
1AMAU001.16	VAP-A25E_MAU01A12	A,TM	PL50		23	NA		23	NA	1	23	S	5	23	IM																						
1AMAU001.67	VAN-A25R_MAU01A04	A,TM	PL50	0	11	S	0	11	S	0	11	S	5	11	IM																						
1AMIA002.34	VAP-A33R_MIA01A00	TM	PL71	0	6	S	0	6	S	0	6	S	0	5	S																						No new data since 2012 cycle
1AMIA004.12	VAP-A33R_MIA01A00	TM	PL71	0	18	S	0	18	S	0	18	S	4	18	IM																						No data since 2014 cycle
1AMID000.75	VAN-A16R_MID01A16	A,TM	PL29	0	11	S	0	10	S	0	11	S	6	11	IM																						
1AMIH001.98	VAN-A02R_MIH01A06	A	PL03	0	10	S	0	10	S	0	10	S	4	10	IM																						
1AMIH-2.50-LWC	VAN-A02R_MIH01A06	CMON	PL03										8	14	IN/O																						
1AMIH-2-SOS	VAN-A02R_MIH01B02	CMON	PL03																												LP						2 sampling events (2a).
1AMIH-4.50-LWC	VAN-A02R_MIH01B02	CMON	PL03										9	14	IN/O																						
1AMIP000.40	VAN-A26R_MIP01A12	A,TM	PL53	0	11	S	0	10	S	0	11	S	0	11	S																						
1AMNR000.72	VAN-A11R_MNR01A04	A,TM	PL23	0	9	S	0	8	S	0	9	S	1	9	IN																						
1aMNR-GWMP-NPS	VAN-A11R_MNR01A04	NONA	PL23	0	25	IN	0	25	IN	0	25	IN																									
1AMNR-P1-SOS	VAN-A11R_MNR01A04	CMON	PL23																												HP						1 sampling event (1u).
1AMNR-P2-SOS	VAN-A11R_MNR01A04	CMON	PL23																												HP						2 sampling events (2u).
1AMNR-P3-SOS	VAN-A11R_MNR01A04	CMON	PL23																												HP						2 sampling events (2u).
1AMON000.96	VAP-A31E_MON03A98	A,TR	PL67		36	NA		36		0	36	S				1	35	S																	36		
1AMON001.00	VAP-A31E_MON03A98	C2,B	PL67		5	NA		5		0	5	W				0	1	W			0	IN	0	S	0	S					J		1		1		2011 WOE: category 3B LM-M scenario 6; one sample event
1AMPB001.00	VAP-A32R_MPB01A14	A	PL70	0	11	S	2	11	IM	3	11	IM	1	11	S																						No data since 2014 cycle
1AMRC002.81	VAP-A31E_MON01A00	TM	PL67		12	NA		12		8	12	IM																									Mistakenly considered riverine in 2008 and 2010 cycles; no new data since 2012 cycle
1AMRC003.12	VAP-A31R_MRC01A98	TM	PL67	0	12	S	4	12	IM	12	12	IM									0	S															No data since 2014 cycle
1AMRC004.04	VAP-A31R_MRC01A98	TM	PL67	0	15	S	4	15	IM	15	15	IM																									No data since 2014 cycle
1ANEA000.57	VAN-A25E_NEA01A00	A,TE,CB,TR	PL49		291	NA		291	NA	0	291	S	6	51	IM						0	S															
1ANEA002.89	VAN-A25R_NEA01A00	A	PL49	0	12	S	0	12	S	0	12	S	0	12	S																						
1ANEA007.65	VAN-A25R_NEA01A00	A	PL49	0	12	S	0	12	S	0	12	S	0	12	S																						
1ANEA-10-PWSWCD	VAN-A25R_NEA01A00	CMON	PL49										2	10	IN/O																						
1ANEA-11-PWSWCD	VAN-A25E_NEA01A00	CMON	PL49										2	11	IN/O																						
1ANEA-8-PWSWCD	VAN-A25R_NEA01A00	CMON	PL49										3	7	IN/O																						
1ANET001.77	VAP-A32R_NET01A14	TM	PL68	0	12	S	0	12	S	2	12	IM	0	12	S																						No data since 2014 cycle
1ANIC002.10	VAN-A11R_NIC01A02	A	PL23	0	11	S	0	11	S	0	11	S	3	11	IM																						
1ANIC-NR-SOS	VAN-A11R_NIC01A02	CMON	PL23																												MP						4 sampling events (2a/1g/1u).
1ANOB000.75	VAN-A07R_NOB01A02	A,B	PL11	0	16	S	0	16	S	0	16	S	4	12	IM																						J
1ANOB-9-SOS	VAN-A07R_NOB01A02	CMON	PL11																												LP						2 sampling events (2a).
1ANOC-0.42-LWC	VAN-A02R_NOC01A00	CMON	PL02										11	14	IN/O																						Colocated with DEQ station 1aNOC000.42
1ANOC000.42	VAN-A02R_NOC01A00	A,B,TM	PL02	0	17	S	1	17	S	0	17	S	9	12	IM				0	S	0	S															IM		Colocated with citizen station 1aNOC-0.42-LWC
1ANOC004.38	VAN-A02R_NOC02A02	A,B,TM,SS	PL02	0	27	S	0	27	S	0	27	S	7	22	IM						0	S															J		
1ANOC009.37	VAN-A02R_NOC03A02	B	PL02	0	3	S	0	3	S	0	3	S																									IM		
1ANOC-4.38-LWC	VAN-A02R_NOC02A02	CMON	PL02										2	3	IN/O																						
1ANOC-9.37-LWC	VAN-A02R_NOC03A02	CMON	PL02										3	3	IN/O																						
1ANOF002.14	VAN-A19R_NOF01A10	A	PL32	0	12	S	0	12	S	0	12	S	3	12	IM																						
1ANOF004.38	VAN-A19R_NOF01A10	B	PL32	0	2	S	0	2	S	0	2	S																									FS		
1ANOF-LM02-OWML	VAN-A19L_NOF01A12	OWML	PL32	0	1414	S	34	878	S	2	1414	S																											0	2	S	Lake Manassas, lacustrine, data pooled. Chla FS 2013, 2014 (LM01, LM02, LM03, LM04, LM05, LM06) (TP not assessed, no algaecide application). Non-nutrient data pooled thru-out lake. DO (168/5445) S, Temp (0/8749) S, pH (10/8749) S
1ANOF-LM03-OWML	VAN-A19L_NOF01A12	OWML	PL32	0	985	S	18	659	S	0	985	S																											0	2	S	Lake Manassas, lacustrine, data pooled. Chla FS 2013, 2014 (LM01, LM02, LM03, LM04, LM05, LM06) (TP not assessed, no algaecide application). Non-nutrient data pooled thru-out lake. DO (168/5445) S, Temp (0/8749) S, pH (10/8749) S
1ANOG005.69	VAN-A06R_NOG02A00	A,TR	PL12	0	31	S	0	30	S	0	31	S	13	31	IM																						
1aNOG-7-SOS	VAN-A06R_NOG03A02	CMON	PL12																												HP						1 sampling event (1u).
1ANOM005.99	VAP-A32E_NOM01A04	A,TR	PL68		36	NA		36		0	36	S				3	34	S																	36		
1ANOM011.37	VAP-A32R_NOM01A00	TM	PL68	0	12	S	0	12	S	0	12	S	1	11	S																						No data since 2014 cycle
1ANOM012.38	VAP-A32R_NOM02A14	TM	PL68	0	23	S	0	23	S	2	23	S	1	12	S						0	S																
1ANOR009.87	VAN-A26R_NOR01A02	A,TM	PL53	0	11	S	0	10	S	0	11	S	3	11	IM																						Colocated with USGS station 01659000
1AOCC000.01	VAN-A25E_OCC01A12	C2	PL50		4	NA		4	NA	0	4	S	0	1	W				0	IN	0	IN															WOE - 2009 (3B)

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
1AOCC001.04	VAN-A25E_OCC01C16	A,C2	PL50		3	NA		3	NA	0	3	S	0	1	W						0	IN																WOE - 2013 (2B)
1AOCC001.69	VAN-A25E_OCC01B12	C2	PL50		3	NA		3	NA	0	3	S	0	1	W				0	IN	0	IN																WOE - 2009 (3B)
1AOCC002.47	VAN-A25E_OCC02A00	A,TE,CB,TR,C	PL48		314	NA		314	NA	0	314	S	1	55	S						0	S							1	O								FTM: OE for PCBs (2014; NSH). Continuous Monitoring Data - pH: 2009 (0/182, 0%)
1AOCC004.52	VAN-A25E_OCC04B08	A,TM	PL48		92	NA		92	NA	0	92	S	0	12	S						0	IN																
1AOCC006.47	VAN-A25E_OCC05A02	A,TM	PL48		31	NA		31	NA	0	31	S	1	6	IN																								
1AOCC006.71	VAN-A25E_OCC05A02	A,TM	PL48		12	NA		12	NA	0	12	S	2	12	IM																								
1AOCC021.35	VAN-A20R_OCC01A04	A,TR	PL41	0	26	S	0	25	S	0	26	S	5	26	IM																								
1AOCC-RE02-OWML	VAN-A24L_OCC01A02	OWML	PL47	0	2976	S	326	1825	S	27	2927	S																								0	2	S	Occoquan Reservoir, lacustrine, data pooled. Chla FS 2013, 2014 (RE02, RE05, RE10, RE15) (TP not assessed, no algaecide application). Non-nutrient data pooled. DO (924/9539) S, Temp (0/14138) S, pH (146/14137) S
1AOCC-RE05-OWML	VAN-A24L_OCC01A02	OWML	PL47	0	2560	S	244	1670	S	17	2560	S																								0	2	S	Occoquan Reservoir, lacustrine, data pooled. Chla FS 2013, 2014 (RE02, RE05, RE10, RE15) (TP not assessed, no algaecide application). Non-nutrient data pooled. DO (924/9539) S, Temp (0/14138) S, pH (146/14137) S
1AOCC-RE10-OWML	VAN-A24L_OCC01A02	OWML	PL47	0	2212	S	146	1491	S	41	2211	S																								0	2	S	Occoquan Reservoir, lacustrine, data pooled. Chla FS 2013, 2014 (RE02, RE05, RE10, RE15) (TP not assessed, no algaecide application). Non-nutrient data pooled. DO (924/9539) S, Temp (0/14138) S, pH (146/14137) S
1AOCC-RE15-OWML	VAN-A24L_OCC01A02	OWML	PL47	0	2009	S	90	1331	S	30	2009	S																								0	2	S	Occoquan Reservoir, lacustrine, data pooled. Chla FS 2013, 2014 (RE02, RE05, RE10, RE15) (TP not assessed, no algaecide application). Non-nutrient data pooled. DO (924/9539) S, Temp (0/14138) S, pH (146/14137) S
1AOCC-RE20-OWML	VAN-A24L_OCC01A02	OWML	PL47	0	1661	S	38	1253	S	26	1661	S																											Occoquan Reservoir, non-lacustrine. Non-nutrient data pooled. DO (924/9539) S, Temp (0/14138) S, pH (146/14137) S
1AOCC-RE30-OWML	VAN-A24L_OCC01A02	OWML	PL46	1	1316	S	22	935	S	2	1316	S																											Occoquan Reservoir, non-lacustrine. Non-nutrient data pooled. DO (924/9539) S, Temp (0/14138) S, pH (146/14137) S
1AOCC-RE35-OWML	VAN-A24L_OCC01A02	OWML	PL41	0	1453	S	58	1034	S	3	1453	S																											Occoquan Reservoir, non-lacustrine. Non-nutrient data pooled. DO (924/9539) S, Temp (0/14138) S, pH (146/14137) S
1AOCS-DR5-SOS	VAN-A11R_OCS01A04	CMON	PL22																												HP							11 sampling events (1a/2g/8u).
1aOCS-WOTR-NPS	VAN-A11R_OCS01A04	NONA	PL22	0	24	IN	0	25	IN	0	24	IN																											
1AOLD000.70	VAP-A32R_OLD01A14	TM	PL68	0	12	S	0	12	S	2	12	IM	1	12	S																								No data since 2014 cycle
1AOWL001.85	VAN-A17R_OWL01A14	A	PL36	0	9	S	0	9	S	0	9	S	3	9	IM																								
1APAE002.54	VAN-A05R_PAE01A02	A	PL08	0	12	S	0	12	S	0	12	S	3	12	IM																								
1aPAE004.21	VAN-A05R_PAE02A06	A	PL08	0	12	S	0	12	S	0	12	S	6	12	IM																								
1APAS-PT-FBRA	VAN-A29R_PAS01A14	CMON	PL61										1	3	IN/O																								
1APAU-PSB01-SOS	VAN-A14R_PAU01A04	CMON	PL28																												HP							11 sampling events (11u).
1APAU-PSB02-SOS	VAN-A14R_PAU01A04	CMON	PL28																												HP							2 sampling events (2u).
1APEP001.58	VAN-A30R_PEP01A10	A	PL64	0	8	S	1	8	IN	1	8	IN	0	8	S																								
1APIA001.80	VAN-A01R_PIA01A00	A,B,TR	PL01	0	40	S	0	39	S	0	40	S	7	34	IM																								FS
1APIA003.51	VAN-A01R_PIA01A00	FPM,B	PL01	0	2	S	0	2	S	0	2	S	1	1	W				0	IN	0	S																		FS
1APIA004.67	VAN-A01R_PIA02A06	B	PL01	0	2	S	0	2	S	0	2	S																												FS
1APIA-1-SOS	VAN-A01R_PIA02A06	CMON	PL01																												LP							2 sampling events (2a).
1APIM000.15	VAN-A12R_PIM01A00	A,TR,TM	PL24	0	37	S	0	36	S	2	36	S	11	37	IM																								
1APIM001.89	VAN-A12R_PIM02A00	A,B,FPM,TM,SS	PL24	0	4	S	0	4	S	0	4	S	1	1	W				0	IN	0	S																		IM
1APIM004.16	VAN-A12R_PIM02B06	A,TM	PL24	0	9	S	0	8	S	0	9	S	3	9	IM																								
1aPIM-GWMP-NPS	VAN-A12R_PIM01A00	NONA	PL24	0	25	IN	0	25	IN	0	25	IN																											
1APIM-P1-SOS	VAN-A12R_PIM01A00	CMON	PL24																												HP							1 sampling event (1u).
1APIM-P2-SOS	VAN-A12R_PIM01A00	CMON	PL24																												LP							1 sampling event (1a).
1APIM-PIM2-SOS	VAN-A12R_PIM02A00	CMON	PL24																												HP							8 sampling events (1g/7u).
1APIM-PIM4-SOS	VAN-A12R_PIM02A00	CMON	PL24																												HP							1 sampling event (1u).
1APIN000.57	VAP-A31R_PIN01A00	TM	PL65	0	12	S		12	NA	0	12	S	1	12	S																								Class VII; no data since 2014 cycle
1APIN007.24	VAP-A31R_PIN01A00	TM	PL65	0	12	S		12	NA	0	12	S	2	12	IM																								Class VII; no data since 2014 cycle
1APIY-PHC01-SOS	VAN-A23R_PIY01A02	CMON	PL46																												LP							6 sampling events (4a/1g/1u).
1APOE002.00	VAN-A23R_POE01A00	A,TR	PL46	0	33	S	0	32	S	0	33	S	8	33	IM																								
1APOE-PHC05-SOS	VAN-A23R_POE01A00	CMON	PL46																												MP							2 sampling events (2g).
1APOE-POPE-SOS	VAN-A23R_POE01A00	CMON	PL46																												MP							11 sampling events (7a/3g/1u).
1APOH000.93	VAN-A15E_POH01A00	A,TE,CB,TR	PL30		83	NA		83	NA	0	83	S	1	25	S						0	S																
1APOH002.10	VAN-A15E_POH02A00	A,CB	PL30		45	NA		42	NA	36	210	IM									0	S																Continuous Monitoring Data - pH: 2009 (36/210, 17.1%)
1APOH002.27	VAN-A15E_POH02A00	C	PL29																										1	O								FTT: OE for PCBs (2014; NSH).
1APOH002.32	VAN-A15E_POH02A00	A,TE,CB,TR	PL29		92	NA		92	NA	5	92	S	1	49	S						0	S																
1APOH005.36	VAN-A16R_POH01A00	A,TR	PL29	0	40	S	0	39	S	0	39	S	15	40	IM																								
1APOH007.65	VAN-A16R_POH01B14	A,TM	PL29	0	12	S	0	11	S	0	12	S	7	12	IM																								
1APOH008.54	VAN-A16R_POH01B14	FPM,B	PL29	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S																		IM

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
1APOH013.12	VAN-A16R_POH02A02	A	PL29	0	23	S	0	22	S	0	23	S	7	23	IM																						
1APOH015.09	VAN-A16R_POH03A04	A,TM	PL29	0	12	S	0	11	S	0	12	S	6	12	IM																						
1APOH-POH2-SOS	VAN-A16R_POH01B14	CMON	PL29																												HP						1 sampling event (1u).
1APOM000.60	VAN-A29E_POM01A04	A,CB,TR	PL60		53	NA		53	NA	0	53	S				0	14	S			0	S														
1APOM-000.97-VIMS	VAN-A29E_POM01B06	NONA	PL60		218	NA		218	NA	18	204	S																								Continuous Monitoring Data - pH: 2009 (18/204, 8.8%)
1APOM001.04	VAN-A29E_POM01B06	C2	PL60																				0	S												
1APOM001.96	VAN-A29E_POM02A02	C2	PL60		5	NA		5	NA	0	5	S				0	2	S			0	S														WOE - 2012 (3B), 2013 (3B)
1APOM002.25	VAN-A29E_POM02A02	C2	PL60																				0	S												
1APOM002.41	VAN-A29E_POM02A02	A,TE,CB,TR	PL60		84	NA		84	NA	0	84	S				3	38	S			0	S														
1APOM003.59	VAN-A29E_POM20A04	C2	PL60																				0	S												
1APOM006.72	VAN-A29R_POM01A00	A,TM	PL60	0	8	S	0	8	S	0	8	S	2	8	IM																						
1APOM008.24	VAN-A29R_POM02A06	A	PL60	0	11	S	0	10	S	0	11	S	2	11	IM																						
1APOM012.24	VAN-A29R_POM03A06	A,TM	PL60	0	8	S	0	8	S	0	8	S	1	8	IN																						
1APOM013.02	VAN-A29L_POM01A02	L	PL59	0	218	S	0	39	S	0	201	S	0	14	S						0	S										0	2	S	0	2	S	Abel Lake (lacustrine): Chl a & TP (algaecide application) FS 2009, 2010. Ambient data also used to assess Abel Lake segment VAN-A29L_LOH01A02.
1APOM-SCPC1-ALL	VAN-A29R_POM03A06	CMON	PL60	0	12	S	0	12	S	0	12	IN																									
1APOM-SCPRUN-ALL	VAN-A29R_POM02A06	CMON	PL60	0	20	S	1	20	S	0	19	IN																									
1APOP003.92	VAP-A31R_POP01A00	A,TM	PL67	0	24	S	2	24	S	10	24	IM	2	11	IM						0	S																No data since 2014 cycle
1APOP004.02	VAP-A31R_POP01A00	TM	PL67	0	12	S	0	12	S	3	12	IM																									No new data since 2012 cycle
1APOP-GEWA-PC1	VAP-A31E_POP01A98	NONA	PL67		16	NA		16																											8		No data since 2014 cycle
1APOP-GEWA-PC10	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC11	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event - no new data since 2012 cycle
1APOP-GEWA-PC12	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		One sample event - no new data since 2012 cycle
1APOP-GEWA-PC13	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event - no new data since 2012 cycle
1APOP-GEWA-PC14	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC15	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		One sample event - no new data since 2012 cycle
1APOP-GEWA-PC16	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC17	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC18	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC19	VAP-A31E_POP01A98	NONA	PL67		8	NA		8																											3		No data since 2014 cycle
1APOP-GEWA-PC2	VAP-A31E_POP01A98	NONA	PL67		22	NA		22																											8		No data since 2014 cycle
1APOP-GEWA-PC20	VAP-A31E_POP01A98	NONA	PL67		5	NA		5																											2		No new data since 2012 cycle
1APOP-GEWA-PC21	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC22	VAP-A31E_POP01A98	NONA	PL67		5	NA		5																											2		No data since 2014 cycle
1APOP-GEWA-PC23	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		No new data since 2012 cycle - one sample event
1APOP-GEWA-PC24	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		No new data since 2012 cycle - one sample event
1APOP-GEWA-PC25	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC26	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC27	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		No new data since 2012 cycle - one sample event
1APOP-GEWA-PC28	VAP-A31E_POP01A98	NONA	PL67		5	NA		5																											2		No new data since 2012 cycle
1APOP-GEWA-PC29	VAP-A31E_POP01A98	NONA	PL67		5	NA		5																											2		No data since 2014 cycle
1APOP-GEWA-PC3	VAP-A31E_POP01A98	NONA	PL67		22	NA		22																											8		No data since 2014 cycle
1APOP-GEWA-PC30	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		One sample event - no new data since 2012 cycle
1APOP-GEWA-PC31	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC32	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		No new data since 2012 cycle - one sample event
1APOP-GEWA-PC33	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC34	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		No new data since 2012 cycle - one sample event
1APOP-GEWA-PC35	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		No new data since 2012 cycle - one sample event
1APOP-GEWA-PC36	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC37	VAP-A31E_POP01A98	NONA	PL67		5	NA		5																											2		One sample event; no data since 2014 cycle
1APOP-GEWA-PC38	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		One sample event
1APOP-GEWA-PC39	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC4	VAP-A31E_POP01A98	NONA	PL67		28	NA		28																											10		No data since 2014 cycle
1APOP-GEWA-PC40	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC41	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC42	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		No new data since 2012 cycle - one sample event
1APOP-GEWA-PC43	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event
1APOP-GEWA-PC44	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle
1APOP-GEWA-PC5	VAP-A31E_POP01A98	NONA	PL67		20	NA		20																											7		No data since 2014 cycle
1APOP-GEWA-PC6	VAP-A31E_POP01A98	NONA	PL67		19	NA		19																											8		No data since 2014 cycle
1APOP-GEWA-PC7	VAP-A31E_POP01A98	NONA	PL67		21	NA		21																											8		No data since 2014 cycle
1APOP-GEWA-PC8	VAP-A31E_POP01A98	NONA	PL67		4	NA		4																											2		No data since 2014 cycle
1APOP-GEWA-PC9	VAP-A31E_POP01A98	NONA	PL67		4	NA		4																											2		No data since 2014 cycle
1APOP-GEWA-PCS1	VAP-A31E_POP01A98	NONA	PL67		3	NA		3																											1		No new data since 2012 cycle - one sample event
1APOP-GEWA-PCS2	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																											1		One sample event; no data since 2014 cycle

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
1APOP-GEWA-PCS3	VAP-A31E_POP01A98	NONA	PL67		2	NA		2																									1			No new data since 2012 cycle - one sample event
1APOR000.40	VAN-A29R_POR01A06	A,TM	PL59	0	18	S	2	18	IM	0	18	S	16	18	IM																						
1APOT036.79	MD	PFWQ	PL67		1	NA		1		0	1	W				0	1	W			0	IN												1			Maryland; HAB response; no data since 2014 cycle
1APOT039.19	MD	TM	PL67		33	NA		33	NA	0	33	S				9	32	IM																			Maryland
1APOT042.01	MD	PFWQ	PL67		1	NA		1		0	1	W				0	1	W			0	IN												1			Maryland; no data since 2014 cycle
1APOT-11T-FBRA	VAN-A29E_POT01A06	CMON	PL61											4	NA																						Citizen Monitoring - Level II E. coli
1APOT-1T-FBRA	VAN-A29E_POT01A06	CMON	PL61											2	NA																						Citizen Monitoring - Level II E. coli
1APOT-2T-FBRA	VAN-A29E_POT01A06	CMON	PL61											14	NA																						Citizen Monitoring - Level II E. coli
1APOT-3A-FBRA	VAN-A29E_POT01A06	CMON	PL61											2	NA																						Citizen Monitoring - Level II E. coli
1APOT-5T-FBRA	VAN-A29E_POT01A06	CMON	PL61											5	NA																						Citizen Monitoring - Level II E. coli
1APOT-8T-FBRA	VAN-A29E_POT01A06	CMON	PL61											6	NA																						Citizen Monitoring - Level II E. coli
1APOT-DT-FBRA	VAN-A29E_POT01A06	CMON	PL61											5	NA																						Citizen Monitoring - Level II E. coli
1APOT-FA-FBRA	VAN-A29E_POT01A06	CMON	PL61											2	NA																						Citizen Monitoring - Level II E. coli
1APOT-RVT-FBRA	VAN-A29E_POT01A06	CMON	PL61											12	NA																						Citizen Monitoring - Level II E. coli
1APOT-SL3T-FBRA	VAN-A29E_POT01A06	CMON	PL61											3	NA																						Citizen Monitoring - Level II E. coli
1APOT-ST-FBRA	VAN-A29E_POT01A06	CMON	PL61											12	NA																						Citizen Monitoring - Level II E. coli
1APOT-TRT-FBRA	VAN-A29E_POT01A06	CMON	PL61											2	NA																						Citizen Monitoring - Level II E. coli
1APOT-TT-FBRA	VAN-A29E_POT01A06	CMON	PL61											8	NA																						Citizen Monitoring - Level II E. coli
1APOT-UR5T-FBRA	VAN-A29E_POT01A06	CMON	PL61											3	NA																						Citizen Monitoring - Level II E. coli
1APOT-UR6T-FBRA	VAN-A29E_POT01A06	CMON	PL61											2	NA																						Citizen Monitoring - Level II E. coli
1APOW000.27	VAN-A26E_POW01A02	C2	PL54		2	NA		2	NA	0	2	S	0	1	W						0	IN															WOE - 2014 (2A)
1APOW000.57	VAN-A26E_POW02A02	A,TE	PL54		11	NA		11	NA	0	11	S	0	4	S																						
1APOW003.11	VAN-A26R_POW01A00	A,TM	PL51	0	24	S	0	24	S	0	24	S	6	24	IM																						
1APOW006.11	VAN-A26R_POW01A00	A,TM	PL51	0	12	S	0	12	S	0	12	S	4	12	IM																						
1APOW009.99	VAN-A26R_POW02A02	A	PL51	0	12	S	0	12	S	0	12	S	4	11	IM																						
1APRE001.58	VAP-A34E_PRE01A98	A	PL73		12	NA		12		0	12	S				2	12	IM																	5			No new data since 2012 cycle
1APUR001.20	VAN-A20R_PUR01A06	A	PL41	0	11	S	0	11	S	0	11	S	2	11	IM																						
1AQUA000.43	VAN-A26E_QUA01A10	A,TE,CB,TR	PL52		165	NA		165	NA	0	165	S	0	36	S						0	S	0	IN													
1AQUA001.09	VAN-A26E_QUA01B04	SS	PL52																				0	IN													
1AQUA001.81	VAN-A26E_QUA20A10	SS	PL52																				2	IN/O													Sediment OE (Cu, 1/1; Nickel, 1/1)
1AQUA002.38	VAN-A26E_QUA02A06	SS	PL52																				1	IN/O													Sediment OE (Zn, 1/1)
1AQUA004.46	VAN-A26R_QUA01A00	A,TR	PL52	0	33	S	0	32	S	0	33	S	7	33	IM																						
1AQUA-D1-RMS	VAN-A26R_QUA01A00	CMON	PL52										5	39	IN/O																						
1AQUA-D2-RMS	VAN-A26R_QUA01A00	CMON	PL52										6	41	IN/O																						
1AQUA-D3-RMS	VAN-A26R_QUA01A00	CMON	PL52										10	39	IN/O																						
1AQUA-D4-RMS	VAN-A26R_QUA01A00	CMON	PL52										12	37	IN/O																						
1ARAB-POH9-SOS	VAN-A16R_RAB01A12	CMON	PL29																													HP						3 sampling events (3u).
1ASAD001.76	VAN-A24R_SAD01A04	A,TM	PL47	0	12	S	0	12	S	0	12	S	3	12	IM																						
1ASCO-SCOT1-SOS	VAN-A11R_SCO01A02	CMON	PL23																													HP						1 sampling event (1u).
1ASHA001.18	VAP-A33E_SHA01A98	C2,B	PL71		2	NA		2		0	2	W				0	1	W	0	IN	0	IN	0	S	0	S					J			1			1 sample event; WOE 2009: Category 3B, HM-M scenario 5; no new data since 2012 cycle
1ASID-POH1-SOS	VAN-A16R_SID01A02	CMON	PL29																													HP						2 sampling events (2u).
1ASNA-DR16-SOS	VAN-A11R_SNA04A02	CMON	PL22																													HP						12 sampling events (12a/10u).
1ASNA-DR19-SOS	VAN-A11R_SNA04A02	CMON	PL22																													HP						16 sampling events (16u).
1ASNA-DR29-SOS	VAN-A11R_SNA04A02	CMON	PL22																													HP						14 sampling events (14u).
1ASNA-DR30-SOS	VAN-A11R_SNA03A02	CMON	PL22																													HP						13 sampling events (13u).
1ASNA-DR3-SOS	VAN-A11R_SNA02A02	CMON	PL22																													HP						9 sampling events (1a/8u).
1ASNA-DR4-SOS	VAN-A11R_SNA01A02	CMON	PL22																													HP						2 sampling events (2u).
1ASOB001.80	VAN-A26R_SOB01A12	A,TM	PL53	0	11	S	0	10	S	0	11	S	1	11	S																						
1ASOC000.01	VAN-A02R_SOC01A00	B	PL02	0	3	S	0	3	S	0	3	S																					FS						
1ASOC001.66	VAN-A02R_SOC01A00	A,TM	PL02	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																Colocated with citizen station 1aSOC-1.66-LWC
1ASOC005.46	VAN-A02R_SOC01A00	A,TM	PL02	0	17	S	0	17	S	0	17	S	5	17	IM						0	S																
1ASOC007.06	VAN-A02R_SOC02A02	A,B,TM	PL02	0	21	S	0	21	S	0	21	S	4	13	IM				0	S	0	S																
1ASOC010.09	VAN-A02R_SOC03A04	B	PL02	0	7	S	0	7	S	0	7	S																					FS						
1ASOC011.70	VAN-A02R_SOC03A04	B	PL02	0	3	S	0	3	S	0	3	S																					FS						
1ASOC011.82	VAN-A02R_SOC03A04	A,TM	PL02	0	19	S	0	19	S	0	19	S	3	18	IM				0	S	0	S																Colocated with citizen station 1aSOC-11.30-LWC
1ASOC013.05	VAN-A02R_SOC04A04	A,B,TM	PL02	0	20	S	0	20	S	0	20	S	3	12	IM				0	S	0	S																
1ASOC-1.66-LWC	VAN-A02R_SOC01A00	CMON	PL02										6	7	IN/O																						Colocated with DEQ station 1aSOC001.66
1ASOC-11.30-LWC	VAN-A02R_SOC03A04	CMON	PL02										2	3	IN/O																						Colocated with DEQ station 1aSOC011.70
1ASOC-14.10-LWC	VAN-A02R_SOC04A04	CMON	PL02										1	3	IN/O																						
1ASOC-16.12-LWC	VAN-A02R_SOC04A04	CMON	PL02										0	1	IN																						
1ASOC-2-SOS	VAN-A02R_SOC03A04	CMON	PL02																													MP						1 sampling event (1g).
1ASOC-SF5-SOS	VAN-A02R_SOC01A00	CMON	PL02																													LP						6 sampling events (4a/1g/1u).
1ASOH001.71	VAN-A16R_SOH01A12	A,TM	PL29	0	12	S	0	11	S	0	12	S	4	12	IM																						
1ASOH006.66	VAN-A16L_SOH01A06	L	PL29	0	150	S	4	65	S	1	138	S	0	14	S						0	S												0	2	S	0	2	S	Burke Lake: Chla & TP FS 2009, 2010 (algaecide application)

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
1ASOH-POH11-SOS	VAN-A16R_SOH01A12	CMON	PL29																												MP							4 sampling events (1a/3u).
1ASOQ006.73	VAN-A26R_SOQ01B02	A,CB,TM	PL52	0	75	S	0	74	S	2	74	S	1	10	S						0	S																USGS sampling. Colocated with USGS station 01658500.
1aSOQ-PRWI-NPS	VAN-A26R_SOQ01A06	NONA	PL52	0	34	IN	0	34	IN	0	34	IN																										
1ASOR000.59	VAN-A09R_SOR01A04	A,B,TM	PL17	0	16	S	0	16	S	0	16	S	3	12	IM				0	S	0	S										IM							
1ASOT001.44	VAN-A19R_SOT01A00	A	PL32	0	9	S	0	9	S	0	9	S	4	9	IM																							
1ASOU-3A-PWSWCD	VAN-A19R_SOU01A12	CMON	PL33										2	10	IN/O																							
1ASOV000.89	VAP-A33E_SOV01A02	C2,B	PL71		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					J				1		WOE 2014: LM-S scenario 5, Category 3B (possible scouring by natural tidal currents)
1ASPN000.08	VAP-A34E_SPN01A04	A	PL73		12	NA		12		0	12	S				4	12	IM																	6		No new data since 2012 cycle
1ASUG003.52	VAN-A10R_SUG01A00	B	PL21	0	2	S	0	2	S	0	2	S																			IM							
1ASUG004.42	VAN-A10R_SUG01A00	A,TR	PL21	0	35	S	0	34	S	0	35	S	6	34	IM																							
1ASUG006.28	VAN-A10R_SUG02A02	B	PL21	0	4	S	0	4	S	0	4	S																			IM							
1ASUG-SLR1-SOS	VAN-A10R_SUG02A02	CMON	PL21																												HP							2 sampling events (2u).
1ASUG-SLR2-SOS	VAN-A10R_SUG02A02	CMON	PL21																												HP							10 sampling events (1g/9u).
1ASUG-SLR5-SOS	VAN-A10R_SUG02A02	CMON	PL21																												HP							8 sampling events (8u).
1ASUG-SLR6-SOS	VAN-A10R_SUG02A02	CMON	PL21																												HP							5 sampling events (5u).
1ASYC002.03	VAN-A08R_SYC01B06	A,SS	PL15	0	13	S	0	13	S	0	13	S	4	12	IM																							
1ASYC007.43	VAN-A08R_SYC03A02	B	PL15	0	4	S	0	4	S	0	4	S																			J							ALU fully supporting with observed effects. Low flows noted in 2013. Site revisit recommended.
1ASYC-1-SOS	VAN-A08R_SYC01B06	CMON	PL15																												LP							3 sampling events (3a). FKA 1aSYC-1-LWC.
1ATAE002.50	VAP-A32R_TAE01A12	A,TM	PL68	0	24	S	0	24	S	3	24	IM	8	24	IM																							No data since 2014 cycle
1ATAE003.85	VAP-A32R_TAE01A12	TM	PL68	0	12	S	0	12	S	3	12	IM	2	12	IM																							No data since 2014 cycle
1ATEM003.54	VAP-A32R_TEM01A14	TM	PL68	0	12	S	0	12	S	3	12	IM	3	12	IM																							No data since 2014 cycle
1ATHG-DR17-SOS	VAN-A11R_THG01A10	CMON	PL22																												HP							7 sampling events (7u).
1ATHP001.15	VAP-A32R_THP01A06	TM	PL70	0	12	S	2	12	IM	10	12	IM									0	S																prev. 1ATHPRT626; no data since 2014 cycle
1ATON003.77	VAN-A18R_TON01A08	A	PL39	0	8	S	0	8	S	0	8	S	1	8	IN																							
1ATRA000.09	VAN-A19R_TRA01A06	A	PL31	0	12	S	0	12	S	0	12	S	6	12	IM																							
1ATRI001.50	VAN-A13R_TRI01A00	A,B,TM	PL26	0	22	S	0	22	S	0	22	S	12	17	IM				0	S	0	S										IM							
1ATRI002.25	VAN-A13R_TRI01A00	A,TM	PL26	0	2	S	0	2	S	0	2	S	1	2	W						0	S																
1ATRI002.75	VAN-A13R_TRI01A00	A,TM	PL26	0	2	S	0	2	S	0	2	S	1	2	IN						0	S																
1ATRI003.66	VAN-A13R_TRI01A00	A,TM	PL26	0	2	S	0	2	S	0	2	S	1	2	IN						0	S																Colocated with citizen station 1aTRI-3-GMHS
1ATRI-1-GMHS	VAN-A13R_TRI01A00	CMON	PL26										0	29	IN																							
1ATRI-2-GMHS	VAN-A13R_TRI01A00	CMON	PL26										3	29	IN																							
1ATRI-3-GMHS	VAN-A13R_TRI01A00	CMON	PL26										7	28	IN/O																							Colocated with DEQ station 1aTRI003.66
1ATUK003.37	VAN-A17R_TUK01A06	A	PL36	0	23	S	0	23	S	0	23	S	4	23	IM																							
1ATUS003.19	VAN-A08R_TUS01B06	B	PL16	0	2	S	0	2	S	0	2	S																			IM							
1ATUY000.26	VAN-A11R_TUY01A06	B	PL23	0	2	S	0	2	S	0	2	S																			IM							
1aTUY-GWMP-NPS	VAN-A11R_TUY01A06	NONA	PL23	0	24	IN	0	24	IN	0	24	IN																										
1AUMC-001.78-VIMS	VAN-A30E_UMC04C06	NONA	PL64		131	NA		131	NA	0	131	S																										
1AUMC003.09	VAN-A30E_UMC05A02	C2	PL64		3	NA		3	NA							0	1	W	0	IN	0	IN															WOE - 2009 (2A)
1AUMC004.43	VAN-A30E_UMC05A02	A,TR	PL64		36	NA		35	NA	0	36	S				1	13	S																			
1AUMC009.61	VAN-A30R_UMC01A00	A	PL64	0	23	S	1	22	S	1	23	S	2	24	S																							
1AWHP001.92	VAP-A33R_WHP01A14	TM	PL71	0	12	S	1	12	S	0	12	S	1	11	S																							No data since 2014 cycle
1AWLB000.06	VAN-A25R_WLB01A02	A,TM	PL48	0	12	S	0	12	S	0	12	S	2	12	IM				0	IN																			
1AWLL001.30	VAN-A30E_WLL01B10	A	PL64		11	NA		11	NA	0	11	S																										
1AWOL001.26	VAN-A24R_WOL01A06	A,B,TM	PL47	0	26	S	0	25	S	0	26	S	5	23	IM																	FS							
1AWOL-WR-SOS	VAN-A24R_WOL02A12	CMON	PL47																												HP							3 sampling events (1g/2u).
1AWOT002.36	VAN-A11R_WOT01A02	A,CR	PL22	0	12	S	0	11	S	0	12	S	2	12	IM																							
1AWOT-DR12-SOS	VAN-A11R_WOT02A14	CMON	PL22																												HP							9 sampling events (1g/8u).
1aWOT-WOTR-NPS	VAN-A11R_WOT01A02	NONA	PL22	0	33	IN	0	33	IN	0	33	IN																										
1AXAQ000.85	VAN-A03R_XAQ01A04	A	PL05	0	12	S	0	12	S	0	12	S	7	12	IM																							
1AXAQ-5-SOS	VAN-A03R_XAQ01A04	CMON	PL05																												MP							2 sampling events (1a/1g).
1AXCD-98-SOS	VAN-A05R_XCD01A16	CMON	PL08	0	3	S	0	3	IN	0	3	IN	0	3	IN																							
1AXCJ000.54	VAP-A32R_XCJ01A10	TM	PL70	0	8	S	0	8	S	0	8	S	3	8	IM																							No new data since 2012 cycle
1AXDW000.08	VAP-A33E_JCK01B98	A	PL70		12	NA		12		0	12	S				2	12	IM																	6		No new data since 2012 cycle
1AXGJ000.42	VAN-A03R_XGJ01A04	A,SS,CR	PL05	0	10	S	0	10	S	0	10	S	3	10	IM																							
1AXHM000.38	VAP-A31R_MRC01A98	TM	PL67	0	14	S	4	14	IM	13	14	IM																										No data since 2014 cycle
1aXJJ-DR20-SOS	VAN-A11R_XJJ01A02	CMON	PL22																												HP							12 sampling events (1a/11u).
1AXJK-CR11-SOS	VAN-A22R_XJK01A02	CMON	PL45																												MP							10 sampling events (4a/3g/3u).
1AXJT-2.10-LWC	VAN-A02R_XJT01A06	CMON	PL03										11	14	IN/O																							
1AXKR-0.10-LWC	VAN-A02R_XKR01A08	CMON	PL03										4	5	IN/O																							
1AXKT000.30	VAN-A01R_XKT01A04	B	PL01	0	2	S	0	2	S	0	2	S																			FS							
1AXKT-15-SOS	VAN-A01R_XKT01A04	CMON	PL01																												HP							1 sampling event (1u).
1AXKV-SC227-ALL	VAN-A28R_XKV01A06	CMON	PL57	0	23	S	0	23	S	0	22	IN																										
1AXKZ-SCVILLARS-ALL	VAN-A29R_XKZ01A06	CMON	PL58	0	3	S	0	3	S	0	3	IN																										

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Potomac River Basin																																					
1AXLB000.05	VAN-A29R_XLB01A08	FPM,B	PL59	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									IM							
1AXLF000.13	VAN-A26R_XLF01A10	A	PL54	0	12	S	0	11	S	4	12	IM	4	12	IM																							Colocated with citizen station 1aXLF-SCMEADOW_ALL.
1AXLF-SCMEADOW-ALL	VAN-A26R_XLF01A10	CMON	PL54	0	7	S	1	5	IN	0	7	IN																										Colocated with DEQ station 1aXLF000.13.
1AXLK000.04	VAP-A32R_XLK01A10	TM	PL68	0	11	S	0	11	S	2	11	IM									0	S																
1AXLL000.92	VAP-A34R_XLL01A10	TM	PL72	0	6	S	0	6	S	0	6	S	0	6	S																							No new data since 2012 cycle
1AXLM000.67	VAP-A34R_XLM01A10	TM	PL72	0	6	S	0	6	S	0	6	S	0	6	S																							No new data since 2012 cycle
1AXLO-LWC20-SOS	VAN-A08R_XLO01A10	CMON	PL14																												HP							3 sampling events (3u).
1AXLO-LWC21-SOS	VAN-A08R_XLO01A10	CMON	PL14																												LP							3 sampling events (2a/1g).
1AXLP-SLR4-SOS	VAN-A10R_XLP01A10	CMON	PL21																												HP							19 sampling events (19u).
1AXLQ000.73	VAP-A31R_MRC01A98	TM	PL67	0	14	S	4	14	IM	13	14	IM																										No data since 2014 cycle
1AXLR000.44	VAN-A18R_XLR01A12	FPM,B	PL39	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									FS							
1AXLU000.73	VAP-A31R_POP01A00	TM	PL67	0	12	S	0	12	S	4	12	IM																										No data since 2014 cycle
1AXLW000.75	VAN-A04R_XLW01A14	A	PL06	0	10	S	0	10	S	0	10	S	2	10	IM																							
1AXLZ002.04	VAP-A33R_XLZ01A14	TM	PL71	0	12	S	1	12	S	2	12	IM	1	11	S																							No data since 2014 cycle
1AXMA000.12	VAP-A33R_XMA01A14	TM	PL71	0	12	S	0	12	S	1	12	S	3	12	IM																							No data since 2014 cycle
1AXMB000.88	VAP-A33R_XMB01A14	TM	PL71	0	12	S	2	12	IM	2	12	IM	1	12	S																							No data since 2014 cycle
1AXMC000.92	VAP-A33R_XMC01A14	TM	PL71	0	12	S	0	12	S	1	12	S	3	12	IM																							No data since 2014 cycle
1AXMG-BRMB1-SOS	VAN-A09R_XMG01A12	CMON	PL17																												MP							6 sampling events (3g/3u).
1AXMH-4-PWSWCD	VAN-A19R_XMH01A12	CMON	PL33										1	5	IN/O																							
1AXMI-14-SOS	VAN-A05R_XMI01A12	CMON	PL09	0	15	S	1	8	IN	0	3	S	2	15	IN/O																MP							Level II data: pH (1/5). 2 sampling events (1a/1u).
1AXMJ000.42	VAN-A18R_XMJ01A14	FPM,B	PL40	0	4	S	0	3	S	0	4	S	0	2	S				0	S	0	S									FS							
1AXMK000.37	VAN-A25R_XMK01A16	A,CR	PL48	0	12	S	0	11	S	0	12	S	4	12	IM																							
1AXMQ-TH7-RMS	VAN-A26R_XMQ01A14	CMON	PL52										0	2	IN																							
1AXMR-6A-FBRA	VAN-A29R_XMR01A14	CMON	PL61										1	2	IN/O																							
1AYEO001.04	VAP-A33E_YEO01A02	C2,B	PL71		6	NA		6		0	6	W				1	1	W			0	IN	0	S	0	S					J				1		WOE - 2013: HM-M scenario 5, Category 3B; one sample event
1AYOU001.50	VAN-A21R_YOU01A02	A	PL44	0	12	S	0	12	S	0	12	S	3	12	IM																							
1AYOU-BRM-SOS	VAN-A21R_YOU01A02	CMON	PL44																												MP							16 sampling events (5a/3g/8u).
1aYOU-MANA-NPS	VAN-A21R_YOU01A02	NONA	PL44	0	28	IN	0	28	IN	0	28	IN																									
COA000.63	VAP-A34E_COA02A02	CB	PL73		16	NA		16		0	16	S																									VIMS - no new data since 2012 cycle
COA004.28	VAP-A34E_COA01A98	CB	PL72		70	NA		70		0	70	S																									VIMS; no new data since 2012 cycle
Cubitt Creek Site 1	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
Cubitt Creek Site 10	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
Cubitt Creek Site 2	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
Cubitt Creek Site 3	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
Cubitt Creek Site 4	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
Cubitt Creek Site 5	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
Cubitt Creek Site 6	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
Cubitt Creek Site 7	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
Cubitt Creek Site 8	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
Cubitt Creek Site 9	VAP-A34E_CUT01A98	CMON	PL73		7	NA								7	NA																							Level II - no new data since 2012 cycle
LOW003.42	VAP-A32E_LOW02A00	CB	PL70		69	NA		69		0	69	S																									VIMS - no new data since 2012 cycle
MAO001.05	VAP-A31E_MAO02A00	CB	PL66		59	NA		59		0	59	S																									VIMS - no new data since 2012 cycle
MON000.18	VAP-A31E_MON03A98	CB	PL67		223	NA		223		0	182	S																									VIMS ConMon - no new data since 2012 cycle
NHUT01	VAN-A13E_HUT01A02	A,TM	PL28		2	NA		2	NA	0	2	S	0	2	S																							
NHUT02	VAN-A14E_POT01A08	A,TM	PL28		2	NA		2	NA	0	2	S	0	2	S																							
NOM000.81	VAP-A32E_NOM04A00	CB	PL74		35	NA		35		0	35	S																									VIMS - no new data since 2012 cycle
NOM002.36	VAP-A32E_NOM02A00	CB	PL69		145	NA		145		9	210	S																									VIMS ConMon - no new data since 2012 cycle
NOM004.69	VAP-A32E_NOM02A00	CB	PL68		66	NA		66		0	66	S																									VIMS - no new data since 2012 cycle
POT022.86	VAP-A32E_LOW02D16	CB	PL74		35	NA		35		0	35	S																									VIMS; no new data since 2012 cycle
ROS001.10	VAP-A31E_ROS01A08	CB	PL65		50	NA		50		0	50	S																									VIMS - no new data since 2012 cycle
VA351214	VAN-A29E_POT01A06	VDHB	PL61													12	18	IM																			monthly geometric mean samples
WES000.18	VAP-A33E_WES02A06	CB	PL71		181	NA		181		4	172	S																									VIMS ConMon; high pH - no new data since 2012 cycle
YEO000.45	VAP-A33E_YEO01A02	CB	PL71		27	NA		27		0	27	S																									VIMS; no new data since 2012 cycle

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Rappahannock River Basin																																					
16R01	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																													B-IBI = 3; RPPMHa
16R02	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																													B-IBI = 3.67; RPPMHa
16R03	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																													B-IBI = 2.67; RPPMHa
16R04	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																													B-IBI = 3.33; RPPMHa
16R05	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																													B-IBI = 2.33; RPPMHa
16R06	VAP-E26E_MLL02A06	CB-B	RA74		1	NA		1																													B-IBI = 2.67; RPPMHa
16R07	VAP-E25E_RPP02A02	CB-B	RA73		1	NA		1																													B-IBI = 2.33; RPPMHa
16R08	VAP-E25E_RPP02A02	CB-B	RA73		1	NA		1																													B-IBI = 1.67; RPPMHa
16R09	VAP-E26E_CRR01A00	CB-B	RA73		1	NA		1																													B-IBI = 2.33; CRRMHa
16R10	VAP-E26E_WHR01A00	CB-B	RA72		1	NA		1																													B-IBI = 1.67; CRRMHa
16R11	VAP-E25E_URB01A00	CB-B	RA69		1	NA		1																													B-IBI = 3.33; RPPMHc
16R12	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 2.33; RPPMHa
16R13	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 2.33; RPPMHa
16R14	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																													B-IBI = 2; RPPMHa
16R15	VAP-E24E_TOT02A00	CB-B	RA64		1	NA		1																													B-IBI = 1.8; RPPMHm
16R16	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																													B-IBI = 1.8; RPPMHa
16R17	VAP-E23E_RPP02A98	CB-B	RA62		1	NA		1																													B-IBI = 1.8; RPPMHa
16R18	VAP-E23E_RPP02A98	CB-B	RA62		1	NA		1																													B-IBI = 2.2; RPPMHa
16R19	VAP-E22E_RPP05A02	CB-B	RA62		1	NA		1																													B-IBI = 1.4; RPPMHa
16R20	VAP-E22E_RPP05A02	CB-B	RA56		1	NA		1																													B-IBI = 1.8; RPPMHa
16R21	VAP-E22E_RPP03A02	CB-B	RA56		1	NA		1																													B-IBI = 2.2; RPPOHa
16R22	VAP-E22E_RPP02A02	CB-B	RA56		1	NA		1																													B-IBI = 2.67; RPPOHa
16R23	VAP-E22E_RPP01A02	CB-B	RA54		1	NA		1																													B-IBI = 3.0; RPPTFa
17M11	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																													B-IBI = 4.5; RPPMHa
17R01	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																													B-IBI = 4.5; RPPMHa
17R02	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																													B-IBI = 3; RPPMHa
17R03	VAP-E25E_RPP02A02	CB-B	RA73		1	NA		1																													B-IBI = 3.5; RPPMHa
17R04	VAP-E25E_RPP02A02	CB-B	RA73		1	NA		1																													B-IBI = 2; RPPMHa
17R05	VAP-E25E_RPP02A02	CB-B	RA73		1	NA		1																													B-IBI = 3; RPPMHa
17R07	VAP-E25E_RPP02A02	CB-B	RA69		1	NA		1																													B-IBI = 1; RPPMHa
17R08	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 2.5; RPPMHa
17R09	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 3.5; RPPMHa
17R10	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 2; RPPMHa
17R11	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 1.5; RPPMHa
17R13	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 1.5; RPPMHa
17R14	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 1; RPPMHa
17R15	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 2; RPPMHa
17R16	VAP-E25E_RPP01A02	CB-B	RA66		1	NA		1																													B-IBI = 2.5; RPPMHa
17R17	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																													B-IBI = 1.5; RPPMHa
17R18	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																													B-IBI = 1; RPPMHa
17R19	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																													B-IBI = 2.5; RPPMHa
17R20	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																													B-IBI = 2; RPPMHa
17R21	VAP-E23E_RPP02B10	CB-B	RA62		1	NA		1																													B-IBI = 3; RPPMHa
17R22	VAP-E22E_RPP05A02	CB-B	RA62		1	NA		1																													B-IBI = 1.67; RPPMHa
17R23	VAP-E22E_RPP04A02	CB-B	RA56		1	NA		1																													B-IBI = 1; RPPOHa
17R24	VAP-E22E_RPP02A02	CB-B	RA56		1	NA		1																													B-IBI = 1.67; RPPOHa
17R25	VAP-E22E_RPP02A02	CB-B	RA56		1	NA		1																													B-IBI = 1; RPPOHa
17R26	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																													B-IBI = 1; RPPMHa
17R27	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																													B-IBI = 5; RPPMHa
18R02	VAP-E25E_RPP02A02	CB-B	RA74					1																													B-IBI = 1.0; RPPMHa
18R03	VAP-E25E_RPP02A02	CB-B	RA74					1																													B-IBI = 3.0; RPPMHa
18R05	VAP-E25E_RPP02A02	CB-B	RA74					1																													B-IBI = 2.33; RPPMHa
18R06	VAP-E26E_MLL02A06	CB-B	RA74					1																													B-IBI = 1.33; RPPMHa
18R07	VAP-E26E_MLL02A06	CB-B	RA74					1																													B-IBI = 2.33; RPPMHa
18R08	VAP-E25E_RPP02A02	CB-B	RA74					1																													B-IBI = 1.67; RPPMHa
18R09	VAP-E25E_RPP02A02	CB-B	RA73					1																													B-IBI = 1.0; RPPMHa
18R10	VAP-E26E_CRR01A00	CB-B	RA72					1																													B-IBI = 2.0; CRRMHa
18R12	VAP-E25E_RPP02A02	CB-B	RA68					1																													B-IBI = 2.2; RPPMHa
18R13	VAP-E25E_RPP02A02	CB-B	RA68					1																													B-IBI = 2.67; RPPMHa
18R14	VAP-E25E_RPP01A02	CB-B	RA66					1																													B-IBI = 3; RPPMHa
18R15	VAP-E25E_RPP01A02	CB-B	RA66					1																													B-IBI = 1; RPPMHa
18R16	VAP-E25E_RPP01A02	CB-B	RA66					1																													B-IBI = 2.2; RPPMHa
18R17	VAP-E24E_RPP03A00	CB-B	RA66					1																													B-IBI = 2.33; RPPMHa
18R18	VAP-E24E_RPP03A00	CB-B	RA66					1																													B-IBI = 2.67; RPPMHa
18R19	VAP-E24E_RPP03A00	CB-B	RA66					1																													B-IBI = 2.6; RPPMHa

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA										BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH				E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status		Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Rappahannock River Basin																																							
18R20	VAP-E24E_RPP03A00	CB-B	RA66					1																															B-IBI = 2.0; RPPMHa
18R21	VAP-E23E_RPP02A98	CB-B	RA62					1																															B-IBI = 2.6; RPPMHa
18R22	VAP-E22E_RPP03A02	CB-B	RA56					1																															B-IBI = 2.0; RPPOHa
18R23	VAP-E22E_RPP01A02	CB-B	RA54					1																															B-IBI = 4.33; RPPTFa
18R24	VAP-E22E_RPP01A02	CB-B	RA54					1																															B-IBI = 3.0; RPPTFa
18R25	VAP-E22E_RPP01A02	CB-B	RA54					1																															B-IBI = 3.0; RPPTFa
18R27	VAP-E25E_RPP02A02	CB-B	RA68					1																															B-IBI = 1.67; RPPMHa
18R28	VAP-E25E_RPP02A02	CB-B	RA73					1																															B-IBI = 3.0; RPPMHa
18R29	VAP-E24E_RPP03A00	CB-B	RA66					1																															B-IBI = 2.33; RPPMHa
19R01	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																															B-IBI = 1.33; RPPMHa
19R02	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																															B-IBI = 2.33; RPPMHa
19R03	VAP-E25E_RPP02A02	CB-B	RA74		1	NA		1																															B-IBI = 2.33; RPPMHa
19R04	VAP-E25E_RPP02A02	CB-B	RA73		1	NA		1																															B-IBI = 2.33; RPPMHa
19R05	VAP-E25E_RPP02A02	CB-B	RA73		1	NA		1																															B-IBI = 1; RPPMHa
19R06	VAP-E26E_CRR01A00	CB-B	RA72		1	NA		1																															B-IBI = 1.67; CRRMHa
19R07	VAP-E26E_CRR01A00	CB-B	RA72		1	NA		1																															B-IBI = 2; CRRMHa
19R08	VAP-E26E_CRR01A00	CB-B	RA72		1	NA		1																															B-IBI = 1.67; CRRMHa
19R09	VAP-E26E_ZZZ02C14	CB-B	RA72		1	NA		1																															B-IBI = 3.33; CRRMHa
19R10	VAP-E25E_RPP02A02	CB-B	RA69		1	NA		1																															B-IBI = 3; RPPMHa
19R11	VAP-E25E_URB02A00	CB-B	RA69		1	NA		1																															B-IBI = 2.67; RPPMHc
19R12	VAP-E25E_ZZZ01D14	CB-B	RA69		1	NA		1																															B-IBI = 3; RPPMHd
19R13	VAP-E25E_RPP02A02	CB-B	RA69		1	NA		1																															B-IBI = 3.33; RPPMHa
19R14	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																															B-IBI = 3.67; RPPMHa
19R15	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																															B-IBI = 1.67; RPPMHa
19R16	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																															B-IBI = 1.67; RPPMHa
19R17	VAP-E25E_RPP02A02	CB-B	RA68		1	NA		1																															B-IBI = 3; RPPMHa
19R19	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																															B-IBI = 2.67; RPPMHa
19R20	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																															B-IBI = 3.67; RPPMHa
19R21	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																															B-IBI = 2.6; RPPMHa
19R22	VAP-E24E_RPP03A00	CB-B	RA66		1	NA		1																															B-IBI = 1.8; RPPMHa
19R23	VAP-E22E_RPP05A02	CB-B	RA56		1	NA		1																															B-IBI = 1; RPPMHa
19R24	VAP-E22E_RPP03A02	CB-B	RA56		1	NA		1																															B-IBI = 1.4; RPPOHa
19R25	VAP-E22E_RPP01A02	CB-B	RA54		1	NA		1																															B-IBI = 2; RPPTFa
20R01	VAP-E25E_RPP02A02	CB-B	RA74					1																															
20R02	VAP-E25E_RPP02A02	CB-B	RA74					1																															
20R04	VAP-E25E_RPP02A02	CB-B	RA73					1																															
20R05	VAP-E25E_RPP02A02	CB-B	RA73					1																															
20R06	VAP-E26E_CRR01A00	CB-B	RA72					1																															
20R08	VAP-E25E_RPP02A02	CB-B	RA73					1																															
20R09	VAP-E25E_RPP02A02	CB-B	RA69					1																															
20R10	VAP-E25E_RPP02A02	CB-B	RA69					1																															
20R12	VAP-E25E_HRY01A06	CB-B	RA68					1																															
20R13	VAP-E25E_RPP02A02	CB-B	RA68					1																															
20R14	VAP-E25E_RPP02A02	CB-B	RA68					1																															
20R15	VAP-E25E_RPP02A02	CB-B	RA68					1																															
20R16	VAP-E25E_RPP02A02	CB-B	RA68					1																															
20R17	VAP-E25E_RPP02A02	CB-B	RA68					1																															
20R18	VAP-E24E_RPP03A00	CB-B	RA66					1																															
20R19	VAP-E23E_RPP02A98	CB-B	RA62					1																															
20R20	VAP-E22E_RPP05A02	CB-B	RA62					1																															
20R21	VAP-E22E_RPP05A02	CB-B	RA62					1																															
20R22	VAP-E22E_ZZZ02A06	CB-B	RA56					1																															
20R23	VAP-E22E_RPP02B16	CB-B	RA56					1																															
20R26	VAP-E24E_RPP03A00	CB-B	RA66					1																															
20R27	VAP-E24E_RPP03A00	CB-B	RA66					1																															
20R28	VAP-E22E_RPP05A02	CB-B	RA56					1																															
3-ALC002.74	VAN-E10R_ALC01A00	A	RA23	0	12	S	0	11	S	0	11	S	3	12	IM																								
3-BAY000.96	VAP-E22R_BAY02A14	TM	RA53	0	13	S	1	13	S	0	13	S	0	12	S																								No data since 2014 cycle
3-BAY002.62	VAP-E22R_BAY01A08	TM	RA53	0	13	S	1	13	S	2	13	IM	3	12	IM							0	S																No data since 2014 cycle
3-BAY004.39	VAP-E22R_BAY01A08	TM	RA53	0	12	S	0	12	S	2	12	IM	3	11	IM																								No data since 2014 cycle
3-BAY006.66	VAP-E22R_BAY01A08	TM	RA53	0	13	S	0	13	S	11	13	IM	1	12	S																								No data since 2014 cycle
3-BFL000.90	VAN-E13R_BFL01A04	A,TM	RA29	0	12	S	0	12	S	0	12	S	8	11	IM																								
3-BFL002.90	VAN-E13R_BFL02A12	A,B	RA29	0	16	S	0	15	S	1	15	S	5	12	IM																			IM					
3-BFL006.28	VAN-E13R_BFL03A16	A,TM	RA29	0	12	S	0	12	S	0	12	S	5	12	IM																								
3BIG-1-RFLOW	VAN-E05R_BIG01A08	CMON	RA12	0	2	IN							1	2	IN/O																								

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Rappahannock River Basin																																					
3BKK-VT58-UVA	VAN-E03R_BKK01A02	NONA	RA08	3	15	IN/O				1	16	IN									0	S															
3-BLA002.31	VAP-E23R_BLA01A06	TM	RA57	0	12	S		12	NA	0	12	S	2	12	IM																						Class VII; no data since 2014 cycle
3-BLD000.58	VAP-E26E_BLD01A98	TM	RA70		12	NA		12		0	12	S				8	12	IM																			No new data since 2012 cycle
3-BLD001.54	VAP-E26R_BLD01A08	A,TM,B	RA70	0	26	S	0	26	S	0	26	S	9	24	IM																FS							2011 benthics; no data since 2014 cycle
3-BLU000.80	VAN-E13R_BLU01A00	A,TM	RA28	0	12	S	0	12	S	0	12	S	3	12	IM																							
3-BLU002.60	VAN-E13R_BLU01A00	A,TM	RA28	0	12	S	0	12	S	0	12	S	7	12	IM																							
3-BLU008.33	VAN-E13R_BLU02A04	A,TM	RA28	0	11	S	0	11	S	0	11	S	7	11	IM																							
3-BMS000.37	VAP-E24R_BMS01A98	TM	RA64	0	12	S	2	12	IM	0	12	S	3	12	IM																						No new data since 2012 cycle
3-BMS002.00	VAP-E24R_BMS01A98	TM,B	RA64	0	14	S	0	14	S	0	14	S	2	12	IM																FS							2010 benthics; no new data since 2012 cycle
3-BMS004.42	VAP-E24R_BMS01A98	TM	RA64	0	12	S	3	12	IM	1	12	S	5	12	IM																							No new data since 2012 cycle
3-BON001.65	VAP-E26R_BON01A08	A	RA71	0	12	S	3	12	IM	0	12	S	2	12	IM																							No data since 2014 cycle
3-BOS000.72	VAN-E08R_BOS01A02	A,TM	RA17	0	23	S	1	23	S	0	23	S	14	22	IM																							
3BOS-BR1-JMSWCD	VAN-E08R_BOS01A02	CMON	RA17										20	42	IN/O																							
3BOS-BR2-JMSWCD	VAN-E08R_BOS02A12	CMON	RA17										8	38	IN/O																							
3-BRA000.85	VAP-E24R_BRA01A08	TM	RA63	0	12	S	0	12	S	2	12	IM	1	12	S																							No new data since 2012 cycle
3-BRD000.31	VAP-E26E_BRD01A00	A	RA74		12	NA		12		0	12	S				1	12	S																	12		No new data since 2012 cycle
3-BRD000.62	VAP-E26E_BRD01A00	A,TR	RA74		37	NA		37		0	37	S				3	36	S																	35		
3-BRK002.64	VAN-E17R_BRK01A04	FPM,B	RA39	0	2	S	0	2	S	0	2	S	1	1	W				0	IN	0	S	0	S							IM							
3-BRL000.15	VAP-E23R_CAT03A04	TM	RA57	0	12	S		12	NA	0	12	S	4	12	IM																							Class VII water; no data since 2014 cycle
3-BTL000.94	VAN-E06R_BTL01A02	A,B	RA13	0	4	S	0	3	S	0	4	S																			FS							
3-BUC001.54	VAN-E01R_BUC01A10	A,B	RA01	0	14	S	0	14	S	0	14	S	7	12	IM																FS							
3-BUC003.26	VAN-E01R_BUC01A10	FPM,B	RA01	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S							J							
3BWN-B1-JMSWCD	VAN-E08R_BWN01A02	CMON	RA17										12	40	IN/O																							
3-CAE000.25	VAN-E02R_CAE01A00	A,TM,CR	RA06	0	33	S	0	33	S	0	32	S	6	33	IM																							
3-CAE006.32	VAN-E02R_CAE02A04	A,TM,CR	RA06	0	16	S	1	16	S	0	16	S	5	16	IM																							
3-CAE012.67	VAN-E02R_CAE02C14	FPM,B	RA06	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									FS							
3CAE-F1-JMSWCD	VAN-E02R_CAE01A00	CMON	RA06	0	53	S	0	55	IN	0	53	IN	3	53	IN																							
3CAE-F1-SOS	VAN-E02R_CAE01A00	CMON	RA06																												LP							4 sampling events (4a).
3-CAT000.46	VAP-E23E_CAT01A02	TM	RA58		12	NA		12		0	12	S				3	12	IM																			No data since 2014 cycle
3-CAT006.58	VAP-E23E_CAT01A02	A,TM	RA58		13	NA		12		0	13	S				4	12	IM																			No data since 2014 cycle
3-CAT011.62	VAP-E23R_CAT01A98	A,CB,TR,B	RA57	0	51	S		51	NA	0	52	S	5	29	IM																FS							Class VII water; 2009 and 2014 benthics
3-CAT015.44	VAP-E23R_CAT02A02	A	RA57	0	12	S		12	NA	0	12	S	4	12	IM																							Class VII water; no data since 2014 cycle
3-CEB001.92	VAP-E26E_CEB01A00	A	RA73		12	NA		12		0	12	S				1	12	S																	12		No new data since 2012 cycle
3-CED003.52	VAN-E16R_CED02A04	A	RA38	0	10	S	0	10	S	0	10	S	7	10	IM																							
3-CLB000.50	VAN-E20R_CLB01A00	A,TM	RA46	0	12	S	0	12	S	0	11	S	3	12	IM																							
3CLB-CLB2-FAME	VAN-E20R_CLB01A00	CMON	RA46										0	4	IN																							
3CLB-CLB3-FAME	VAN-E20R_CLB01A00	CMON	RA46										0	4	IN																							
3CLB-CLB4-FAME	VAN-E20R_CLB01A00	CMON	RA46										0	4	IN																							
3CLB-CLB5-FAME	VAN-E20R_CLB01A00	CMON	RA46										1	4	IN/O																							
3CLB-CLB6-FAME	VAN-E20R_CLB01A00	CMON	RA46										0	4	IN																							
3-CLK000.27	VAP-E23R_CLK01A14	TM	RA58	0	13	S	0	12	S	0	13	S	3	12	IM																							No data since 2014 cycle
3-CMR000.50	VAP-E23R_CAT03A04	TM	RA57	0	24	S		24	NA	0	24	S	3	12	IM																							Class VII water; no data since 2014 cycle
3-CON002.26	VAN-E11R_CON01A04	A	RA25	0	12	S	0	11	S	0	12	S	1	12	S																							
3-COO000.04	VAN-E15R_COO01A04	A	RA35	0	12	S	0	11	S	0	11	S	5	12	IM																							
3-COO005.87	VAN-E15R_COO01A04	B	RA35	0	4	S	0	4	S	0	4	S																			FS							
3COO-C1-SOS	VAN-E15R_COO01A04	CMON	RA35																												LP							1 sampling event (1a).
3-COV001.95	VAN-E05R_COV01A02	A,B	RA12	0	16	S	0	16	S	0	16	S	0	12	S																FS							
3-CRA000.46	VAN-E08R_CRA01A02	A,TM	RA17	0	21	S	1	21	S	0	21	S	6	21	IM																							
3CRA-C1-JMSWCD	VAN-E08R_CRA01A02	CMON	RA17										6	38	IN/O																							
3-CRR000.40	VAP-E26E_CRR01A00	C2,B	RA73		2	NA		2		0	2	S				0	1	W	0	IN	0	IN	0	S	0	S					J					1		WOE - 2009 category 3B, HM-S scenario 5; no new data since 2012 cycle
3-CRR001.61	VAP-E26E_CRR01A00	C2,B	RA72		9	NA		9		0	9	W				0	1	W	0	IN	0	IN	0	S	0	S					J					1		One sample event; 2011 WOE: category 3B LM-M scenario 5; no data since 2014 cycle
3-CRR003.04	VAP-E26E_CRR01A00	C2,B	RA72		8	NA		8		0	8	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE: category 3B PH-M scenario 8; no data since 2014 cycle
3-CRR003.38	VAP-E26E_CRR01A00	CB,TR	RA72		321	NA		293		2	321	S				0	63	S			0	S													64		Trend Station
3-CTM000.88	VAP-E26E_CTM03A08	C2,B	RA71		6	NA		6		0	6	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE: category 3B HM-M scenario 8; no data since 2014 cycle
3-CTO005.64	VAP-E26E_CTO01A02	C2,B	RA70		2	NA		2		0	2	W				0	1	W			0	IN	0	S	0	S					J					1		WOE 2014: LM-M scenario 5, Category 3B; one sample event
3-CTO007.51	VAP-E26E_CTO01A02	A	RA70		12	NA		12		0	12	S				7	12	IM																	11		No new data since 2012 cycle
3-CTO008.05	VAP-E26R_CTO01A04	TM	RA70	0	13	S	1	13	S	0	13	S																									
3-CTO010.61	VAP-E26R_CTO01A04	A	RA70	0	25	S	0	25	S	0	25	S	0	12	S						0	IN															
3-CTR000.76	VAP-E26E_CTR02A00	A	RA73		12	NA		12		0	12	S				0	11	S																	12		Previously called 3-CTR001.06
3DEP-06-NPS	VAN-E20R_DEP03A12	NONA	RA46	0	50	S	2	49	S	28	50	IM																									
3-DPR001.70	VAN-E10R_DPR01A00	A,TR	RA23	0	32	S	1	32	S	0	32	S	17	32	IM																							
3-DPR008.98	VAN-E10R_DPR03A02	A,TM,CR	RA23	0	20	S	0	19	S	0	19	S	4	20	IM																							
3DPR-F15-JMSWCD	VAN-E10R_DPR01A00	CMON	RA23	0	53	S	0	54	IN	0	54	IN	4	54	IN																							

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA										BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH				E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status		Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Rappahannock River Basin																																						
3DPR-F15-SOS	VAN-E10R_DPR01A00	CMON	RA23																												LP							4 sampling events (4a).
3-DRK001.35	VAP-E24R_TOT02B12	TM	RA64	0	12	S	0	12	S	1	12	S	4	12	IM																							No new data since 2012 cycle
3-DUN000.08	VAP-E26E_CEB01A00	C2,B	RA73		2	NA		2		0	2	W				0	1	W	0	IN	0	IN	0	S	0	S					J							WOE: 2009: Category 3B, HM-M scenario 5; no new data since 2012 cycle; one sample event
3-ELM002.23	VAP-E22R_ELM01A06	TM	RA53	0	24	S	3	24	IM	5	24	IM	5	23	IM						0	S																
3-ELM002.92	VAP-E22R_ELM01A06	TM	RA53	0	26	S	0	26	S	5	26	IM	5	13	IM																							No data since 2014 cycle
3-ELM004.27	VAP-E22R_ELM01A06	TM	RA53	0	26	S	6	26	IM	4	26	IM	1	13	S																							No data since 2014 cycle
3-ENT000.65	VAN-E12R_ENT01A10	B	RA26	0	7	S	0	7	S	0	7	S																			FS							
3-ENT000.99	VAN-E12R_ENT01A10	B	RA26	0	1	W	0	1	W	0	1	W																			FS							
3-FAL000.13	VAN-E20R_FAL01A04	B	RA46	0	2	S	0	2	S	0	2	S																			IM							
3-FAM002.62	VAP-E25E_FAM01A98	A	RA65		12	NA		12		0	12	S				8	12	IM			0	S															12		saltwater
3-FAR002.88	VAP-E22R_FAR01A04	TM	RA55	0	11	S	2	11	IM	6	11	IM									0	S																No new data since 2012 cycle
3-FAR004.38	VAP-E22R_FAR01A04	TM	RA55	0	11	S	0	11	S	4	11	IM																										No new data since 2012 cycle
3-FIR002.35	VAN-E01R_FIR01A04	A	RA01	0	12	S	1	12	S	0	12	S	5	12	IM																							
3FIR-F4-JMSWCD	VAN-E01R_FIR01A04	CMON	RA01	0	53	S	1	54	IN	0	54	IN	9	52	IN/O																							
3FIR-F4-SOS	VAN-E01R_FIR01A04	CMON	RA01																												MP							4 sampling events (2a/2g).
3-FLA001.93	VAN-E09R_FLA01A08	A,TM,C	RA21	0	13	S	0	13	S	0	13	S	7	13	IM						0	S							1	O								WTOX: NH3=Ins, PCB=S (FCU); FTT: OE for PCBs (2013: YEB).
3-GAR000.95	VAN-E11R_GAR01A02	A	RA24	0	11	S	0	11	S	0	10	S	6	11	IM																							
3-GAR003.56	VAN-E11R_GAR02A06	B	RA24	0	6	S	0	6	S	0	6	S																			FS							
3-GEE001.44	VAP-E25E_GEE01A98	TM	RA68		6	NA		6		1	6	IN				4	5	IM																				tidal; no new data since 2012 cycle
3-GIN002.64	VAN-E21R_GIN01A08	A,B,TM	RA51	0	12	S	0	12	S	2	12	IM	2	10	IM																	IM							
3-GLC002.03	VAN-E02R_GLC02A12	A	RA05	0	11	S	0	11	S	0	11	S	7	11	IM																							
3-GLL001.98	VAN-E21R_GLL01A08	A,TM	RA51	0	10	S	1	10	S	8	10	IM	1	10	S																							
3-GRA002.01	VAN-E15R_GRA01A04	A,B	RA36	0	17	S	0	17	S	0	16	S	9	11	IM																	J							Biological monitoring assesses the benthic community as fully supporting with observed effects due to drought conditions one season and a tropical storm the following season, follow-up monitoring will occur.
3GRA-M5-SOS	VAN-E15R_GRA01A04	CMON	RA36																												HP							1 sampling events (1u).
3-GRT001.70	VAN-E02R_GRT01A00	A,B,TM	RA07	0	31	S	0	31	S	0	31	S	7	28	IM																	IM							
3-GRT007.72	VAN-E02R_GRT04A04	A,CR,TM	RA07	0	6	S	0	6	S	0	6	S	3	6	IM																							
3-GRT008.62	VAN-E02R_GRT04A04	B	RA07	0	2	S	0	2	S	0	2	S																			IN							SOS validation study - assessment unclear, resampling will be rescheduled
3GRT-F10-JMSWCD	VAN-E02R_GRT04A04	CMON	RA07	0	106	S	0	112	IN	0	112	IN	52	182	IN/O																							
3GRT-F10-SOS	VAN-E02R_GRT04A04	CMON	RA07																												LP							5 sampling events (5a).
3GRT-GR1-JMSWCD	VAN-E02R_GRT04A04	CMON	RA07										11	40	IN/O																							
3GRT-GR2-JMSWCD	VAN-E02R_GRT04A04	CMON	RA07										17	40	IN/O																							
3GRT-GR3-JMSWCD	VAN-E02R_GRT04A04	CMON	RA07										13	40	IN/O																							
3GRT-GR7-JMSWCD	VAN-E02R_GRT04A04	CMON	RA07										16	40	IN/O																							
3GRT-GR8-JMSWCD	VAN-E02R_GRT01A00	CMON	RA07										4	40	IN																							
3GRT-GR9-JMSWCD	VAN-E02R_GRT01A00	CMON	RA07										4	39	IN																							
3-HAE001.00	VAN-E18R_HAE01A12	A	RA44	0	12	S	0	11	S	0	11	S	2	12	IM																							
3-HAL001.44	VAN-E20R_HAL01A00	A,TM	RA46	0	12	S	0	12	S	0	11	S	2	12	IM																							
3-HAL002.72	VAN-E20R_HAL01A00	FPM,B	RA46	0	2	S	0	2	S	0	2	S	0	1	W						0	IN	0	S								IM							
3HAL-08-NPS	VAN-E20R_HAL01A00	NONA	RA46	0	54	S	0	53	S	0	54	S																										
3HAL-1-ALL	VAN-E20R_HAL01A00	CMON	RA46	0	106	S	0	97	S	0	39	S	4	11	IM																							Level II data: DO (0/1), pH (0/66), E. coli (2/8).
3HAL-6-ALL	VAN-E20R_HAL01A00	CMON	RA46	0	11	S	0	6	S	0	11	IN	10	11	IM																							Level II data: E. coli (4/7).
3-HAZ005.98	VAN-E07R_HAZ01A04	A,B,TR	RA16	0	35	S	0	35	S	1	35	S	11	34	IM																	FS							
3-HAZ018.29	VAN-E04R_HAZ01A00	A,TR	RA10	0	34	S	0	34	S	0	34	S	5	34	IM																							
3-HAZ034.96	VAN-E04R_HAZ02B06	PA	RA09	3	11	IM	0	11	S	0	11	S	5	11	IM																							
3-HAZ035.32	VAN-E04R_HAZ02B06	FPM,B	RA09	0	2	S	0	2	S	0	2	S	0	1	W						0	IN	0	S								FS							
3-HAZ039.26	VAN-E04R_HAZ03A02	A	RA09	0	12	S	0	12	S	0	12	S	0	12	S																							
3-HAZ042.43	VAN-E04R_HAZ03A02	B	RA09	0	9	S	0	9	S	0	9	S																				FS							
3HAZ-VT62-UVA	VAN-E04R_HAZ03A02	NONA	RA09	3	15	IN/O				1	16	IN											0	S															
3-HIT003.43	VAN-E01R_HIT01A14	B	RA02	0	2	S	0	2	S	0	2	S																				FS							
3-HNT000.92	VAN-E18L_HNT01A08	L	RA44	0	206	S	0	55	S	21	206	S	0	14	S								0	S													2	S	Hunting Run Reservoir, lacustrine, pooled data: Chla FS 2012, 2013 (TP not assessed, no algaecide application). Non nutrient data pooled. DO (0/62) S, Temp (0/245) S, pH (21/245) S
3-HNT002.09	VAN-E18L_HNT01A08	L	RA44	0	39	S	0	7	S	0	39	S	0	4	S								0	S														Hunting Run Reservoir, non-lacustrine. Non-nutrient data pooled. DO (0/62) S, Temp (0/245) S, pH (21/245) S
3-HOK007.25	VAP-E23R_HOK01A04	TM	RA60	0	12	S	4	12	IM	3	12	IM																										No data since 2014 cycle
3-HOK011.45	VAP-E23R_HOK01A04	A,TM	RA60	0	25	S	0	25	S	11	25	IM	3	24	IM																							
3-HOR000.50	VAN-E19R_HOR01A04	A	RA45	0	12	S	0	12	S	0	12	S	4	12	IM																							
3-HUE000.20	VAN-E03R_HUE01A00	A,B,TR	RA08	0	37	S	0	37	S	0	37	S	9	33	IM																	FS							
3-HUH000.87	VAN-E21R_HUH01A02	B	RA49	0	2	S	0	2	S	0	2	S																				FS							
3-JAC000.02	VAP-E26E_CTR03B16	C2,B	RA73		5	NA		5		0	5	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE: category 2B HM-M scenario 3 (potential effects from high metals & PAHs in sed); no data since 2014 cycle

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Rappahannock River Basin																																					
3-JOA000.80	VAN-E09R_JOA01A06	A,C	RA20	0	14	S	0	13	S	0	13	S	4	14	IM						0	S							1	O								WTOX: NH3=Ins, PCB=S (FCU); FTT: OE for PCBs (2013: AME).
3-JOA001.60	VAN-E09R_JOA01A06	B	RA20	0	2	S	0	2	S	0	2	S																			IM							
3-JOR000.50	VAN-E01R_JOR01A04	A,B	RA02	0	27	S	0	26	S	0	27	S	5	23	IM																FS							
3JOR-R17-JMSWCD	VAN-E01R_JOR01A04	CMON	RA02	0	53	S	0	54	IN	0	54	IN	2	50	IN																							
3JOR-R17-SOS	VAN-E01R_JOR01A04	CMON	RA02																												LP							4 sampling events (3a/1u).
3KEA-16-NPS	VAN-E18R_KEA01A12	NONA	RA43	0	52	S	0	51	S	0	51	S																									
3-LAN002.81	VAP-E25E_LAN01A98	A	RA67		12	NA		12		0	12	S				1	12	S																		12		saltwater
3-LAN006.35	VAP-E25E_LAN01A98	C2,B	RA67		3	NA		3		0	3	W				1	1	W	0	IN	0	IN	0	S	0	S					J					1		One sample event; WOE - 2009 category 3B, OH scenario 5; no new data since 2012 cycle
3-LAN007.27	VAP-E25R_LAN01A08	A	RA67	0	10	S	0	10	S	0	10	S																										No data since 2014 cycle
3-LAT002.34	VAP-E25R_LAT01A14	A	RA65	0	12	S	0	12	S	0	12	S	3	12	IM																							No data since 2014 cycle
3-LEA000.17	VAN-E14R_LEA01A06	A	RA32	0	12	S	0	11	S	0	11	S	5	12	IM																							
3-LGG000.95	VAP-E25E_LGG01A98	C2,B	RA69		2	NA		2		0	2	W				0	1	W			0	IN	0	S	0	S					FS					1		WOE 2013: HM-M scenario 5, Category 2A; one sample event
3-LGG001.92	VAP-E25E_LGG01A98	TM	RA69		12	NA		12		0	12	S				2	12	IM																				No new data since 2012 cycle
3-LGG004.54	VAP-E25R_LGG01A98	TM	RA69	0	12	S	4	12	IM	1	12	S	1	12	S																							No new data since 2012 cycle
3-LIA002.27	VAN-E20R_LIA01A04	PA	RA46	0	12	S	0	12	S	0	11	S	4	12	IM																							
3-LIA003.14	VAN-E20R_LIA01A04	FPM,B	RA46	0	2	S	0	2	S	0	2	S	1	1	W				0	IN	0	S									IM							
3-LIE003.62	VAP-E23E_LIE01A98	A	RA62		11	NA		11		0	11	S				5	11	IM																		12		No new data since 2012 cycle
3-LIK000.15	VAP-E24E_LIK01A12	SS	RA63		12	NA		12		0	12	S				6	12	IM																				No new data since 2012 cycle
3-LIK002.12	VAP-E24E_LIK01A12	A,SS	RA63		12	NA		12		1	12	S				1	6	IN																				No new data since 2012 cycle; tidal on at least one sample day
3-LIK002.21	VAP-E24R_LIK01A08	TM	RA63	0	12	S	1	12	S	0	12	S	2	12	IM																							No new data since 2012 cycle
3-LIK-LIL TOT-ALL	VAP-E24E_LIK01A12	CMON	RA63		115	NA		110		0	83	S																										ACB - Level 3
3-LIT001.89	VAP-E26R_LIT01A14	A	RA70	0	12	S	0	12	S	0	12	S	5	12	IM																							No data since 2014 cycle
3-LOL000.77	VAP-E26E_LOL01B12	A	RA74		12	NA		12		0	12	S				2	12	IM																		12		No new data since 2012 cycle
3-LSB002.17	VAP-E25R_LSB01A12	TM	RA69	0	12	S	2	12	IM	0	12	S	3	12	IM																							No new data since 2012 cycle
3-MAH000.19	VAN-E08R_MAH01A00	A,TM	RA17	0	23	S	0	23	S	0	23	S	12	23	IM																							
3-MAH004.18	VAN-E08R_MAH02A02	A,B,TM	RA17	0	20	S	0	19	S	0	19	S	8	18	IM																							IM
3MAH-F12-JMSWCD	VAN-E08R_MAH02A02	CMON	RA17	0	51	S	5	53	IN	0	53	IN	5	50	IN																							
3MAH-F12-SOS	VAN-E08R_MAH02A02	CMON	RA17																												HP							1 sampling event (1u).
3MAH-M3-JMSWCD	VAN-E08R_MAH01A00	CMON	RA17										10	41	IN/O																							
3-MAO000.62	VAP-E25R_MAO01A00	TM,SS	RA68	0	12	S	6	12	IM	0	12	S									0	S																No new data since 2012 cycle
3-MAP002.61	VAP-E20R_MAP02A02	A,TM	RA47	0	22	S	0	22	S	0	21	S	2	22	S																							
3-MAP007.97	VAN-E20R_MAP02B12	A,TM	RA47	0	1	W	0	1	W	0	1	W																										
3-MAS001.55	VAN-E13R_MAS01A04	A	RA27	0	11	S	0	11	S	0	10	S	4	11	IM																							
3-MAY000.12	VAP-E24E_LIK01A12	TM	RA63		12	NA		12		0	12	S				2	11	IM																				No new data since 2012 cycle
3-MAY001.47	VAP-E24R_MAY01A12	TM	RA63	0	12	S	0	12	S	1	12	S	0	12	S																							No new data since 2012 cycle
3-MAY003.35	VAP-E24R_MAY01A12	TM	RA63	0	12	S	0	12	S	0	12	S	2	12	IM																							No new data since 2012 cycle
3-MAY005.16	VAP-E24R_MAY01A12	TM	RA63	0	12	S	0	12	S	0	12	S	0	12	S																							No new data since 2012 cycle
3-MAY008.43	VAP-E24R_MAY01A12	TM	RA63	0	24	S	4	24	IM	1	24	S	1	12	S						0	S																
3-MCM000.96	VAP-E26R_BLD01A08	TM	RA70	0	12	S	0	12	S	0	12	S	6	12	IM																							No new data since 2012 cycle
3-MEA000.77	VAP-E26E_MEA03A10	A	RA73		12	NA		12		0	12	W				1	12	S																		12		No data since 2014 cycle
3-MIC001.66	VAN-E21R_MIC01A08	A	RA50	0	12	S	0	12	S	0	12	S	0	12	S																							
3-MIL000.15	VAP-E24R_TOT02B12	TM	RA64	0	12	S	0	12	S	1	12	S	3	11	IM																							No new data since 2012 cycle
3-MIN002.14	VAN-E19R_MIN01A14	A	RA45	0	12	S	0	12	S	0	12	S	6	12	IM																							
3-MIR004.05	VAN-E17R_MIR01A00	A,B	RA41	0	13	S	0	12	S	0	13	S	3	11	IM																							
3-MOT000.39	VAN-E19L_MOT01A02	L	RA45	0	398	S	1	75	S	40	398	S	0	21	S						0	S	0	S											0	2	S	Motts Run Reservoir, lacustrine, pooled data: Chla FS 2013, 2014 (TP not assessed, no algaecide application). DO (0/98) S, Temp (0/462) S, pH (41/462) S
3-MOT001.19	VAN-E19L_MOT01A02	L	RA45	0	64	S	0	23	S	1	64	S	0	5	S						0	S	0	S														Motts Run Reservoir, non-lacustrine. Non-nutrient data pooled. DO (0/98) S, Temp (0/462) S, pH (41/462) S
3-MSW000.85	VAP-E22R_MSW01A14	TM	RA54	0	12	S	1	12	S	2	12	IM	1	11	S																							No data since 2014 cycle
3-MTL004.82	VAP-E23R_MTL01A98	TM	RA59	0	12	S		12	NA	0	12	S																										Class VII water; no data since 2014 cycle
3-MTN000.59	VAN-E09R_MTN01A00	A,C,TR	RA21	0	28	S	0	28	S	0	28	S	6	28	IM						0	S							3	IM								WTOX: NH3=S, PCB=S(FCU);FTT: IM for PCBs (2013: AME).
3-MTN005.79	VAN-E09R_MTN01A00	A,TM,C	RA21	0	2	S	0	2	S	0	2	S	1	2	IN						0	S							2	IM								WTOX: NH3=S, PCB=S(FCU);FTT: IM for PCBs (2013: AME,YEB).
3-MTN014.33	VAN-E09R_MTN03A00	C	RA19																										4	IM								FTT: IM for PCBs (2013: AME,YEB,SFU).
3-MTN014.88	VAN-E09R_MTN03A00	A	RA19	0	5	S	0	5	S	0	5	S	3	4	IM						1	O																WTOX: NH3=S(0/3), PCB=OE(1/4, FCU)
3-MTN019.75	VAN-E09R_MTN04A04	A,TM	RA19	0	2	S	0	2	S	0	2	S	1	2	IN						1	O																WTOX: NH3=S(0/2), PCB=OE(1/2, FCU)
3-MTN021.11	VAN-E09R_MTN04A04	A,TM	RA19	0	2	S	0	2	S	0	2	S	2	2	IM						1	O																WTOX: NH3=S(0/2), PCB=OE(1/2, FCU)
3-MTN022.01	VAN-E09R_MTN04A04	A,TM	RA19	0	2	S	0	2	S	0	2	S	2	2	IM						1	O																WTOX: NH3=S(0/2), PCB=OE (1/2, FCU)
3-MTN022.21	VAN-E09R_MTN04A04	C	RA19																										3	IM								FTT: IM for PCBs (2013: WSU,AME,YEB). Located ~0.25 rm downstream from 3-MTN022.01, at ~rm 21.76.
3-MTN022.49	VAN-E09R_MTN04A04	A,TM	RA19	0	2	S	0	2	S	0	2	S	1	2	IN						1	O																WTOX: NH3=S(0/2), PCB=OE(1/2, FCU)
3-MTN023.88	VAN-E09R_MTN04A04	A,TM	RA19	0	2	S	0	2	S	0	2	S	0	2	S						0	S																WTOX: NH3=IN(0/1), PCB=S(0/2, FCU)

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Rappahannock River Basin																																					
3-MTN024.05	VAN-E09L_MTN01A02	L	RA19	0	38	S	0	25	S	0	38	S	0	7	S						1	O	1	O									1	IN		1	IN	Lake Pelham, lacustrine, pooled data: Chla & TP (algaecides applied), only 1 yr sampled, 2014 IN. Sediment screening value for CU exceeded (1/1) OE. Sediment screening value for PCB exceeded (1/1, OE). DO (0/38) S, Temp (0/51) S, pH (0/51) S, Wat_Tox (0/12), E.coli (1/12) S
3-MTN025.04	VAN-E09L_MTN01A02	L	RA19	0	13	S	0	13	S	0	13	S	1	5	S						0	S											IN			IN	Lake Pelham, lacustrine, pooled data: Chla & TP (algaecides applied), incomplete monitoring yr, 2014 IN. DO (0/38) S, Temp (0/51) S, pH (0/51) S, Wat_Tox (0/12) E.coli (1/12) S
3-MTN028.68	VAN-E09L_MTN02A02	L	RA19	1	69	S	1	33	S	1	69	S	0	13	S						5	S										0	2	S	0	2	S	Mountain Run Lake, lacustrine, pooled data: Chla & TP FS 2009, 2012 (algaecide application). Non nutrient data pooled. DO (1/38) S, Temp (0/77) S, pH (1/77) S, E.coli (1/18) S
3-MTN029.08	VAN-E09L_MTN02A02	L	RA19	0	8	S	0	5	S	0	8	S	1	5	S						13	S															Mountain Run Lake, non-lacustrine: Non nutrient data pooled. DO (1/38) S, Temp (0/77) S, pH (1/77) S, E.coli (1/18) S
3-MTR003.51	VAN-E17R_MTR01A00	A,TR	RA40	0	33	S	0	33	S	0	33	S	4	33	IM																						
3-MTR010.60	VAN-E17R_MTR02A02	A,TM	RA40	0	6	S	0	6	S	0	6	S	3	6	IM																						
3-MTT000.30	VAP-E25E_LAN02A02	C2,B	RA67		1	NA		1		0	1	W				0	1	W			0	IN	0	S	0	S					J				1		WOE 2014: LM-S scenario 5, Category 3B
3-MUC000.23	VAP-E25E_MUC01A04	C2,B	RA68		2	NA		2		0	2	W				0	1	W	0	IN	0	IN	0	S	0	S					J				1		One sample event; 2011 WOE: category 3B HM-S scenario 5; no data since 2014 cycle
3-MUC002.31	VAP-E25E_MUC01A04	TM	RA68		12	NA		12		0	12	S									0	S															Previously considered riverine; no new data since 2012 cycle
3-MUR001.19	VAP-E23R_MUR01A04	TM	RA58	0	13	S	0	12	S	1	13	S	2	12	IM																						No data since 2014 cycle
3-MUU000.82	VAN-E07R_MUU01A00	A	RA15	0	12	S	0	12	S	0	12	S	4	12	IM																						
3-MUU008.52	VAN-E07R_MUU02A02	A	RA15	0	11	S	0	11	S	0	11	S	7	11	IM																						
3-NIC000.38	VAP-E25R_NIC01A12	TM,B	RA69	0	14	S	1	14	S	0	14	S	3	12	IM																	FS						2011 benthics; no E. coli data since 2012 cycle.
3-NSS000.77	VAP-E23R_NSS01A12	A	RA57	0	12	S		12	NA	0	12	S	3	12	IM																						Class VII water; no new data since 2012 cycle
3-OCC003.14	VAP-E22E_OCC01A08	C2,B	RA55		5	NA		5		0	5	W				1	1	W			0	IN	0	S	0	S					FS				1		One sample event; 2012 WOE: category 2A OH-S scenario 2; no data since 2014 cycle
3-OCC005.62	VAP-E22E_OCC01A08	A	RA55		12	NA		12		1	12	S				9	11	IM																	12		No data since 2014 cycle
3-OCC010.47	VAP-E22R_OCC01A98	TM,A	RA55	0	24	S		24	NA	0	24	S	3	12	IM																						Class VII water; no data since 2014 cycle
3-PAN003.00	VAP-E23R_CAT03A04	TM	RA57	0	12	S		12	NA	0	12	S	2	12	IM																						Class VII water; no data since 2014 cycle
3-PAY-PANS1-NNSWCD	VAP-E25E_PAY01A02	CMON	RA68											1	NA																						Northern Neck SWCD; Level II E. coli
3-PAY-PANS2-NNSWCD	VAP-E25E_PAY01A02	CMON	RA68											1	NA																						Northern Neck SWCD; Level II E. coli
3-PAY-PANS3-NNSWCD	VAP-E25E_PAY01A02	CMON	RA68											1	NA																						Northern Neck SWCD; Level II E. coli
3-PAY-PANS4-NNSWCD	VAP-E25E_PAY01A02	CMON	RA68											1	NA																						Northern Neck SWCD; Level II E. coli
3-PBC005.12	VAN-E21R_PBC01A10	FPM,B	RA52	0	2	S	0	2	S	1	2	IN	0	1	W				0	IN	0	S									J						Biological monitoring indicated an impacted benthic community; however, due to private property concerns and access problems at this location, follow-up monitoring will occur at a nearby site with access. An observed effect is noted.
3-PEE003.97	VAP-E22E_PEE01A14	TM	RA54		13	NA		13		1	13	S				6	13	IM																			No data since 2014 cycle
3-PEE004.11	VAP-E22R_PEE01A08	TM	RA54	0	12	S	7	12	IM	1	12	S	1	12	S																						No data since 2014 cycle
3-PEE004.46	VAP-E22R_PEE01A08	A,TR,TM	RA54	0	48	S	21	48	IM	4	48	S	4	36	IM																						
3-PEE004.96	VAP-E22R_PEE01A08	TM	RA54	0	12	S	7	12	IM	3	12	IM	1	12	S																						No data since 2014 cycle
3-PEE006.57	VAP-E22R_PEE01A08	TM	RA54	0	12	S	0	12	S	3	12	IM	0	12	S																						No data since 2014 cycle
3-PIS004.79	VAP-E23E_PIS02A00	TM	RA61		12	NA		12		0	12	S				2	10	IM																	11		
3-PIS008.15	VAP-E23R_PIS01A98	B,TM	RA61	0	4	S	0	4	S	0	4	S																			FS						2012 and 2014 benthics
3-PIS009.24	VAP-E23R_PIS01A98	A,CB,TR	RA61	0	37	S	0	37	S	4	37	IM	7	24	IM																						
3-PIY000.01	VAN-E05R_PIY01A04	B	RA11	0	9	S	0	9	S	0	9	S																			FS						
3PIY-PINE-UVA	VAN-E05R_PIY02B10	NONA	RA11	21	199	IN/O				0	245	IN									0	S															
3-POH000.48	VAN-E03R_POH01A02	A	RA08	0	12	S	0	12	S	0	12	S	12	12	IM																						
3-POL000.10	VAN-E13R_POL01A04	A	RA30	0	10	S	0	10	S	0	10	S	3	10	IM																						
3-POT001.06	VAN-E17R_POT01A14	A	RA39	0	8	S	1	8	IN	0	8	S	4	8	IM																						
3-PRR000.54	VAP-E25E_PRR01A02	A	RA68		13	NA		13		0	13	S				1	12	S																	12		
3-RAP003.76	VAN-E18R_RAP02A02	B	RA44	0	2	S	0	2	S	0	2	S																			FS						
3-RAP006.53	VAN-E18R_RAP03A02	A,TR	RA44	0	33	S	0	33	S	0	33	S	3	33	S																						
3-RAP014.45	VAN-E18R_RAP05A08	PA	RA42	0	12	S	0	12	S	0	12	S	4	12	IM																						
3-RAP015.25	VAN-E18R_RAP05A08	FPM,B	RA42	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									FS						
3-RAP030.21	VAN-E16R_RAP01A04	A,CB	RA37	0	121	S	0	118	S	1	120	S	16	35	IM						0	S															USGS Samples
3-RAP043.00	VAN-E13R_RAP01A00	B	RA30	0	2	S	0	2	S	0	2	S																			FS						
3-RAP045.08	VAN-E13R_RAP01A00	A,TR	RA30	0	33	S	0	33	S	0	33	S	7	33	IM																						
3-RAP055.84	VAN-E13R_RAP02A06	A,TM	RA27	0	12	S	0	12	S	0	12	S	7	12	IM																						
3-RAP066.54	VAN-E12R_RAP01A00	A,B,CB	RA26	0	76	S	0	76	S	0	76	S	5	70	S						0	S									FS						
3-RAP077.28	VAN-E11R_RAP01A00	A,B,TR	RA24	0	35	S	0	35	S	0	35	S	2	33	S																	FS						
3-RAP082.43	VAN-E11R_RAP02A00	B	RA24	1	9	IN	0	9	S	0	9	S																			FS						
3-RIC003.85	VAP-E24R_RIC01A12	TM	RA66	0	24	S	11	24	IM	16	24	IM	4	23	IM																						
3-RIC005.00	VAP-E24R_RIC01A12	TM	RA66	0	12	S	0	12	S	3	12	IM	4	12	IM																						No new data since 2012 cycle
3-RIC006.43	VAP-E24R_RIC01A12	TM	RA66	0	12	S	4	12	IM	11	12	IM	5	12	IM																						No new data since 2012 cycle
3-RIP000.22	VAN-E12R_RIP01A04	A,B	RA26	0	14	S	0	13	S	0	13	S	3	11	IM																	IM						
3-RNF002.04	VAP-E24R_RIC01A12	TM	RA66	0	12	S	1	12	S	2	12	IM	3	12	IM																						No new data since 2012 cycle
3-ROB001.90	VAN-E15R_ROB01A00	A,CB	RA36	0	68	S	0	67	S	0	66	S	13	67	IM						0	S															
3-ROB003.59	VAN-E15R_ROB01A00	B	RA36	0	5	S	0	5	S	0	5	S																			FS						
3-ROB004.98	VAN-E15R_ROB01A00	FPM	RA36	0	2	S	0	2	S	0	2	S																									

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Rappahannock River Basin																																					
3-ROB017.24	VAN-E14R_ROB01A06	A,B,TR	RA32	0	36	S	0	36	S	3	36	S	2	33	S																FS							
3-ROB023.06	VAN-E14R_ROB01C00	B,SS	RA32	0	5	S	0	5	S	0	5	S	0	1	W																FS							
3-ROB024.06	VAN-E14R_ROB01C00	A,TM	RA32	4	10	IM	0	10	S	0	10	S	1	10	S																							
3-ROB030.76	VAN-E14R_ROB02A02	B	RA31	0	2	S	0	2	S	0	2	S																			FS							
3-ROE000.75	VAN-E14R_ROE01A02	B	RA31	0	5	S	0	5	S	0	5	S																			FS							
3-ROE004.07	VAN-E14R_ROE02A06	B	RA31	0	4	S	0	4	S	0	4	S																			FS							
3ROE-VT66-UVA	VAN-E14R_ROE02A06	NONA	RA31	2	15	IN/O				0	16	IN									0	S															
3-RPP004.51	VAP-E25E_RPP02A02	C2,B	RA74		5	NA		5		0	5	W				0	1	W	0	IN	0	IN	0	S	0	S					J				1			One sample event; 2011 WOE: category 3B HM-M scenario 8; no data since 2014 cycle
3-RPP005.00	VAP-E25E_RPP02A02	C2,B	RA74		6	NA		6		0	6	W				0	1	W	0	IN	0	IN	0	S	0	S					FS				1			One sample event; 2010 water organics (HH only); no new data since 2012 cycle; 2010 WOE: category 2A PH-S scenario 2
3-RPP010.60	VAP-E25E_RPP02A02	CB,TR	RA73		766	NA		723		0	766	S				0	64	S					0	S											64			Trend Station
3-RPP017.72	VAP-E25E_RPP02A02	CB,TR	RA69		756	NA		720		0	756	S				0	65	S					0	S											64			Trend Station
3-RPP025.52	VAP-E25E_RPP02A02	CB,TR	RA68		410	NA		391		2	410	S				0	66	S					0	S											66			Trend Station
3-RPP031.57	VAP-E24E_RPP03A00	CB,TR	RA66		305	NA		291		0	305	S				0	65	S					0	S											66			Trend Station; saltwater
3-RPP042.12	VAP-E23E_RPP02A98	CB,TR	RA62		362	NA		345		0	362	S				2	68	S					0	S											68			Trend Station; saltwater
3-RPP044.06	VAP-E22E_RPP05A02	SS	RA62		1	NA		1		0	1	W																										No data since 2014 cycle
3-RPP046.26	VAP-E22E_RPP05A02	TM	RA56		12	NA		12		0	12	S				4	12	IM																				No data since 2014 cycle
3-RPP051.01	VAP-E22E_RPP03A02	CB,TR	RA56		438	NA		417		6	438	S				4	64	S			0	S													65			Trend Station
3-RPP056.20	VAP-E22E_RPP02B16	TM	RA56		12	NA		12		0	12	S				2	12	IM																				No data since 2014 cycle
3-RPP060.59	VAP-E22E_RPP01A02	TM	RA54		25	NA		25		0	25	S	1	24	S																							No data since 2014 cycle
3-RPP064.40	VAP-E22E_RPP01A02	CB,TR	RA54		331	NA		331		0	331	S	2	66	S						0	S													135			68			Trend Station
3-RPP064.58	VAP-E22E_RPP01A02	SS	RA54		1	NA		1		0	1	W																										No data since 2014 cycle
3-RPP069.15	VAP-E22E_RPP01A02	TM	RA54		37	NA		37		1	37	S	1	25	S																							No data since 2014 cycle
3-RPP074.38	VAN-E21E_RPP01A02	A,CB	RA52		2	NA		2	NA	0	2	S																										
3-RPP077.96	VAN-E21E_RPP01A02	A,CB	RA51		2	NA		2	NA	0	2	S																										
3-RPP080.19	VAN-E21E_RPP03A02	A,CB,TR	RA51		460	NA		460	NA	0	460	S	2	66	S						0	S																
3RPP-080.19-VIMS	VAN-E21E_RPP03A02	NONA	RA51		33	NA		33	NA	0	33	S																										
3-RPP083.88	VAN-E21E_RPP03A02	A,CB	RA51		2	NA		2	NA	0	2	S																										
3RPP-084.32-VIMS	VAN-E21E_RPP03A02	NONA	RA51		162	NA		162	NA	0	162	S																										Continuous Monitoring Data - pH: 2009 (0/217, 0%)
3-RPP086.72	VAN-E21E_RPP04A02	A,CB	RA49		2	NA		2	NA	0	2	S																										
3-RPP088.22	VAN-E21E_RPP04A02	A,CB	RA49		2	NA		2	NA	0	2	S																										
3-RPP091.55	VAN-E21E_RPP04A02	A,CB,TR	RA49		216	NA		216	NA	0	216	S	2	66	S						0	S																
3-RPP092.71	VAN-E21E_RPP04A02	C2	RA49		2	NA		2	NA	0	2	S	0	1	W						0	IN																
3-RPP096.60	VAN-E21E_RPP05A02	A,C2	RA49		8	NA		8	NA	0	8	S	0	1	W				0	IN	0	IN																
3-RPP097.39	VAN-E21E_RPP05A02	A,C2	RA49		3	NA		3	NA	0	3	S	0	1	W						0	IN																
3RPP-098.80-VIMS	VAN-E21E_RPP05A02	NONA	RA48		27	NA		27	NA	0	27	S																										
3-RPP098.81	VAN-E21E_RPP05A02	A,CB,TR	RA48		204	NA		204	NA	0	204	S	6	65	S						0	S																
3-RPP104.47	VAN-E20E_RPP02A02	A,TM	RA46		15	NA		15	NA	0	15	S	2	6	IM																							
3-RPP106.01	VAN-E20E_RPP02A02	A,CB,TR	RA46		269	NA		269	NA	0	269	S	14	65	IM						0	S																
3-RPP107.91	VAN-E20E_RPP03A02	A,TM	RA46		13	NA		13	NA	0	13	S	0	6	S																							
3RPP-108.39-VIMS	VAN-E20E_RPP03A02	NONA	RA46		43	NA		43	NA	0	43	S																										
3RPP-10-ALL	VAN-E21E_RPP04A02	CMON	RA49		11	NA		10	NA	0	11	IN																										
3-RPP110.57	VAN-E20E_RPP03A02	A,TR	RA46		35	NA		35	NA	2	35	S	8	35	IM																							
3-RPP113.37	VAN-E19R_RPP01A02	A,CB	RA45	0	122	S	0	118	S	1	120	S	1	1	W						0	S																Data collected by USGS (station TF3.0)
3-RPP147.49	VAN-E08R_RPP02A02	A,CB	RA18	0	87	S	0	86	S	0	85	S	8	68	IM						0	S																USGS Sampling
3-RPP150.32	VAN-E02R_RPP01A02	A,B	RA07	0	8	S	0	8	S	0	8	S																			FS							
3RPP-15R23-ODU	VAN-E21E_RPP03A02	NONA	RA51					1	NA																												BIBI Score = 4
3RPP-15R24-ODU	VAN-E21E_RPP04A02	NONA	RA49					2	NA																												BIBI Score = 1.5
3RPP-15R25-ODU	VAN-E21E_RPP04A02	NONA	RA49					1	NA																												BIBI Score = 4
3-RPP163.41	VAN-E02R_RPP03A04	A	RA07	0	12	S	0	12	S	0	12	S	2	12	IM																							
3-RPP163.49	VAN-E02R_RPP04A14	B	RA05	0	2	S	0	2	S	0	2	S																			FS							
3RPP-16R24-ODU	VAN-E21E_RPP01A02	NONA	RA52																																		BIBI Score = 4.5
3-RPP175.51	VAN-E01R_RPP02A00	A,TR	RA03	0	33	S	0	32	S	0	33	S	9	33	IM																							
3RPP-19R26-ODU	VAN-E21E_RPP01A02	NONA	RA52		1	NA		1	NA																												BIBI Score = 1.5
3RPP-20R24-ODU	VAN-E21E_RPP01A02	NONA	RA52					1	NA																												
3RPP-20R25-ODU	VAN-E21E_RPP03A02	NONA	RA52					1	NA																												ODU/BEL probabilistic DO station
3RPP-2-ALL	VAN-E20R_RPP01A10	CMON	RA46	1	84	S	0	71	S	2	24	S																										Level II data: DO (0/2), pH (0/59).
3RPP-4-ALL	VAN-E21E_RPP03A02	CMON	RA51		31	NA		31	NA	0	17	S																										Level II data: pH (0/14).
3RPP-6-ALL	VAN-E19R_RPP02A02	CMON	RA45	0	37	S	0	36	S	0	35	IN	0	1	IN																							
3RPP-8-ALL	VAN-E20E_RPP02A02	CMON	RA46		11	NA		12	NA	0	12	IN																										
3-RUL000.39	VAN-E18R_RUL01A14	A	RA42	0	11	S	0	11	S	0	10	S	1	11	S																							
3-RUN000.13	VAP-E23R_RUN01A14	TM,B	RA57	0	14	S		14	NA	0	14	S	5	12	IM																IM							Class VII water; 2011 benthics; no data since 2014 cycle
3-RUS003.23	VAN-E05R_RUS01B08	A,B	RA12	0	21	S	0	21	S	0	21	S	6	18	IM																FS							
3-RUS005.66	VAN-E05R_RUS02A02	B	RA12	0	2	S	0	2	S	0	2	S																			FS							
3-RUS007.41	VAN-E05R_RUS02A02	A,B,CR	RA12	0	2	S	0	2	S	0	2	S																			FS							

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Rappahannock River Basin																																					
3RUS-10-RFLOW	VAN-E05R_RUS02A02	CMON	RA12	0	2	IN							1	2	IN/O																						
3RUS-12-RFLOW	VAN-E05R_RUS01B08	CMON	RA12	0	2	IN							0	2	IN																						
3RUS-14-RFLOW	VAN-E05R_RUS02A02	CMON	RA12	0	2	IN							0	2	IN																						
3RUS-6-RFLOW	VAN-E05R_RUS02A02	CMON	RA12	0	2	IN							1	2	IN/O																						
3RUS-7-RFLOW	VAN-E05R_RUS02A02	CMON	RA12	0	2	IN							0	2	IN																						
3RUS-8-RFLOW	VAN-E05R_RUS02A02	CMON	RA12	0	2	IN							0	2	IN																						
3-SMO001.58	VAP-E22R_SMO01A14	TM	RA54	0	12	S	3	12	IM	7	12	IM	1	12	S																						No data since 2014 cycle
3-SMR002.60	VAN-E10R_SMR01A04	A,TM,B	RA22	0	23	S	0	23	S	0	22	S	2	19	S				0	IN	0	S									J							
3-SMR004.81	VAN-E10R_SMR02A06	A,TM,B,FPM	RA22	0	24	S	0	24	S	0	23	S	6	19	IM				0	S	0	S	0	IN							IM							
3-SMS000.77	VAP-E23R_SMS01A14	TM	RA58	0	12	S	2	12	IM	6	12	IM	1	12	S																						No data since 2014 cycle
3-SOT001.00	VAN-E12R_SOT01A04	B	RA26	0	4	S	0	4	S	0	4	S																			FS							
3-STE000.77	VAP-E26E_STE02A08	A	RA74		11	NA		11		0	11	S				1	11	S																	11		No data since 2014 cycle
3-STL001.54	VAP-E22R_STL01A14	TM	RA53	0	13	S	1	13	S	4	13	IM	0	12	S																						No data since 2014 cycle
3-STL003.35	VAP-E22R_STL01A14	TM	RA53	0	13	S	4	13	IM	12	13	IM	3	12	IM																						No data since 2014 cycle
3STT-STAN-UVA	VAN-E11R_STT01A04	NONA	RA24	24	198	IN/O				2	259	IN									0	S															
3-SUM002.40	VAN-E17R_SUM01A04	A	RA39	0	10	S	0	10	S	0	9	S	7	10	IM																						
3-SUT002.62	VAN-E02R_SUT01A04	A	RA06	0	10	S	0	10	S	0	10	S	2	10	IM																						
3-SYN000.42	VAP-E23R_CAT03A04	TM	RA57	0	12	S		12	NA	0	12	S	3	12	IM																						Class VII water; no data since 2014 cycle
3-TAY002.46	VAP-E26R_TAY01A16	A	RA72	0	13	S	0	13	S	0	13	S	1	12	S																						
3-TBS001.08	VAP-E23R_TBS01A06	TM	RA57	0	12	S		12	NA	0	12	S	2	12	IM																						Class VII water; no data since 2014 cycle
3-TBS003.39	VAP-E23R_TBS01A06	TM	RA57	0	12	S		12	NA	0	12	S	3	12	IM																						Class VII water; no data since 2014 cycle
3-THM001.40	VAN-E01R_THM01A02	A,B,TM	RA04	0	30	S	0	30	S	0	30	S	13	27	IM																	IM						
3THM-TR10-JMSWCD	VAN-E01R_THM01A02	CMON	RA04										32	63	IN/O																						
3THM-TR8-JMSWCD	VAN-E01R_THM01A02	CMON	RA04										30	59	IN/O																						
3THM-TR9-JMSWCD	VAN-E01R_THM01A02	CMON	RA04										27	55	IN/O																						
3-THO006.50	VAN-E06R_THO02A02	A,TR	RA14	0	34	S	0	34	S	0	34	S	11	34	IM																						
3-THO014.37	VAN-E05R_THO01A02	A,B,TR	RA11	0	43	S	0	42	S	0	43	S	6	34	IM																	FS						
3-THO022.27	VAN-E05R_THO03A02	B	RA11	0	4	S	0	4	S	0	4	S																			J						
3-THO024.12	VAN-E05R_THO03B16	B	RA11	0	4	S	0	4	S	0	4	S																			FS						
3-THO025.39	VAN-E05R_THO03B16	B	RA11	0	4	S	0	4	S	0	4	S																			FS						
3THO-R5-SOS	VAN-E05R_THO03A02	CMON	RA11																												LP						1 sampling events (1a).
3-THR000.01	VAN-E05R_THR01A02	B	RA11	0	4	S	0	4	S	0	4	S																			J						
3-THR000.50	VAN-E05R_THR01A02	A	RA11	0	12	S	0	12	S	0	12	S	1	12	S																						
3-THR002.00	VAN-E05R_THR02A02	B	RA11	0	11	S	0	11	S	0	10	S																			FS						
3THR-R7-SOS	VAN-E05R_THR01A02	CMON	RA11																												LP						2 sampling events (2a).
3THR-VT61-UVA	VAN-E05R_THR03A16	NONA	RA11	3	15	IN/O				0	16	IN									0	S															
3-THU004.69	VAN-E01R_THU01A00	A,TM	RA04	0	33	S	0	33	S	0	33	S	8	33	IM																						
3THU-F14-JMSWCD	VAN-E01R_THU01A00	CMON	RA04	0	55	S	0	56	IN	0	55	IN	7	51	IN/O																						
3THU-F14-SOS	VAN-E01R_THU01A00	CMON	RA04																												LP						5 sampling events (3a/2g).
3THU-TR1-JMSWCD	VAN-E01R_THU01A00	CMON	RA04										12	59	IN/O																						
3THU-TR2-JMSWCD	VAN-E01R_THU01A00	CMON	RA04										10	63	IN/O																						
3-THW004.68	VAN-E01R_THW01A02	A,TM	RA04	0	27	S	0	27	S	0	27	S	4	27	IM																						
3THW-TR3-JMSWCD	VAN-E01R_THW01A02	CMON	RA04										9	63	IN/O																						
3THW-TR4-JMSWCD	VAN-E01R_THW01A02	CMON	RA04										8	63	IN/O																						
3THW-TR5-JMSWCD	VAN-E01R_THW01A02	CMON	RA04										28	63	IN/O																						
3THW-TR6-JMSWCD	VAN-E01R_THW01A02	CMON	RA04										13	63	IN/O																						
3THW-TR7-JMSWCD	VAN-E01R_THW01A02	CMON	RA04										7	62	IN/O																						
3-TIN000.36	VAN-E08R_TIN01A08	A	RA18	0	9	S	1	9	IN	0	9	S	5	9	IM																						
3-TOT005.11	VAP-E24E_TOT01A00	A,TR,SS	RA64		36	NA		36		0	36	S				15	36	IM																	29		Trend Station; saltwater
3-TOT006.34	VAP-E24E_TOT01A00	SS	RA64		12	NA		12		0	12	S				6	12	IM																			No new data since 2012 cycle
3-TOT009.95	VAP-E24R_TOT01A06	A,TM	RA64	0	12	S	1	12	S	0	12	S	3	11	IM																						No new data since 2012 cycle
3-TOT012.53	VAP-E24R_TOT01A06	TM,B	RA64	0	14	S	0	14	S	0	14	S	3	12	IM																	FS						2010 benthics; no new data since 2012 cycle
3-TOT014.49	VAP-E24R_TOT01A06	TM	RA64	0	12	S	0	12	S	0	12	S	4	12	IM																						No new data since 2012 cycle
3-TOT-TOT 1-ACB	VAP-E24R_TOT01A06	CMON	RA64	0	112	S	1	104	S	0	81	S																									ACB - Level 3
3-TOT-TOT 2-ACB	VAP-E24E_TOT01A00	CMON	RA64		113	NA		108		0	80	S																									ACB - Level 3
3-TOT-TOT 3-ACB	VAP-E24E_TOT01A00	CMON	RA64		111	NA		107		0	83	S																									ACB - Level 3
3-TOT-TOT 4-ACB	VAP-E24E_TOT02A00	CMON	RA64		115	NA		110		0	81	S																									ACB - Level 3
3-TWN000.35	VAP-E25E_TWN01A12	TM	RA69		11	NA		11		0	12	S				5	11	IM																			No new data since 2012 cycle
3-URB001.00	VAP-E25E_URB02A00	A,TR	RA69		36	NA		36		0	37	S				2	34	S																	35		Trend Station
3-WAF000.82	VAN-E07R_WAF01A10	B	RA16	0	2	S	0	2	S	0	2	S																			FS						
3-WEE000.38	VAP-E25E_WEE02A04	C2,B	RA68		2	NA		2		0	2	W				0	1	W			0	IN	0	S	0	S					J					1		One sample event; 2012 WOE: category 3B HM-M scenario 5; no data since 2014 cycle
3-WHO001.48	VAN-E14R_WHO01A06	A	RA33	0	11	S	0	11	S	0	10	S	4	11	IM																						
3-WHS000.89	VAP-E26E_WHS01B00	A	RA73		12	NA		12		0	12	S				3	12	IM																	11		No new data since 2012 cycle
3-WHT000.35	VAN-E21R_WHT01A06	A	RA48	0	12	S	0	11	S	2	12	IM	2	12	IM																						
3-WIL004.00	VAN-E18R_WIL01A08	A,TM	RA43	0	11	S	0	11	S	0	11	S	7	11	IM																						

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Rappahannock River Basin																																					
3WIL-15-NPS	VAN-E18R_WIL01A08	NONA	RA43	0	52	S	1	51	S	0	52	S																									
3WNR-14-NPS	VAN-E18R_WNR01A12	NONA	RA43	0	51	S	2	50	S	0	51	S																									
3WOC-VT75-UVA	VAN-E14R_WOC01A06	NONA	RA31	2	14	IN/O				0	16	IN									0	S															
3XAC-F1-SOS	VAN-E02R_XAC01A04	CMON	RA07																											HP							1 sampling event (1u).
3XAC-F3-JMSWCD	VAN-E02R_XAC01A04	CMON	RA07	0	54	S	0	56	IN	0	56	IN	31	92	IN/O																						
3XAC-F3-SOS	VAN-E02R_XAC01A04	CMON	RA07																											HP							3 sampling events (3u).
3-XBO000.26	VAN-E13R_XBO01A04	A,TM	RA27	0	12	S	0	11	S	0	12	S	8	12	IM																						
3-XEY001.00	VAP-E26R_XEY01A06	TM	RA70	0	13	S	0	13	S	0	13	S									0	S															
3-XEZ000.12	VAN-E13R_XEZ01A04	A,TM	RA30	0	12	S	0	11	S	0	12	S	2	11	IM																						
3-XFE001.05	VAN-E20R_XFE01A02	A	RA47	0	12	S	0	12	S	2	11	IM	1	12	S																						
3-XGI000.44	VAP-E22R_XGI01A10	TM	RA55	0	5	S	2	5	IM	3	5	IM									0	S															
3-XGR000.95	VAN-E12R_XGR01A10	FPM,B	RA26	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									FS							
3XHD-15-RFLOW	VAN-E05R_XHD01A08	CMON	RA12	0	2	IN							2	2	IN/O																						
3XHD-16-RFLOW	VAN-E05R_XHD01A08	CMON	RA12	0	2	IN							2	2	IN/O																						
3XHD-17-RFLOW	VAN-E05R_XHD01A08	CMON	RA12	0	2	IN							1	2	IN/O																						
3XHF-18-RFLOW	VAN-E05R_XHF01A08	CMON	RA12	0	2	IN							1	2	IN/O																						
3-XHH000.24	VAN-E06R_XHH01A12	A	RA14	0	12	S	0	12	S	0	12	S	4	12	IM																						
3-XHJ000.04	VAP-E24R_RIC01A12	TM	RA66	0	12	S	7	12	IM	7	12	IM	1	12	S																						No new data since 2012 cycle
3-XHK000.65	VAP-E24R_TOT02B12	TM	RA64	0	12	S	1	12	S	0	12	S	4	12	IM																						No new data since 2012 cycle
3-XHL000.96	VAP-E24R_XHL01A12	TM	RA64	0	11	S	0	11	S	2	11	IM	4	11	IM																						No new data since 2012 cycle
3-XHM000.27	VAP-E24R_TOT02B12	TM	RA64	0	11	S	0	11	S	1	11	S	6	11	IM																						No new data since 2012 cycle
3XHN-7-ALL	VAN-E20R_XHN01A10	CMON	RA46	0	83	S	1	83	S	3	31	S	4	11	IM																						Level II data: pH (0/52), E. coli (2/6).
3XHP-XYY01-SOS	VAN-E13R_XHP01A10	CMON	RA30																											LP							1 sampling event (1a).
3-XHQ000.35	VAN-E16R_XHQ01A12	FPM,B	RA38	0	1	W	0	1	W	0	1	W	1	1	W						0	IN									J							
3XHS-GR4-JMSWCD	VAN-E02R_XHS01A12	CMON	RA07										3	40	IN																						
3-XHU000.04	VAN-E01R_XHU01A14	FPM,B	RA04	0	2	S	0	2	S	0	2	S	1	1	W				0	IN	0	S									IM							
3-XHW000.20	VAP-E22R_XHW01A14	TM	RA54	0	12	S	0	12	S	1	12	S	2	12	IM																						No data since 2014 cycle
3-XHY000.06	VAP-E22R_ELM01A06	TM	RA53	0	26	S	8	26	IM	6	26	IM	4	13	IM																						No data since 2014 cycle
3-XHY002.50	VAP-E22R_ELM01A06	TM	RA53	0	25	S	0	25	S	2	25	S	1	12	S																						No data since 2014 cycle
3XIA-9-ALL	VAN-E20R_XIA01A12	CMON	RA46	0	42	S	0	44	S	0	27	S	2	11	IM																						Level II data: pH (0/17), E. coli (0/7).
3-XID000.16	VAP-E26E_BRD01A00	C2,B	RA74		3	NA		3		0	3	W				0	1	W			0	IN	0	S	0	S					J				1			WOE 2013: HM-S scenario 1, Category 3B; one sample event
CRR000.79	VAP-E26E_CRR02A08	CB	RA73		59	NA		59		0	59	S																									VIMS, no new data since 2012 cycle
CRR003.38	VAP-E26E_CRR01A00	CB	RA72		42	NA		42		0	42	S																									VIMS, no new data since 2012 cycle
CRR004.02	VAP-E26E_CTM03A08	CB	RA71		198	NA		198		0	195	S																									VIMS ConMon - no new data since 2012 cycle
CTM003.69	VAP-E26E_CTM01A00	CB	RA71		54	NA		54		0	54	S																									VIMS, no new data since 2012 cycle
CTO004.91	VAP-E26E_CTO01A02	CB	RA70		48	NA		48		0	48	S																									VIMS, no new data since 2012 cycle
LE3.2	VAP-E25E_RPP02A02	CB-B	RA69																																		B-IBI = multiple; RPPMH
LE3.4	VAP-E25E_RPP02A02	CB-B	RA73																																		B-IBI = multiple; RPPMH
RET3.1	VAP-E23E_RPP02A98	CB-B	RA62																																		B-IBI = multiple; RPPMH
RPP001.99	VAP-E25E_RPP02A02	CB	RA74		76	NA		76		0	76	S																									VIMS - no new data since 2012 cycle
RPP006.96	VAP-E25E_RPP02A02	CB	RA74		40	NA		40		0	40	S																									VIMS - no new data since 2012 cycle
RPP010.60	VAP-E25E_RPP02A02	CB	RA73		82	NA		82		0	82	S																									VIMS - no new data since 2012 cycle
RPP015.61	VAP-E26E_RPP03A00	CB	RA69		162	NA		162		0	202	S																									VIMS ConMon - no new data since 2012 cycle
RPP017.04	VAP-E25E_RPP02A02	CB	RA69		42	NA		42		0	42	S																									VIMS - no new data since 2012 cycle
RPP021.29	VAP-E25E_RPP02A02	CB	RA68		36	NA		36		0	36	S																									VIMS - no new data since 2012 cycle
RPP021.36	VAP-E25E_RPP02A02	CB	RA68							0	335	S																									VIMS ConMon
RPP022.94	VAP-E25E_RPP02A02	CB	RA68		48	NA		48		0	48	S																									VIMS - no new data since 2012 cycle
RPP025.52	VAP-E25E_RPP02A02	CB	RA68		46	NA		46		0	46	S																									VIMS - no new data since 2012 cycle
RPP029.64	VAP-E22E_RPP05A02	CB	RA62		52	NA		52		0	52	S																									VIMS - no new data since 2012 cycle
RPP031.57	VAP-E24E_RPP03A00	CB	RA66		34	NA		34		0	34	S																									VIMS - no new data since 2012 cycle
RPP033.29	VAP-E24E_RPP03A00	CB	RA66		133	NA		133		0	167	S																									VIMS ConMon - no new data since 2012 cycle
RPP037.79	VAP-E24E_RPP03A00	CB	RA66		43	NA		43		0	43	S																									VIMS - no new data since 2012 cycle
RPP042.12	VAP-E23E_RPP02A98	CB	RA62		35	NA		35		0	35	S																									VIMS - no new data since 2012 cycle
RPP051.01	VAP-E22E_RPP03A02	CB	RA56		45	NA		45		0	45	S																									VIMS - no new data since 2012 cycle
RPP057.00	VAP-E22E_RPP02A02	CB	RA54		120	NA		120		1	211	S																									VIMS ConMon - no new data since 2012 cycle
RPP064.40	VAP-E22E_RPP01A02	CB	RA54		21	NA		21		0	21	S																									VIMS - no new data since 2012 cycle
TF3.3	VAP-E22E_RPP03A02	CB-B	RA56																																		B-IBI = multiple; RPPOHa

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4A-10-THA	VAC-L27L_BWA01A08	CMON	RU56	0	9	S	0	9	S	1	9	IN																									Timberlake Homeowners Association Station
4A-11-THA	VAC-L27L_BWA01A08	CMON	RU56	0	9	S	0	9	S	0	9	S																									Timberlake Homeowners Association Station
4A-1-THA	VAC-L27L_BWA01A08	CMON	RU56	0	9	S	0	9	S	0	9	S	0	3	S																							Timberlake Homeowners Association Station
4A-2-THA	VAC-L27R_BWA04A08	CMON	RU56	0	9	S	0	9	S	0	9	S																									Timberlake Homeowners Association Station
4A-3-THA	VAC-L27L_BWA01A08	CMON	RU56	0	9	S	0	9	S	0	9	S	0	3	S																							Timberlake Homeowners Association Station
4A-4-THA	VAC-L27R_BRW01A08	CMON	RU56	0	9	S	0	9	S	0	9	S																									Timberlake Homeowners Association Station
4A-5-THA	VAC-L27L_BWA01A08	CMON	RU56	0	9	S	0	9	S	1	9	IN	0	3	S																							Timberlake Homeowners Association Station
4A-6-THA	VAC-L27R_WTR01A08	CMON	RU56	0	9	S	0	9	S	0	9	S																									Timberlake Homeowners Association Station
4A-7-THA	VAC-L27L_BWA01A08	CMON	RU56	0	8	S	0	8	S	0	8	S	0	3	S																							Timberlake Homeowners Association Station
4A-8-THA	VAC-L27L_BWA01A08	CMON	RU56	0	9	S	0	9	S	0	9	S																									Timberlake Homeowners Association Station
4A-9-THA	VAC-L27L_BWA01A08	CMON	RU56	0	9	S	0	9	S	0	9	S																									Timberlake Homeowners Association Station
4AAAR004.72	VAC-L73R_AAR01A00	A	RD75	0	12	S	1	12	S	0	12	S	1	12	S						0	S	0	S	0	S												2014 Delist
4AAAR006.20	VAC-L73R_AAR02A10	A	RD75	0	12	S	0	12	S	0	12	S	3	12	IM						0	S																2016 - DO Delist/EC Impairment
4AACC001.75	VAC-L39R_ACC01A98	FPM,B	RU82																												IM							2002 Probabilistic Monitoring Heavy rains occurred within a week of the fall 2002 sampling event. The benthic TMDL completed in 2004 identified sediment as the stressor to the benthic community.
4AACC002.60	VAC-L39R_ACC01A98	B,TM,SS	RU82	0	2	S	0	2	S	0	2	S									0	S										IM							Observed Effects Benthics 2006 FC bacteria: FC Geo Mean 2/3 Violation Rate - Ash Camp Creek Source Assessment The benthic TMDL completed in 2004 identified sediment as the stressor to the benthic community. 2008/2011 Bio Only, No new bacteria data A slight improvement in the benthic community has been noted at this site. Sediment continues to affect the stream community negatively.
4AACC004.87	VAC-L39R_ACC01A98	B,SS	RU82	0	2	S	0	2	S	0	2	S							0	S	0	S										IM							2006 FC bacteria: FC Geo Mean 0/2 Violation Rate - Ash Camp Creek Source Assessment The benthic TMDL completed in 2004 identified sediment as the stressor to the benthic community. 2008/2011 Bio Only, No new bacteria data A slight improvement has been noted at this site during recent sampling. Sediment and nutrients continue to affect the stream community negatively.
4AACC007.62	VAC-L39R_ACC01A98	B	RU82																												J							50 yards below Keysville STP discharge - station may not be appropriate for benthic assessment 2010 - No New Data
4A-ACC-CHA11-SSWCD	VAC-L39R_ACC01A98	CMON	RU82	0	10	S							12	33	IN/O						0	S																Southside SWCD Station - Level II Coliscan Category 3C
4AALL001.13	VAC-L67R_ALL01A08	A,B	RD60	0	14	S	0	14	S	0	14	S	8	12	IM						0	S										FS							2009 Bio
4AALN009.12	VAC-L78R_ALN03A04	A,TR	RL11	0	36	S	3	36	S	0	37	S	9	37	IM						0	S																2016 - DO Delist
4AALN016.38	VAC-L78R_ALN04A06	A,B	RL10	0	25	S	0	25	S	0	26	S	7	24	IM						0	S										J							2013 Bio 4AALN016.38 exhibits significant seasonal variability. Sedimentation is a potential stressor. Additional data needed to accurately characterize the benthic community
4AALN020.60	VAC-L78R_ALN04A06	B	RL10	0	1	W	0	1	W	0	1	W																				IM							2013 Bio Sedimentation is a probable stressor to the benthic community. Silviculture is taking place within the nearby watershed.
4AATD002.66	VAC-L36R_ATD01A08	A,B	RU73	0	2	S	0	2	S	0	2	S	12	12	IM						0	S										IM							2012 Bio Lack of riparian vegetation and poor bank condition may be limiting the ability of 4AATD002.66 to support a diverse community.
4ABAA000.03	VAW-L06R_BAA01A00	A	RU15	0	12	S	0	12	S	0	12	S	0	12	S						0	S											0	12	IN				Bacteria Delist 2016 (0/12). No additional data beyond the 2008 assessment where E.coli exceeds 2 / 12- 'IM'.
4ABAA000.30	VAW-L06R_BAA01A00	B,A	RU15	0	4	S	0	3	S	0	4	S																				FS							Four surveys (2011-2013) averaging 63.4 VSCI. 3 surveys 2008 & 2012. Avg. VSCI 60.6.
4ABAA023.07	VAW-L06R_BAA05A08	B,SS	RU15	0	3	S	0	3	S	0	3	S																				IM							5 surveys 2008, 2009 & 2012. Avg. VSCI 57.8.
4ABAA-4-SOS	VAW-L06R_BAA05A08	CMON	RU15																												LP							SOS 3 surveys '07, '08 & '09 [3D] Lv. 2. Four surveys Outside Acceptable Season Range.
4ABAA-5-SOS	VAW-L06R_BAA05A08	CMON	RU15																												LP							SOS 1 surveys '09 [3D] Lv. 2.
4ABAA-6-SOS	VAW-L06R_BAA02A00	CMON	RU15																												LP							SOS 1 surveys '10 [3D] Lv. 2.
4ABAN000.50	VAC-L71R_BAN04A00	C,SS	RD67																						0	S	2	IM	4	IM								VDH Fish Advisory PCBs & Mercury Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam. These river segments comprise ~67 miles. (10/27/99; modified 12/13/04; mercury, 8/31/07; modified 9/16/08) 2013 FT/Sediment - PCBs 3 Species 2007 FT Sampling PCB 3 Species Hg 2 Species 00 FT/Sed PCB 3 Sp.
4ABAN001.86	VAC-L71R_BAN04A00	A	RD67	0	11	S	0	11	S	0	12	S	4	12	IM						0	S																
4ABAN001.98	VAC-L71R_BAN04A00	SS	RD67																						2	O												99 Sed DDD & Total DDT

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ABAN005.58	VAC-L71R_BAN04A00	A,TR	RD67	0	35	S	0	35	S	0	36	S	13	36	IM						0	S																Trend Analysis Performed - Statistically significant trends were detected (TP, decreasing & TSS, decreasing) USGS Temperature Data Level III - 0/7
4ABAN008.30	VAC-L71R_BAN04A00	A,C	RD67	0	11	S	0	11	S	0	12	S	4	12	IM						0	S	0	S	0	S	2	O	3	IM								VDH Fish Adv. Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam. These river segments comprise ~67 miles. (10/27/99; modified 12/13/04; mercury, 8/31/07; modified 9/16/08) 2013 FT/Sediment 2007 FT Sampling PCB 3 Species OE - Hg 2 Species Ammonia Special Study
4ABAN012.46	VAC-L71L_BAN03L00	L,C	RD65	0	67	S	8	45	IM	0	67	S	0	14	S						0	S	0	S	0	S	1	O	0	S								2007 FT Sampling OE - As 1 Species & Hg 1 Species 2009-2010 Banister Lake Sampling TSI Calculations (data from stratified months) Chl a - 53 TP - 58 Secchi - 61 Category 4C
4ABAN023.28	VAC-L67R_BAN01A98	A	RD62	0	11	S	0	11	S	0	12	S	3	12	IM						0	S																
4ABAN029.81	VAC-L67R_BAN01A98	TM	RD62	0	12	S	0	12	S	0	11	S	3	12	IM						0	S																No New Data
4ABAN034.15	VAC-L67R_BAN02A04	FPM,B	RD60	0	1	W	0	1	W	0	1	W	0	1	W						0	W			0	W					J							2010 FPM Note: these data were collected using boatable methods and should not be assessed using the SCI.
4ABAN039.76	VAC-L67R_BAN02A04	A,TM,B,TR	RD60	0	34	S	0	34	S	0	36	S	10	36	IM						0	S	0	S	0	S					FS							
4ABAN044.76	VAC-L67R_BAN04A08	TM	RD58	0	11	S	0	12	S	0	11	S	1	12	S						0	S																No New Data
4ABAN053.77	VAC-L67R_BAN04A08	TM,PA	RD58	0	12	S	0	12	S	0	12	S	2	12	IM						0	S																2016 - New EC Impairment Banister Watershed TMDL
4ABAN057.85	VAC-L67R_BAN04A08	FPM,B	RD58	0	1	W	0	1	W	0	1	W	0	1	W						0	W	0	S							J							2013 Boatable Probmon Large River boatable techniques used for sampling. Not calibrated for use with VSCI.
4ABAN070.20	VAC-L65R_BAN03A00	A,TM	RD52	0	12	S	0	12	S	0	12	S	6	12	IM						0	S	0	S	0	S												PWS
4ABAN074.58	VAC-L65R_BAN04A00	TM	RD52	0	11	S	0	12	S	0	11	S	3	12	IM						0	S																No New Data Banister Watershed TMDL
4ABAR000.32	VAC-L70R_BAR01A06	B	RD63	0	3	S	0	3	S	0	3	S								0	W									IM							2012/2014 Bio 4ABAR000.32 exhibits great seasonal variability with the fall sample scoring near the impairment threshold of 60. Habitat scores indicate sediment may be the leading stressor on the system.
4ABAU000.25	VAW-L53R_BAU01A06	TM,B	RD24	0	15	S	0	14	S	0	15	S	3	12	IM																IM	0	12	S				
4ABAU000.94	VAW-L53R_BAU01A06	A	RD24	0	12	S	0	12	S	0	12	S	4	12	IM						0	S										0	12	S				
4ABAU005.34	VAW-L53L_BAU01A02	A,L,C	RD24	0	58	S	0	51	S	0	14	S	0	7	IN																			0	1	IN	Bacteria Impairment carried 2016 IR. Martinsville (Beaver Creek) Reservoir 2016 Pooled Data: Temp 0 / 58 (S); DO 0 / 51 (S); pH 0 / 14 (S); CHL A 0 / 1 (IN - 1 year). PWS. E.coli Listed with the 2010 IR. 2007 FT exceed PCB WQS.
4ABAU011.17	VAW-L53R_BAU02A06	FPM,B	RD24	0	4	S	0	4	S	0	4	S	2	2	IN					0	IN	0	S	0	S						IM	0	4	S	0	2	IN	FW08VA004- 2 surveys 2011. Avg. VSCI 38.8. No 2011 sediment PEC SV excursions- metals only.
4ABCD001.70	VAC-L36R_BCD01A08	A,B	RU75	0	13	S	0	13	S	0	13	S	3	12	IM						0	S									FS							2010 Bio
4ABCE000.87	VAW-L08R_BCE01A08	FPM,B	RU22	0	2	S	0	2	S	0	2	S	0	1	IN					0	S	0	S	0	S	2	O				IM							VAW05547-047 (2006). 2006 Sediment exceeds PEC SVs DDE (SV-31.3 ppb @ 613.3); DDT TOTAL (SV-572 ppb @ 613.3). No Sediment PEC exceedances from 2007 data; metals only. N.F. Blackwater River Bacteria TMDL Study U.S. EPA approved 03/09/2001. Fed. ID 7790 / 20
4ABCE001.32	VAW-L08R_BCE01A08	B,TM	RU22	0	16	S	0	16	S	0	16	S	7	12	IM																IM	0	12	S				2 VSCI surveys (2010).
4ABDA003.63	VAW-L07R_BDA01A00	TM,TR	RU17	0	24	S	0	24	S	0	24	S	8	23	IM						0	S										0	24	IN				
4ABDA006.72	VAW-L07R_BDA01A00	B,TM	RU17	0	2	S	0	2	S	0	2	S																			IM							2 VSCI surveys (2008).
4ABDA-T16-FC	VAW-L07R_BDA01A00	CMON	RU17																												1	12	IN				SML TP stream - 'W' No additional data beyond 2012 IR.
4ABDB000.75	VAC-L67R_BDB01A08	A,B	RD62	0	15	S	0	15	S	0	15	S	4	12	IM						0	S									IM							2010/2014 Bio 4ABDB000.75 has VSCI scores continually close to the impairment cutoff score of 60. Additional sampling yielded lower scores. Loose, soft sand/sediment dominated stream bottom and banks.
4ABDB004.35	VAC-L67R_BDB01A08	FPM,B	RD62	0	2	S	0	2	S	0	2	S	0	1	W					0	W	0	S							J							2012 FPM 4ABDB000.75 has VSCI scores very close to the impairment cutoff score of 60. Further sampling is required to accurately assess the waterbody. Recent sampling indicates an unbalanced community due to bank scour and sedimentation stressors. This site is on private property and was sampled as part of PROBMON: therefore, it will not be revisited. Link this station with 4ABDB000.75 which is listed as impaired.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ABDC002.36	VAW-L02R_BDC01A04	A	RU08	0	12	S	1	12	S	3	12	IM	2	12	IM						0	S																2010 initially 303(d) Listed Bacteria (Nested) E.coli 2/12- 'IM' and pH 4 / 16- 'IM'. No additional data beyond the 2010 IR.
4ABEE000.80	VAC-L75R_BEE01A98	A,B	RL01	0	15	S	0	15	S	0	15	S	4	11	IM						0	S									IM							2010/2014 Bio 4ABEE000.80 exhibits seasonal variability. Further sampling indicates an unbalanced benthic community. Sedimentation and nutrient enrichment are probable stressors.
4ABEE001.20	VAC-L75R_BEE01A98	FPM,B	RL01																											J							2002 Probabilistic Monitoring Insufficient information prohibits an accurate assessment. Personnel who performed the spring 2002 monitoring are no longer with the agency, therefore pertinent information about the stream is unavailable.
4ABHA002.47	VAC-L30R_BHA01A02	A,B	RU63	0	13	S	0	13	S	0	14	S	4	11	IM						0	S									FS							2010 Bio
4ABHB004.40	VAC-L75L_ROA05L98	L	RL07	0	231	S	33	161	IM	0	231	S	0	21	S						0	S													0	3	S	2010/2012/2014 Kerr Reservoir Pooled DO Data: 134/1437
4ABHB008.63	VAC-L75R_BHB01A98	A	RL07	0	12	S	1	12	S	0	12	S	1	12	S						0	S																No New Data
4ABHB013.93	VAC-L75R_BHB01A98	A	RL07	0	12	S	0	12	S	0	12	S	1	12	S						0	S																No New Data
4ABHT001.90	VAW-L04R_BHT01A10	B,TM	RU14	0	3	S	0	3	S	0	3	S																			IM							3 surveys (2009 & 2010). Avg. VSCI 36.8.
4ABHT-1-SOS	VAW-L04R_BHT01A10	CMON	RU14																											MP							SOS 5 surveys 2010-2012 [3C] Lv. 2. One survey Outside Acceptable Season Range.
4ABIR001.00	VAC-L63R_BIR01A98	A,TM	RD47										6	11	IM						0	S																2004 Birch Creek TMDL
4ABIR004.22	VAC-L63R_BIR01A98	TM,B	RD47	0	2	S	0	2	S	0	2	S	5	11	IM																FS							2013 Bio 2004 Birch Creek TMDL
4ABIR005.34	VAC-L63R_BIR01A98	TM	RD47										6	11	IM																							2004 Birch Creek TMDL
4ABIR011.55	VAC-L63R_BIR01A98	A,TM,B	RD47	0	14	S	0	14	S	0	14	S	4	12	IM						0	S									IM							2004 Birch Creek TMDL 2013 Bio 4ABIR011.55 has an unbalanced benthic community. A breached mill dam is present upstream which may negatively affect the flow regime. Moderate algae production and embeddedness indicate nutrient enrichment and sedimentation are also likely stressors.
4ABIR014.28	VAC-L63R_BIR01A98	TM	RD47										2	11	IM																							2004 Birch Creek TMDL
4ABKN000.52	VAC-L65R_BKN01A00	A,B	RD53	0	17	S	0	17	S	0	17	S	1	12	S						0	S									IM							2008/2011/2012/2014 Bio Sediment and flow regime seem to affect the stream community negatively. Showing improvement in 2012 and 2014. Sedimentation still seems to be the main stressor. However, when in-stream snag habitat is present a fairly diverse benthic community is supported.
4ABKN002.47	VAC-L65R_BKN01A00	TM	RD53	0	11	S	0	12	S	0	11	S	4	12	IM						0	S																No New Data Banister River Watershed TMDL
4ABLE001.21	VAC-L40R_BLE01A06	B,SS	RU87	0	4	S	0	4	S	0	4	S	3	6	IM						0	S									IM							2010/2014 Bio Heavy to moderate embeddedness observed in 2014 samples. Sedimentation is a likely stressor. PRO Hog Farm Special Study & Follow-up
4ABLG000.24	VAW-L01R_BLG01A10	PA	RU02	1	13	S	0	13	S	1	13	S	0	13	S																	0	13	S				
4ABLG001.95	VAW-L01R_BLG01A10	FPM,B	RU02	0	2	S	0	2	S	0	2	S	0	1	IN																FS	0	2	S	0	1	IN	
4ABLG-1-SOS	VAW-L01R_BLG01A10	CMON	RU02																											LP							SOS 8 surveys 2007 & 2009-2012 [3D] Lv. 2- Two surveys Outside Acceptable Date Range.
4ABLG-RN01-UVA	VAW-L01R_BLG01A10	CMON	RU02							1	1	IN/O																										
4ABLU002.02	VAC-L74R_BLU01A08	A	RD73	0	11	S	2	11	IM	0	11	S	2	11	IM						0	S																
4ABMA002.00	VAC-L76L_BMA01A06	A,TR	RD77	0	35	S	0	35	S	0	36	S	3	36	S						0	S																
4ABNN001.85	VAC-L40R_BNN01A06	TM,SS,B	RU87	0	2	S	0	2	S	0	2	S	5	6	IM																J							2009 Bio 4ABNN001.85 exhibits significant seasonal variability. Further sampling is required to accurately assess the waterbody. 4ABNN001.85 is linked to 4ABNN002.17, a PROBMON trend station which is currently impaired (sediment a likely stressor). PRO Hog Farm Special Study & Follow-up
4ABNN002.17	VAC-L40R_BNN01A06	B	RU87	0	4	S	0	4	S	0	4	S	1	2	IN				0	S											IM							2012/2014 Bio 4ABNN002.17 exhibits seasonal variability near the impairment threshold. Habitat scores and Taxa lists indicate bank scour and sedimentation to be likely stressors within this reach.
4A-BNN-CHA02-SSWCD	VAC-L40R_BNN01A06	CMON	RU87	0	10	S							13	37	IN/O																							Southside SWCD Station - Level II Coliscan Category 3C
4ABNR000.40	VAW-L08R_BNR01A00	A,B,TR	RU20	0	41	S	0	41	S	0	41	S	16	34	IM						0	S									IM	0	36	S				6 surveys 2007 & 2009-2011). Avg. VSCI 49.5. N.F. Blackwater River Bacteria TMDL Study U.S. EPA approved 03/09/2001. Fed. ID 7790 / 20479. SWCB approved 6/17/2004. Originally 303(d) Listed 1996 for FC. Bacteria Implementation Plan SWCB approved 6/17/20
4ABNR001.53	VAW-L08R_BNR01A00	B,TM	RU20	0	4	S	0	4	S	0	4	S																			IM							2 VSCI surveys (2010). N.F. Blackwater River General Standard Benthic (Fed ID 24548 Phosphorus & Fed ID 24550 Sediment) TMDL Study is U.S. EPA approved 4/26/2004. Fed ID 7789. SWCB approved 8/31/2004.

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ABNR004.56	VAW-L08R_BNR02A00	A,TM	RU20	0	12	S	0	12	S	0	11	S	3	12	IM						0	S																No additional data beyond the 2010 IR where E.coli exceeds in 4 / 13- 'IM'. N.F. Blackwater River Bacteria TMDL Study U.S. EPA approved 03/09/2001. Fed. ID 7790 / 20479. SWCB approved 6/17/2004. Originally 303(d) Listed 1996 for FC. No additional data
4ABNR-1-SOS	VAW-L08R_BNR02A00	CMON	RU20																											LP							4 surveys 2011-2012 [3D] Lv. 2.
4ABOE001.34	VAW-L21R_BOE01A08	A	RU40	0	12	S	0	12	S	0	12	S	4	12	IM																	2	12	IN				Goose Creek Fed ID 24552 and its tributaries are nested within the Staunton River TMDL Watershed.
4ABOE005.27	VAW-L21R_BOE01A08	FPM,B	RU40	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S									IM	0	2	S	0	1	IN	VARS11-091- 2 surveys 2012. Avg. VSCI 54.1. No sediment collection.
4ABOR000.62	VAC-L28R_BOR01A00	A,TM,TR,B	RU59	0	37	S	0	37	S	0	37	S	12	35	IM						0	S	0	S	0	S					FS							PWS; Big Otter FC TMDL Approved Trend Analysis Performed - Statistically significant trends were detected (TP, decreasing & TSS, decreasing) 2007-2008 Roanoke River PCB TMDL Sampling No Violations 2005 SPMD Data found to be invalid USGS Temperature Data Level III - 0/14
4ABOR008.32	VAC-L28R_BOR01A00	TM	RU59	0	2	S	0	2	S	0	2	S									0	S																No New Data PWS; Big Otter FC TMDL Approved
4ABOR012.18	VAC-L28R_BOR01A00	C,A	RU57	0	12	S	0	12	S	0	12	S	2	12	IM								0	S	0	S	0	S	1	O								2016 - EC Impairment 2006 FT/Sediment - PCB 1 Species
4ABOR016.26	VAW-L27R_BOR01A00	A,TM	RU55	0	24	S	0	23	S	0	24	S	8	23	IM						0	S										2	24	IN				Big Otter River Bacteria TMDL Study U.S. EPA approved on 02/02/2001. Fed ID 1427 / 9485 / 36497. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 3/27/2007. Originally 303(d) Listed 2002 for FC
4ABOR024.46	VAW-L25R_BOR01A02	A	RU52	0	12	S	0	12	S	0	12	S	2	12	IM						0	S										0	12	S				Bacteria TMDL Study EPA Approved 02/02/01.
4ABOR033.22	VAW-L23R_BOR01A02	A,B	RU49	0	2	S	0	2	S	0	2	S									0	S									FS	0	2	S				2 surveys 2011. Avg. VSCI 65.8.
4ABOR034.32	VAW-L23R_BOR01A02	A	RU49																		0	S																Bacteria Impairment remains. No additional data beyond the 2010 IR where E.coli exceeds in 4 /23- 'IM'. Sheeps Creek/Big Otter River Bacteria TMDL Study U.S. EPA approved 02/02/2001. Fed ID 1650 / 7798 / 23400. SWCB approved 6/17/2004. Bacteria Implement
4ABOR-1-SOS	VAW-L23R_BOR01A02	CMON	RU49																											LP							SOS 2 surveys '07 [3C] Lv. 2
4ABPA-3-SOS	VAW-L05R_BPA01A04	CMON	RU11																											LP							SOS 6 surveys 2007-2010 [3D] Lv. 2. One survey Outside Acceptable Season Range.
4ABPC003.14	VAC-L75R_BPC01A04	A	RL03	0	12	S	1	12	S	0	12	S	1	11	S						0	S																
4ABRA-FR02-UVA	VAW-L51R_RBC03A02	CMON	RD18							0	1	IN																										
4ABRY000.05	VAW-L52R_BRY01A00	A,TM	RD22	0	19	S	0	18	S	0	19	S	7	21	IM						0	S																No additional data beyond the 2008 IR where E.coli exceed in 7 /21- 'IM'. Same location as SS 2000W0034E.
4ABRY010.27	VAW-L52R_BRY03A00	TM	RD22	0	10	S	0	10	S	1	10	IN	4	12	IM																							No additional data beyond the 2008 IR where E.coli exceed in 4 /12- 'IM'. B'Berry Study. (formerly coded 2000W0034J).
4ABRY011.44	VAW-L52R_BRY04A02	TM	RD22	0	10	S	0	10	S	1	10	IN	6	12	IM																							No additional data beyond the 2008 IR where E.coli exceed in 6 /12- 'IM'. B'Berry Study. (formerly coded 2000W0034L).
4ABSA000.62	VAW-L10L_BSA01A10	A,L,TR	RU26	0	1171	S	2	654	S	0	77	S	0	38	S						0	S																Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S).
4ABSA-T6-FC	VAW-L10R_BSA01A06	CMON	RU26																												0	17	S				SML TP stream - 'W' No additional data beyond 2012 IR.
4ABSF001.15	VAW-L08R_BSF01A00	TM,TR	RU21	4	36	IM	0	36	S	0	36	S	28	36	IM						0	S										0	36	S				2014 DELIST Temp. S.F. Blackwater TMDL Bacteria Study U.S. EPA approved 2/02/2001 [Fed. IDs: 1886 / 7791 / 21330 / 24549]. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 6/17/2004. Originally 303(d) Listed in 1996 for FC. Tem
4ABST001.13	VAC-L77L_BST01A06	L,SS	RU93	0	139	S	11	95	IM	3	139	S	0	22	S						0	S												1	3	IN	2010/2012/2014 Kerr Reservoir Pooled DO Data: 134/1437
4ABST009.45	VAC-L77R_BST01A98	FPM,B	RU91	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S									FS							2014 Probmon 4ABST009.45 exhibits seasonal variation near the assessment threshold of 60. A 2014 PROBMON station on private property: therefore it will not be revisited.
4ABST013.64	VAC-L77R_BST01A98	B	RU91	0	2	S	0	2	S	0	2	S																			IM							2012 Bio 4ABST013.64 has limited habitat due to scour and sedimentation. Riparian vegetation was suitable but bank scour was evident. Spring taxa list was dominated by Simuliidae and Chironomidae, bringing VSCI scores well below the impairment threshold.
4ABST014.94	VAC-L77R_BST01A98	FPM,B	RU91	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W	0	W					J							2007 FPM 4ABST014.94 exhibits significant seasonal variation. Additional data must be collected to accurately characterize the status of the stream community; however this site is on private property and was sampled as part of the Probabilistic Monitoring program. Therefore it will not be revisited. 4ABST014.94 is linked to 4ABST013.64 which is listed as impaired (scour and sediment likely stressors) in 2012.
4ABST017.09	VAC-L77R_BST02A06	A,PA	RU91	0	23	S	0	23	S	0	24	S	9	24	IM						0	S																
4ABTC000.60	VAC-L62R_BTC01A08	A	RD46	0	12	S	0	12	S	0	12	S	6	12	IM						0	S																

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ABTF002.16	VAC-L33R_BTF01A06	TM	RU67										2	11	IM																						2004 Falling River TMDL EPA Approved 7/9/2004
4ABTF003.11	VAC-L33R_BTF01A06	FPM,B	RU67	0	2	S	0	2	S	0	2	S	1	1	IN				0	W	0	S	0	W	0	W					FS							2008 FPM
4ABTM000.04	VAW-L01R_BTM01A06	A	RU02	3	12	IM	0	12	S	0	12	S	2	11	S						0	S										1	11	IN				TEMP Listed 2008 (3/10). No additional data beyond the 2012 IR. 2012 Temp 5/20-IM & E.coli 2/20-S
4ABTM-2-SOS	VAW-L01R_BTM03A06	CMON	RU02																											LP							SOS 1 survey 2010 [3D] Lv. 2.
4ABUB000.06	VAC-L37R_BUB01A06	A,TM,B	RU76	0	14	S	0	14	S	0	15	S	2	12	IM						0	S									J							2006 Roanoke Basin TMDL 2009/2013 Bio 4ABUB000.06 continues to exhibit significant seasonal variation. Cattle have access to upstream areas of the stream. Good snag habitat was present for the fall 2013 sample. Nutrient enrichment and sediment may be contributing factors to the seasonal variation. Additional data must be collected to accurately characterize the status of the stream community.
4ABUB006.50	VAC-L37R_BUB01A06	TM	RU76	0	14	S	0	14	S	0	14	S	4	12	IM																							No New Data 2006 Roanoke Basin TMDL
4A-BUB-CHA01-SSWCD	VAC-L37R_BUB01A06	CMON	RU76	0	10	S							11	37	IN/O																							Southside SWCD Station - Level II Coliscan Category 3C
4ABVA-PT11-UVA	VAW-L43R_SMR02A02	CMON	RD06							0	1	IN																										
4ABWA002.00	VAC-L27R_BWA01A00	A,B	RU56										11	27	IM																IM							2009 Bio 4ABWA002.00 exhibits significant seasonal variation. Follow-up monitoring continues the trend of a good VSCI score in the fall. The high number of taxa within the scraper FFG may be an indication of nutrient enrichment.
4ABWA008.53	VAC-L27R_BWA02A02	FPM,B	RU56	0	3	S	0	3	S	0	3	S	0	1	W				0	S	0	S	0	S	0	S					IM							2012 Bio/2003 ProbMon Abundant periphyton and the presence of filamentous algae indicate elevated nutrients are the probable cause of the impairment at 4ABWA008.53 Flow regime and nutrients seem to negatively affect the stream community
4ABWB000.32	VAC-L39R_BWB01A10	FPM,B	RU82	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W	0	W					IM							2008 FPM
4ABWC001.00	VAC-L38R_BWC01A06	A,TM	RU80	0	9	S	0	9	S	1	9	IN	4	9	IM						0	S			0	S												2006 Roanoke Basin Bacteria TMDL 2007-2008 Roanoke River PCB TMDL Sampling
4ABWR002.50	VAW-L10L_BWR01A10	A,L,TR	RU26	0	1299	S	0	814	S	0	76	S	0	38	S						0	S										0	2	S	0	2	S	Smith Mtn Lake Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S); TP 0 / 2 (S); CHLa 0 / 2 (S). PWS. LZ Nutrients Pooled CHLa: 0 / 2(S)- 90 %tile 2013- 5.90 µg/L; 2014- 6.55 µg/L. TP: 0 / 2(S) Median 2013- 10 µg/L; 2014 10 µg/L.
4ABWR010.55	VAW-L10L_BWR02A10	A,L,TR	RU24	0	1100	S	8	527	S	1	74	S	0	38	S						0	S																Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S).
4ABWR017.42	VAW-L10L_BWR03A10	L	RU24	0	253	S	3	253	IM	3	43	S	3	38	S																							Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S). VDH Fish Consumption Advisory issued PCBs
4ABWR019.75	VAW-L10R_BWR01A00	A,C,TR	RU24	0	36	S	0	36	S	0	36	S	11	36	IM				0	S	0	S	0	S	0	S	1	IM	1	IM		4	36	IN				VDH PCB Fish Consumption Advisory (PCB). '06 FT PCB 1 sp.; mercury (Hg) 2 sp. Sed no exceedances. Trend Analysis.
4ABWR029.51	VAW-L08R_BWR01A00	A,B	RU22	0	4	S	0	4	S	0	4	S																			FS							2014 DELIST Gen. Std. Benthic. 4 surveys 2011-2012. Avg. VSCI 69.4.
4ABWR045.80	VAW-L08R_BWR03A00	A,B,TR	RU22	0	43	S	0	43	S	0	43	S	16	35	IM						0	S	0	S	0	S					J	1	36	IN				2 VSCI surveys (2010). Gen. Std. (98) 'Partial De-list' EPA APPROVED 1/27/2004. Middle Blackwater River Bacteria TMDL Study U.S. EPA approved 12/04/2001. [Fed. ID 1887 / 1889 / 9633]. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved
4ABWR054.81	VAW-L08R_BWR04A00	A,TM,TR	RU22	0	36	S	0	36	S	0	36	S	19	36	IM						0	S										0	36	S				Upper Blackwater River Bacteria TMDL Study U.S. EPA approved on 03/09/2001. Fed. ID 1887 / 9634. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 6/17/2004. Originally listed in 1996 for FC.
4ABWR061.20	VAW-L08R_BWR05A00	A,B,TM,TR	RU22	0	41	S	0	41	S	0	41	S	22	35	IM				0	S	0	S									IM	0	36	S				6 VSCI surveys 2007 &, 2009-2011. Avg. VSCI 49.4. Upper Blackwater River Bacteria TMDL Study U.S. EPA approved on 03/09/2001 Fed. ID 1887 / 9634. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 6/17/2004. Originally listed in 1996 f
4ABWR-1-SOS	VAW-L08R_BWR01A00	CMON	RU22																											HP							SOS 3 acceptable surveys (2009; 2012). SOS 5 surveys '06, '07, '09 & '10 [3C] Lv. 2. Two surveys Outside Acceptable Season Range.
4ABWR-T3-FC	VAW-L10L_BWR03A10	CMON	RU24																												1	11	IN				
4ABYE000.85	VAC-L67R_BYE01A08	A,B	RD62	0	14	S	0	14	S	0	14	S	5	12	IM						0	S									FS							2010 Bio
4ABYR000.80	VAC-L62R_BYR01A04	SS,TM	RD46										2	6	IM																							PRO Hog Farm Special Study & Follow-up
4ABYR002.13	VAC-L62R_BYR01A04	SS	RD46										2	6	IM																							PRO Hog Farm Special Study & Follow-up
4ACAN000.80	VAC-L60R_CAN1A02	A,B	RD41	0	14	S	0	14	S	0	14	S	3	12	IM						0	S									IM							2009 Bio Bank scour and sedimentation are negatively affecting 4ACAN000.80.
4ACAP-2-SOS	VAW-L01R_CAP01A08	CMON	RU02																											LP							SOS 16 surveys 2007-2012 [3D] Lv. 2. One survey Outside Acceptable Season Range.
4ACAR001.70	VAC-L40R_CAR01A08	A	RU90	0	10	S	1	10	IN	0	10	S	3	10	IM						0	S																
4ACAS001.92	VAC-L57R_CAS01A00	A	RD31										0	4	IM																							NO NEW DATA

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ACAS003.45	VAC-L57R_CAS01A00	A,B	RD31	0	19	S	0	19	S	0	19	S	0	10	S				0	W	0	S									FS							2009/2011/2012/2014 Bio 4ACAS003.45 has VSCI scores close to the impairment cutoff of 60. Further sampling is required to accurately assess this waterbody. This stream section was involved with a pollution incident involving the improper disposal of nutrient rich wastes. This reach should be monitored to track recovery. It was sampled in 2011, 2012, and 2014. Optimal habitat enables this community to score well. However, nutrient enrichment may still be affecting this reach.
4ACBA000.22	VAC-L36R_CBA01A06	TM	RU73	0	12	S	0	12	S	0	12	S	1	12	IM																						2016 - Delist 2006 Roanoke Basin TMDL
4ACCK001.80	VAW-L12L_CCK01A02	A,L	RU27	0	1123	S	0	729	S	1	78	S	0	40	S						0	S															Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S).
4ACCK004.26	VAW-L12R_XME01A02	A	RU27	0	12	S	0	12	S	0	12	S	3	11	IM						0	S										0	11	S				
4ACEC001.24	VAW-L18R_CEC01A10	FPM,B	RU37	0	4	S	0	4	S	0	4	S	0	1	IN				0	S	0	S	0	S							FS	0	4	S	0	1	IN	VAW05547-300 (2010).
4ACLA000.88	VAC-L13R_CLA01A10	A	RU28	0	12	S	0	12	S	0	12	S	1	12	IM						0	S															2016 - Delist EC? 2014 - New Bacteria Impairment
4ACLB001.00	VAC-L74R_CLB01A06	TM	RD72	0	12	S	5	12	IM	0	12	S	1	12	S				0	S																	2016 - Impaired for EC Actual station monitored for TMDL development. 1.90 Probmon station no longer accessible.
4ACLB001.90	VAC-L74R_CLB01A06	FPM,TM,B	RD72																											IM							2006 Probabilistic Monitoring Lack of suitable habitat is negatively affecting the stream community. DO Impairment at RM 1.00
4ACLB004.14	VAC-L74R_CLB01A06	B	RD72	0	2	S	0	2	S	0	2	S																			IM							2012 Bio Beaver dam downstream. Very slow-moving water. Habitat rather lacking and livestock have access upstream of bridge.
4ACLB005.17	VAC-L74R_CLB01A06	SS	RD72	0	6	S	0	6	S	0	6	S	1	6	IM						0	S															PRO Hog Farm Special Study & Follow-up
4ACLB007.78	VAC-L74R_CLB01A06	SS	RD72	0	6	S	0	6	S	0	6	S	3	6	IM						0	S															No New Data PRO Hog Farm Special Study & Follow-up
4ACMC001.58	VAW-L22R_CMC01A12	A	RU44	0	12	S	0	12	S	0	12	S	2	12	IM																	0	12	S				Goose Creek Fed ID 24552 and its tributaries are nested within the Staunton River TMDL Watershed.
4ACNE-6-RVTU	VAW-L05R_CNE01A14	CMON	RU13	0	6	S							0	6	S																						RVTU Temp Lv. 3/E.coli Lv. 2.
4ACNT001.32	VAW-L15R_CNT01A00	A,B	RU31	0	24	S	0	24	S	0	24	S	3	24	IM						0	S									FS	0	24	S				DELIST Bacteria 2014. 2008 IR E.coli exceeds in 6 / 12-'IM'. Pigg River TMDL Study U.S. EPA approved on 9/11/2006 Fed ID 30414. Bacteria Implementation Plan SWCB approved 12/13/2010. FC Listed 2004 2/17-'IM'.
4ACNT003.84	VAW-L15R_CNT01A00	FPM,B	RU31	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-339 2 surveys 2010. Avg. VSCI 67.6.
4ACNT017.37	VAW-L15R_CNT02A14	PA,TM	RU31	0	11	S	0	11	S	0	11	S	4	11	IM																	0	12	S				
4ACNT022.05	VAW-L15R_CNT03A14	FPM,B	RU31	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							J	0	2	S	0	1	IN	VARS11-070- 2 surveys 2011. Avg. VSCI 59.7.
4ACOA000.60	VAW-L10L_COA01A10	A,L,TR	RU26	0	1176	S	22	690	S	0	75	S	0	37	S						0	S															Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S).
4ACOX000.38	VAC-L78R_COX01A04	A	RL11				0	4	IM	1	4	IM																									Flow below 7Q10 8/6/02 Reference Gage #02079640; Ambient Sediment Sample DO - 3/11 Violation Rate No New Data - 2012
4ACOX003.23	VAC-L78R_COX01A04	A	RL11	0	12	S	4	12	IM	1	12	S	1	12	S						0	S															No New Data
4ACOX007.73	VAC-L78R_COX01A04	FPM,B	RL11	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	S	0	S	0	S					IM							2005 Probabilistic Monitoring Lack of suitable habitat is negatively affecting the stream community. Beaver activity has made the reach unwadeable. Accurate assessment depends on locating a suitably accessible site.
4ACPC-1-SOS	VAW-L43R_CPC01A12	CMON	RD06																											LP							SOS 4 surveys '09 & '10 [3D] Lv. 2.
4ACRE002.52	VAC-L30R_CRE01A00	A,TM,B	RU72	0	4	S	0	4	S	0	4	S	2	12	IM						0	S									J							PWS 2011/2014 Bio This stream had increased sediment deposition.
4ACRE008.75	VAC-L30R_CRE01A00	A,B	RU72	0	16	S	0	16	S	0	16	S	3	12	IM						0	S									J							2011/2014 Bio This stream had increased sediment deposition and marginal habitat.
4ACRR000.80	VAC-L66R_CRR01A00	A,C,TM	RD55	0	11	S	0	12	S	0	11	S	1	12	S						0	S	0	S	0	S	1	O	0	S								99 FT/Sed 2007 FT Sampling
4ACRR003.56	VAC-L66R_CRR01A00	A	RD55	0	11	S	0	11	S	0	12	S	9	12	IM						0	S																
4ACRR008.32	VAC-L66L_CRR01A02	L	RD55	0	81	S	11	51	IM	0	81	S	1	14	S						0	S													0	2	S	2011/2012 Cherrystone Creek Reservoir
4ACRV001.88	VAW-L05R_CRV01A00	A	RU12	0	12	S	0	12	S	0	12	S	6	12	IM						0	S										0	12	S				2008 FC bacteria: 3/10- 'IM'.
4ACRV006.19	VAW-L05L_CRV01A02	A,L	RU12	0	296	S	1	152	S	1	28	S	0	14	S						0	S													0	2	S	2016 Cycle: Carvin Cove Res. Pooled Data: Temp 0 / 296 (S); DO 0 / 152 (S); pH 1 / 28 (S); LZ Nutrients (1 station) CHLa 0 / 2 (FS)- 90 %tile 3.8/3.4 µg/L.
4ACRV-2-SOS	VAW-L05R_CRV01A00	CMON	RU12																											LP							SOS 10 surveys '07, '08, '09 & '10 [3D] Lv. 2. Three surveys Outside Acceptable Season Range.
4ACRV-5-SOS	VAW-L05R_CRV02A00	CMON	RU12																											IN							1 survey 2011. Gray Zone.
4ACTT000.70	VAC-L78R_CTT01A08	A,C	RL12	0	24	S	2	24	IM	0	24	S	8	24	IM														0	S								2016 - DO Delist
4ACUB002.21	VAC-L37R_CUB02A06	A	RU72	0	12	S	0	12	S	0	12	S	3	11	IM						0	S			0	S												2006 Roanoke Basin Bacteria TMDL 2007-2008 Roanoke River PCB TMDL Sampling
4ACUB005.46	VAC-L37R_CUB02A06	TM	RU79	0	14	S	0	14	S	0	14	S	3	12	IM																							No New Data 2006 Roanoke Basin TMDL

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *							COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																						
4ACUB010.96	VAC-L37R_CUB01A00	A,C,TR	RU78	0	35	S	0	35	S	0	36	S	6	35	IM						0	S	0	S	0	S	2	IM	3	IM									2006 FT/Sediment - Hg 2 Species, PCBs 3 Species 2014 FT/Sediment - PCBs 1 Species USGS Temperature Data Level III - 0/7
4ACUB017.46	VAC-L37R_CUB01A00	A,TM	RU78	0	11	S	0	11	S	0	12	S	1	12	S						0	S																	2006 Roanoke Basin TMDL
4A-CUB-CHA04-SSWCD	VAC-L37R_CUB01A00	CMON	RU78	0	10	S							5	37	IN/O																								Southside SWCD Station - Level II Coliscan Category 3C
4A-CUB-CHA05-SSWCD	VAC-L37R_CUB01A00	CMON	RU78	0	10	S							5	37	IN/O																								Southside SWCD Station - Level II Coliscan Category 3C
4A-CUB-CHA06-SSWCD	VAC-L37R_CUB01A00	CMON	RU78	0	10	S							4	35	IN/O																								Southside SWCD Station - Level II Coliscan Category 3C
4A-CUB-CHA07-SSWCD	VAC-L37R_CUB02A06	CMON	RU79	0	10	S							4	37	IN/O																								Southside SWCD Station - Level II Coliscan Category 3C
4A-CUB-CHA09-SSWCD	VAC-L37R_CUB02A06	CMON	RU79	0	10	S							6	37	IN/O																								Southside SWCD Station - Level II Coliscan Category 3C
4ADAN000.00	VAC-L73L_DAN07A04	L,SS	RD76	0	7	S	0	7	S	0	7	S							0	S			0	S															2014 Dan River Coal Ash Spill Response
4ADAN001.18	VAC-L73L_DAN07A04	C,SS	RD76																						0	S	3	IM	4	IM									VDH Fish Adv. PCB & Mercury Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam. These river segments comprise ~67 miles. (10/27/99; modified 12/13/04; mercury, 8/31/07; modified 9/16/08) 2007 FT Sampling PCB 3 Species Hg 3 Species 2013 FT/Sediment - PCBs 3 Species
4ADAN009.93	VAC-L73R_DAN06A98	C	RD76																										2	IM									2013 FT/Sediment - PCBs 4 Species
4ADAN012.51	VAC-L64R_DAN05A98	C	RD51																				0	S	0	S	0	S	2	IM									VDH Fish Adv. 02 FT/Sed PCB 3 Sp.
4ADAN012.82	VAC-L64R_DAN05A98	C,SS	RD51																						0	S			1	IM									VDH Fish Adv. 00 FT/Sed PCB 3 Sp.
4ADAN013.34	VAC-L64R_DAN05A98	C,SS	RD51																				0	S	0	S	3	IM	6	IM									VDH Fish Adv. PCBs & Mercury Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam. These river segments comprise ~67 miles. (10/27/99; modified 12/13/04; mercury, 8/31/07; modified 9/16/08) 99 FT/Sed PCB 7 Sp. 2007 FT Sampling PCB 5 Species & DDT 1 Species Hg 3 Species OE - Pb 1 Species Possible Delist for DDE & DDT
4ADAN015.30	VAC-L64R_DAN05A98	A,C,SS,TR	RD51	0	35	S	0	35	S	0	36	S	11	36	IM						0	S							2	IM									VDH Fish Adv. 99 FT/Sed PCB 2 Sp. 2013 FT/Sediment - PCBs 3 Species Trend Analysis Performed - Statistically significant trends were detected for Nitrogen Oxides (declining), Nitrogen (declining), and Total Phosphorous (declining)
4ADAN017.44	VAC-L64R_DAN04A98	C,SS	RD51																				0	S	0	S	0	S	1	IM									VDH Fish Adv. 99 FT/Sed PCB 2 Sp.
4ADAN027.56	VAC-L62R_DAN03A98	FPM,B	RD46	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W			0	W					J								2011 Large River Probmon Large river non-target for current DEQ sampling techniques. No assessment tool available for large river benthic communities.
4ADAN028.90	VAC-L62R_DAN02A98	A,TR,SS	RD46	0	45	S	0	45	S	0	47	S	11	36	IM				0	S	0	S							2	IM									2013 FT/Sediment - PCBs 4 Species 2014 Dan River Coal Ash Spill Response
4ADAN042.01	VAC-L60R_DAN01A00	FPM,SS,B	RD44	0	3	S	0	3	S	0	3	S	0	2	S				0	S			0	W							J								2013 Large River Probmon 2014 Dan River Coal Ash Spill Response Large river non-target for current DEQ sampling techniques. No assessment tool available for large river benthic communities.
4ADAN042.80	VAC-L60R_DAN01A00	PA,TM,SS	RD41	0	22	S	0	22	S	0	22	S	3	12	S				0	S	0	S	0	S					2	IM									2013 FT/Sediment - PCBs 3 Species VDH Fish Adv. 2014 Dan River Coal Ash Spill Response
4ADAN053.40	VAC-L60R_DAN03A02	A	RD39	0	17	S	0	17	S	0	15	S	1	12	S																								

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ADAN054.03	VAC-L60R_DAN02A00	C,SS	RD39																						0	S	4	IM	5	IM								2007 FT Sampling PCB 4 Species Hg 4 Species OE - As 1 Species 2013 FT/Sediment - PCBs 4 Species VDH Fish Advisory - PCBs & Mercury Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam. These river segments comprise ~67 miles. (10/27/99; modified 12/13/04; mercury, 8/31/07; modified 9/16/08)
4ADAN056.80	VAC-L60R_DAN02A00	C	RD39																										1	O								2014 FT/Sediment PCBs 1 Species
4ADAN059.97	VAC-L57R_DAN02A00	SS	RD33	0	11	S	0	11	S	0	11	S							0	S			0	S														2014 Dan River Coal Ash Spill Response
4ADAN060.16	VAC-L57R_DAN02A00	C	RD33																										0	S								2014 FT/Sediment
4ADAN066.41	VAC-L57R_DAN03A00	A	RD33	0	12	S	0	12	S	0	12	S	1	12	S																							
4ADAN075.22	VAC-L57R_DAN04A00	A,SS,TR,B	RD32	0	46	S	0	46	S	0	48	S	6	37	IM				0	S	0	S	0	S								J							2014 Dan River Coal Ash Spill Response 2014 FT/Sediment Trend Analysis Performed - Statistically significant trends were detected (TN, decreasing & TP, decreasing) Large river non-target for current DEQ sampling techniques. No assessment tool available for large river benthic communities.
4ADAN169.57	VAW-L42R_DAN01A00	A	RD02	2	9	IM	0	9	S	0	9	S	1	9	IN						0	S																No additional data beyond the 2008 IR. 2002 Temp °C Listed (3/19) Class V- All exceeds occur in July. Bacteria TMDL Study U.S. EPA Approved 12/08/2008. Fed ID 35748. SWCB approved 4/28/2009.
4ADAN181.10	VAW-L42R_DAN01A00	A	RD02	3	12	IM	0	12	S	0	12	S	2	12	IM						0	S										0	12	S				Bacteria TMDL Study U.S. EPA Approved 12/08/2008. Fed ID 35748. SWCB approved 4/28/2009.
4ADAN187.94	VAW-L42L_DAN02A02	A,L,C	RD01	0	133	S	0	112	S	1	14	S	0	7	S						0	S					1	O	0	S					1	2	IN	Townes Reservoir: Temp 0 / 133; DO 0 / 112 (S); pH 1 / 14 (S); CHL A 1 / 2 (IN). 2007 FT mercury (Hg) 1 sp.
4ADAN194.10	VAW-L42L_DAN01A02	A,L	RD01	0	205	S	0	105	S	1	14	S	0	7	S						0	S													0	1	IN	Talbott Reservoir Pooled Data: Temp 0 / 205 (S); DO 0 / 105 (S); pH 1 / 14 (S); CHLa 0 / 1 (IN). No additional data.
4ADAN196.09	VAW-L42L_DAN01A02	C	RD01																								1	IM	0	S								2007 FT only. mercury (Hg) [Apx E-1] 2 sp.
4ADAN199.71	VAW-L42R_DAN05A02	FPM,B	RD01	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN											FS	0	2	S	0	1	IN	
4ADAN205.79	VAW-L42R_DAN05A02	A,PA	RD01	0	24	S	0	24	S	0	24	S	11	24	IM																	0	23	S				
4ADAY003.97	VAW-L20R_DAY01A00	B,A	RU39	0	2	S	0	2	S	0	2	S																			FS	0	2	S				Bio 'FS' -two 2013 VSCI surveys with average score of 68.86 (S 69.06, F 68.65).
4ADBC000.13	VAC-L62R_DBC01A98	FPM,B	RD44	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							J							2009 FPM 4ADBC000.13 has VSCI scores close to the impairment cutoff of 60. Further sampling is required to accurately assess this waterbody.
4ADBC002.19	VAC-L62R_DBC01A98	A,TM,B	RD44	0	2	S	0	2	S	0	2	S	2	12	IM						0	S	0	S	0	S					J							2013 Bio This stream exhibits variability around the assessment threshold score of 60. Additional sampling is required to accurately assess the condition of this stream. No New Bacteria Data Dan River Basin TMDL
4ADEE000.06	VAW-L05R_DEE01A08	B,TM	RU12	0	2	S	0	2	S	0	2	S																			IM							2 surveys 2012. Avg. VSCI 53.4.
4ADEE-1-SOS	VAW-L05R_DEE01A08	CMON	RU12																											MP							SOS 12 surveys 2007-2012 [3C] Lv. 2. Two surveys Outside Acceptable Season Range. Formerly coded 4ADEE-SOS.
4ADEL001.35	VAW-L53R_DEL01A10	B,TM	RD24	0	9	S	0	9	S	0	9	S	6	6	IM																IM	0	6	S				
4ADEV000.64	VAC-L77R_DEV01A14	FPM,B	RU91	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S			0	W					J							2011 FPM Spring 2011 notes: “Some bedrock in riffles. Riffles full of sediment. Recent clear-cut on LB around X continuing DS. Deer stand (active) at K. Part of stream may have been channelized long ago.” Fall 2011 notes: “Landowner stated stream was almost dry two weeks ago. Pools didn't dry. Driest he'd ever seen it. Some riffles bedrock.” Habitat was good, some sediment deposition evident. This site is on private property and was sampled as part of the Probabilistic Monitoring program, therefore it will not be revisited. Follow-up samples will be taken at the nearest bridge (4ADEV000.86).
4ADEV000.86	VAC-L77R_DEV01A14	B	RU91	0	2	S	0	2	S	0	2	S																			J							2014 Bio Moderate fine sediments and bedrock dominated habitat are features of Devils Branch. This stream exhibits significant seasonal variability as well as around the assessment threshold score of 60. Additional sampling is required to accurately assess the condition of this stream.
4ADFF002.02	VAC-L41R_DFF02A98	A,TM	RU89	0	11	S	0	11	S	0	11	S	1	11	S						0	S																EPA Delist 2007-2008 Roanoke River PCB TMDL Sampling
4ADFF004.90	VAC-L41R_DFF01A02	A,SS	RU89	0	11	S	0	11	S	0	12	S	2	12	IM																							
4ADFF009.01	VAC-L41R_DFF01A02	A,SS,PA	RU88	0	23	S	0	23	S	0	24	S	5	24	IM								0	S														
4ADOG000.80	VAC-L34R_DOG01A10	A	RU71	0	12	S	0	12	S	0	12	S	2	11	IM								0	S														No New Data

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AEAS001.20	VAC-L75L_ROA05L98	C	RL09																				0	S	0	S	1	O	1	O									2006 FT/Sediment - Hg 1 Species OE - PCB 1 Species
4AECR003.02	VAW-L25R_ECR01A00	A,TM	RU51	0	24	S	0	24	S	0	24	S	14	23	IM						0	S										4	24	IN				Bacteria TMDL Study EPA Approved 02/02/01.
4AECR007.62	VAW-L25R_ECR02A02	A	RU51	0	9	S	0	9	S	0	9	S	6	9	IM						0	S																No additional data beyond the 2008 IR. Bacteria TMDL Study EPA Approved 02/02/01.
4AECR016.66	VAW-L25R_ECR02A02	A	RU51	0	9	S	0	9	S	0	9	S	6	9	IM						0	S																No additional data beyond the 2008 IR E.coli 6/9- 'IM'. Bacteria TMDL Study EPA Approved 02/02/01.
4AEKH000.63	VAC-L67R_EKH01A04	TM	RD61	0	12	S	0	12	S	1	11	S	0	12	S																							Banister Watershed TMDL
4AEKH003.18	VAC-L67R_EKH01A04	FPM,B	RD61	0	2	S	0	2	S	0	2	S							0	W	0	S	0	S	0	S					IM							2001 Probabilistic Monitoring 2008 Bio 4AEKH003.68 was sampled to replace 4AEKH003.18. 4AEKH003.18 was a probabilistic monitoring station located on private property. The final assessment of 4AEKH003.18 was "J", meaning more information was needed for an accurate assessment. The remoteness of this site makes future sampling at 4AEKH003.18 unlikely. The proximity of station 4AEKH003.68 to 4AEKH003.18 makes it a suitable surrogate for the assessment of both stations.
4AEKH003.68	VAC-L67R_EKH01A04	A,B	RD61	0	14	S	0	14	S	0	14	S	1	12	S																IM							4AEKH003.68 was sampled to replace 4AEKH003.18. 2008/2012 Bio 4AEKH003.18 was a probabilistic monitoring station located on private property. The final assessment of 4AEKH003.18 was "J", meaning more information was needed for an accurate assessment. The remoteness of this site makes future sampling at 4AEKH003.18 unlikely. The proximity of station 4AEKH003.68 to 4AEKH003.18 makes it a suitable surrogate for the assessment of both stations.
4AELK005.44	VAW-L42R_ELK01A12	A	RD04	0	12	S	0	12	S	0	12	S	4	12	IM																	0	12					
4AELT000.86	VAW-L01R_ELT01A02	A,B	RU04	0	14	S	0	14	S	0	13	S	1	12	S						0	S									FS	0	14	S				2 surveys 2012. Avg. VSCI 72.3
4AENT001.64	VAC-L34R_ENT01A08	A	RU70	0	12	S	0	12	S	2	12	IM	4	11	IM						0	S																
4AFAL000.92	VAC-L61R_FAL01A00	C,B,A	RD38	0	3	S	0	3	S	0	3	S	0	1	W				0	S	0	S	0	S	1	O	2	IM	0	S	IM							2002 FT/Sed C-Dane 2007 FT Sampling Hg 2 Species 2007-2008, 2011-2012 Bio 4AFAL000.92 exhibits significant seasonal variation. Additional data must be collected to accurately characterize the status of the stream community. VSCI scores from 2011 and 2012 indicate an unbalanced community with tolerant taxa dominating the samples. Sediment and nutrient enrichment are probable stressors to this reach.
4AFAL001.58	VAC-L61R_FAL01A00	A,TM	RD38	0	11	S	0	11	S	0	11	S	3	12	IM						0	S	0	S	0	S												No New Data
4AFAL005.42	VAC-L61R_FAL01A00	TM	RD38	0	12	S	0	12	S	0	12	S	5	12	IM						0	S																No New Data
4AFAL006.58	VAC-L61R_FAL01A00	PA	RD38	0	12	S	0	12	S	0	12	S	2	12	IM																							
4AFAL006.61	VAC-L61R_FAL01A00	FPM,B	RD38	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S									IM							2014 Probmon Bank scour and slight sedimentation were observed. Originally a PROBMON station, accessible from Rt 29 in Danville.
4AFAR000.66	VAC-L39R_FAR01A16	B	RU86	0	2	S	0	2	S	0	2	S																			FS							2014 Bio
4AFCA001.40	VAC-L29R_FCA01A00	A,TM,B	RU58	0	17	S	0	17	S	0	17	S	2	12	IM						0	S	0	S	0	S					FS							PWS Big Otter FC TMDL Approved 2007/2011/2012/2014 Bio 4AFCA001.40 exhibited significant seasonal variation in 2007-2012. Habitat scores indicate limited riparian vegetation and sedimentation as potential stressors within this reach. Additional monitoring in 2014 yielded samples above the assessment threshold of 60
4AFCA003.38	VAC-L29R_FCA01A00	B	RU58	0	2	S	0	2	S	0	2	S																			FS							No New Data 2008 Bio 4AFCA003.88 exhibits seasonal variation. The majority of the watershed is agricultural with some light industry and development in the headwaters. The more recent data indicate the support of the aquatic life use water quality standard.
4AFCA010.95	VAC-L29R_FCA02A10	B	RU58	0	4	S	0	4	W	0	4	S																			IM							2007/2012/2014 Bio 4AFCA010.95 was listed as impaired in the 2008 IR. Sediment and scour are listed as probable stressors. It exhibits slight seasonal variability and moderate variability near the assessment threshold of 60. Recent sampling has indicated an improvement is VSCI scores, although sediment and scour are still affecting the community. Additional monitoring is required to accurately assess the waterbody.
4AFGC-1-SOS	VAW-L10R_FGC01A00	CMON	RU24																											LP							SOS 3 surveys '09 & '10 [3D] Lv. 2. One survey Outside Acceptable Season Range.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AFIN008.76	VAW-L07L_FIN01A02	A,L	RU16	0	62	S	0	31	S	0	21	S	0	7	S						0	S												0	1	IN	Falling Cr. Reservoir Pooled Data: Temp 0 / 62 (S); DO 0 / 31 (S); pH 0 / 21 (S,B); CHLa 0 / 1 (IN). PWS. One year collection 2007 only. Recreation not assessed No Public Access. No additional data.
4AFLT002.60	VAC-L79R_FLT02A96	A,B,TR	RL14	0	37	S	0	37	S	0	38	S	6	35	IM						0	S									IM							2008/2011 Bio Flat Creek is a very slow moving stream at rivermile 2.60. Habitat was adequate with abundant leaf packs. Field measurements indicate a slight depression of dissolved oxygen in the warmest summer months.
4AFLT003.30	VAC-L79R_FLT02A96	FPM	RL14	0	1	W	0	1	W	0	1	W	0	1	W				0	W																		2012 FPM
4AFLT008.79	VAC-L79R_FLT02A96	A,B,C	RL14	0	2	S	0	2	S	0	2	S	1	7	IM						0	S	0	S	0	S	0	S	0	S	IM							2002 Sed/FT 2004 Flat Creek TMDL The benthic TMDL completed in 2004 identified sediment as the stressor to the benthic community. No New Bacteria Data 2008/2010-2011 Bio 4AFLT008.79 has sparse habitat, effluent affected flow, and is subject to occasionally significant storm flows
4AFLT008.80	VAC-L79R_FLT02A96	TM	RL14										3	6	IM																							2014 - No New Data 2004 Flat Creek TMDL
4AFLT009.17	VAC-L79R_FLT01A00	B,TM	RL14				2	8	IM				3	7	IM																IM							2014 - No New Data 2004 Flat Creek TMDL The benthic TMDL completed in 2004 identified sediment as the stressor to the benthic community. 4AFLT009.17 is in the headwater segment of Flat Creek with several small channels. Flow regime related sedimentation seems to be negatively affecting the stream community.
4AFRV002.78	VAC-L34R_FRV01A00	A,TM	RU71										6	10	IM																							2012 - No New Data PWS; 2004 Falling River TMDL EPA Approved 7/9/2004; Ambient Sediment Sample 2007-2008 Roanoke River PCB TMDL Sampling USGS Temperature Data Level III - 0/14
4AFRV003.07	VAC-L34R_FRV01A00	TM	RU71	0	12	S	0	12	S	0	12	S	2	12	IM						0	S																2011-2012 IP Monitoring
4AFRV010.99	VAC-L34R_FRV04A00	A,TM,TR	RU69	0	35	S	0	35	S	0	36	S	16	36	IM						0	S	0	S	0	S	0	S	0	S								2004 Falling River TMDL EPA Approved 7/9/2004 Trend Analysis Performed - Statistically significant trends were detected (TN, increasing)
4AFRV017.71	VAC-L34R_FRV06A02	PA,TM	RU69	0	24	S	0	24	S	0	24	S	9	24	IM						0	S																2004 Falling River TMDL EPA Approved 7/9/2004
4AFRV017.85	VAC-L34R_FRV06A02	FPM,B	RU69	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S									FS							2013 FPM
4AFRV025.34	VAC-L32R_FRV01A06	TM	RU66	0	12	S	0	12	S	0	12	S	4	12	IM																							2004 Falling River TMDL EPA Approved 7/9/2004
4AFRV029.24	VAC-L32R_FRV01A06	TM	RU65	0	12	S	0	12	S	0	12	S	5	12	IM																							2014 - No New Data 2004 Falling River TMDL EPA Approved 7/9/2004
4AFRY006.08	VAW-L18R_FRY01A06	TM,B	RU37	0	17	S	0	17	S	0	17	S	6	12	IM																IM	0	12					2 surveys 2011. Avg. VSCI 40.4. (former FPM VAEQ99-281).
4AFSF000.66	VAC-L33R_FSF01A06	TM	RU67										3	10	IM																							2014 - No New Data 2004 Falling River TMDL EPA Approved 7/9/2004
4AFSF004.56	VAC-L33R_FSF01A06	A	RU67	0	11	S	0	11	S	0	12	S	4	12	IM						0	S																
4AFSF011.11	VAC-L33R_FSF01A06	TM	RU67										5	11	IM																							2014 - No New Data
4AGCR000.01	VAW-L08R_GCR01A00	A,TM,TR	RU21	2	12	IM	0	12	S	0	12	S	1	12	S						0	S												0	12				South Fork Blackwater River TMDL Bacteria Study & Allocations U.S. EPA approved 2/02/2001 [Fed. ID 1886/7791]. Bacteria Implementation Plan SWCB approved 6/17/2004. 2010 temperature De-list. Re-Listed 2012 for temperature. No additional data 2014.
4AGEO006.26	VAC-L68R_GEO01B14	FPM,B	RD57	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S			0	W					J							2011 FPM Good banks, somewhat embedded with marginal sediment deposition
4AGEO006.73	VAC-L68R_GEO01B14	FPM,B	RD57	0	2	S	0	2	S	0	2	S																			J							2013 Bio 4AGEO006.73 exhibits drastic seasonal variability around the assessment threshold score of 60. Abundant algal growth indicates nutrient enrichment is a probable stressor. Link 4AGEO006.73 to 4AGEO006.26 (a probmon assessed J)
4AGEO011.38	VAC-L68L_GEO01A02	L	RD57	0	45	S	0	22	S	1	45	S	0	12	S						0	S	0	S	0	S									0	2	S	2003 & 2007 Georges Creek Reservoir
4AGER001.17	VAC-L63R_GER01A08	A	RD47	0	12	S	0	12	S	0	12	S	5	12	IM						0	S																
4AGIB000.66	VAC-L71R_GIB01A08	A	RD67	0	6	S	1	6	S	0	5	S	2	6	IM						0	S																
4AGIL002.39	VAW-L11L_GIL01A10	A,L	RU25	0	593	S	7	302	S	0	77	S	1	39	S						0	S																Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S).
4AGIL004.46	VAW-L11R_GIL01A00	A,TM,TR	RU25	0	36	S	0	36	S	0	36	S	18	36	IM						0	S			0	S								2	36				Gills Creek Bacteria TMDL Study U.S. EPA approved on 5/31/2002 [Fed ID 9472 / 18765]. SWCB approved 6/17/2004. Lower Blackwater River Implementation Plan SWCB approved 9/27/2006. Originally 303(d) Listed 1996 for FC. '04 sediment PCB only.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AGIL008.30	VAW-L11R_GIL01A00	A	RU25	0	12	S	0	12	S	0	12	S	9	12	IM						0	S										1	12					Gills Creek Bacteria TMDL Study U.S. EPA approved on 5/31/2002 [Fed ID 9472 / 18765]. SWCB approved 6/17/2004. Lower Blackwater River Implementation Plan SWCB approved 9/27/2006. Originally 303(d) Listed 1996 for FC.
4AGIL023.22	VAW-L11R_GIL03A02	A	RU25	0	12	S	0	12	S	0	12	S	7	12	IM						0	S										1	12					Gills Creek Bacteria TMDL Study U.S. EPA approved on 5/31/2002 [Fed ID 9472 / 18765]. SWCB approved 6/17/2004. Lower Blackwater River Implementation Plan SWCB approved 9/27/2006. Originally 303(d) Listed 1996 for FC.
4AGIL-1-SOS	VAW-L11R_GIL01A00	CMON	RU25																											LP							SOS 8 surveys '07, '08, '09 & '10 [3D] Lv. 2. Four surveys Outside Acceptable Season Range.
4AGIL-2-SOS	VAW-L11R_GIL01A00	CMON	RU25																											HP							SOS 1 survey '10 [3C] Lv. 2.
4AGIL-3-SOS	VAW-L11R_GIL03A02	CMON	RU25																											HP							SOS 4 surveys '09 & '10 [3C] Lv. 2.
4AGIL-4-USPS	VAW-L11R_GIL01A00	USPS	RU25	0	29	S	0	26	S	0	28	S																									Lv. 3
4AGIL-T0-FC	VAW-L11R_GIL02A02	CMON	RU25																												2	17	IN				SML TP stream - 'W' No additional data beyond 2012 IR.
4AGIL-T2-FC	VAW-L11R_GIL01A00	CMON	RU25																												3	17	IN				SML TP stream - 'W' No additional data beyond 2012 IR.
4AGLA000.20	VAW-L05R_GLA01A00	A,TM	RU13	0	12	S	0	12	S	1	12	S	4	12	IM						0	S																No additional data beyond the 2010 IR. Glade Creek Bacteria TMDL US EPA Approved 8/05/2004 Fed ID: 24779. SWCB approved 12/02/2004. Originally 303(d) Listed in 1998 for FC.
4AGLA004.39	VAW-L05R_GLA01A00	A,TM	RU13																		0	S																Bacteria Impairment carries. No additional data beyond the 2008 IR where E.coli exceeds in 10 / 18- 'IM'. Glade Creek Bacteria TMDL US EPA Approved 8/05/2004 Fed ID: 24779.
4AGLA-10-RVTU	VAW-L05R_GLA01A00	CMON	RU13	0	3	S							0	3	S																						RVTU Temp Lv.3 / Ecoli [3D] Lv. 2.
4AGLA-1-RVTU	VAW-L05R_GLA04A00	CMON	RU13	0	3	S							0	3	S																						RVTU Temp Lv. 3/E.coli Lv. 2.
4AGLA-2-SOS	VAW-L05R_GLA01A00	CMON	RU13																											LP							SOS 8 surveys '05, '06, '07, '08, & '09 [3D] Lv.2. Three surveys Outside Acceptable Season Range.
4AGLA-3-RVTU	VAW-L05R_GLA04A00	CMON	RU13	0	3	S							0	3	S																						RVTU Temp Lv. 3/E.coli Lv. 2.
4AGLA-3-SOS	VAW-L05R_GLA02A00	CMON	RU13																											MP							SOS 7 surveys '05, '06, '07 & '08 [3D] Lv. 2. Three surveys Outside Acceptable Season Range.
4AGLA-4-RVTU	VAW-L05R_GLA04A00	CMON	RU13	0	3	S							0	3	S																						RVTU Temp Lv. 3/E.coli Lv. 2.
4AGLA-5-RVTU	VAW-L05R_GLA03A00	CMON	RU13	0	3	S							2	3	IN																						RVTU Temp Lv. 3/E.coli Lv. 2.
4AGLA-5-SOS	VAW-L05R_GLA03A00	CMON	RU13																											LP							SOS 2 surveys '07 & '11 [3D] Lv. 2. One survey Outside Acceptable Season Range.
4AGLA-8-RVTU	VAW-L05R_GLA02A00	CMON	RU13	0	3	S							0	3	S																						RVTU Temp Lv. 3/E.coli Lv. 2.
4AGLA-9-RVTU	VAW-L05R_GLA02A00	CMON	RU13	0	3	S							0	3	S																						RVTU Temp Lv. 3/E.coli Lv. 2.
4AGLA-SOS	VAW-L05R_GLA01A00	CMON	RU13																											LP							SOS 2 surveys 2010 [3D] Lv. 2.
4AGNF-1-SOS	VAW-L11R_GNF01A02	CMON	RU25																											LP							SOS 5 surveys "09 & '10 [3D] Lv. 2. Three surveys Outside Acceptable Season Range.
4AGOB003.86	VAW-L51L_GOB02A06	A,L	RD20	0	51	S	0	31	S	0	18	S	0	7	S																			1	2	IN	Fairystone Pooled Data: Temp 0 / 62 (S); DO 0 / 33 (S); pH 0 / 20 (S). 2003 CHLa 90th %tile= 1 year of data (IN); 2009 CHLa 90th %tile= 3.4 µg/L.
4AGOB005.18	VAW-L51R_GOB01A08	A,C	RD20	0	12	S	0	12	S	0	12	S	2	12	IM						0	S										0	12	S				2007 FT only. Mercury (Hg) [Apx E-1] 1 sp. 5 fish. No additional data beyond the 2008 IR.
4AGOB-FS-CB-SP	VAW-L51L_GOB02A06	NONA	RD20										1	28	S																						Fairystone Lake Pooled data: Temp: 0 / 62- 0 % exceedance rate- 'FS'. DO: 0 / 33- 0% exceedance rate- 'FS'. pH: 0 / 20- 0% exceedance rate- 'FS'. TP NA. Chlorophyll a: 0 / 0- Insufficient to assess. DCR Beach samples E.coli 'FS'.
4AGOB-FS-LB-SP	VAW-L51L_GOB02A06	NONA	RD20										1	21	S																						Fairystone Lake Pooled data: Temp: 0 / 62- 0 % exceedance rate- 'FS'. DO: 0 / 33- 0% exceedance rate- 'FS'. pH: 0 / 20- 0% exceedance rate- 'FS'. TP NA. Chlorophyll a: 0 / 0- Insufficient to assess. DCR Beach samples E.coli 'FS'.
4AGOB-FS-RB-SP	VAW-L51L_GOB02A06	NONA	RD20										1	21	S																						Fairystone Lake Pooled data: Temp: 0 / 62- 0 % exceedance rate- 'FS'. DO: 0 / 33- 0% exceedance rate- 'FS'. pH: 0 / 20- 0% exceedance rate- 'FS'. TP NA. Chlorophyll a: 0 / 0- Insufficient to assess. DCR Beach samples E.coli 'FS'.
4AGOS000.71	VAW-L01R_GOS01A02	A,B	RU01	0	14	S	0	14	S	0	14	S	3	12	IM																FS	0	14	S				2 surveys 2011. Avg. VSCI 73.4.
4AGRA003.29	VAC-L75L_ROA05L98	A	RL03	0	11	S	0	11	S	0	12	S	0	12	S						0	S																
4AGRM-1-SOS	VAW-L07R_GRM01A12	CMON	RU18																											LP							SOS 8 surveys 2009-2012 [3C] Lv. 2. Two surveys Outside Acceptable Season Range.
4AGRT003.82	VAC-L80R_GRT01A00	A,TM,B	RL18	0	16	S	0	16	S	0	16	S	3	12	IM						0	S									J							2006 Great Creek TMDL 2010/2014 Bio 4AGRT003.82 exhibits significant seasonal variation. Additional data must be collected to accurately characterize the status of the stream community.
4AGRT004.70	VAC-L80R_GRT01A00	TM	RL18										7	9	IM																						2006 Great Creek TMDL
4AGRT008.49	VAC-L80R_GRT01A00	TM	RL18										2	9	IM																						2006 Great Creek TMDL
4AGSE000.20	VAW-L22R_GSE01A00	A	RU45	0	12	S	0	12	S	0	12	S	0	12	S				0	S	0	S										0	12	S				No additional data beyond the 2010 IR. ROA PCB TM SPMD-'S' (2007). 2004 FC bacteria: 3/18- 'IM'. Need 12 E.coli.
4AGSE013.78	VAW-L22R_GSE02A02	A	RU43	0	24	S	0	23	S	0	24	S	4	23	IM																	2	24	IN				

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AGSE025.64	VAW-L21R_GSE01A00	A	RU41	0	9	S	0	9	S	0	9	S	3	9	IM						0	S																No additional data beyond the 2008 IR. Goose Creek Fed ID 24552 and its tributaries are nested within the Staunton River TMDL Watershed.
4AGSE037.78	VAW-L20R_GSE01A00	A	RU39	0	12	S	0	12	S	0	12	S	6	12	IM						0	S										0	12	S				No additional data beyond the 2008 IR where E.coli exceeds in 8 / 12- 'IM'.
4AGSE-1-SOS	VAW-L22R_GSE02A02	CMON	RU43																											HP							SOS 7 surveys '07, '08, '09 & '10 [3C] Lv. 2. Two surveys Outside Acceptable Range.
4AGSH001.28	VAW-L04R_GSH01A14	FPM,B	RU10	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S									IM	0	2	S	0	1	IN	2 surveys 2012. Avg. VSCI 47.9. No 2012 sediment collection.
4AGSY004.60	VAC-L64R_GSY01A08	B	RD51	0	4	S	0	4	S	0	4	S																			IM							2010/2014 Bio 4AGSY004.60 exhibits significant seasonal variability and a VSCI score close to the impairment cutoff of 60. Very low flows are characteristic of this waterbody. Further sampling is required to accurately assess this waterbody. 4AGSY004.60 was sampled in response to a J assessment of an upstream PROBMON station (4AGSY004.98).
4AGSY004.98	VAC-L64R_GSY01A08	FPM,B	RD51										1	1	IN				0	W											IM							2006 Probabilistic Monitoring Probabilistic survey lists as: 4AXUY000.58 Headwater stream which flows through an active cattle pasture. The stream community may be negatively impacted from sedimentation and excess nutrients.
4AHAG002.95	VAC-L80R_HAG01A06	TM	RL18										3	9	IM																							2006 Great Creek TMDL
4AHCK000.51	VAC-L34R_HCK01A10	A,B	RU69	0	4	S	0	4	S	0	4	S	2	12	IM						0	S									FS							2010/2012 Bio Seasonal variability in 2010 necessitated further sampling of 4AHCK000.51. Additional sampling yielded consistent scores above the assessment threshold. Riparian vegetation was adequate to maintain a balanced community.
4AHEN002.16	VAC-L39R_HEN01A00	A	RU85	0	12	S	0	12	S	0	12	S	4	12	IM						0	S	0	S	0	S												
4AHEN004.27	VAC-L39R_HEN02A04	B	RU85	0	4	S	0	4	S	0	4	S																			IM							2009/2012 Bio 4AHEN004.27 exhibits significant seasonal variation. Additional data were collected in 2012 and characterize the stream community as unbalanced. Sediment and bank scour seem to be likely stressors within this reach.
4AHEN004.74	VAC-L39R_HEN02A04	FPM,B	RU85																											IM							2001 Probabilistic Monitoring Potential sediment impacts and lack of instream habitat.
4AHLL000.45	VAC-L57R_HLL01A14	FPM,B	RD31	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S			0	S					J							2011 FPM Riffles in this stream were somewhat embedded but overall it had decent habitat.
4AHNT001.29	VAW-L22R_HNT01A10	A	RU43	0	11	S	0	11	S	0	11	S	11	12	IM						0	S																No additional data beyond the 2010 IR.
4AHOO-PT07-UVA	VAW-L42R_HOO01A02	CMON	RD03							0	1	IN																										
4AHPN001.62	VAW-L18R_HPN01A06	A,TM	RU36	0	11	S	0	11	S	0	11	S	7	12	IM						0	S										1	12	IN				No additional data beyond the 2008 IR where E.coli exceeds in 13 / 21- 'IM'. Pigg R. Bacteria TMDL [Fed ID 30414] EPA Approved 9/11/2006; SWCB Approved 6/27/2007.
4AHRN004.93	VAW-L47R_HRN01A00	A,B,TM	RD11	0	29	S	0	28	S	0	29	S	9	24	IM						0	S									IM	0	23	S				3 VSCI surveys (2008, 2009 & 2010) to validate 4AHRN007.65. 2010 IR E.coli exceeds in 6 / 21- 'IM'. 2004 Bacteria (FC) Listed (5/17). Dan River Bacteria TMDL U.S. EPA approved 12/08/2008 Fed ID: 35748. SWCB approved 4/28/2009.
4AHTA000.77	VAC-L38R_HTA01A06	A,TM	RU80	0	11	S	0	11	S	0	12	S	3	12	IM						0	S																
4AHTA003.26	VAC-L38L_HTA01L00	L,C	RU80	0	56	S	6	40	IM	0	56	S	0	14	S						0	S	0	S	0	S	2	IM	0	S				1	2	IN/O	2013-2014 Lake Conner Only one sample year 2006 FT/Sediment - Hg 2 Species
4AHYC002.70	VAC-L74R_HYC01A00	A,C,SS	RD74	0	12	S	2	12	S	0	12	S	0	12	S						0	S	0	S	0	S	3	IM	4	IM								VDH Fish Adv. PCB & Mercury Dan River within the state of Virginia from the Brantley Steam Plant Dam in Danville downstream to the confluence with Roanoke River on John. H. Kerr Reservoir, including its tributaries Hyco River up to Rt. 738 bridge and Banister River up to the Banister Dam. These river segments comprise ~67 miles. (10/27/99; modified 12/13/04; mercury, 8/31/07; modified 9/16/08) 2013 FT/Sediment - PCBs 2 Species 2007 FT Sampling PCB 3 Species Hg 3 Species OE - As 1 Species
4AHYC010.76	VAC-L74R_HYC01A00	C	RD72																								1	O									2013 FT/Sediment - PCBs 1 Species
4AHYC016.70	VAC-L74R_HYC02A06	A,TR	RD70	0	34	S	0	34	S	0	36	S	6	36	IM						0	S																
4AIND-1-SOS	VAW-L07R_IND01A02	CMON	RU18																											LP							SOS 2 surveys '09 & '10 [3D] Lv. 2
4AIND-T20-FC	VAW-L07R_IND01A02	CMON	RU18																												1	17	IN				SML TP stream - 'W' No additional data beyond 2012 IR.
4AINN-1-SOS	VAW-L02R_INN01A12	CMON	RU06																											MP							SOS 4 surveys 2009-2010 [3D] Lv. 2. One survey Outside Acceptable Season Range.
4AIVV002.00	VAW-L42R_IVV01A02	FPM,B	RD01	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-307- 2 surveys 2010. Avg. VSCI 72.2.
4AJCR000.42	VAW-L53R_JCR01A16	FPM,B	RD24	0	4	S	0	4	S	0	4	S	1	1	IN																IM	0	2	S	0	1	IN	
4AJHN000.01	VAW-L26R_JHN01A00	B,TM	RU54	0	4	S	0	4	S	0	4	S	2	3	IN				0	IN	0	S	0	S							IM	0	3	S				PWS. 3 VSCI surveys 2008 &2011-2012. Avg. VSCI 48.6. No Sediment PEC exceedances from 2008 data; metals only. FC TMDL Surface observations; FC stirred Bottom observations 2/2-W. Bacteria TMDL Study APPROVED 02/02/01.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AJNS000.64	VAC-L28R_JNS01A02	TM	RU57																																		PWS; TMDL Surface Observation; Big Otter FC TMDL Approved 2006 FC bacteria: 1/1 = IN
4AJOL-1-SOS	VAW-L11R_JOL01A02	CMON	RU25																												MP							SOS 6 surveys '07, '08, '09 & '10 [3D] Lv. 2. Five surveys Outside Acceptable Season Range.
4AJOL-2-USPS	VAW-L11R_JOL01A02	USPS	RU25	0	29	S	0	26	S	0	28	S																										Lv. 3
4AJOL-3-USPS	VAW-L11R_JOL01A02	USPS	RU25	0	27	S	0	25	S	0	27	S																										Lv. 3
4AJOR000.02	VAW-L53R_JOR01A06	A	RD24	0	12	S	0	12	S	0	12	S	5	12	IM						0	S																No additional data beyond the 2008 IR where E.coli exceed 7 / 21- 'IM'. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008. Fed ID: 35756. SWCB approved 4/28/2009. There are no additional data beyond the 2008 assessment.
4AJSR000.53	VAC-L70R_JSR01A08	TM,B	RD64	0	3	S	0	3	S	0	3	S									0	S									FS							2010/2014 Bio 4AJSR000.53 exhibits significant seasonal variation. Additional data must be collected to accurately characterize the status of the stream community.
4AJUM-T15-FC	VAW-L07R_JUM01A02	CMON	RU18																													18	IN					SML TP stream - 'W' No additional data beyond 2012 IR.
4AKTT001.15	VAC-L78R_KTT01A12	A	RL11	0	22	S	9	22	IM	0	24	S	3	23	IM						0	S																
4ALAW002.38	VAC-L61R_LAW01A04	B,FPM	RD38	0	3	S	0	3	S	0	3	S	0	1	W				0	W	0	S									J							2013 Bio 2014 FPM 4ALAW002.38 is linked to 4ALAW002.43 (J assessment in 2014). VSCI scores are close to the assessment threshold of 60 with sediment being a probable stressor. Additional monitoring is needed to more accurately assess the condition of this stream.
4ALAW002.43	VAC-L61R_LAW01A04	A,B	RD38	0	16	S	0	16	S	0	16	S	2	12	IM						0	S									J							2009/2013 Bio 4ALAW002.43 exhibits significant seasonal variation. Additional data must be collected to accurately characterize the status of the stream community. 4ALAW002.43 will be linked with 4ALAW002.38 which is located 250 meters downstream of Lawless Creek Road.
4ALBT003.07	VAW-L51R_LBT01A06	A,B	RD20	0	2	S	0	2	S	0	2	S									0	S									FS							2 surveys 2012. Avg. VSCI 77.8. (former FPM VAEQ-426).
4ALCC000.59	VAC-L66R_LCC01A08	A	RD55	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																
4ALCK000.38	VAW-L05R_LCK01A00	A,TM	RU13	0	12	S	0	12	S	0	12	S	5	12	IM						0	S																Bacteria TMDL Study Approved 08/05/2004. No additional data beyond the 2010 IR where E.coli excursions are found in 21 of 46 E.coli samples.
4ALCK002.17	VAW-L05R_LCK01A00	TM	RU13	0	3	S	0	3	S	0	3	S	1	3	IM						0	S																No additional data beyond 2008 IR where E.coli exceeds in 9 /18- 'IM'. Tinker Creek Bacteria TMDL US EPA approved 8/05/2004; Fed ID: 24540. SWCB Approved 12/02/2004. Originally 303(d) Listed in 2002 for FC.
4ALDR002.61	VAW-L42R_LDR01A02	A	RD03	2	12	S	0	12	S	0	12	S	2	12	IM						0	S										0	12	S				Bacteria TMDL Study U.S. EPA Approved 12/08/2008. Fed ID 35748. SWCB approved 4/28/2009.
4ALDR004.50	VAW-L42R_LDR01A02	A	RD03																0	S																		Bacteria impairment carried 2016 IR (2008 IR 2/9). Bacteria TMDL Study U.S. EPA Approved 12/08/2008. Fed ID 35748. SWCB approved 4/28/2009.
4ALFF001.85	VAC-L76R_LFF01A00	A,B	RD77	0	14	S	0	14	S	0	14	S	5	12	IM						0	S									IM	6	14	O				2010 Bio Sedimentation and STP effluent have negatively affected the benthic community. 2006 - 8/20 OE for TP
4ALFK-FL03-UVA	VAW-L01R_LKF01A02	CMON	RU01							0	1	IN																				0	36	S				
4ALHT000.70	VAC-L30R_LHT01A06	TM	RU62										5	11	IM																							2006 Roanoke Basin TMDL
4ALIZ003.42	VAC-L81R_LIZ01A10	A	RL22	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																
4ALLE005.22	VAW-L08R_LLE03A00	A,B,TM,TR	RU22	0	40	S	0	40	S	0	40	S	22	36	IM						0	S									IM							2 VSCI surveys (2010). Middle Blackwater River Bacteria TMDL Study U.S. EPA approved on 12/04/2001 [Fed. ID 1887 / 1889 / 9633]. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 6/17/2004. Originally 303(d) Listed in 1998 (2002) for
4ALNE006.56	VAC-L77R_LNE01A98	A,TR	RU92	0	35	S	1	35	S	0	36	S	9	35	IM						0	S																
4ALNE013.64	VAC-L77R_LNE02A06	SS	RU92																		0	S										1	1	IN				Chase City WWTP Special Study
4ALNE013.84	VAC-L77R_LNE02A06	SS	RU92																		0	S																Chase City WWTP Special Study 2006 FC bacteria: 1/1 = IN
4ALOL000.62	VAC-L74R_LOL01A06	SS,TM	RD72	0	12	S	0	12	S	0	12	S	1	12	S						0	S																2011 TMDL Monitoring
4ALOR007.20	VAW-L26R_LOR01A00	FPM,B	RU54	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							IM							VAW05547-120 (2007). No Sediment PEC exceedances from 2007 data metals only.
4ALOR007.94	VAW-L26R_LOR01A00	C	RU54																				0	S	0	S	1	IM	1	IM								PWS. '06 FT mercury (Hg) [Apx E-1] 2 sp.; no sediment PEC exceedances. Outside Data Window: '02 FT PCB [Apx E-1] 1 sp.; Sed no exceedances. '99 FT PCB Apx E-1] 3 sp. Sed no exceedances.
4ALOR008.64	VAW-L26R_LOR01A00	A,B,TM	RU54	0	18	S	0	18	S	0	18	S	4	18	IM				0	S	0	S									IM	5	18	IN				1 survey 2008. VSCI 56.5. No additional data beyond the 2010 IR. Bacteria TMDL Study U.S. EPA Approved 2/02/01.
4ALOR008.93	VAW-L26R_LOR01A00	FPM,B	RU54	0	2	S	0	2	S	0	2	S	0	1	IN						0	S									IM	1	2	IN	0	1	IN	2 surveys 2012. Avg. VSCI 38.1.
4ALOR012.20	VAW-L26R_LOR02A00	B,TM	RU54	0	2	S	0	2	S	0	2	S																			IM							2 VSCI surveys (2008).
4ALOR014.33	VAW-L26R_LOR03A00	B,TM	RU54	0	4	S	0	4	S	0	4	S	2	3	IM						0	S									IM	3	3	IN				2 surveys 2011-2012. Avg. VSCI 49.2.
4ALOR014.75	VAW-L26R_LOR04A00	A,B,TR	RU54	0	40	S	0	40	S	0	40	S	16	36	IM						0	S									IM	1	36	IN				2 VSCI survey (2006 & 2008). Bacteria TMDL Study U.S. EPA Approved 02/02/01. Trend Analysis.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ALOR021.92	VAW-L26R_LOR04A00	TM	RU54	0	12	S	0	12	S	0	12	S	10	12	IM						0	s																No additional data beyond the 2010 IR. Little Otter River Bacteria TMDL Study is U.S. EPA approved on 02/02/2001. Fed ID 1547 / 9486 / 19639 / 24557 / 24780. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 3/27/2007. Originally 303
4ALOU001.16	VAC-L37R_LOU01A06	TM	RU79										4	12	IM																						2006 Roanoke Basin TMDL
4ALPP004.46	VAC-L81R_LPP01A16	PA	RL20	0	12	S	0	12	S	0	12	S	2	12	IM																						2013 Probambient
4ALPP004.52	VAC-L81R_LPP01A16	FPM,B	RL20	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S									J						2013 Probmon 4ALPP004.52 exhibits significant seasonal variation. Additional data must be collected to accurately characterize the status of the stream community; however this site is on private property and was sampled as part of the Probabilistic Monitoring program. Therefore it will not be revisited.
4ALRC-PT03-UVA	VAW-L50R_RCC20A04	CMON	RD15							0	1	IN																									2016 Cycle: One 2010 pH measurement of 6.7. Temp and pH data are Level II; Nitrate data are Level I.
4ALRO003.34	VAC-L39R_LRO01A00	A	RU82	0	12	S	0	12	S	0	12	S	0	12	S						0	S																Flow below 7Q10 on 6-25-02 & 8-12-02 (02065500)
4ALRO010.18	VAC-L39R_LRO02A10	B	RU81	0	2	S	0	2	S	0	2	S																			IM						2012 Bio This stream had good habitat, a good riparian zone, and relatively stable banks. There was some sediment deposition occurring.
4ALRO010.68	VAC-L39R_LRO02A10	FPM,B	RU81	0	2	S	0	2	S	0	2	S	0	1	W				0	S	0	S									IM						2007 Probmon 4AROC010.68 exhibited high seasonal variation. The spring sample half the taxa of the fall sample and both samples were dominated by tolerant taxa (Hydropsychidae in the spring and Chironomidae in the fall).
4ALRV005.17	VAC-L34R_LRV01A00	TM	RU70										5	11	IM																						2004 Falling River TMDL EPA Approved 7/9/2004
4ALRV007.84	VAC-L34R_LRV01A00	A	RU70	0	12	S	0	12	S	0	12	S	3	12	IM						0	S																
4ALRV009.74	VAC-L34R_LRV03A06	A	RU70	0	11	S	0	11	S	0	12	S	3	12	IM						0	S																
4ALRV013.53	VAC-L34R_LRV04A12	A	RU70	0	12	S	0	12	S	1	12	S	4	12	IM						0	S																
4ALSN001.04	VAC-L64R_LSN02A02	A,C	RD50																		0	S					0	S	1	O								
4ALSN007.45	VAC-L64R_LSN01A98	A,TM	RD50	0	12	S	2	12	IM	0	12	S	3	12	IM						0	S													2	12	O	No New Data Dan River TMDL Study
4ALUB000.12	VAC-L37R_LUB01A06	TM,B	RU77	0	14	S	0	14	S	0	14	S	1	12	S																	J						2016 Delist Candidate for EC 2013 Bio 4ALUB000.12 exhibits drastic seasonal variability around the assessment threshold score of 60. Additional monitoring is needed to accurately assess this reach.
4A-LUB-CHA08-SSWCD	VAC-L37R_LUB01A06	CMON	RU77	0	10	S							6	35	IN/O																						Southside SWCD Station - Level II Coliscan Category 3C
4ALVL001.11	VAW-L07L_LVL01A10	A,L	RU16	0	9	S	0	8	S	0	9	S	0	9	S						0	S																Smith Mtn. Lake Pooled Data: Temp 2 / 15,739 (S); DO 367 / 7,408 (S); pH 31 / 1,246 (S); TP 0 / 2 (S); CHLa 0 / 2 (S).
4ALVL-1-SOS	VAW-L07R_LVL01A02	CMON	RU16																												LP						SOS 4 surveys '08, '09 & '10 [3D] Lv. 2. Three surveys Outside Acceptable Season Range.
4ALVL-T18-FC	VAW-L07R_LVL01A02	CMON	RU16																													1	12	IN				SML TP stream - 'W' No additional data beyond 2012 IR.
4ALVL-T19-FC	VAW-L07R_LVL01A02	CMON	RU16																													1	21	IN				SML TP stream - 'W' No additional data beyond 2012 IR.
4ALWD002.54	VAW-L56R_LWD01A00	A,TM	RD29	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																No additional data beyond the 2008 IR where E.coli exceeds in 8 / 31-'IM'. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008. Fed ID: 35753. SWCB approved 4/28/2009. 2008 E.coli exceeds GM 2/5 calcs-'IM'. Bacteria (FC) 2002 Listed 3/23 >1000; FC 20
4ALWD011.03	VAW-L56R_LWD03A00	A	RD27	0	12	S	0	12	S	0	12	S	6	12	IM						0	S																2008 IR E.coli exceeds in 8 / 21-'IM'. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008. Fed ID: 35753. SWCB approved 4/28/2009. Station Bacteria (E.coli) 2006 Listed 2/9.
4ALWF004.32	VAW-L56R_LWF01A00	A	RD28	0	12	S	0	12	S	0	12	S	6	12	IM																			1	12	IN				No additional data beyond the 2012 IR. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008. Fed ID: 35753. SWCB approved 4/28/2009.
4ALYA000.60	VAC-L80R_LYA01A06	TM	RL18										5	9	IM																						2006 Great Creek TMDL
4ALYH000.17	VAC-L19R_LYH01A02	TM	RU48	0	1	W	0	1	W	0	1	W									1	O																2007-2008 Roanoke River PCB TMDL Sampling PCB Violation - 34,673 pg/L
4ALYH000.22	VAC-L19R_LYH01A02	SS,TM	RU48																						1	O											2000 PCB Altavista/Hurt Soil & Sediment SS
4ALYH000.26	VAC-L19R_LYH01A02	SS	RU48																						1	O											2000 PCB Altavista/Hurt Soil & Sediment SS
4ALYH000.33	VAC-L19R_LYH01A02	SS	RU48																						1	O											2000 PCB Altavista/Hurt Soil & Sediment SS
4ALYH000.50	VAC-L19R_LYH01A02	A,B	RU48	0	13	S	0	13	S	0	13	S	9	11	IM																IM						2008/2012 Bio 4ALYH000.50 is located in a city park with significant impervious surface coverage in the riparian zone.
4ALYT003.77	VAC-L78R_LYT01A06	A,B,TR	RL10	0	40	S	1	40	S	0	41	S	11	36	IM						0	S									IM						2005-2012/2014 Bio 4ALYT003.77 was negatively affected by drought in 2007-2008, with periods of very low flow. Logging in the upgradient watershed appears to have negatively affected the benthic community with sedimentation. Current monitoring (2014) has yielded similar results.
4AMAY018.17	VAW-L48R_ZZZ01A00	A	RD13	0	12	S	0	12	S	0	12	S	4	12	IM						0	S												1	12	IN		2008 Listed Bacteria (E.coli) 3/9- 'IM'. Station located in North Carolina. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008 Fed ID: 35748. SWCB approved 4/28/2009.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AMBY001.33	VAW-L54R_MBY01A10	FPM,B	RD26	0	2	S	0	2	S	0	2	S	0	1	IN				0	S	0	S	0	S							IM							VAW05547-175- 2 surveys 2008. Avg. VSCI 46.8. No Sediment PEC exceedances from 2008 data; metals only.
4AMBY001.51	VAW-L54R_MBY01A10	TM,B	RD26	0	16	S	0	15	S	0	16	S	4	12	IM																IM	0	11	S				
4AMCC002.05	VAC-L81R_MCC01A14	B	RL21	0	2	S	0	2	S	0	2	S																			J							2012 Bio Spring 2012: “Failing banks. Small, incised stream, some clay. Gravel riffles with some cobble.” Fall 2012 “Recent clear-cut on right bank. Very low flow. Failing banks.”
4AMCG000.56	VAC-L57R_MCG01A06	FPM,B	RD32	0	1	W	0	1	W	0	1	W							0	W											FS							2003 Probabilistic Monitoring SPMD Station 2008 Bio 4AMCG000.56 exhibited strong seasonal variation in 2003. Additional data collected in 2008 indicate the support of the aquatic life use water quality standard.
4AMCH000.53	VAW-L54R_MCH01A10	B,TM	RD26	0	17	S	0	17	S	0	17	S	4	13	IN				0	S	0	S									IM	0	14	S	0	1	IN	3 surveys 2008 & 2009. Avg. VSCI 24.0.
4AMCR004.60	VAW-L26R_MCR01A00	A,TM	RU53	0	36	S	0	35	S	0	35	S	17	36	IM						0	S										0	36	S				Little Otter River Bacteria TMDL Study U.S. EPA approved on 02/02/2001. Fed ID 1547 / 9486 / 19639 / 24557 / 24780. SWCB approved 6/17/2004. Bacteria Implementation Plan SWCB approved 3/27/2007. Originally 303(d) Listed 1996 for FC.
4AMDL000.34	VAW-L04R_MDL01A06	TM	RU14																																		Bacteria Impairment carries. 2010 and 2008 assessments find E.coli exceeds in 4/12- 'IM'.
4AMDL002.93	VAW-L04R_MDL01A06	B	RU14	0	2	S	0	2	S	0	2	S							0	IN	0	S	0	S							IM							No data beyond the 2012 IR where 6 surveys have an average VSCI score of 24.3 (24.3).4 VSCI surveys 2007 FPM, 2009. Avg. VSCI 20.1. No Sediment PEC exceedances from 2007 data; metals only.
4AMDL-1-SOS	VAW-L04R_MDL01A06	CMON	RU14																												HP							SOS 13 surveys 2007-2012 [3C] Lv. 2. Four surveys Outside Acceptable Season Range.
4AMEE002.38	VAW-L09R_MEE01A00	B,TM	RU23	0	4	S	0	4	S	0	4	S																			IM							4 surveys 2010-2011. Avg. VSCI 57.4.
4AMEE004.90	VAW-L09R_MEE01A00	A,TR	RU23	0	36	S	0	36	S	0	36	S	18	35	IM								0	S								2	36	IN				Maggodee Creek Bacteria TMDL Study U.S. EPA approved 4/27/2001 [Fed ID 1562 / 9475]. SWCB approved 6/17/2004. Lower Blackwater River Bacteria Implementation Plan SWCB approved 9/27/2006. Originally 303(d) Listed 1996 for FC.
4AMEE009.86	VAW-L09R_MEE03A00	A	RU23	0	24	S	0	24	S	0	24	S	9	24	IM								0	S								2	24	IN				Maggodee Creek Bacteria TMDL Study U.S. EPA approved 4/27/2001 [Fed ID 1562 / 9475]. SWCB approved 6/17/2004. Lower Blackwater River Bacteria Implementation Plan SWCB approved 9/27/2006. Originally 303(d) Listed 1996 for FC.
4AMEE016.75	VAW-L09R_MEE04A00	PA,FPM	RU23	0	6	S	0	6	S	0	6	S	0	6	S																	0	6	S				
4AMEE017.24	VAW-L09R_MEE04A00	FPM,B	RU23	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S									IM	0	2	S	0	1	IN	
4AMEE021.13	VAW-L09R_MEE05A00	A	RU23	5	24	IM	0	24	S	0	24	S	5	23	IM						0	S										0	24	S				Re-Listed 2012 Bacteria. 2008 E.coli Partial delist (4.4 mi.) Bacteria TMDL Study APPROVED 4/27/01. Imp Pan APPROVED 9/27/2006. Bacteria (FC) '98 Listed station.
4AMEE-1-SOS	VAW-L09R_MEE04A00	CMON	RU23																												MP							SOS 8 surveys 2010-2012 [3C] Lv. 2. Two surveys Outside Acceptable Date Range.
4AMEE-2-SOS	VAW-L09R_MEE05A00	CMON	RU23																												LP							SOS 8 surveys '10 [3D] Lv. 2. Two surveys Outside Acceptable Date Range.
4AMEE-T1a-FC	VAW-L09R_MEE01A00	CMON	RU23																													1	6	IN				SML TP stream - 'W' No additional data beyond 2012 IR.
4AMEE-T1-FC	VAW-L09R_MHA01A00	CMON	RU23																													1	11	IN				SML TP stream - 'W' No additional data beyond 2012 IR.
4AMES004.78	VAC-L79R_MES01A98	A	RL13	0	12	S	0	12	S	0	12	S	2	11	IM						0	S																2016 New EC Impairment
4AMES007.54	VAC-L79L_MES01L00	L,C	RL13	0	56	S	8	41	IM	0	56	S	1	14	S						0	S	0	S	0	S	2	IM	0	S					2	2	IM	2013-2014 Lake Gordon 2006 FT/Sediment - Hg 2 Species
4AMEY000.40	VAC-L35R_MEY02A06	TM	RU68										8	11	IM																							2004 Falling River TMDL EPA Approved 7/9/2004
4AMEY006.72	VAC-L35R_MEY02A06	FPM,B	RU68	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S									J							2013 FPM 4AMEY006.72 exhibits seasonal variability near the assessment threshold of 60. This stream is on private property and was sampled as part of the Probabilistic Monitoring program, therefore it will not be revisited. 4AMEY016.00 is assessed as impaired within the watershed.
4AMEY007.76	VAC-L35R_MEY02A06	PA	RU68	0	12	S	0	12	S	0	12	S	5	12	IM																							
4AMEY010.46	VAC-L35R_MEY02A06	A,TM	RU68	0	11	S	0	11	S	0	12	S	6	12	IM																							2004 Falling River TMDL EPA Approved 7/9/2004
4AMEY016.00	VAC-L35R_MEY01A00	A,TM,B	RU68	0	7	S	0	7	S	0	7	S	3	6	IM				0	S	0	S	0	S	0	S					IM	4	15	O				2004 Falling River TMDL EPA Approved 7/9/2004 2006 - 5/22 TP OE 2007-2008/2013 Bio Agricultural watershed influences in addition to a small POTW several miles upstream.
4AMIL002.17	VAC-L68R_MIL01A16	B	RD56	0	1	W	0	1	W	0	1	W																			FS							2013 Bio Agricultural watershed. Good in-stream habitat with low sedimentation.
4AMRR000.02	VAW-L55R_MRR01A00	A,TM	RD25	0	12	S	0	12	S	0	12	S	2	12	IM						0	S										0	12	S				Dan River Bacteria TMDL U.S. EPA approved 12/08/2008. Fed ID: 35753. SWCB approved 4/28/2009. Bacteria (FC) 2002 Listed 5/23 >1000; FC 2004 >400 4/29.
4AMRY000.82	VAC-L64R_MRY01A04	A,TM,B	RD48	0	15	S	0	15	S	0	16	S	6	12	IM						0	S									J							2010/2014 Bio 4AMRY000.82 continues to exhibit significant seasonal variation. Additional data must be collected to accurately characterize the status of the stream community. Sedimentation is a probable stressor.
4AMSN000.53	VAW-L04R_MSN01A00	B,TM	RU10	0	2	S	0	2	S	0	2	S																			IM							2 VSCI surveys (2005).

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AMSN000.67	VAW-L04R_MSN01A00	TM	RU10	0	13	S	0	13	S	0	13	S	2	12	IM														1	O								No additional data beyond the 2008 IR.
4AMSN003.05	VAW-L04R_MSN01A00	B,TM	RU10	0	2	S	0	2	S	0	2	S																			IM							2 VSCI surveys (2005).
4AMSN-4-SOS	VAW-L04R_MSN01A00	CMON	RU10																												LP							SOS 1 survey 2011 [3D] Lv. 2.
4AMTR010.33	VAW-L49R_MTR01A02	A	RD14	0	12	S	0	12	S	0	12	S	1	12	S						0	S										0	12	S				2008 Bacteria Listed (E.coli) 3/9- 'IM'. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008 Fed ID: 35748. SWCB approved 4/28/2009.
4AMUR001.82	VAW-L04R_MUR01A00	B,TM	RU14	0	3	S	0	3	S	0	3	S																			IM							3 VSCI surveys (2009 & 2010). Avg. VSCI 19.4.
4AMUR-B-SOS	VAW-L04R_MUR01A00	CMON	RU14																												HP							SOS 6 surveys 2007-2010 [3C] Lv. 2. One survey Outside Acceptable Season Range.
4AMWW004.53	VAW-L22R_MWW01A10	PA	RU43	0	12	S	0	12	S	0	12	S	4	12	IM						0	S										0	12	S				No additional data beyond the 2010 IR.
4AMYO001.48	VAC-L74R_MYO01A04	A	RD71	0	12	S	0	12	S	0	12	S	2	12	IM																							
4AMYO001.87	VAC-L74R_MYO01A04	C	RD71																								1	O	0	S								2007 FT Sampling OE - Hg 1 Species
4ANCH001.23	VAW-L51R_NCH01A12	A	RD19	0	12	S	0	12	S	0	12	S	4	12	IM																	0	12	S				
4ANCH-1-SOS	VAW-L51R_NCH01A12	CMON	RD19																												LP							SOS 1 survey '09 & '10 [3D] Lv.2. One survey Outside Acceptable Season Range.
4ANFA000.35	VAC-L73R_NFA01A06	A	RD75	0	11	S	0	11	S	0	12	S	2	12	IM						0	S																
4ANFS-PT15-UVA	VAW-L50R_NFS01A00	CMON	RD15							0	1	IN																									
4ANMR002.60	VAW-L46R_NMR01A00	A,C	RD12	0	36	S	0	36	S	0	36	S	14	36	IM						0	S							0	S	0	S		1	36	IN			2004 Bacteria Listed. 3/25-IM. '07 FT no exceedances; no sediment collection. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008. Fed ID: 35754. SWCB approved 4/28/2009.
4ANOT001.06	VAW-L24R_NOT01A02	A,TM	RU50	0	36	S	0	36	S	0	36	S	16	35	IM						0	S										0	36	S				Bacteria TMDL Study EPA Approved 02/02/01.
4ANUT001.50	VAC-L75L_ROA05L98	C	RL08																				0	S	0	S	1	O	1	O							2006 FT/Sediment - Hg 1 Species (OE - Exceeds 1.1 ppm) OE - PCB 1 Species
4AORE000.01	VAW-L04R_ORE01A00	FPM,B	RU14	0	2	S	0	2	S	0	2	S	1	1	IN								1	O							IM	0	2	S	0	1	IN	2 surveys 2011. Avg. VSCI 23.3. 2011 sediment finds lead (Pb) exceeding the PEC SV of 128 ppm at 168 ppm.
4AORE000.19	VAW-L04R_ORE01A00	A,TM	RU14	0	12	S	0	12	S	0	12	S	6	12	IM						0	S																No additional data beyond the 2008 IR E.coli 23/36). Roanoke River Bacteria TMDL US EPA approved 8/02/2006. SWCB approved 6/27/2007. NESTED.
4AOST002.01	VAW-L24R_OST02A02	B,A	RU50	0	2	S	0	2	S	0	2	S																			FS	0	2	S				Benthic community VSCI scores average 85.9 (S 81.88, F 89.84). Sampled as a benthic reference site. Majority of the watershed is National Forest.
4AOST-BE02-UVA	VAW-L24R_OST02A02	CMON	RU50							0	1	IN																									
4AOWC002.35	VAC-L13R_OWC01A00	TM	RU38										3	6	IM																							
4AOWC005.36	VAC-L13R_OWC01A00	A,B	RU38	0	3	S	0	3	S	0	3	S	2	3	IM						0	S	0	S							FS							The dominant land use in this watershed is forest; however, this reach is potentially impacted by non-point source pollution from agricultural and silviculture land use. Despite the possible impact to stream habitat from fine sediment deposition, the benthic community, which was collected using a multi-habitat sampling method (sampling woody debris and vegetation), does not appear to be affected.
4APAA000.71	VAW-L17R_PAA01A04	B,PA	RU35	0	15	S	0	15	S	0	15	S	2	11	IM																IM	0	12	S				Two of 12 escherichia coli (E.coli) samples. New NESTED (4A) addition 2016. Bio 'IM' Four VSCI (2013-2014) surveys with an average score of 58.2.
4APBA003.71	VAW-L46R_PBA02A02	A	RD10	1	12	S	0	12	S	0	12	S	1	12	S																	0	12	S				2016 is the first cycle reported.
4APBA-PT13-UVA	VAW-L46R_PBA02A02	CMON	RD10							0	1	IN																				0	0	IN/O				2016 Cycle: Temp and pH are Level II. One 2010 pH measurement of 6.7.
4APCP-1-SOS	VAW-L10R_PCP01A02	CMON	RU24																												LP							3 surveys 2011-2012 [3D] Lv. 2. One survey Outside Acceptable Date Range.
4APCP-T4-FC	VAW-L10R_PCP01A02	CMON	RU24																													0	17	S				SML TP stream - 'W' No additional data beyond 2012 IR.
4APDA000.35	VAC-L64R_PDA01A10	B	RD51	0	2	S	0	2	S	0	2	S																			IM							2008 & 2012 Bio Flow regime related sedimentation seems to be negatively affecting the stream community. 4APDA000.35 is located in a highly urban/industrial watershed.
4APDD001.13	VAC-L65R_PDD01A12	A	RD54	0	11	S	0	11	S	0	12	S	1	12	S																							
4APDE002.12	VAC-L66R_PDE01A10	A	RD55	0	12	S	0	12	S	0	11	S	4	12	IM						0	S																2016 No New Data
4APEC002.42	VAC-L71R_PEC01A04	A,B	RD65	0	16	S	0	16	S	0	16	S	3	12	IM						0	S										IM							2009 & 2013 Bio 4APEC002.42 exhibits seasonal variability. Spring scores are very low. Sedimentation is a likely stressor due to high embeddedness scores.
4APEC006.49	VAC-L71R_PEC01A04	A,B	RD65	0	4	S	0	4	S	0	4	S	2	12	IM						0	S										IM							2009 & 2013 Bio 4APEC006.49 has fall VSCI scores very close to the impairment cutoff score of 60. Spring scores are very low. Sedimentation is a likely stressor due to high embeddedness scores.
4APEE001.04	VAW-L04R_PEE01A02	A,C,TM	RU14	0	2	S	0	2	S	0	2	S	1	2	IM						0	S	0	S	10	O	0	S										No additional data beyond the 2012 IR where E.coli 2/14- 'IM'. PCB impairment (FT) carried. VDH Fish Consumption Advisory (PCB). Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. Fed ID: 38634. SWCB approved 12/9/2010. '06 FT no exceedances; 2006 sediment
4APEE001.16	VAW-L04R_PEE01A02	B,TM	RU14	0	2	S	0	1	IN	0	2	S																			IM							Two 2013 VSCI surveys with an average score of 26.9.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4APEE-1-SOS	VAW-L04R_PEE01A02	CMON	RU14																											MP							SOS 6 surveys 2009-2011 [3C] Lv. 2. Two surveys Outside Acceptable Season Range. Formerly coded 4APEE-SOS.
4APET004.35	VAC-L73R_PET01A16	A	RD76	0	12	S	3	12	IM	0	12	S	4	12	IM																						2016 New DO Impairment
4APGG003.29	VAW-L13L_PGG01A02	A,C,TM	RU37	0	23	S				0	23	S	2	6	IM																						Leesville Lake Pooled Data (Citizen & DEQ): Dissolved Oxygen - 38/501; pH - 1/696; Temp- 0/1001. '06 FT mercury (Hg) [Apx E-1] 1 sp.
4APGG008.87	VAW-L18R_PGG02A00	A,TM,TR	RU37	0	36	S	0	36	S	0	36	S	9	34	IM						0	S										3	36	IN				Pigg R. Bacteria TMDL [Fed ID 30414] EPA Approved 9/11/2006; SWCB Approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010. No additional data beyond the 2008 IR.
4APGG011.14	VAW-L18R_PGG02A00	FPM,B	RU36	0	2	S	0	2	S	0	2	S	1	1	IN				0	IN	0	S									FS	0	2	S	0	1	IN	VARS11-096- 2 surveys 2012. Avg. VSCI 69.8. No 2012 sediment collection.
4APGG016.06	VAW-L18R_PGG02A00	A,TM	RU36	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																No additional data beyond the 2008 IR where E.coli exceeds in 9 / 21- 'IM'. Pigg R. Bacteria TMDL [Fed ID 30414] EPA Approved 9/11/2006; SWCB Approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010. No additional data beyond the 2008 IR.
4APGG030.62	VAW-L16R_PGG01A00	A,TM	RU32	0	11	S	0	11	S	0	11	S	2	12	IM						0	S										0	12	S				No additional data beyond the 2010 IR. Pigg R. Bacteria TMDL [Fed ID 30414] EPA Approved 9/11/2006; SWCB Approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010. No additional data beyond the 2010 IR where 13 of 33 samples exceed.
4APGG042.21	VAW-L14R_PGG01A00	FPM,B	RU30	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-255- 2 surveys 2009. Avg. VSCI 70.2.
4APGG052.73	VAW-L14R_PGG02A00	TM,TR	RU30	0	36	S	0	36	S	0	36	S	14	35	IM						0	S										0	36	S				Trend Analysis. Pigg River Bacteria TMDL Study U.S. EPA approved 9/11/2006 [Fed ID 30414]. SWCB approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010. Originally 303(d) Listed 1996 for FC.
4APGG055.72	VAW-L14R_PGG02A00	TM,TR	RU30	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																No additional data beyond 2010 IR. Pigg River Bacteria TMDL Study U.S. EPA approved 9/11/2006 [Fed ID 30414]. SWCB approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010. Originally 303(d) Listed 1996 for FC.
4APGG057.85	VAW-L14R_PGG03A00	TM	RU30	0	12	S	0	12	S	1	12	S	5	12	IM						0	S																No additional data beyond 2010 IR. Pigg River Bacteria TMDL Study U.S. EPA approved 9/11/2006 [Fed ID 30414]. SWCB approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010.
4APGG063.32	VAW-L14R_PGG04A00	FPM,B	RU29	0	2	S	0	2	S	0	2	S	1	1	IN				0	IN	0	S	0	S							J	0	2	S	0	1	IN	VARS11-235- 2 surveys 2011. Avg. VSCI 63.21.
4APGG068.49	VAW-L14R_PGG04A00	PA,TM	RU29	0	18	S	0	18	S	0	18	S	9	18	IM						0	S										0	18	S				No additional data beyond 2008 IR where E.coli exceeds in 8 / 12- 'IM'. Pigg River Bacteria TMDL Study U.S. EPA approved 9/11/2006 [Fed ID 30414]. SWCB approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010.
4APGG074.87	VAW-L14R_PGG04A00	A,TM	RU29	0	12	S	0	12	S	0	11	S	7	12	IM						0	S																No additional data beyond the 2010 IR where E.coli exceeds in 12 / 24- 'IM'. Pigg River Bacteria TMDL Study U.S. EPA approved 9/11/2006 [Fed ID 30414]. SWCB approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010.
4APGG076.93	VAW-L14R_PGG05B12	FPM,B	RU29	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							IM	0	2	S	0	1	IN	VAW05547-223- 2 surveys 2009. Avg. VSCI 50.5.
4APGG077.15	VAW-L14R_PGG06B12	TM,B	RU29	0	21	S	0	21	S	0	21	S	12	17	IM																IM	0	18	S				
4APGG-1-SOS	VAW-L14R_PGG01A00	CMON	RU30																											MP							SOS 1 survey '07 [3C] Lv. 2.
4APGG-2-SOS	VAW-L14R_PGG05A02	CMON	RU29																											LP							SOS 4 surveys "09 & '10 [3D] Lv. 2. One survey Outside Acceptable Season Range.
4APGG-3-SOS	VAW-L14R_PGG04A00	CMON	RU30																											IN							1 survey 2011 [3A] Lv. 2. Insufficient data.
4APGG-4-SOS	VAW-L14R_PGG02A00	CMON	RU30																											W							1 survey 2012 [W] Lv. 2. One survey Outside Acceptable Date Range. Not assessed.
4APGG-T10-FC	VAW-L13L_PGG01A02	CMON	RU37																												0	17	S				SML TP stream - 'W' No additional data beyond 2012 IR.
4APHC006.38	VAC-L82R_PHC01A00	A	RL23	0	12	S	0	12	S	0	12	S	4	12	IM																							2016 New EC Impairment
4APKP002.31	VAC-L60R_PKP01A06	A	RD39	0	12	S	0	12	S	0	12	S	2	12	IM						0	S																
4APKP002.46	VAC-L60R_PKP01A06	B	RD39	0	2	S	0	2	S	0	2	S																			IM							2009 Bio 4APKP002.46 is in an urban watershed with abundant impervious surfaces. Flow regime and sedimentation seem to be affecting the benthic community negatively.
4APLP000.40	VAC-L34R_PLP01A00	A	RU71	0	3	S	0	3	S	0	3	S									0	S																No New Data
4APOB006.35	VAC-L81R_POB01A00	A,B	RL20	0	3	S	0	3	S	0	3	S									0	S									J							2016 Delist Candidate for DO 2009/2014 Bio 4APOB006.35 is characterized as very low gradient and was sampled in the spring of 2009 during a low flow event. The site was non-wadeable the following fall. Follow-up monitoring in 2014 yielded seasonally variable results and additional monitoring is needed to accurately assess the reach.
4APOP000.10	VAC-L77R_POP01A14	FPM,B	RU93	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S									J							2012 FPM This site had unstable banks and marginal habitat with a hardpan clay stream bottom. This site is on private property and was sampled as part of the Probabilistic Monitoring program; therefore it will not be revisited.
4APOW000.69	VAC-L62R_POW01A08	A	RD46	0	12	S	0	12	S	0	12	S	4	12	IM						0	S																

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4APRS008.76	VAW-L42R_PRS01A02	A	RD05	0	12	S	0	12	S	0	12	S	4	12	IM																	0	12	S				No additional data beyond the 2012 IR.
4APWL001.11	VAC-L74R_PWL01A10	A	RD69	0	12	S	0	12	S	0	12	S	3	12	IM																							2016 New EC Impairment
4ARAB000.52	VAC-L19R_RAB01A00	B	RU48	0	3	S	0	3	S	0	3	S																			IM							2011/2012 Bio 4ARAB000.52 exhibited high seasonal variability, with one score approaching the impairment cutoff of 60. Sedimentation and elevated nutrients may be negatively affecting the stream community.
4ARAB003.64	VAC-L19R_RAB01A00	FPM,B	RU48	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S									J							2012 FPM This stream had moderately unstable banks and increased sediment deposition. Condition of stream drastically different seasonally. 4ARAB003.64 was sampled within the PROBMON program. The reach is accessed by private property and will not be revisited. 4ARAB003.71 is accessible from the road and will be linked to this reach for future assessments.
4ARAB003.71	VAC-L19R_RAB01A00	B	RU48	0	1	W	0	1	W	0	1	W																			FS							2014 Bio 4ARAB003.71 is affected by slight sedimentation but still meets WQS.
4ARAC000.92	VAC-L64R_RAC01A04	B	RD51	0	2	S	0	2	S	0	2	S																			IM							2012 Bio 4ARAC000.92 is located in an older suburban watershed with abundant impervious surfaces which negatively affects flows and sedimentation. There is also an unlined municipal landfill in the watershed which has historical leachate issues.
4ARAR-PT04-UVA	VAW-L42R_RAR01A02	CMON	RD02																																		
4ARBC005.44	VAW-L51R_RBC02A02	A	RD18	3	12	IM	0	12	S	0	12	S	3	12	IM						0	S										1	12	IN				2002 Temp °C Listing 2/6- IM. No additional data beyond the 2008 IR.
4ARBC-FR03-UVA	VAW-L51R_RBC02A02	CMON	RD18							0	1	IN																									
4ARCC006.89	VAW-L50R_RCC02A02	B,A	RD15	0	2	S	0	2	S	0	2	S																			FS	0	2	S				Reference station. VSCI scores average 78.0 (2013).
4ARCC008.86	VAW-L50R_RCC02A02	B,SS	RD15	0	2	S	0	2	S	0	2	S																			FS							Regional Monitoring Network station RMN-VA-4ARCC008.86. VSCI scores average 77.2 (2014).
4ARCC-PT01-UVA	VAW-L50R_RCC02A02	CMON	RD15							0	1	IN																									
4AREE000.80	VAW-L53R_REE01A00	A	RD23	0	12	S	0	12	S	0	12	S	3	12	IM						0	S										0	12	S				2008 IR E.coli exceed 4 / 21- 'IM'. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008 Fed ID: 35748. SWCB approved 4/28/2009. Bacteria (E.coli) 2008 Listed.
4ARFK000.20	VAC-L66L_RFK01A06	L	RD55	0	63	S	5	35	IM	9	63	IM	1	14	S						0	S													0	2	S	2011/2012 Roaring Fork Reservoir
4ARHY-PT12-UVA	VAW-L43R_RHY01A02	CMON	RD06							0	1	IN																									
4ARNF002.97	VAW-L02R_RNF01A00	TM	RU08	0	12	S	0	12	S	0	12	S	1	12	S						0	S										0	12	S				No additional data beyond the 2010 IR.
4ARNF013.66	VAW-L02R_RNF03A02	A,TM,TR	RU07	0	36	S	0	36	S	0	35	S	10	35	IM						0	S										1	36	IN				1 survey 2007. VSCI 72.6. Trend Analysis.
4ARNF015.22	VAW-L02R_RNF04A02	FPM,B	RU06	0	4	S	0	4	S	0	4	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-319 (2010). 4 surveys 2010 & 2012. Avg. VSCI 69.2. No 2010 sediment PEC SV excursions.
4ARNF016.80	VAW-L02R_RNF04A02	A	RU06	0	24	S	0	24	S	0	24	S	6	24	IM																	0	24	S				The 2012 E.coli exceedances cause the extension of the impairment upstream and is a nested extension of the initially 2002 Listed 4ARNF013.66. No additional data beyond the 2012 IR.
4ARNF-1-SOS	VAW-L02R_RNF05A02	CMON	RU06																												W							SOS 1 survey 2010. Survey Outside Acceptable Season Range. Not assessed.
4AROA000.00	VAC-L80L_ROA08A04	L	RL18	0	191	S	9	158	S	0	191	S	0	21	S						0	S													0	3	S	2010/2012/2014 Lake Gaston Pooled DO data: 18/379
4AROA004.54	VAC-L80L_ROA08A04	L,C,SS	RL18	0	147	S	2	104	S	1	147	S	0	14	S						0	S	0	S	0	S	1	O	1	IM								2010/2012/2014 Lake Gaston Not in Lacustrine Zone Pooled DO data: 18/379 2002 FT/Sed PCBs 1 Species & Hg 1 Species; Lake Gaston 2006 FT/Sediment - Hg 1 Species, PCBs 2 Species Observed Effects
4AROA008.66	VAC-L79L_ROA07A98	L	RL14	0	136	S	7	117	S	0	136	S	0	21	S						0	S																2010/2012/2014 Lake Gaston Not in Lacustrine Zone Pooled DO data: 18/379 4B - Renovations at Kerr Dam to aerate water discharged from dam in months when Kerr Reservoir is stratified.
4AROA012.08	VAC-L78R_ROA06A98	A,TR	RL12	0	35	S	1	35	S	0	37	S	1	37	S						0	S																Tail water of Kerr Dam and Reservoir. 4B - Renovations at Kerr Dam to aerate water discharged from dam in months when Kerr Reservoir is stratified.
4AROA018.04	VAC-L78R_ROA06A98	A,SS,TR	RL12	0	22	S	2	22	S	0	24	S	1	23	S						0	S							1	O								1999 FT/Sed PCBs 1 Species Trend Analysis Performed - No statistically significant trends were detected Tail water of Kerr Dam and Reservoir 4B - Renovations at Kerr Dam to aerate water discharged from dam in months when Kerr Reservoir is stratified.
4AROA018.36	VAC-L75L_ROA05L98	L,SS	RL09	0	466	S	33	288	IM	5	466	S	0	21	S						0	S													0	3	S	2010/2012/2014 Kerr Reservoir Pooled DO Data: 134/1437
4AROA022.52	VAC-L75L_ROA05L98	L,SS	RL09	0	443	S	13	248	S	2	443	S	0	21	S						0	S													0	3	S	2010/2012/2014 Kerr Reservoir Pooled DO Data: 134/1437

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AROA028.04	VAC-L75L_ROA05L98	L,C,SS	RL09	0	403	S	19	211	S	0	403	S	0	20	S						0	S	0	S	0	S	2	IM	1	IM					0	3	S	2010/2012/2014 Kerr Reservoir Pooled DO Data: 134/1437 2002 FT PCB 5 sp. 2006 FT/Sediment - Hg 2 Species (Exceeds 1.1 ppm), PCBs 3 Species VDH Fishing Advisory for PCBs
4AROA028.44	VAC-L75L_ROA05L98	C,SS	RL07																						0	S			2	IM								1999 FT/Sed; Fall 98 PCB 6 Sp. & H epoxide 1 Sp.
4AROA032.42	VAC-L75L_ROA05L98	L	RL06	0	314	S	15	194	S	0	314	S	0	21	S						0	S													0	3	S	2010/2012/2014 Kerr Reservoir Pooled DO Data: 134/1437
4AROA036.59	VAC-L75L_ROA05L98	C	RL06																				0	S	0	S	1	O	1	IM								2006 FT/Sediment - Hg 1 Species (OE - Exceeds 1.1 ppm), PCBs 4 Species
4AROA038.49	VAC-L75L_ROA05L98	L,A,SS	RU94	0	163	S	7	138	S	0	163	S	0	21	S						0	S													0	3	S	2010/2012/2014 Kerr Reservoir Pooled DO Data: 134/1437
4AROA043.14	VAC-L75L_ROA05L98	L,SS	RU94	0	122	S	3	102	S	0	122	S	0	21	S				0	S	0	S	0	S											0	3	S	2010/2012/2014 Kerr Reservoir Pooled DO Data: 134/1437
4AROA059.12	VAC-L40R_ROA03A98	A,SS,TM,TR	RU87	0	35	S	0	35	S	0	36	S	10	36	IM						2	IM					4	IM	2	IM								98 FT PCB 4 Sp. &02 FT/Sed PCB 8 Sp. Trend Analysis Performed - No statistically significant trends were detected 2006 FT/Sediment - Hg 4 Species (Exceeds 1.1 ppm), As 1 Species (OE), PCBs 7 Species VDH Fish Advisory 2013 FT/Sediment - PCBs 6 Species 2007-2008 Roanoke River PCB TMDL Sampling PCB Violations - 1627 pg/L & 1359 pg/L
4AROA064.69	VAC-L38R_ROA02A98	FPM,B	RU80				0	1	W	0	1	W	0	1	W				0	W	0	W	0	W	0	W					FS							2008 Probmon 4AROA064.69 is a large river site. VSCI is not applicable to large rivers. However, benthic community did not indicate an unbalanced system.
4AROA067.91	VAC-L38R_ROA02A98	A,C,TR,SS,TM	RU80	0	42	S	0	42	S	0	43	S	7	42	IM				0	W	2	IM					4	IM	2	IM								99 PCB 3 Species 2006 FT/Sediment - Hg 4 Species, PCBs 7 Species VDH Fish Advisory 2013 FT/Sediment - PCBs 6 Species 2007-2008 Roanoke River PCB TMDL Sampling PCB Violations - 1336 pg/L & 1307 pg/L
4AROA076.57	VAC-L38R_ROA02A98	FPM,B	RU80	0	1	W	0	1	W	0	1	W																			J							2014 FPM 4AROA076.57 was sampled as part of the large river PROBMON program. The VSCI is tailored to smaller rivers. This segment can be assessed when assessment techniques are refined in the future.
4AROA090.50	VAC-L30R_ROA02A00	TM	RU64	0	3	S	0	3	S	0	3	S									2	IM			0	S												2007-2008 Roanoke River PCB TMDL Sampling PCB Violations - 1192 pg/L & 1625 pg/L
4AROA096.62	VAC-L30R_ROA02A00	C	RU64																										2	IM								PWS; VDH Fish Adv.; 00 FT Only PCB 2 Sp.
4AROA096.65	VAC-L30R_ROA02A00	SS	RU64																						4	O												"PWS; VDH Fish Adv.; 99 Sed Only
4AROA097.07	VAC-L30R_ROA03A00	C,SS	RU64																				0	S	1	O	2	IM	4	IM								PWS; VDH Fish Adv.; 02 FT/Sed 2006 FT/Sediment - Hg 2 Species (Exceeds 1.1 ppm), PCBs 5 Species 2013 FT/Sediment - PCBs 5 Species
4AROA097.46	VAC-L30R_ROA03A00	A,B,TM,TR	RU64	0	34	S	0	34	S	0	36	S	6	36	IM						0	S									J							PWS; VDH Fish Advisory; 2006 Roanoke Basin TMDL Trend Analysis Performed - Statistically significant trends were detected (TN, decreasing & TP decreasing & TSS, decreasing) Large river non-target for current DEQ sampling techniques; river is only wadeable at this site during periods of very low flow. USGS Temperature Data Level III - 0/3
4AROA097.76	VAC-L30R_ROA04A00	TM	RU64	0	2	S	0	2	S	0	2	S									2	IM			0	S												2007-2008 Roanoke River PCB TMDL Sampling PCB Violations - 1115 pg/L & 4304 pg/L
4AROA108.09	VAC-L30R_ROA06A00	A,C,TM	RU63	0	13	S	0	13	S	0	13	S	0	12	S				0	S	1	O	0	S	0	S	1	IM	2	IM								PWS; 98 FT/Sed PCB 6 Sp. 2006 FT/Sediment - PCBs 4 Species VDH Fish Advisory 2013 FT/Sediment - PCBs 5 Species 2007-2008 Roanoke River PCB TMDL Sampling PCB Violation - 1147 pg/L
4AROA118.49	VAC-L30R_ROA06A00	FPM,B	RU60	0	1	W	0	1	W	0	1	W	0	1	W				0	W											J							2012 Fall Probmon 4AROA118.49 was sampled as part of the large river PROBMON program. The VSCI is tailored to smaller rivers. This segment can be assessed when assessment techniques are refined in the future.
4AROA124.59	VAC-L30R_ROA06A00	A,TM	RU60	0	1	W	0	1	W	0	1	W									2	IM	0	S	0	S												PWS; VDH Fish Advisory 2007-2008 Roanoke River PCB TMDL Sampling PCB Violations - 2909 pg/L & 4466 pg/L
4AROA127.79	VAC-L19R_ROA01A00	TM	RU48	0	1	W	0	1	W	0	1	W									0	S																2007-2008 Roanoke River PCB TMDL Sampling
4AROA128.27	VAC-L19R_ROA01A00	CMON	RU48																0	S																		CVGS Hg Mercury Sampling

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AROA129.55	VAC-L19R_ROA01A00	A,C,TR	RU48	0	33	S	0	33	S	0	35	S	3	34	S						1	O					2	IM	2	IM								PWS; VDH Fish Adv.; 02 FT/Sed 2006 FT/Sediment - Hg 2 Species, PCBs 7 Species 2013 FT/Sediment - PCBs 5 Species 2007-2008 Roanoke River PCB TMDL Sampling High Flow Sample - 766 pg/L
4AROA131.55	VAC-L19R_ROA03A00	A	RU46	0	12	S	0	12	S	0	12	S	0	12	S						0	S																
4AROA134.35	VAC-L19R_ROA03A00	FPM,B	RU46																												J							PWS; 2002-2003 Probabilistic Monitoring Large river non-target for current DEQ sampling techniques; river is only wadeable at this site during periods of very low flow.
4AROA136.70	VAC-L19R_ROA04A00	FPM,B	RU46	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	W	0	W					J							2008 Large River Probmon 4AROA136.70 was sampled as part of the large river PROBMON program. The VSCI is tailored to smaller rivers. This segment can be assessed when assessment techniques are refined in the future.
4AROA137.00	VAC-L19R_ROA04A00	C	RU46																										2	IM								2013 FT/Sediment - PCBs 5 Species
4AROA140.22	VAC-L19R_ROA04A00	CMON	RU46																0	S																		CVGS Hg Mercury Sampling
4AROA140.66	VAC-L13L_ROA01A02	L,C	RU38	0	358	S	15	196	S	0	224	S	0	20	S						0	S					1	O	0	S					0	3	S	2009/2011/2013 Leesville Lake Pooled DO data: 24/374 2006 FT/Sediment - Hg 1 Species (OE)
4AROA145.34	VAC-L13L_ROA01A02	L	RU38	0	282	S	9	155	S	0	196	S	0	20	S						0	S													0	2	S	2009/2011/2013 Leesville Lake Pooled DO data: 24/374
4AROA153.59	VAC-L13L_ROA01A02	L	RU38	0	23	S	0	23	S	0	23	S	0	13	S						0	S																2009/2011 Leesville Lake Pooled DO data: 24/374
4AROA158.22	VAW-L12L_ROA01A02	A,L,TR	RU27	0	1472	S	1	913	S	1	78	S	0	38	S						0	S													0	2	S	0	2	S	Smith Mtn Lake Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S); TP 0 / 2 (S); CHLa 0 / 2 (S). PWS. LZ Nuts Pooled CHLa: 0 / 2(S)- 90 %tile 2013- 5.90 µg/L; 2014- 6.55 µg/L. TP: 0 / 2(S) Median 2013- 10 µg/L; 2014 10 µg/L.
4AROA163.76	VAW-L12L_ROA01A02	A,L,TR	RU27	0	1308	S	0	778	S	2	78	S	0	41	S						0	S													0	2	S	0	2	S	Smith Mtn. Lake Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S); TP 0 / 2 (S); CHLa 0 / 2 (S). PWS. LZ Nutrients Pooled (4 stations) CHLa: 0 / 2(S)- 90 %tile 2013- 5.90 µg/L; 2014- 6.55 µg/L. TP: 0 / 2(S) Median 2013- 10 µg/L; 2
4AROA167.34	VAW-L07L_ROA01A10	A,L,TR	RU19	0	1295	S	7	750	S	1	76	S	0	41	S						0	S													0	2	S	0	2	S	Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S); TP 0 / 2 (S); CHLa 0 / 2 (S). PWS. LZ Nutrients Pooled (4 stations) CHLa: 0 / 2(S)- 90 %tile 2013- 5.90 µg/L; 2014- 6.55 µg/L. TP: 0 / 2(S) Median 2013- 10
4AROA175.63	VAW-L07L_ROA02A10	A,L	RU19	0	1392	S	59	565	S	5	99	S	0	43	S																							Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S). 2016 Cycle: PWS. NEW-1. VDH Fish Consumption Advisory issued PCBs 7/27/2005. No VDH Drinking Water Advisory.
4AROA180.21	VAW-L07L_ROA03A10	A,L,TR	RU18	2	1251	S	36	485	S	6	87	S	0	42	S						0	S																Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S). VDH Fish Consumption Advisory (PCB).
4AROA183.64	VAW-L07L_ROA03A10	A,L,TR	RU18	0	875	S	32	395	S	4	89	S	0	41	S						0	S																Smith Mtn. Lake Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S); TP 0 / 2 (S); CHLa 0 / 2 (S). PWS. VDH Fish Consumption Advisory (PCB).
4AROA192.55	VAW-L07L_ROA04A10	A,L,TR	RU16	0	24	S	0	24	S	0	23	S	1	24	S						0	S																Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8,940 (S); pH 27 / 1,233 (S); TP 0 / 2 (S); CHLa 0 / 2 (S). PWS. 2014 DELIST Bacteria. VDH Fish Consumption Advisory issued PCBs.
4AROA192.94	VAW-L07L_ROA04A10	A,L	RU16	0	196	S	0	196	S	2	60	S	4	43	S																							DEQ Smith Mountain Lake Pooled Field data- 'FS'. Temp: 2 / 15,851-
4AROA196.05	VAW-L07L_ROA05A14	A,L	RU16	0	139	S	0	139	S	0	58	S	10	42	IM																							DEQ Smith Mountain Lake Pooled Field data- 'FS'. Temp: 2 / 15,851- DO: 196 / 8,940- 2.2% exceedance rate- 'FS'. pH: 27 / 1,233- 2.2% exceedance rate- 'FS'. VDH Fish Consumption Advisory. Waters impaired for PCBs.
4AROA196.98	VAW-L07L_ROA05A14	TM,L	RU14	0	1	IN	0	1	IN	0	1	IN									1	O																Smith Mtn. Lake Pooled Data: Temp 3 / 15,652 (S); DO 298 / 7,776 (S); pH 28 / 1,248 (S); TP 0 / 2 (S); CHLa 0 / 2 (S). PWS. VDH Fish Consumption Advisory (PCB). No additional data.
4AROA198.08	VAW-L04R_ROA01A00	B,TM	RU14	0	4	S	0	4	S	0	4	S																			IM							Four VSCI surveys averaging 46.4 (2010, 2014). 2 surveys 2010. Avg. VSCI 47.3. DEQ validation of SOS citizen monitoring.
4AROA199.20	VAW-L04R_ROA01A00	C,TM,TR	RU14	0	35	S	0	34	S	0	34	S	8	35	IM						1	IM			0	S			1	IM					0	35	S				PWS. ROA PCB TM 2008 two SPMD-'IM (2/2)'. VDH Fish Consumption Advisory (PCB). '06 FT PCB [Apx E-1] 3 sp. exceed.; '06 sediment no PEC exceedances. Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. SWCB approved 12/9/2010. Fed IDs: L04R Roanoke River
4AROA200.06	VAW-L04R_ROA02A00	A	RU14	0	1	IN																																
4AROA202.20	VAW-L04R_ROA05A00	A,B,C,TM,TR	RU14	0	44	S	0	42	S	0	42	S	3	34	IM						1	IM	0	S	0	S	0	S	1	IM	J	0	36	S				ROA PCB TM 2008 two SPMD-'IM (2/2)'. 4 VSCI surveys (2009, 2010 & 2012) Avg. score of 60.8. Remains Impaired. VAEQ99-466 (2003-2005). VDH Fish Consumption Advisory (PCB). 2004 FT/Sed [Apx E-1] 3 sp. Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. SW

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AROA202.32	VAW-L04R_ROA05A00	FPM	RU14	0	2	S	0	2	S										0	S	0	S	0	S	1	O												VDH Fish Consumption Advisory. VAEQ99-466 (2004 - Algal). 2004 sediment exceeds 99th percentile acenaphthene (SV 170) @ 310 ppb. EDAS coded 4AROA202.20.
4AROA204.76	VAW-L04R_ROA06A00	TM	RU14	0	2	S	0	2	S												1	IM							1	IM							ROA PCB TM 2008 two SPMD-'IM (2/2)'. VDH Fish Consumption Advisory (PCB). Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. SWCB approved 12/9/2010. Fed IDs: L04R Roanoke River 24537, 38552, 38632, 38633, 38634, 38635, 38636.
4AROA205.67	VAW-L04R_ROA05A00	A	RU14	0	2	S	0	2	S																												Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. Fed ID: 38634. SWCB approved 12/9/2010.
4AROA205.73	VAW-L04R_ROA05A00	TM	RU14	0	12	S	0	12	S	0	12	S	1	12	IM						0	S															No additional data beyond the 2008 IR (E.coli 8/32). VDH Fish Consumption Advisory. Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. [Fed ID: 38634]. SWCB approved 12/9/2010. Roanoke R. Bacteria TMDL US EPA approved 8/02/2006 [Fed ID: 24538]. SWCB a
4AROA206.27	VAW-L04R_ROA06A00	B,TM	RU14	0	4	S	0	4	S	0	4	S																			FS						2014 DELIST Gen. Std. Benthic. 4 VSCI surveys (2009, 2010 &2012) (EDAS 4AROA206.95). Avg. VSCI 66.2. VDH Fish Consumption Advisory. Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. Fed ID: 38634. SWCB approved 12/9/2010.
4AROA206.80	VAW-L04R_ROA06A00	C	RU14																				0	S	0	S	1	IM	1	IM							VDH Fish Consumption Advisory (PCB). '06 PCB [Apx E-1] 3 sp.; mercury (Hg) [Apx E-1] 2 sp.; no PEC exceedances. '02 FT PCBs [Apx E-1] 1 sp.; sediment no PEC exceedances.
4AROA207.08	VAW-L04R_ROA06A00	TM	RU14	0	2	S	0	2	S												1	O							1	O							VDH Fish Consumption Advisory (PCB). ROA PCB TM 2008 SPMD (1/2)-'OE'. Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. Fed ID: 38634. SWCB approved 12/9/2010.
4AROA210.56	VAW-L03R_ROA01A00	FPM,B	RU14	0	4	S	0	4	S	0	2	S	0	1	IN				0	S	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-260 (2009). 2 surveys 2009. Avg. VSCI 61.2.
4AROA212.17	VAW-L03R_ROA02A00	A,B,TM	RU09	1	6	IM	0	6	S	0	4	S									0	S							0	S	FS						2014 DELIST Gen. Std. Benthic. Insufficient Temp data to delist. VDH Fish Consumption Advisory (PCB). ROA PCB TM 2008 SPMD-'S' Two deployments. Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. SWCB approved 12/9/2010. PCB Fed IDs for: L03R- 38624,
4AROA212.99	VAW-L03R_ROA01A00	A	RU09	0	2	S	0	2	S																												
4AROA215.13	VAW-L03R_ROA03A00	B,TM,SS	RU09	0	6	S	0	6	S	0	6	S	0	2	S						0	S	0	S	0	S					FS							2014 DELIST Gen. Std. Benthic. VDH Fish Consumption Advisory (PCB). 4 VSCI surveys (2009-2010 & 2012). Avg. VSCI 62.9. Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. SWCB approved 12/9/2010. PCB Fed IDs for: L03R- 38624, 38625, 38627, 38629, 38543
4AROA216.33	VAW-L03R_ROA01A00	A,TM	RU09	0	2	S	0	2	S																												
4AROA220.94	VAW-L03R_ROA04A00	TM	RU09																		0	S															Bacteria Impairment carries. Bacteria TMDL Approved. VDH Fish Consumption Advisory (PCB). Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. SWCB approved 12/9/2010. PCB Fed IDs for: L03R- 38624, 38625, 38627, 38629, 38543, 38630. No data since '08 IR.
4AROA224.54	VAW-L03R_ROA06A00	B,TM	RU09	0	4	S	0	4	S	0	4	S									0	S	0	S							FS						PWS. 4 VSCI surveys 2009 & 2010-2012. Avg. VSCI 64.0. VDH Fish Consumption Advisory (PCB). Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. SWCB approved 12/9/2010. PCB Fed IDs for: L03R- 38624, 38625, 38627, 38629, 38543, 38630. No additional E.coli
4AROA227.42	VAW-L03R_ROA06A00	TM,TR	RU09	0	36	S	0	36	S	0	35	S	6	36	S						0	S							0	S		1	35	IN			VDH Fish Consumption Advisory (PCB). ROA PCB TM 2008 SPMD-'S'. Roanoke R. PCB TMDL Study US EPA approved 4/9/2010. SWCB approved 12/9/2010. Fed IDs: L04R Roanoke River 24537, 38552, 38632, 38633, 38634, 38635, 38636. Partial Delist BAC (E.coli) 2008. 2
4AROA-3-SOS	VAW-L03R_ROA01A00	CMON	RU09																											LP						SOS 6 surveys 2008-2011 [3D] Lv. 2. Five surveys Outside Acceptable Season Range- not assessed.
4AROA-5-SOS	VAW-L03R_ROA04A00	CMON	RU09																											LP						3 surveys 2009 & 2011-2012 Lv.2 [3D]. One survey outside acceptable date range.
4AROA-6-SOS	VAW-L04R_ROA08A02	CMON	RU14																											HP						SOS 1 survey 2009 [3C] Lv. 2.
4AROA-SM-BA1-SP	VAW-L07L_ROA02A10	NONA	RU19										0	19	S																					Citizen Smith Mountain Lake Pooled Field data Lv. 3 'FS'. (No additional field data 2012). Temp: 0 / 2,466- 0% exceedance rate- 'FS'. DO: 0 / 125- 0% exceedance rate- 'FS'. pH: 14 / 1,630- 0.8% exceedance rate- 'FS'. DCR Beach station E.coli 'FS'
4AROA-SM-BA2-SP	VAW-L07L_ROA02A10	NONA	RU19										0	29	S																					Citizen Smith Mountain Lake Pooled Field data Lv. 3 'FS'. (No additional field data 2012). Temp: 0 / 2,466- 0% exceedance rate- 'FS'. DO: 0 / 125- 0% exceedance rate- 'FS'. pH: 14 / 1,630- 0.8% exceedance rate- 'FS'. DCR Beach station E.coli 'FS'.
4AROA-SM-BA3-SP	VAW-L07L_ROA02A10	NONA	RU19										0	19	S																					Citizen Smith Mountain Lake Pooled Field data Lv. 3 'FS'. (No additional field data 2012). Temp: 0 / 2,466- 0% exceedance rate- 'FS'. DO: 0 / 125- 0% exceedance rate- 'FS'. pH: 14 / 1,630- 0.8% exceedance rate- 'FS'. DCR Beach station E.coli 'FS'.
4AROC001.00	VAC-L39R_ROC02A06	TM	RU86										0	0	IM																					2012 - No New Bacteria Data 2006 Roanoke River Basin Bacteria TMDL 2007-2008 Roanoke River PCB TMDL Sampling

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status													Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AROC005.35	VAC-L39R_ROC01A98	A,C	RU86	0	12	S	0	12	S	0	12	S	2	12	IM						0	S	0	S	0	S	2	IM	1	O								No New Data Flow below 7Q10 on 6-25-02 & 8-12-02 Reference Gage 02065500 2006 FT/Sediment - Hg 2 Species New Mercury FT Impairment OE - PCB 1 Species
4AROC006.55	VAC-L39R_ROC01A98	FPM,B	RU86	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	W	0	W					FS							2006 Probabilistic Monitoring 4AROC006.55 was only wadeable in the spring of 2006. Further sampling will be improbable due to the overall depth of the stream.
4AROC006.93	VAC-L39R_ROC01A98	FPM,B	RU86	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W	0	W					J							2011 Probmon This was sampled using boatable methods and therefore cannot be assessed using the SCI. This site is on private property and was sampled as part of the Probabilistic Monitoring program, therefore it will not be revisited.
4AROL-1-SOS	VAW-L51R_ROL01A12	CMON	RD20																												LP							SOS 2 surveys '09 & '10 [3D] lv. 2. One survey Outside Acceptable Season Range.
4ARSF000.88	VAW-L01R_RSF02A00	CMON	RU05	2	12	IM	0	12	S	0	12	S	2	12	IM																	0	12	S				
4ARSF014.02	VAW-L01R_RSF03A00	A	RU03	3	12	IM	0	12	S	0	12	S	2	12	IM																	1	12	IN				Extends the temperature and bacteria impairments upstream. No additional data beyond the 2012 IR.
4ARSF-2-SOS	VAW-L01R_RSF01A00	CMON	RU05																												LP							SOS 9 surveys 2007-2012 [3D] Lv. 2. Six surveys Outside Acceptable Season Range- 1 survey invalid.
4ARSL003.20	VAW-L43R_RSL01A12	A	RD07	0	12	S	0	12	S	0	12	S	7	12	IM																	0	12	S				NESTED Dan River Bacteria TMDL Study is U.S. EPA approved on 12/08/2008. Fed ID 35757. SWCB approved 4/28/2009.
4ARUN-FR01-UVA	VAW-L51R_RBC03A02	CMON	RD18							0	1	IN																										
4ARUT000.45	VAC-L60R_RUT01A12	FPM,B	RD39	0	6	S	0	6	S	0	6	S	0	1	W				0	W					0	W					IM							2009 & 2011 & 2014 Bio 4ARUT000.45 is located in an older suburban watershed with abundant impervious surfaces. An historic pollution event at an upgradient industrial facility may be affecting the benthic community as well.
4ARUT002.04	VAC-L60R_RUT01A12	B	RD39	0	3	S	0	3	S	0	3	S																			IM							2009 & 2014 Bio 4ARUT002.04 is located in an older suburban watershed with abundant impervious surfaces. An historic pollution event at an upgradient industrial facility may be affecting the benthic community as well. Beaver have dammed the stream as well.
4ARYE-PT09-UVA	VAW-L43R_RYE02A14	CMON	RD06							0	1	IN																										
4ASBA004.54	VAW-L21R_SBA01A08	A	RU42	0	12	S	0	12	S	0	12	S	6	11	IM																	1	12	IN				Goose Creek Fed ID 24552 and its tributaries are nested within the Staunton River TMDL Watershed. No additional data beyond the 2012 IR.
4ASCB000.16	VAW-L23R_SCB01A00	A	RU49	0	11	S	0	11	S	0	11	S	2	11	IM																							No additional data beyond the 2010 IR.
4ASCB004.58	VAW-L23L_SCB01A02	A,L	RU49	0	74	S	0	39	S	2	22	S	0	7	S						0	S												1	2	IN		Bedford (Stony Creek) Reservoir: Temp 0 / 120 (S); DO 0 / 67 (S); pH 2 / 33 (S); CHLA 0 / 1 (IN). PWS.
4ASCB005.38	VAW-L23R_SCB04A10	FPM,B	RU49	0	2	S	0	2	S	0	2	S	0	1	IN				0	S	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-184 4 surveys 2008-2009. Avg. VSCI 72.3. No Sediment PEC exceedances from 2008 data; metals only.
4ASCB-1-SOS	VAW-L23R_SCB01A00	CMON	RU49																												LP							SOS 1 survey '10 [3D] Lv. 2. Two surveys Outside Acceptable Season Range.
4ASCB-BE01-UVA	VAW-L23R_SCB04A10	CMON	RU49							0	1	IN																										
4ASCE000.26	VAC-L19R_SCE01A00	A,TM	RU47	0	13	S	0	13	S	0	13	S	0	12	S						0	S			0	S												PWS 2007-2008 Roanoke River PCB TMDL Sampling
4ASCE007.71	VAC-L19R_SCE01A00	FPM,B	RU47	0	2	S	0	2	S	0	2	S	1	1	IN				0	W	0	S			0	W					FS							2011 FPM This stream had high sedimentation but good habitat.
4ASCR000.64	VAC-L59R_SCR01A02	A	RD37	0	12	S	0	12	S	0	12	S	0	12	S																							
4ASCR003.33	VAC-L59R_SCR01A02	FPM,B	RD37	0	5	S	0	5	S	0	5	S	0	1	W				0	W	0	S	0	S	0	S					J							2008 Probmon 2011 & 2012 Bio 4ASCR003.33 exhibits significant seasonal variation. Additional data were collected in 2012 and 2014 and seasonal variability continued. Bank scour and sediment are likely stressors within this reach. Additional monitoring is needed to accurately assess this reach.
4ASCR007.06	VAC-L59R_SCR02A02	A,TM	RD37	0	12	S	0	12	S	0	11	S	4	12	IM						0	S	0	S	0	S												
4ASDA000.67	VAW-L14R_SDA01A00	TM	RU29	0	12	S	0	12	S	0	12	S	5	12	IM						0	S										0	12	S				No additional data beyond the 2008 IR where E.coli exceeds in 7 / 12. Pigg River (Storey Creek) TMDL Study U.S. EPA approved on 9/11/2006 [Fed ID 30412]. SWCB approved 6/27/2007. Pigg River Bacteria Implementation Plan SWCB approved 12/13/2010. Origin
4ASDA004.19	VAW-L14R_SDA01A00	PA	RU29	0	12	S	0	12	S	0	12	S	5	12	IM																	1	12	IN				
4ASDA004.94	VAW-L14R_SDA01A00	FPM	RU29	0	2	S	0	1	IN	0	2	S	1	1	IN/O																	0	2	S	0	1	IN	
4ASDA007.24	VAW-L14R_SDA01A00	TM	RU29	0	12	S	0	12	S	0	11	S	8	12	IM						0	S																No additional data beyond the 2010 IR where E.coli exceeds in 10 / 18. Pigg River (Storey Creek) TMDL Study U.S. EPA approved on 9/11/2006 [Fed ID 30412]. SWCB approved 6/27/2007. Pigg River Bacteria Implementation Plan SWCB approved 12/13/2010. Original
4ASDA009.77	VAW-L14R_SDA01A00	TM	RU29	0	12	S	0	12	S	0	11	S	3	12	IM						0	S																No additional data beyond the 2010 IR where E.coli exceeds in 3 / 12. Pigg River (Storey Creek) TMDL Study U.S. EPA approved on 9/11/2006 [Fed ID 30412]. SWCB approved 6/27/2007. Pigg River Bacteria Implementation Plan SWCB approved 12/13/2010. Origin

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ASDA009.79	VAW-L14R_SDA02A00	TM	RU29	0	12	S	0	12	S	0	11	S	5	11	IM						0	S																No additional data beyond the 2010 IR where E.coli exceeds in 10 / 23. Pigg River (Storey Creek) TMDL Study U.S. EPA approved on 9/11/2006 [Fed ID 30412]. SWCB approved 6/27/2007. Pigg River Bacteria Implementation Plan SWCB approved 12/13/2010. Original
4ASDE002.18	VAC-L70R_SDE01A12	FPM,B	RD63	0	3	S	0	3	S	0	3	S	0	1	W				0	W	0	S									IM							2012 FPM This site is on private property and was sampled as part of the Probabilistic Monitoring program, therefore it will not be revisited. The stream had relatively unstable banks and increased sediment deposition. There was a large beaver dam just downstream of the reach in fall 2012 in addition to several smaller beaver dams throughout the sampling reach. 4ASDE002.18 will be linked to 4ASDE004.07 for future monitoring.
4ASDE002.65	VAC-L70R_SDE01A12	FPM,B	RD63	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							J							2010 FPM 4ASDE002.65 has VSCI scores close to the impairment cutoff of 60. Further sampling is required to accurately assess this waterbody, however, this site is on private property and sampled as part of the Probabilistic Monitoring program, therefore it will not be revisited. Link to 4ASDE004.07
4ASDE004.07	VAC-L70R_SDE01A12	B	RD63	0	2	S	0	2	S	0	2	S																			IM							2014 Bio This reach is linked with the PROBMON station 4ASDE002.65 which will not be revisited due to private property access. Sedimentation is the likely stressor for both reaches.
4ASEE003.16	VAW-L23R_SEE01A00	A,B,TM	RU49	0	36	S	0	36	S	0	36	S	10	36	IM						0	S									W	0	36	S				1 VSCI survey 2008-Low flow impacts. Not assessed. Bacteria TMDL Study APPROVED 2/2/01.
4ASEN000.40	VAC-L31R_SEN01A00	A,B	RU61	0	15	S	0	15	S	0	15	S	0	12	S						0	S	0	S							FS							Ambient Sediment Sample 2007-2008 Bio 4ASEN000.40 exhibits seasonal variability and is affected by sedimentation. However, the more recent data indicate support of the aquatic life use narrative water quality standard.
4ASFD-T5-FC	VAW-L10R_SFD01A02	CMON	RU24																													0	6	S				SML TP stream - 'W' No additional data beyond 2012 IR.
4ASHB-1-SOS	VAW-L51R_SHB01A12	CMON	RD20																												LP							SOS 2 surveys '09 & '10 [3D] Lv. 2. One survey Outside Acceptable Season Range.
4ASHR000.24	VAW-L03L_SHR01A06	A,L	RU09	0	244	S	2	127	S	1	14	S	0	7	S						0	S													0	1	IN	Spring Hollow Reservoir pooled data: Temp 0 / 244 (S); DO 2 / 127 (S); pH 1 / 14 (S); CHLa 0 / 1 (IN); No additional data.
4ASIT001.46	VAW-L02R_SIT02A16	FPM	RU06	0	1	IN	0	1	IN	1	1	IN/O	0	1	IN																	0	1	IN	0	1	IN	
4ASKS002.80	VAC-L64R_SKS01A08	A	RD50	0	11	S	0	11	S	0	11	S	2	11	IM						0	S																
4ASLA001.52	VAC-L40R_SLA01A06	A,SS	RU87	0	11	S	0	11	S	0	12	S	3	12	IM						0	S																
4ASLA002.69	VAC-L40R_SLA01A06	SS	RU87																																			2006 - TP = 2/9 OE (2010 No New Data)
4ASLC002.75	VAC-L62R_SLC01A04	A	RD43	0	22	S	0	22	S	0	24	S	6	24	IM						0	S																
4ASMI003.58	VAC-L79R_SMI01A08	A	RL16	0	24	S	2	24	S	1	24	S	4	24	IM						0	S																
4ASMR004.14	VAW-L45R_SMR01A00	A,TM	RD09	0	19	S	0	18	S	0	19	S	4	17	IM						0	S																No additional data beyond the 2008 IR- E.coli 4 /17. 2004 Bacteria Listed. 2/16- 'IM'.
4ASMR004.17	VAW-L45R_SMR01A00	C	RD09																										1	IM	0	S						'07 FT mercury (Hg) [Apx E-1] 2 sp.
4ASMR016.09	VAW-L45R_SMR04A14	A,TM	RD09	0	36	S	0	36	S	0	36	S	6	36	IM						0	S													0	35	S	2010 IR E.coli 15/41- 'IM'. Dan River Bacteria TMDL Study is U.S. EPA approved on 12/08/2008. Fed ID 35757. SWCB approved 4/28/2009.
4ASMR027.44	VAW-L43R_SMR02A02	A	RD06	0	12	S	0	12	S	0	12	S	1	11	S						0	S													1	12	IN	No additional data beyond 2010 IR. Dan River Bacteria TMDL Study is U.S. EPA approved on 12/08/2008. Fed ID 35757. SWCB approved 4/28/2009.
4ASMR031.11	VAW-L43R_SMR03B02	B,A	RD06	0	3	S	0	3	S	0	3	S																			FS							3 surveys 2009-2010. Avg. VSCI 65.3.
4ASMR033.98	VAW-L43R_SMR04A00	A	RD06	3	12	IM	0	11	S	1	12	S	2	12	IM						0	S																No additional data beyond the 2010 IR. 2006 Temp De-list returned with 2010 assessment.
4ASMR-PT08-UVA	VAW-L43R_SMR07A00	CMON	RD06							0	1	IN																										
4ASNA000.20	VAC-L70R_SNA01A00	A,TM	RD64	0	12	S	0	12	S	0	12	S	2	12	IM						0	S																
4ASNA002.84	VAC-L70R_SNA01A00	FPM,B	RD64	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							FS							2009 FPM
4ASNA012.51	VAC-L70R_SNA01A00	TM	RD64	0	12	S	0	12	S	0	11	S	1	12	S						0	S																No New Data
4ASNA015.30	VAC-L70R_SNA01B10	A,B	RD63	0	12	S	0	12	S	0	12	S	4	12	IM						0	S									FS							2008 Bio
4ASNA019.51	VAC-L70R_SNA01A00	TM	RD63	0	11	S	0	12	S	0	11	S	0	12	S						0	S																No New Data
4ASNE005.30	VAC-L69R_SNE01A00	A,TM,B	RD59	0	14	S	0	14	S	0	14	S	1	12	IM						0	S	0	S	0	S					FS							2016 - EC Delist Candidate Banister River Watershed TMDL 2009 Bio
4ASNE010.46	VAC-L69R_SNE01A00	TM	RD59	0	11	S	0	12	S	0	11	S	2	12	IM						0	S																Banister River Watershed TMDL
4ASNF007.64	VAW-L43R_SNF02A04	FPM,B	RD06	0	4	S	0	4	S	0	4	S																			FS							
4ASNP-PT14-UVA	VAW-L50R_NFS01A00	CMON	RD15							0	1	IN																										
4ASNW000.60	VAW-L17R_SNW01A00	TM	RU35	0	36	S	0	36	S	0	36	S	9	35	IM						0	S													0	36	S	Pigg R. Bacteria TMDL [Fed ID 30414] EPA Approved 9/11/2006; SWCB Approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010.
4ASNW016.24	VAW-L17R_SNW02A12	A	RU33	0	12	S	0	12	S	0	12	S	6	11	IM																				0	12	S	Pigg R. Bacteria TMDL [Fed ID 30414] EPA Approved 9/11/2006; SWCB Approved 6/27/2007. Bacteria Implementation Plan SWCB approved 12/13/2010. No additional data beyond the 2012 IR.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ASOO003.12	VAW-L44R_SOO01A00	A,TM	RD08	0	12	S	0	12	S	0	12	S	3	12	IM						0	S										0	12	S				Dan River Bacteria TMDL Study U.S. EPA approved on 12/08/2008. Fed ID 35757. SWCB approved 4/28/2009.
4ASOT000.99	VAW-L51R_SOT01A08	A	RD17	5	24	IM	0	24	S	0	24	S	3	24	IM						0	S										0	24	S				2008 IR TEMP 3/8- 'IM'
4ASOT-FR04-UVA	VAW-L51R_SOT01A08	CMON	RD17							0	1	IN																									
4ASRE006.91	VAW-L54R_SRE01A00	FPM,B	RD30	0	2	S	0	2	S	0	2	S	0	2	S				0	IN	0	IN	0	S							IN	0	2	S	0	2	S	VARS11-024- Boatable site benthic no Index.
4ASRE007.90	VAW-L54R_SRE01A00	PA,TR	RD30	0	49	S	0	49	S	0	49	S	7	48	IM						0	S										1	48	IN				Dan River Bacteria TMDL U.S. EPA approved 12/08/2008. Fed ID: 35756. SWCB approved 4/28/2009. Bacteria (FC) 2006 Listed 6/48.
4ASRE015.43	VAW-L54R_SRE03A00	A,B,TM	RD30	0	20	S	0	20	S	0	20	S									0	S									IM						11 surveys (2007-2012). Avg. VSCI 58.6. Smith River Gen. Std. - Benthic Phased TMDL. Phase I U.S. EPA approved 1/13/2011. Fed IDs: 39703, 39705 (delist), 39706 & 39707. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008. Fed ID: 35756. SWCB approved
4ASRE019.00	VAW-L54R_SRE03A00	A,B,TM	RD26	0	23	S	0	23	S	0	23	S									0	S									IM						11 surveys (2007-2012). Avg. VSCI 54.3.
4ASRE021.58	VAW-L54R_SRE03A02	A,TM	RD26	0	9	S	0	9	S	0	9	S	4	9	IM				0	IN	0	S																No additional data beyond the 2008 IR where E.coli exceeds in 4 / 9- 'IM'. Bacteria (FC) 2002 Listed >1000 (4/29); FC 2004 >400 (6/35).
4ASRE022.30	VAW-L54R_SRE05A00	B,TM	RD26	0	20	S	0	20	S	0	19	S																			IM						11 surveys (2007-2012). Avg. VSCI 57.3. Smith River Gen. Std. - Benthic Phased TMDL. Phase I U.S. EPA approved 1/13/2011. Fed IDs: 39703, 39705 (delist), 39706 & 39707.
4ASRE022.90	VAW-L54R_SRE06A00	B,TM	RD26	0	23	S	0	23	S	0	22	S																			FS						8 surveys 2009-2012. Avg. VSCI 66.6. Benthic Delist 2012. Smith River Gen. Std. - Benthic Phased TMDL. Phase I U.S. EPA approved 1/13/2011. Fed IDs: 39703, 39705 (delist), 39706 & 39707.
4ASRE024.30	VAW-L54R_SRE06A00	B,TM	RD26	0	21	S	0	21	S	0	21	S																			FS						9 surveys 2008-2012. Avg. VSCI 64.3. Benthic Delist 2012. Smith River Gen. Std. - Benthic Phased TMDL. Phase I U.S. EPA approved 1/13/2011. Fed IDs: 39703, 39705 (delist), 39706 & 39707.
4ASRE026.04	VAW-L54R_SRE06A00	B,C,TM	RD26	0	3	S	0	3	S	0	3	S													1	O	1	O			W						'07 FT PCB [Apx E-1] 1 sp.; arsenic (As) [Apx E-2] 1 sp. 2012 Benthic Delist. No benthic collection due to safety concerns.
4ASRE031.00	VAW-L53R_SRE01B06	B,TM	RD24	1	21	S	0	21	S	1	21	S																			FS						9 surveys 2008-2012. Avg. VSCI 59.2. Returns to Listing 2014. 2012 Benthic Delist.
4ASRE032.38	VAW-L53R_SRE01B06	FPM,B	RD24	0	2	S	0	2	S	0	2	S	0	1	IN				0	S	0	S	0	S							IM						VAW05547-331- 2 VSCI surveys 2010. Avg. VSCI 59.7.
4ASRE033.19	VAW-L53R_SRE01B06	A,B,TM,TR	RD24	1	60	IM	0	60	S	0	60	S	8	36	IM				0	S	0	S									FS						Temp 'IM' for 8/4/14 thru 9/2/14 continuous temp monitoring. Device recorded temperature every 30 minutes for 30 days. 2016 IR reveals 20% of the days exceeded the max daily temp at least 10.5% of the day for the Class VI Natural Trout criterion of 20°C.
4ASRE036.55	VAW-L53R_SRE04A00	A	RD22	0	12	S	0	12	S	0	12	S	1	12	IM						0	S															No additional data beyond the 2008 IR where E.coli exceed 3 / 21- 'IM'. Dan River Bacteria TMDL U.S. EPA approved 12/08/2008. Fed ID: 35756. SWCB approved 4/28/2009. There are no additional data beyond the 2008 assessment. Returned to impaired waters status
4ASRE043.54	VAW-L52R_SRE03A00	A,TR	RD22	0	39	S	0	39	S	0	39	S	0	36	S						0	S										0	36	S				Trend Analysis.
4ASRE046.90	VAW-L51L_SRE01A02	A,C,L	RD22	0	636	S	0	336	S	1	42	S	0	21	S						0	S	1	O	0	S	1	IM	0	S					0	2	S	The assessment is carried from the 2014 IR. Philpott 2014/2016 Pooled Data: Temp 0 / 2,857 (S); DO 3 / 1,323 (S); pH 4 / 277 (S); CHLa 0/2 (S); 90th %tile 2011 2.95 µg/L; 2012 90th %tile 2.02 µg/L. 4ASRE046.90- 2007 FT mercury (Hg) >0.3 ppm [Apx E-1]
4ASRE048.98	VAW-L51L_SRE01A02	A,L	RD20	0	640	S	0	298	S	1	41	S	0	21	S						0	S													0	2	S	Philpott 2014/2016 Pooled Data: Temp 0 / 2,857 (S); DO 3 / 1,323 (S); pH 4 / 277 (S); CHLa 0/2 (S); 90th %tile 2011 2.95 µg/L; 2012 90th %tile 2.02 µg/L.
4ASRE052.31	VAW-L51L_SRE02A02	A,L	RD19	0	649	S	2	286	S	1	42	S	0	21	S																						Philpott Reservoir Pooled Data: Temp 0 / 2,857 (S); DO 3 / 1,303 (S); pH 4 / 277 (S); CHLa 0/2 (S). 2007 FT exceeds the WQS based TV for mercury (Hg) 1 sp.; 3 individual Largemouth Bass (41.8 cm) @ 0.59; (40.9 cm) @ 0.563 and (33.2 cm) @ 0.374 ppm.
4ASRE056.06	VAW-L51L_SRE03A02	A,L	RD19	0	357	S	1	226	S	1	54	S	0	32	S																						Philpott Reservoir Pooled Data: Temp 0 / 2,857 (S); DO 3 / 1,303 (S); pH 4 / 277 (S); CHLa 0/2 (S). 2007 FT exceeds the WQS based TV for mercury (Hg) 1 sp.; 3 individual Largemouth Bass (41.8 cm) @ 0.59; (40.9 cm) @ 0.563 and (33.2 cm) @ 0.374 ppm.
4ASRE063.69	VAW-L51R_SRE06A00	FPM,B,PA	RD17	2	15	IN	0	15	S	0	15	IN	1	14	S				0	IN	0	IN									FS	0	15	S	0	2		VARS11-008- 1 survey 2012. VSCI 79.7. No sediment collection.
4ASRE075.69	VAW-L50R_SRE01A00	A,TR	RD15	9	36	IM	0	36	S	1	36	S	8	36	IM						0	S										0	36	S				Dan River Bacteria TMDL U.S. EPA approved 12/08/2008 Fed ID: 35748. SWCB approved 4/28/2009.
4ASRE-3-SOS	VAW-L51R_SRE07A00	CMON	RD17																											LP						SOS 11 surveys 2007-2012 [3D] Lv. 2. Four surveys Outside Acceptable Season Range.
4ASRN005.14	VAC-L39L_SRN01L00	L	RU81	0	59	S	0	37	S	0	59	S	1	21	S						0	S	0	S	0	S						0	3	S	0	3	S	Algaecide Use 2008-2010 Keysville Reservoir
4ASRV000.20	VAC-L58R_SRV01A00	A,SS,TM	RD36	0	12	S	0	12	S	0	12	S	2	12	IM						0	S															Dan River Watershed TMDL
4ASRV007.46	VAC-L58R_SRV02A04	A	RD36	0	12	S	0	12	S	0	11	S	0	12	S						0	S															No New Data
4ASRV010.68	VAC-L58R_SRV02A04	A	RD36	0	12	S	0	12	S	0	12	S	1	12	S						0	S															
4ASRV012.19	VAC-L58R_SRV02A04	FPM	RD36																												1	1	IN				2001 Probabilistic Monitoring
4ASRV015.06	VAC-L58R_SRV03A06	B	RD36	0	2	S	0	2	S	0	2	S																			FS						2012 Bio Habitat and taxa scores indicate a balanced community.
4ASRV018.79	VAC-L58R_SRV03A06	TM	RD35	0	11	S	0	11	S	0	11	S	1	12	S						0	S															

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status													Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ASRV022.99	VAC-L58R_SRV04A06	A,B	RD35	0	12	S	0	12	S	0	14	S	1	12	IM						0	S									FS							2014 - No New Data 2009 Bio This site was sampled as a potential reference station based on water quality data and instream habitat.
4ASRV025.40	VAC-L58R_SRV04A06	A	RD35	0	12	S	0	12	S	0	12	S	6	12	IM						0	S																
4ASRW002.32	VAC-L65R_SRW02A08	TM,B	RD52	0	2	S	0	2	S	0	2	S									0	S									IM							2011 Bio Habitat scores and taxa lists indicate sedimentation as a stressor causing an unbalanced community.
4ASSC002.98	VAC-L30R_SSC01A02	TM	RU62	0	11	S	0	11	S	0	11	S	6	12	IM																								No New Data 2006 Roanoke Basin TMDL
4ASSC012.62	VAC-L30R_SSC02A12	FPM,B	RU62	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	W							J							2009 FPM - No Fall Sample 4ASSC012.62 is a probmon site on private property. High beaver activity has turned this reach of stream into a slow moving swamp. The VSCI is not tuned to assessing swamp waters. The single sample with such a low VSCI score warrants further study at a suitably accessible site within the watershed, without beaver activity.
4ASSP000.64	VAC-L58R_SSP01A06	FPM,B	RD34	0	2	S	0	2	S	0	2	S	1	1	IN				0	W	0	S									J							2012 FPM Additional data needed to accurately characterize the benthic community; however this site is on private property and was sampled as part of the Probabilistic Monitoring program, therefore it will not be revisited.
4ASSP002.44	VAC-L58R_SSP01A06	A,B	RD34	0	13	S	0	13	S	0	14	S	0	12	S						0	S									FS							2014 Bio 4ASSP002.44 is linked with 4ASSP000.64 a 2012 PROBMON station assessed J. Sedimentation is a limiting stressor within the reach but the community seems balanced.
4ASSP004.06	VAC-L58R_SSP01A06	FPM,B	RD34	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							FS							2009 FPM 4ASSP004.06 exhibits seasonal variability around the impairment threshold of 60 but scores well in the fall. Bank scour and sedimentation seem to be probable stressors within the reach. This reach is on private property and was sampled as part of the Probabilistic Monitoring program and therefore will not be revisited. Link with 4ASSP002.44 sampled in 2014 and assessed as FS
4ASUC001.31	VAC-L34R_SUC01A06	A,B	RU69	0	13	S	0	13	S	0	13	S	4	12	IM						0	S									FS							2009 Bio
4ASUT000.89	VAC-L58R_SUT01A08	A,B	RD36	0	12	S	0	12	S	0	12	S	3	10	IM						0	S									FS							2010 Bio
4ASWA002.97	VAC-L58R_SWA01A08	TM	RD36	0	11	S	0	11	S	0	11	S	3	12	IM						0	S																No New Data
4ASWC-1-SOS	VAW-L07R_SWC01A02	CMON	RU18																											LP							SOS 4 surveys 2010-2011 [3D] Lv. 2.
4ASWC-T13-FC	VAW-L07R_SWC01A02	CMON	RU18																												0	17	S					SML TP stream - 'W' No additional data beyond 2012 IR.
4ASYC002.02	VAW-L50R_SYC01A12	A	RD16	0	12	S	0	12	S	0	12	S	2	12	IM																	0	12	S					No additional data beyond the 2012 IR.
4ATCC003.71	VAW-L17R_TCC01A06	TM	RU34	0	12	S	0	12	S	0	12	S	2	12	IM						0	S										0	12	S					Originally Listed 2008. No additional data beyond the 2012 IR.
4ATEL001.02	VAW-L08R_TEL01A00	A,B,TM,TR	RU22	0	40	S	0	40	S	0	40	S	15	36	IM						0	S									IM	1	35	IN				4 surveys 2010-2011. Avg. VSCI 58.3. Bacteria TMDL Study APPROVED 12/04/2001. Stream Flow
4ATIP002.55	VAC-L36R_TIP01A00	A,TM,B	RU74	0	17	S	0	17	S	0	17	S	4	12	IM						0	S									FS							2006 Roanoke River Bacteria TMDL 2008/2011/2012/2014 Bio Additional data collected in 2012 and 2014 continue the trend of seasonal variability. Spring VSCI scores are below the assessment threshold of 60 and fall scores are well above. Riparian vegetation is nearly optimal while bank scour and sediment scores are suboptimal. Sediment deposition is a probable stressor within this reach. Snag habitat is a limiting factor in the VSCI score for this reach. 4ATIP002.55, while seasonally variable, is very stable year to year.
4ATIP008.76	VAC-L36R_TIP02A06	TM	RU74	0	11	S	0	11	S	0	11	S	6	12	IM																								No New Data 2006 Roanoke Basin TMDL
4ATIP013.21	VAC-L36R_TIP02A06	TM	RU74	0	11	S	0	11	S	0	11	S	4	12	IM																								No New Data 2006 Roanoke Basin TMDL
4A-TIP-CHA12-SSWCD	VAC-L36R_TIP02A06	CMON	RU74	0	10	S							7	37	IN/O																								Southside SWCD Station - Level II Coliscan Category 3C
4A-TIP-CHA13-SSWCD	VAC-L36R_TIP01A00	CMON	RU74	0	10	S							8	33	IN/O																								Southside SWCD Station - Level II Coliscan Category 3C
4A-TIP-CHA14-SSWCD	VAC-L36R_TIP02A06	CMON	RU74	0	10	S							9	37	IN/O																								Southside SWCD Station - Level II Coliscan Category 3C
4ATKR000.17	VAW-L05R_TKR01A00	C	RU13																				0	S	12	O	0	S	1	IM								VDH Fish Consumption Advisory (PCB). '06 FT PCB Apx [E-1] 3 sp.; lead (Pb) detected 3 sp.; sediment exceeds PEC SV (22,800 ppb) Total PAH @967,921 ppb; NAP (561) @2,065; Fluorene (536) @9,967; PHH (1170) @245,951; ATH(845) @27,045; FTH (2230) @198,509; Py
4ATKR000.69	VAW-L05R_TKR01A00	A,B,TR	RU13	4	36	IM	0	35	S	0	35	S	13	35	IM						0	S	0	S							IM	0	36					1 VSCI survey 2008. VSCI 50.9. Tinker Creek Bacteria TMDL Study US EPA approved 8/05/2004. Fed IDs: 7787 (FC), 21671 & 21672. SWCB approved 12/02/2004. Originally 303(d) Listed in 1998 for FC. 2006 Trend Analysis.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4ATKR009.30	VAW-L05R_TKR01B06	A,C,TM	RU11																		0	S			9	O	0	S	0	S									No additional data beyond the 2008 IR (2008 Temp 3/23- 'IM'; E.coli 10/18- 'IM'). Tinker Creek Bacteria TMDL Study US EPA approved 8/05/2004. Fed IDs: 7787 (FC), 21671 & 21672. SWCB approved 12/02/2004. Originally 303(d) Listed in 1998 for FC. '06 FT/
4ATKR015.88	VAW-L05R_TKR02A00	A,TM	RU11	0	12	S	0	12	S	0	11	S	5	12	IM						0	S										0	12	S				Tinker Creek Bacteria TMDL Study US EPA approved 8/05/2004. Fed IDs: 7787 (FC), 21671 & 21672. SWCB approved 12/02/2004. Originally 303(d) Listed in 1998 for FC.
4ATKR-1-SOS	VAW-L05R_TKR01B06	CMON	RU11																											LP							SOS 2 surveys 2009 & 2010 [3D] Lv.2.
4ATKR-2-SOS	VAW-L05R_TKR02A00	CMON	RU11																											LP							SOS 2 surveys 2010 [3D] Lv.2. Two surveys Outside Acceptable Season Range.
4ATKR-4-SOS	VAW-L05R_TKR01B06	CMON	RU11																											W							SOS 1 survey 2009 [3A] Lv. 2. One survey Outside Acceptable Date Range. Not assessed.
4ATKR-5-SOS	VAW-L05R_TKR02A00	CMON	RU11																											LP							SOS 10 surveys 2007-2010 [3D] Lv.2.
4ATKR-6-SOS	VAW-L05R_TKR01B06	CMON	RU11																											LP							SOS 3 surveys 2007 & 2010 [3D] Lv. 2. Two surveys Outside Acceptable Season Range.
4ATKR-7-SOS	VAW-L05R_TKR01A00	CMON	RU13																											HP							SOS 4 surveys 2009-2011 Lv. 2. [3C]. Two surveys Outside Acceptable Season Range.
4ATKR-8-SOS	VAW-L05R_TKR02A00	CMON	RU11																											LP							SOS 7 surveys 2009-2012 [3D] Lv. 2. Four surveys Outside Acceptable Season Range.
4ATMA001.46	VAW-L18R_TMA01A06	A,TM	RU36	0	11	S	0	11	S	0	11	S	4	12	IM						0	S										1	12	IN				No additional data beyond the 2008 IR where E.coli exceeds in 5 / 21- 'IM'. Pigg R. Bacteria TMDL [Fed ID 30414] EPA Approved 9/11/2006; SWCB Approved 6/27/2007.
4ATRB000.97	VAC-L28R_TRB01A02	FPM,B	RU59	0	2	S	0	2	S	0	2	S	0	1	W				0	W											FS							2013 Probmon 4ATRB000.97 is a 2013 PROBMON station and is on private property therefore it will not be revisited.
4ATRB001.36	VAC-L28R_TRB01A02	B	RU59	0	7	S	0	7	S	0	7	S																			FS							2008/2011/2012/2014 Bio 4ATRB001.36 exhibited seasonal variation. Additional data were collected in 2012 and seasonal variability had decreased. Upgradient development has occurred and may have stabilized over time. Data from 2014 show a balanced community. 4ATRB001.36 is sampled as a bio trend station and will be revisited in the future (2017)
4ATRD000.04	VAC-L58R_TRD01A06	A,B	RD34	0	18	S	0	18	S	0	18	S	2	11	IM						0	S									FS							2009-2010/2013/2014 Bio 4ATRD000.04 exhibited seasonal variability and was monitored again in 2013 and 2014. This reach is characterized by long sandy reaches and small gravel riffles. The benthic community is dependent on the snag habitat provided by the wooded riparian areas. The spring 2013 sample (VSCI of 30.4) was dominated by pollution tolerant Chironomidae due to the late sample date (5/6/13). 2014 samples showed a balanced community with more normal levels of tolerant families. 4ATRD000.04 will be monitored again in 2017.
4ATRD000.35	VAC-L58R_TRD01A06	FPM,B	RD34	0	3	S	0	3	S	0	2	S	1	2	IN				0	W	0	S	0	S	0	S					FS							No New Data 2005-2006 Carryover Probabilistic Monitoring Excellent riparian zone.
4ATRO001.16	VAC-L57R_TRO01A08	A,B	RD32	0	15	S	0	15	S	0	15	S	1	12	S						0	S									J							2010/2014 Bio 4ATRO001.16 continues to exhibit high seasonal variability. Additional sampling in 2014 continues this trend. The spring 2014 sample (5/9/14) is dominated by tolerant Chironomidae taxa but otherwise is indicative of a diverse community. Monitoring will continue in 2016.
4ATRR001.92	VAC-L72R_TRR01A00	A,B,TM	RD66	0	16	S	0	16	S	0	16	S	4	12	IM						0	S									IM							2005-2006/2011-2012 Bio 4ATRR001.92 exhibits some seasonal variability near the assessment threshold of 60. The community depends greatly on snag habitat which is limited by scoured banks and sandy bottoms. Sediment is a likely stressor.
4A-TUR-CHA10-SSWCD	VAC-L37R_ZZZ01B14	CMON	RU78										5	37	IN/O																							
4ATWN000.22	VAW-L52R_TWN01A12	A	RD21	0	12	S	0	12	S	0	12	S	4	12	IM																	0	12	S				No additional data beyond the 2012 IR.
4ATWT000.32	VAC-L39R_TWT01A98	A	RU84	0	10	S	0	10	S	0	12	S	4	12	IM						0	S																2012 - EC Impairment
4ATWT003.36	VAC-L39R_TWT01A98	B	RU84	0	2	S	0	2	S	0	2	S							0	S	0	S	0	S	0	S					IM							2004 Twitty's Creek TMDL The benthic TMDL completed in 2004 identified sediment as the stressor to the benthic community. 2008/2011 Bio 4ATWT003.36 exhibits seasonal variability.
4ATWT006.40	VAC-L39R_TWT01A98	B	RU84	0	2	S	0	2	S	0	2	S							0	S	0	S	0	S	0	S					IM							2004 Twitty's Creek TMDL The benthic TMDL completed in 2004 identified sediment as the stressor to the benthic community. 2008/2011 Bio 4ATWT006.40 exhibits seasonal variability.
4ATWT006.63	VAC-L39R_TWT01A98	C	RU84																		2	O	0	S	1	O	0	S										2006 FT/Sediment - Hg 1 Species (OE) Total PAH & Naphthalene in Sediment Listed in Fish Tissue and Sediment Results as 4ATWT009.63
4ATWT008.59	VAC-L39R_TWT01A98	B	RU84																											IM							Reference Station - 2004 Twitty's Creek TMDL The benthic TMDL completed in 2004 identified sediment as the stressor to the benthic community. 2010 - No New Data
4ATYS001.25	VAC-L37R_TYS01A08	A	RU78	0	12	S	0	12	S	0	12	S	8	12	IM						0	S																

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AWEL000.59	VAW-L26R_WEL01A02	FPM,B	RU53	0	2	S	0	2	S	0	2	S	1	1	IN				0	S	0	S	0	S	0	S					IM							VAEQ99-586 (2005). No Sediment PEC exceedances from 2005 data.
4AWEL001.14	VAW-L26R_WEL01A02	A,B,TM	RU53	0	16	S	0	16	S	0	16	S	11	12	IM						0	S									IM							4 surveys 2011-2012. Avg. VSCI 50.2.
4AWFC002.12	VAC-L39R_WFC01A00	A,TR	RU83	0	35	S	0	35	S	0	36	S	10	36	IM						0	S																
4AWFE000.60	VAC-L62R_WFE01A08	B	RD44	0	1	W	0	1	W	0	1	W																			J							2012 Bio This stream had marginal bank stability and increased sedimentation as well as marginal habitat.
4AWFE001.57	VAC-L62R_WFE01A08	FPM,B	RD44	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	W	0	W					IM							2007 Probabilistic Monitoring 4AWFE001.57 has VSCI scores very close to the impairment cutoff score of 60. Further sampling is required to accurately assess the waterbody. This station was a former PROBMON site on private property. Downstream access to resample is limited but should be pursued.
4AWID-PT02-UVA	VAW-L51R_WID01A02	CMON	RD17							0	1	IN																									
4AWLF000.09	VAW-L21R_WLF01A08	A	RU41	0	9	S	0	9	S	0	9	S	3	9	IM						0	S																No additional data beyond the 2008 IR. Goose Creek Fed ID 24552 and its tributaries are nested within the Staunton River TMDL Watershed.
4AWLF001.20	VAW-L21R_WLF01A08	FPM,B	RU41	0	2	S	0	2	S	0	2	S	1	1	IN				0	IN	0	S	0	S							IM							VAW05547-296- 2 surveys 2010. Avg. VSCI 51.4.
4AWLN000.40	VAW-L02R_WLN01A00	TM	RU07	0	3	S	0	2	S	0	3	S	1	3	IM						0	S																No additional data beyond the 2008 IR (E.coli 13 of 27)-'IM'.
4AWMB001.07	VAC-L39R_WMB01A08	A	RU83	0	12	S	0	12	S	0	12	S	7	12	IM						0	S																
4AWNN000.10	VAC-L71R_WNN01A06	FPM,B	RD67	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							FS							2010 FPM
4AWNN000.99	VAC-L71R_WNN01A06	A	RD67										1	3	IM																						
4AWNS004.02	VAC-L62R_WNS01A04	A	RD45	0	12	S	0	12	S	0	12	S	2	12	IM																						2016 - New EC Impairment
4AWOA002.43	VAC-L65R_WOA01A10	A	RD54	0	12	S	0	12	S	0	11	S	6	12	IM						0	S																No New Data
4AWPP002.53	VAC-L30R_WPP01A02	TM,A,B	RU64	0	16	S	0	16	S	0	17	S	3	12	IM																J							2006 Roanoke Basin TMDL 2008/2011/2012 Bio 4AWPP002.53 exhibits drastic seasonal variation. The habitat is somewhat lacking, but there was plenty of large woody debris present. The spring scores are dominated by tolerant Chironomidae taxa. Sediment is a probable stressor: however, the community has the potential to be quite diverse. Monitoring will continue in 2017.
4AWRN000.43	VAC-L68R_WRN01A00	A,TM,B	RD57	0	16	S	0	16	S	0	16	S	5	11	IM						0	S									FS							2009/2013 Bio 4AWRN000.43 exhibits significant seasonal variation and VSCI scores close to the impairment cutoff. Additional sampling should improve the accuracy of the assessment.
4AWRN005.50	VAC-L68R_WRN02A06	A,B	RD56	0	16	S	0	16	S	0	16	S	6	12	IM																IM							2009/2013 Bio 4AWRN005.50 exhibited significant seasonal variation. Additional data were collected to accurately characterize the stream community. 2013 data are dominated by tolerant Chironomidae taxa and may indicate sediment as a probable stressor. PWS
4AWTH000.40	VAW-L12L_WTH01A10	A,L	RU27	0	1111	S	19	726	S	1	78	S	0	40	S																						Smith Mtn. Lake 2016 Pooled Data: Temp 2 / 15,851 (S); DO 196 / 8940 (S); pH 27 / 1,233 (S); TP 0 / 2 (S); CHLa 0 / 2 (S). PWS. NEW-1. VDH Fish Consumption Advisory issued PCBs 7/27/2005. No VDH Drinking Water Advisory.
4AXCN000.31	VAC-L19R_XCN01A02	B	RU48	0	4	S	0	4	S	0	4	S																			IM							2012/2014 Bio 4AXCN000.31 appears to be negatively affected by high nutrient levels and suburban storm flows. Recent data indicate a slight improvement from the 2008 data but nutrients and sedimentation are still primary stressors.
4AXDK000.94	VAC-L63R_XDK01A06	TM	RD47										4	11	IM																						2014 - No New Data
4AXKD003.34	VAW-L07L_XKD01A02	A,L	RU17	0	91	S	0	45	S	5	26	IM	0	7	S						0	S													0	1	IN	No additional data beyond the 2012 IR. Beaverdam Creek Res.: Temp 0 / 150 (S); DO 0 / 69 (S); pH 0 / 26 (S,B); CHLa 0 / 1 (IN). This lake has been submitted for removal from the WQS section 187 Lakes List.
4AXKF000.20	VAW-L08R_XKF01A06	TM	RU22										3	3	IM																						No additional data beyond the 2008 IR where E.coli exceeds 5 / 5- 'IM'. Middle Blackwater River Bacteria TMDL Study U.S. EPA approved 12/04/2001. SWCB approved 6/17/2004. [Fed. ID 1887 / 1889 / 9633]. Bacteria Implementation Plan SWCB approved 6/17/2004.
4AXLN000.00	VAC-L19R_XLN01A02	TM	RU48	0	2	S	0	2	S	0	2	S									1	O																2007-2008 Roanoke River PCB TMDL Sampling PCB Violation - 1,489,098 pg/L
4AXLN000.25	VAC-L19R_XLN01A02	SS	RU48																						1	O												2000 PCB Altavista/Hurt Soil & Sediment SS
4AXMA000.85	VAC-L28R_XMA01A02	TM	RU57																																			PWS; TMDL Surface Observation; Big Otter FC TMDL Approved 2006 FC bacteria: 1/1 = IN
4AXMC000.54	VAC-L40R_XMC01A06	SS	RU87	0	6	S	0	6	S	0	6	S	2	5	IM						0	S																PRO Hog Farm Special Study & Follow-up
4A-XMC-CHA03-SSWCD	VAC-L40R_XMC01A06	CMON	RU87	0	10	S							4	37	IN/O																						Southside SWCD Station - Level II Coliscan Category 3C
4AXMP000.44	VAW-L53R_XMP01A06	TM,B	RD24	0	15	S	0	15	S	0	15	S	5	11	IM																J	0	12	S				Four surveys with average VSCI score of 52.3 (2013-2014).
4AXMP001.26	VAW-L53R_XMP01A06	TM,B	RD24	0	1	IN	0	1	IN	0	1	IN																			IM							1 VSCI survey (Fall 2006).
4AXMV000.63	VAW-L01R_XMV01A10	FPM,B	RU04	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							IM							VAW05547-095- 2 surveys 2007. Avg. 54.6. VSCI 2007 sediment metals only.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AXMY000.22	VAW-L17R_XMY01A08	B,FPM	RU34	0	2	S	0	2	S	0	2	S																			FS	0	2	S				Two 2012 VSCI surveys with an average score of 61.8.
4AXNA001.18	VAW-L07R_XNA02A12	FPM,B	RU16	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-328- 2 surveys 2010. Avg. VSCI 61.6.
4AXNC000.10	VAW-L20R_XNC01A12	FPM,B	RU39	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VAW05547-232- 2 surveys 2009. Avg. VSCI 72.1.
4AXNE000.48	VAW-L25R_XNE01A12	FPM,B	RU51	0	1	IN	0	1	IN	0	1	IN	0	1	IN				0	IN	0	S	0	S							W	0	2	S	0	1	IN	VAW05547-248 (2009). Not assessed - headwater VSCI not applicable.
4AXNK-T14-FC	VAW-L07R_XNK01A10	CMON	RU19																												2	28	IN				SML TP stream - 'W' No additional data beyond 2012 IR.
4AXNU-SCR08-FC	VAW-L07L_ROA01A10	CMON	RU19																																		Secchi depth only.
4AXNV-SCR07-FC	VAW-L07L_ROA01A10	CMON	RU19																																		Secchi disk only.
4AXNX-T8-FC	VAW-L10R_XNX01A10	CMON	RU26																												0	13	S				SML TP stream - 'W' No additional data beyond 2012 IR.
4AXNY-T7-FC	VAW-L10R_XNY01A10	CMON	RU26																												0	16	S				SML TP stream - 'W' No additional data beyond 2012 IR.
4AXOC-1-SOS	VAW-L07R_XOC02A10	CMON	RU19																												LP						SOS 9 surveys '07, '09 & '10 [3D] Lv. 2. One survey Outside Acceptable Season Range.
4AXOD000.38	VAW-L26R_XOD01A14	FPM,B	RU54	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VARS11-243- 2 surveys 2011. Avg. VSCI 65.1. No sediment excursions of PEC SVs- metals only.
4AXOE001.26	VAW-L42R_XOE01A14	FPM,B	RD03	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S									FS	0	2	S	0	1	IN	VARS11-101- 2 surveys 2012. Avg. VSCI 79.6. No sediment collection.
4AXOE-PT05-UVA	VAW-L42R_XOE01A14	CMON	RD03							0	1	IN																									
4AXOF001.26	VAW-L17R_XOF02A14	FPM,B	RU34	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S									FS	0	2	S	0	1	IN	VARS11-110- 2 surveys 2012. Avg. VSCI 74.1. No sediment collection.
4AXOH000.06	VAW-L20R_XOH01A16	PA	RU39	0	13	S	0	13	S	0	13	S	0	10	S				0	IN	0	S										0	11	S	0	1	IN	
4AXOI000.04	VAW-L20R_XOI01A16	FPM	RU39	0	2	S	0	2	S	0	2	S	0	2	S																	0	2	S				
4AXOL000.94	VAW-L20R_XOL01A14	FPM,B	RU39	0	4	S	0	4	S	0	4	S	0	2	S				0	IN	0	S										J	0	4	S	0	2	S	VARS11-004- 2 surveys 2012. Avg. VSCI 50.0. No sediment collection.
4AXOM-1-SOS	VAW-L07R_XOM01A12	CMON	RU18																												HP						SOS 10 surveys 2009-2012 [3C] Lv. 2. Five surveys Outside Acceptable Season Range.
4AXON-1-USPS	VAW-L11R_XON01A12	USPS	RU25	0	27	S	0	25	S	0	26	S																									Lv. 3
4AXOO-5-USPS	VAW-L11R_XOO01A12	USPS	RU25	0	26	S	0	24	S	0	26	S																									Lv. 3
4AXOQ-FL04-UVA	VAW-L01R_LKF01A02	CMON	RU01							0	1	IN																									
4AXOR-PT06-UVA	VAW-L42R_LDR20A02	CMON	RD03							0	1	IN																									
4AXSP001.93	VAW-L44R_XSP02A14	FPM,B	RD08	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS	0	2	S	0	1	IN	VARS11-040- 2 surveys 2011. Avg. VSCI 72.0.
4AXUO000.49	VAW-L07R_XUO01A06	FPM,B	RU19	0	2	S	0	2	S	0	1	S	0	1	IN						0	S	0	S	0	S					IM						VAEQ99-456- 2 surveys 2008. Avg. VSCI 47.9.
4AXUP000.06	VAC-L31R_XUP01A06	FPM,B	RU61																0	W											IM						2011/2013 Bio Sediment and nutrients are primary stressors to this reach. VSCI scores exhibit seasonal variability over several years.
4AXUQ000.00	VAC-L78R_XUQ01A04	SS	RL11																		2	O										5	6	IN/O				Formerly ST AB No New Data!! 2006 FC bacteria: 2/4 = IM
4AXUS000.65	VAC-L70R_XUS01A08	FPM,B	RD64	0	1	W	0	1	W				0	1	W				0	W	0	W	0	W	0	W					FS							2005 Probabilistic Monitoring Stable riffles, some evidence of storm flow-related bank failure.
4AXUZ000.03	VAC-L65R_XUZ01A10	FPM,B	RD54	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	S	0	S	0	S					J						2007 Probmon 4AXUZ000.03 is a small un-named tributary to the Banister River which was sampled as a probabilistic site in the spring of 2007. Access to the site is limited by private landowners and additional sampling will be difficult. The stream was not flowing during the fall 2007 sampling event.
4AXVK001.44	VAC-L34R_XVK01A12	FPM,B	RU70	0	3	S	0	3	S	0	3	S	1	2	IN				0	S	0	S	0	S							IM						2009-2010 FPM 4AXVK001.44 is a very small intermittent stream within the PROBMON program. Sampling in the fall of 2010 was halted due to lack of flow. The site is within an agricultural watershed and cattle do have direct access to the stream. Access to the site is limited by private landowners and additional sampling will be difficult. The intermittent nature of the stream makes it non-target for the VSCI
4AXVL000.82	VAC-L75R_XVL01A12	FPM,B	RL03	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	W							J						2009 FPM 4AXVL000.82 is a small stream within the PROBMON program. The fall sample was halted due to a lack of flow. Access to the site is limited by private landowners and additional sampling will be difficult. The intermittent nature of the stream makes it non-target for the VSCI
4AXVN001.55	VAC-L41R_XVN01A12	FPM,B	RU88	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	W							J						2010 Bio 4AXVN001.55 exhibits significant seasonal variation. Additional data is needed to accurately characterize the status of the stream community. This site is on private property and was sampled as part of the Probabilistic Monitoring program: therefore, it will not be revisited.
4AXVO000.50	VAC-L39R_XVO01A14	FPM,B	RU81	0	2	S	0	2	S	0	2	S	1	1	IN				0	W	0	S									IM						2012 FPM 4AXVO000.50 is a small stream within the PROBMON program. This stream was incised and a likely stressor is sedimentation. The habitat was marginal and the banks were unstable. Access to the site is limited by private landowners and additional sampling will not be possible.
4AXVP000.20	VAC-L61R_XVP01A16	FPM,B	RD38	0	2	S	0	2	S	0	2	S	0	1	W																FS							2013 FPM
4AXVQ000.77	VAC-L62R_XVQ01A16	FPM,B	RD43	0	2	S	0	2	S	0	2	S	1	1	IN				0	W											IM						2013 FPM 4AXVQ000.77 is a small stream within the PROBMON program. Access to the site is limited by private landowners and additional sampling will not be possible.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorus			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Roanoke and Yadkin Rivers Basin																																					
4AXVQ000.97	VAC-L62R_XVQ01A16	PA	RD43	0	12	S	0	12	S	0	12	S	4	12	IM																							2016 - New bacteria impairment
4AXVR-1-SOS	VAW-L05R_XVR01A14	CMON	RU13																												LP							SOS 2 surveys '11 [3D] 'v. 2. Two surveys Outside Acceptable Season Range.
4AXVR-2-RVTU	VAW-L05R_XVR01A14	CMON	RU13	0	3	S							0	3	IN																							RVTU Temp Lv.3 / Ecoli [3D] Lv. 2.
4AXVS-1-SOS	VAW-L04R_XVS01A14	CMON	RU14																												LP							SOS 2 surveys 2011-2012 [3D] Lv. 2.
4AXVT-1-SOS	VAW-L14R_XVT01A14	CMON	RU29																												LP							1 survey 2012 [3D] Lv. 2.
4AXVU-1-SOS	VAW-L14R_XVU01A14	CMON	RU30																												LP							1 survey 2012 [3D] Lv. 2. One survey Outside Acceptable Date Range.
4AXVV000.54	VAC-L41R_XVV01A16	FPM,B	RU88	0	2	S	0	2	S	0	2	S	1	1	IN				0	W											J							2014 FPM 4AXVV000.54 is a small stream within the PROBMON program. Access to the site is limited by private landowners and additional sampling will not be possible.
4BARA035.07	VAW-M03R_ARA01A00	C	YA03																								1	IM	0	S								PWS. '07 FT mercury (Hg) [Apx E-1] 3 sp.
4BARA035.13	VAW-M03R_ARA01A00	A	YA03	0	9	S	0	9	S	0	9	S	3	9	IM						0	S																No additional data beyond the 2008 IR where E.coli 3/9- 'IM'.
4BBIR002.57	VAW-M03R_BIR01A14	FPM,B	YA03	0	2	S	0	2	S	0	2	S	0	1	IN				0	IN	0	S	0	S							FS							VARS11-239- 2 surveys 2011. Avg. VSCI 76.3.
4BELK000.96	VAS-M02R_ELK01A02	FPM,PA,B	YA05	0	2	S	0	2	S	0	2	S	0	1	IN																FS	0	2	S				@ Rt 823 crossing, Class VI, PWS VSCI: 08/29/2011 70.16 05/12/2011 78.23 PWS is supported
4BJOH004.45	VAW-M03R_JOH01A02	A	YA04	2	12	IM	0	12	S	0	12	S	2	12	IM						0	S										0	12	S				PWS. Temp initially Listed 2008 2/9- 'IM'.
4BLOV007.92	VAS-M02R_LOV01A02	A,C	YA05	3	12	IM	0	12	S	0	12	S	7	12	IM												0	S	2	IM		0	12	S				Bridge. # 6089 on SR 687 off SR 686, Class V Carryover: Fish station sampled 12 June 2007, metals, PCB and pesticide analysis. DDT and DDE exceed TV in a redhorse sucker. No TSV for metals in fish are exceeded.
4BLOV008.45	VAS-M02L_LOV01B10	C	YA05																								11	IM	6	IM								Carryover from 2014 IR: Lovills Creek Lake-Class VI Fish station sampled on 08 Aug 2007; metals, PCB and pesticide analysis: six largemouth bass exceeded the VDH level of concern for mercury. In addition, DDD, DDE and DDT exceeded Department of Environmental Quality screening values in carp. VDH recommends no more than two meals per month of largemouth bass due to mercury contamination.
4BPAU007.19	VAS-M02R_PAU01A02	A	YA07	0	12	S	0	12	S	0	12	S	1	12	S																	0	12	S				Bra. # 6091 on SR 690 off SR 52, Class V
4BSTE007.99	VAS-M02R_STE01A02	A	YA06	4	12	IM	0	12	S	0	12	S	0	12	S																	0	12	S				Bra. no # guard rail on NC SR # 1602 Class V
CA01-UVA	VAS-M01R_LFR01A16	NONA	YA02								1	IN									0	IN																Little Fisher Creek headwaters, tributary to Little Fisher River (NC) from Rich Mtn. Level III Chloride Level II pH 0/1 3D
CA02-UVA	VAS-M02R_STW01A02	NONA	YA06								1	IN									0	IN																Level III Chloride Level II pH 0/1
LVLAOWC000.58	VAC-L13L_OWC01A02	CMON	RU38	0	31	S	0	11	S	0	28	S	0	63	IN																							Leesville Lake Association #5
LVLAROA140.66	VAC-L13L_ROA01A02	CMON	RU38	0	405	S	10	226	IM	11	405	S	0	32	IN																				1	2	IN	Leesville Lake Association #11
LVLAROA140.93	VAC-L13L_ROA01A02	CMON	RU38	0	1	W	0	1	W	0	1	W	0	8	IN																							Leesville Lake Association #10
LVLAROA141.42	VAC-L13L_ROA01A02	CMON	RU38	0	186	S	7	85	IM	1	145	S	0	41	IN																							Leesville Lake Association #7
LVLAROA142.50	VAC-L13L_ROA01A02	CMON	RU38	0	30	S	0	12	S	0	27	S	0	41	IN																							Leesville Lake Association #6
LVLAROA143.84	VAC-L13L_ROA01A02	CMON	RU38	0	30	S	0	12	S	0	27	S	0	13	IN																							Leesville Lake Association #4
LVLAROA146.87	VAC-L13L_ROA01A02	CMON	RU38	0	412	S	7	276	S	4	473	S	0	5	IN																							Leesville Lake Association #8
LVLAROA149.94	VAC-L13L_ROA01A02	CMON	RU38	0	44	S	0	20	S	0	41	S	1	61	IN																							Leesville Lake Association #2
LVLAROA153.47	VAC-L13L_ROA01A02	CMON	RU38	0	310	S	0	270	S	0	282	S	5	64	IN																				0	2	IN	Leesville Lake Association #1
LVLAROA157.92	VAC-L13L_ROA03A02	CMON	RU28	0	8	S	0	8	S	0	8	S	0	7	IN																							Leesville Lake Association #12
LVLATER000.33	VAC-L13L_ROA01A02	CMON	RU38	0	31	S	0	13	S	0	28	S	1	62	IN																							Leesville Lake Association #3

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
0163054325	VAV-B39R_RKB01A00	USGS	PS43																																		WQS - Basin 1B: Section 2: Class IV: Special Standards: pH Station used for use support/non-support in previous cycles. No 2016 data.
01632900	VAV-B47R_SMT01A00	USGS	PS62	0	1422	S	0	1392	S	0	1426	S									0	S															WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1003	VAV-B11R_XED01A02	USFS	PS02																												FS						Assessment Based on SCI Score - WQS - Basin 1B: Section 4: Class VI: Special Standards: pH
1008	VAV-B11R_WTK01A02	USFS	PS03																																		Assessment Based on SCI Score - WQS - Basin 1B: Section 4: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
1011	VAV-B11R_WTK01A02	USFS	PS03																																		Assessment Based on SCI Score - WQS - Basin 1B: Section 4: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
1032	VAV-B11R_EDB02A10	USFS	PS02																																		Assessment Based on SCI Score - WQS - Basin 1B: Section 4: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
1AABR000.78	VAV-B09R_ABR01A00	A,B	PU17	0	33	S	0	33	S	0	32	S	8	29	IM																IM						01 Chlordane WQS - Basin 1A: Section 11: Class IV: Special Standards: pH
1AABR-SU POND 1-FOSR	VAV-B09L_ABR01A08	FOSR	PU17																																		WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1AABR-SU POND 2-FOSR	VAV-B09L_ABR01B08	FOSR	PU17																																		WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1ABAB004.54	VAV-B07R_BAB01A00	A	PU14	0	12	S	0	12	S	0	12	S	0	12	S																						WQS - Basin 1A: Section 11: Class VI: Special Standards: pH. Bacteria is a delist in 2016.
1ABAR032.10	VAV-B07R_BAR01A00	A	PU15	0	12	S	0	12	S	0	12	S	0	12	S																						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH
1ABAR041.11	VAV-B05R_BAR01B10	A	PU10	0	12	S	0	12	S	0	12	S	3	12	IM																						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH
1ABAR046.01	VAV-B05R_BAR02A04	B	PU10	0	5	S	0	5	S	0	5	S																			FS						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH
1ABLR-OPCS06-FOSR	VAV-B08R_BLR01A08	FOSR	PU16																																		WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1ADRS000.11	VAV-B09R_DRS01A00	A	PU18	0	6	S	0	6	S	0	6	S	0	6	S																						WQS - Basin 1A: Section 11: Class IV Special Standards: pH
1AHOC003.67	VAV-B06R_HOC01A00	SS	PU12																																		WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1AHOC006.23	VAV-B06R_HOC01A00	A,B	PU12	0	1	W	0	1	W	0	1	W																			FS						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. No new bacteria data in 2016, remains impaired.
1AHOC008.96	VAV-B06R_HOC02A10	SS	PU12																																		WQS - Basin 1A: Section 11: Class V: Special Standards: pH, hh. Station used for use support/non-support in previous cycles. No 2016 data.
1AISC001.77	VAV-B05R_ISC01A00	A	PU11	0	12	S	0	12	S	0	12	S	2	11	IM																						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Bacteria listed as impaired in 2016.
1ALAR007.66	VAV-B01R_LAR01A00	A	PU01																																		WQS - Basin 1A: Section 12: Class VI: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1ALIG001.84	VAV-B05R_LIG01A00	A	PU11																																		WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1ALIR000.95	VAV-B09R_LIR01A00	A	PU18																																		WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1ALMR001.82	VAV-B58R_LSR01A00	A	PS86	0	11	S	0	11	S	0	11	S	6	12	IM																						WQS - Basin 1B: Section 1a: Class IV: Special Standards: pH
1AMIS000.33	VAV-B04R_MIS01A14	A	PU09	0	11	S	0	11	S	0	11	S	3	11	IM																						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH
1AOPE025.10	VAV-B09R_OPE01A00	A	PU19	0	29	S	0	29	S	1	28	S	4	29	IM																						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH
1AOPE027.30	VAV-B09R_OPE02A10	A	PU18	0	11	S	0	11	S	0	11	S	4	12	IM																						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH
1AOPE028.72	VAV-B09R_OPE02A10	A,B	PU18	0	5	S	0	5	S	0	5	S	0	1	W						0	W	0	S	0	S					IM						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH
1AOPE031.26	VAV-B09R_OPE02A10	A	PU18	0	5	S	0	5	S	0	5	S	1	6	IM																						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH, Segment remains impaired for bacteria, no new data for 2014
1AOPE036.13	VAV-B08R_OPE01A00	A,B,TR	PU16	0	45	S	0	44	S	0	44	S	12	40	IM																	IM						WQS - Basin 1A: Section 11: Class IV Special Standards: pHTrend analysis in 2006 at 1AOPE036.10 showed no statistically significant trends detected.
1AOPE044.17	VAV-B08R_OPE01A00	A	PU16	0	11	S	0	11	S	0	11	S	5	12	IM																						WQS - Basin 1A: Section 11: Class IV: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1AOPE047.44	VAV-B08R_OPE02A10	A	PU16	0	6	S	0	6	S	0	6	S	4	6	IM																							WQS - Basin 1A: Section 11: Class IV: Special Standards: pH
1ARED000.46	VAV-B09R_RED01A00	A,B	PU18	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 1A: Section 11: Class VI: Special Standards: pH
1ASFP002.56	VAV-B03R_SFP01A00	A	PU06	0	11	S	0	11	S	0	11	S	2	12	IM																							WQS - Basin 1A: Section 12: Class IV: Special Standards: pH 2008 FC bacteria 0/12 = S
1ASLP034.20	VAV-B04R_SLP01A00	A	PU08	0	12	S	0	12	S	0	12	S	2	12	IM																							WQS - Basin 1A: Section 11: Class IV: Special Standards: pH, Bacteria listed as impaired in 2016.
1ASOA001.00	VAV-B02R_SOA01A00	A,B	PU02	0	14	S	0	13	S	0	13	S	0	12	S																	FS							WQS - Basin 1A: Section 12: Class IV: Special Standards:
1ASOA003.77	VAV-B02R_SOA01B10	A	PU02	0	6	S	0	6	S	0	6	S	0	6	S																							WQS - Basin 1A: Section 12: Class IV: Special Standards: pH
1ASTC000.02	VAV-B02R_STC01A00	A	PU03	1	12	S	0	11	S	0	12	S	1	12	S																							WQS - Basin 1A: Section 12: Class VI: Special Standards: pH, Bacteria is a delist in 2016
1ASTC000.72	VAV-B02R_STC01A00	B	PU03	0	3	S	0	3	S	0	3	S																			IM							Site has degraded since 2006 assessment. WQS - Basin 1A: Section 12: Class VI: Special Standards: pH.
1ASTC004.27	VAV-B02R_STC02A00	A,B	PU03	0	1	W	0	1	W	0	1	W																			FS							WQS - Basin 1A: Section 12: Class VI: Special Standards: pH
1ASTT006.12	VAV-B01R_STT01A00	A	PU01																																			WQS - Basin 1A: Section 12: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1ASYL000.02	VAV-B09R_SYL01A10	A	PU20	0	12	S	0	12	S	0	12	S	0	11	S																							WQS - Basin 1A: Section 11a: Class IV: Special Standards: pH
1ATWN-OPCS19-FOSR	VAV-B09R_TWN01A08	FOSR	PU17																																			Coli-scan data - Level II. WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1AWRR-OPCS22-FOSR	VAV-B08R_WRR01A08	FOSR	PU16																																			WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1AWSC003.54	VAV-B02R_WSC02A00	B	PU03	0	4	S	0	4	IM	0	4	S																			IM							Site is listed in biologist table at mile 3.67. No new bacteria data in 2014, remains insufficient information. DO Impairment remains in 2016, no new data
1AWSC003.79	VAV-B02R_WSC03A00	B	PU03	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 1A: Section 12: Class IV: Special Standards: pH
1AXAL000.02	VAV-B02R_XAL01A16	A	PU03	0	2	S	0	2	S	0	2	S																											WQS - Basin 1A: Section 12: Class VI: Special Standards: pH. RB reference data only, no benthic score.
1AXOP-OPCS20-FOSR	VAV-B08R_XOP01A08	FOSR	PU16																																			Coli-scan data - Level II. WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1AXXO-OPCS21-FOSR	VAV-B08R_XXO01A08	FOSR	PU16																																			Coli-scan data - Level II. WQS - Basin 1A: Section 11: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BBAK001.74	VAV-B10R_BAK01A00	A	PS01																																			WQS - Basin 1B: Section 4: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BBAK-GA17BC-FOSR	VAV-B10R_BAK01A00	FOSR	PS01	0	70	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BBCK000.78	VAV-B31R_BCK01A00	A,B	PS29	0	14	S	0	14	S	0	14	S	2	9	IM																	IM							Site has improved since 2006 cycle. WQS - Basin 1B: Section 3: Class IV: Special Standards: pH2008 FC bacteria 1/18 = S
1BBCK-GA22A-FOSR	VAV-B31R_BCK01A00	FOSR	PS29	0	8	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BBGR004.08	VAV-B33R_BGR01A00	A,B	PS32	0	2	S	0	2	S	0	2	S							0	W	0	S	0	S							FS							WQS - Basin 1B: Section 3: Class VI: Special Standards: pH
1BBHC-GA26-FOSR	VAV-B30R_BHC01A06	FOSR	PS27	0	89	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BBIG001.80	VAV-B38R_BIG01A00	B	PS40	0	2	S	0	2	S	0	2	S																			FS							WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BBKB-GA30-FOSR	VAV-B14R_BKB01A00	FOSR	PS09																																			WQS - Basin 1B: Section 4: Class V: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BBLK000.08	VAV-B26R_BLK01A00	B	PS22	0	6	S	0	6	S	0	5	S																			IM							WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BBLK000.38	VAV-B26R_BLK01A00	A	PS22	0	41	S	0	41	S	0	41	S	14	42	IM																							WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BBLK005.62	VAV-B26R_BLK01A00	A,B	PS22	0	8	S	0	8	S	0	7	S	0	1	W				0	W	0	S									IM							WQS - Basin 1B: Section 5: Class IV: Special Standards: pH. No new bacteria data in 2016, remains impaired.
1BBLK-JR08-FOSR	VAV-B26R_BLK01A00	FOSR	PS22	0	115	S																																WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BBMR000.20	VAV-B55R_BMR01A00	A	PS81	0	42	S	0	41	S	0	42	S	16	41	IM																							WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BBON000.60	VAV-B35R_BON01A00	A	PS35	0	57	S	0	57	S	0	58	S	22	47	IM																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BBON001.46	VAV-B35R_BON01A00	A	PS35	0	57	S	1	57	S	0	58	S	10	23	IM																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BBRO000.34	VAV-B45R_BRO01A14	B	PS55	0	6	S	0	6	S	0	6	S																			FS							WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH,
1BBRO002.91	VAV-B45R_BRO01A14	A	PS55	0	1	W	0	1	W	0	1	W									0	W																WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH, PWS
1BBRY001.22	VAV-B18R_BRY01A02	A	PS14	0	12	S	0	12	S	0	12	S	5	12	IM																							WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH. PWS
1BBRY005.09	VAV-B18R_BRY02A00	A,B	PS14	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	S							FS							WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BBRY006.94	VAV-B18R_BRY03A00	A	PS14																																			WQS - Basin 1B: Section 5: Class VI: Special Standards: Station used for use support/non-support in previous cycles. No 2016 data.
1BBRY-JR03-FOSR	VAV-B18R_BRY01A02	FOSR	PS14	0	115	S															0	S																WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH. PWS
1BBVR002.75	VAV-B18R_BVR01A00	B	PS14	0	2	S	0	2	S	0	2	S																			FS							Benthic MI in 2004 (improved) WQS - Basin 1B: Section 5: Class V: Special Standards: pH
1BBVR003.60	VAV-B18R_BVR02A00	A,B	PS14	0	4	S	0	4	S	0	4	S																			FS							This station will be evaluated in the next triennial review for classification as a Class IV stream instead of Class V as determined by the Virginia Department of Game and Inland Fisheries. WQS - Basin 1B: Section 5: Class V: Special Standards: pH2008
1BCBR000.80	VAV-B34R_CBR01A00	A	PS33	0	10	S	0	10	S	0	10	S	3	10	IM																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BCBR007.42	VAV-B34R_CBR01A00	A	PS33	0	12	S	0	12	S	0	12	S	4	12	IM																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BCBR-JR13-FOSR	VAV-B34R_CBR01A00	FOSR	PS33	0	24	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BCDR000.81	VAV-B53R_CDR01A00	A	PS75	0	12	S	0	12	S	0	12	S	2	12	IM																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BCDR008.29	VAV-B53R_CDR02A00	A	PS75	0	12	S	0	12	S	0	12	S	1	12	S																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BCDR013.29	VAV-B53R_CDR02A00	A,TR	PS75	0	36	S	0	35	S	0	36	S	3	36	S																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH , Bacteria is a delist in 2016.Trend analysis was performed at station 1BCDR013.29 in the 2012 cycle. Statistically significant trends were detected for the following parameter(s): DO % Sat. -
1BCDR015.40	VAV-B53R_CDR02A00	B	PS74	0	2	S	0	2	S	0	2	S																			FS							WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH
1BCDR023.47	VAV-B52R_CDR02A00	A	PS72	0	12	S	0	12	S	0	12	S	2	12	IM																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH. This station also used for assessment in VAV-B52R_CDR03B10.
1BCDR028.86	VAV-B52R_CDR02B10	A	PS72	0	12	S	0	12	S	0	12	S	2	12	IM																							WQS - Basin 1B: Section 6b: Class V: Special Standards: pH
1BCDR045.30	VAV-B52R_CDR03B10	A,B	PS71	0	32	S	1	31	S	4	31	IM									0	S									FS							WQS - Basin 1B: Section 6b: Class: VI: Special Standards: pH, PWS
1BCDR-1-SOS	VAV-B53R_CDR01A00	CMON	PS75																											MP							SOS data Level II. WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BCDR-CC01-FOSR	VAV-B53R_CDR03A10	FOSR	PS74										1	18	S																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: PWS, pH
1BCDR-CC03-FOSR	VAV-B52R_CDR02B10	FOSR	PS72										0	17	S																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: PWS, pH
1BCDR-CC06-FOSR	VAV-B52R_CDR03A00	FOSR	PS71										9	17	IM																							WQS - Basin 1B: Section 6b: Class V: Special Standards: PWS, pH
1BCDR-CC07-FOSR	VAV-B52R_CDR04A02	FOSR	PS71										0	12	S																							WQS - Basin 1B: Section 6b: Class VI: Special Standards: PWS, pH
1BCDR-CC1-SOS	VAV-B53R_CDR03A10	CMON	PS74																												LP							SOS data Level II. WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BCDR-CC3-SOS	VAV-B52R_CDR02B10	CMON	PS72																												LP							SOS data Level II. WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BCDR-CC7a-SOS	VAV-B52R_CDR03B10	CMON	PS71																												LP							SOS data Level II. WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BCDR-CC7-SOS	VAV-B52R_CDR03B10	CMON	PS71																												MP							SOS data Level II. WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BCDR-FS02-FOSR	VAV-B53R_CDR01A00	FOSR	PS75	0	83	S															0	S																WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BCDR-NS52-FOSR	VAV-B53R_CDR02A00	FOSR	PS74	0	103	S															0	S																WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BCDR-NS61-FOSR	VAV-B53R_CDR01A00	FOSR	PS75	0	69	S															0	S																WQS - Basin 1B: Section 6b: Class: IV Special Standards: pH, PWS
1BCDR-NS70-FOSR	VAV-B53R_CDR03A10	FOSR	PS74	0	75	S															0	S																WQS - Basin 1B: Section 6b: Class: IV Special Standards: pH, PWS
1BCKD000.38	VAV-B48R_CKD01A00	A,B	PS63	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BCKD-1-SOS	VAV-B56R_CRO01A00	CMON	PS79																												LP							SOS data Level II. WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BCKD-Riverton Common-SOS	VAV-B56R_CRO01A00	CMON	PS79																												MP							SOS data Level II. WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BCKS001.03	VAV-B25R_CKS01A00	A,B	PS23	0	6	S	0	6	S	0	5	S																			IM							WQS - Basin 1B: Section 5: Class IV: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BCKS003.04	VAV-B25R_CKS01A00	B	PS23	0	6	S	0	6	S	0	5	S																			IM							WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BCKS003.10	VAV-B25R_CKS01A00	A	PS23	0	40	S	0	40	S	0	40	S	32	41	IM																							WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BCKS007.71	VAV-B25R_CKS01A00	A	PS23	0	12	S	0	12	S	0	12	S	5	12	IM																							WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BCKS-JR07-FOSR	VAV-B25R_CKS01A00	FOSR	PS23	0	87	S																																2 excursions of 42 samples were observed for nitrate, this is not a PWS, so the standard does not apply; WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BCLS003.60	VAV-B31L_00	L	PS28	0	88	S	0	35	S	88	88	IM	0	7	S						0	S												0	1	IN	Only one year of Chlor A data, unable to assess for nutrients. Lake remains impaired for pH in 2016 WQS - Basin 1B: Section 3b: Class IV: Special Standards: pH
1BCNG003.13	VAV-B29L_CNG01A04	L	PS26	0	84	S	0	42	S	6	84	S	1	14	S						0	S												0	2	S	WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BCPL000.95	VAV-B57R_CPL01A00	A,B	PS84	0	29	S	0	29	S	0	29	S	3	24	IM																IM							Site had degraded since 2006 assessment. WQS - Basin 1B: Section 1a: Class V: Special Standards: pH
1BCPL-FC18-FOSR	VAV-B57R_CPL01A00	FOSR	PS84	3	107	S	0	18	S	0	15	S									0	S																WQS - Basin 1B: Section 1a: Class V: Special Standards: pH
1BCRB000.18	VAV-B42R_CRB01A00	A	PS50	0	11	S	0	11	S	0	11	S	2	11	IM																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BCRO002.75	VAV-B56R_CRO01A00	A	PS79	0	72	S	0	70	S	0	71	S	6	71	S																							WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH, Bacteria is supporting in 2016 data window looking forward into 2015, the station will violate above the 10.5% threshold so BPJ leaves this assessment unit impaired for bacteria.
1BCRO006.86	VAV-B56R_CRO01A00	A	PS79	0	10	S	0	10	S	0	10	S																										WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BCRO006.93	VAV-B56R_CRO01B16	A	PS79	0	10	S	4	10	IM	0	10	S																										WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BCRO009.19	VAV-B56L_CRO01A04	L	PS79	0	208	S	6	84	S	0	208	S	0	12	S						0	S												0	2	S	Lake Frederick pooled DO/pH/Temp/E-coli results for Stations 1BCRO009.19, 1BCRO009.79, 1BXCE000.63 = 217 obs/9 exceeds (DO) 424 obs/0 exceeds (pH 424 obs/0 exceeds (Temp) 36 obs/0 exceeds (E-coli). WQS - Basin 1B: Section 1c: Class IV: Special Standards:
1BCRO009.79	VAV-B56L_CRO01A04	L	PS79	0	114	S	3	70	S	0	114	S	0	12	S						0	S												0	2	S	Lake Frederick pooled DO/pH/Temp/E-coli results for Stations 1BCRO009.19, 1BCRO009.79, 1BXCE000.63 = 217 obs/9 exceeds (DO) 424 obs/0 exceeds (pH 424 obs/0 exceeds (Temp) 36 obs/0 exceeds (E-coli). WQS - Basin 1B: Section 1c: Class IV: Special Standards:
1BCRO-CR05-FOSR	VAV-B56R_CRO01A00	FOSR	PS79	0	1	W	0	1	W	0	1	W									0	W																WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BCST007.42	VAV-B14R_CST01A00	A,B	PS09	0	19	S	0	18	S	0	19	S	5	12	IM																FS							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BCST012.32	VAV-B14R_CST01A00	A	PS09	0	66	S	0	64	S	0	66	S	36	64	IM																							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BCST016.48	VAV-B14R_CST01A00	A	PS09	0	12	S	0	11	S	0	12	S	9	12	IM																							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BCST021.76	VAV-B14R_CST02A00	A	PS08	0	72	S	0	70	S	0	72	S	43	71	IM																							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BCST028.71	VAV-B14R_CST02A00	A	PS08	0	6	S	0	6	S	0	6	S	3	6	IM																							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BCST-GA29-FOSR	VAV-B14R_CST01A00	FOSR	PS09	0	97	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BCST-GA32A-FOSR	VAV-B14R_CST01A00	FOSR	PS08	0	45	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BCST-GA32-FOSR	VAV-B14R_CST02A00	FOSR	PS08	0	53	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BCUB000.40	VAV-B37R_CUB01A00	A,B	PS38	1	14	S	0	14	S	0	14	S	1	12	S																FS							WQS - Basin 1B: Section 2: Class VI: Special Standards: pH
1BCUB-FP12-FOSR	VAV-B37R_CUB01A00	FOSR	PS38	10	98	IM																																4 excursions of 38 samples were observed for nitrate, this is not a PWS, so the standard does not apply; WQS - Basin 1B: Section 2: Class VI: Special Standards: pH
1BDFK000.76	VAV-B47R_DFK01A00	A	PS59	0	70	S	2	69	S	0	72	S	32	71	IM																							WQS - Basin 1B: Section 6e: Class IV Special Standards: pH PWS
1BDGR000.23	VAV-B58R_DGR01A00	A	PS85	0	12	S	0	12	S	0	12	S	5	12	IM																							WQS - Basin 1B: Section 1a: Class IV: Special Standards: pH, Bacteria listed in 2016.
1BDGR-FC06-FOSR	VAV-B58R_DGR01A00	FOSR	PS85	0	106	S	0	18	S	0	16	S									0	S																WQS - Basin 1B: Section 1a: Class IV: Special Standards: pH, PWS
1BDNF006.74	VAV-B39R_DNF01A02	A	PS43	0	12	S	0	12	S	0	12	S	0	12	S																							WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BDRI000.21	VAV-B39R_DRI01A00	B,FPM	PS43	0	2	S	0	2	S	0	2	S																			IM							Benthic MI in 2004 (improved) WQS - Basin 1B: Section Class IV: Special Standards: pH
1BDRI005.55	VAV-B39L_DRI01A08	L	PS43																																		WQS - Basin 1B: Section 2, Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BDRI-FP18A-PCCM	VAV-B39R_DRI01A00	NONA	PS43	0	5	IN							2	11	IN/O																							Temperature & Coli-scan data Level II, Remains IN/O for bacteria, no new data. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BDRI-FP18-PCCM	VAV-B39R_DRI01A00	NONA	PS43	0	5	IN							2	11	IN/O																							Temperature & Coli-scan data Level II Remains IN for bacteria, no new data. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BDUR000.02	VAV-B21R_DUR01A00	A	PS20	0	42	S	0	42	S	0	42	S	8	42	IM						0	S																WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH, PWS
1BDUR000.11	VAV-B21R_DUR01A00	B	PS20	0	5	S	0	5	S	0	4	S																			FS							WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH, PWS
1BDUR010.66	VAV-B21R_DUR04A00	A	PS20	0	12	S	0	12	S	0	12	S	0	12	S																							WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH
1BDUR017.26	VAV-B20R_DUR02B10	A	PS17	0	12	S	0	12	S	2	12	IM	0	12	S																							WQS - Basin 1B: Section 5c: Class VI: Special Standards: pH, PWS. Additional AU VAV-B20R_DUR03A00
1BDUR-JR02-FOSR	VAV-B21R_DUR02A00	FOSR	PS20	0	72	S															0	S																WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH, PWS
1BEDN003.67	VAV-B10R_EDN01A00	A	PS01																																			WQS - Basin 1B: Section 4: Class IV Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BEDN-GA35-FOSR	VAV-B10R_EDN01A00	FOSR	PS01	0	71	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BEHC001.18	VAV-B39R_EHC01A00	B,TM	PS42	0	6	S	0	75	S	1	76	S	20	72	IM																	IM							Assessment Comment: Site has degraded since the 2006 assessment. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BEHC-FP08E-PCCM	VAV-B39R_EHC01A00	NONA	PS42	0	5	IN							4	11	IN/O																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BEHC-FP08J-FOSR	VAV-B39R_EHC01A00	FOSR	PS42	0	1	W																																WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BEKR000.25	VAV-B13R_ELK01A00	A	PS05																																			WQS - Basin 1B: Section 4: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BELK001.00	VAV-B35R_ELK01A00	A	PS35	0	12	S	0	12	S	0	12	S	1	12	S																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BFDY000.02	VAV-B47R_FDY01A02	A,B	PS60	0	32	S	0	30	S	24	32	IM									0	S									FS							WQS - Basin 1B: Section 6e: Class VI: Special Standards: pH, PWS
1BFLR000.57	VAV-B52R_FLR01A14	A	PS73	0	12	S	0	12	S	0	12	S	2	12	IM																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BFMC003.57	VAV-B14R_FMC02A10	A	PS08	0	12	S	0	12	S	0	12	S	10	12	IM																							WQS - Basin 1B: Section 4: Class V: Special Standards: pH
1BFMC-GA31-FOSR	VAV-B14R_FMC01A00	FOSR	PS08	0	108	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BFNT002.16	VAV-B40R_FNT01A00	A	PS45	0	12	S	0	12	S	0	12	S	7	12	IM																							WQS - Basin 1B: Section 2: Class V: Special Standards: pH, Bacteria listed in 2016.
1BFNT-FW21-FOSR	VAV-B40R_FNT01A00	FOSR	PS45	2	16	IM	1	12	S	0	14	S									0	S																WQS - Basin 1B: Section 2: Class V: Special Standards: pH
1BFUR-CC02-FOSR	VAV-B52R_FLR01A14	FOSR	PS73										0	17	S																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: PWS, pH
1BGER000.87	VAV-B42R_GER01A00	A	PS49	0	12	S	0	12	S	0	12	S	1	10	S																							WQS - Basin 1B: Section 6: Class VI: Special Standards: pH
1BGNY000.04	VAV-B40R_GNY01A00	A	PS46	0	12	S	0	12	S	0	12	S	3	12	IM																							WQS - Basin 1B: Section 2: Class V Special Standards: pH - VAV-B40R_XGY01A10 is also included with this station. Temp is delist in 2016.
1BGSR000.44	VAV-B52R_GSR01A16	PA	PS72	0	10	S	0	10	S	0	10	S	3	10	IM																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: PWS, pH, Bacteria listed in 2016.
1BGSR000.58	VAV-B52R_GSR01A16	A,B,FPM	PS72	0	2	S	0	2	S	0	2	S	0	2	S						0	W										FS							WQS - Basin 1B: Section 6b: Class IV: Special Standards: PWS, pH
1BGSR-CC04-FOSR	VAV-B52R_CDR02B10	FOSR	PS72										1	18	S																							WQS - Basin 1B: Section 6b: Class IV: Special Standards: PWS, pH
1BHDY000.91	VAV-B37R_HDY01A00	A	PS39	0	12	S	0	12	S	0	12	S	2	12	IM																							WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BHDY-DEQ.91-PCCM	VAV-B37R_HDY01A00	NONA	PS39	0	5	IN							1	10	IN																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BHKS000.96	VAV-B39R_HKS01A00	A,B	PS43	0	75	S	0	74	S	0	75	S	25	72	IM																	FS							WQS - Basin 1B: Section 2: Class IV Special Standards: pH
1BHKS009.58	VAV-B39R_HKS02A00	A	PS42	0	12	S	0	12	S	0	12	S	3	12	IM																							WQS - Basin 1B: Section 2: Class V-hh: Special Standards: pH
1BHKS-FP06-FOSR	VAV-B39R_HKS01A00	FOSR	PS43	0	106	S																																WQS - Basin 1B: Section 2: Class IV: Specials Standards: pH
1BHKS-FP06-PCCM	VAV-B39R_HKS01A00	NONA	PS43	0	5	IN							3	11	IN/O																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BHKS-FP08A-FOSR	VAV-B39R_HKS02A00	FOSR	PS43	0	5	S																																E-coli data Level II from PCCM - 'WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BHKS-FP08A-PCCM	VAV-B39R_HKS01A00	NONA	PS43	0	2	IN							0	2	IN/O																							Temperature & Coli-scan data Level II Remains IN/O for bacteria, no new data WQS - Basin 1B: Section 2: Class V-hh: Special Standards: pH
1BHKS-FP08B-FOSR	VAV-B39R_HKS02A00	FOSR	PS42	1	5	O																																WQS - Basin 1B: Section 2: Class V-hh: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BHKS-FP08BQ-PCCM	VAV-B39R_HKS02A00	NONA	PS42	0	5	IN							2	4	IN/O																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class V-hh: Special Standards: pH
1BHKS-FP08F-FOSR	VAV-B39R_HKS02A00	FOSR	PS42	0	5	S																															WQS - Basin 1B: Section 2: Class V-hh: Special Standards: pH
1BHKS-FP08-FOSR	VAV-B39R_HKS01A00	FOSR	PS42	0	106	S																															WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BHKS-FP08F-PCCM	VAV-B39R_HKS02A00	NONA	PS42	0	5	IN							5	11	IN/O																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class V-hh: Special Standards: pH
1BHKS-FP08G-FOSR	VAV-B39R_HKS02A00	FOSR	PS42	0	5	S																															WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BHKS-FP08G-PCCM	VAV-B39R_HKS03A10	NONA	PS42	0	5	IN							0	11	IN/O																							Temperature & Coli-scan data Level II Remains IN/O for bacteria, no new data. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BHMN002.09	VAV-B45R_HMN01A00	A,B	PS58	0	3	S	0	3	S	0	3	S																			IM							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BHMN007.59	VAV-B45R_HMN02A00	B	PS58	0	3	S	0	3	S	0	3	S																			IM							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BHPY000.10	VAV-B41R_HPY01A00	A	PS48	0	1	W	0	1	W	0	1	W																										WQS - Basin 1B: Section 2a: Class IV: Special Standards: pH, PWS
1BHPY001.29	VAV-B41R_HPY01A00	A,B	PS48	0	19	S	0	19	S	0	19	S	3	12	IM																IM							Site has degraded since 2006 assessment. WQS - Basin 1B: Section 2a: Class IV: Special Standards: pH, PWS
1BHPY002.67	VAV-B41R_HPY01A00	A,B	PS48	0	30	S	0	29	S	0	30	S	1	24	S																IM							WQS - Basin 1B: Section 2a: Class IV: Special Standards: pH, PWS
1BHPY-2-SOS	VAV-B41R_HPY01A00	CMON	PS48																												MP							SOS data Level II. WQS - Basin 1B: Section 2a: Class IV: Special Standards: pH, PWS
1BHPY-FW09-FOSR	VAV-B41R_HPY01A00	FOSR	PS48	0	9	S															0	S																WQS - Basin 1B: Section 2a: Class IV: Special Standards: pH, PWS
1BHPY-FW11-FOSR	VAV-B41R_HPY01A00	FOSR	PS48	0	39	S	0	1	W	0	1	W									0	S																WQS - Basin 1B: Section 2a: Class IV: Special Standards: pH, PWS
1BHPY-FW29-FOSR	VAV-B41R_HPY01A00	FOSR	PS48	0	9	S															0	S																WQS - Basin 1B: Section 2a: Class IV: Special Standards: pH, PWS
1BJDN000.29	VAV-B50R_JDN01A00	A,B	PS69	0	1	W	0	1	W	0	1	W																			FS							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BJDN-TB3-FOSR	VAV-B50R_JDN01A00	FOSR	PS69	0	90	S																																WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BJEN002.46	VAV-B11R_JEN01A00	A	PS03	0	12	S	0	12	S	0	12	S	0	12	S																							WQS - Basin 1B: Section 4a: Class IV Special Standards: pH, PWS
1BJEN-1-SOS	VAV-B11R_JEN01A00	CMON	PS03																												LP							SOS data Level II. WQS - Basin 1B: Section 4a: Class IV: Special Standards: pH, PWS
1BJEN-GA34-FOSR	VAV-B11R_JEN01A00	FOSR	PS03	0	112	S															0	S																WQS - Basin 1B: Section 4a: Class IV: Special Standards: pH, PWS
1BJER000.62	VAV-B40R_JER01A00	A	PS44	0	24	S	0	24	S	0	24	S	10	24	IM																							WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BJER004.48	VAV-B40R_JER02A10	A	PS44	0	12	S	0	12	S	0	12	S																										WQS - Basin 1B: Section 2: Class VI: Special Standards: pH
1BJER-FP14-FOSR	VAV-B40R_JER01A00	FOSR	PS44	0	59	S																																WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BLAC000.14	VAV-B47R_LAC01A00	A	PS61	0	2	S	0	2	S	0	2	S																										WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS. RB reference data only, no benthic score.
1BLAC-LAC-FOSR	VAV-B47R_LAC01A00	FOSR	PS61	0	16	S	0	15	S	1	16	S	7	22	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BLAR001.77	VAV-B49R_LAR01A00	A,B	PS65	0	32	S	0	31	S	1	31	S									0	S									FS							WQS - Basin 1B: Section 6: Class VI: Special Standards: pH
1BLEW000.61	VAV-B12R_LEW01A00	A,B	PS06	0	2	S	0	2	S	0	2	S																			IM							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BLEW006.95	VAV-B12R_LEW01A00	B	PS06	0	3	S	0	3	S	0	3	S																			IM							Benthic SV in 2004 (improved) WQS - Basin 1B: Section 4: Class IV: Special Standards: pH2008 FC bacteria 9/12 = IM
1BLEW009.19	VAV-B12R_LEW01A00	A,B	PS06	0	5	S	0	5	S	0	5	S																			FS							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BLEW-GA19A-FOSR	VAV-B12R_LEW01A00	FOSR	PS06	0	48	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BLEW-GA20-FOSR	VAV-B12R_LEW01A00	FOSR	PS06	0	100	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BLGC000.96	VAV-B24R_LGC01A00	A	PS21	0	70	S	0	67	S	0	70	S	26	71	IM																							WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH
1BLGC-JR06-FOSR	VAV-B24R_LGC01A00	FOSR	PS21	0	116	S															0	S																WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH, PWS
1BLHC000.04	VAV-B39R_LHC01A00	TM	PS42	0	6	S	0	6	S	0	6	S	0	6	S																							WQS - Basin 1B: Section 2: Class IV: Special Standards: pH2008 FC bacteria 0/12 = S
1BLIN001.60	VAV-B37R_LIN01A06	A	PS39																																			WQS - Basin 1B: Section 2: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BLIN-DEQ1.60-PCCM	VAV-B37R_LIN01A06	NONA	PS39	0	5	IN							0	11	IN																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BLMR-GA27-FOSR	VAV-B14R_LMR01A00	FOSR	PS10	0	103	S																															WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BLNG000.24	VAV-B57R_LNG01A04	A	PS82	0	36	S	0	35	S	0	36	S	8	35	IM																						WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BLNV000.16	VAV-B46R_LNV01A00	B	PS56	0	5	S	0	5	S	0	5	S																			IM							WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH, PWS
1BLNV000.71	VAV-B46R_LNV01A00	B,FPM	PS56	0	4	S	0	4	S	0	4	S	1	1	W				0	W	0	S	0	S							IM							WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH, PWS
1BLNV001.22	VAV-B46R_LNV01A00	A,TR	PS56	0	48	S	0	48	S	0	48	S	19	48	IM																						WQS - Basin 1B: Section 6f: Class IV Special Standards: pH, PWS Trend analysis was performed at station 1BLNV001.22 in the 2006 cycle. No statistically significant trends were detected.
1BLNV006.49	VAV-B46R_LNV02A04	A	PS56	0	24	S	0	24	S	0	24	S	12	24	IM																						WQS - Basin 1B: Section 6f: Class IV Special Standards: pH
1BLNV-NR01-FOSR	VAV-B46R_LNV01A00	FOSR	PS56	0	112	S	0	1	W	0	1	W	6	18	IM						0	S																WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH, PWS
1BLOM000.24	VAV-B45R_LOM01A00	B,FPM	PS57	0	11	S	0	11	S	0	11	S	1	1	W				0	W	0	S	0	S							IM							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BLOM001.45	VAV-B45R_LOM01A00	A	PS57	0	35	S	0	35	S	0	35	S	32	36	IM						0	S																WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BLOM002.21	VAV-B45R_LOM01A00	A	PS57	0	3	S	0	3	S	0	3	S									0	S																WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BLOM007.36	VAV-B45R_LOM01A00	A	PS57	0	1	W	0	1	W	0	1	W									0	W																WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Water toxics not assessed based on only one sample available for assessment.
1BLSC000.50	VAV-B49R_LSC01B08	A	PS66	3	10	IM	0	9	S	0	10	S	0	11	S																						WQS - Basin 1B: Section 6: Class VI: Special Standards: pH
1BLSC003.52	VAV-B49R_LSC01A00	A,B	PS66	0	27	S	0	26	S	3	27	IM									0	S									FS							WQS - Basin 1B: Section 6: Class VI: Special Standards: pH, Impaired for pH in 2016.
1BLTD001.15	VAV-B43R_LTD01A00	A	PS52	0	12	S	0	12	S	0	12	S	0	11	S																						WQS - Basin 1B: Section 6: Class IV: Special Standards: pH VAV-B43R_SBL01A10; VAV-B43R_XCL01A10
1BLTT000.07	VAV-B16R_LTT01A00	A	PS13	0	9	S	0	9	S	0	9	S	0	9	S																						WQS - Basin 1B: Section 5: Class VI: Special Standards:
1BLWS-FC03-FOSR	VAV-B57R_LWS01A00	FOSR	PS84	0	102	S	0	19	S	0	15	S									0	S																WQS - Basin 1B: Section 1a: Class IV: Special Standards: pH, PWS
1BMAN002.55	VAV-B55R_MAN01A00	A,B	PS80	0	40	S	0	39	S	0	40	S	4	35	IM																FS							WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BMAN-1-SOS	VAV-B55R_MAN01A00	CMON	PS80																												MP							SOS data Level II. WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BMAN-FW37-FOSR	VAV-B55R_MAN01A00	FOSR	PS80	0	29	S	0	1	W	0	1	W																										WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BMCR-FW07-FOSR	VAV-B56R_MCR01A00	FOSR	PS79	0	9	S																																WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH:
1BMDD000.40	VAV-B22R_MDD01A00	A	PS19	0	41	S	0	41	S	0	41	S	22	42	IM						0	S																01 2 exceedences for Nitrate in PWS. WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH, PWS
1BMDD002.10	VAV-B22R_MDD01A00	B	PS19	0	6	S	0	6	S	0	6	S																			IM							WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH, PWS
1BMDD005.17	VAV-B22R_MDD03A00	A,B	PS19	0	5	S	0	5	S	0	5	S																			IM							WQS - Basin 1B: Section 5d: Class IV: Special Standards: pH
1BMDD005.81	VAV-B22R_MDD03A00	A,TR	PS19	0	88	S	0	88	S	0	88	S	38	61	IM						0	S																WQS - Basin 1B: Section 5d: Class IV: Special Standards: pHTrend analysis was performed at station 1BMDD005.81 in the 2006 cycle. No statistically significant trends were detected.
1BMDD-JR01-FOSR	VAV-B22R_MDD01A00	FOSR	PS19	0	115	S															0	S																WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH, PWS
1BMDL001.83	VAV-B15R_MDL01A00	A,TR	PS11	0	66	S	0	64	S	0	66	S	8	64	IM																						WQS - Basin 1B: Section 4: Class IV: Special Standards: pH Trend analysis was performed at station 1BMDL001.83 in the 2006 cycle. Statistically significant trends were detected for the following parameter(s): Dissolved Oxygen % Saturation (declining)
1BMDL005.63	VAV-B15R_MDL01A00	A	PS11	0	12	S	0	12	S	0	12	S	1	12	S																						WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL013.94	VAV-B15R_MDL01A00	A	PS11	0	12	S	0	11	S	0	12	S	3	12	IM																						WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL022.09	VAV-B12R_MDL01A00	PA	PS07	0	12	S	0	12	S	0	12	S	0	12	S				0	W	0	S																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH. Bacteria delist in 2016.
1BMDL025.92	VAV-B12R_MDL01A00	B,FPM	PS07	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	S							FS							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL026.58	VAV-B12R_MDL01A00	B,FPM	PS07	0	5	S	0	5	S	0	5	S																			IM							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL033.03	VAV-B12R_MDL01A00	B,A	PS07	0	1	W	0	1	W	0	1	W																			FS							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL036.08	VAV-B12R_MDL01A00	A,B	PS07	0	64	S	0	60	S	0	64	S	5	60	S																FS							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL060.48	VAV-B10R_MDL02A00	TM	PS01	0	72	S	0	68	S	0	72	S	35	72	IM				0	W	0	S																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BMDL066.05	VAV-B10R_MDL02A00	B	PS01	0	7	S	0	7	S	0	7	S																			IM							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL066.84	VAV-B10R_MDL03A00	A,B	PS01	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA10-FOSR	VAV-B15R_MDL01A00	FOSR	PS11	0	71	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA11-FOSR	VAV-B15R_MDL01A00	FOSR	PS11	0	74	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA12-FOSR	VAV-B12R_MDL01A00	FOSR	PS07	0	102	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA13-FOSR	VAV-B12R_MDL01A00	FOSR	PS07	0	117	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA17-FOSR	VAV-B10R_MDL01A00	FOSR	PS01	0	80	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA17MR-FOSR	VAV-B10R_MDL02A00	FOSR	PS01	0	72	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA18-FOSR	VAV-B10R_MDL03A00	FOSR	PS01	0	97	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA28-FOSR	VAV-B12R_MDL01A00	FOSR	PS07	0	98	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA33-FOSR	VAV-B12R_MDL01A00	FOSR	PS05	0	116	S																																WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMDL-GA38-FOSR	VAV-B11R_MDL01A00	FOSR	PS02	0	108	S															0	S																WQS - Basin 1B: Section 4a: Class IV: Special Standards: pH, PWS
1BMDW000.18	VAV-B14R_LMR01A00	A	PS10																																			WQS - Basin 1B: Section 3: Class VI: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BMFT001.43	VAV-B13R_MFT01A00	A	PS05	0	1	W	0	1	W	0	1	W	1	1	IM																							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH. No new bacteria data in 2016, remains impaired.
1BMFT002.46	VAV-B13R_MFT01A00	A,B	PS05	0	6	S	0	6	S	0	6	S																			FS							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMFT006.20	VAV-B13R_MFT01A00	A	PS05	0	55	S	0	51	S	0	55	S	12	56	IM																							WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BMIC001.00	VAV-B29R_MIC01A00	A,B	PS26	0	14	S	0	14	S	0	14	S	10	12	IM																	IM							01 DDT WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BMIC-JR12-FOSR	VAV-B29R_MIC01A00	FOSR	PS26	0	41	S																																WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BMIL002.20	VAV-B48R_MIL01A00	A,B	PS63	0	17	S	0	16	S	0	17	S	3	12	IM																	FS							WQS - Basin 1B: Section 6e: Class V: Special Standards: pH 2008 FC bacteria 8/16 = IM
1BMIL005.67	VAV-B48R_MIL02B10	A,B	PS63	0	3	S	0	3	S	0	3	S																			FS							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH 2008 FC bacteria 2/13 = IM
1BMIL006.68	VAV-B48R_MIL02B10	B,FPM	PS63	0	3	S	0	3	S	0	3	S	1	1	W				0	W	0	S									IM							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH 2008 FC bacteria 2/13 = IM
1BMIL007.79	VAV-B48R_MIL03A04	A,B	PS63	0	3	S	0	3	S	0	3	S																			FS							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BMLC000.40	VAV-B38R_MLC01A00	A	PS41	0	72	S	0	71	S	0	72	S	25	72	IM																							WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BMLC-FP13B-FOSR	VAV-B38R_MLC01A00	FOSR	PS41	0	4	S																																WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BMLC-FP13-FOSR	VAV-B38R_MLC01A00	FOSR	PS41	0	106	S																																WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BMLC-FP616-PCCM	VAV-B38R_MLC01A00	NONA	PS41	0	5	IN							8	11	IN/O																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BMLC-Hamburg-PCCM	VAV-B38R_MLC01A00	NONA	PS41	0	5	IN							1	11	IN/O																							Temperature & Coli-scan data Level II. Remains IN/O for bacteria, no new data. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BMLC-MCXrds-PCCM	VAV-B38R_MLC01A00	NONA	PS41	0	5	IN							6	11	IN/O																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BMLC-NS46-FOSR	VAV-B48R_MIL01A00	FOSR	PS63	6	90	S																																WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BMLS002.37	VAV-B31R_MLS02A10	A,B	PS29	0	6	S	0	6	S	2	6	IM																			IM							WQS - Basin 1B: Section 3: Class V; Special Standards: pH, Impaired for pH in 2016.
1BMSS001.35	VAV-B19R_MSS01A00	TM,B	PS15	1	71	S	0	68	S	0	71	S	17	71	IM				0	W	0	S									IM							WQS - Basin 1B: Section 5b: Class V: Special Standards: pH, PWS
1BMSS003.01	VAV-B19R_MSS02A00	B	PS15	0	6	S	0	6	S	0	6	S																			IM							Site has degraded since 2006 assessment. WQS - Basin 1B: Section 5b: Class V: Special Standards: pH
1BMSS-JR05-FOSR	VAV-B19R_MSS01A00	FOSR	PS15	2	115	S															0	S																WQS - Basin 1B: Section 5b: Class V: Special Standards: pH, PWS
1BMSS-MC1-SOS	VAV-B19R_MSS02A00	CMON	PS15																												MP							SOS data Level II. WQS - Basin 1B: Section 5b: Class V: Special Standards: PWS, pH
1BMTR000.93	VAV-B47R_MTN01A00	A	PS60	0	71	S	0	70	S	0	71	S	21	72	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH
1BMTR003.25	VAV-B47R_MTN01A00	A,B	PS60	0	8	S	0	8	S	0	8	S																			FS							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH
1BNAK000.30	VAV-B36R_NAK01A00	B	PS36	0	3	S	0	3	S	0	3	S																			FS							WQS - Basin 1B: Section 2d: Class IV: Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BNAK001.24	VAV-B36R_NAK01A00	A,B	PS36	0	15	S	0	15	S	0	15	S	0	12	S																IM							WQS - Basin 1B: Section 2d: Class IV: Special Standards: pH2008 FC bacteria 0/20 = S
1BNAK-FP11-FOSR	VAV-B36R_NAK01A00	FOSR	PS36	0	95	S																															WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BNFS000.57	VAV-B51R_NFS01A00	A,C,FPM,TR	PS78	0	38	S	0	38	S	0	38	S	4	36	IM																							2 samples of Hg in Lmouth Bass, 1 sample of Arsenic in Smouth Bass, 10 samples of PCB in Carp (4), Smouth Bass (1), Channel Catfish (4), White Sucker (1) VDH Fish Advisory Data outside 2016 window. WQS - Basin 1B: Section 6: Class IV: Special Standards: p
1BNFS005.33	VAV-B51R_NFS03A00	A	PS78																																		WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BNFS010.34	VAV-B51R_NFS04A00	A,TR	PS70	0	146	S	0	144	S	0	145	S	12	60	IM							0	S															WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH Trend analysis was performed at station 1BNFS010.34 in the 2006 cycle. Statistically significant trends were detected for the following parameter(s): Oxidized Nitrogen (Nitrate/Nitrite) (incr)
1BNFS011.81	VAV-B51R_NFS05A00	SS	PS70																																		WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BNFS037.89	VAV-B50R_NFS01A00	A,B	PS69	0	15	S	0	15	S	0	15	S	3	11	IM																FS							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS043.06	VAV-B50R_NFS02A00	A	PS68	0	5	S	0	5	S	0	5	S	0	5	S																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS062.18	VAV-B48R_NFS01A00	A	PS64	0	5	S	0	5	S	0	5	S	0	5	S																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH, 2 violations of 11 for bacteria in 2010, new data indicate move to insufficient information, not adequate for de-listing
1BNFS070.67	VAV-B48R_NFS01A00	A,TR	PS64	0	36	S	0	35	S	0	36	S	6	36	IM																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pHTrend analysis was performed at station 1BNFS070.67 in the 2006 cycle. No statistically significant trends were detected.
1BNFS073.75	VAV-B45R_NFS01A00	A,B	PS58	0	16	S	0	15	S	0	16	S	3	12	IM																FS							WQS - Basin 1B: Section 6: Class IV Special Standards: pH
1BNFS076.56	VAV-B45R_NFS02A00	A	PS57	0	11	S	0	11	S	0	11	S	2	11	IM																							WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH
1BNFS081.42	VAV-B45R_NFS02A00	A	PS57	0	6	S	0	6	S	0	6	S	2	6	IM																							WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH
1BNFS087.35	VAV-B45R_NFS02A00	A,B	PS57	0	3	S	0	3	S	0	3	S																			IM							Site has degraded since 2006 assessment. WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH
1BNFS088.81	VAV-B45R_NFS02B08	A,B	PS57	0	3	S	0	3	S	0	3	S																			J							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH, Benthic improving at this site, reserve judgement
1BNFS090.16	VAV-B45R_NFS03A00	A	PS55	0	6	S	0	6	S	0	6	S	1	6	IN/O																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH2008 FC bacteria 2/12 = IM
1BNFS093.53	VAV-B45R_NFS04A04	PA,C,TR	PS55	0	41	S	0	41	S	0	41	S	3	41	S																							1 Hg in Channel Catfish, 3 of Arsenic in 3 species. Outside 2016 window. WQS- Basin 1B: Section 6: Class IV: Sp Stds: pH 06 Trend analysis showed no significant trend. Water toxics not assessed based on only one sample available for assessment.
1BNFS093.80	VAV-B45R_NFS04A04	A,FPM,TR	PS55	0	3	S	0	3	S	0	3	S	0	2	S				0	W	0	S																1 Hg in Channel Catfish, 3 of Arsenic in 3 species. Outside 2016 window. WQS- Basin 1B: Section 6: Class IV: Sp Stds: pH 06 Trend analysis showed no significant trend.
1BNFS094.51	VAV-B45R_NFS04A04	A,B	PS55	0	4	S	0	4	S	0	4	S																			FS							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS098.22	VAV-B43R_NFS01A00	A	PS51	0	12	S	0	12	S	0	12	S	0	12	S																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH, Bacteria delist in 2016.
1BNFS107.86	VAV-B42R_NFS01A00	A,B	PS51	0	4	S	0	4	S	0	4	S																			IM							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-NFS5-SOS	VAV-B50R_NFS01A00	CMON	PS69																												MP							SOS data Level II. WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-NFS6-SOS	VAV-B50R_NFS01A00	CMON	PS69																												LP							SOS data Level II. WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-NR02-FOSR	VAV-B45R_NFS03A00	FOSR	PS55	0	113	S	0	1	W	0	1	W	3	18	IM							0	S															WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH, PWS
1BNFS-NS07-FOSR	VAV-B50R_NFS01A00	FOSR	PS69	0	87	S																															WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-NS10-FOSR	VAV-B50R_NFS04A00	FOSR	PS68	0	88	S							2	18	IM																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-NS15-FOSR	VAV-B51R_NFS04A00	FOSR	PS70	0	103	S																0	S															WQS - Basin 1B: Section 6b: Class IV: Special Standards: pH, PWS
1BNFS-NS25-FOSR	VAV-B50R_NFS02A00	FOSR	PS68	0	98	S																															WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-NS26-FOSR	VAV-B50R_NFS03A00	FOSR	PS68	0	114	S																															WQS - Basin 1B: Section 6d: Class IV: Special Standards: pH, PWS
1BNFS-NS59-FOSR	VAV-B51R_NFS06A00	FOSR	PS70	0	108	S																0	S															WQS - Basin 1B: Section 6c: Class IV: Specials Standards: pH, PWS

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BNFS-NS63-FOSR	VAV-B50R_NFS02A00	FOSR	PS68	0	113	S																															WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-NS66-FOSR	VAV-B50R_NFS02A00	FOSR	PS68	0	112	S																															WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-NS67-FOSR	VAV-B50R_NFS01A00	FOSR	PS69	0	103	S							0	18	S																						WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-NS69-FOSR	VAV-B50R_NFS02A00	FOSR	PS68	0	112	S																															WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-POI 5-FOSR	VAV-B45R_NFS01A00	FOSR	PS58										3	18	IM																						WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-TBV1-FOSR	VAV-B50R_NFS02A00	FOSR	PS57	0	115	S																															WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNFS-TBV2-FOSR	VAV-B45R_NFS02A00	FOSR	PS57	0	116	S																															WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BNKD000.80	VAV-B28R_NKD01A00	A	PS24	0	70	S	0	68	S	0	70	S	41	71	IM																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNKD-JA01-FOSR	VAV-B28R_NKD01A00	FOSR	PS24	0	114	S																															WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNKD-NC1-FOSR	VAV-B28R_NKD02A10	FOSR	PS24										0	20	S																						WQS - Basin 1B: Section 5: Class V: Special Standards: pH
1BNKD-NC1-SOS	VAV-B28R_NKD01A00	CMON	PS24																												LP						SOS data Level II. WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNKD-NC5-FOSR	VAV-B28R_NKD01A00	FOSR	PS24										17	18	IM																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNKD-NC6-FOSR	VAV-B28R_NKD01A00	FOSR	PS24										17	18	IM																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNKN-1-PTK	VAV-B28R_NKN01A00	CMON	PS24	0	11	IN				0	11	S	0	5	IN																						Temp and E-coli (Coli-scan) Level II: pH Level III. WQS - Basin 1B: Section 5; Class IV: Special Standards: pH
1BNKN-2-PTK	VAV-B28R_NKN01A00	CMON	PS24	0	11	IN				0	11	S	0	5	IN																						Temp and E-coli (Coli-scan) Level II: pH Level III. WQS - Basin 1B: Section 5; Class IV: Special Standards: pH
1BNKN-NC2-FOSR	VAV-B28R_NKN01A00	FOSR	PS24										10	18	IM																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNKN-NC3-FOSR	VAV-B28R_NKN01A00	FOSR	PS24										9	18	IM																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNKN-NC4-FOSR	VAV-B28R_NKN01A00	FOSR	PS24										5	6	IM																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNKW001.97	VAV-B36R_NKW01A00	A,B,FPM	PS36	0	3	S	0	3	S	0	3	S																			FS						WQS - Basin 1B: Section 2d: Class IV: Special Standards: pH
1BNPC000.02	VAV-B50R_NPC01A00	A	PS68	0	37	S	0	35	S	0	37	S	12	35	IM																						WQS - Basin 1B: Section 6d: Class IV: Special Standards: pH PWS
1BNTH004.39	VAV-B23R_NTH01A04	A	PS26	0	35	S	0	33	S	0	35	S							0	S																	WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNTH007.69	VAV-B23R_NTH01B10	A	PS25	0	12	S	0	12	S	0	12	S	3	12	IM																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNTH014.08	VAV-B23R_NTH02A04	A,TR	PS25	0	35	S	0	35	S	0	35	S	7	36	IM																						WQS - Basin 1B: Section 5: Class IV Special Standards: pHTrend analysis was performed at station 1BNTH014.08 in the 2006 cycle. Statistically significant trends were detected for the following parameter(s): Dissolved Oxygen % Saturation (increasing)
1BNTH014.48	VAV-B23R_NTH02A04	B	PS25	0	3	S	0	3	S	0	3	S																			IM						Site had degraded since 2006 assessment. WQS - Basin 1B: Section 5: Class IV Special Standards: pH
1BNTH015.45	VAV-B23R_NTH02A04	B,PA,FPM	PS25	0	15	S	0	15	S	0	15	S	3	10	IM						0	W									FS						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH. Water toxics not assessed based on only one sample available for assessment.
1BNTH015.66	VAV-B23R_NTH02A04	A,FPM	PS25	0	3	S	0	3	S	0	3	S	1	3	IN/O				0	S	0	S															WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNTH022.25	VAV-B23R_NTH04A04	A	PS25	0	12	S	0	12	S	0	12	S	5	12	IM																						WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH, PWS
1BNTH026.23	VAV-B17R_NTH02A00	SS	PS16	0	12	S	0	12	S	0	12	S	1	12	S																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH, PWS. Water toxics not assessed based on only one sample available for assessment.
1BNTH029.30	VAV-B17R_NTH02A00	A	PS16	0	6	S	0	6	S	0	6	S	3	6	IM																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNTH036.96	VAV-B17R_NTH04A00	A	PS16																																		WQS - Basin 1B: Section 5: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BNTH037.23	VAV-B16R_NTH01A00	A	PS12																																		WQS - Basin 1B: Section 5: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BNTH043.48	VAV-B16L_01	L	PS12	0	149	S	4	52	S	0	149	S	0	14	S						0	S												0	2	S	WQS - Basin 1B: Section 5e; Class VI: Special Standards: PWS
1BNTH045.36	VAV-B16L_NTH01A04	L	PS12	37	139	IM	5	85	S	0	139	S	0	14	S						0	S												0	2	S	Remains impaired for temperature in 2016. WQS - Basin 1B: Section 5e; Class VI: Special Standards: PWS
1BNTH046.75	VAV-B16R_NTH03A00	B	PS12	0	2	S	0	2	S	0	2	S																			FS						WQS - Basin 1B: Section 5e: Class VI: Special Standards: PWS. No new pH data in 2014,

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BNTH-GA36-FOSR	VAV-B23R_NTH01B10	FOSR	PS25	0	74	S																															WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNTH-GA37-FOSR	VAV-B16R_NTH03A00	FOSR	PS12	0	72	S															0	S															WQS - Basin 1B: Section 5e: Class VI: Special Standards: pH, PWS
1BNTH-JR04-FOSR	VAV-B17R_NTH02A00	FOSR	PS16	0	96	S															0	S															WQS - Basin 1B: Section 5b: Class IV: Special Standards: pH, PWS
1BNTH-JR09-FOSR	VAV-B23R_NTH02A04	FOSR	PS25	0	91	S																															WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BNTH-JR11-FOSR	VAV-B23R_NTH02A04	FOSR	PS25	0	96	S																															WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BOVL-FP15-FOSR	VAV-B40R_OVL01A00	FOSR	PS45	1	58	S																															WQS - Basin 1B: Section 2: Class VI: Special Standards: pH
1BPCD000.20	VAV-B15R_PCD01A00	A	PS11	0	61	S	1	59	S	0	61	S	39	61	IM																						WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BPDY-CC05-FOSR	VAV-B52R_PDY01A00	FOSR	PS71										0	17	S																						WQS - Basin 1B: Section 6b: Class VI: Special Standards: PWS, pH
1BPGE000.09	VAV-B57R_PGE01A00	A	PS83	1	36	S	0	36	S	0	36	S	22	35	IM																						WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BPGE-1-SOS	VAV-B57R_PGE01A00	CMON	PS83																												HP						SOS data Level II. WQS - Basin 1B: Section 1c: Class VI: Special Standards: pH
1BPGE-FC09-FOSR	VAV-B57R_PGE02A10	FOSR	PS83	0	103	S	0	18	S	0	15	S									0	S															WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BPGH000.29	VAV-B50R_PGH01A00	FPM,B	PS68	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	0	S							IM						WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BPGH000.60	VAV-B50R_PGH01A00	A	PS68	0	1	W	0	1	W	0	1	W																									WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BPHY-NS17-FOSR	VAV-B51R_PYH01A06	FOSR	PS70																																		WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BPLR000.08	VAV-B27R_PLR01A00	B,FPM	PS25	0	2	S	0	2	S	0	2	S	1	1	W				0	W	0	S	1	O							IM						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH. One sample exceeded the sediment screening value for Chromium
1BPLR000.16	VAV-B27R_PLR01A00	A	PS25	0	12	S	0	12	S	0	12	S	12	12	IM																						WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BPLR-JR10-FOSR	VAV-B27R_PLR01A00	FOSR	PS25	0	98	S																															WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
1BPNE000.04	VAV-B30R_PNE01A00	A	PS27	0	6	S	0	6	S	0	6	S	3	6	IM																						WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BPNE001.60	VAV-B30R_PNE01A00	FPM,B	PS27	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W	0	S							IM						WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BPOR-GA25-FOSR	VAV-B30R_POR01A00	FOSR	PS27	0	94	S																															WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BPSG000.20	VAV-B54R_PSG01A00	B	PS77	0	1	W	0	1	W	0	1	W																									WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BPSG001.36	VAV-B54R_PSG01A00	A,C,TR	PS77	0	42	S	0	42	S	0	42	S	4	42	S																						2 samples of Arsenic in Redbreast Sunfish & Rock Bass. Data outside 2016 window. WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Bacteria delist in 2016.Trend analysis was performed at station 1BPSG001.36 in the 2006 cycle. No statistically
1BPSG018.13	VAV-B54R_PSG01C10	A	PS77	0	12	S	0	12	S	0	12	S	3	12	IM																						WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BPSG031.99	VAV-B54R_PSG03A10	A,B	PS76	0	3	S	0	23	S	0	3	IM																				FS						WQS - Basin 1B: Section 6: Class V: Special Standards: pH. No new pH data for 2016, remains impaired.
1BPSG-1-SOS	VAV-B54R_PSG01A00	CMON	PS77																												HP						SOS data Level II. WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BPSG-NS68-FOSR	VAV-B54R_PSG01C10	FOSR	PS77	0	101	S																															WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BPSS-FP07B-PCCM	VAV-B39R_PSS01A00	NONA	PS43	0	5	IN							1	11	IN/O																						Temperature & Coli-scan data Level II Remains IN/O for bacteria, no new data. WQS - Basin 1B: Section 2: Class VI: Special Standards: pH
1BPSS-FP07-FOSR	VAV-B39R_PSS01A00	FOSR	PS43	0	60	S																															WQS - Basin 1B: Section 2: Class VI: Special Standards: pH
1BPSS-FP07-PCCM	VAV-B39R_PSS01A00	NONA	PS43	0	5	IN							2	11	IN/O																						Temperature & Coli-scan data Level II Remains IN/O for bacteria, no new data. WQS - Basin 1B: Section 2: Class VI: Special Standards: pH
1BPSS-FP17-FOSR	VAV-B39R_PSS01A00	FOSR	PS43	24	67	IM																															WQS - Basin 1B: Section 2: Class VI: Special Standards: pH
1BQAL004.30	VAV-B35R_QAL01A00	A,B	PS35	0	62	S	0	62	S	0	63	S	4	12	IM																						Benthic SV in 2004 (improved) WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BQAL005.04	VAV-B35R_QAL03A00	B	PS35	0	4	S	0	4	S	0	4	S																									WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BQAL005.09	VAV-B35R_QAL03A00	B	PS35	0	4	S	0	4	S	0	4	S																									Site had degraded since 2006 assessment. WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BQAL005.29	VAV-B35R_QAL03A00	A	PS35	0	58	S	0	58	S	0	59	S	12	59	IM																						WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BRSC001.42	VAV-B57R_RSC01A00	A	PS83	3	36	S	0	36	S	0	36	S	16	36	IM																						WQS - Basin 1B: Section 1c: Class VI: Special Standards: pH. Delist for Temp in 2016.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BRSC-1-SOS	VAV-B57R_RSC01A00	CMON	PS83																												HP							SOS data Level II. WQS - Basin 1B: Section 1c: Class VI: Special Standards:
1BRUN001.09	VAV-B44R_RUN01A00	A	PS54																																			WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BSHN022.63	VAV-B58R_SHN01A00	A,TR	PS85	0	35	S	0	35	S	0	35	S	5	36	IM																							VDH Fish Advisory WQS - Basin 1B: Section 1a: Class IV: Special Standards: pHTrend analysis was performed at station 1BSHN022.63 in the 2006 cycle. No statistically significant trends were detected.
1BSHN028.15	VAV-B57R_SHN01A00	A,C	PS84	0	12	S	0	12	S	0	12	S	0	12	S																							2 samples below VDH threshold for Hg, 1 sample of As in Redbreast Sunfish; 10 samples with PCB in Carp (3), Channel Catfish (4), Shorthead Redhorse Sucker (1), Redbreast Sunfish (1) & Smouth Bass (1) Data outside 2016 window. WQS - Basin 1B: Section 1a:
1BSHN032.65	VAV-B57R_SHN02A00	A	PS84	0	14	S	0	14	S	0	14	S	1	12	S																							WQS - Basin 1B: Section 1a: Class IV: Special Standards: pH
1BSHN038.48	VAV-B57R_SHN03A00	A	PS82	0	12	S	0	12	S	0	12	S	4	12	IM																							WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BSHN048.00	VAV-B55R_SHN01A00	A	PS80	1	12	S	0	12	S	0	12	S	1	12	S																							VDH Fish Advisory WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BSHN052.75	VAV-B55R_SHN02A00	A	PS80	0	2	S	0	2	S	0	2	S																										WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BSHN-FC01-FOSR	VAV-B57R_SHN03A00	FOSR	PS82	0	106	S	0	18	S	0	15	S									0	S																WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BSHN-FC05-FOSR	VAV-B57R_SHN01A00	FOSR	PS85	0	110	S	0	17	S	0	15	S									0	S																WQS - Basin 1B: Section 1a: Class IV: Special Standards: pH, PWS
1BSHN-FC08-FOSR	VAV-B58R_SHN01A00	FOSR	PS85	0	103	S	0	17	S	0	14	S									0	S																WQS - Basin 1B: Section 1a: Class IV: Special Standards: pH
1BSKD003.18	VAV-B20L_01	L	PS17	50	335	IM	0	117	S	28	307	S	0	13	S						0	S													0	2	S	Remains impaired for temperature in 2016. WQS - Basin 1B: Section 5d: Class VI: Special Standard:
1BSMK004.84	VAV-B44R_SMK01A00	A	PS53	1	12	S	0	12	S	0	12	S	0	10	S																							WQS - Basin 1B: Section 6g: Class V: Special Standards: pH. Delist for bacteria in 2016.
1BSMT001.42	VAV-B47R_SMT01A00	A	PS62	0	6	S	0	6	S	0	6	S	2	6	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH
1BSMT004.60	VAV-B47R_SMT01A00	A,TR	PS62	0	141	S	0	139	S	0	140	S	35	82	IM						0	S																WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH. Trend analysis was performed at station 1BSMT004.60 in the 2006 cycle. No statistically significant trends were detected.
1BSMT006.62	VAV-B47R_SMT01A00	B	PS62	0	7	S	0	7	S	0	7	S																				IM						WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH. Change in benthics from 2014
1BSMT019.26	VAV-B47R_SMT03A00	A	PS62	0	18	S	0	18	S	0	18	S	6	18	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BSMT023.18	VAV-B47R_SMT03A00	A	PS61	0	60	S	0	59	S	0	60	S	27	60	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BSMT026.41	VAV-B47R_SMT04A00	A	PS60	0	12	S	0	12	S	0	12	S	7	12	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BSMT-DN-WAR-FOSR	VAV-B47R_SMT02A00	FOSR	PS62	0	15	S	0	16	S	0	16	S	16	21	IM						0	S																WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BSMT-HDW@SPR-FOSR	VAV-B47R_SMT04A00	FOSR	PS60	0	19	S	0	19	S	1	19	S	7	21	IM						0	S																WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BSMT-HDW-DS-FOSR	VAV-B47R_SMT04A00	FOSR	PS60	0	19	S	0	19	S	0	19	S	9	22	IM						0	S																WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BSMT-IT@SLAB-FOSR	VAV-B47R_SMT04A00	FOSR	PS60	0	20	S	0	20	S	0	20	S	18	22	IM						0	S																WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BSMT-NS65-FOSR	VAV-B47R_SMT01A00	FOSR	PS62	0	30	S															0	S																WQS - Basin 1B: Section 6e: Class IV: Special Standards: PWS, pH
1BSMT-SC1-SOS	VAV-B47R_SMT01A00	CMON	PS62																												MP							SOS data Level II. WQS - Basin 1B: Section 6e: Class IV: Special Standards: PWS, pH
1BSMT-SC3-FOSR	VAV-B47R_SMT01A00	FOSR	PS62										15	29	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: PWS, pH
1BSMT-SC4-FOSR	VAV-B47R_SMT01A00	FOSR	PS62	0	3	S	0	3	S	0	3	S	16	29	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: PWS, pH
1BSMT-SC5-FOSR	VAV-B47R_SMT03A00	FOSR	PS61	0	11	S	0	10	S	0	11	S	29	40	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: PWS, pH
1BSNN000.18	VAV-B35R_SNN01A00	A	PS34																																			WQS - Basin 1B: Section 3: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BSPR000.40	VAV-B57R_SPR01A00	A,B	PS83	0	50	S	0	50	S	0	50	S	11	42	IM																		IM						WQS - Basin 1B: Section 1c: Class VI Special Standards: pH
1BSPR003.13	VAV-B57R_SPR01A00	B	PS83	0	3	S	0	3	S	0	3	S																				IM						WQS - Basin 1B: Section 1c: Class VI Special Standards: pH
1BSPR-FC02-FOSR	VAV-B57R_SPR01A00	FOSR	PS83	0	106	S	0	19	S	0	15	S									0	S																WQS - Basin 1B: Section 1c: Class VI: Special Standards: pH
1BSPR-Project Hope-SOS	VAV-B57R_SPR01A00	CMON	PS83																												HP							SOS data Level II. WQS - Basin 1B: Section 1c: Class VI: Special Standards: pH
1BSRT000.10	VAV-B48R_SRT01A00	A	PS63																																			WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BSSF000.19	VAV-B41R_SSF01A00	A,C	PS47	0	13	S	0	13	S	0	13	S	5	12	IM																							5 samples of Hg in Smouth Bass, Channel Catfish, Lmouth Bass (3), 4 samples of As in Smouth Bass & Lmouth Bass(3) 14 samples of PCB in Lmouth Bass (3), Redbreast Sunfish (1), Channel Catfish (5) & Carp (5) VDH Fish Advisory Data outside 2016 window.
1BSSF003.56	VAV-B41R_SSF02A00	A,TR	PS47	0	147	S	0	144	S	1	146	S	9	46	IM						0	S																VDH Fish Advisory WQS - Basin 1B: Section 2: Class IV: Special Standards: PWSTrend analysis was performed at station 1BSSF003.56 in the 2006 cycle. Statistically significant trends were detected for the following parameter(s): Dissolved Oxygen % Sat.
1BSSF031.38	VAV-B40R_SSF02A00	A	PS44	0	34	S	0	32	S	0	34	S	0	1	W				0	S																		VDH Fish Advisory WQS - Basin 1B: Section 2: Class IV: Special Standards: pH Also in ID305B VAV-B40R_SSS01C14; VAV-B40R_SSF03A14; VAV-B40R_SSF04A14.
1BSSF034.55	VAV-B40R_SSF02A00	FPM	PS44	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W																VDH Fish Advisory WQS - Basin 1B: Section 2: Class IV: Special Standards: pH Also in ID305B VAV-B40R_SSS01C14; VAV-B40R_SSF03A14; VAV-B40R_SSF04A14.
1BSSF040.97	VAV-B40R_SSF02A00	FPM	PS44	0	3	S	0	3	S	0	3	S	0	1	W				0	W	0	S	0	S														VDH Fish Advisory WQS - Basin 1B: Section 2: Class IV: Special Standards: pH Also in ID305B VAV-B40R_SSS01C14; VAV-B40R_SSF03A14; VAV-B40R_SSF04A14.
1BSSF053.05	VAV-B38R_SSF01A00	B	PS41	0	3	S	0	3	S	0	3	S																				IM						VDH Fish Advisory WQS - Basin 1B: Section 2b: Class IV: Special Standards: pH
1BSSF054.20	VAV-B38R_SSF01A00	A,C,TR	PS41	0	36	S	0	36	S	0	36	S	5	36	IM																							Continuous monitoring data for Temp., DO and pH. DO evaluated based on the 5 mg/l daily average standard. 0 of 148 days violated the daily standard. 2 samples of Hg in Redbreast Sunfish and Smouth Bass. VDH Fish Advisory Data outside 2016 window.
1BSSF066.98	VAV-B37R_SSF02A10	FPM	PS37	0	2	S	0	1	W	0	2	S	0	1	W				0	W	0	W	1	O														VDH Fish Advisory WQS - Basin 1B: Section 2: Class IV: Special Standards: pH. One sample exceeded the sediment screening value for Mercury
1BSSF068.83	VAV-B37R_SSF02A10	SS	PS37	0	12	S	0	12	S	0	12	S	1	12	S																							VDH Fish Advisory WQS - Basin 1B: Section 2b: Class IV: Special Standards: pH
1BSSF078.18	VAV-B37R_SSF02A10	B	PS37	0	4	S	0	4	S	0	4	S																				IM						VDH Fish Advisory, Benthic MI in 2004 (improving) WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSSF078.20	VAV-B37R_SSF02A10	A	PS37	0	47	S	0	45	S	0	47	S	1	12	S				0	S																		VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH,
1BSSF081.36	VAV-B35R_SSF01A00	FPM	PS35	0	1	W	0	1	W	0	1	W	0	1	W				0	W	0	W																VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSSF085.08	VAV-B35R_SSF01A00	A	PS35	0	12	S	0	12	S	0	12	S	1	12	S																							VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSSF086.12	VAV-B35R_SSF01A00	A,B,FPM	PS35	0	3	S	0	3	S	0	3	S																				FS						VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSSF092.69	VAV-B35R_SSF01A00	A	PS34	0	12	S	0	12	S	0	12	S	1	12	S																							VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSSF096.03	VAV-B33R_SSF01A00	A	PS32	0	12	S	0	12	S	0	12	S	1	12	S																							VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSSF100.10	VAV-B33R_SSF01A00	A,B,TR	PS32	0	199	S	0	191	S	0	198	S	4	71	S				0	S	0	S										J						Continuous monitoring data for Temp. DO and pH. DO evaluated based on the 5 mg/l daily average standard. 0 of 153 days violated the standard. 1 sample of Hg in Smouth Bass, 1 sample of PCB in Smouth Bass VDH Fish Advisory Data outside 2014 window. Be
1BSSF-FP01-FOSR	VAV-B37R_SSF02A10	FOSR	PS37	0	94	S																																WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BSSF-FP03-FOSR	VAV-B38R_SSF01A00	FOSR	PS41	0	70	S																																WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BSSF-FP05-FOSR	VAV-B40R_SSF02A00	FOSR	PS45	0	60	S																																WQS - Basin 1B: Section 2: Class IV: Special Standards: pH Also in ID305B VAV-B40R_SSS01C14; VAV-B40R_SSF03A14; VAV-B40R_SSF04A14.
1BSSF-FW14-FOSR	VAV-B41R_SSF02A00	FOSR	PS47	0	53	S	0	46	S	0	48	S									0	S																WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BSTH002.14	VAV-B32R_STH01A04	A,B	PS31	0	51	S	0	49	S	0	51	S	2	12	IM				0	S												IM						VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH005.36	VAV-B32R_STH02A04	FPM,B	PS31	0	2	S	0	2	S	0	2	S	0	1	W				0	W	0	S	1	O								IM						VDH Fish Advisory 1 sediment sample exceeded the screening value for Mercury. WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH007.80	VAV-B32R_STH02A04	A,TR	PS31	0	88	S	0	84	S	0	88	S	7	53	IM				0	S																		VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH Trend analysis was performed at station 1BSTH007.80 in the 2006 cycle. Statistically significant trends were detected for the following parameter(s): Dissolved Oxygen % Sat.
1BSTH012.71	VAV-B32R_STH02A04	B,SS	PS31	0	42	S	0	39	S	0	42	S							0	S												FS						VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH. Benthics status change from 2014.
1BSTH019.26	VAV-B32R_STH03A04	A	PS30	0	36	S	0	33	S	0	36	S							0	S																		VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BSTH019.52	VAV-B32R_STH03A04	A,B	PS30	0	69	S	0	67	S	0	69	S	11	65	IM																IM							VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH. Water toxics not assessed based on only one sample available for assessment.
1BSTH020.85	VAV-B32R_STH03A04	A,B	PS30	0	40	S	0	39	S	0	40	S	4	35	IM																IM							VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH021.59	VAV-B32R_STH03A04	A,B	PS30	0	7	S	0	7	S	0	7	S																			IM							VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH022.19	VAV-B32R_STH03A04	A	PS30	0	36	S	0	33	S	2	36	S							0	S																		VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH023.73	VAV-B32R_STH03A04	A,C	PS30	0	5	S	0	5	S	0	5	S	2	6	IM																							5 samples of Hg in Redbreast Sunfish, Lmouth Bass (3) & Smouth Bass. 3 samples of Arsenic in Redbreast Sunfish, Lmouth Bass and Smouth Bass. VDH Fish Advisory Data outside 2016 window. WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH024.96	VAV-B32R_STH04A04	SS	PS30	0	36	S	0	33	S	0	36	S							0	S																		VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH025.70	VAV-B32R_STH04A04	A	PS30	0	3	S	0	3	S	0	3	S																										VDH Fish Advisory WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH025.83	VAV-B32R_STH04A04	A	PS30	0	36	S	0	33	S	0	36	S							0	S																		WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH026.73	VAV-B32R_STH05A04	A	PS30	0	39	S	0	36	S	0	39	S							0	S																		WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH027.08	VAV-B32R_STH05A04	B	PS30	0	7	S	0	7	S	0	7	S																			IM							Site has degraded for benthics since 2010 assessment. WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH027.85	VAV-B32R_STH05A04	A,TR	PS30	0	138	S	0	134	S	0	132	S	11	70	IM						0	S																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH. Trend analysis was performed at station 1BSTH027.85 in the 2006 cycle. No statistically significant trends were detected.
1BSTH029.45	VAV-B32R_STH05A04	A,B,FPM	PS30	0	2	S	0	2	S	0	2	S																			FS							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH. Benthic status change from 2014.
1BSTH031.45	VAV-B32R_STH05A04	A	PS30	0	12	S	0	12	S	0	12	S	4	12	IM																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH036.84	VAV-B31R_STH01A00	A	PS28	0	6	S	0	6	S	0	6	S	5	6	IM																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH041.68	VAV-B30R_STH01A00	A	PS27	0	72	S	0	70	S	0	72	S	39	71	IM																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH044.90	VAV-B30R_STH01A00	A	PS27	0	6	S	0	6	S	0	6	S	4	6	IM																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH-GA01-FOSR	VAV-B32R_STH01A04	FOSR	PS31	0	63	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH-GA02A-FOSR	VAV-B32R_STH01A04	FOSR	PS31	0	71	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH-GA02B-FOSR	VAV-B32R_STH01A04	FOSR	PS31	0	70	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH-GA02-FOSR	VAV-B32R_STH02A04	FOSR	PS31	0	71	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH-GA04-FOSR	VAV-B32R_STH03A04	FOSR	PS30	0	61	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH-GA08-FOSR	VAV-B30R_STH01A00	FOSR	PS27	0	95	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH-GA21-FOSR	VAV-B32R_STH04A04	FOSR	PS30	0	45	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTH-GA23-FOSR	VAV-B31R_STH01A00	FOSR	PS28	0	97	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTL002.14	VAV-B32R_STL01A16	PA	PS30	0	12	S	0	12	S	0	12	S	8	12	IM																							WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTO-GA24-FOSR	VAV-B30R_STO01A00	FOSR	PS27	0	13	S																																WQS - Basin 1B: Section 3: Class IV: Special Standards: pH
1BSTR-BHSR-PCCM	VAV-B37R_STR01A00	NONA	PS39	0	5	IN							0	9	IN																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BSTR-CH-PCCM	VAV-B37R_STR01A00	NONA	PS39	0	5	IN							0	9	IN																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BSTV000.20	VAV-B56R_STV01A00	B,A	PS79	0	70	S	3	68	S	0	69	S	7	66	IM																IM							WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BSTV002.92	VAV-B56R_STV02A08	C	PS79																																			1 sample exceeded DDT PEC WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BSTY001.22	VAV-B49R_STY01A00	A	PS67	0	11	S	0	10	S	0	11	S	3	11	IM																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BSTY003.84	VAV-B49R_STY01A00	A	PS67	0	5	S	0	5	S	0	5	S	0	5	S																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BSTY004.24	VAV-B49R_STY01A00	B	PS67	0	6	S	0	6	S	0	6	S																			IM							WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY004.68	VAV-B49R_STY02A00	A	PS67	0	1	W	0	1	W	0	1	W																										WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY005.53	VAV-B49R_STY02A00	A	PS67	0	3	S	0	3	S	0	3	S																										WQS - Basin 1B: Section 6: Class V: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BSTY005.91	VAV-B49R_STY03A00	B	PS67	0	3	S	0	3	S	0	3	S																			IM							WQS - Basin 1B: Section 6: Class V: Special Standards: pH. Benthic status change from 2014.
1BSTY006.81	VAV-B49R_STY03A00	A	PS67	2	5	IM	0	5	S	0	5	S	0	5	S																							WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY013.85	VAV-B49R_STY05A04	A	PS65	3	10	IM	0	10	S	0	10	S	0	10	S																							WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY023.05	VAV-B49L_STY01A10	L	PS65	0	70	S	2	65	S	0	70	S	0	14	S						0	S																Chlor A not evaluated, lake not in 187 Regulation. This lake has a DO impairment in the Hypolimnion that is natural. 2/65 vio of DO in epilimnion, 34/63 vio in hypolimnion. All TSI OK (< 60) WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BSTY023.05	VAV-B49L_STY01A10	L	PS65	0	68	S	34	63	IM	3	68	S																										Chlor A not evaluated, lake not in 187 Regulation. This lake has a DO impairment in the Hypolimnion that is natural. 2/65 vio of DO in epilimnion, 34/63 vio in hypolimnion. All TSI OK (< 60) WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BSTY-2-SOS	VAV-B49R_STY02A00	CMON	PS67																												MP							SOS data Level II. WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY-3-SOS	VAV-B49R_STY05A04	CMON	PS65																												LP							SOS data Level II. WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY-LL01D-FNFSR	VAV-B49L_STY01A10	CMON	PS65	0	32	IN	0	17	IN	0	14	IN	1	22	S																							FNFSR Field parameter data Level II, All other data Level III. WQS: Basin 1B: Section 6: Class IV: Special Standards: pH DEQ & Level III bacteria data pooled (4/82) 4.9% violation rate.
1BSTY-LL01S-FNFSR	VAV-B49L_STY01A10	CMON	PS65	0	32	IN	0	16	IN	0	14	IN	0	23	S																							FNFSR Field parameter data Level II, All other data Level III. WQS: Basin 1B: Section 6: Class IV: Special Standards: pH DEQ & Level III bacteria data pooled (4/82) 4.9% violation rate.
1BSTY-LL02-FNFSR	VAV-B49L_STY01A10	CMON	PS65	0	32	IN	0	16	IN	0	14	IN	3	23	IM																							FNFSR Field parameter data Level II, All other data Level III. WQS: Basin 1B: Section 6: Class IV: Special Standards: pH DEQ & Level III bacteria data pooled (4/82) 4.9% violation rate.
1BSTY-NS29-FOSR	VAV-B49R_STY02A00	FOSR	PS67	13	115	IM																																WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY-NS30-FOSR	VAV-B49R_STY03A00	FOSR	PS67	15	116	IM																																WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY-NS58-FOSR	VAV-B49R_STY04A04	FOSR	PS66	14	116	IM																																WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY-STY01-FNFSR	VAV-B49R_STY06A10	CMON	PS65	0	34	IN	0	19	IN	0	17	IN	1	24	S																							FNFSR Field parameter data Level II, All other data Level III. WQS: Basin 1B: Section 6: Class IV: Special Standards: pH
1BSTY-STY-2-FNFSR	VAV-B49R_STY05A04	CMON	PS65	2	32	IN	0	19	IN	0	17	IN	1	24	S																							FNFSR Field parameter data Level II, All other data Level III. WQS: Basin 1B: Section 6: Class V: Special Standards: pH
1BSTY-STY-3-FNFSR	VAV-B49R_STY06A10	CMON	PS65	0	17	IN	0	17	IN	0	15	IN	3	12	IM																							FNFSR Field parameter data Level II, All other data Level III. WQS: Basin 1B: Section 6: Class IV: Special Standards: pH
1BSYR-Sto-1-SOS	VAV-B36R_SYR01A00	CMON	PS36																												LP							WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BTBL-NS44-FOSR	VAV-B51R_TBL02A04	FOSR	PS70	0	101	S							5	18	IM						0	S																WQS - Basin 1B: Section 6c: Class IV: Specials Standards: pH
1BTMB000.54	VAV-B50R_TMB01A00	A,B	PS69	0	17	S	0	17	S	0	17	S	2	12	S																	FS							Benthic MI in 2004 (improved) WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. No new bacteria data in 2014, fully supporting carries forward.
1BTMB000.70	VAV-B50R_TMB01A00	A,B	PS69	0	3	S	0	3	S	0	3	S																				FS							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BTMB-NS13-FOSR	VAV-B50R_TMB01A00	FOSR	PS69	0	82	S																																WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BTMB-TB1-FOSR	VAV-B50R_TMB01A00	FOSR	PS69	0	95	S																																WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BTMB-TB2-FOSR	VAV-B50R_TMB01A00	FOSR	PS69	0	55	S																																WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BTRL000.02	VAV-B45R_TRL01A00	A,B	PS55	0	47	S	0	47	S	0	47	S	16	36	IM						0	S										IM							WQS - Basin 1B: Section 6f: Class IV: Special Standards: pH
1BTRN000.38	VAV-B17R_TRN01A00	A	PS16																																			WQS - Basin 1B: Section 5: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BWAR003.88	VAV-B47R_WAR01A00	A	PS61	0	23	S	0	23	S	0	23	S	5	23	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BWAR-SCW1-FOSR	VAV-B47R_WAR01A00	FOSR	PS61	0	14	S	0	14	S	0	14	S	12	21	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BWAR-SCW2-FOSR	VAV-B47R_WAR01A00	FOSR	PS61	0	17	S	0	17	S	0	17	S	8	21	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BWAR-SCW3-FOSR	VAV-B47R_WAR01A00	FOSR	PS61	0	16	S	0	16	S	0	16	S	7	21	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
1BWBK-1-SOS	VAV-B57R_WBK01A00	CMON	PS83																												HP							SOS data Level II. WQS - Basin 1B: Section 1c: Class VI: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
1BWLO000.71	VAV-B55R_WLO01A06	A	PS80	0	36	S	0	35	S	0	36	S	10	36	IM																							WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BWSB000.22	VAV-B58R_WSB01A00	A	PS85	0	18	S	0	18	S	0	18	S	15	18	IM																							WQS - Basin 1B: Section 1a: Class IV: Special Standards: pH
1BWSB-FC32-FOSR	VAV-B58R_WSB01A00	FOSR	PS85	0	106	S	0	18	S	0	16	S									0	S																WQS - Basin 1B: Section 1a: Class IV: Special Standards: pH
1BWSK-GA39-FOSR	VAV-B11R_WSK01A00	FOSR	PS03	0	110	S															0	S																WQS - Basin 1B: Section 4a: Class IV: Special Standards: pH, PWS
1BWSK-WC1-SOS	VAV-B11R_WSK01A00	CMON	PS03																												LP							SOS data Level II. WQS - Basin 1B: Section 4a: Class IV: Special Standards: PWS, pH
1BWST000.20	VAV-B56R_WST01A00	A	PS79	0	58	S	0	56	S	0	57	S	10	58	IM																							WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BWST000.33	VAV-B56R_WST01A00	A	PS79	0	13	S	0	13	S	0	13	S	3	13	IM																							WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH
1BXBP000.03	VAV-B49R_XBP01A10	A,B	PS65	0	2	S	0	2	S	0	2	S																			FS							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
1BXBP-OS01-FNFSR	VAV-B49R_XBP01A10	CMON	PS65	0	35	IN	0	17	IN	0	19	IN	8	24	IM																							FNFSR Field parameter data Level II, All other data Level III. WQS: Basin 1B: Section 6: Class IV: Special Standards: pH
1BXBP-OS03-FNFSR	VAV-B49R_XBP01A10	CMON	PS65	0	34	IN	0	18	IN	0	16	IN	4	23	IM																							FNFSR Field parameter data Level II, All other data Level III. WQS: Basin 1B: Section 6: Class IV: Special Standards: pH
1BXCE000.63	VAV-B56L_CRO01A04	L	PS79	0	102	S	2	63	S	0	102	S	0	12	S						0	S													0	2	S	Lake Frederick pooled DO/pH/Temp/E-coli results for Stations 1BCRO009.19, 1BCRO009.79, 1BXCE000.63 = 217 obs/9 exceeds (DO) 424 obs/0 exceeds (pH 424 obs/0 exceeds (Temp) 36 obs/0 exceeds (E-coli). WQS - Basin 1B: Section 1c: Class IV: Special Standards:
1BXDN000.36	VAV-B10R_XDN01A00	A	PS01	0	2	S	0	2	S	0	2	S																										WQS - Basin 1B: Section 4: Class IV: Special Standards: pH
1BXDR-CRDR-FOSR	VAV-B56R_XDR01A06	FOSR	PS79																																			WQS - Basin 1B: Section 1c: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BXEF000.23	VAV-B25L_00	L	PS23	0	40	S	0	13	S	0	39	S	0	13	S						0	S													0	2	S	WQS - Basin 1B: Section 5: Class IV: Special Standards: pH, PWS
1BXEH000.04	VAV-B41R_XEH01A12	A	PS47	0	1	W	0	1	W	0	1	W																										WQS - Basin 1B; Section 2: Class IV: Special Standards: pH
1BXHB-MQ01-FOSR	VAV-B45R_XHB01A08	FOSR	PS58																																			LFSWCD Coli-scan data Level II. WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
1BXMC-FP644-PCCM	VAV-B38R_XMC01A08	NONA	PS41	0	5	IN							8	11	IN/O																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BXML-SL-PCCM	VAV-B38R_XML01A08	NONA	PS41	0	2	IN							0	4	IN																							Temperature & Coli-scan data Level II. WQS - Basin 1B: Section 2: Class IV: Special Standards: pH
1BXMS000.20	VAV-B19R_XMS01A04	A	PS15	0	2	S	0	2	S	0	2	S																										WQS-Basin 1B; Class IV: Section 5b: Special Standards: pH (6.5-9.5)
1BXOS000.01	VAV-B52R_XOS01A00	A	PS71	0	2	S	0	2	S	0	2	S																										WQS - Basin 1B: Section 6b: Class IV: Specials Standards: pH
1BXPG-NS53-FOSR	VAV-B54R_XPG01A08	FOSR	PS76	0	102	S																																WQS - Basin 1B: Section 6: Class V: Special Standards: pH
1BXSG-SC 1-FOSR	VAV-B47R_XSG01A12	FOSR	PS62										10	12	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: PWS, pH
1BXSG-SC 2-FOSR	VAV-B47R_XSG01A12	FOSR	PS62	0	6	S	0	6	S	0	6	S	20	24	IM																							WQS - Basin 1B: Section 6e: Class IV: Special Standards: PWS, pH
1BXSH-NS64-FOSR	VAV-B50R_XSH01A10	FOSR	PS68	0	116	S							13	18	IM																							WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
2001	VAV-B20R_SKD03A00	USFS	PS17																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 5d: Class VI: Special Standards:
2003	VAV-B20R_RCK01A02	USFS	PS18																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 5: Class VI: Special Standards: pH
2021	VAV-B13R_XEI02A02	USFS	PS05																																			WQS - Basin 1B: Section 4: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
2022	VAV-B18R_HQR01A00	USFS	PS14																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 6g: Class VI: Special Standards: pH
2023	VAV-B18R_MNS01A04	USFS	PS14																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 5: Class VI: Special Standards: pH
2024	VAV-B44R_TUR01A02	USFS	PS53																																			Assessment Based on SCI Score - WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
2026	VAV-B18R_BRY02A00	USFS	PS14																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 5: Class IV: Special Standards: pH
2030	VAV-B16R_SKF01A00	USFS	PS12																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 6: Class IV: Special Standards: pH
4002	VAV-B49R_LAR01A00	USFS	PS65																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 6: Class VI: Special Standards: pH

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
4005	VAV-B37R_MGN01A02	USFS	PS38																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 2: Class VI: Special Standards:
4018	VAV-B54R_LPC01A00	USFS	PS77																																			Assessment Based on SCI Score - WQS - Basin 1B: Section 6: Class V: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
4028	VAV-B49R_XEN01A02	USFS	PS66																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 6: Class VI: Special Standards: pH
4029	VAV-B49R_LSC01B08	USFS	PS66																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 6: Class VI: Special Standards: pH
4061	VAV-B44R_XEQ01A02	USFS	PS54																																			WQS - Basin 1B: Section 6: Class IV: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
4076	VAV-B47R_MTN01A00	USFS	PS60																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 6e: Class IV: Special Standards: pH, PWS
4077	VAV-B54R_PMR01A00	USFS	PS76																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 6: Class V: Special Standards: pH
5104	VAV-B31R_TMS02A10	USFS	PS29																																			Assessment Based on SCI Score - WQS - Basin 1B: Section 3: Class VI: Special Standards: pH. Station used for use support/non-support in previous cycles. No 2016 data.
5116	VAV-B31R_MLS02A10	USFS	PS29																												IM							Assessment Based on SCI Score - Two spring samples show improvement, no new fall data to delist. WQS - Basin 1B: Section 3: Class V: Special Standards: pH
6056	VAV-B01R_XER01A00	USFS	PU01																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 12: Class VI: Special Standards:
6057	VAV-B01R_XSC01A04	USFS	PU01																												FS							Assessment Based on SCI Score - WQS - Basin 1B: Section 12: Class VI: Special Standards:
AU11-UVA	VAV-B11R_XED01A02	NONA	PS02							1	1	W																										WQS - Basin 1B: Section 4: Class IV Special Standards: pH
AU12-UVA	VAV-B32R_SAW02A10	NONA	PS30							1	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
AU13-UVA	VAV-B31R_TMS02A10	NONA	PS29							0	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
AU14-UVA	VAV-B30R_LOV02A10	NONA	PS27							1	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
AU15-UVA	VAV-B31R_JHN01A00	NONA	PS28							1	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
AU16-UVA	VAV-B31R_CLS02A10	NONA	PS28							1	1	W																										WQS - Basin 1B: Section 3b: Class VI Special Standards: PWS
AU19-UVA	VAV-B31R_BKN02A10	NONA	PS29							0	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
AU20-UVA	VAV-B31R_BSK01A10	NONA	PS29							0	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
AU30-UVA	VAV-B16R_LTT01A00	NONA	PS13							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
AU31-UVA	VAV-B16R_LTT01A00	NONA	PS13							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
AU32-UVA	VAV-B16R_LTT01A00	NONA	PS13							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
AU33-UVA	VAV-B11R_JEN02A00	NONA	PS03							0	1	W																										WQS - Basin 1B: Section 4a: Class IV Special Standards: pH
AU34-UVA	VAV-B11R_BFP02A10	NONA	PS02							0	1	W																										WQS - Basin 1B: Section 4: Class VI Special Standards:
AU35-UVA	VAV-B31R_ORE01A02	NONA	PS29							1	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards:
DR01-UVA	VAV-B33R_DPR01A00	NONA	PS32	7	99	IN				102	102	IN/O																										WQS - Basin 1B: Section 3: Class VI: Special Standards: pH
HI01-UVA	VAV-B01R_MUL01A10	NONA	PU01							0	1	W																										WQS - Basin 1B: Section 12: Class VI Special Standards:
HI02-UVA	VAV-B01R_NEW01A10	NONA	PU01							0	1	W																										WQS - Basin 1B: Section 12: Class VI Special Standards:
HI05-UVA	VAV-B01R_LAR01A00	NONA	PU01							0	1	W																										WQS - Basin 1B: Section 12: Class VI Special Standards:
HI06-UVA	VAV-B01R_SLA01A00	NONA	PU01							0	1	W																										WQS - Basin 1B: Section 12: Class VI Special Standards:
HI07-UVA	VAV-B01R_XTD01A04	NONA	PU01							0	1	W																										WQS - Basin 1B: Section 12: Class VI Special Standards:
HI08-UVA	VAV-B01R_BUR01A04	NONA	PU01							0	1	W																										WQS - Basin 1B: Section 12: Class VI Special Standards:
HI09-UVA	VAV-B01R_LAR01A00	NONA	PU01							0	1	W																										WQS - Basin 1B: Section 12: Class VI Special Standards:
HI11-UVA	VAV-B01R_BLT01A16	NONA	PU01							0	1	W																										WQS - Basin 1B: Section 12: Class VI Special Standards:
MAD2-UVA	VAV-B33R_MAD02A10	NONA	PS32	2	14	IN/O				2	15	IN/O																										WQS - Basin 1B: Section 3: Class VI Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
MAIA97-132-UVA	VAV-B16R_NTH03A00	NONA	PS12	0	2	IN				2	2	IN/O																										WQS - Basin 1B: Section 5e: Class VI Special Standards: PWS
NFDR-UVA	VAV-B39R_DNF01A02	NONA	PS43	0	129	IN				67	129	IN/O																										WQS - Basin 1B: Section 2: Class IV Special Standards: pH
PAIN-UVA	VAV-B32R_PAN01A00	NONA	PS31	27	313	IN				313	313	IN/O																										WQS - Basin 1B: Section 3: Class VI: Special Standards: pH
PG03-UVA	VAV-B37R_PSR01A00	NONA	PS38							0	1	W																										WQS - Basin 1B: Section 2: Class VI Special Standards:
PG04-UVA	VAV-B37R_RNR01A00	NONA	PS38							0	1	W																										WQS - Basin 1B: Section 2: Class VI Special Standards:
PG05-UVA	VAV-B37R_FLZ01A00	NONA	PS37							0	1	W																										WQS - Basin 1B: Section 2: Class IV Special Standards: pH
PG08-UVA	VAV-B36R_NKE01A10	NONA	PS36							0	1	W																										WQS - Basin 1B: Section 2d: Class VI Special Standards: pH
PG09-UVA	VAV-B36R_BIC01A00	NONA	PS36							0	1	W																										WQS - Basin 1B: Section 2: Class IV Special Standards: pH
RH01-UVA	VAV-B42R_GER01A00	NONA	PS49							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
RH02-UVA	VAV-B42R_GER01A00	NONA	PS49							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
RH03-UVA	VAV-B42R_CRR01A10	NONA	PS49							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
RH05-UVA	VAV-B42R_SUM01A10	NONA	PS49							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
RH06-UVA	VAV-B43R_CRH01A10	NONA	PS52							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
RH07-UVA	VAV-B43R_XCL01A10	NONA	PS52							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
RH08-UVA	VAV-B42R_RAT01A16	NONA	PS51							0	1	W																										WQS - Basin 1B: Section 6: Class IV Special Standards: pH
RH09-UVA	VAV-B42R_SPU01A16	NONA	PS51							0	1	W																										WQS - Basin 1B: Section 6: Class IV Special Standards: pH
RH10-UVA	VAV-B42R_SRK02A10	NONA	PS50							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
RH11-UVA	VAV-B42R_XSK01A16	NONA	PS50							0	1	W																										WQS - Basin 1B: Section 6: Class IV Special Standards: pH
RH12-UVA	VAV-B20R_LPR01A10	NONA	PS17							1	1	W																										WQS - Basin 1B: Section 5d: Class VI Special Standards:
RH13-UVA	VAV-B20R_LAU01A10	NONA	PS17							1	1	W																										WQS - Basin 1B: Section 5d: Class VI Special Standards:
RH14-UVA	VAV-B20R_DUR03A00	NONA	PS17							0	1	W																										WQS - Basin 1B: Section 5d: Class VI Special Standards:
RH15-UVA	VAV-B44R_LON01A02	NONA	PS53							0	1	W																										WQS - Basin 1B: Section 6g: Class VI Special Standards:
RH16-UVA	VAV-B18R_BRY03A00	NONA	PS14							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
RH17-UVA	VAV-B18R_MNS01A04	NONA	PS14							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
RH18-UVA	VAV-B18R_HQR01A00	NONA	PS14							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
RH20-UVA	VAV-B20R_LLR01A02	NONA	PS17							1	1	W																										WQS - Basin 1B: Section 5d: Class VI Special Standards:
RH21-UVA	VAV-B20R_SND01A10	NONA	PS17							0	1	W																										WQS - Basin 1B: Section 5d: Class VI Special Standards:
RH22-UVA	VAV-B20R_MSP01A10	NONA	PS17							0	1	W																										WQS - Basin 1B: Section 5d: Class VI Special Standards:
RH23-UVA	VAV-B20R_DRU01A10	NONA	PS18							0	1	W																										WQS - Basin 1B: Section 5c: Class VI Special Standards:
RH24-UVA	VAV-B20R_KPT01A10	NONA	PS18							0	1	W																										WQS - Basin 1B: Section 5c: Class VI Special Standards:
RH25-UVA	VAV-B20R_GUM01A02	NONA	PS18							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
RH26-UVA	VAV-B20R_MSR01A10	NONA	PS18							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
RH27-UVA	VAV-B20R_RCK01A02	NONA	PS18							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
RH30-UVA	VAV-B20R_XXB01A16	NONA	PS18							0	1	W																										WQS - Basin 1B: Section 5d: Class IV Special Standards:
RH32-UVA	VAV-B20R_DUR02A00	NONA	PS18							0	1	W																										WQS - Basin 1B: Section 5c: Class VI Special Standards: PWS
RH33-UVA	VAV-B18R_ROB01A02	NONA	PS14							1	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:
RH34-UVA	VAV-B18R_USB01A00	NONA	PS14							1	1	W																										WQS - Basin 1B: Section 5: Class IV Special Standards: pH
RH36-UVA	VAV-B20R_BBB01A00	NONA	PS18							0	1	W																										WQS - Basin 1B: Section 5: Class VI Special Standards:

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
RH38-UVA	VAV-B35R_BON02A10	NONA	PS35							0	1	W																										WQS - Basin 1B: Section 2: Class VI Special Standards: pH
RH39-UVA	VAV-B35R_BON02A10	NONA	PS35							0	1	W																										WQS - Basin 1B: Section 2: Class VI Special Standards: pH
RH40-UVA	VAV-B35R_XBN01A16	NONA	PS35							0	1	W																										WQS - Basin 1B: Section 3: Class IV Special Standards: pH
RH41-UVA	VAV-B36R_NKS02A10	NONA	PS36							0	1	W																										WQS - Basin 1B: Section 2d: Class VI Special Standards: pH
RH42-UVA	VAV-B35R_DRU01A00	NONA	PS35							0	1	W																										WQS - Basin 1B: Section 3: Class IV Special Standards: pH
RH43-UVA	VAV-B43R_MSL02A10	NONA	PS51							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
RH44-UVA	VAV-B43R_RTR01A16	NONA	PS51							0	1	W																										WQS - Basin 1B: Section 6: Class IV Special Standards:
RH47-UVA	VAV-B33R_LLW02A10	NONA	PS32							1	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
RH48-UVA	VAV-B33R_BGR01A00	NONA	PS32							0	1	W																										WQS - Basin 1B: Section 3: Class IV Special Standards: pH
RH49-UVA	VAV-B33R_BGR02A10	NONA	PS32							0	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
RH50-UVA	VAV-B33R_RMR01A10	NONA	PS32							1	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
RH51-UVA	VAV-B35R_ONE02A10	NONA	PS34							1	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
RH52-UVA	VAV-B35R_ONE02A10	NONA	PS34							1	1	W																										WQS - Basin 1B: Section 3: Class VI Special Standards: pH
SH02-UVA	VAV-B49R_XEN01A02	NONA	PS66							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
SH03-UVA	VAV-B49R_LAR01A00	NONA	PS65							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
SH04-UVA	VAV-B52R_CDR04A02	NONA	PS71							1	1	W																										WQS - Basin 1B: Section 6b: Class VI Special Standards:
SH05-UVA	VAV-B52R_XSG01A04	NONA	PS71							0	1	W																										WQS - Basin 1B: Section 6b: Class VI Special Standards:
SH06-UVA	VAV-B49R_AND01A16	NONA	PS65							0	1	W																										WQS - Basin 1B: Section 6: Class V Special Standards: pH
SH07-UVA	VAV-B49R_STY06A10	NONA	PS65							0	1	W																										WQS - Basin 1B: Section 6: Class IV Special Standards: pH
TIME 98-049-UVA	VAV-B52R_XCR01A16	NONA	PS71	0	2	IN				2	2	IN/O																										WQS - Basin 1B: Section 6b: Class VI Special Standards: pH
TIME 98-061-UVA	VAV-B49R_XBR01A16	NONA	PS65	0	2	IN				2	2	IN/O																										WQS - Basin 1B: Section 6: Class V Special Standards: pH
VA 548-UVA	VAV-B47R_XGC01A16	NONA	PS62	0	2	IN				2	2	IN/O																										WQS - Basin 1B: Section 6e: Class IV Special Standards: pH
VT18-UVA	VAV-B01R_XER01A00	NONA	PU01	0	15	IN				0	15	IN																										WQS - Basin 1B: Section 12: Class VI Special Standards:
VT19-UVA	VAV-B01R_XSC01A04	NONA	PU01	0	15	IN				0	15	IN																										WQS - Basin 1B: Section 12: Class VI Special Standards:
VT36-UVA	VAV-B32R_MDW01A00	NONA	PS31	2	15	IN/O				15	15	IN/O																										WQS - Basin 1B: Section 3: Class VI: Special Standards: pH
VT37-UVA	VAV-B16R_NTH03A00	NONA	PS12	0	15	IN				15	15	IN/O																										WQS - Basin 1B: Section 5e: Class IV Special Standards: PWS
VT39-UVA	VAV-B31R_KND01A00	NONA	PS28	1	14	IN				14	14	IN/O																										WQS - Basin 1B: Section 3: Class VI: Special Standards:
VT40-UVA	VAV-B31R_MLS03A10	NONA	PS29	2	16	IN/O				9	16	IN/O																										WQS - Basin 1B: Section 3b: Class VI Special Standards: PWS
VT49-UVA	VAV-B49R_LSC01A00	NONA	PS66	2	16	IN/O				1	16	IN																										WQS - Basin 1B: Section 6: Class VI Special Standards:
VT50-UVA	VAV-B49R_LAR02A08	NONA	PS65	0	16	IN				16	16	IN/O																										WQS - Basin 1B: Section 6: Class VI Special Standards:
VT51-UVA	VAV-B40R_JER02A10	NONA	PS44	2	15	IN/O				1	15	IN																										WQS - Basin 1B: Section 2: Class VI Special Standards: pH
VT52-UVA	VAV-B37R_MGN01A02	NONA	PS38	0	16	IN				2	16	IN/O																										WQS - Basin 1B: Section 2: Class VI Special Standards:
VT53-UVA	VAV-B35R_TWO01A00	NONA	PS34	1	15	IN				15	15	IN/O																										WQS - Basin 1B: Section 3: Class VI: Special Standards: pH
VT54-UVA	VAV-B42R_GER01A00	NONA	PS49	0	15	IN				0	15	IN																										WQS - Basin 1B: Section 6: Class VI Special Standards:
VT55-UVA	VAV-B42R_BLR01A02	NONA	PS49							0	1	W																										WQS - Basin 1B: Section 6: Class VI Special Standards:
VT56-UVA	VAV-B18R_WFR01A02	NONA	PS14	1	16	IN				16	16	IN/O																										WQS - Basin 1B: Section 5: Class VI: Special Standards:
VT57-UVA	VAV-B20R_BBB01A00	NONA	PS18	1	16	IN				0	16	IN																										WQS - Basin 1B: Section 5: Class VI Special Standards:
VT80-UVA	VAV-B49R_LSC01A00	NONA	PS66	2	16	IN/O				9	16	IN/O																										WQS - Basin 1B: Section 6: Class VI Special Standards:

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Shenandoah River Basin																																					
WN01-UVA	VAV-B40R_OVL01A00	NONA	PS45							0	1	W																										WQS - Basin 1B: Section 2: Class VI Special Standards: pH
WN02-UVA	VAV-B40R_LND01A10	NONA	PS46							0	1	W																										WQS - Basin 1B: Section 2: Class VI Special Standards: pH
WOR1-UVA	VAV-B11R_WTK01A02	NONA	PS32	0	166	IN				155	167	IN/O																										WQS - Basin 1B: Section 4: Class IV Special Standards: pH

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
03208500	VAS-Q12R_RSS03A02	USGS	BS27																		0	S										0	14	S				Carryover from 2014 IR: Russell Fork At Haysi, VA Water Toxic Cl 14 measurements
03475000	VAS-O05R_MFH03A00	USGS	TH14																		0	S										0	14	S				Carryover from 2014 IR: M F Holston River Near Meadowview, VA Watt ox Cl 12 measurements
03524000	VAS-P07R_CLN01A00	USGS	TC14																		0	S										0	14	S				Carryover from 2014 IR: Clinch River At Cleveland, VA Water Toxics Cl 13 measurements
03524740	VAS-P09R_CLN01A00	USGS	TC23	0	26	S	0	21	S	0	25	S							0	S	0	S										3	18	O				Clinch River at Route 65 Dungannon, VA. PWS Water toxics Cl 26 measurements Ammonia 23 Sulfate 26 Manganese 24
03531500	VAS-P21R_POW02A02	USGS	TP10																		0	S										0	14	S				Carryover from 2014 IR: Powell River Near Jonesville, VA Water Toxic Cl 12 measurements
1035.09-UT1LC1 - ATS	VAS-P17R_LOC01B14	NONA	TP04																											FS							75m below SR 160 culvert crossing VSCI: 8/26/2011 66 3/22/2011 84
1035.09-UT1LC2 - ATS	VAS-P17R_LOC01B14	NONA	TP04																											FS							150m above haul road crossing VSCI: 8/26/2011 65 3/22/2011 83
1035.09-UT2LC1 - ATS	VAS-P17R_LOC01B14	NONA	TP04																											FS							100m above haul road crossing VSCI: 3/22/2011 79
1035.09-UT2LC1F - ATS	VAS-P17R_LOC01B14	NONA	TP04																											FS							150m north of mine site VSCI: 8/26/2011 77
1036.12-PC1 - ATS	VAS-P17R_PRE01A06	NONA	TP03																											J							100m below permit boundary VSCI: 8/29/2011 46 3/21/2011 71
1036.12-PC2 - ATS	VAS-P17R_PRE01A06	NONA	TP03																											FS							Stonega VSCI: 3/21/2011 76 8/29/2011 65
1036.12-UTPC1 - ATS	VAS-P17R_XHV01A14	NONA	TP03																											J							100m upstream of marker mine permit boundary VSCI: 8/29/2011 56 3/21/2011 75
1081.07-BT1 - ATS	VAS-P20R_BAI01A00	NONA	TP08																											J							downstream of permit and 75m below box cut VSCI: 10/3/2011 59 3/23/2011 69
1081.07-GC1 - ATS	VAS-P20R_GIN01A00	NONA	TP08																											FS							50m above public viewing area VSCI: 10/3/2011 62 3/23/2011 82
1083.05-SC1 - ATS	VAS-P20R_SRA01A94	NONA	TP08																											IM							adjacent to 1256 Deel Fork Road behind town hall and church VSCI: 10/03/2011 46 03/23/2011 53
1101701-BC5 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							100m downstream of confluence with Deel Fork VSCI: 10/17/2011 42
1101779-HB1 - ATS	VAS-Q11R_HNE01A14	NONA	BS23																											FS							25m upstream of confluence with Wakenva Branch VSCI: 10/26/2011 60
1101779-HB2 - ATS	VAS-Q11R_HNE01A14	NONA	BS23																											FS							below old strip bench VSCI: 11/01/2011 77
1101779-WB1 - ATS	VAS-Q11R_WAK01A14	NONA	BS23																											IM							50m upstream of Honey Branch confluence VSCI: 10/26/2011 48
1101779-WB2 - ATS	VAS-Q11R_WAK01A14	NONA	BS23																											IM							adjacent to old haul road VSCI: 10/26/2011 50
1101834-CRC1 - ATS	VAS-Q11R_CRC01A14	NONA	BS22																											IM							below deep mine and road crossing VSCI: 11/02/2011 50
1101834-CRC2 - ATS	VAS-Q11R_CRC01A14	NONA	BS22																											J							adjacent to haul road and 150m upstream of confluence with Spring Fork VSCI: 11/01/2011 57
1101834-MFOF1 - ATS	VAS-Q11R_OMF01A14	NONA	BS22																											FS							adjacent to gas well access road VSCI: 11/01/2011 74
1102001-HF1 - ATS	VAS-Q08R_CNW02B14	NONA	BS15																											FS							50m upstream of confluence with Conaway Creek VSCI: 11/09/2011 66
1102001-JBF1 - ATS	VAS-Q08R_CNW02A14	NONA	BS15																											IM							adjacent to haul road, below bench VSCI: 11/09/2011 54
1102001-LB1 - ATS	VAS-Q08R_CNW02B14	NONA	BS15																											FS							Adjacent to access road VSCI: 11/09/2011 72
1102030-BC1 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							25m downstream of confluence with Convict Hollow VSCI: 10/18/2011 37
1102030-BC2 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							75m below 609 bridge crossing VSCI: 10/24/2011 36
1102030-CH3 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							175m upstream of confluence with Bull Creek VSCI: 10/17/2011 39
1102030-PC1 - ATS	VAS-Q08R_PLR01A08	NONA	BS14																											IM							15m upstream of June Apple Rd VSCI: 10/17/2011 49

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
1102030-PC2 - ATS	VAS-Q08R_PLR01A08	NONA	BS14																											J							20m downstream of Bandit Rd. VSCI: 10/17/2011 57
1116.01-PR1F - ATS	VAS-P17R_POW01B02	NONA	TP02																											IM							100m downstream of SR 790 crossing VSCI: 8/23/2011 35
1116.04-BC1 - ATS	VAS-P17R_BLK01A96	NONA	TP02																											IM							75m below sediment pond and adjacent to haul road, VSCI: 8/23/2011 49 3/22/2011 56
1116.04-BC3 - ATS	VAS-P17R_BLK01A96	NONA	TP02																											IM							350m downstream of Black Creek Lake VSCI: 3/22/2011 59
1116.04-BC3F - ATS	VAS-P17R_BLK01A96	NONA	TP02																											IM							50m below wetland, 250m below Black Creek Lake. VSCI: 8/23/2011 32
1116.04-BC4 - ATS	VAS-P17R_BLK01B14	NONA	TP02																											FS							50m above first unnamed tributary upstream of Black Creek Lake VSCI: 8/23/2011 60 3/22/2011 79
1116.04-PR-1 - ATS	VAS-P17R_POW01B02	NONA	TP02																											IM							100m below junction of SR 790 and old Highway 23 VSCI: 3/22/2011 41
1116.04-PR2 - ATS	VAS-P17R_POW01B02	NONA	TP02																											IM							100m downstream of Coal Bucket Deli at Blackwood VSCI: 8/23/2011 48 3/22/2011 44
1127.04-AS1 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							50m upstream of confluence with Levisa Fork VSCI: 10/13/2011 40 05/02/2011 39
1127.04-AS3 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							100m upstream of confluence with Burnt Poplar Fork VSCI: 5/02/2011 42
1127.04-AS6 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							100m upstream of confluence with Belcher Branch VSCI: 5/02/2011 47
1127.04-AS611F - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							100m upstream of confluence with Belcher Branch VSCI: 10/13/2011 41
1127.04-AS6F - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							adjacent to food pantry/ old school house VSCI: 10/13/2011 28
1184.03-SW4 - ATS	VAS-P17R_LOC01A12	NONA	TP04																											IM							25m downstream of a culvert discharge VSCI: 10/05/2011 45
1184.03-SW4L - ATS	VAS-P17R_LOC01B14	NONA	TP04																											FS							75m downstream of SR 160 road crossing VSCI: 10/05/2011 63
1184.03-SW4R - ATS	VAS-P17R_LOC01A12	NONA	TP04																											IM							50m down stream of confluence with unnamed tributary VSCI: 10/05/2011 47
1184.03-SW7 - ATS	VAS-P17R_LOC01A12	NONA	TP04																											IM							50m downstream of an unnamed tributary VSCI: 10/05/2011 32
1184.04-RFCC1 - ATS	VAS-P17R_BLU01A10	NONA	TP03																											FS							150m up from confluence VSCI: 10/05/2011 61
1199.01-CC1 - ATS	VAS-P17R_CPH01A14	NONA	TP01																											IM							150m below confluence with Sargent Hollow VSCI: 2/23/2011 21
1199.01-PR1 - ATS	VAS-P17R_POW03C14	NONA	TP02																											IM							150m above haul road crossing VSCI: 8/25/2011 52 2/21/2011 58
1199.01-RF1 - ATS	VAS-P17R_RIN01B14	NONA	TP01																											IM							50m upstream of Stidham Fork confluence VSCI: 8/23/2011 44
1199.01-RF1F - ATS	VAS-P17R_RIN01B14	NONA	TP01																											IM							100m upstream of Stidham Fork confluence VSCI: 8/23/2011 30
1199.01-RF2 - ATS	VAS-P17R_RIN01B14	NONA	TP01																											IM							400m upstream of Pine Branch VSCI: 8/23/2011 34 2/22/2011 32
1199.01-RF3 - ATS	VAS-P17R_RIN01B14	NONA	TP01																											IM							75m upstream of Pine Branch adjacent to coke ovens, VSCI: 8/23/2011 33 2/22/2011 29
1199.01-RF4 - ATS	VAS-P17R_RIN01B14	NONA	TP01																											IM							on southern edge of DMLR permit 1101760 VSCI: 8/25/2011 40 2/22/2011 38
1200.01-PR1 - ATS	VAS-P17R_POW01C02	NONA	TP02																											J							between two bridges, 0.25 miles west of junction SR 610 and SR 623 VSCI: 9/28/2011 59 2/23/2011 50
1200.01-PR2 - ATS	VAS-P17R_POW01C02	NONA	TP02																											J							between two road bridges, 0.7 miles south of junction SR 610 and SR 623 VSCI: 9/28/2011 49 2/21/2011 73
1201487-HB1 - ATS	VAS-P10R_HON01A14	NONA	TC17																											FS							100m above confluence with unnamed tributary VSCI: 10/26/2011 71
1201487-HB2 - ATS	VAS-P10R_HON01A14	NONA	TC17																											FS							below SR 610 bridge crossing at dumpsters VSCI: 10/26/2011 70
1201574-CC2 - ATS	VAS-Q08R_CNW02A14	NONA	BS15																											IM							75m upstream of confluence with Hoffman Fork VSCI: 10/18/2011 37

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
1201574-LB1 - ATS	VAS-Q08R_CNW02B14	NONA	BS15																											FS							adjacent to abandoned house VSCI: 10/18/2011 60
1201648-DF2 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							adjacent to 1256 Deel Fork Road VSCI: 10/18/2011 39
1201678-DF1 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							150m downstream of confluence with Deel Fork VSCI: 10/18/2011 34
1201678-JF1 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							100m upstream of Deel Fork Confluence VSCI: 10/18/2011 45
1201775-LFLC1 - ATS	VAS-P10R_LEL01A98	NONA	TC17																											IM							25m upstream of SR 627/860 junction VSCI: 1/11/2011 44
1201775-LFLC2 - ATS	VAS-P10R_LEL01A98	NONA	TC17																											IM							100m downstream of West Dante 4-way junction VSCI: 01/11/2011 58 01/01/2011 47
1201798-LT1 - ATS	VAS-Q12R_LTH01A14	NONA	BS35																											J							150m upstream of confluence with Abes Fork VSCI: 10/25/2011 57
1202045-MFHC1 - ATS	VAS-Q12R_XGN01A12	NONA	BS35																											IM							25m upstream of Hunts Creek confluence VSCI: 10/25/2011 31
1202045-MFHC2 - ATS	VAS-Q12R_XGN01A12	NONA	BS35																											IM							adjacent to roadway, below houses VSCI: 10/25/2011 56
1211.01-CF1 - ATS	VAS-P11R_CRI01A14	NONA	TC19																											IM							100m above Red River Coal Haul road VSCI: 8/25/2011 30 2/21/2011 42
1211.01-GR2 - ATS	VAS-P11R_GUE04A96	NONA	TC19																											IM							on the Guest River approximately 200 m upstream of the confluence with Roberts Branch VSCI: 8/25/2011 39 2/21/2011 31
1211.01-GR3 - ATS	VAS-P11R_GUE04A96	NONA	TC19																											IM							on the Guest River approximately 150 m downstream of the confluence with Short Branch VSCI: 8/25/2011 28 2/21/2011 24
1211.01-GR4 - ATS	VAS-P11R_GUE04A96	NONA	TC19																											IM							on the Guest River approximately 200 m downstream of the confluence with Big Branch VSCI: 8/25/2011 36 2/23/2011 25
1212.01-BC1 - ATS	VAS-P11R_BER02A00	NONA	TC20																											IM							on Bear Creek approximately 300 m above the confluence with an unnamed tributary VSCI: 2/16/2011 48
1212.01-BC2 - ATS	VAS-P11R_BER02A00	NONA	TC20																											IM							on Bear Creek approximately 200 m downstream of the confluence with an unnamed tributary VSCI: 2/16/2011 37
1212.01-UTBC1 - ATS	VAS-P11R_XHW01A14	NONA	TC20																											IM							100m above confluence to Bear Creek VSCI: 2/16/2011 45
1213.01-GR1 - ATS	VAS-P11R_GUE03A98	NONA	TC21																											IM							600m upstream of the Ramsey Preparation Plant VSCI: 2/21/2011 45
1213.01-GR2 - ATS	VAS-P11R_GUE03A98	NONA	TC21																											IM							adjacent to silos at Ramsey Plant VSCI: 2/21/2011 37
1213.01-GR3 - ATS	VAS-P11R_GUE03A98	NONA	TC21																											IM							150m below confluence with Machine Creek VSCI: 2/21/2011 40
1218.01-LF1 - ATS	VAS-P17R_LAF01A14	NONA	TP04																											FS							150m above Exeter Deep Mine VSCI: 06/06/2011 76 05/24/2010 75 05/27/2008 79 06/05/2007 60
1218.01-PC1 - ATS	VAS-P17R_PIG01A06	NONA	TP04																											IM							50m below Laurel Fork confluence VSCI: 2/18/2011 51
1218.01-PC2 - ATS	VAS-P17R_PIG01B12	NONA	TP04																											IM							50m upstream of residential area of Lower Exeter VSCI: 2/18/2011 33
1218.01-PC3 - ATS	VAS-P17R_PIG01B12	NONA	TP04																											IM							100m downstream of Exeter VSCI: 2/18/2011 39
1222.01-CC1 - ATS	VAS-P17R_CAL01B04	NONA	TP03																											IM							150m upstream of confluence with Mud Lick Creek VSCI: 10/04/2011 36
1222.01-CC2 - ATS	VAS-P17R_CAL01B04	NONA	TP03																											IM							Beside railroad and under main power line VSCI: 10/04/2011 42
1222.01-CC3 - ATS	VAS-P17R_CAL01B04	NONA	TP03																											IM							adjacent to railroad and between two bridges VSCI: 10/04/2011 30
1222.01-CC5 - ATS	VAS-P17R_CAL01C14	NONA	TP03																											IM							75m upstream of Pigeon Creek processing plant VSCI: 10/21/2011 46
1222.01-MB1 - ATS	VAS-P17R_MRB01A14	NONA	TP03																											FS							adjacent to Stonega Calvary Baptist Church VSCI: 10/04/2011 74
1231.01-CC1F - ATS	VAS-P17R_CAL01B04	NONA	TP03																											IM							adjacent to substation VSCI: 9/28/2011 48
1231.01-CC2F - ATS	VAS-P17R_CAL01B04	NONA	TP03																											IM							75m upstream of Possum Trot Hollow confluence VSCI: 9/28/2011 47

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
1231.01-CC3F - ATS	VAS-P17R_CAL01B04	NONA	TP03																											IM							100m above confluence with Possum Trot Hollow VSCI: 9/28/2011 45
1232.01-BC1 - ATS	VAS-P20R_BUY01B14	NONA	TP07																											IM							adjacent to Railroad and power line right-of-way VSCI: 9/22/2011 45
1232.01-CC1 - ATS	VAS-P20R_CXR01A14	NONA	TP07																											IM							0.5 miles on Daleville Rd off of SR 626 VSCI: 9/22/2011 29 3/29/2011 56
1232.01-CC2 - ATS	VAS-P20R_CXR01A14	NONA	TP07																											IM							adjacent to an abandoned house VSCI: 9/22/2011 31 3/29/2011 28
1232.01-JC1 - ATS	VAS-P20R_JON01A14	NONA	TP07																											IM							at bridge crossing at mouth of hollow VSCI: 9/22/2011 34 3/23/2011 35
1232.01-MC1 - ATS	VAS-P20R_MRF01A14	NONA	TP07																											J							50m above roadway VSCI: 9/22/2011 56 3/23/2011 76
1235.01-RF1 - ATS	VAS-P17R_RIN01A00	NONA	TP01																											IM							300m above Gabe Br. Confluence VSCI: 3/22/2011 43
1235.01-RF2 - ATS	VAS-P17R_RIN01A00	NONA	TP01																											IM							200m below trash dumpsters VSCI: 3/22/2011 39
1236.01-NFPR1 - ATS	VAS-P20R_PWL02A02	NONA	TP07																											FS							off SR 606 adjacent to Eastern Sunrise Baptist Church, Class VI VSCI: 9/22/2011 61 3/29/2011 62
1236.01-NFPR2 - ATS	VAS-P20R_PWL03B02	NONA	TP07																											J							25m upstream of SR 606 bridge crossing just downstream of Wolf Harbor Branch VSCI: 9/22/2011 58 3/29/2011 64
1236.01-RB1 - ATS	VAS-P20R_RLB01A14	NONA	TP07																											J							100m upstream of confluence with North Fork of Powell River VSCI: 9/22/2011 54 3/29/2011 74
1236.01-RB2 - ATS	VAS-P20R_RLB01A14	NONA	TP07																											FS							upstream of permit boundary VSCI: 3/29/2011 77
1236.01-RB2F - ATS	VAS-P20R_RLB01A14	NONA	TP07																											J							175m upstream of North Fork of Powell confluence VSCI: 9/22/2011 57
1236.01-WHB1 - ATS	VAS-P20R_WHB01A14	NONA	TP07																											J							100m above mine office VSCI: 9/22/2011 55 3/29/2011 76
1237.01-BC1 - ATS	VAS-P20R_LIT01A14	NONA	TP07																											FS							50m below confluence with Little Bundy Creek VSCI: 3/23/2011 61
1237.01-LBC1 - ATS	VAS-P20R_LIT01A14	NONA	TP07																											IM							150m below power line right-of-way VSCI: 4/25/2011 58
1241.02-MLC1 - ATS	VAS-P17R_MIK01A06	NONA	TP03																											IM							150m downstream of McHenry Fork adjacent to log cabin VSCI: 4/25/2011 45
1241.02-MLC2 - ATS	VAS-P17R_MIK02A14	NONA	TP03																											IM							125m downstream of the confluence with Lick Branch VSCI: 4/25/2011 57
1241.02-MLC3 - ATS	VAS-P17R_MIK02A14	NONA	TP03																											FS							200m above confluence with Lick Branch VSCI: 4/25/2011 61
1241.02-MLC4 - ATS	VAS-P17R_MIK02A14	NONA	TP03																											IM							head of Mud Lick Creek drainage above garage and 150m upstream of confluence with Mud Lick Creek VSCI: 4/25/2011 51
1241.02-PC1 - ATS	VAS-P17R_PRE01A06	NONA	TP03																											FS							100m upstream of last house VSCI: 4/25/2011 64
1253.03-GF1 - ATS	VAS-Q13R_GLD01A14	NONA	BS28																											IM							0.6 miles on SR 679 off SR 671 VSCI: 08/29/2011 52
1253.03-HB1 - ATS	VAS-Q13R_HAY01A14	NONA	BS28																											IM							225m upstream of confluence with South Fork Pound River VSCI: 08/29/2011 35
1253.03-SFPR1 - ATS	VAS-Q13R_PNS01A94	NONA	BS28																											IM							275m upstream of confluence with Big Branch VSCI: 08/29/2011 26
1253.03-SFPR2 - ATS	VAS-Q13R_PNS01A94	NONA	BS28																											IM							475m upstream of mine entrance road along SR 671 VSCI: 8/29/2011 36
1300504-AGB1 - ATS	VAS-Q11R_ACB01A14	NONA	BS22																											J							adjacent to haul road strip bench VSCI: 11/01/2011 58
1300504-DF1 - ATS	VAS-Q11R_DIL01A14	NONA	BS22																											IM							100m upstream of confluence with Austin Gap Branch VSCI: 10/26/2011 48
1300504-NC1 - ATS	VAS-Q11R_NEE01A14	NONA	BS22																											IM							100m downstream of an unnamed tributary VSCI: 10/26/2011 57
1300504-NC2 - ATS	VAS-Q11R_NEE01A14	NONA	BS22																											FS							200m below silos VSCI: 10/26/2011 60
1501923-SLB1 - ATS	VAS-Q08R_SLB01A14	NONA	BS15																											IM							100m upstream of a confluence with an unnamed tributary VSCI: 10/18/2011 54

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
1501923-SLB2 - ATS	VAS-Q08R_SLB01A14	NONA	BS15																											IM							100m downstream of confluence with unnamed tributary VSCI: 10/18/2011 49
1601787-CC3 - ATS	VAS-Q08R_CNW02A14	NONA	BS15																											IM							100m upstream of confluence with Caney Fork VSCI: 10/24/2011 43
1601787-CC4 - ATS	VAS-Q08R_CNW01A08	NONA	BS15																											IM							100m downstream of confluence with Dry Hollow VSCI: 10/24/2011 35
1601787-CF1 - ATS	VAS-Q08R_CNW02A14	NONA	BS15																											IM							below pond and adjacent to road VSCI: 10/24/2011 34
1601787-CF2 - ATS	VAS-Q08R_CNW02A14	NONA	BS15																											IM							adjacent to old access road VSCI: 10/31/2011 42
1601788-BB1 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							adjacent to house at reclaimed mine dump (on topo) VSCI: 10/17/2011 48
1601788-BB2 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							50m upstream of confluence with Bull Creek VSCI: 10/17/2011 35
1601788-BC3 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							50m upstream of confluence with Belcher Branch VSCI: 10/17/2011 39
1601788-BC4 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							upstream of confluence with Convict Hollow VSCI: 10/24/2011 39
1601788-BC5 - ATS	VAS-Q08R_BLC01A98	NONA	BS14																											IM							50m downstream of confluence with Big Branch VSCI: 10/17/2011 34
1601816-HC1 - ATS	VAS-Q08R_HME01B14	NONA	BS14																											IM							50m downstream of Mule Hollow confluence VSCI: 10/24/2011 45
316.24-UTCC1 - ATS	VAS-P17R_XHO01A14	NONA	TP03																											IM							upstream of Dorchester Mine VSCI: 8/22/2011 55 6/01/2011 58
360.39-CC1 - ATS	VAS-P17R_CAL01C14	NONA	TP03																											J							above B portal deep mine VSCI: 8/22/2011 48 2/16/2011 70
360.39-CC2 - ATS	VAS-P17R_CAL01B04	NONA	TP03																											IM							adjacent to electrical substation VSCI: VSCI: 9/28/2011 45
360.39-WF1 - ATS	VAS-P17R_CLA01A14	NONA	TP03																											IM							25m above permit boundary VSCI: 8/22/2011 58 2/16/2011 49
532.23-CC1 - ATS	VAS-P17R_CAL01C14	NONA	TP03																											IM							1/4 mile north of Stonega VSCI: 10/04/2011 54
569.04-SW1 - ATS	VAS-P17R_MIK02A14	NONA	TP03																											FS							0.5 mile upstream of Roda, VSCI: 12/07/2011 75
569.04-SW7 - ATS	VAS-P17R_MIK01A06	NONA	TP03																											IM							1/4 mile downstream of Roda, Virginia VSCI: 12/07/2011 46
68.39-PF1 - ATS	VAS-P17R_POT01A14	NONA	TP01																											IM							adjacent to railroad track VSCI: 10/04/2011 41
68.39-WF1 - ATS	VAS-P17R_WHT01A14	NONA	TP01																											FS							200m above pond VSCI: 10/04/2011 65
69.39-PF2 - ATS	VAS-P17R_POT01A14	NONA	TP01																											IM							adjacent to garage VSCI: 10/04/2011 30
6AABR000.71	VAS-Q09R_ABR01A10	B,CR,A	BS18	0	4	S	0	4	S	0	4	S																		FS	0	2	S				Rt 80, West of Bee VSCI: 09/24/2013 71.10 04/15/2013 67.39 09/30/2010 71.55 05/12/2010 72.25 Some data was incorrectly entered as 6AABR000.16.
6AABR-AB-1-SOS	VAS-Q09R_ABR01A10	CMON	BS18																											HP							Abner Branch is a small tributary to the Russell Fork River. It's located at Bee, Virginia. For the most part it runs parallel with state route 80 05/24/2008: Lev II-Unacceptable
6AACB-5-SAMS	VAS-Q11R_ACB01A14	CMON	BS22							0	1	IN																									2700 feet from confluence with Dismal Fork and Neece Creek
6AAMB-1-SAMS	VAS-Q14R_AMB01A16	CMON	BS32		1	IN																															1000 feet from confluence with Birchfield Creek Level II Temp 0/1
6AAMB-2-SAMS	VAS-Q14R_AMB01A16	CMON	BS32		1	IN					1	IN																									3000 feet from confluence with Birchfield Creek Level II Temp 0/1
6AAMB-3-SAMS	VAS-Q14R_AMB01A16	CMON	BS32		1	IN					1	IN																									700 feet from confluence with Birchfield Creek Level II Temp 0/1
6AAMB-4-SAMS	VAS-Q14R_AMB01A16	CMON	BS32		1	IN					1	IN																									Within 100 feet from confluence with Birchfield Creek Level II Temp 0/1, pH 0/1
6ABAI000.85	VAS-Q12R_BAI01A08	TM	BS27	0	12	S	0	12	S	0	12	S	1	12	S																0	12	S				Walk Bridge. off Rt. 609 off 460 G&M Building
6ABAI-10-SAMS	VAS-Q12R_BAI01A08	CMON	BS27		1	IN				0	1	IN																									On Bartlick Road 0.4 miles west of Breaks Park Road Level II temp 0/1
6ABAI-8-SAMS	VAS-Q12R_BAI01A08	CMON	BS27		1	IN				0	1	IN																									At Bildell Drive crossing Level II Temp 0/1
6ABAI-9-SAMS	VAS-Q12R_BAI01A08	CMON	BS27		1	IN					1	IN																									Just below confluence of unnamed tributary between Breaks Park Road and Cherokee Lane Level II Temp 0/1, pH 0/1

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6ABAR000.08	VAS-Q13R_BAR01A02	B,CR,A	BS28	0	2	S	0	2	S	0	2	S																			FS	0	2	S				VSCI: 09/17/2013 65.52 06/04/2013 65.74
6ABEP000.08	VAS-Q13R_BEP01A16	B,CR	BS30	0	1	IN	0	1	IN	0	1	IN																			J							VSCI: 09/30/2010 59.32
6ABFF000.02	VAS-Q11R_BFF01A08	TM	BS25	0	12	S	0	12	S	0	12	S	5	12	IM																							
6ABFF-BC2-MRRP	VAS-Q11R_BFF01A08	CMON	BS25		1	IN					1	IN	2	2	IM																							Southbound side of Highway 63 bridge. Originally Lower BC2.
6ABFF-BC-MRRP	VAS-Q11R_BFF01A08	CMON	BS25		3	IN		1	IN		1	IN	3	3	IM																							Across from Buffalo Creek Road (SR 681),
6ABFF-UpperBC-MRRP	VAS-Q11R_BFF01A08	CMON	BS25		2	IN				0	1	IN	1	2	IN/O																							Left side of Y in the road
6A-BIGBR-NF-MRRP	VAS-Q13R_BID01A14	CMON	BS28		2	IN					1	IM	0	2	S																							First open field on left
6A-BIGBR-SF-MRRP	VAS-Q13R_PNS01A94	CMON	BS28		1	IN							0	1	IN																							100 feet upstream of Drulu Road bridge. Original ID RM-1.
6ABIP000.65	VAS-Q06R_BIP01A98	A	BS12	0	11	S	0	11	S	0	11	S	1	11	S																	0	11	S				RT 627 Bridge #6047
6ABIR-18-SAMS	VAS-Q10R_BIR01A16	CMON	BS19		1	IN					1	IN																										Just above confluence with Fryingpan Creek Level II Temp 0/1, pH 0/1
6ABL05-FORF	VAS-Q12R_BAI01A08	CMON	BS27		17	IN								18	IN																							At bridge 100 yards downstream of Appalachian Metal, Additional Level II tm 17/0 viol 3D EC 18/3 viol 3C
6ABL10-FORF	VAS-Q12R_BAI01A08	CMON	BS27		16	IN								16	IN																							At first bridge on Route 611 coming from Highway 80, Additional Level II tm 16/0 viol 3D EC 16/4 viol 3C
6ABL15-FORF	VAS-Q12R_BAI01A08	CMON	BS27		17	IN								18	IN																							At fire hydrant at number 1099, Additional Level II TM 17/0 viol 3D EC 18/5 viol 3C
6ABL20-FORF	VAS-Q12R_BAI01A08	CMON	BS27		17	IN								18	IN																							At mouth to Russell Fork River at railroad bridge, Additional Level II tm 17/0 viol 3D EC 18/2 viol 3C
6ABLC000.85	VAS-Q08R_BLC01A98	A	BS14	0	12	S	0	12	S	0	12	S	3	12	IM																	0	12	S				Walk Bridge. off Rt. 609 off 460 G&M Building
6ABLC002.30	VAS-Q08R_BLC01A98	A,FPM,B	BS14	0	15	S	0	14	S	0	15	S	11	13	IM				0	S	0	S	0	S							IM	0	13	S				Off Rt. 609, between Big Branch and Belcher VSCI: 10/20/2014 36.09 03/18/2014 30.08 04/27/2011 42.37 11/08/2010 33.25 Manganese exceeded PWS standard for taste in one sample.
6ABLC-14-SAMS	VAS-Q08R_BLC01A98	CMON	BS14		1	IN					1	IN																										At Roller Pin Road Level II Temp 0/1, pH 0/1
6ABLC-16-SAMS	VAS-Q08R_BLC01A98	CMON	BS14	0	1	IN				0	1	IN																										near confluence with Bull Creek
6ABLC-27-SAMS	VAS-Q08R_BLC01A98	CMON	BS14	0	1	IN				0	1	IN																										200 feet upstream of Burnt Poplar Fork
6ABLC-28-SAMS	VAS-Q08R_BLC01A98	CMON	BS14	0	1	IN				0	1	IN																										500 feet downstream of Big Branch
6ABLD000.90	VAS-Q14R_BLD01A10	B,TM	BS32	0	2	S	0	2	S	0	2	S																			IM							SE of Hibbits Gap near Wise/Dick. Co. line VSCI: 10/27/2009 62.44 03/31/2009 37.12 Historically: 11/05/2008 57.26
6ABLD-19-SAMS	VAS-Q08R_BLC01A98	CMON	BS32	0	1	IN				0	1	IN																										2000 feet NE from confluence with Dotson Creek Level II temp 0/1, pH 0/1
6ABLD-20-SAMS	VAS-Q14R_BLD01A10	CMON	BS32	0	1	IN																																About 1200 feet East from intersection of Birchfield Rd and Natureview Rd
6ABLD-21-SAMS	VAS-Q14R_BLD01A10	CMON	BS32		1	IN																																About 1800 feet East from intersection of Birchfield Rd and Natureview Rd Level II Temp 0/1
6ABLD-22-SAMS	VAS-Q14R_BLD02A16	CMON	BS32		1	IN					1	IN																										Confluence with Dotson Creek Level II temp 0/1, pH 0/1
6ABLD-23-SAMS	VAS-Q14R_BLD02A16	CMON	BS32		1	IN					1	IN		1	IN																							Intersection of Birchfield Creek and Bean Gap Rd Level II temp 0/1, pH 0/1
6ABLD-24-SAMS	VAS-Q14R_BLD01A10	CMON	BS32	0	1	IN																																Intersection of Birchfield Rd and Lane Hollow Rd
6ABSB-MRRP	VAS-Q11R_BSB01A10	CMON	BS25	0	7	S	0	1	IN	0	1	IN	1	5	IN/O																							Small Creek along Smith Ridge Road, approximately 1/4 mile from Railroad tracks, Additional Level II EC 1/2 3C
6ABUL-29-SAMS	VAS-Q08R_BLC01A98	CMON	BS14	0	1	IN				0	1	IN																										At outfall of strip mine pond on Bull Creek Road
6ACB03-FORF	VAS-Q12R_CBC01A12	CMON	BS35		17	IN								18	IN																							At 6000 Breaks Park Road, Additional Level II tm 17/0 viol 3D EC 18/6 viol 3C
6ACB05-FORF	VAS-Q12R_CBC01A12	CMON	BS35		13	IN								13	IN																							At crossing with Garden Hole access road, Additional Level II tm 13/0 viol 3D EC 13/4 viol 3C
6ACED-45-SAMS	VAS-Q03R_CED01A16	CMON	BS07	0	1	IN				0	1	IN																										At confluence with Knox Creek and just below strip mine pond
6ACEY000.05	VAS-Q11R_CEY01A04	A	BS24	0	11	S	0	11	S	0	11	S	1	11	S																	0	11	S				Ford off Rt 773 of Rt 63 under RR, Class V
6ACEY-43-SAMS	VAS-Q11R_CEY01A04	CMON	BS24		1	IN					1	IN																										1 mile upstream of confluence with McClure River Level II temp 0/1, pH 0/1

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA										BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH				E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status		Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																							
6ACF08-FORF	VAS-Q12R_GSS01A12	CMON	BS35		18	IN								18	IN																								At bridge about 300 yards upstream of Highway 80, Additional Level II 148 e.coli 0/18 temp
6ACF10-FORF	VAS-Q12R_GSS01A12	CMON	BS35		18	IN								18	IN																								Below Highway 80 bridge, Additional Level II tm 18/0 viol 3D EC 18/11 viol 3C
6ACLA-211-SAMS	VAS-Q13R_CLA02A16	CMON	BS29		1	IN																																Intersection of Unnamed tributary and Cavenger Branch Rd Level II Temp 0/1
6ACNB-40-SAMS	VAS-Q09R_CNB01A16	CMON	BS17							0	1	IN																											Below confluence of unnamed tributary draining a mine pond Road south of Duty, VA
6ACNB-41-SAMS	VAS-Q09R_CNB01A16	CMON	BS17							0	1	IN																											Intersection of Monte Rd and entrance to a big mine
6ACNO-49-SAMS	VAS-Q11R_CNO01A16	CMON	BS22							0	1	IN																											3000 feet before confluence with Middle Fork
6ACNR003.00	VAS-Q13L_PNK01A02	C	BS33																										1	IM									Cranesnest River near Fishtrap Branch, 2007.
6ACNR009.17	VAS-Q14R_CNR02A02	A,TR	BS33	0	33	S	0	33	S	0	33	S	5	33	IM																		1	33	S				Low Water Bridge. @ Cranesnest Campground
6ACNR017.24	VAS-Q14R_CNR01A00	FPM,TM,B	BS33	0	4	S	0	4	S	0	4	S																				IM							Off Rt 637 VSCI: 11/14/2012 59.44 05/10/2012 56.47 10/28/2009 59.34 03/23/2009 42.64
6ACNR021.72	VAS-Q14R_CNR01A00	A	BS33	0	11	S	0	11	S	0	11	S	3	11	IM																		0	11	S				Class IV, bridge #6031 on SR 634 off Rt 72
6ACNR2-MRRP	VAS-Q14R_CNR02A02	CMON	BS33		2	IN		1	IN		1	IN	0	2	S																							600 feet from off of Route 83 on SR 649, next to gravel pull off
6ACNW000.07	VAS-Q08R_CNW01A08	A,PA,B	BS15	0	12	S	0	11	S	0	12	S	5	12	IM				0	S	0	S										IM	0	12	S				Off Rt. 610 off near Conaway WWTP VSCI: 10/06/2014 51.64 03/12/2014 36.24 Manganese exceeded PWS standard in one sample.
6ACVT-48-SAMS	VAS-Q08R_BLC01A98	CMON	BS14	0	1	IN				0	1	IN																											300 feet upstream of confluence with Bull Creek
6ADCD-51-SAMS	VAS-Q01R_DCD02A16	CMON	BS02	0	1	IN																																	500 feet from confluence with Dry Fork
6ADIS001.24	VAS-Q05R_DIS01A00	TM	BS11	2	12	IM	0	12	S	0	12	S	1	11	S																		0	11	S				Bridge #6274 on SR 666 off SR 638, Class V
6ADIS003.52	VAS-Q05R_DIS01A00	B,TM	BS11	0	2	S	0	2	S	0	2	S																				FS							Off SR 638, Class V VSCI: 11/01/2011 78.61 04/27/2011 64.66
6ADIS010.02	VAS-Q05R_DIS01B02	C,TM	BS11	0	1	IN	0	1	IN	0	1	IN															0	S	0	S									Off SR 638, Class V Fish collection 2007
6ADIS013.73	VAS-Q05R_DIS01B02	FPM,TM,B	BS11	0	2	S	0	2	S	0	2	S																				FS							@ Whitewood HS, Pilgrims Knob, Class V VSCI: 10/21/2013 73.27 04/11/2013 65.79 Historically: 11/06/2008 63.35 05/06/2008 57.20
6ADIS014.33	VAS-Q05R_DIS01B02	A	BS11	1	11	S	0	11	S	0	11	S	2	11	IM																		0	11	S				Bridge #6165 on SR 628 off SR 638, Class V
6ADIS022.34	VAS-Q05R_DIS02A00	A,PA,B	BS10	0	13	S	0	13	S	0	13	S	0	12	S				0	S	0	S										IM	0	13	S				Bridge #6165 on SR 628 off SR 638, Class V VSCI 10/01/2013 48.84 04/11/2013 52.93
6ADIS-53-SAMS	VAS-Q05R_DIS02A00	CMON	BS10	0	1	IN				0	1	IN																											500 feet from confluence with Dry Fork
6ADIS-54-SAMS	VAS-Q05R_DIS01A00	CMON	BS11	0	1	IN				0	1	IN																											Below confluence with Harper Creek
6ADOE-58-SAMS	VAS-Q12R_DOE01A16	CMON	BS26		1	IN																																	4200 feet upstream of confluence with Russell Prater Creek Level II temp 0/1
6ADOE-59-SAMS	VAS-Q12R_DOE01A16	CMON	BS26		1	IN																																	50 feet upstream of confluence with Russell Prater Creek Level II temp 0/1
6ADOO-63-SAMS	VAS-Q13R_DOO01A16	CMON	BS29		1	IN					1	IN																											At Baker Meade and Oak roads Level II temp 0/1, pH 0/1
6ADOO-64-SAMS	VAS-Q13R_DOO01B16	CMON	BS29	0	1	IN																																	At Bold Camp Road bridge 1000 feet south of McCoy Road Level II temp 0/1
6ADOO-65-SAMS	VAS-Q13R_DOO01B16	CMON	BS29	0	1	IN																																	At McCoy Road below unnamed tributary from reclaimed strip mine
6ADOT000.46	VAS-Q14R_DOT01A12	FPM,PA	BS32	0	2	S	0	2	S	0	2	S	0	1	IN																		0	2	S				VSCI: 04/26/2010 53.73 10/28/2010 54.65
6ADOT-60-SAMS	VAS-Q14R_DOT01A12	CMON	BS32		2	IN					2	IN																											2500 feet NW from confluence with Hurricane Branch Level II temp 0/2, pH 0/2
6ADOT-61-SAMS	VAS-Q14R_DOT01A12	CMON	BS32		1	IN					1	IN																											500 feet North of intersection of Strawberry Mtn. Rd and Dotson Creek Rd Level II temp 0/1, pH 0/1
6ADOT-62-SAMS	VAS-Q14R_DOT01A12	CMON	BS32		2	IN					2	IN																											Within 200 feet north of intersection of Dotson Creek Rd and Beartooth Way Level II temp 0/2, pH 0/2
6ADTB-66-SAMS	VAS-Q07R_DTB01A16	CMON	BS13	0	1	IN				0	1	IN																											2500 feet up Dry Tripe Road

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6AFOX001.69	VAS-Q09R_FOX01A06	A,PA,B	BS19	0	17	S	0	17	S	0	17	S	1	14	S				0	S	0	S	0	S							FS	0	17	S				SR 619 off SR 605 off 80 near Cannady VSCI: 11/05/2014 69.43 05/29/2014 69.45 09/30/2013 79.00 04/10/2013 71.19 08/30/2011 69.19 05/23/2011 64.32
6AFRY006.70	VAS-Q10R_FRY02A04	FPM,PA,B	BS19	0	4	S	0	4	S	0	4	S	0	2	S																IM	0	4	S				Formerly 6AHRD000.01 VAW05547-243, Class V VSCI: 11/02/2010 36.48 05/12/2010 44.27 10/01/2009 38.52 05/19/2009 35.48
6AFRY-77-SAMS	VAS-Q10R_FRY02A04	CMON	BS19		1	IN																															300 feet above confluence with Big Spruce Pine Branch Level II temp 0/1
6AFRY-78-SAMS	VAS-Q10R_FRY02A04	CMON	BS19		1	IN																															500 feet north of confluence with Cabin Branch Level II Temp 0/1
6AFRY-79-SAMS	VAS-Q10R_FRY02A04	CMON	BS19		1	IN																															500 feet north of confluence with Cabin Branch Level II Temp 0/1
6AFRY-FPC-MRRP	VAS-Q10R_FRY01A04	CMON	BS19		2	IN					1	IN	0	2	S																							Off SR 671 (off Rt 80), at bridge #6060. Formally known as site FPC Class V
6AGAR000.16	VAS-Q04R_GAR01A98	TM	BS08	0	1	IN	0	1	IN	0	1	IN																										SR 669 bridge off SR 624 @ Appalachian School of Pharmacy
6AGAR001.78	VAS-Q04R_GAR01A98	C	BS08																										0	S	0	S						Garden Creek near Garden Creek Mission, 2007.
6AGBC-86-SAMS	VAS-Q12R_GBC01A16	CMON	BS26	0	1	IN				0	1	IN																											At Curve Hollow Road bridge
6AGBC-87-SAMS	VAS-Q12R_GBC01A16	CMON	BS26	0	1	IN				0	1	IN																											At intersection of Greenbrier and old Greenbrier roads
6AGBC-88-SAMS	VAS-Q12R_GBC01A16	CMON	BS26	0	1	IN				0	1	IN																											tributary is from reclaimed strip mine on Shadow Road
6AGOO000.09	VAS-Q04R_GOO01A10	A	BS09	0	11	S	0	9	S	0	10	S	0	11	S																							Carryover from 2014 IR Off 460, Bob Casey Rd. private bridge
6AGRCR-MRRP	VAS-Q12R_GSS01A12	CMON	BS35		1	IN					1	IN	0	1	IN																							Hwy 80, next to Gateway Hotel, Breaks
6AGRE-80-SAMS	VAS-Q13R_GRE01A16	CMON	BS30		1	IN																															At confluence with unnamed tributary of reclaimed strip mine at Willis Lane Level II temp 0/1
6AGRE-81-SAMS	VAS-Q13R_GRE01A16	CMON	BS30		1	IN																															At intersection of Dickenson Highway and Old Georges Fork Road Level II temp 0/1
6AGRE-82-SAMS	VAS-Q13R_GRE01A16	CMON	BS30		1	IN																															At private driveway off Lower Georges Fork Hollow road 1.3 miles north of Hwy 83 Level II temp 0/1
6AGRF002.36	VAS-Q04R_GRF01A02	FPM,PA,B	BS08	0	2	S	0	2	S	0	2	S	1	1	IN/O				0	S	0	S									J	0	2	S				Off SR 624 VSCI: 09/24/2012 64.66 05/15/2012 52.76
6AGRF004.97	VAS-Q04R_GRF01A02	A,B,TM	BS08	0	2	S	0	2	S	0	2	S																			IM							Private Bridge on Trivett off Rt 632 basket ball court VSCI: 09/21/2010 52.02 04/06/2010 52.29
6AHAT000.12	VAS-Q11R_HAT01A08	FPM,CR,B	BS23	0	2	S	0	2	S	0	2	S																			FS	0	2	S				At junction with Ally Road and Rt 63, Additional Level II EC 2/0 viol 3D VSCI: 11/05/2014 70.28 04/09/2014 75.11
6AHAT-AR-HC-MRRP	VAS-Q11R_HAT01A08	CMON	BS23	0	2	S	0	1	IN	0	1	IN		2	IN																							At junction with Ally Road and Rt 63, Additional Level II EC 0/2 3D
6AHH01-FORF	VAS-Q12R_XGN01A12	CMON	BS35		16	IN								16	IN																							20 yards upstream of fire hydrant, Additional Level II tm 16/0 viol 3D EC 16/0 viol 3D
6AHH05-FORF	VAS-Q12R_XGN01A12	CMON	BS35		18	IN								18	IN																							At 2007 Happy Hollow Road, Additional Level II tm 18/0 viol 3D EC 18/7 viol 3C
6AHH10-FORF	VAS-Q12R_XGN01A12	CMON	BS35		17	IN								17	IN																							Mouth of creek upstream of Crow Pass Road, Additional Level II tm 17/0 viol 3D EC 17/6 viol 3C
6AHLY-104-SAMS	VAS-Q14R_HLY01A04	CMON	BS33		1	IN																															At Hughes Hollow road crossing Level II temp 0/1
6AHME002.16	VAS-Q08R_HME01A04	FPM,TM,B	BS14	0	2	S	0	2	S	0	2	S																			IM							Near Thomas Off SR. 650 VSCI: 10/21/2013 55.76 04/15/2013 22.66 Historically: 09/25/2007 59.40 05/24/2007 38.67
6AHPE-98-SAMS	VAS-Q08R_HPE01A16	CMON	BS15	0	1	IN				0	1	IN																											At Home Creek Road crossing Level II temp 0/1
6AHPR-99-SAMS	VAS-Q05R_HPR02A16	CMON	BS11		1	IN																															200 feet upstream of confluence with Dismal Creek Level II temp 0/1
6AHRC000.05	VAS-Q09R_HUR01A02	A	BS16	0	11	S	0	10	S	0	11	S	8	11	IM																							Rt 80 culvert in Davenport

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6AHU02-FORF	VAS-Q12R_HUB01A12	CMON	BS35		16	IN								16	IN																						At SR 609 bridge near Colley Cemetery, Additional Level II tm 16/0 viol 3D EC 16/3 viol 3D
6AHU05-FORF	VAS-Q12R_HUB01A12	CMON	BS35		18	IN								18	IN																						Behind second residence upstream from Breaks post office, Additional Level II tm 18/0 viol 3D EC 18/4 viol 3C
6AHU07-FORF	VAS-Q12R_HUB01A12	CMON	BS35		16	IN								16	IN																						Bridge at intersection of Colley and Happy Hollow roads, Additional Level II tm 16/0 viol 3D EC 16/4 viol 3C
6AHU10-FORF	VAS-Q12R_HUB01B12	CMON	BS35		15	IN								15	IN																						Downstream from the Breaks Motel by Highway 80 bridge, Additional Level II tm 15/0 viol 3D EC 15/3 viol 3C
6AIAC000.42	VAS-Q13R_IAC01A10	B,CR,A	BS29	0	2	S	0	2	S	0	2	S																		IM							South of Pound VSCI: 10/04/2010 34.01 04/26/2010 32.55
6AIAC-106-SAMS	VAS-Q13R_IAC01A10	CMON	BS29		1	IN					1	IN																									At Kanawha Road crossing Level II temp 0/1, pH 0/1
6AIAC-107-SAMS	VAS-Q13R_IAC01A16	CMON	BS29	0	1	IN				0	1	IN																									Intersection of Indian Creek and Cavenger Branch Rd
6AIND000.52	VAS-Q09R_IND01A10	A,B,SS	BS17	0	2	S	0	2	S	0	2	S																		J							Off Rt 80, SR 602 bridge #6905 VSCI: 09/30/2010 51.23 05/12/2010 66.13 Historically: 09/22/2008 57.82
6AKOX006.52	VAS-Q03R_KOX02A98	A,TR	BS07	0	29	S	0	28	S	1	29	S	8	29	IM																	0	29	S				SR 711 bridge off SR 697 below KY line
6AKOX008.11	VAS-Q03R_KOX02A98	C	BS07																								0	S	5	IM							At KY line 2007 collection: One fish sample exceeded VDH level of concern, two exceeded VDH screening value, two exceeded DEQ screening value.
6AKOX011.67	VAS-Q03R_KOX02A98	B,TM	BS05	0	2	S	0	2	S	0	2	S																		J							Off SR 643 below Bee Branch VSCI: 09/21/2010 69.56 04/08/2010 40.98
6AKOX014.17	VAS-Q03R_KOX02A98	TM	BS05	0	6	S	0	5	S	1	6	IN/O	2	6	IM																						Off SR 643
6AKOX017.71	VAS-Q03R_KOX02A98	TM	BS05	0	6	S	0	5	S	0	6	S	2	6	IM																						Hurley High School bridge off SR 643
6AKOX019.30	VAS-Q03R_KOX01A00	C	BS04																								1	O	3	IM							Knox Creek downstream Long Bottom Branch Three samples exceeded both DEQ and VDH screening values for Total PCBs. One exceeded the DEQ screening value for Hg, 2007.
6AKOX-112-SAMS	VAS-Q03R_KOX01A00	CMON	BS04	0	1	IN				0	1	IN																									Just below confluence with Big Bull Branch ALUS 3
6ALAB-52-SAMS	VAS-Q01R_LAB01A16	CMON	BS02	0	1	IN																															At Monk Road Level II Temp 0/1
6ALAF001.03	VAS-Q10R_LAF01A06	A	BS20	0	11	S	0	10	S	0	11	S	0	11	IN																	0	11	S				At ford off SR 670 (off Route 80)
6ALEV130.00	VAS-Q08R_LEV01A00	C	BS15																								0	S	8	IM							At state line Four samples exceeded the VDH level of concern, an additional four samples exceeded the VDH screening value, 2007.
6ALEV131.52	VAS-Q08R_LEV01A00	A,TR	BS15	0	36	S	0	35	S	1	36	S	5	35	IM																	0	35	S				Downstream of gage 03207800 @ Wellmore Coal Dock #14 off Rt 460
6ALEV138.19	VAS-Q08R_LEV03A02	FPM,B,TM	BS14	0	2	S	0	2	S	0	2	S																		J							Upstream Poplar Creek confluence @ Harman Junction VSCI: 09/21/2010 63.40 04/21/2010 53.14 Historically: 10/03/2007 65.88 03/28/2007 38.59
6ALEV140.64	VAS-Q06R_LEV01A98	TM	BS14	0	2	S	0	2	S	0	2	S																									Downstream of Gundy
6ALEV143.86	VAS-Q06R_LEV01A98	TM	BS12	0	1	IN	0	1	IN	0	1	IN																									Bridge on Railroad Ave. off Rt 83
6ALEV148.79	VAS-Q06R_LEV01A98	TM	BS12	0	1	IN	0	1	IN	0	1	IN																									@ Deel
6ALEV151.25	VAS-Q06R_LEV01A98	C	BS12																								0	S	2	IM							Downstream of Dismal confluence One composite catfish sample exceeded the VDH screening value, 2007.
6ALEV152.46	VAS-Q04R_LEV01A94	A,TM,B	BS09	0	13	S	0	12	S	0	13	S	2	11	IM								0	S						IM	0	12	S				Near Janey Carryover of benthics from 2014 IR VSCI: 09/26/2007 57.19 05/30/2007 41.13
6ALEV158.93	VAS-Q04R_LEV01B02	FPM,PA,B	BS09	0	2	S	0	2	S	0	2	S	0	1	IN				0	S	0	S	0	S						J	0	2	S				Upstream of Big Skeggs Hollow VSCI: 10/25/2010 70.82 04/21/2010 58.11
6ALEV161.43	VAS-Q04R_LEV01B06	TM	BS09	0	2	S	0	2	S	0	2	S																									On Cloverhill Road
6ALFK-121-SAMS	VAS-Q14R_LFK03A16	CMON	BS33	0	1	IN																															At Blue Jay Road at Dickenson and Wise County line at reclaimed strip mine Level II temp 0/1

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6ALL05-FORF	VAS-Q12R_LEH01A12	CMON	BS27		18	IN								18	IN																						10 yards upstream of gas pipeline, Additional Level II tm 18/0 viol 3D EC 18/3 viol 3C
6ALLF001.69	VAS-Q10R_LLF01A06	FPM,TM,B	BS20	0	2	S	0	2	S	0	2	S																		FS	0	2	S				South of Nancy VSCI: 11/05/2014 68.88
6ALLF002.19	VAS-Q10R_LLF01A06	FPM,TM,B	BS20	0	2	S	0	2	S	0	2	S																		FS							South of Nancy VSCI: 04/09/2014 69.77 10/28/2009 71.97 03/23/2009 65.60
6ALMA-120-SAMS	VAS-Q14R_LMA01A02	CMON	BS33		1	IN																															2000 feet above confluence with Lick Fork- Left Fork Level II temp 0/1
6ALOC000.03	VAS-Q08R_LOC01A08	A,TM	BS14	0	1	IN	0	1	IN	0	1	IN																									Culvert #1060 @ intersection of 460 & SR 656
6ALRA000.10	VAS-Q06R_LRA01A12	A,TM	BS12	0	1	IN	0	1	IN	0	1	IN																									Little Prater Creek near Grundy 5/17/2010 VSCI: 10/31/11 72
6ALSE-122-SAMS	VAS-Q10R_LSE01A16	CMON	BS19		1	IN																															At Frying Pan Road bridge Level II temp 0/1
6ALYB000.07	VAS-Q08R_LYB01A12	A,TM	BS14	0	1	IN	0	1	IN	0	1	IN																									Lynn Camp Creek near Harman
6AMAC-149-SAMS	VAS-Q11R_MAC01A16	CMON	BS25		1	IN																															At Chevy Drive crossing Level II Temp 0/1
6AMAC-150-SAMS	VAS-Q11R_MAC01A16	CMON	BS25		1	IN																															At outfall of strip mine pond on Mill Street 2000 feet west of Cabin Creek Road Level II temp 0/1
6AMAC-151-SAMS	VAS-Q11R_MAC01A16	CMON	BS25		1	IN																															At outfall of strip mine pond on Mill Street east of Cabin Creek Road
6AMCR000.20	VAS-Q11R_MCR01A00	A	BS25	0	11	S	0	11	S	0	11	S	0	11	S																0	11	S				Bridge #6146 on Rt 693 off Rt 82
6AMCR000.55	VAS-Q11R_MCR01A00	A,B	BS25	0	2	S	0	2	S	0	2	S																		J	0	2	S				Bridge #6146 on Rt 693 off Rt 82 VSCI: 09/24/2013 66.59 05/30/2013 58.16
6AMCR004.86	VAS-Q11R_MCR02A00	A,B,SS	BS25	0	2	S	0	2	S	0	2	S																		FS							Off SR 738 North of Goff Tunnel VSCI: 10/31/2011 78.63 06/13/2011 60.76
6AMCR005.94	VAS-Q11R_MCR02A00	FPM,PA,B	BS25	0	2	S	0	2	S	0	2	S	0	1	IN				0	S	0	S								J	0	2	S				Off SR 83 North of Faith Bible Church VSCI: 09/26/2012 60.88 05/07/2012 54.80
6AMCR007.46	VAS-Q11R_MCR02A00	TM	BS25	0	12	S	0	12	S	0	12	S	2	12	IM																						RT 63 bridge
6AMCR007.85	VAS-Q11R_MCR02A00	FPM,PA,B	BS25	0	1	IN	0	1	IN	0	1	IN									0	IN								FS	0	1	IN				Off Rt 83 At Clinchco VSCI: 08/30/2011 61.79
6AMCR009.92	VAS-Q11R_MCR02A00	A	BS25	0	23	S	0	23	S	0	23	S	3	23	IM																0	23	S				Low water bridge at Clinchco corporate limits
6AMCR014.69	VAS-Q11R_MCR03A06	A,TM	BS25	0	23	S	0	23	S	0	23	S	14	23	IM						0	S									0	23	S				Bridge #6080 on SR 716 off Rt 63
6AMCR017.12	VAS-Q11R_MCR04A06	B,TM	BS25	0	2	S	0	2	S	0	2	S																		FS							Off Rt. 63 below Nora VSCI: 10/30/2011 69.39 06/13/2011 63.83
6AMCR017.56	VAS-Q11R_MCR04A06	A	BS23	0	11	S	0	11	S	0	11	S	1	11	S																0	11	S				Bridge #6122 on SR 652 off Rt 63
6AMCR019.96	VAS-Q11R_MCR04A06	A	BS23	0	23	S	0	23	S	0	23	S	10	23	IM						0	S									0	23	S				Wood bridge off Rt 63 .4 mi downstream SR 655
6AMCR-d-RF-MRRP	VAS-Q11R_MCR04A06	CMON	BS23	0	13	S	0	2	S	0	2	S	4	12	IM																						30 meters downstream of Roaring Fork confluence There are additional Level II EC.
6AMCR-MR-FBC-MRRP	VAS-Q11R_MCR02A00	CMON	BS25		2	IN					1	IN	1	2	IN/O																						At Fremont Baptist Church, near steps to river. Formally known as site MR-FBC
6AMCR-MR-PP-MRRP	VAS-Q11R_MCR04A06	CMON	BS23		2	IN					1	IN	0	2	S																						Pines Park, near picnic tables, downstream of Aly Creek.
6AMCR-N-CS-MRRP	VAS-Q11R_MCR03A06	CMON	BS25		1	IN					1	IN	1	2	IN/O																						At Route 643 bridge before intersection with Highway 63
6AMCR-N-DSH-MRRP	VAS-Q11R_MCR04A06	CMON	BS25		2	IN					1	IN	0	2	S																						At 5386 Dante Mountain Road in Nora, Virginia Additional Level II temp 0/2 pH 0/2
6AMCR-N-RS-MRRP	VAS-Q11R_MCR04A06	CMON	BS23		2	IN					1	IN	0	2	S																						At Route 652 bridge before intersection with Highway 63
6AMCR-u-MT-MRRP	VAS-Q11R_MCR04A06	CMON	BS23		2	IN					1	IN	0	2	S																						Between Load Out Road Bridge and Martintown,
6AMCR-u-RF-MRRP	VAS-Q11R_MCR04A06	CMON	BS23		2	IN					1	IN	1	2	IN/O																						30 meters upstream of Roaring Fork confluence Additional Level II
6AMDW-146-SAMS	VAS-Q14R_MDW02A16	CMON	BS32		1	IN																															1500 feet from confluence with Birchfield Creek Level II temp 0/1
6AMEA-144-SAMS	VAS-Q13R_MEA01A16	CMON	BS29		2	IN					1	IN																									At Meade Fork Road crossing in Meade, VA Level II temp 0/2, pH 0/1
6AMEA-145-SAMS	VAS-Q13R_MEA01A16	CMON	BS29								1	IN																									Strip mine pond outfall off of Meade Fork Road Level II pH 0/1
6AMLL-148-SAMS	VAS-Q13R_MLL01A16	CMON	BS30		1	IN					1	IN																									At Mountain Cove Road crossing Level II temp 0/1, pH 0/1
6AMUE-154-SAMS	VAS-Q13R_MUE01A16	CMON	BS29	0	1	IN																															At Pasco Lane
6AOPF001.31	VAS-Q11R_OPF01A02	A	BS22	0	11	S	0	11	S	0	11	S	1	11	S																0	11	S				Bridge #6117 on SR 674 off SR 652

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6AOPF-160-SAMS	VAS-Q11R_OPF01A02	CMON	BS22							0	1	IN																									500 Feet North of confluence with Neece Creek
6APAW000.71	VAS-Q10R_PAW01A12	FPM,B	BS21	0	1	IN	0	1	IN	0	1	IN																			FS							VSCI: 03/18/2014 81.58
6APAW001.22	VAS-Q10R_PAW01A12	FPM,PA,B	BS21	0	3	S	0	3	S	0	3	S	1	1	IN/O				0	S	0	S	0	S							J	0	2	S				VSCI: 10/21/2014 68.09 10/07/2009 59.41 04/20/2009 83.77
6APAY-161-SAMS	VAS-Q07R_PAY01A16	CMON	BS13	0	2	S				0	2	S																										Just above confluence with Slate Branch on Payne Branch Road crossing
6APLL000.17	VAS-Q13R_PLL01A02	B,TM	BS28	0	4	S	0	4	S	0	4	S																			FS	0	2	S				Off SR 671 VSCI: 10/29/2014 71.45 04/10/2014 78.72 10/25/2011 80.67 05/19/2011 77.37
6APLR000.06	VAS-Q08R_PLR01A08	A	BS14	0	13	S	0	13	S	0	13	S	3	12	IM																	0	12	S				Bridge. # 6120 on SR 604 off 460
6APNK000.08	VAS-Q13R_PNK01A96	A	BS28	2	12	IM	0	12	S	0	12	S	0	12	S																	0	12	S				Bridge #6066 on SR 671
6APNK001.26	VAS-Q13L_PNK01A02	L	BS28	0	100	S	19	100	IM	0	100	S	0	7	S						0	S										0	7	S				North Fork Pound Reservoir Sampled in 2014
6APNK008.28	VAS-Q13R_PNK01A06	B	BS28	0	2	S	0	2	S	0	2	S																			IM	0	2	S				Bridge #6066 on SR 671 VSCI: 09/17/2013 50.51 06/04/2013 59.41
6APNK-12-SAMS	VAS-Q13R_PNK01A06	CMON	BS28	0	1	IN				0	1	IN																										Bear Fork, at confluence with North Fork Pound River
6APNK-155-SAMS	VAS-Q13R_PNK01A06	CMON	BS28	0	1	IN				0	1	IN																										At confluence with Bear Fork
6APNK-156-SAMS	VAS-Q13R_PNK01B16	CMON	BS28	0	2	S					1	IN																										At Flat Gap Road bridge Level II temp 0/2, pH 0/1
6APNK-157-SAMS	VAS-Q13R_PNK01B16	CMON	BS28	0	1	IN				0	1	IN																										At intersection of Wagon Wheel and North Fork roads
6APNK-158-SAMS	VAS-Q13R_PNK01B16	CMON	BS28		1	IN																															At Sulphar Spring Drive Level II Temp 0/1
6APNR001.49	VAS-Q13R_PNR02C02	A	BS34	0	11	S	0	11	S	0	11	S	0	11	S																	0	11	S				Below Flannagan Dam @gage off SR 739, Class VI
6APNR001.82	VAS-Q13L_PNR01A02	L	BS34	111	501	IM	193	501	IM	24	501	S	0	14	S						0	S										0	14	S				At Flannagan Dam @gage off SR 739 DEQ sampled in 2009 and 2010. Class VI
6APNR002.15	VAS-Q13L_PNR01A02	C	BS34																								2	IM	0	S								Below Flannagan Dam @gage off SR 739 Hg exceeded the VDH level on concern and the DEQ screening value, 2007.
6APNR017.79	VAS-Q13R_PNR02B02	A	BS30	0	11	S	0	11	S	0	11	S	1	11	S																	1	11	S				Bridge #6139 on SR 631 off SR 83, Class VI
6APNR023.86	VAS-Q13R_PNR01A00	A,B	BS30	0	2	S	0	2	S	0	2	S																			IM							SR 624 Bridge in Norland VSCI: 10/23/2013 51.97 05/30/2013 31.98 Historically: 11/05/2008 58 06/02/2008 51
6APNR028.76	VAS-Q13R_PNR01A00	A	BS30	0	10	S	0	10	S	0	10	S	3	10	IM																	1	10	S				SR 666 low water bridge off SR 630
6APNR035.66	VAS-Q13R_PNR01A00	A	BS29	0	11	S	0	11	S	0	11	S	2	11	IM																	0	11	S				Bridge #1001 on Rt 23 Bus off Rt 83
6APNS000.40	VAS-Q13R_PNS01A94	A	BS28	0	11	S	0	10	S	0	11	S	1	10	S																	0	11	S				SR 671 @ Roberts
6APNS003.38	VAS-Q13R_PNS01A94	TM	BS28	0	12	S	0	12	S	0	12	S	3	12	IM																	0	12	S				SR 679
6APNS-189-SAMS	VAS-Q13R_PNS02B04	CMON	BS28		1	IN					1	IN																										2500 from confluence with Donald Branch Level II Temp 0/1, pH 0/1
6APNS-190-SAMS	VAS-Q13R_PNS02B04	CMON	BS28		1	IN					1	IN																										500 feet downstream of Hale Gap Road bridge Level II temp 0/1, pH 0/1
6APNS-191-SAMS	VAS-Q13R_PNS02B04	CMON	BS28	0	1	IN				0	1	IN																										About 2500 from confluence with Donald Branch
6APNS-192-SAMS	VAS-Q13R_PNS02B04	CMON	BS28	0	1	IN				0	1	IN																										Intersection of Hale Gap Rd and Pikes Drive
6APNS-RM-CH-MRRP	VAS-Q13R_PNS01A94	CMON	BS28		2	IN					1	IN	0	2	S																							Frist bridge on Glady Fork Road after turning off South Fork Road Additional Level II temp 0/2 pH 0/14 DO 0/1
6APOW-172-SAMS	VAS-Q14R_POW03A16	CMON	BS33		1	IN					1	IN																										At intersection of Powers Branch and Old Barn roads Level II temp 0/1, pH 0/1
6APPW000.49	VAS-Q03R_PPW01A94	TM	BS06	0	6	S	0	6	S	0	6	S	3	6	IM																							Downstream of Kelsea
6APUM-173-SAMS	VAS-Q03R_PUM01A16	CMON	BS05	0	1	IN				0	1	IN																										1500 feet up Kershaw Branch Road from Guesses Fork Road
6ARAC-177-SAMS	VAS-Q03R_RAC02A16	CMON	BS05		1	IN																																At Ira Hurley Road crossing Level II temp 0/1
6ARAC-178-SAMS	VAS-Q03R_RAC02A16	CMON	BS05	0	1	IN				0	1	IN																										On Race Fork Road 1.9 miles south of Hurley Road
6ARAC-179-SAMS	VAS-Q03R_RAC02A16	CMON	BS05		1	IN																																On Race Fork Road 2.1 miles south of Hurley Road Level II temp 0/1
6ARAE-180-SAMS	VAS-Q13R_RAE01A16	CMON	BS28		1	IN					1	IN																										2000 feet from confluence of Rat Creek and Short Creek Level II temp 0/1, pH 0/1
6ARLF000.06	VAS-Q14R_RLF01A14	A,PA,B	BS33	0	12	S	0	11	S	0	12	S	0	12	S	0	2	NA	0	S	0	S									FS	0	12	S				West of Bise Ridge Off SR 649 VSCI: 10/20/2014 64.37 04/01/2014 78.85 05/10/2012 50.73
6AROR-RF-MRRP	VAS-Q11R_ROR01A14	CMON	BS23	0	1	IN					2	IN	0	3	S																							10 feet from confluence with the McClure River,

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6ARP90-FORF	VAS-Q12R_RPC01A96	CMON	BS26		15	IN								16	IN																						30 yards downstream of Exxon station, Additional Level II Temp 15/0 viol 3D EC 16/4 viol 3C
6ARP99-FORF	VAS-Q12R_RPC01A96	CMON	BS26		17	IN								18	IN																						At mouth to Russell Fork River on Highway 80/83 bridge, Additional Level II tm 16/0 viol 3D EC 18/5 viol 3C
6ARPC000.40	VAS-Q12R_RPC01A96	A	BS26	0	12	S	0	12	S	0	12	S	7	12	IM																0	12	S				Bridge on Covenant Way off Rt. 80
6ARPC000.52	VAS-Q12R_RPC01A96	B,TM	BS26	0	2	S	0	2	S	0	2	S																		IM							Rt 767 off Rt 80/83 VSCI: 09/30/2010 54.85 05/26/2010 44.47
6ARPC-185-SAMS	VAS-Q12R_RPC01A96	CMON	BS26	0	1	IN				0	1	IN																									250 feet upstream of confluence with Doe Branch
6ARPC-186-SAMS	VAS-Q12R_RPC01A96	CMON	BS26	0	1	IN				0	1	IN																									At Raines School in Prater, VA Level II temp 0/1
6ARPC-RP-Funeral-MRRP	VAS-Q12R_RPC01A96	CMON	BS26	0	1	IN					1	IN	0	1	IN																						Behind the Haysi Funeral Home.
6ARSS014.15	VAS-Q12R_RSS02A04	A,TR	BS35	0	35	S	0	35	S	0	35	S	5	35	IM																2	35	S				Pool Point off Rt 80
6ARSS024.30	VAS-Q12R_RSS03A02	A,TR	BS27	0	35	S	0	35	S	0	35	S	6	35	IM																0	35	S				near Haysi on SR 613 Bridge #6003
6ARSS025.50	VAS-Q12R_RSS03A02	C	BS27																								0	S	0	S							SR 722 bridge # 6149 off Rt 80, 2007.
6ARSS025.87	VAS-Q10R_RSS02A00	B	BS21	0	2	S	0	2	S	0	2	S																		FS							SR 722 bridge # 6149 off Rt 80 VSCI: 11/05/2014 73.83 05/21/2014 66.22
6ARSS047.10	VAS-Q09R_RSS02A00	A,TR	BS16	0	35	S	0	35	S	0	35	S	6	35	IM																						@ Council SR 1030 @ WPH Recreation Center
6ARSS-4244-MRRP	VAS-Q09R_RSS02A00	CMON	BS16										0	2	S																						Bridge #4244, off Rt 80, downstream of Davenport
6ARSS50-FORF	VAS-Q10R_RSS02A00	CMON	BS21		18	IN								19	IN																						10 yards upstream of sewer manhole, Additional Level II temp 18/0 viol 3D EC 19/1 viol 3D
6ARSS-RT722-MRRP	VAS-Q10R_RSS02A00	CMON	BS21										2	3	IM																						Off SR 722 (off route 80) at bridge # 6149
6ASAT000.26	VAS-Q07R_SAT01A00	A,B,TM	BS13	0	12	S	0	12	S	0	12	S	2	12	IM																IM	0	12	S				Walk Bridge. # 9000 across from Law School VSCI Carryover from 2014 IR: 06/05/2008 36.70 09/26/2007 58.90 05/30/2007 53.10
6ASAT003.60	VAS-Q07R_SAT01A00	FPM,PA,B	BS13	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S									IM	0	2	S				North of Grundy High School VSCI: 04/22/2010 52.38
6ASAT004.56	VAS-Q07R_SAT01A00	C	BS13																								0	S	0	S							Slate Creek near Buchanan County Vocational Center, 2007.
6ASAT007.71	VAS-Q07R_SAT01A00	B,TM	BS13	0	2	S	0	2	S	0	2	S																		J							Off Rt 83 above White Oak Branch VSCI: 09/21/2010 71.80 04/08/2010 34.30 Historically: 09/26/2007 64.38 05/30/2007 49.39
6ASAT011.43	VAS-Q07R_SAT01B02	A,PA,B	BS13	0	13	S	0	13	S	1	13	S	1	12	S	0	1	NA	0	S	0	S									FS	0	13	S				Off Rt 83 above Payne Branch VSCI: 10/01/2013 62.54 04/10/2013 61.31
6ASPK-EHS-RC2-MRRP	VAS-Q11R_SPK01A08	CMON	BS22		1	IN					1	IN	0	2	S																						At Ervinton High School, upstream of road bridge entering parking lot
6ASPK-EHS-RC3-MRRP	VAS-Q11R_SPK01A08	CMON	BS22	0	8	S							0	18	S																						At Ervinton High School, downstream of school, near rail road tracks. Formally known as site EHS-RC3
6ASPK-SF-DH-MRRP	VAS-Q11R_SPK01A08	CMON	BS22	0	1	IN																															At drainage pipe at Ervinton High School, Additional Level II: EC 0/1 3D
6ASTI000.09	VAS-Q08R_STI01A12	A,TM	BS14	0	1	IN	0	1	IN	0	1	IN																									Webb Branch @ Janey
6AWBB000.01	VAS-Q04R_WBB01A12	A,TM	BS09	0	1	IN	0	1	IN	0	1	IN																									Stiltner Creek @ Riverview Elem.
6AWGH-220-SAMS	VAS-Q14R_WGH01A16	CMON	BS33		1	IN																															At Windsong Trail and Coeburn Road downstream of reclaimed strip mine Level II temp 0/1
6AWLF-217-SAMS	VAS-Q08R_WLF02A16	CMON	BS15		1	IN																															At Old Rocklick Road crossing Level II temp 0/1
6AWPE-218-SAMS	VAS-Q12R_WPR01A16	CMON	BS26	0	1	IN				0	1	IN																									200 feet upstream of confluence with Russell Prater Creek
6AWTK000.10	VAS-Q06R_WTK01A12	A,TM	BS12	0	1	IN	0	1	IN	0	1	IN																									Watkins Branch near Grundy
6AXCA-83-SAMS	VAS-Q13R_XCA03A16	CMON	BS30		1	IN																															At intersection of Dickenson Highway and Cooks Fork road Level II temp 0/1
6AXRB-56-SAMS	VAS-Q05R_XRB02A16	CMON	BS11	0	1	IN				0	1	IN																									At confluence with Dismal Creek on Dismal Creek Road
6AXRC-188-SAMS	VAS-Q07R_XRC01A16	CMON	BS13	0	1	IN				0	1	IN																									At Slate Cemetery in Slate, VA
6AXRD-15-SAMS	VAS-Q08R_BLC01A98	CMON	BS14	0	1	IN				0	1	IN																									Along Split Rock Road just east of intersection of Bonanza Road
6AXRE-42-SAMS	VAS-Q09R_XRE02A16	CMON	BS17		1	IN					1	IN																									At mine pond discharge off Monte Road south of Duty, VA Level II Temp 0/1, pH 0/1
6AXRF-108-SAMS	VAS-Q09R_XRF01A16	CMON	BS17							0	1	IN																									Near outfall of coal mine pond in Duty, VA
6AXRI-35-SAMS	VAS-Q12R_XRI01A16	CMON	BS26	0	1	IN				0	1	IN																									50 feet upstream of confluence with Butcherknife Fork on Sunny Road
6AXRK-187-SAMS	VAS-Q12R_XRK01A16	CMON	BS26	0	1	IN				0	1	IN																									At JWB Hollow Road just upstream of Raines School in Prater, VA

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6AXRL-11-SAMS	VAS-Q12R_XRL01A16	CMON	BS27		1	IN				0	1	IN																									On Breaks Park Road 0.6 mile east of Bartlick Road
6AXRM-159-SAMS	VAS-Q13R_XRM01A16	CMON	BS28	0	3	S				0	1	IN																									Below pond discharge Level II temp 0/1
6AXRN-193-SAMS	VAS-Q13R_XRN01A16	CMON	BS28	0	2	S					2	IN																									At end of Greywell Road Level II temp 0/2, pH 0/3
6AXRN-213-SAMS	VAS-Q13R_XRN01A16	CMON	BS28	0	1	IN																															On Jeep trail 1 mile from confluence with South Fork Pound River
6AXRN-214-SAMS	VAS-Q13R_XRN01A16	CMON	BS28	0	1	IN																															On Jeep trial 1.2 miles from confluence with South Fork Pound River
6AXRN-215-SAMS	VAS-Q13R_XRN01A16	CMON	BS28		1	IN					1	IN																									3500 feet from confluence with South Fork Pound River Level II temp 0/1, pH 0/1
6AXRO-194-SAMS	VAS-Q13R_XRO01A16	CMON	BS28	0	1	IN																															Tributary is from strip mine at intersection of Choctaw and South Fork roads
6AXRP-208-SAMS	VAS-Q13R_XRP01A16	CMON	BS28	0	3	S				0	1	IN																									About 750 feet south from intersection of Guest River Rd and Hale Gap Rd Level II temp 0/4, pH 0/3
6AXRP-209-SAMS	VAS-Q13R_XRP01A16	CMON	BS28	0	1	IN				0	1	IN																									At the intersection of Guest River Rd and Hale Gap Rd
6AXRQ-212-SAMS	VAS-Q13R_XRQ01A16	CMON	BS28	0	1	S					1	IN																									Below pond Level II temp 0/1, pH 0/1
6AXRU-55-SAMS	VAS-Q05R_XRU01A16	CMON	BS10	0	1	IN				0	1	IN																									White Mountain Road 1400 feet from intersection with Jewell Valley Road
6AXRU-57-SAMS	VAS-Q05R_XRU01A16	CMON	BS10	0	1	IN				0	1	IN																									At intersection of White Mountain and Jewel Valley roads
6BAMO001.52	VAS-P14R_AMO01A02	B,SS	TC29	0	1	IN	0	1	IN	0	1	IN											0	S							FS						N of Bush Mill, W of Nickelsville, Class V VSCI: 06/04/2009 64.89
6BBAI-6-SAMS	VAS-P20R_BAI01A00	CMON	TP08		3	IN					3	IN																									At Pot Branch Road bridge Level II temp 0/3, pH 0/1
6BBAI-7-SAMS	VAS-P20R_BAI01A00	CMON	TP08		1	IN																															1000 feet above Office Drive bridge Level II temp 0/1
6BBAR000.97	VAS-P12R_BAR01A02	B,TM	TC24	0	1	IN	0	1	IN	0	1	IN																				IM						Carryover from Off SR 704 VSCI: Historically: 04/22/2008 54.94
6BBCD001.89	VAS-P06R_BCD01A98	A	TC13	0	12	S	0	12	S	0	12	S	4	12	IM																		1	12	S				Swinging bridge off SR 721 off SR 640 Some data was incorrectly entered as 6BBCD001.84.
6BBCD002.01	VAS-P06R_BCD01A98	B	TC13	0	2	S	0	2	S	0	2	S																				IM	0	2	S				Shifted from 6BBCD001.84 Off SR 721 VSCI: 11/19/2012 59.21 06/06/2012 52.43
6BBCD006.66	VAS-P06R_BCD02A00	A	TC13	0	12	S	0	12	S	0	12	S	5	12	IM																		1	12	S				Swinging bridge on Cliffside Drive. off 19b, Class V
6BBCD009.83	VAS-P06R_BCD03A00	A	TC13	0	12	S	0	12	S	0	12	S	9	12	IM																		1	12	S				Bridge #6266 on SR 727 off SR 658
6BBCE001.05	VAS-P16R_BCE01A00	A	TC34	0	12	S	0	12	S	0	12	S	2	12	IM																								SR 600 bridge
6BBER001.14	VAS-P11R_BER01A98	A	TC20	0	23	S	0	23	S	0	23	S	7	23	IM																		0	11	S				Off SR 681 below Town of Wise STP
6BBEV000.17	VAS-P18R_BEV01A10	A	TP05	0	12	S	0	12	S	0	12	S	1	12	S																			12					Bridge. # 6188 on SR 612 off SR 613 @ VDOT
6BBIG000.12	VAS-P03R_BIG01A10	A,C	TC04	0	12	S	0	12	S	0	12	S	8	12	IM														0	S	0	S							Allegany St bridge off Rt 67 in Richlands, 2007.
6BBIG000.99	VAS-P03R_BIG01A10	B,SS	TC04	0	1	IN	0	1	IN	0	1	IN											0	S							IM						Rt 67N, N of Richlands VSCI: 06/02/2009 42.64
6BBKW005.82	VAS-P16R_BKW01A02	TM	TC34	0	12	S	0	12	S	0	12	S	5	12	IM																								Bridge on Rt. 70 @ TN line
6BBLC000.19	VAS-P04R_BLC01A10	B,SS	TC05	0	3	S	0	3	S	0	3	S											0	S							FS						At Dye on SR 617 off Rt 67 VSCI: 10/23/2013 71.29 05/16/2013 62.29 06/02/2009 55.60
6BBLC002.21	VAS-P04R_BLC01A10	FPM,B	TC05	0	2	S	0	2	S	0	2	S	0	2	S								0	S							FS						Carryover from E of Robinson Ridge VSCI: 03/26/2008 62.21 05/01/2007 79.68
6BBLC-17-SAMS	VAS-P04R_BLC01A10	CMON	TC05	0	1	IN																															At Swifty John Road
6BBLK000.13	VAS-P17R_BLK01A96	B,TM	TP02	0	1	IN	0	1	IN	0	1	IN									0	IN	0	S							IM						Carryover from N of Blackwood VSCI: Historically: 11/05/2008 54.20 04/29/2008 48.40
6BBLK-25-SAMS	VAS-P17R_BLK01A96	CMON	TP02		1	IN					1	IN							0	S																	Where Park Place road curves to the left. Selenium 7.6 ug/l Selenium 6.61 ug/l Level II temp 0/1, pH 0/1
6BBLK-26-SAMS	VAS-P17R_BLK01A96	CMON	TP02	0	1	IN													0	S																	Where Park Place road curves to the left. Selenium 7.6 ug/l Selenium 6.61 ug/l
6BBRE000.15	VAS-P07R_BRE01A10	B,SS	TC14	0	1	IN	0	1	IN	0	1	IN											0	S							FS						VSCI: 06/03/2009 75.84

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BBUC000.24	VAS-P11R_BUC01A02	B	TC21	0	3	S	0	3	S	0	3	S																			FS	0	2	S				Off Burns Creek Road @ Tacoma, Class V VSCI: 10/18/2011 65.90 05/19/2011 62.34
6BBUG000.10	VAS-P06R_BUG01A06	A	TC13	0	12	S	0	12	S	0	12	S	8	12	IM																	1	12	S				Bridge #6226 on SR 658 off Rt 19 bus
6BBUL000.06	VAS-P09R_BUL01A06	A	TC18	0	23	S	0	23	S	0	23	S	3	23	IM																	0	23	S				Bridge #6062 on SR 657 off Rt 58
6BBUL-30-SAMS	VAS-P04R_BLC01A10	CMON	TC18		1	IN					1	IN																									Intersection of Bull Run and Clinchfield Railroad Level II temp 0/1, pH 0/1
6BBUL-31-SAMS	VAS-P04R_BLC01A10	CMON	TC18		1	IN					1	IN																									Near confluence of Bull Run and a tributary Level II temp 0/1, pH 0/1
6BBUL-Carfax-SOS	VAS-P09R_BUL01A06	CMON	TC18																												LP							Park at Carfax water treatment plant, then walk down to river. Walk downstream, past a creek, to a large riffle in the river. Fall 2008: Lev II-Acceptable
6BBUY000.01	VAS-P20R_BUY01A12	A	TP07	0	11	S	0	11	S	0	11	S	1	11	S																	0	11	S				SR 625 bridge #6023 near Sigma Baptist Church, Class V
6BBUY-32-SAMS	VAS-P20R_BUY01A12	CMON	TP07	0	2	S				0	2	S																										Bundy Creek when it runs between Sigma and Keokee road
6BBUY-33-SAMS	VAS-P20R_BUY01A12	CMON	TP07		1	IN					1	IN																									Eastern side of intersection of Sigma Rd and State Rt. 606 Level II temp 0/1, pH 0/1
6BBUY-34-SAMS	VAS-P20R_BUY01A12	CMON	TP07		3	IN					1	IN																									Intersection of Sigma Rd and State Route 606 Level II temp 0/3, pH 0/1
6BBUY-44-SAMS	VAS-P20R_BUY01A12	CMON	TP07		1	IN					1	IN																									At Morris Drive 1500 feet below coal tailings pond Level II temp 0/1, pH 0/1
6BCAL000.03	VAS-P17R_CAL01A98	A,B	TP03	0	2	S	0	2	S	0	2	S																			IM							On Rt 78 in Appalachia VSCI: 10/04/2010 55.18 05/27/2010 48.81
6BCAL001.57	VAS-P17R_CAL01A98	TM	TP03	0	4	S	0	4	S	0	4	S									0	IN															Callahan Cr. and Nickols Rd.
6BCAL003.19	VAS-P17R_CAL01B04	B,SS	TP03	0	3	S	0	3	S	0	3	S	2	2	IM																IM							Rt. 78 Bridge # 1056, below Waterfall near Stonega VSCI: 09/21/2011 44.07
6BCAL004.01	VAS-P17R_CAL01B04	B,SS	TP03	0	5	S	0	5	S	0	5	S	1	1	IN/O	0	1	NA	0	S	0	S									IM							Below Stonega straight pipe discharge across RR VSCI: 10/02/2013 39.41 04/29/2013 54.41 09/21/2011 31.79 11/15/2010 28.0
6BCAL004.30	VAS-P17R_CAL01B04	B,SS	TP03	0	1	IN	0	1	IN	0	1	IN																			IM							Bridge Upstream of Stonega, below trib. With high conductivity 09/21/2011 43.72
6BCAL004.45	VAS-P17R_CAL01B04	B,SS	TP03	0	4	S	0	4	S	0	4	S	0	1	IN																IM							Upstream Stonega @ end state maintained VSCI: 09/21/2011 40.78 11/15/2010 52.05
6BCAL-36-SAMS	VAS-P17R_CAL01B04	CMON	TP03		1	IN					1	IN							0	IN																	1000 feet upstream of Rt 78 Selenium 6.51 ug/l Level II temp 0/1, pH 0/1
6BCAL-37-SAMS	VAS-P17R_CAL01B04	CMON	TP03		1	IN					1	IN							0	S																	Where Park Place road curves to the left. Selenium 7.6 ug/l Selenium 6.61 ug/l Level II temp 0/1, pH 0/1
6BCAL-38-SAMS	VAS-P17R_CAL01B04	CMON	TP03		1	IN													0	S																	Where Park Place road curves to the left. Selenium 7.6 ug/l Selenium 6.61 ug/l Level II temp 0/1
6BCAL-39-SAMS	VAS-P17R_CAL01B04	CMON	TP03	0	1	IN				0	1	S							0	S																	Where Park Place road curves to the left. Selenium 7.6 ug/l Selenium 6.61 ug/l
6BCAL-CC3-SAMS	VAS-P17R_KEL01A14	CMON	TP03		3	IN					3	IN							0	IN																	1000 feet upstream of Rt 78 Selenium 6.51 ug/l Level II temp 0/3, pH 0/3
6BCAL-CCSTN-SAMS	VAS-P17R_CAL01B04	CMON	TP03																0	S																	Where Park Place road curves to the left. Selenium 7.6 ug/l Selenium 6.61 ug/l
6BCAL-POND11A-SAMS	VAS-P17R_XHQ01A14	CMON	TP03																0	S																	Selenium 8 ug/l Selenium 7 ug/l
6BCAL-POND8A-SAMS	VAS-P17R_XHP01A14	CMON	TP03																0	S																	Selenium 14 ug/l Selenium 13 ug/l
6BCAL-SCC4-SAMS	VAS-P17R_CAL01B04	CMON	TP03																		0	IN															500 feet upstream of confluence with Mud Lick Creek Selenium 6.61 ug/l
6BCAT002.35	VAS-P09R_CAT01A10	B,SS	TC18	0	1	IN	0	1	IN	0	1	IN													0	S					FS							West of Banners Corner VSCI: 06/02/2009 69.78
6BCAV000.05	VAS-P01R_CAV01A00	B,SS	TC01	0	3	S	0	3	S	0	3	S													1	O					IM							Rt 16 at River Jack VSCI: 11/10/2014 45.72 03/17/2014 48.14 06/02/2009 55.69 09/29/2008 64.59 Monitoring data exceeded the Sediment Screening Value for Lead.

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BCAV002.88	VAS-P01L_CAV01A10	C,SS	TC01																								2	IM										Lake Witten One fish sample collected in 2007 exceeded the VDH level of concern; an additional sample exceeded the DEQ screening value.
6BCLC-111-SAMS	VAS-P20R_CLC01A16	CMON	TP07		3	IN					1	IN																										Intersection of Jordan Branch and state route 606 Level II temp 0/3, pH 0/1
6BCLN002-SOS	VAS-P09R_CLN02B08	CMON	TC22																												MP							@ River Farm off Rt 65 a few miles E of Dungannon Spring 2012: Lev II-Gray Zone Fall 2010: Lev II-Unacceptable Summer 2010: Lev II-Gray Zone Spring 2010: Lev II-Acceptable Fall 2009: Lev II-Acceptable
6BCLN189.10	VAS-P13R_CLN01A02	B	TC33	0	1	IN	0	1	IN	0	1	IN																			W							Kyles Ford, TN, unwadeable
6BCLN202.07	VAS-P13R_CLN01A02	B,TM	TC33	0	13	S	0	13	S	0	13	S	3	12	IM																FS							Upstream Shelby Creek @ TN line island
6BCLN206.70	VAS-P13R_CLN01A02	A,TR	TC33	0	35	S	0	35	S	0	35	S	4	35	IM																	0	35	S				SR. 627, downstream gage
6BCLN211.00	VAS-P13R_CLN01A02	C	TC33																								2	IM	0	S								Clinch River near Clinchport, 2008 No PCB, no pesticides, no metals in fish
6BCLN213.02	VAS-P13R_CLN02A02	TM	TC27	0	32	S	0	32	S	0	32	S	3	12	IM				0	S	0	S										0	4	S				Bridge St swinging bridge off Rt 65 Manganese & Fe exceeded PWS standard in one sample.
6BCLN219.26	VAS-P13R_CLN02A02	B,SS	TC27	0	1	IN	0	1	IN	0	1	IN											0	S							FS							At Craft Mill In EDAS as 6BCLN219.24 VSCI: 06/02/2009 63.78 Historically: 10/01/2008 70.71
6BCLN225.94	VAS-P13R_CLN03A02	B,TM,FPM	TC27	0	3	S	0	3	S	0	3	S	0	1	IN	0	1	NA	0	S	0	S									J	0	2	S				Southwest of Pendleton Island above Suck Branch VSCI: 10/17/2012 58.14
6BCLN227.25	VAS-P13R_CLN03A02	B,SS	TC27	0	33	S	0	33	S	0	33	S							0	S	0	S	0	S							FS	0	4	S				S. of Ft. Blackmore, upstream Pendleton Island VSCI: 05/12/2014 66.34 10/27/2011 68.07 06/14/2011 52.23 06/02/2009 52.31 Fe exceeded PWS standard.
6BCLN236.00	VAS-P09R_CLN01A00	C	TC23																								0	S	0	S								Near Dungannon 05/07/2008 No PCB, no pesticides, no metals in fish
6BCLN237.09	VAS-P09R_CLN01A00	A	TC23	0	23	S	0	23	S	0	23	S	4	23	IM																	0	11	S				Boat ramp downstream Rt 65
6BCLN237.33	VAS-P09R_CLN01A00	A	TC23	0	22	S				0	22	S	0	22	S				0	S	0	S										0	4	S				Boat ramp downstream Rt 65 Manganese & Fe exceeded PWS standard in one sample.
6BCLN242.00	VAS-P09R_CLN02B08	A,TM	TC22	0	12	S	0	12	S	0	12	S	4	12	IM																								SR 608 off Rt 72, gravel road
6BCLN246.30	VAS-P09R_CLN01B00	A	TC18	0	20	S	0	20	S	0	20	S	3	20	IM				0	S	0	S										0	20	S				SR 657 at dead end at Carfax
6BCLN249.62	VAS-P09R_CLN01B00	A,SS	TC18	0	21	S	0	21	S	0	21	S	3	20	IM				0	S	0	S	0	S								0	20	S				SR 611@ Burtons Ford
6BCLN250.67	VAS-P09R_CLN01B00	FPM,PA,B	TC18	0	3	S	0	3	S	0	3	S	0	2	S	0	1	NA	0	S	0	S	0	S							J	0	2	S				Upstream of Burtons Ford, SR 611 VSCI: 09/24/2014 58.24 10/16/2012 77.73 10/20/2010 73.00
6BCLN250.70	VAS-P09R_CLN01B00	B,FPM,TM	TC18	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S									FS	0	1	IN				East of Robinette Cemetery VSCI: 10/16/2012 79.98
6BCLN256.31	VAS-P09R_CLN01C00	TM,PA,B	TC16	0	13	S	0	12	S	0	13	S	4	13	IM	0	1	NA	0	S	0	S									J	1	13	S				Off SR 640 VSCI: 10/15/2013 59.86
6BCLN264.07	VAS-P09R_CLN01C14	SS	TC16	0	18	S	0	17	S	0	17	S							0	S	0	S										0	4	S				SR 665 bridge, Carterton, VA Fe exceeded PWS standard in one sample.
6BCLN264.27	VAS-P09R_CLN01C14	B,SS	TC16	0	31	S	0	31	S	0	31	S	6	31	IM				0	S	0	S	0	S							FS	0	20	S				Carryover from 1/2 mi below Eagle Nest Br near Carterton Historically VSCI: 09/30/2008 71.08 Fe exceeded the PWS standard for taste.
6BCLN271.50	VAS-P07R_CLN01A00	A,TR	TC14	0	76	S	0	75	S	0	76	S	14	56	IM				0	S	0	S										1	60	S				RT 82 bridge @ Cleveland Fe exceeded PWS standard in one sample.
6BCLN273.19	VAS-P07R_CLN01A00	FPM,PA,B	TC14	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	IN	0	S							FS	0	1	IN				Upstream of Cleveland VSCI: 10/21/2010 72.32
6BCLN274.71	VAS-P07R_CLN01A00	SS	TC14	0	19	S	0	19	S	0	19	S							0	S	0	S										0	4	S				Artrip State Route 661 Fe exceeded PWS standard in one sample.
6BCLN296.60	VAS-P04R_CLN02A02	B,SS	TC11	0	5	S	0	5	S	0	5	S											0	S							FS							Off Rt 80 at Blackford VSCI: 10/15/2013 69.87 05/16/2013 65.30 11/02/2011 75.45 06/13/2011 70.67 06/03/2009 72.84

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BCLN315.11	VAS-P03R_CLN01A98	A,C	TC04	0	12	S	0	12	S	0	12	S	4	12	IM				3	IM							3	IM										SR 723 bridge below Richlands STP Three individual smallmouth bass exceeded the DEQ screening value for Hg, 2007.
6BCLN320.68	VAS-P03R_CLN02A00	FPM,PA,B	TC04	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S									FS	0	2	S				Off T707 Edgewater Drive RR Trestle VSCI: 09/22/2014 66.46 03/24/2014 62.37
6BCLN321.13	VAS-P03R_CLN02A00	PA,SS,TR	TC04	0	67	S	0	65	S	0	67	S	9	66	IM				0	S	0	S										2	67	S				Off T707 Edgewater Drive RR Trestle
6BCLN324.38	VAS-P02R_CLN02B02	B,SS	TC02	0	1	IN	0	1	IN	0	1	IN											0	S							FS							Off Rt 460, right on bridge #1201 VSCI: 06/02/2009 73.24
6BCLN335.61	VAS-P02R_CLN02A02	B,SS	TC02	0	1	IN	0	1	IN	0	1	IN											0	S							J							Off SR 639, 510 Earl Branch Road VSCI: 06/02/2009 58.45
6BCLN346.80	VAS-P01R_CLN01A98	A,B	TC01	0	2	S	0	2	S	0	2	S																			IM							Off Rt 16 Walking Bridge off Broadway St In EDAS as 6BCLN346.60 VSCI: 04/20/2010 52.05 03/24/2009 44.88
6BCLN348.31	VAS-P01R_CLN01A98	C	TC01																								0	S	0	S								Clinch River near Rt. 61 bridge at Tazewell, 2007.
6BCLN-46-SAMS	VAS-P04R_CLN01B02	CMON	TC05		1	IN					1	IN																										1500 feet down Gardner Rd off of Swords Creek Rd Level II temp 0/1, pH 0/1
6BCLN-47-SAMS	VAS-P13R_CLN01A02	CMON	TC33		1	IN																																Intersection of Reeds Creek Rd and Reeds Creek Level II temp 0/1
6BCOB000.18	VAS-P15R_COB01A10	B,SS	TC32	0	3	S	0	3	S	0	3	S											0	S							J							SR 600 west of Fairview VSCI: 10/23/2014 71.02 05/28/2014 50.12 06/02/2009 55.04
6BCOC001.19	VAS-P09R_COC01A02	B,SS	TC22	0	3	S	0	3	S	0	3	S											0	S							FS	0	2	S				W. of Barb Hollow SR 685, Class V VSCI: 10/27/2011 84.71 06/02/2011 76.33 06/03/2009 77.45
6BCOL000.12	VAS-P03R_COL01A04	A	TC04	0	12	S	0	12	S	0	12	S	11	12	IM						0	S										0	12	S				SR 751 bridge #6130 in Raven
6BCOL001.93	VAS-P03R_COL01A04	FPM,TM,B	TC04	0	3	S	0	3	S	0	3	S							0	S											IM							Near Red Ash off Rt. 460 VSCI: 04/06/2010 47.33 03/24/2009 52.52 Manganese exceeded PWS standard in one sample.
6BCOP002.00	VAS-P14R_COP01A02	A,C	TC30	0	11	S	0	11	S	0	11	S	1	11	S												1	O	0	S								Bridge. # 6140 on SR 627 off 72, 2007.
6BCOP002.68	VAS-P14R_COP01A02	B,TM	TC30	0	2	S	0	2	S	0	2	S																			FS							SR 627 ford (Jennings Ford) VSCI: 10/20/2011 74.92 06/11/2011 65.59
6BCOP007.56	VAS-P14R_COP01A02	B,TM	TC30	0	1	IN	0	1	IN	0	1	IN																			FS							E of Spivey Mill, Off SR 627 VSCI: 09/27/2012 70.53
6BCOP007.97	VAS-P14R_COP01A02	B,TM	TC30	0	1	IN	0	1	IN	0	1	IN																			FS							Downstream of Beecher Branch confluence, off SR 627 VSCI: 04/12/2012 58.74
6BCOP012.73	VAS-P14R_COP01B04	TM	TC30	0	12	S	0	12	S	0	12	S	1	12	S																								Bridge. # 6538 on SR 619 off 72
6BCOP023.91	VAS-P14R_COP02A02	TM	TC29	0	12	S	0	12	S	0	12	S	2	12	IM																								Bridge. # 6094 on SR 671 off 670 off 71
6BCOP032.73	VAS-P14R_COP02A02	TM	TC29	0	12	S	0	12	S	0	12	S	4	12	IM																								Low-water Bridge. On SR 670 off 71
6BCOP047.75	VAS-P14R_COP02B08	TM	TC28	0	12	S	0	12	S	0	12	S	5	12	IM																								Low water Pvt. Bridge. off SR 678 off 58
6BCOP052.77	VAS-P14R_COP03A02	TM	TC28	0	12	S	0	12	S	0	12	S	6	12	IM																								Pvt. Bridge. off SR 678 off SR 671 off 58, Class V
6BCOV001.68	VAS-P13R_COV01B08	A	TC25	0	12	S	0	12	S	0	12	S	3	12	IM																								Bridge #6479 on SR 827 off SR 649 off 65, Class V
6BCOV004.26	VAS-P13R_COV01B08	TM	TC25	0	9	S	0	9	S	0	9	S	3	9	IM																								SR 649 bridge #6065, Class V
6BCRA000.31	VAS-P11R_CRA01A98	SS	TC21	0	10	S	0	10	S	0	10	S	4	10	IM																			0	10	S			Off SR 725, off SR 661, on Boydton Rd.
6BCRA000.31-UTRR	VAS-P11R_CRA01A98	CMON	TC21	0	10	S		10	IN		10	IN	9	14	IM																								At Boyden Road south of Crab Orchard, Virginia Level II pH 0/10, DO 0/10
6BCRB-50-SAMS	VAS-P20R_CRB01A16	CMON	TP07		1	IN					1	IN																										Intersection of Crab Orchard Creek and Mohawk Loop Level II temp 0/3=1, pH 0/1
6BCRC000.20	VAS-P11R_CRC01A02	B,SS	TC19	0	18	S	0	18	S	0	18	S	1	12	S				0	S	0	S									FS	0	12	S				Off SR 725, off SR 661, on Boydton Rd, Class V VSCI: 10/22/2013 68.11 04/29/2013 71.49 04/26/2011 62.04
6BCRC002.17	VAS-P11R_CRC01B10	B,SS	TC19	0	14	S	0	14	S	0	14	S	0	12	S						0	S									FS	0	12	S				South of Ramsey, unpaved road, Class V VSCI: 11/10/2010 86.82 06/02/2010 83.34
6BCUL001.59	VAS-P14R_CUL01A10	B,SS	TC29	0	3	S	0	3	S	0	3	S											0	S							FS							S of Twin Springs VSCI: 06/02/2011 67.17 10/07/2010 61.21 10/01/2008 54.24

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BDAK001.71	VAS-P15R_DAK01A10	B,SS	TC32	0	15	S	0	15	S	0	15	S	3	12	IM						0	S	0	S							FS	0	12	S				S of Twin Springs VSCI: 05/09/2011 76.59 06/02/2009 61.77
6BDAR000.26	VAS-P17R_DAR01A02	B,TM	TP04	0	2	S	0	2	S	0	2	S																			FS							Carryover from 2014 IR
6BDBR001.69	VAS-P21R_DBR01A02	A	TP12	0	12	S	0	12	S	0	12	S	2	11	IM																	0	11	S				SR 657 ford, off Rt 58, Class V
6BDES000.06	VAS-P02R_DES01A10	A	TC02	0	1	IN	0	1	IN	0	1	IN	0	1	IN																	0	1	IN				Off SR 637 near golf course
6BDEV000.07	VAS-P12R_DEV01A02	A,B	TC24	0	2	S	0	2	S	2	2	IM																			J							Off SR 619 upstream Straight Fork confluence, Class V VSCI: 10/27/2011 62.69 05/18/2011 43.68
6BDRL-175-SAMS	VAS-P09R_DRL02B16	CMON	TC18		1	IN																															About 3000 feet from confluence with Bull Run Level II temp 0/1
6BDUM000.04	VAS-P08R_DUM01A94	A,TM	TC15	0	36	S	0	35	S	0	36	S	4	36	IM																	0	24	S				Bridge #6151 @ AEP Rt 664/665
6BDUM000.14	VAS-P08R_DUM01A94	TM	TC15	0	1	IN	0	1	IN	0	1	IN																										SR 616 bridge, near Clinch River
6BDUM000.23	VAS-P08R_DUM01A94	FPM,TM,B	TC15	0	7	S	0	7	S	0	7	S																			FS							Off SR 664 VSCI: 10/28/2014 71.83 06/02/2014 64.86 11/19/2012 67.50 04/17/2012 51.30 10/07/2010 50.97 04/06/2010 60.24 11/18/2009 59 04/23/2009 52.21
6BDUM-67-SAMS	VAS-P08R_DUM01A94	CMON	TC15		1	IN					1	IN																										3000 feet NE of confluence with unnamed tributary Level II temp 0/1, pH 0/1
6BDUM-68-SAMS	VAS-P08R_DUM02A16	CMON	TC15	0	1	IN				0	1	IN																										3000 feet south from confluence with Roll Pone Branch
6BDUM-69-SAMS	VAS-P08R_DUM01A94	CMON	TC15	0	1	IN				0	1	IN																										Intersection of Dumps Creek and Gravel Lick Rd
6BEAS000.07	VAS-P11R_EAS01A06	B,TM	TC19	0	6	S	0	6	S	0	6	S							0	S											FS							Clear Creek Road - Above Ramsey VSCI: 04/29/2013 87.00 10/12/2011 74.85
6BEKG004.18	VAS-P06R_EKG01A06	A	TC12	0	12	S	0	12	S	0	12	S	11	12	IM																	1	12	S				Private bridge off SR 869 0.3 mi from SR 656
6BEKG008.48	VAS-P06R_EKG01A10	A	TC12	0	12	S	0	12	S	0	12	S	9	12	IM																	1	12	S				Off Rt 80 bridge on Meadowlark Lane @church
6BEKG010.34	VAS-P06R_EKG01A10	B,SS	TC12	0	1	IN	0	1	IN	0	1	IN											0	S							J							At Rosedale behind Sunoco station VSCI: 06/03/2009 57.47 Historically: 10/12/2008 66.94
6BELC-70-SAMS	VAS-P20R_ELC01A00	CMON	TP08		1	IN					1	IN																										Intersection between Bonny Blue and Virginia Lee Roads Level II temp 0/1, pH 0/1
6BELC-71-SAMS	VAS-P20R_ELC01A00	CMON	TP08		2	IN					2	IN																										125 ft. from Ely Creek interaction with Ely Pucketts Creek road Level II temp 0/2, pH 0/2
6BELC-72-SAMS	VAS-P20R_ELC01A00	CMON	TP08		1	IN					1	IN																										Above pond outfall on Office Drive Level II temp 0/1, pH 0/1
6BELC-73-SAMS	VAS-P20R_ELC01A00	CMON	TP08		1	IN					1	IN																										At Ely Pucketts Creek Road and Lincoln Drive Level II temp 0/1, pH 0/1
6BELC-74-SAMS	VAS-P20R_ELC01A00	CMON	TP08		1	IN					1	IN																										Just below pond outfall near Office Drive Level II temp 0/1, pH 0/1
6BFAW-75-SAMS	VAS-P20R_BAI01A00	CMON	TP08		1	IN																																200 feet upstream of confluence with Baileys Trace Level II temp 0/1
6BFAW-76-SAMS	VAS-P20R_BAI01A00	CMON	TP08		1	IN																																500 feet upstream of confluence with Baileys Trace Level II temp 0/1
6BFLC000.52	VAS-P09R_FLC01A02	A	TC23	0	23	S	0	23	S	0	23	S	8	23	IM																	0	11	S				Bridge #1089 on SR 659 off SR 65, Class V
6BFOU003.59	VAS-P23R_FOU01A14	A	TP16	0	14	S	0	14	S	0	14	S	6	12	IM																	0	15	S				Bridge #1089 on SR 659 off Rt 65
6BGIN-84-SAMS	VAS-P20R_GIN01A00	CMON	TP08		1	IN					1	IN																										At Kemner Gem Road in Darbyville, VA Level II temp 0/1, pH 0/1
6BGIN-85-SAMS	VAS-P20R_GIN01A00	CMON	TP08		1	IN																																At Kemner Gem Road in Darbyville, VA Level II temp 0/1
6BGLA000.18	VAS-P11R_GLA01A14	TM	TC20	0	12	S	0	12	S	0	12	S	8	12	IM																								School Ave culvert @ Addington MS
6BGRV-GL-1-MRRP	VAS-P10R_GRV01A10	CMON	TC17										3	4	IM																								2014 At the end of the driveway at 240 Gravel Lick
6BGSY000.25	VAS-P14R_GSY01A10	B,SS	TC28	0	1	IN	0	1	IN	0	1	IN											0	S							FS							E of Thompson Ford, W of Tray Hollow VSCI: 06/03/2009 75.46
6BGUE006.45	VAS-P11R_GUE02A98	C	TC21																						0	S	0	S										Bridge #1058 on Rt. 72 Fish data only is available at this site, 2007.
6BGUE006.50	VAS-P11R_GUE02A98	A,B,TR	TC21	0	25	S	0	25	S	0	25	S	4	23	IM																IM	2	23	S				Bridge #1058 on Rt. 72 VSCI: 10/27/2009 39.74 06/08/2009 32.09 05/29/2007 34.73
6BGUE013.71	VAS-P11R_GUE03A98	A	TC21	0	11	S	0	11	S	0	11	S	4	11	IM																	0	11	S				Private bridge off Rt 58 across from Drive-in
6BGUE016.54	VAS-P11R_GUE03A98	FPM,TM,B	TC21	0	2	S	0	2	S	0	2	S																			IM							Above Tacoma off Alt. Rt. 58 VSCI: 10/18/2011 40.11 05/19/2011 40.69

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BGUE026.55	VAS-P11R_GUE04A96	A	TC19	0	10	S	0	10	S	0	10	S	3	10	IM																0	10	S				Bridge #6215 on SR 625 off SR 620
6BGUE-89-SAMS	VAS-P11R_GUE04A96	CMON	TC19		1	IN																															1300 feet SW of confluence with Big Branch Level II temp 0/1
6BGUE-90-SAMS	VAS-P11R_GUE04A96	CMON	TC19		2	IN					2	IN																									1500 feet down from headwaters of Guest River Level II temp 0/2, pH 0/2
6BGUE-91-SAMS	VAS-P11R_GUE04A96	CMON	TC19		1	IN					1	IN																									1500 Feet NW of confluence with Steve Horn Branch Level II temp 0/1, pH 0/1
6BGUE-92-SAMS	VAS-P11R_GUE04A96	CMON	TC19		1	IN					1	IN																									2500 feet down from headwaters of Guest River Level II temp 0/1, pH 0/1
6BGUE-93-SAMS	VAS-P11R_GUE04A96	CMON	TC19	0	1	IN																															500 Feet North of intersection of Guest River Rd and Education Trail
6BGUE-94-SAMS	VAS-P11R_GUE04A96	CMON	TC19	1	1	IN																															About 60 feet from confluence with Hall Branch
6BGUE-95-SAMS	VAS-P11R_GUE04A96	CMON	TC19		2	IN					2	IN																									At the confluence of Guest River and Bad Branch Level II temp 0/2, pH 0/2
6BGUE-96-SAMS	VAS-P11R_GUE04A96	CMON	TC19		1	IN					1	IN																									Intersection of Guest River and Education Trail Level II temp 0/1, pH 0/1
6BHAR000.34	VAS-P21R_HAR01A02	A	TP12	0	11	S	0	11	S	0	11	S	3	11	IM																0	11	S				Bridge #6054 on SR 661 off SR 758, Class V
6BHAR002.41	VAS-P21R_HAR01A02	A,PA,B	TP12	0	12	S	0	12	S	0	12	S	4	12	IM	0	1	NA			0	S								J	0	12	S				Bridge #6054 on SR 661 off SR 758, Class V. VSCI: 11/03/2014 53.68 03/11/2014 61.04
6BHES000.05	VAS-P04R_HES01A10	A	TC05	0	12	S	0	12	S	0	12	S	4	12	IM																						SR 622 bridge #6305 @ Swords Creek
6BHES000.38	VAS-P04R_HES01A10	B,SS	TC05	0	1	IN	0	1	IN	0	1	IN											0	S						FS							Off Rt 67 on SR 622, near Millers Chapel VSCI: 06/03/2009 67.47
6BHES-100-SAMS	VAS-P04R_HES02A16	CMON	TC05		1	IN					1	IN																									250 feet above confluence with Long Branch Level II temp 0/1, pH 0/1
6BHES-101-SAMS	VAS-P04R_HES02A16	CMON	TC05		1	IN					1	IN																									At confluence with Strow Creek Level II temp 0/1, pH 0/1
6BHES-125-SAMS	VAS-P04R_HES02A16	CMON	TC05		1	IN					1	IN																									Confluence of Rock Lick Branch Level II temp 0/1, pH 0/1
6BHOG000.76	VAS-P05R_HOG01A10	B,SS	TC08	0	1	IN	0	1	IN	0	1	IN											0	S						FS							At Belfast, Rt 642 off 19/460 VSCI: 06/03/2009 69.71
6BHRI-105-SAMS	VAS-P08R_HRI01A16	CMON	TC15	0	1	IN				0	1	IN																									250 Feet from confluence with Dumps Creek
6BIDI001.49	VAS-P02R_IDI01A00	A	TC03	0	13	S	0	13	S	0	13	S	2	12	IM																0	13	S				Rt. 1206 Off SR 631 Private Bridge Wildwood Drive.
6BIDI008.73	VAS-P02R_IDI02A04	A	TC03	0	1	IN	0	1	IN	0	1	IN	0	1	IN																0	1	IN				SR 612 bridge #6015 @ Harman
6BIDI009.04	VAS-P02R_IDI02A04	FPM,PA,B	TC03	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S	0	S						FS	0	2	S				@ Harman VSCI: 11/04/2009 82.95 06/08/2009 65.81 Fe exceeded PWS standard in one sample.
6BIDN000.69	VAS-P05R_IDN01A04	A,B	TC08	0	13	S	0	13	S	0	13	S	3	13	IM																J							On SR 770 Off SR 609 off Hwy 19 Carryover from VSCI: 09/23/2008 59.81
6BIDN003.15	VAS-P05R_IDN02A10	B,SS	TC08	0	1	IN	0	1	IN	0	1	IN											0	S						FS							E of Ferrell Cemetery SR 1114 off Rt 19 VSCI: 06/03/2009 64.30
6BIND009.10	VAS-P24R_IND01A00	C	TP18																								0	S	0	S							Near Gibson Mill, 2007
6BIND009.12	VAS-P24R_IND01A00	A	TP18	0	13	S	0	13	S	0	13	S	6	12	IM																0	12	S				Bridge. # 6323 on SR 692 off 58
6BIND010.25	VAS-P24R_IND01A00	B,SS	TP18	0	2	S	0	2	S	0	2	S																		J							Off SR 691 0.1 mi above Pendleton Br) VSCI: 11/03/2011 79.15 05/03/2011 54.95
6BJAY001.47	VAS-P11R_JAY01A02	B	TC21	0	1	IN	0	1	IN	0	1	IN																		FS							Rt 72 bridge VSCI: 04/29/2010 67.11
6BJNN001.35	VAS-P01R_JNN01A04	FPM,B	TC01	0	2	S	0	2	S	0	2	S																		J							Near Adria Off Rt. 16 VSCI: 04/05/2010 61.48 03/24/2009 44.46
6BJON000.46	VAS-P20R_JON01A12	A	TP07	0	11	S	0	11	S	0	11	S	1	11	S																0	11	S				SR 606/628 bridge #6025
6BJOR-109-SAMS	VAS-P20R_JOR01A16	CMON	TP07	0	1	IN				0	1	IN																									At Clydesdale Drive Level II temp 0/1, pH 0/1
6BJOR-110-SAMS	VAS-P20R_JOR01A16	CMON	TP07		1	IN					1	IN																									At utility crossing off Route 606 Level II temp 0/1, pH 0/1
6BKAT000.02	VAS-P05R_KAT01A10	B,SS	TC09	0	1	IN	0	1	IN	0	1	IN											0	S						FS							SR 609 N of Wardell VSCI: 06/02/2009 62.17 Historically: 09/29/2008 72.19
6BLCC000.09	VAS-P10R_LCC01A98	A,B	TC17	0	13	S	0	13	S	0	12	S	4	11	IM																IM	0	11	S				SR 628 bridge # 6286 off SR 63 VSCI: 10/12/2011 60.34 04/27/2011 43.97
6BLCC002.84	VAS-P10R_LCC01A98	A	TC17	0	1	IN	0	1	IN	0	1	IN	0	1	IN																0	1	IN				RR trestle off SR 615 off SR 870 off 63
6BLCC005.99	VAS-P10R_LCC02A02	A	TC17	0	1	IN	0	1	IN	0	1	IN	0	1	IN																0	1	IN				SR 759 bridge. Off 63 at RR yard below Dante

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BLCC006.75	VAS-P10R_LCC02A02	A	TC17	0	1	IN	0	1	IN	0	1	IN	0	1	IN																	0	1	IN				Bridge #6105 on SR 608 off Rt 63.
6BLCC-119-SAMS	VAS-P10R_LCC02A02	CMON	TC17		1	IN																															1000 Feet south from intersection of Bunch Town Rd and VA-63 Level II temp 0/1
6BLCC-Boody-MRRP	VAS-P10R_LCC01A98	CMON	TC17	0	3	S							0	3	S																							Underneath the Boody RR trestle above the confluence with the Clinch River
6BLIK-118-SAMS	VAS-P17R_LIK01A16	CMON	TP04		2	IN					2	IN																									Just above confluence with Pigeon Creek Level II temp 0/2, pH 0/2
6BLIT-123-SAMS	VAS-P20R_LIT01A14	CMON	TP07	0	1	IN				0	1	IN																									At state route 606 Level II temp 0/6, pH 0/4
6BLOC001.05	VAS-P17R_LOC01A12	TM	TP04	0	2	S	0	2	S	0	2	S									0	IN	0	S													Looney Cr. on SR 160
6BLOC-126-SAMS	VAS-P17R_LOC01A12	CMON	TP04		1	IN					1	IN																									1.4 miles west of Appalachia town limits on Inman Road Level II temp 0/1, pH 0/1
6BLOC-127-SAMS	VAS-P17R_LOC01A12	CMON	TP04	0	2	S																															1.2 miles west of Appalachia town limits on Inman Road Level II temp 0/2, pH 0/2
6BLOC-128-SAMS	VAS-P17R_LOC01A12	CMON	TP04		1	IN					1	IN																									1 mile west of Appalachia town limits on Inman Road Level II temp 0/1, pH 0/1
6BLOC-129-SAMS	VAS-P17R_LOC01A12	CMON	TP04		1	IN					1	IN																									0.7 miles west of Appalachia town limits on Inman Road Level II temp 0/1, pH 0/1
6BLOC-130-SAMS	VAS-P17R_LOC01A12	CMON	TP04		1	IN					1	IN																									50 feet west before confluence of Looney Creek Level II temp 0/1, pH 0/1
6BLOC-132-SAMS	VAS-P17R_LOC01A12	CMON	TP04		1	IN					1	IN																									About 2600 feet west from intersection of Lynch Pl. and N. Inman Rd. Level II temp 0/1, pH 0/1
6BLOC-133-SAMS	VAS-P17R_LOC01A12	CMON	TP04	0	1	IN					1	IN																									About 2200 feet west from intersection of Lynch Pl and N. Inman Rd. Level II temp 0/1, pH 0/1
6BLOC-134-SAMS	VAS-P17R_LOC01A12	CMON	TP04		1	IN					1	IN																									Intersection of Looney Creek and Churchtown Rd Level II temp 0/1, pH 0/1
6BLOC-135-SAMS	VAS-P17R_LOC01A12	CMON	TP04		1	IN					1	IN																									1.3 miles west of Appalachia town limits on Inman Road Level II temp 0/1, pH 0/1
6BLOC-136-SAMS	VAS-P17R_LOC01A12	CMON	TP04		1	IN					1	IN																									Near Intersection of Looney Creek and N. Inman Street Level II temp 0/1, pH 0/1
6BLOC-137-SAMS	VAS-P17R_LOC01A12	CMON	TP04	0	1	IN					1	IN																									Near Intersection of Looney Creek and N. Inman Street near intersection of N. Inman Street and road leading to coal mine Level II temp 0/1, pH 0/1
6BLOC-138-SAMS	VAS-P17R_LOC01A12	CMON	TP04		1	IN					1	IN																									Past the end of road named Clover Pl. Level II temp 0/1, pH 0/1
6BLOC-139-SAMS	VAS-P17R_LOC01A12	CMON	TP04		3	IN					3	IN																									West of confluence where Looney Creek intersects Inman Rd. Level II temp 0/3, pH 0/3
6BLOO004.25	VAS-P06R_LOO01A06	A	TC12	0	12	S	0	12	S	0	12	S	6	12	IM																	0	12	S				Bridge #6316 on SR 657 off SR 656
6BLOO006.03	VAS-P06R_LOO01B12	A	TC12	0	12	S	0	12	S	0	12	S	6	12	IM																	0	12	S				Bridge #6316 on SR 657 off SR 656, Rt 80 bridge #1039
6BLOW000.30	VAS-P02R_LOW01A10	A	TC03	0	1	IN	0	1	IN	0	1	IN	1	1	IN/O																	0	1	IN				Off SR 627 off Crosscreek Drive (private drive)
6BLRF000.03	VAS-P02R_LRF01A10	A	TC03	0	1	IN	0	1	IN	0	1	IN	1	1	IN/O																	0	1	IN				SR 627 Bridge #6293
6BLSR000.33	VAS-P09R_LSR01A02	A	TC23	0	23	S	0	23	S	0	23	S	0	23	S																	0	11	S				Bridge #1048 on Rt 72, Class V
6BLSR004.22	VAS-P09R_LSR02A02	A,B	TC23	0	2	S	0	2	S	0	2	S																				FS	0	2	S				Off SR 701, Class V VSCI: 11/14/2012 82.37 06/04/2012 81.80
6BLSR008.12	VAS-P09L_LSR01A02	C	TC23																											3	IM							Off SR 701, Class V Three composite fish samples collected 5/15/2007 exceeded DEQ screening value for Hg.
6BLTF000.68-UTRR	VAS-P11R_LTF01A98	CMON	TC21	0	10	S		9	IN		11	IN	12	15	IM																							At intersection of Quillen Avenue and Front Street in Coeburn, Virginia Level II pH 0/11, DO 0/9
6BLTL001.11	VAS-P06R_LTL01A12	A	TC13	0	12	S	0	12	S	0	12	S	8	11	IM																	0	12	S				Footbridge @JS Easterly Park downstream WWTP
6BLTL003.31	VAS-P06R_LTL01A10	FPM,PA,B	TC13	0	2	S	0	2	S	0	2	S	1	1	IN/O	0	1	NA	0	S	0	S									J	0	2	S				East of Lebanon athletic field VSCI: 09/26/2012 64.23 05/03/2012 50.94
6BLTL007.84	VAS-P06R_LTL01A10	B,SS	TC13	0	1	IN	0	1	IN	0	1	IN											0	S							FS							SR 841 off Rt 19/460 S of Willis VSCI: 06/03/2009 68.81
6BLTR000.75	VAS-P05R_LTR01A00	A	TC09	0	12	S	0	12	S	0	12	S	1	11	S																	0	12	S				Ford off SR 640
6BLTR018.19	VAS-P05R_LTR02A00	A	TC07	0	13	S	0	13	S	0	13	S	6	13	IM																							Bridge on SR 609
6BLTR019.45	VAS-P05R_LTR02A00	FPM,B	TC07	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S	0	S							FS	0	2	S				Stream ford off SR 640 East of Wardell VSCI: 11/09/2009 77.67 05/20/2009 64.68 Historically: 11/03/2008 77.78 03/24/2008 66.27
6BLTR022.98	VAS-P05R_LTR02A00	FPM,PA,B	TC07	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S									FS	0	2	S				North of SR 603 VSCI: 09/25/2012 72.78 05/21/2012 65.03

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BLUC000.73	VAS-P05R_LUC01A10	B,SS	TC07	0	1	IN	0	1	IN	0	1	IN											0	S							IM							SR 609 SE of Wardell VSCI: 06/02/2009 47.81
6BLWS000.06	VAS-P04R_LWS01A98	A	TC10	0	13	S	0	13	S	0	13	S	12	13	IM																							SR 723 bridge. # 6097 at SR 651 intersection
6BLWS003.88	VAS-P04R_LWS01A98	FPM,B	TC10	0	2	S	0	2	S	0	2	S																			IM							Carryover from Near Honaker Off SR 637 VSCI: 11/10/2008 48.84 05/21/2008 53.85
6BLWS004.84	VAS-P04R_LWS01A10	A	TC10	0	12	S	0	12	S	0	12	S	3	12	IM																							SR 812 bridge #6041 near Laurel
6BLWS-113-SAMS	VAS-P04R_LWS01A10	CMON	TC10		1	IN					1	IN																										100 feet East from the confluence with Flatrock Creek Level II temp 0/1, pH 0/1
6BLWS-114-SAMS	VAS-P04R_LWS01A10	CMON	TC10	0	1	IN					1	IN																										250 feet west from the confluence with Flatrock Creek Level II temp 0/1, pH 0/1
6BLWS-116-SAMS	VAS-P04R_LWS02A16	CMON	TC10	0	1	IN																																At northern intersection of Old Drill and Drill roads
6BMAH000.07	VAS-P11R_MAH02A14	B,TM	TC21	0	3	S	0	3	S	1	3	IN/O																			FS							Off SR 855 VSCI: 05/01/2013 62.46 10/18/2011 71.02 04/28/2011 69.68
6BMAR-142-SAMS	VAS-P20R_MAR01A16	CMON	TP07		1	IN					1	IN																										2000 feet below Mine Drive crossing and jus below mine pond Level II temp 0/1, pH 0/1
6BMAR-143-SAMS	VAS-P20R_MAR01A16	CMON	TP07		2	IN					2	IN																										Above Glenbrook Mountain Road Level II temp 0/2, pH 0/2
6BMCK000.04	VAS-P03R_MCK01A10	B,SS	TC04	0	1	IN	0	1	IN	0	1	IN											0	S							IM							Doran near Richlands Municipal Airport VSCI: 06/02/2009 52.71
6BMCK000.11	VAS-P03R_MCK01A10	A	TC04	0	12	S	0	12	S	0	12	S	2	12	IM																							SR 673 between trailer park & STP
6BMDF-147-SAMS	VAS-P08R_MDF01A16	CMON	TC15	0	1	IN				0	1	IN																										Intersection of Middle Fork Clinch and Gravel Lick Rd.
6BMIA000.36	VAS-P11R_MIA01A08	A,B	TC21	0	12	S	0	11	S	1	12	S	0	11	S																J	0	11	S				SW of Riverview VSCI: 04/28/2010 57.90
6BMID000.20	VAS-P03R_MID01A98	B,TM	TC04	0	12	S	0	12	S	0	12	S	6	12	IM																FS							At Cedar Bluff on SR 621 Bridge # 6025 VSCI: 11/08/2012 67.96 04/16/2012 70.60
6BMIF001.38	VAS-P07R_MIF02A14	B,SS	TC14	0	5	S	0	5	S	0	5	S											0	S							J							SR 800/640 Intersect, N. of Jessee's Mill VSCI: 10/28/2014 61.09 05/22/2014 53.95 11/02/2011 69.12 05/24/2011 62.85 06/02/2009 47.20
6BMIF003.28	VAS-P07R_MIF01A10	B,SS	TC14	0	2	S	0	2	S	0	2	S																			IM							SE of Dumps Creek/Clinch confluence VSCI: 11/19/2012 53.50 05/03/2012 56.22
6BMIK000.07	VAS-P17R_MIK01A06	B,TM	TP03	0	2	S	0	2	S	0	2	S							0	S											UI							SE of Dumps Creek/Clinch confluence VSCI: 11/19/2012 53.50 05/03/2012 59.00
6BMIK-152-SAMS	VAS-P17R_MIK01A06	CMON	TP03		1	IN					1	IN																										Above unnamed tributary confluence with Callahan Creek just east of mine operation in Osaka, VA Level II temp 0/1, pH 0/1
6BMIK-153-SAMS	VAS-P17R_MIK01A06	CMON	TP03		1	IN					1	IN																										Below unnamed tributary confluence with Callahan Creek just east of mine operation in Osaka, VA Level II temp 0/1, pH 0/1
6BMLG000.55	VAS-P04R_MLG01A00	B,SS	TC05	0	3	S	0	3	S	0	3	S											0	S							IM							South of 67 at West Raven, Class VI VSCI: 09/26/2013 53.47 05/16/2013 55.55 06/02/2009 57.99
6BMOL000.03	VAS-P14R_MOL01A08	TM	TC28	0	12	S	0	12	S	0	12	S	8	12	IM																							Bridge. # 6248 on SR 678 off 58
6BMOL001.75	VAS-P14R_MOL01A08	FPM,PA,B	TC28	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S	0	S							FS	0	2	S				Upstream of Porter Hollow confluence VSCI: 08/31/2011 71.51 05/10/2011 76.43
6BMOL003.98	VAS-P14R_MOL01B10	A,TM	TC28	0	12	S	0	12	S	0	12	S	10	12	IM																							SR 604 bridge #6116, downstream of Moll Creek Church
6BMSC001.53	VAS-P05R_MSC01A02	A	TC06	0	10	S	0	9	S	0	10	S	4	9	IM																	0	8	S				Near Maiden Spring Community SR 608 Off 91
6BMSC008.98	VAS-P05R_MSC01C04	A	TC06	0	13	S	0	13	S	0	13	S	3	13	IM																							On 1040 off SR 604
6BMSC018.89	VAS-P05R_MSC01B04	B,SS	TC06	0	1	IN	0	1	IN	0	1	IN																			FS							DEQ special study benthic station S of Thompson Cemetery, Class VI; VSCI: 06/02/2009 76.90 09/29/2008 68.89
6BMTN003.56	VAS-P23R_MTN01A00	A	TP14	0	13	S	0	13	S	0	13	S	5	11	IM																	0	12	S				SR 682 bridge off 672 off Bus. 58, Class V
6BMTN003.94	VAS-P23R_MTN01A00	FPM,PA,B	TP14	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S	0	S							FS	0	2	S				South of Edds Mill, Class V VSCI: 11/01/2010 72.91 05/11/2010 67.44
6BNFC003.80	VAS-P15R_NFC01C02	A	TC32	0	12	S	0	12	S	0	12	S	5	12	IM																							Ford on SR 621 off SR 600

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				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BNFC010.65	VAS-P15R_NFC01B00	A	TC32	0	12	S	0	12	S	0	12	S	5	12	IM																							SR 600 bridge # 6005 off 58
6BNFC018.68	VAS-P15R_NFC01B08	A	TC31	0	12	S	0	12	S	0	12	S	4	12	IM																							SR 624 bridge # 6039 off SR 604 off 58
6BNFC022.47	VAS-P15R_NFC01A00	B,SS	TC31	0	1	IN	0	1	IN	0	1	IN											0	S							J							N of Duffield, at Industrial Park VSCI: 06/02/2009 55.81 10/01/2008 64.27
6BOBE004.78	VAS-P14R_OBE02A02	B,SS	TC30	0	1	IN				0	1	IN																			W							Bridge. # 6140 on SR 627 off 72, Class V.
6BOBE005.85	VAS-P14R_OBE02A02	SS	TC30	0	1	IN				0	1	IN																										Bridge. # 6140 on SR 627 off 72, Class V.
6BPAT000.13	VAS-P15R_PAT01A10	B,SS	TC31	0	3	S	0	3	S	0	3	S											0	S							J	0	2	S				Rt. 603 E. of Powers Ford VSCI: 10/26/2011 82.69 05/18/2011 55.18 06/02/2009 79.56
6BPIG000.04	VAS-P17R_PIG01A06	SS	TP04	0	2	S	0	2	S	0	2	S									0	IN	0	S														Off Rt 23 R.R. trestle near Appalachia
6BPIG001.58	VAS-P17R_PIG01A06	B,SS	TP04	0	1	IN	0	1	IN	0	1	IN																			FS							Downstream Imboden VSCI: 11/15/2010 64.51
6BPIG003.55	VAS-P17R_PIG01B12	B,SS	TP04	0	1	IN	0	1	IN	0	1	IN																			IM							Downstream Exeter VSCI: 11/15/2010 32.36
6BPIG005.20	VAS-P17R_PIG01B12	B,SS	TP04	0	1	IN	0	1	IN	0	1	IN																			IM							Upstream Exeter VSCI: 11/15/2010 53.18
6BPIG-162-SAMS	VAS-P17R_PIG01B12	CMON	TP04		1	IN					1	IN																										Immediately to the west of confluence with Franks Branch Level II temp 0/1, pH 0/1
6BPIG-163-SAMS	VAS-P17R_PIG01B12	CMON	TP04	0	1	IN																																Off of Exeter Rd near confluence between
6BPLC000.49	VAS-P14R_PLC01A10	B,SS	TC30	0	1	IN	0	1	IN	0	1	IN											0	S							FS							Carryover from SE of Cox Mill, SR 619 VSCI: 06/02/2009 74.80
6BPLL000.27	VAS-P18R_PLL01A98	A	TP05	0	2	S	0	2	S	0	2	S									0	IN	0	S														Bridge 8002 Off Rt 58 on Shawnee Ave W.
6BPLL001.61	VAS-P18R_PLL01A98	A,PA,B	TP05	0	15	S	0	15	S	2	15	IM	6	14	IM	0	1	NA	0	S	0	S	0	S							J	0	14	S				In Big Stone Gap VSCI: 10/02/2013 64.62 05/28/2013 41.13 Historically: 10/15/2008 72.16 03/25/2008 51.71
6BPLL006.38	VAS-P18R_PLL02A00	A	TP05	0	1	IN	0	1	IN	0	1	IN																										SR 612 & SR 616 intersection
6BPLL012.79	VAS-P18L_PLL01L02	L,C	TP05	0	88	S	42	88	S	54	88	IM	0	7	S						0	S					2	IM				0	8	S				Big Cherry Reservoir: DO violations were at depth during stratification. Two largemouth bass composited samples collected on 8/30/2007 exceeded the VDH level of concern for Hg.
6BPOM-166-SAMS	VAS-P17R_POM01A16	CMON	TP03		2	IN					2	IN																										At city limits of Appalachia Level II temp 0/2, pH 0/2
6BPON000.04	VAS-P02R_PON01A10	A	TC02	0	1	IN	0	1	IN	0	1	IN	0	1	IN																	0	1	IN				SR 637 S of Pounding Mill
6BPON000.40	VAS-P02R_PON01A10	B,SS	TC02	0	3	S	0	3	S	0	3	S											0	S							FS							SR 637 S of Pounding Mill VSCI: 11/10/2014 66.76 03/24/2014 73.39 Historically: 09/29/2008 58.21
6BPOT-164-SAMS	VAS-P17R_POT01B16	CMON	TP01		1	IN					1	IN																										Intersection of Reeds Creek Rd and Reeds Creek Level II temp 0/1, pH 0/1
6BPOT-165-SAMS	VAS-P17R_POT01A14	CMON	TP01		1	IN																																Intersection of Reeds Creek Rd and Reeds Creek Level II temp 0/1
6BPOW115.51	VAS-P23R_POW01A00	TM	TP13	0	2	S	0	2	S	0	2	S									0	IN	0	S								0	1	IN				Powell River off SR 679
6BPOW138.91	VAS-P21R_POW02A02	A,TR	TP10	0	37	S	0	37	S	0	37	S	2	34	S																	0	35	S				SR 654 bridge # 6044 off SR 622
6BPOW145.95	VAS-P21R_POW02A02	FPM,B	TP10	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	IN	0	S							IM	0	1	IN				South of Hwy 58 VSCI: 10/19/2010 41.10
6BPOW166.97	VAS-P19R_POW03A00	B	TP06	0	2	S	0	2	S	0	2	S																			J							Rt. 58 bridge VSCI: 10/24/2013 78.56 05/02/2013 50.86 Historically: 10/29/2008 73.36 05/19/2008 51.94
6BPOW-167-SAMS	VAS-P17R_POW01C02	CMON	TP02		1	IN					1	IN																										Intersection of Reeds Creek Rd and Reeds Creek Level II temp 0/1, pH 0/1
6BPOW-168-SAMS	VAS-P17R_POW01B02	CMON	TP02		1	IN																																Intersection of Reeds Creek Rd and Reeds Creek Level II temp 0/1
6BPOW-169-SAMS	VAS-P17R_POW01B02	CMON	TP02	0	1	IN																																Intersection of Reeds Creek Rd and Reeds
6BPOW-170-SAMS	VAS-P17R_POW01C02	CMON	TP02		1	IN																																Intersection of the Powell River and Country Meadow Drive Level II temp 0/1
6BPOW-171-SAMS	VAS-P17R_POW01A94	CMON	TP04		1	IN					1	IN																										Off of Roaring Branch Road and Norfolk Southern Railroad Level II temp 0/1, pH 0/1
6BPOW178.33	VAS-P17R_POW01A94	C	TP06																								0	S	0	S								In Big Stone Gap, 2007
6BPOW179.20	VAS-P17R_POW01A94	A,B,TR	TP04	0	36	S	0	36	S	0	36	S	16	34	IM						0	S									J	0	35	S				In Big Stone Gap @ gage Carryover from VSCI: 09/25/2008 59.03

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BPOW183.55	VAS-P17R_POW02B06	A	TP02	0	2	S	0	2	S	0	2	S											0	S														
6BPOW193.38	VAS-P17R_POW01B02	A	TP02	0	2	S	0	2	S	0	2	S									0	IN															SR 790 bridge # 6204 off Bus. 23
6BPOW197.21	VAS-P17R_POW01C02	A,TM	TP02	0	2	S	0	2	S	0	2	S									0	IN	0	S													Powell R and SR 621
6BPOW-NFPowell-SOS	VAS-P17R_POW01A94	CMON	TP04																												HP							Near Development Services Building on River Rd, Big Stone Gap, Scott Co, Jefferson National Forest Spring 2010: Lev II-Gray Zone Fall 2010: Lev II-Unacceptable Fall 2008: Lev II-Unacceptable Fall 2008: Lev II-Unacceptable
6BPRE000.17	VAS-P17R_PRE01A06	A,SS	TP03	0	2	S	0	2	S	0	2	S							0	S																	Powell R and SR 621
6BPTR000.02	VAS-P14R_PTR01A14	A,TM	TC28	0	12	S	0	12	S	0	12	S	5	12	IM																						SR 605 culvert off SR 604
6BPWL001.49	VAS-P20R_PWL01A00	A	TP09	0	12	S	0	12	S	0	12	S	3	11	IM																	0	11	S				Bridge #6030 on SR 630 off Rt 421
6BPWL001.93	VAS-P20R_PWL01A00	B	TP09	0	2	S	0	2	S	0	2	S																			J							Rt. 421 near Pennington Gap VSCI: 10/05/2010 63.27 04/07/2010 43.55
6BPWL002.48	VAS-P20R_PWL01A00	C	TP09																								0	S	0	S							Near Leeman Field, 2007
6BPWL004.10	VAS-P20R_PWL01A00	A,SS	TP09	0	11	S	0	11	S	0	11	S	5	11	IM																	0	11	S				Bridge #6065 on SR T7060 off Rt 421
6BPWL004.40	VAS-P20R_PWL01A00	B	TP09	0	2	S	0	2	S	0	2	S																			J							At Leeman Field VSCI: 10/24/2013 67.88 05/28/2013 48.03 Historically: 10/29/2008 62.82 05/19/2008 35.75
6BPWL006.59	VAS-P20R_PWL03B02	A	TP07	4	11	IM	0	11	S	0	11	S	0	11	S																	0	11	S				William's Farm bridge off SR 606, Class V
6BPWL010.36	VAS-P20R_PWL02A02	A,C	TP07	2	11	IM	0	11	S	0	11	S	0	11	S												0	S	0	S		0	11	S				Bridge #6466 on SR 606, Class V Fish samples were collected 7/25/2007.
6BPWL017.03	VAS-P20R_PWL03A02	A,PA	TP07	1	23	S	0	23	S	0	23	S	0	23	S																	0	23	S				SR 625 bridge off SR 606, Class V
6BPWL020.93	VAS-P20R_PWL03A02	FPM,B	TP07	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S									J	0	2	S				SR 625 bridge off SR 606, Class V. VSCI: 10/10/2013 60.56 05/13/2013 57.84 Manganese exceeded PWS standard in one sample.
6BPWL024.64	VAS-P20L_PWL01L02	L	TP07	2	77	S	44	77	S	5	77	S	0	7	S				0	S	0	S										0	7	S				SR 625 bridge off SR 606, Class V. Manganese exceeded PWS standard in one sample.
6BPWL025.32	VAS-P20L_PWL01L02	C	TP07																								2	IM										Lake Keokee, 2007
6BREE000.22	VAS-P20R_REE01A12	A	TP07	0	11	S	0	11	S	0	11	S	3	11	IM																	0	11	S				Off 606 SR 628 bridge # 6026
6BREE-181-SAMS	VAS-P20R_REE01A16	CMON	TP07		1	IN					1	IN																										Intersection of Reeds Creek Rd and Reeds Creek Level II temp 0/1, pH 0/1
6BRIC001.80	VAS-P13R_RIC01A14	TM	TC25	0	4	S	0	4	S	0	4	S	1	4	IN/O																						SR 649 culvert #6503
6BRIN000.31	VAS-P17R_RIN01A00	B,SS	TP01	0	2	S	0	2	S	0	2	S									0	IN	0	S							IM							Off SR 603 Carryover from VSCI: 11/04/2008 49.15 04/22/2008 27.84
6BRIN-182-SAMS	VAS-P17R_RIN01A00	CMON	TP01		1	IN					1	IN																										Intersection of Reeds Creek Rd and Reeds Creek Level II temp 0/1, pH 0/1
6BRIN-183-SAMS	VAS-P17R_RIN01A00	CMON	TP01		1	IN					1	IN																										Intersection of Reeds Creek Rd and Reeds Creek Level II temp 0/1, pH 0/1
6BRLB-184-SAMS	VAS-P20R_RLB01A14	CMON	TP07		1	IN					1	IN																										Off jeep trail near headwaters of creek Level II temp 0/1, pH 0/1
6BRUS001.25	VAS-P09R_RUS01A06	A	TC18	0	23	S	0	23	S	0	23	S	4	23	IM																	0	11	S				SR 775 culvert off SR 655 off Rt. 58
6BSEL001.81	VAS-P11R_SEL01A14	FPM,PA,B	TC21	0	1	IN	0	1	IN	0	1	IN	0	1	IN	0	1	NA			0	IN	0	S							IM	0	1	IN				N of Rt 72 VSCI: 05/10/2011 21.85
6BSEP000.55-UTRR	VAS-P11R_SEP01A98	CMON	TC19	0	11	S		9	IN		11	IN	5	11	IM																								On Rock Switch Road (Route 625) northeast of Addington, Virginia Level II pH 0/11, DO 0/9
6BSFK000.62	VAS-P01R_SFK01A10	B,SS	TC01	0	3	S	0	3	S	0	3	S										IM	0	S							FS							Riverview Drive, off Rt 61, S of Fourway VSCI: 11/10/2014 68.47 03/17/2014 75.02 06/02/2009 58.79
6BSIM000.22	VAS-P21R_SIM01A02	FPM,PA,B	TP13	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S									FS	0	2	S				Impacted by beaver dam, off SR 662, East of Flatwoods School, Class V VSCI: 09/27/2012 60.63 04/30/2012 66.71
6BSNK001.03	VAS-P09R_SNK01A00	A	TC22	0	11	S	0	11	S	0	11	S	1	11	S																	0	11	S				SR 683 bridge #6127 off 65, Class V
6BSNY000.31	VAS-P12R_SNY01A04	TM	TC24	0	12	S	0	12	S	0	12	S	1	12	S																								Rt 72/65 bridge #1026, Class V
6BSNY001.98	VAS-P12R_SNY01A04	A	TC24	0	11	S	0	11	S	0	11	W	0	11	S																								SR 728 bridge # 6128 off SR 619 off 72, Class V
6BSNY004.35	VAS-P12R_SNY01A04	A,TM	TC24	0	12	S	0	12	S	0	12	S	0	12	S																								Rt 619 bridge #6033, downstream Straight Fork, Class V
6BSNY005.68	VAS-P12R_SNY01A00	B	TC24	0	2	S	0	2	S	0	2	S																			FS							Off SR 657, Class V VSCI: 10/27/2011 85.86 05/18/2011 73.56
6BSRA000.10	VAS-P20R_SRA01A94	A	TP08	0	11	S	0	11	S	0	11	S	7	11	IM																	0	11	S				SR 606 bridge #6469 off US 421

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BSRA000.11	VAS-P20R_SRA01A94	B,SS	TP08	0	2	S	0	2	S	0	2	S																			IM							SR 606 bridge # 6469 VSCI: 05/09/2011 46.54 10/05/2010 50.76 Historically: 09/19/2007 47.83 05/22/2007 50.07
6BSRA001.11	VAS-P20R_SRA01A94	A,SS	TP08	0	10	S	0	10	S	0	10	S	3	10	IM																	0	10	S				SR 352 bridge # 1041
6BSRA001.34	VAS-P20R_SRA01A94	C	TP08																								0	S	0	S								Near Penn Lee. Fish were collected 8/30/2007
6BSRA003.22	VAS-P20R_SRA01A94	SS	TP08	0	1	IN	0	1	IN	0	1	IN	0	1	IN																	0	1	IN				Private bridge on SR 636 @ Martin Residence
6BSRA003.62	VAS-P20R_SRA01A94	B,SS	TP08	0	2	S	0	2	S	0	2	S																			IM							Above acid mine discharge VSCI: 05/09/2011 52.69 10/05/2010 44.66
6BSRA004.16	VAS-P20R_SRA01A94	SS	TP08	0	13	S	0	13	S	0	13	S	2	13	IM																	0	13	S				Abandoned bridge above Gin Creek
6BSRA-195-SAMS	VAS-P20R_SRA01A94	CMON	TP08		2	IN					2	IN																			IM							1000 feet below Monarch Road bridge Level II temp 0/2, pH 0/2
6BSRA-196-SAMS	VAS-P20R_SRA01A94	CMON	TP08		1	IN					1	IN																										About 1500 feet south from intersection of Monarch Street and Straight Creek Level II temp 0/1, pH 0/1
6BSRA-197-SAMS	VAS-P20R_SRA01A94	CMON	TP08		2	IN					2	IN																										Intersection of Straight Creek and Monarch Road Level II temp 0/2, pH 0/2
6BSRA-198-SAMS	VAS-P20R_SRA01A94	CMON	TP08		2	IN					2	IN																										Just below pond outfall at Monarch Road Level II temp 0/2, pH 0/2
6BSRA-199-SAMS	VAS-P20R_SRA01A94	CMON	TP08		2	IN					2	IN																										2000 feet upstream of confluence with Puckett Creek Level II temp 0/2, pH 0/2
6BSRA-200-SAMS	VAS-P20R_SRA01A94	CMON	TP08		2	IN					2	IN																										At Hawk Thorn Drive Level II temp 0/2, pH 0/2
6BSRA-201-SAMS	VAS-P20R_SRA01A94	CMON	TP08		1	IN																																Intersection of Straight Creek and Monarch Road Level II temp 0/1
6BSRA-207-SAMS	VAS-P20R_SRA01A94	CMON	TP02		1	IN					1	IN																										3000 feet from confluence with Powell River Level II temp 0/1, pH 0/1
6BSTC000.04	VAS-P20R_STC01A96	FPM,PA,B	TP08	0	16	S	0	16	S	0	16	S	8	12	IM	0	1	NA	0	S	0	S	0	S							J	0	14	S				@ Stone Creek community VSCI: 11/04/2014 70.55 04/03/2014 57.36 10/06/2009 60.73 04/27/2009 51.96
6BSTC000.13	VAS-P20R_STC01A96	B	TP08	0	4	S	0	4	S	0	4	S																			FS							At Stone Creek community VSCI: 10/24/2013 68.43 05/02/2013 73.65 05/09/2011 61.26 10/05/2010 64.56
6BSTN000.14	VAS-P21R_STN01A12	A	TP10	0	11	S	0	11	S	0	11	S	5	11	IM																	0	11	S				SR 793 bridge, E of Poteet Ferry bridge
6BSTO000.45	VAS-P13R_STO01A00	A,TM	TC26	0	12	S	0	12	S	0	12	S	4	12	IM																								SR T-794 bridge # 6404
6BSTO004.56	VAS-P13R_STO01A00	A,C	TC26	0	23	S	0	23	S	0	23	S	5	23	IM												1	O				0	11	S				Near intersection of SR 871 & SR 650 One smallmouth bass collected 6/29/2007 exceeded DEQ screening value for Hg.
6BSUL-203-SAMS	VAS-P04R_SUL01A16	CMON	TC05	0	1	IN																																500 feet north of confluence with Big Lick Creek
6BSUL-204-SAMS	VAS-P04R_SUL01A16	CMON	TC05	0	1	IN																																700 feet north of confluence with Big Lick Creek
6BSUT001.71	VAS-P09R_SUT01A02	A	TC23	0	35	S	0	34	S	0	35	S	5	35	IM																	0	23	S				SR 902 bridge #6417 off Rt 65
6BSUT004.66	VAS-P09R_SUT01A02	TM	TC23	0	12	S	0	12	S	0	12	S	5	12	IM																								Hunters Valley E Rd, downstream Cornett Br
6BSWD000.11	VAS-P04R_SWD01A00	B,FPM,TM	TC05	0	44	S	0	44	S	0	44	S	13	37	IM	0	1	NA	0	S	0	S									J	0	14	S				Off SR 633 VSCI: 10/28/2014 68.53 05/27/2014 47.68 09/25/2012 68.49 04/16/2012 51.36 11/18/2009 63.07 04/24/2009 39.69 Some data was incorrectly entered as 6BSWO000.11.
6BSWO001.81	VAS-P04R_SWD01A00	A	TC05	0	13	S	0	13	S	0	13	S	1	12	S				0	S	0	S										0	12	S				SR T-794 bridge #6404
6BTHC000.06	VAS-P03R_THC01A10	B,SS	TC04	0	1	IN	0	1	IN	0	1	IN											0	S							IM							Patterson St near Doran VSCI: 09/29/2008 55.22
6BTHC-206-SAMS	VAS-P03R_THC02A16	CMON	TC04	0	1	IN																																At Hill Creek Road bridge 2000 feet upstream of Bragg Road
6BTMP003.58	VAS-P07R_TMP01A06	A	TC14	0	12	S	0	12	S	0	12	S	8	12	IM																	0	12	S				SR 646 bridge #6275 off Rt 645
6BTMP006.26	VAS-P07R_TMP02A10	B,SS	TC14	0	14	S	0	14	S	0	14	S	6	13	IM						0	S	0	S							IM	1	13	S				Off 80 on SR 646, NE of Coulwood VSCI: 06/03/2009 56.77
6BTMS000.35	VAS-P11R_TMS01A98	A	TC21	0	11	S	0	11	S	0	11	S	7	11	IM																	0	11	S				SR 1129 bridge #6224 off SR 813
6BTMS000.60-UTRR	VAS-P11R_TMS01A98	CMON	TC21	0	11	S		9	IN		11	IN	9	14	IM																								On Front Street East Bridge in Coeburn, Virginia Level II pH 0/11, DO 0/9
6BTMS006.51	VAS-P11R_TMS02A00	FPM,B	TC21	0	1	IN	0	1	IN	0	1	IN	0	1	IN								0	S							FS							Carryover from South of Herald VSCI: 03/13/2008 66.56

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6BTMS-205-SAMS	VAS-P11R_TMS01A98	CMON	TC21		1	IN					1	IN																									Intersection of Straight Creek and Monarch Road Level II temp 0/1, pH 0/1
6BTMS-Park-SOS	VAS-P11R_TMS01A98	CMON	TC21																												HP							At park in Coeburn. Summer 2008: Lev II-Unacceptable
6BTOW001.32	VAS-P21R_TOW01A06	A	TP10	0	23	S	0	23	S	0	23	S	3	23	IM																	0	24	S				SR 654 Bridge #6043 off Rt 662
6BTOW003.82	VAS-P21R_TOW01B12	A	TP10	0	11	S	0	11	S	0	11	S	7	11	IM																	0	11	S				Rt 648 bridge #6370 off Rt 58 S of Hill Cemetery
6BVAL000.25	VAS-P14R_VAL01A02	A	TC29	0	12	S	0	12	S	0	12	S	6	12	IM																							SR 670 bridge #6092 off 71
6BVAL002.86	VAS-P14R_VAL02A02	FPM,PA,B	TC29	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S	0	S							FS	0	2	S				NNW of McConnell, S of Valley Cr Chapel, Class V VSCI: 10/08/2009 68.39 04/30/2009 66.00
6BVAL004.08	VAS-P14R_VAL02A02	A	TC29	0	12	S	0	12	S	0	12	S	1	12	S																							SR 671 bridge 6454, Class V
6BWAL000.12	VAS-P22R_WAL01A00	A	TP11	0	23	S	0	23	S	0	23	S	1	23	S																	0	23	S				SR 616 bridge off Rt 665, Class V
6BWAL014.54	VAS-P22R_WAL02B02	A	TP11	2	11	IM	0	11	S	0	11	S	3	11	IM																	0	11	S				SR 612 bridge #6010, SW of Roller Chapel, Class V
6BWAL026.64	VAS-P22R_WAL02A02	A	TP11	2	11	IM	0	11	S	0	11	S	4	11	IM																	0	11	S				SR 859 off SR 612 @ Blue Spring Church, Class V
6BWEA000.02	VAS-P07R_WEA01A06	A	TC14	0	12	S	0	12	S	0	12	S	8	12	IM																	0	12	S				Bridge #6080 on SR 661 off Rt 82
6BWEA004.32	VAS-P07R_WEA01A06	A	TC14	0	12	S	0	12	S	0	12	S	6	12	IM																	0	12	S				SR 712 bridge #6098 off Rt 615
6BWEL-216-SAMS	VAS-P20R_WEL01A16	CMON	TP07		1	IN					1	IN																									Intersection of Mohawk Loop and Wells Branch Level II temp 0/1, pH 0/1
6BWPH-115-SAMS	VAS-P04R_WPH01A16	CMON	TC10	0	1	IN																															Wolfpen Hollow, 2500 feet north from confluence with Grassy Creek
6BXAR000.69	VAS-P11L_XAR01A02	L	TC20	0	67	S	18	67	S	0	67	S	0	7	S				0	S	0	S	0	S								0	7	S				Off SR 682 near Dungannon Sampled in 2013 Low DO measurements were near bottom during stratification.
6BXCD-210-SAMS	VAS-P11R_XCD01A16	CMON	TC19	0	1	IN																															1000 feet from confluence with the Guest River
6BXDJ000.15	VAS-P09R_XDJ01A04	TM	TC23	0	12	S	0	12	S	0	12	S	0	12	S																							Off SR 682 near Dungannon
6BXGD000.01	VAS-P14R_XGD01A12	FPM,PA,B	TC30	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA			0	S	0	S							IM	0	2	S				Off SR 682 near Dungannon VSCI: 09/30/2009 38.60 04/27/2009 51.35
6BXRC-102-SAMS	VAS-P04R_XRC01A16	CMON	TC05		1	IN					1	IN																									1000 feet downstream of Fuller Chapel Level II temp 0/1, pH 0/1
6BXRC-103-SAMS	VAS-P04R_XRC01A16	CMON	TC05		1	IN					1	IN																									Across from Fuller Chapel and downstream of reclaimed strip mine Level II temp 0/1, pH 0/1
6BXRE-202-SAMS	VAS-P04R_XRE01A16	CMON	TC05		1	IN					1	IN																									At 90 degree turn on Strouth Creek road Level II temp 0/1, pH 0/1
6BXRF-117-SAMS	VAS-P04R_XRF01A16	CMON	TC10	0	1	IN																															At Old Drill Road in Russell, VA
6BXRG-174-SAMS	VAS-P09R_XRG01A16	CMON	TC18		1	IN					1	IN																									750 feet from the northern end of Hall Hollow Rd Level II temp 0/1, pH 0/1
6BXRH-176-SAMS	VAS-P09R_XRH01A16	CMON	TC18		1	IN					1	IN																									Intersection of Dry Fork Rd and Brooks Hollow Rd Level II temp 0/1, pH 0/1
6BXRJ-141-SAMS	VAS-P17R_XRJ01A16	CMON	TP04		1	IN					1	IN																									N. Inman Street and road leading to coal mine Level II temp 0/1, pH 0/1
6BXRK-131-SAMS	VAS-P17R_XRK01A16	CMON	TP04	0	1	IN					2	IN																									On Inman Road about 2500 feet west from intersection of Lynch Pl. Level II temp 0/2, pH 0/2
6BXRM-140-SAMS	VAS-P17R_XRM01A16	CMON	TP04	0	1	IN																															At Inman Road below coal mine
6BXRN-13-SAMS	VAS-P20R_XRN01A16	CMON	TP07		3	IN					3	IN																									Intersection of Beaver Creek and State Route 606 Level II temp 0/3, pH 0/3
6BXRO-124-SAMS	VAS-P04R_XRO01A16	CMON	TC05	0	1	IN																															1000 feet North from confluence with Rock Lick Branch
6BYLO001.50	VAS-P11R_YLO01A98	TM	TC20	0	12	S	0	12	S	0	12	S	5	12	IM																							Intersection Vanover Ave/Coeburn Rd
6CABR001.00	VAS-O12R_ABR01A00	A	TH38	0	12	S	0	12	S	0	12	S	2	12	IM																	0	12	S				Bridge # 6102 near Barker's Chapel
6CBER004.10	VAS-O03R_BER02A04	B	TH09	0	6	S	0	6	S	0	6	S																			FS	0	2	S				Off Route 694 to FR 6251, Class V VSCI: 11/06/2014 73.97 04/22/2014 68.32 11/13/2012 65.18 04/23/2012 79.16 10/17/2011 64.12 06/01/2011 71.91
6CBEV015.27	VAS-O07R_BEV01A94	A,SS,C	TH21	0	22	S	0	22	S	0	22	S	15	22	IM												0	S	4	IM		0	12	S				State Street & 8th, Bristol, VA/TN Four fish samples collected 8/27/2007 exceeded VDH level of concern and two additional exceeded the DEQ level of concern for Total PCBs.
6CBEV020.86	VAS-O07R_BEV01A94	A,TR	TH21	0	10	S	0	10	S	0	10	S	4	10	IM																							@Pal's Bridge, Bristol off Rt. 11
6CBEV022.29	VAS-O07R_BEV02A94	A,C,B	TH21	0	12	S	0	12	S	0	12	S	4	10	IM												0	S	0	S	J							Sugar Hollow Park near picnic shelters D & F, 2007. Class V VSCI: 11/15/2012 65.67 05/01/2012 52.99
6CBEV023.99	VAS-O07R_BEV02A94	A,TM,B	TH21	0	2	S	0	2	S	0	2	S																			IM							Carryover from Beaver Creek near Rt. 625 bridge VSCI: 09/18/2007 43.03 05/21/2007 53.83
6CBLU000.15	VAS-O13R_BLU01A08	A	TH41	0	12	S	0	12	S	0	12	S	10	12	IM																							SR 689 bridge #6348 off 58/221

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6CBMC000.38	VAS-O14R_BMC01A98	A	TH43	0	34	S	0	34	S	0	34	S	8	34	IM																0	22	S				Ford on SR 614 off 23
6CBMC002.90	VAS-O14R_BMC02A00	A,SS	TH43	0	12	S	0	12	S	0	12	S	1	12	S																						Low water bridge off SR 619
6CBMC008.35	VAS-O14R_BMC03A00	A	TH43	0	12	S	0	12	S	0	12	S	1	12	S																						SR 669 bridge #6091 off 71
6CBMC017.45	VAS-O14R_BMC04A02	A	TH43	0	12	S	0	12	S	0	12	S	1	12	S																						SR 613 bridge #6130
6CBMC026.32	VAS-O14R_BMC05A02	A	TH43	0	21	S	0	21	S	0	21	S	5	21	IM																0	10	S				SR 613 bridge #6012 off SR 676 off 19
6CBMC042.54	VAS-O14R_BMC07A02	A	TH42	0	22	S	0	22	S	0	22	S	8	22	IM																0	10	S				SR 679 bridge #6092 off 613 off 676
6CBMC049.05	VAS-O14R_BMC04A00	A	TH42	0	12	S	0	12	S	0	12	S	6	12	IM																						SR 676 bridge #6089 off 19
6CBOO002.71	VAS-O08R_BOO01A12	A	TH23	0	12	S	0	12	S	0	12	S	6	12	IM																0	12	S				SR 618 bridge #6026 @Gardeners Church
6CBRU000.20	VAS-O11R_BRU01B04	A	TH34	0	24	S	0	23	S	0	24	S	3	24	IM																0	24	S				Bridge # 6428 on SR 611 off Rt. 19, Class VI
6CBRU006.73	VAS-O11R_BRU01A00	B	TH34	0	2	S	0	2	S	0	2	S																		FS						Off SR 689, Class VI VSCI: 11/18/2009 72.72 03/30/2009 63.94
6CBRU010.91	VAS-O11L_BRU01A02	L,C	TH34	26	53	IM	9	53	IM	0	53	S	0	7	S						0	S					1	O			0	7	S				Hidden Valley Lake Station #1 @ Dam, Class VI even though DGIF converted this lake to a warm water fishery.
6CBSC000.10	VAS-O01R_BSC01A02	A	TH02	0	12	S	0	12	S	0	12	S	11	12	IM																						SR 605 Culvert off SR 645 @ Riverside CC
6CBVD000.07	VAS-O02R_BVD01A00	A,C	TH06	0	36	S	0	36	S	0	36	S	1	36	S												2	IM	0	S	0	23	S				Bridge #1029 on Rt. 58 in Damascus, Class VI Fish collection was 7/24/2007. A rock bass composite exceeded the screening value for Hg; a smallmouth composite exceeded the VDH level of concern for Hg.
6CBVR000.08	VAS-O10R_BVR01B04	A	TH29	0	12	S	0	10	S	0	12	S	8	12	IM																						Bristol off Rt. 11 @Pal's Bridge Carried over from 2014 WQA.
6CBYS000.08	VAS-O05R_BYS01A94	B,TM	TH13	0	2	S	0	1	IN	0	2	S																		J						SR 735 @ Bramblewood Farm VSCI: 11/26/2012 64.11 05/29/2012 58.33
6CBYS000.23	VAS-O05R_BYS01A94	A	TH13	0	12	S	0	12	S	0	12	S	6	12	IM																2	12	O				SR 735, private bridge @ 32488 Ramblewood
6CCED000.14	VAS-O05R_CED01A94	A,B	TH14	0	14	S	0	13	S	0	14	S	10	12	IM															IM	0	12	S				Off SR 803 at Mock Mill VSCI: 11/26/2012 57.71 05/29/2012 49.54
6CCOV002.44	VAS-O12R_COV01A00	A	TH40	0	12	S	0	12	S	0	12	S	3	11	IM																0	12	S				SR 803 bridge #6147 off Rt 58/421
6CCOV002.54	VAS-O12R_COV01A00	FPM,PA,B	TH40	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA	0	S	0	S								FS	0	2	S				Southwest of Baker Cemetery, off Rt. 421 VSCI: 10/15/2012 77.55 05/01/2012 66.91
6CCRS001.15	VAS-O01R_CRS01B04	A	TH01	0	12	S	0	12	S	0	12	S	1	12	S																0	12	S				Rt 676 bridge #6081 @ Sugar Grove
6CDOW000.02	VAS-O13R_DOW01A08	A	TH41	0	12	S	0	12	S	0	12	S	5	12	IM																						SR 689 bridge #6349 off 58/221
6CEFW000.46	VAS-O11R_EWF01A12	A	TH32	0	12	S	0	12	S	0	12	S	2	12	IM																0	12	S				Private bridge off Rt 80 @Hayters Gap
6CFIF000.96	VAS-O06R_FIF01A02	A	TH15	0	23	S	0	23	S	0	23	S	7	23	IM																0	12	S				SR 676 bridge #6054 off 672 off 75
6CFIF006.16	VAS-O06R_FIF02A08	A	TH15	0	11	S	0	11	S	0	11	S	4	11	IM																						SR 676 bridge #6054 off 672 off 75
6CFIN001.26	VAS-O11R_FIN01A12	A	TH33	0	12	S	0	12	S	0	12	S	2	12	IM																0	11	S				SR 741 @ end state maintenance
6CGAS000.45	VAS-O12R_GAS01A16	PA,B	TH36	0	14	S	0	14	S	0	14	S	5	14	IM	0	1	NA	0	S	0	S								FS	0	14	S				VSCI: 09/29/2014 76.19 03/27/2014 70.62
6CGRC000.68	VAS-O01R_GRC01A00	A	TH02	0	12	S	0	12	S	0	12	S	8	12	IM																						SR 606 bridge #6370 near Loves Mill, Class V
6CGRW000.09	VAS-O05R_GRW01A02	A	TH14	0	12	S	0	12	S	0	12	S	10	12	IM																0	11	S				SR 706 bridge #6423 off 58
6CGRW002.31	VAS-O05R_GRW01A02	B,SS,CR	TH14	0	1	IN	0	1	IN	0	1	IN																		IM						Carryover from N of Neff VSCI: 05/06/2008 55.80
6CHIL000.02	VAS-O13R_HIL01A08	A	TH41	0	18	S	0	18	S	0	18	S	4	18	IM																0	6	S				SR 689 bridge # 6103 of 58/221
6CHTO000.07	VAS-O05R_HTO01A94	B,TM	TH13	0	2	S	0	1	IN	0	2	S																		FS						At Johnson Farm, VSCI: 11/26/2012 65.88 05/29/2012 66.65
6CHTO000.24	VAS-O05R_HTO01A94	A	TH13	0	12	S	0	12	S	0	12	S	11	12	IM																0	12	S				At Johnson Farm
6CHUN001.34	VAS-O04R_HUN02A02	A	TH11	0	12	S	0	12	S	0	12	S	4	12	IM																0	12	S				SR 658 bridge #6065
6CHUN004.76	VAS-O04L_HUN01A02	L,C	TH11	20	75	IM	27	75	IM	0	75	S	0	7	S						0	S					4	IM			0	7	S				Hungry Mother Lake Station #1 @ Dam, Class V. Fish were collected June 2007. 3 Largemouth bass individuals and one walleye composite exceeded screening value for Hg.
6CHUN006.54	VAS-O04R_HUN02B04	A	TH11	0	12	S	0	12	S	0	12	S	1	12	S																0	12	S				SR 348 bridge #6098 @NE HM Park boundary
6CHUT000.07	VAS-O03R_HUT01A10	FPM	TH10	0	2	S	0	2	S	0	2	S	0	1	IN				0	S	0	S	0	S							0	14	S				Near Mount Carmel VSCI: 11/26/2012 65.88 05/29/2012 66.52 10/10/2007 63.49 04/09/2007 68.57
6CLAE000.62	VAS-O10R_LAE02A02	A,TM	TH28	0	11	S	0	11	S	0	11	S	3	12	IM						0	S									0	12	S				At Broadford Rt 42 bridge #1036 intersection w Rt 91- Class VI waters
6CLAE001.68	VAS-O10R_LAE02A02	B	TH28	0	2	S	0	2	S	0	2	S																		FS						Off Rt 91, Class V VSCI: 04/05/2010 75.80 03/26/2009 61.03
6CLAE014.52	VAS-O10R_LAE02C04	A	TH28	0	11	S	0	11	S	0	11	S	0	12	S						0	S									0	12	S				Rt 16 bridge #1059

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6CLAE018.29	VAS-O10R_LAE01A02	B,TM	TH28	0	2	S	0	2	S	0	2	S																			IM							Off FR 222 above Roaring Fork VSCI: 04/05/2010 58.07 03/25/2009 58.64
6CLAL000.19	VAS-O02R_LAL01A04	FPM,PA,B	TH06	0	3	S	0	3	S	0	3	S	0	1	IN	0	1	NA	0	S	0	S	0	S							FS	0	2	S				Off Rt 58, Class VI VSCI: 09/01/2011 67.93 06/09/2011 73.26
6CLAL001.21	VAS-O02R_LAL01A04	A	TH06	0	24	S	0	24	S	0	24	S	1	24	S																	0	12	S				SR 718 bridge #6079 off US 58, Class VI
6CLAL004.90	VAS-O02R_LAL01A04	A	TH05	0	36	S	0	36	S	0	36	S	3	36	S																	0	24	S				Rt. 91 bridge #1062, Class VI
6CLAU001.84	VAS-O11L_LAU01A02	L	TH30	28	76	IM	30	76	IM	0	76	S	0	7	S						1	O										0	7	S				Laurel Bed Lake Station #1 @ dam, Class VI.
6CLIB000.08	VAS-O09R_LIB01A02	A	TH25	0	11	S	0	11	S	0	11	S	4	12	IM						0	S										0	12	S				SR 620 bridge #6026 off Rt 42, Class VI
6CLIB001.06	VAS-O09R_LIB01A02	A,FPM,B	TH25	0	14	S	0	14	S	0	14	S	4	13	IM	0	1	NA	0	S	0	S	0	S							FS	0	14	S				Near Goodwill Church VSCI: 11/05/2009 77.75 05/04/2009 73.21
6CLIB003.65	VAS-O09R_LIB01A02	B,TM	TH25	0	12	S	0	12	S	0	12	S	2	12	IM						0	S									FS	0	12	S				Off Rt. 621 above Laurel Branch VSCI: 11/10/2009 83.60 03/26/2009 73.00
6CLMO000.05	VAS-O12R_LMC01A02	A	TH35	0	12	S	0	12	S	0	12	S	2	12	IM																	0	12	S				SR 802 bridge #6440 off Rt. 19
6CLOC000.14	VAS-O10R_LOC01A02	A	TH27	0	11	S	0	11	S	0	11	S	7	12	IM																							At Rich Valley SR 630 bridge #6039
6CLOG000.12	VAS-O11R_LOG01A02	A	TH33	0	12	S	0	12	S	0	12	S	3	12	IM																	0	12	S				Rt 80 pull off,.25 mile upstream NFH confluence
6CLRL000.35	VAS-O04R_LRL01A04	A	TH12	0	12	S	0	12	S	0	12	S	6	12	IM																	0	12	S				Pvt. Bridge on Rt. 660 off Rt. 11, Class V
6CLTC002.54	VAS-O10R_LTC01B04	A,B	TH28	0	13	S	0	13	S	0	13	S	1	12	S																FS	0	12	S				Class V W of 91/607 Intersect, W of Tannersville VSCI 7/06/2009 62.3
6CLTC004.59	VAS-O10R_LTC01B04	A,B	TH28	0	13	S	0	12	S	1	13	S	1	12	S																FS	0	12	S				E of power line, N of Flattop Mtn, Class V VSCI 7/06/2009 66.2
6CLTC009.25	VAS-O10R_LTC01A02	B	TH28	0	1	IN	0	1	IN	1	1	IN/O																			IM							E of Jackson Cemetery, Jefferson National Forest, Braided channel immediately below beaver ponds. VSCI 7/06/2009 52.2 Class V
6CLTL000.26	VAS-O07R_LTL01A96	A	TH21	0	12	S	0	12	S	0	12	S	11	12	IM																	0	12	S				State St. bridge @ Paty Lumber
6CMFH013.21	VAS-O05R_MFH03A00	A,TR	TH14	0	35	S	0	35	S	0	35	S	9	35	IM																	1	35	S				SR 803 bridge
6CMFH033.40	VAS-O04R_MFH01A00	B,C,TR	TH12	0	36	S	0	36	S	0	36	S	17	36	IM												1	O	0	S	FS	1	36	S				SS station @ SR 645 bridge, Historically: VSCI: 9/24/2008 67.39 7.24.2007 - Smallmouth bass: 0.37 ppm Hg
6CMFH040.67	VAS-O03R_MFH01A00	A	TH10	0	1	IN	0	1	IN	0	1	IN	1	1	IN/O																	0	1	IN				@ Marion, Holston Hills CC Off Rt 11, Class V
6CMFH045.83	VAS-O03R_MFH01A00	B,TM	TH10	0	2	S	0	2	S	0	2	S																			FS							Carryover from SR 693 above Marion, Class V VSCI: 11/17/2008 74.26 05/29/2008 61.29
6CNFH007.78	VAS-O13R_NFH01A94	B,TM	TH45	0	2	S	0	2	S	0	2	S																			FS							Carryover from Off SR 614 VSCI: 11/18/2008 73.83 04/24/2008 64.12
6CNFH008.78	VAS-O13R_NFH01A94	A,TR	TH45	0	35	S	0	35	S	0	35	S	4	35	IM																	1	35	S				RT. 23 bridge below Weber City
6CNFH008.80	VAS-O13R_NFH01A94	C	TH45																								3	IM	0	S							Below Weber City Two samples collected in 2007 exceeded the VDH level of concern. An additional sample exceeded the DEQ level of concern.
6CNFH014.72	VAS-O13R_NFH02A94	FPM,TM,B	TH41	0	2	S	0	2	S	0	2	S																			FS							Jeep trail N of Penitentiary Hollow VSCI: 04/12/2010 75.33 04/30/2009 68.44
6CNFH039.18	VAS-O12R_NFH01C02	C	TH39																								4	IM	0	S							Near Mendota Four fish samples exceeded the VDH level of concern for Hg, 2007.
6CNFH067.13	VAS-O11R_NFH02A94	B,TM	TH33	0	2	S	0	2	S	0	2	S	0	1	IN										1	O					FS							Carryover from Off SR 611 N of Thompson Cemetery VSCI: 11/10/2008 60.59 05/21/2008 61.93 10/04/2007 58.10 05/03/2007 67.09 Monitoring data exceeded the Sediment Screening Value for mercury.
6CNFH073.03	VAS-O11R_NFH02B10	FPM,PA,B	TH31	0	2	S	0	2	S	0	2	S	0	1	IN	0	1	NA					1	O							FS	0	2	S				W of Snodgrass Cemetery VSCI: 11/23/2009 67.03 04/29/2009 74.37 Monitoring data exceeded the Sediment Screening Value for MERCURY

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA										BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH				E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status		Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																						
6CNFH078.55	VAS-O11R_NFH03A94	C	TH31																									1	IM	1	O								Ford off SR 611 upstream of Tumbling Creek A smallmouth bass composite sample exceeded the VDH level of concern for Hg and PCB, 2007.
6CNFH079.22	VAS-O11R_NFH03A94	A,SS	TH31	0	14	S	0	14	S	0	14	S		1	14	S																	0	14	S				Ford off SR 611 upstream of Tumbling Creek One sample exceeded WQS for Chloride.
6CNFH080.43	VAS-O11R_NFH03A94	A,TM	TH31	0	14	S	0	14	S	0	14	S		1	14	S																	0	14	S				Below Saltville
6CNFH081.69	VAS-O11R_NFH03A94	TM	TH31	0	24	S	0	24	W	0	24	S		5	24	IM																	0	24	S				End of Henrytown Rd, across from pump station One sample exceeded WQS for Chloride.
6CNFH085.20	VAS-O10R_NFH01A94	A,TR,SS	TH29	0	47	S	0	47	S	0	47	S		7	46	IM																	0	45	S				Rt 91 bridge above Saltville
6CNFH086.23	VAS-O10R_NFH02A00	B,FPM	TH29	0	1	IN	0	1	IN	0	1	IN		0	1	IN	0	1	NA	0	S	0	IN	0	S							W	0	1	IN				@ McCready, stream was unwadeable; no benthic sample was collected.
6CNFH089.25	VAS-O10R_NFH02A00	TM	TH29	0	11	S	0	11	S	0	11	S		2	12	IM																							
6CNFH124.62	VAS-O09R_NFH01B02	PA	TH24	0	12	S	0	12	S	0	12	S		4	12	IM																	0	12	S				One Lane Bridge on SR 622 off Rt 42
6CNFH127.12	VAS-O09R_NFH01C02	A,TM	TH24	0	11	S	0	11	S	0	11	S		7	12	IM																							One Lane Bridge on SR 622 off Rt 42
6CNOR000.14	VAS-O12R_NOR01A02	A	TH37	0	12	S	0	12	S	0	12	S		1	12	S																	0	12	S				SR 812 bridge #6341 off SR 622
6CPSM000.04	VAS-O13R_PSM01A02	A,TM	TH44	0	22	S	0	22	S	0	22	S		9	22	IM																	0	10	S				SR 714 bridge # 6116 off 614 off 23
6CRUS000.73	VAS-O02R_RUS01A02	A	TH03	0	1	IN	0	1	IN	0	1	IN		0	1	IN																	0	1	IN				SR 733 culvert near 36176 Rush Creek Rd, Class V
6CSFH062.93	VAS-O06L_SFH01A00	L,NONA	TH19	0	400	S	99	400	IM	4	400	S		0	13	S																							South Holston Lake continuously monitored by TVA Station #1 @ TN state line
6CSFH070.80	VAS-O06L_SFH01A00	C	TH17																									4	IM	2	IM								SR. 712 bridge off 58, 1.5 mi from Alvarado Four fish samples collected 6/4/2007 exceeded the VDH level of concern. Seven additional samples exceeded the DEQ screening value.
6CSFH075.61	VAS-O02R_SFH02A00	A,TR	TH07	0	48	S	0	48	S	0	48	S		10	48	IM																	1	36	S				SR. 712 bridge off 58, 1.5 mi from Alvarado
6CSFH082.78	VAS-O02R_SFH02A00	FPM,PA,B	TH03	0	2	S	0	2	S	0	2	S		0	1	IN	0	1	NA	0	S	0	S	0	S							FS	0	2	S				East of Route 91 VSCI: 11/03/2010 81.59 05/10/2010 75.26
6CSFH088.91	VAS-O02R_SFH01B02	C	TH03																									2	IM	0	S								Fish sampled 24 July 2007 analyzed for pesticides, metals and PCB; Hg exceeded the Department of Environmental Quality screening value in two samples.
6CSFH093.01	VAS-O02R_SFH01B02	A,TM	TH03	0	12	S	0	12	S	0	12	S		0	12	S																							SR 604 Bridge #6005 at Loves Mill
6CSFH096.96	VAS-O01R_SFH01A00	B,SS,CR	TH02	0	1	IN	0	1	IN	0	1	IN																				FS							Carryover from At Riverside, downstream of Bishop Branch VSCI: 05/05/2008 71.39
6CSFH097.42	VAS-O01R_SFH01A00	A,B,TR	TH02	0	47	S	0	47	S	0	47	S		12	47	IM																FS	0	35	S				SR 660 @ Riverside Church VSCI: 05/29/2008 71.04
6CSFH099.18	VAS-O01R_SFH01A00	FPM,PA,B	TH02	0	2	S	0	2	S	0	2	S		0	1	IN	0	1	NA	0	S	0	S	0	S							FS	0	2	S				Southeast of River Bend Cemetery VSCI: 10/18/2010 81.44 05/10/2010 82.38
6CSFH101.81	VAS-O01R_SFH02A00	A,TM	TH02	0	12	S	0	12	S	0	12	S		0	24	S																							
6CSFH110.45	VAS-O01R_SFH03A00	A,TM	TH01	0	12	S	0	12	S	0	12	S		4	12	IM																							SR 670 Bridge #6252 @ West Farm, Class VI
6CSFH-2-SOS	VAS-O01R_SFH01A00	CMON	TH02																													LP							Immediately downstream of confluence with Parker Branch Spring 2008: Lev II-Acceptable
6CSFH-SOS	VAS-O01R_SFH01A00	CMON	TH02																													LP							150 yards downstream of Riverside Community Center above confluence with Parker Branch Summer 2008: Lev II-Acceptable Spring 2008: Lev II-Acceptable Fall 2007: Lev II-Acceptable (3 samples)
6CSGT000.39	VAS-O02R_SGT02A04	A,B	TH04	0	14	S	0	14	S	0	14	S		0	12	S																FS	0	12	S				Rt 58 bridge #1085 near AT, Class V VSCI: 11/16/2010 83.18 06/01/2010 80.41
6CSLM000.67	VAS-O01R_SLM01A02	TM	TH01	0	10	S	0	10	S	0	10	S		4	10	IM																							Class VI
6CSLM002.49	VAS-O01R_SLM01A02	FPM,B	TH01	0	2	S	0	1	IN	0	2	S																				FS							VSCI: 11/02/2009 62.05 03/12/2009 74.55 Previously 6CSLM002.11
6CSMI000.22	VAS-O12R_SMI01A02	A	TH36	0	12	S	0	12	S	0	12	S		5	12	IM																	0	12	S				SR 614 ford off SR 700
6CSNK006.68	VAS-O07R_SNK01A02	A	TH20	0	12	S	0	12	S	0	12	S		2	12	IM																	0	12	S				King Mill Pike bridge #6398, Class V
6CSPO001.45	VAS-O06R_SPO01A16	FPM,PA,B	TH16	0	14	S	0	14	S	0	14	S		2	12	IM	0	1	NA	0	S	0	S									FS	0	13	S				SR 665 bridge #6107 off SR 663 off 75 - Class V. VSCI: 10/30/2014 74.09 05/07/2014 80.52
6CSPR001.18	VAS-O06R_SPR01A02	A	TH18	1	12	S	0	12	S	0	12	S		5	12	IM																	0	12	S				SR 665 bridge #6107 off SR 663 off 75 - Class V waters
6CSTC000.20	VAS-O01R_STC01A02	FPM,PA,B	TH02	0	13	S	0	13	S	0	13	S		3	13	IM	0	1	NA	0	S	0	S									FS	0	13	S				Southeast of River Bend Cemetery VSCI: 10/01/2014 65.80 05/08/2014 71.77
6CSTO000.86	VAS-O07R_STO01A12	A	TH22	0	12	S	0	12	S	0	12	S		3	12	IM																	0	12	S				I81 Ext 1, Beech Grove Church culvert off 58
6CSTU000.15	VAS-O02R_STU01A02	FPM,B	TH04	0	2	S	0	2	S	0	2	S		0	1	IN								0	S							FS							Carryover from South of Konnarock, Class VI VSCI: 10/06/2008 77.46 03/31/2008 78.03

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
6CSUL000.09	VAS-O04R_SUL01A12	A	TH12	0	12	S	0	12	S	0	12	S	9	12	IM																	0	12	S				SR 614 ford off SR 700
6CTAT000.50	VAS-O05R_TAT01A02	FPM,CR,B	TH13	0	2	S	0	1	IN	0	2	S																			J							Off SR 736 across from quarry VSCI: 11/26/2012 74.39 05/29/2012 54.79
6CTOO000.25	VAS-O11R_TOO01A98	A	TH33	0	12	S	0	12	S	0	12	S	3	12	IM																	0	12	S				SR 765 bridge #6425 off SR 692, Class VI
6CTUM000.12	VAS-O11R_TUM01A00	A,TM	TH30	0	14	S	0	14	S	0	14	S	0	14	S																	0	14	S				SR 611 bridge #6011 @ SR 747, Class V
6CTUM002.69	VAS-O11R_TUM02A04	A,TM	TH30	0	14	S	0	14	S	0	14	S	0	14	S																	0	14	S				SR 747 bridge #6308 @fee fishing area, Class V
6CWAL000.09	VAS-O04R_WAL01A02	A	TH12	0	12	S	0	12	S	0	12	S	8	12	IM																	0	12	S				SR 645 bridge #6053 off SR 659, Class V
6CWLC000.79	VAS-O02R_WLC01A06	A,B	TH04	0	14	S	0	14	S	0	14	S	1	12	S																FS	0	12	S				RR trestle on VA Creeper off US 58, Class VI VSCI: 11/16/2010 78.44 06/01/2010 85.31
6CWLC003.74	VAS-O02R_WLC02B12	A,B,CR	TH04	0	1	IN	0	1	IN	0	1	IN																			FS							Carryover from RR trestle on VA Creeper off US 58, Class VI VSCI: 11/13/2008 81.31
6CWLC010.20	VAS-O02R_WLC01A00	A,B	TH04	0	2	S	0	2	S	0	2	S																			FS		2					SR 728 above RR trestle, Class VI VSCI: 11/15/2012 84.38 11/13/2008 66.65
6CWLC011.55	VAS-O02R_WLC01A00	A	TH04	0	12	S	0	12	S	0	12	S	2	12	IM																	0	12	S				RR trestle on VA Creeper off US 58, Class VI
6CWLF001.18	VAS-O06R_WLF03A06	A	TH16	0	12	S	0	12	S	0	12	S	8	12	IM																	8	12	O				SR 658 bridge #1034 off SR 670
6CWLF005.95	VAS-O06R_WLF01A98	B,SS,FPM	TH16	0	3	S	0	3	S	0	3	S	0	1	IN	0	1	NA	0	S	0	S	0	S							IM	2	2	IN/O				Off Rt 75, N of WTP ponds VSCI: 08/31/2011 53.41 06/09/2011 53.41 06/08/2010 48.43
6CWLF006.43	VAS-O06R_WLF01A98	B,SS	TH16	0	1	IN	0	1	IN	0	1	IN																			IM							Off Rt 75, West of Blind Hollow VSCI: 06/08/2010 42.47
6CWLF006.55	VAS-O06R_WLF01A98	C,SS	TH16																								0	S	0	S								Fish samples were collected 8/27/2007. No samples exceeded WQS.
6CWLF-4-SOS	VAS-O06R_WLF01A98	MU	TH16																												LP							1.25 miles below the Wolf Creek Water Reclamation Facility (VPDES-VA0026531) Spring 2010: Lev II-Acceptable Fall 2009: Lev II-Gray Zone Spring 2009: Lev II-Unacceptable
6CWOC000.02	VAS-O11R_WOC01A12	A	TH32	0	12	S	0	12	S	0	12	S	4	12	IM																	0	12	S				Rt 80 bridge #1043 @Hayters Gap Community Center
6CWOL000.04	VAS-O11R_WOL01A02	A	TH32	0	12	S	0	12	S	0	12	S	0	12	S																	0	12	S				Rt 80 bridge #1045
6CWOL000.39	VAS-O11R_WOL01A02	B,TM	TH32	0	2	S	0	2	S	0	2	S																			FS							Off Rt 80, VSCI: 10/17/2011 74.34 06/08/2011 71.96
6CXBV000.21	VAS-O13R_XBV01A08	A,TM	TH41	0	10	S	0	10	S	0	10	S	3	10	IM																								SR 896 bridge #6573 off 58/221
6CXDY000.17	VAS-O05R_XDY01A08	A,TM	TH14	0	12	S	0	12	S	0	12	S	8	12	IM																	0	12	S				SR 803 bridge #6337
6CXEE000.03	VAS-O01R_XEE01A08	B,TM	TH01	0	2	S	0	2	S	0	2	S																			FS							Iron Mountain, off Appalachian Trail, Class VI. VSCI: 09/25/2013 72.34 04/30/2013 70.15
6CXEE000.72	VAS-O01R_XEE01A08	B,PA,TM	TH01	10	12	IM	0	12	S	0	12	S	0	11	S																J							Iron Mtn, off Appalachian Trail VSCI: 04/02/2009 59.37
6CXEO000.25	VAS-O12R_XEO01A12	FPM,PA,B	TH40	0	1	IN	0	1	IN	0	1	IN	1	1	IN/O	0	1	NA	0	S	0	S	0	S							J	0	1	IN				@Valley Institute VSCI: 05/13/2014 70.17 10/22/2009 58.65 04/06/2009 65.89
7002	VAS-O03R_ENI01A02	USFS	TH08																												UN							Class VI VSCI: 4/27/2011 84
7027	VAS-O10R_ROA01A02	USFS	TH28																												UN							Class VI VSCI: 04/25/2012 76 05/23/2011 73 05/26/2010 79 05/04/2009 82
784.22-MLC1 - ATS	VAS-P17R_MIK02A14	NONA	TP03																												IM							above metal bridge at gas well VSCI: 2/15/2011 59
785.27-RF1 - ATS	VAS-P17R_RIN01B14	NONA	TP01																												IM							125m upstream of confluence with Potcamp Fork VSCI: 8/25/2011 32
819.07-AS4 - ATS	VAS-P17R_MIK01A06	NONA	TP03																												IM							above unnamed tributary confluence, 50m downstream of bridge VSCI: 10/11/2011 55
819.07-AS5 - ATS	VAS-P17R_MIK01A06	NONA	TP03																												J							100m below unnamed tributary confluence VSCI: 10/05/2011 59
825.02-MLC1 - ATS	VAS-P17R_MIK02A14	NONA	TP03																												IM							50m above access road VSCI: 8/26/2011 52

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
825.02-PF1 - ATS	VAS-P17R_POT01A14	NONA	TP01																											IM							150 m downstream of the confluence with Band Mill Hollow and adjacent to a substation VSCI: 8/25/2011 29 2/23/2011 32
827.03-PR1 - ATS	VAS-P17R_POW02B06	NONA	TP02																											IM							50m upstream edge of the Bulldog Mine permit boundary VSCI: 8/30/2011 48 2/18/2011 50
827.03-PR2 - ATS	VAS-P17R_POW02B06	NONA	TP02																											IM							50m downstream of the southwestern edge of the Bulldog mine permit area VSCI: 8/30/2011 51 2/18/2011 51
827.03-UTPR1 - ATS	VAS-P17R_XHX01A14	NONA	TP02																											FS							150m above old 23/alt 58 road crossing VSCI: 08/25/2011 78 03/29/2011 75
9015	VAS-O01R_CMR01A02	USFS	TH01																											UN							VSCI: 5/19/2009 84
9030	VAS-O01R_ROW02A02	USFS	TH02																											UN							Carryover from Class VI VSCI: 5/07/2008 83
9032	VAS-O02R_WLC02B12	USFS	TH04																											UN							VSCI: 6/19/2009 78
9033	VAS-O02R_FEA01A02	USFS	TH04																											UN							Class VI VSCI: 5/06/2009 80
9038	VAS-O02R_GRE01A02	USFS	TH04																											UN							Carryover from Class VI VSCI: 6/07/2007 84
9042	VAS-O01R_PRK01A02	USFS	TH01																											UN							Carryover from Class VI VSCI: 6/11/2007 86
9057	VAS-O01R_HUR01A02	USFS	TH01																											UN							Class VI VSCI: 05/19/2009 83 06/11/2007 82
9091	VAS-O01R_SLM01A06	USFS	TH01																											UN							VSCI: 5/19/2009 80
9092	VAS-P13R_STO03A00	USFS	TC26																											UN							Class V VSCI: 4/27/2011 65
9114	VAS-P17R_XHU01A14	USFS	TP02																											UN							Carryover from VSCI: 6/11/2007 84
9143	VAS-P09R_LSR01A02	USFS	TC23																											UN							Carryover from Class V VSCI: 6/06/2007 75
9172	VAS-P17R_LAF01A14	USFS	TP04																											UN							VSCI: 06/06/2011 76 05/24/2010 75 05/27/2008 79 06/05/2007 60
930.02-CC1 - ATS	VAS-P17R_CAL01C14	NONA	TP03																											IM							150m above confluence with Possum Trot Hollow VSCI: 2/16/2011 56
930.02-CC1F - ATS	VAS-P17R_CAL01C14	NONA	TP03																											FS							50m upstream of Possum trot confluence VSCI: 9/19/2011 62
930.02-CC2 - ATS	VAS-P17R_CAL01B04	NONA	TP03																											IM							100m downstream of the confluence with Possum Trot Hollow VSCI: 9/19/2011 57 2/16/2011 47
930.02-CC3 - ATS	VAS-P17R_CAL01C14	NONA	TP03																											FS							75m below train load out VSCI: 2/23/2011 60
930.02-cc3a - ATS	VAS-P17R_CAL01C14	NONA	TP03																											IM							75 meters upstream of train loading facility VSCI: 2/16/2011 61
930.02-CC3F - ATS	VAS-P17R_CAL01C14	NONA	TP03																											FS							75 meters upstream of train loading facility 150m above processing plant VSCI: 9/19/2011 62
956.25-HB1 - ATS	VAS-P17R_HLS01A14	NONA	TP03																											IM							300m upstream of confluence with Mud Lick Creek VSCI: 8/22/2011 48 2/15/2011 54
956.25-MLC1 - ATS	VAS-P17R_MIK01A06	NONA	TP03																											IM							50m above confluence with Halls Branch VSCI: 8/22/2011 45 2/15/2011 34
956.25-MLC2 - ATS	VAS-P17R_MIK01A06	NONA	TP03																											IM							250 m upstream of the confluence with Callahan Creek VSCI: 8/25/2011 49 2/15/2011 34
CUGA_GC2-NPS	VAS-P24R_GAP01A16	NONA	TP19		10	IN		10	IN		10	IN		10	IN																						At Virginia border of Cumberland Gap National Historic Park Level II: EC 0/10 DO, pH, temp 0/10

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
CUGA_ST9-NPS	VAS-P24R_STT01A14	NONA	TP18		10	IN/O		10	IN		10	IN/O	3	10	IN/O																						Level II: EC 3/10 DO, pH, temp 0/10
GARDEN 40.00-CRC	VAS-Q04R_GAR01A98	NONA	BS08																		0	S															Chloride 22 samples no WQ exceedance
HM-CB-SP	VAS-O04L_HUN01A02	NONA	TH11											56	IN																						Hungry Mother State Park- Swimming Beach aggregated data Level II: 56 samples/1 exceeds
LEVISA 29.00-CRC	VAS-Q04R_LEV01A94	NONA	BS09																		0	S															Near Janey, 0.5 miles upstream of Dismal Creek Water Toxics-Chloride 22 samples, no WQ exceedance
M002-UVA	VAS-O11R_LAU02A16	NONA	TH30		8	IN					10	IN/O									0	S															At shoreline of Laurel Bed Lake Level III Chloride Level II pH 10/10, temp 0/8 3C
M003-UVA	VAS-O11R_LAU01A04	NONA	TH30		13	IN					13	IN									0	S															Outfall of Laurel Bed Lake Level III Chloride, Ammonia Level II temp 3/13, pH 0/13
M004-UVA	VAS-O11R_RED01A04	NONA	TH30		7	IN					7	IN/O									0	S															250 feet upstream of confluence with Tumbling Creek Level III Chloride, Ammonia Level II temp 0/7, pH 3/7
SC01-UVA	VAS-P13R_STO04B10	NONA	TC26								1	IN									0	IN															Level III Chloride Level II pH 0/1
SC02-UVA	VAS-P13R_COV01A02	NONA	TC25								1	IN									0	IN															Level III Chloride Level II pH 0/1
SC03-UVA	VAS-P13R_COV01A02	NONA	TC25								1	IN									0	IN															Level III Chloride Level II pH 0/1
SC04-UVA	VAS-P12R_DEV01A02	NONA	TC24								1	IN									0	IN															Level III Chloride Level II pH 0/1
SC05-UVA	VAS-P12R_SHT01A02	NONA	TC24								1	IN									0	IN															Level III Chloride Level II pH 0/1
SC06-UVA	VAS-P12R_SHT01A02	NONA	TC24								1	IN									0	IN															Level III Chloride Level II pH 0/1
SC08-UVA	VAS-P09R_LSR01B02	NONA	TC23								1	IN									0	IN															Level III Chloride Level II pH 0/1
SC09-UVA	VAS-P09R_LSR01A02	NONA	TC23								1	IN									0	IN															Level III Chloride Level II pH 0/1
SFHRM 62.5-TVA	VAS-O06L_SFH01A00	NONA	TH19		302	IN		302	IN		302	IN							0	S	0	S									0	14	S				Mid-Res, Additional Level II, continuous monitor: Temp 302/0 viol DO 302/0 viol pH 302/0 viol Level III: Ammonia 9/ 0 viol
SH-05-TVA	VAS-O06L_SFH01A00	NONA	TH19										2	9	NA																0	14	S				Carryover from: Washington County Park Swim Site- SF Holston River Mile 62.2 E.coli Geomean = 13
SH-06-TVA	VAS-O06L_SFH01A00	NONA	TH17										1	9	IN																0	14	S				Carryover from: TVA Canoe Access Area 6 (Whitaker Hollow)- SF Holston River Mile 70.8 E.coli Geomean=8.45
SY01-UVA	VAS-O01R_TMR01A04	NONA	TH02								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY02-UVA	VAS-O01R_ROC01A04	NONA	TH02								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY03-UVA	VAS-O03R_NIK02A02	NONA	TH08								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY04-UVA	VAS-O03R_ENI01A02	NONA	TH08								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY05-UVA	VAS-O01R_QRT01A02	NONA	TH01								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY06-UVA	VAS-O01R_XCJ01A02	NONA	TH01								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY07-UVA	VAS-O01R_HOU01A02	NONA	TH01								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY08-UVA	VAS-O01R_PRK01A02	NONA	TH01								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY14-UVA	VAS-O01R_JER01A04	NONA	TH02								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY15-UVA	VAS-O01R_COL01A02	NONA	TH02								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY16-UVA	VAS-O01R_JER01A04	NONA	TH02								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY17-UVA	VAS-O01R_BCK01A02	NONA	TH02								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY18-UVA	VAS-O01R_ROW02A02	NONA	TH02								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY19-UVA	VAS-O01R_XCI01A02	NONA	TH02								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY20-UVA	VAS-O01R_STC02A04	NONA	TH02								1	IN									0	IN															Level III Chloride Level II pH 0/1
SY21-UVA	VAS-O02R_LLC01A04	NONA	TH04								1	IN									0	IN															Level III Chloride Level II pH 0/1

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
Tennessee and Big Sandy Rivers Basin																																					
SY22-UVA	VAS-O02R_PNN01A04	NONA	TH04								1	IN								0	IN																Level III Chloride Level II pH 0/1
SY23-UVA	VAS-O02R_GRS01A04	NONA	TH04								1	IN								0	IN																Level III Chloride Level II pH 0/1
SY25-UVA	VAS-O01R_SCO01A02	NONA	TH01								1	IN								0	IN																Level III Chloride Level II pH 0/1
SY26-UVA	VAS-O01R_BEL01A06	NONA	TH01								1	IN								0	IN																Level III Chloride Level II pH 0/1
SY27-UVA	VAS-O01R_HTN01A06	NONA	TH01								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA12-UVA	VAS-O10R_BKC01A04	NONA	TH28								1	IN								0	IN																Level III Chloride Level II pH 0/1
TA13-UVA	VAS-O10R_CON01A04	NONA	TH28								1	IN								0	IN																Level III Chloride Level II pH 0/1
TIME 98-024-UVA	VAS-O12R_XFB01A16	NONA	TH35		2	IN					2	IN								0	S																Level III Chloride Level II temp 0/2, pH 2/2 3C
TIME 98-038-UVA	VAS-O11R_BNN01A16	NONA	TH32		2	IN					2	IN								0	S																Level III Chloride Level II temp 0/2, pH 2/2 3C
TNW000001999-TDEC	VAS-P21R_HAR01A02	NONA	TP12				0	2	S	0	2	S	0	2	S																						At Lamb Hollow Road bridge
VT05-UVA	VAS-O01R_RAC01A02	NONA	TH01		16	IN					16	IN								0	S																50 feet upstream of confluence with Dickey Creek Level III Chloride, Ammonia Level II temp 0/16, pH 0/16
VT06-UVA	VAS-O01R_ROW02A02	NONA	TH02		16	IN					16	IN								0	S																At Rowland Creek Lane bridge Level III Chloride, Ammonia Level II temp 0/16, pH 0/16
VT07-UVA	VAS-O10R_CVB01A04	NONA	TH28		16	IN					16	IN/O								0	S																At confluence with Roaring Fork Level III Chloride, Ammonia Level II temp 0/16, pH 16/16
VT08-UVA	VAS-O10R_ROA01A02	NONA	TH28		16	IN					16	IN								0	S																50 feet upstream of confluence with Cove Branch Level III Chloride, Ammonia Level II temp 0/16, pH 15/16 Not OE because VSCI scores indicate full support.
VT09-UVA	VAS-O10R_ROA01A02	NONA	TH28		15	IN					15	IN								0	S																250 feet upstream of Roaring Fork Road bridge Level III Chloride Level II temp 0/16, pH 15/15
VT78-UVA	VAS-O10R_LTC01B04	NONA	TH28		15	IN					15	IN/O								0	S																300 feet upstream of DEQ station 6CLTC004.59 Level III Chloride, Ammonia Level II temp 0/15, pH 15/15
WA01-UVA	VAS-O02R_RUS02A02	NONA	TH03								1	IN								0	IN																Level III Chloride Level II pH 0/1
WA02-UVA	VAS-O02R_RUS02A02	NONA	TH03								1	IN								0	IN																Level III Chloride Level II pH 0/1
WA04-UVA	VAS-O02R_LND01A02	NONA	TH06								1	IN								0	IN																Level III Chloride Level II pH 0/1
WC-01-AB	VAS-O06R_WLF01A98	NONA	TH16	0	52	S	0	51	S	0	52	S	25	52	IM																	17	43	O				20 yards upstream of Abingdon WWTP outfall
WE01-UVA	VAS-P18R_PLL03A00	NONA	TP05								1	IN								0	IN																Level III Chloride Level II pH 1/1
WE02-UVA	VAS-P18R_PLL03A00	NONA	TP05								1	IN								0	IN																Level III Chloride Level II pH 0/1
WE03-UVA	VAS-P11R_CRC01B10	NONA	TC19								1	IN								0	IN																Level III Chloride Level II pH 0/1
WE04-UVA	VAS-P11R_BUC01A02	NONA	TC21								1	IN								0	IN																Level III Chloride Level II pH 1/1
WE05-UVA	VAS-P12R_SNY02A00	NONA	TC24								1	IN								0	IN																Level III Chloride Level II pH 0/1
WR-1-SP	VAS-P24R_IND02A14	NONA	TP18											27	IN/O																						Wilderness Road State Park- Bridge Site 22/27 EC Level II
WR-2-SP	VAS-P24R_IND02A14	NONA	TP18											27	IN/O																						Wilderness Road State Park- Tube Put In 27/27 EC Level II
WR-3-SP	VAS-P24R_IND02A14	NONA	TP18											27	IN/O																						Wilderness Road State Park- Tube Take Out 27/27 EC Level II

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																					
01673000 / TF4.0P	VAP-F12R_PMK01B08	USGS	YO27	8	1998	S	0	954	S	0	1978	S								0	S																	co-located with 8-PMK082.34; continuous monitoring data
14Y01	VAT-F27E_YRK02C00	CB-B	YO69																																		BIBI = 1.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
14Y02	VAT-F27E_YRK02A00	CB-B	YO69																																		BIBI = 3; YRKPHa. Chesapeake Bay Segment: YRKPH.
14Y04	VAT-F27E_YRK01A00	CB-B	YO68																																		BIBI = 2; YRKPHa. Chesapeake Bay Segment: YRKPH.
14Y06	VAT-F26E_YRK03A00	CB-B	YO68																																		BIBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y07	VAT-F26E_YRK03A00	CB-B	YO68																																		BIBI = 4; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y08	VAT-F26E_YRK03A00	CB-B	YO66																																		BIBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y09	VAT-F26E_YRK03A00	CB-B	YO66																																		BIBI = 3.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y10	VAT-F26E_YRK03A00	CB-B	YO66																																		BIBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y11	VAT-F26E_YRK03A00	CB-B	YO65																																		BIBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y12	VAT-F26E_YRK03A00	CB-B	YO65																																		BIBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y13	VAT-F26E_YRK03A00	CB-B	YO65																																		BIBI = 2.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y14	VAT-F26E_YRK02A14	CB-B	YO63																																		BIBI = 2.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y15	VAT-F26E_YRK02A14	CB-B	YO63																																		BIBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y16	VAT-F26E_YRK01A04	CB-B	YO63																																		BIBI = 3; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y17	VAT-F26E_YRK01A04	CB-B	YO63																																		BIBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y18	VAT-F26E_YRK01B10	CB-B	YO63																																		BIBI = 2.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y28	VAT-F26E_YRK02A14	CB-B	YO63																																		BIBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
14Y29	VAT-F26E_YRK03A00	CB-B	YO66																																		BIBI = 2.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y01	VAT-F27E_YRK02A00	CB-B	YO69																																		BIBI = 3.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
15Y02	VAT-F27E_YRK02A00	CB-B	YO68																																		BIBI = 2; YRKPHa. Chesapeake Bay Segment: YRKPH.
15Y03	VAT-F27E_YRK02A00	CB-B	YO68																																		BIBI = 2.33; YRKPHa. Chesapeake Bay Segment: YRKPH.
15Y04	VAT-F27E_TMB03A08	CB-B	YO68																																		BIBI = 2.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
15Y07	VAT-F26E_YRK03A00	CB-B	YO66																																		BIBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y08	VAT-F26E_YRK03A00	CB-B	YO66																																		BIBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y09	VAT-F26E_YRK03A00	CB-B	YO66																																		BIBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y10	VAT-F26E_YRK03A00	CB-B	YO66																																		BIBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y11	VAT-F26E_YRK02A14	CB-B	YO63																																		BIBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y12	VAT-F26E_YRK02A14	CB-B	YO63																																		BIBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y13	VAT-F26E_YRK02A14	CB-B	YO63																																		BIBI = 4; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y14	VAT-F26E_YRK01A04	CB-B	YO63																																		BIBI = 3.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y15	VAT-F26E_YRK01A04	CB-B	YO63																																		BIBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y16	VAT-F26E_YRK01A04	CB-B	YO63																																		BIBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y26	VAT-F26E_YRK03A00	CB-B	YO65																																		BIBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y27	VAT-F26E_YRK03A00	CB-B	YO68																																		BIBI = 3.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
15Y28	VAT-F26E_YRK03A00	CB-B	YO65																																		BIBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
16Y01	VAT-F27E_YRK02A00	CB-B	YO69																																		B-IBI = 3.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
16Y02	VAT-F27E_YRK02C00	CB-B	YO69																																		B-IBI = 2.33; YRKPHa. Chesapeake Bay Segment: YRKPH.
16Y03	VAT-F27E_YRK02C00	CB-B	YO69																																		B-IBI = 3.33; YRKPHa. Chesapeake Bay Segment: YRKPH.
16Y04	VAT-F27E_SRH01D14	CB-B	YO69																																		B-IBI = 2; YRKPHd. Chesapeake Bay Segment: YRKPH.
16Y05	VAT-F27E_SRW01A14	CB-B	YO69																																		B-IBI = 1.33; YRKPHd. Chesapeake Bay Segment: YRKPH.
16Y06	VAT-F27E_YRK02A00	CB-B	YO69																																		B-IBI = 2; YRKPHa. Chesapeake Bay Segment: YRKPH.
16Y07	VAT-F27E_YRK02A00	CB-B	YO68																																		B-IBI = 2; YRKPHa. Chesapeake Bay Segment: YRKPH.
16Y08	VAT-F27E_YRK01A00	CB-B	YO68																																		B-IBI = 1.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
16Y09	VAT-F27E_YRK01A00	CB-B	YO68																																		B-IBI = 1.33; YRKPHa. Chesapeake Bay Segment: YRKPH.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																					
16Y11	VAT-F27E_CRT02A00	CB-B	YO68																																		B-IBI = 2; YRKPHh. Chesapeake Bay Segment: YRKPH.
16Y12	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 3; YRKMHa. Chesapeake Bay Segment: YRKMH.
16Y13	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
16Y14	VAT-F26E_YRK01A04	CB-B	YO63																																		B-IBI = 3; YRKMHa. Chesapeake Bay Segment: YRKMH.
16Y15	VAT-F26E_YRK01A04	CB-B	YO63																																		B-IBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
16Y16	VAP-F25E_MPN06B06	CB-B	YO63		1	NA		1																													B-IBI = 3; YRKMHa
16Y17	VAP-F25E_MPN05A00	CB-B	YO61		1	NA		1																													B-IBI = 4.2; MPNOHa
16Y18	VAP-F25E_MPN05A00	CB-B	YO61		1	NA		1																													B-IBI = 4.6; MPNOHa
16Y19	VAP-F14E_PMK06A00	CB-B	YO37		1	NA		1																													B-IBI = 3.4; PMKOHa
16Y20	VAP-F14E_PMK06A00	CB-B	YO37		1	NA		1																													B-IBI = 2.6; PMKOHa
16Y21	VAP-F14E_PMK06A00	CB-B	YO37		1	NA		1																													B-IBI = 2.6; PMKOHa
16Y22	VAP-F14E_PMK06A00	CB-B	YO37		1	NA		1																													B-IBI = 1.8; PMKOHa
16Y23	VAP-F14E_PMK05B00	CB-B	YO37		1	NA		1																													B-IBI = 3; PMKOHa
16Y24	VAP-F14E_PMK02A00	CB-B	YO36		1	NA		1																													B-IBI = 3.4; PMKTFa
16Y26	VAP-F14E_PMK06A00	CB-B	YO37		1	NA		1																													B-IBI = 4.2; PMKOHa
16Y27	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 3.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y01	VAT-F27E_YRK02C00	CB-B	YO69																																		B-IBI = 2.33; YRKPHa. Chesapeake Bay Segment: YRKPH.
17Y02	VAT-F27E_YRK02A00	CB-B	YO69																																		B-IBI = 4; YRKPHa. Chesapeake Bay Segment: YRKPH.
17Y03	VAT-F27E_YRK02A00	CB-B	YO68																																		B-IBI = 3; YRKPHa. Chesapeake Bay Segment: YRKPH.
17Y04	VAT-F27E_YRK01A00	CB-B	YO68																																		B-IBI = 3; YRKPHa. Chesapeake Bay Segment: YRKPH.
17Y05	VAT-F27E_YRK01A00	CB-B	YO68																																		B-IBI = 2.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
17Y06	VAT-F26E_YRK03A00	CB-B	YO68																																		B-IBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y07	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y08	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 2.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y09	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 3; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y10	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 3; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y11	VAT-F26E_YRK03A00	CB-B	YO65																																		B-IBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y12	VAT-F26E_YRK02A14	CB-B	YO63																																		B-IBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y13	VAT-F26E_YRK01A04	CB-B	YO63																																		B-IBI = 3; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y14	VAT-F26E_YRK01B10	CB-B	YO63																																		B-IBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
17Y15	VAP-F14E_PMK06A00	CB-B	YO37		1	NA		1																													B-IBI = 2.33; PMKOHa
17Y16	VAP-F14E_PMK06A00	CB-B	YO37		1	NA		1																													B-IBI = 2; PMKOHa
17Y17	VAP-F14E_PMK06A00	CB-B	YO37		1	NA		1																													B-IBI = 3.67; PMKOHa
17Y18	VAP-F14E_PMK05B00	CB-B	YO37		1	NA		1																													B-IBI = 3.67; PMKOHa
17Y19	VAP-F14E_ZZZ01A00	CB-B	YO36		1	NA		1																													B-IBI = 3; PMKTF-UA
17Y20	VAP-F14E_PMK02A00	CB-B	YO36		1	NA		1																													B-IBI = 1.67; PMKTFa
17Y21	VAP-F14E_PMK02A00	CB-B	YO36		1	NA		1																													B-IBI = 3; PMKTFa
17Y22	VAP-F25E_MPN05A00	CB-B	YO61		1	NA		1																													B-IBI = 4; MPNOHa
17Y23	VAP-F25E_MPN05A00	CB-B	YO61		1	NA		1																													B-IBI = 2; MPNOHa
17Y24	VAP-F25E_MPN05A00	CB-B	YO61		1	NA		1																													B-IBI = 3.67; MPNOHa
17Y26	VAT-F27E_YRK02C00	CB-B	YO69																																		B-IBI = 1.33; YRKPHa. Chesapeake Bay Segment: YRKPH.
18Y02	VAT-F27E_YRK02A00	CB-B	YO68																																		B-IBI = 2.33; YRKPHa. Chesapeake Bay Segment: YRKPH.
18Y03	VAT-F27E_YRK01A00	CB-B	YO68																																		B-IBI = 1.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
18Y05	VAT-F27E_YRK01A00	CB-B	YO68																																		B-IBI = 3; YRKPHa. Chesapeake Bay Segment: YRKPH.
18Y06	VAT-F27E_YRK01A00	CB-B	YO68																																		B-IBI = 3.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y07	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y08	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y09	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y10	VAT-F26E_YRK03A00	CB-B	YO66																																		B-IBI = 2.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y11	VAT-F26E_YRK03A00	CB-B	YO65																																		B-IBI = 2.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y12	VAT-F26E_YRK03A00	CB-B	YO65																																		B-IBI = 3.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y13	VAT-F26E_YRK03A00	CB-B	YO65																																		B-IBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA										BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature				Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																							
18Y14	VAT-F26E_YRK03A00	CB-B	YO65																																				B-IBI = 1.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y15	VAT-F26E_YRK03A00	CB-B	YO63																																				B-IBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y16	VAT-F26E_YRK01A04	CB-B	YO63																																				B-IBI = 2.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
18Y17	VAP-F25E_MPN05A00	CB-B	YO61					1																															B-IBI = 2.6; MPNOHa
18Y18	VAP-F24E_MPN03B02	CB-B	YO60					1																															B-IBI = 2.6; MPNOHa
18Y19	VAP-F24E_MPN03A98	CB-B	YO59					1																															B-IBI = 5.0; MPNTFa
18Y20	VAP-F14E_PMK06B06	CB-B	YO37					1																															B-IBI = 3.0; PMKOHa
18Y21	VAP-F14E_PMK06A00	CB-B	YO37					1																															B-IBI = 1.8; PMKOHa
18Y22	VAP-F14E_PMK06A00	CB-B	YO37					1																															B-IBI = 2.2; PMKOHa
18Y23	VAP-F14E_PMK05B00	CB-B	YO37					1																															B-IBI = 3.8; PMKOHa
18Y24	VAP-F14E_PMK05B00	CB-B	YO37					1																															B-IBI = 2.33; PMKOHa
18Y25	VAP-F14E_PMK02A00	CB-B	YO36					1																															B-IBI = 3.0; PMKTFa
18Y26	VAP-F24E_MPN03B02	CB-B	YO60					1																															B-IBI = 1; MPNOHa
18Y27	VAT-F27E_YRK02A00	CB-B	YO68																																				B-IBI = 3.33; YRKPHa. Chesapeake Bay Segment: YRKPH.
19M08	VAT-F27E_YRK02A00	CB-B	YO69																																				B-IBI = 3.33; MOBPHa. Chesapeake Bay Segment: MOBPH.
19Y01	VAT-F27E_YRK02C00	CB-B	YO69																																				B-IBI = 3; YRKPHa. Chesapeake Bay Segment: YRKPH.
19Y02	VAT-F27E_YRK02C00	CB-B	YO69																																				B-IBI = 2.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
19Y03	VAT-F27E_YRK02A00	CB-B	YO69																																				B-IBI = 3; YRKPHa. Chesapeake Bay Segment: YRKPH.
19Y04	VAT-F27E_WOR01A08	CB-B	YO69																																				B-IBI = 1.67; YRKPHc. Chesapeake Bay Segment: YRKPH.
19Y05	VAT-F27E_YRK02A00	CB-B	YO69																																				B-IBI = 2.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
19Y06	VAT-F27E_YRK01D06	CB-B	YO69																																				B-IBI = 3; YRKPHa. Chesapeake Bay Segment: YRKPH.
19Y07	VAT-F27E_YRK02A00	CB-B	YO68																																				B-IBI = 1.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
19Y08	VAT-F27E_KNG01A02	CB-B	YO68																																				B-IBI = 1.67; YRKPHi. Chesapeake Bay Segment: YRKPH.
19Y09	VAT-F27E_YRK01A00	CB-B	YO68																																				B-IBI = 1.33; YRKPHa. Chesapeake Bay Segment: YRKPH.
19Y10	VAT-F27E_YRK01A00	CB-B	YO68																																				B-IBI = 2.33; YRKPHa. Chesapeake Bay Segment: YRKPH.
19Y11	VAT-F27E_YRK01A00	CB-B	YO68																																				B-IBI = 3; YRKMHa. Chesapeake Bay Segment: YRKMH.
19Y12	VAT-F27E_YRK01A00	CB-B	YO68																																				B-IBI = 3.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
19Y13	VAT-F26E_YRK03A00	CB-B	YO66																																				B-IBI = 2.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
19Y14	VAT-F26E_YRK03A00	CB-B	YO66																																				B-IBI = 3; YRKMHa. Chesapeake Bay Segment: YRKMH.
19Y15	VAT-F26E_YRK03A00	CB-B	YO66																																				B-IBI = 1.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
19Y17	VAT-F26E_YRK03A00	CB-B	YO65																																				B-IBI = 2; YRKMHa. Chesapeake Bay Segment: YRKMH.
19Y18	VAT-F26E_YRK03A00	CB-B	YO65																																				B-IBI = 1.33; YRKMHa. Chesapeake Bay Segment: YRKMH.
19Y19	VAT-F26E_YRK03A00	CB-B	YO65																																				B-IBI = 2.67; YRKMHa. Chesapeake Bay Segment: YRKMH.
19Y20	VAT-F26E_YRK03A00	CB-B	YO65																																				B-IBI = 3; YRKMHa. Chesapeake Bay Segment: YRKMH.
19Y21	VAP-F24E_MPN03A98	CB-B	YO59		1	NA		1																															B-IBI = 2.67; MPNOHa
19Y22	VAP-F23E_MPN03A06	CB-B	YO57		1	NA		1																															B-IBI = 2.5; MPNTFa
19Y23	VAP-F14E_PMK06B06	CB-B	YO37		1	NA		1																															B-IBI = 4.33; PMKOHa
19Y24	VAP-F14E_PMK06A00	CB-B	YO37		1	NA		1																															B-IBI = 4.6; PMKOHa
19Y25	VAP-F14E_PMK02A00	CB-B	YO36		1	NA		1																															B-IBI = 3; PMKTFa
19Y26	VAT-F27E_YRK02A00	CB-B	YO69																																				B-IBI = 3.67; YRKPHa. Chesapeake Bay Segment: YRKPH.
20Y21	VAP-F24E_MPN03A98	CB-B	YO59					1																															
20Y25	VAP-F14E_PMK02A00	CB-B	YO36					1																															
20Y26	VAP-F24E_MPN03A98	CB-B	YO59					1																															
8-ACA000.81	VAP-F13R_ACA01A14	TM	YO30	0	13	S	0	13	S	0	13	S																											No data since 2014 cycle
8-ACQ001.35	VAP-F13R_ACQ01A14	TM	YO35	0	24	S	1	24	S	0	24	S	3	12	IM																								No data since 2014 cycle
8-ACQ004.43	VAP-F13R_ACQ01A14	TM	YO35	0	23	S	7	23	IM	0	23	S	1	11	S																								No data since 2014 cycle
8-ACQ008.01	VAP-F13R_ACQ01A14	TM	YO35	0	23	S	8	23	IM	1	23	S	1	11	S																								No data since 2014 cycle
8-ADA001.59	VAT-F26E_ADM01A00	SS	YO65					5	IM	0	5	S												0	S	0	S												YRKMH. Sed = S, 2012.
8-ADA001.65	VAT-F26E_ADM01A00	C2	YO65					6	IM	0	6	S				0	1	IN	0	S				0	S	0	S												YRKMH, Sed & Met = 2012
8-ADA001.71	VAT-F26E_ADM01A00	SS	YO65					3	IM	0	3	S												0	S	0	S												YRKMH. Sed = S, 2012.
8-ARN000.73	VAN-F09R_ARN01A06	A,TM	YO22	0	12	S	0	11	S	0	12	S	0	12	S																								
8-AYL002.27	VAP-F23R_AYL01A12	A,B	YO57	0	13	S	0	13	S	6	13	IM	3	11	IM																							IN	2009 benthics; no new data since 2012 cycle
8-BDC000.05	VAP-F11R_BDC01A12	A	YO25	0	10	S	1	10	S	3	10	IM	4	9	IM																								No new data since 2012 cycle

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																						
8-BEV003.16	VAN-F22R_BEV01A08	A,TM	YO52	0	12	S	0	12	S	1	12	S	1	12	S																							
8-BEV006.78	VAN-F22R_BEV01B00	A,PA	YO52	0	12	S	0	12	S	0	12	S	3	12	IM																							
8-BEV008.47	VAN-F22R_BEV02A08	A,TM	YO52	0	11	S	0	11	S	6	11	IM	0	11	S																							
8-BLC001.77	VAP-F13R_BLC01A00	TM	YO33	0	12	S	0	12	S	0	12	S																									No data since 2014 cycle
8-BLC002.88	VAP-F13R_BLC01A00	FPM,B	YO33	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S									IN							2012 benthics; no data since 2014 cycle
8-BLC005.54	VAP-F13R_BLC01B12	FPM,B	YO33	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S							FS							2009 Probmon; no new data since 2012 cycle
8-BMC003.65	VAP-F25E_BMC01A08	A	YO61		12	NA		12		0	12	S																									E. coli collected; no data since 2014 cycle
8-BRB002.34	VAN-F21R_BRB01A12	A	YO54	0	11	S	0	11	S	1	11	S	1	11	S																							
8-BRC001.88	VAN-F06R_BRC01A02	A,B,TM	YO12	0	16	S	0	15	S	0	16	S	1	6	IN																FS							
8-BRD000.43	VAT-F26R_BRD01A12	FPM,B	YO62	0	2	S	0	2	S	0	2	S	0	1	IN				1	IN/O											IM							Benthic ProbMon VCPMI IM [2008: S=26.8, F = 33.0, 2009: S=44.0, F = 28.9]; 1 exceedance for Manganese (PWS - Human Health)
8-BRK000.06	VAN-F15R_BRK01A06	A,TM	YO38	0	9	S	2	9	IM	0	9	S	4	10	IM																							
8BRK-04-NPS	VAN-F15R_BRK01A06	NONA	YO38	0	52	S	8	51	IM	2	52	S																									
8BRK-17-NPS	VAN-F15R_BRK01B12	NONA	YO38	0	16	S	0	16	S	2	16	IM																									
8-BRS001.15	VAP-F24R_BRS01A12	FPM,TM,B	YO59	0	15	S	1	15	S	1	15	S	1	14	S				0	IN	0	S	0	S							IN							2009 Probmon; no data since 2014 cycle
8-BRY000.47	VAN-F07R_BRY01A06	A	YO16	0	12	S	0	12	S	0	12	S	2	12	IM																							
8BRY-P4-LACA	VAN-F07R_BRY01A06	CMON	YO16	0	11	S	0	11	S	0	11	S	3	4	IM																						Level II data: E. coli (0/9).
8BRY-P8-LACA	VAN-F07R_BRY02A14	CMON	YO16	0	12	S	0	12	S	0	12	S	2	3	IM																						Level II data: E. coli (3/9).
8-BVL001.56	VAN-F07R_BVL01A12	A,SS	YO17	0	1	W	0	1	W	0	1	W													IN											PCB sediment sample
8-CBN002.69	VAP-F25E_CBN01A00	TM	YO61		1	NA		1		0	1	W																									below dam; occasional tidal influence; no data since 2014 cycle
8CDB-50-ALL	VAT-F27E_CDB02A00	CMON	YO68					3	IM	0	3	S																									ACB station - Level 3 temp and pH; Level 2 DO. YRKPH.
8CHR-P9-LACA	VAN-F07R_CHR01A14	CMON	YO16	0	12	S	0	12	S	0	12	S	4	4	IM																						Level II data: E. coli (4/8).
8-CLC000.09	VAN-F07R_CLC01A12	SS	YO16																						IN											PCB sediment sample
8-CLC003.48	VAN-F07L_CLC01A06	L	YO16	0	117	S	5	48	S	3	117	S	0	13	S						0	S															Lake Orange: non-187 lake
8CLC-P5-LACA	VAN-F07R_CLC01A12	CMON	YO16	0	12	S	0	12	S	0	12	S	3	4	IM																						Level II data: E. coli (0/8).
8-CMC001.00	VAP-F14L_CMC01A14	TM	YO36	0	11	S	0	11	S	0	11	S																									Cohoke Millpond; no data since 2014 cycle
8-CMC005.16	VAP-F14R_CMC01A00	A	YO36	0	11	S	4	11	IM	0	11	S									0	S															No data since 2014 cycle
8-CMP000.28	VAN-F01R_CMP01A12	A,B,SS	YO02	0	26	S	0	25	S	0	26	S	10	23	IM						0	S									IM							
8-CON002.32	VAN-F07L_CON01A02	L	YO19	0	110	S	1	98	S	2	110	S	0	15	S						0	S															Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8-CON005.38	VAN-F08R_CON01A00	A,TR	YO19	4	33	IM	0	33	S	33	33	IM	1	34	S						0	S															
8CON-33-LACA	VAN-F07L_CON01A02	CMON	YO19	0	40	S	0	35	S	2	40	S	0	25	S																						Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8CON-5-LACA	VAN-F07L_CON01A02	CMON	YO19	0	49	S	0	36	S	0	49	S	0	16	S																						Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8-CPL004.15	VAN-F21R_CPL01A06	A,B,TM	YO54	0	30	S	0	30	S	4	30	IM	3	12	IM																FS						
8-CRC001.82	VAN-F06R_CRC01A10	SS	YO15																						IN											PCB sediment sample
8-CRU000.92	VAP-F12R_CRU01A02	A,TM	YO28	0	24	S	0	24	S	5	24	IM	0	12	S																						Total mercury sample in 2014
8-CRU005.61	VAP-F12R_CRU01A02	TM	YO28	0	12	S	0	12	S	5	12	IM	3	12	IM																						No new data since 2012 cycle
8-CRU008.30	VAP-F12R_CRU01A02	TM	YO28	0	12	S	1	12	S	10	12	IM	2	12	IM																						No new data since 2012 cycle
8-CTH001.96	VAP-F24R_CTH01A00	TM	YO59	0	24	S	4	24	IM	1	24	S	3	12	IM																						
8-CTR001.06	VAT-F27E_CRT01A00	C2,B	YO68					2	IM	0	2	IN				0	1	IN			0	S									J							1 sample event; no data since 2010 cycle; 2008 Coastal 2000 Probmon. YRKPH.
8-CUB001.73	VAN-F03R_CUB01A08	A	YO06	0	12	S	4	12	IM	0	12	S	0	12	S																						
8-CUB002.73	VAN-F03R_CUB01A08	A,B	YO06	0	12	S	0	12	S	0	12	S	3	10	IM																IM						
8-DEP000.37	VAN-F03R_DEP01A12	A	YO05	0	12	S	1	11	S	0	11	S	4	12	IM																						
8-DKH001.44	VAN-F06R_DKH01A04	A,SS	YO15	0	12	S	0	11	S	0	12	S	8	12	IM										IN											PCB sediment sample
8-DKW000.12	VAP-F23R_DKW01C98	TM	YO58	0	18	S	5	18	IM	0	18	S	0	12	S																						No data since 2014 cycle
8-DKW001.12	VAP-F23R_DKW01B00	TM	YO58	0	18	S	5	18	IM	0	18	S	0	12	S																						No data since 2014 cycle
8-DKW004.31	VAP-F23R_DKW01B00	TM	YO58	0	18	S	4	18	IM	0	18	S	4	12	IM																						No data since 2014 cycle
8-DKW005.73	VAP-F23R_DKW01A00	TM	YO58	0	18	S	6	18	IM	0	18	S	1	12	S																						No data since 2014 cycle
8-DOC000.69	VAN-F22R_DOC01A08	A,TM	YO53	0	12	S	0	12	S	4	12	IM	4	12	IM																						
8-DWD000.77	VAP-F23R_DWD01A00	TM	YO58	0	18	S	7	18	IM	0	18	S	4	12	IM																						No data since 2014 cycle
8-FEL000.19	VAT-F27E_FEL01A00	A,TR	YO68					35	IM	0	35	S				2	34	O																			YRKPH
8FEL-COLOFC1-NPSN	VAT-F27E_FEL01A00	NONA	YO68					12	IM																												National Park Service Northeast Coastal & Barrier Network, ChesBay Analysis CBPSEG: YRKPH.
8-FMT002.45	VAN-F07R_FMT01A12	A,SS	YO17	0	1	W	0	1	W	0	1	W													IN											PCB sediment sample
8-FOS000.84	VAN-F02R_FOS01A06	A	YO03	0	11	S	0	10	S	0	11	S	3	11	IM																						
8FRC-34-LACA	VAN-F07L_FRC01A04	CMON	YO19	0	55	S	0	45	S	0	55	S	1	24	S																						Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8-FRK005.53	VAN-F03R_FRK02A16	FPM,B	YO05	0	2	S	0	2	S	0	2	S	0	1	W					IN	0	S									J						
8-FRK006.02	VAN-F03R_FRK02A16	PA	YO05	0	12	S	0	11	S	0	12	S	2	12	IM																						
8-FRS001.17	VAT-F26R_FRS02A10	A	YO62	0	12	S	0	12	S	0	12	S	0	11	S																						

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																					
8-FTS001.98	VAP-F23R_FTS01A10	TM	YO58	0	18	S	3	18	IM	1	18	S	1	12	S																							No data since 2014 cycle
8-GDY003.00	VAN-F16R_GDY01A10	A,B	YO40	0	13	S	0	13	S	0	13	S	2	11	IM																FS							
8-GMC000.23	VAN-F07L_GMC01A02	L,SS	YO14	0	4	S	0	4	S	0	4	S	1	2	S							0	S															Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8NAR-12-LACA.
8-GMC002.19	VAN-F06R_GMC01A00	A,TM	YO14	0	12	S	0	12	S	0	12	S	4	12	IM																							
8GMC-13-LACA	VAN-F07L_GMC01A02	CMON	YO14	0	40	S	0	35	S	1	38	S	0	24	S																							Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8NAR-12-LACA.
8-GNT001.54	VAP-F23R_GNT01A00	A,TM	YO58	0	30	S	1	30	S	0	30	S	4	11	IM							0	S															No data since 2014 cycle
8-GOV000.14	VAP-F13R_GOV01A10	TM	YO32	0	6	S	1	6	IN	5	6	IM																										No new data since 2012 cycle
8-HCN000.20	VAN-F06R_HCN01A02	A,B	YO13	0	16	S	0	14	S	0	16	S	0	12	S																FS							
8-HCS000.20	VAN-F06R_HCS01A00	A	YO13	0	12	S	0	11	S	0	12	S	2	12	IM																							
8-HER000.33	VAN-F21R_HER01A06	A,TM	YO56	0	12	S	0	12	S	0	12	S	1	12	S																							
8-HER005.12	VAN-F21R_HER01B02	A,TM	YO56	0	12	S	0	12	S	0	12	S	2	12	IM																							
8-HIK001.20	VAN-F06R_HIK01A12	A	YO13	0	12	S	1	12	S	0	12	S	5	12	IM																							
8HIK-EX1-LACA	VAN-F06R_HIK02A16	CMON	YO13	0	8	S	0	8	S	0	8	S	0	6	S																							Level II data: E. coli (0/2).
8HIK-EX2-LACA	VAN-F06R_HIK01A12	CMON	YO13	0	26	S	0	26	S	2	26	S	9	11	IM																							Level II data: E. coli (3/15).
8HIK-EX9-LACA	VAN-F06R_HIK03A16	CMON	YO13	0	8	S	0	8	S	0	8	S	0	7	S																							Level II data: E. coli (0/1).
8-HMR000.50	VAP-F13R_HMR01A14	TM	YO30	0	13	S	0	13	S	0	13	S																										No data since 2014 cycle
8-HQT002.12	VAP-F12R_HQT01A00	TM	YO27	0	12	S	2	12	IM	5	11	IM										0	S															No new data since 2012 cycle
8-HQT004.62	VAP-F12R_HQT01A00	TM	YO27	0	3	S	0	3	S	1	2	IN																										No new data since 2012 cycle
8-HRS001.35	VAN-F02R_HRS01A16	A	YO04	0	12	S	0	12	S	0	12	S	2	12	IM																							
8-HSN000.92	VAP-F14E_HSN01A12	TM	YO36		11	NA		11		1	11	S	3	12	IM																							No data since 2014 cycle
8-HSN002.12	VAP-F14R_HSN01A00	TM	YO36	0	11	S	2	11	IM	1	11	S	2	12	IM																							One of the DO violations during a low-flow period; no data since 2014 cycle
8-HSN002.43	VAP-F14R_HSN01A00	TM	YO36	0	11	S	1	11	S	1	11	S	3	12	IM																							No data since 2014 cycle
8-HSN003.93	VAP-F14R_HSN01A00	TM	YO36	0	14	S	1	14	S	0	14	S	4	15	IM																							No data since 2014 cycle
8HSP-T4-LACA	VAN-F07R_HSP01A14	CMON	YO17	0	12	S	0	12	S	0	12	S	1	4	IN																							Level II data: E. coli (1/8).
8-HTQ003.77	VAP-F24R_HTQ01A00	A	YO60	0	12	S	0	12	S	0	12	S	2	12	IM																							No new data since 2012 cycle
8-HUD001.80	VAN-F01R_HUD01A04	A	YO02	0	21	S	2	20	S	0	21	S	7	21	IM																							
8IFC-COLOIFC1-NPSN	VAT-F27E_IFC01A00	NONA	YO68					3	IM																													National Park Service Northeast Coastal & Barrier Network, ChesBay Analysis CBPSEG: YRKPH.
8-JDY000.19	VAP-F13R_JDY01A02	TM	YO29	0	11	S	1	11	S	4	10	IM																										No new data since 2012 cycle
8-JDY001.27	VAP-F13R_JDY01A02	TM	YO29	0	24	S	1	24	S	9	23	IM										0	S															
8-JKC004.15	VAP-F13R_JKC01A98	A,TM	YO35	0	36	S	11	36	IM	0	36	S	3	12	IM							0	S															
8-JKC005.80	VAP-F13R_JKC01A98	TM,B	YO35	0	23	S	0	23	S	0	23	S	2	11	IM																IN							2012 benthics; no data since 2014 cycle
8-JKC007.95	VAP-F13R_JKC01A98	TM	YO35	0	24	S	7	24	IM	0	24	S	0	12	S																							Duckweed; pond above station has algal bloom problems per owner; no data since 2014 cycle
8-KER001.31	VAP-F12R_KER01A12	TM	YO28	0	12	S	1	12	S	4	12	IM	3	12	IM																							No new data since 2012 cycle
8-KNG004.46	VAT-F27E_KNG01A02	A,TR	YO68					35	IM	0	35	S				13	29	IM																				YRKPH
8KNG-COLOKC1-NPSN	VAT-F27E_KNG01A02	NONA	YO68					2	IM																													National Park Service Northeast Coastal & Barrier Network, ChesBay Analysis CBPSEG: YRKPH.
8LIT-P13-LACA	VAN-F07R_LIT01A14	CMON	YO16	0	13	S	0	13	S	1	13	S	1	7	IN																							Level II data: E. coli (0/6).
8LIT-P7-LACA	VAN-F07R_LIT01A14	CMON	YO16	0	25	S	0	25	S	2	25	S	6	11	IM																							Level II data: E. coli (7/14).
8-LNG000.94	VAN-F10R_LNG01A14	A	YO24	0	11	S	2	10	IM	0	11	S	4	11	IM																							
8-LTL002.69	VAP-F11R_LTL01A98	A,TM	YO25	0	36	S	0	36	S	0	36	S	5	11	IM																							
8-LTL009.54	VAP-F11R_LTL01A98	A,CB,TR,B	YO25	0	107	S	1	107	S	6	107	S	12	93	IM							0	S								FS							2013 benthics; trend station - decreasing bacteria, increasing SC
8-LTL018.80	VAP-F11R_LTL02B14	A	YO25	0	12	S	1	12	S	1	12	S	3	12	IM																							No new data since 2012 cycle
8-LTL024.86	VAP-F11R_LTL01B08	A	YO25	0	16	S	10	16	IM	0	16	S	3	15	IM																							No data since 2014 cycle
8-LTL030.55	VAN-F10R_LTL01A02	A,TR	YO24	0	34	S	3	33	S	0	34	S	10	34	IM																							
8-LTL035.32	VAN-F10R_LTL02A04	A	YO24	0	11	S	1	10	S	1	11	S	4	11	IM																							
8-LTL-LR-ACB	VAP-F11R_LTL01A98	CMON	YO25	0	2	S	0	2	S	0	1	W	0	1	W																							ACB - level 3 temp, DO, pH - level 2 E. coli; no data since 2014 cycle
8LWS-01-NPS	VAN-F15R_LWS01A12	NONA	YO38	0	53	S	7	52	IM	2	53	S																									
8LWS-03-NPS	VAN-F15R_LWS01A12	NONA	YO38	0	52	S	2	51	S	0	52	S																									
8-MAR003.24	VAN-F22R_MAR01A02	A,TR	YO53	0	35	S	0	35	S	3	35	S	8	36	IM																							
8-MAR004.41	VAN-F22R_MAR02A02	A,TM,SS	YO53	0	6	S	0	6	S	0	6	S																									
8-MAR008.23	VAN-F22R_MAR03A08	B	YO53	0	4	S	0	4	S	0	4	S																									
8-MAT001.87	VAN-F18R_MAT01A12	A	YO43	0	16	S	0	16	S	1	16	S	2	16	IM																							
8-MCP000.79	VAP-F12R_MCP01A94	TM	YO27	0	12	S		12	NA	0	12	S																										Class VII water; no data since 2014 cycle
8-MCP009.56	VAP-F12R_MCP03A06	TM	YO27	0	10	S	3	10	IM	4	10	IM										0	S															
8-MCP-17-RMC	VAP-F12R_MCP03A06	CMON	YO27										2	4	IN/O																							Level 2 data - Randolph-Macon College; no data since 2014 cycle
8-MCP-1-RMC	VAP-F12R_MCP03A06	CMON	YO27										0	1	W																							Level 2 data - Randolph-Macon College; no data since 2014 cycle

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																						
8-MCP-6-RMC	VAP-F12R_MCP02A04	CMON	YO27										0	5	IN																							Level 2 data - Randolph-Macon College; no data since 2014 cycle
8-MCP-8-RMC	VAP-F12R_MCP01A94	CMON	YO27										0	4	IN																							Level 2 data - Randolph Macon College - co-located with 8-MCP002.42; no data since 2014 cycle
8-MCP-J-RMC	VAP-F12R_MCP03A06	CMON	YO27										0	1	W																							Randolph Macon College - level 2 - no new data since 2012 cycle
8-MDQ001.37	VAP-F13R_MDQ01A98	A,TM	YO34	0	24	S		24	NA	0	24	S	4	12	IM																							Class VII water; no data since 2014 cycle
8-MHX000.27	VAP-F13R_MHX01A12	FPM,B	YO29	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S							IN							2010 Probmon; no new data since 2012 cycle
8-MHX001.50	VAP-F13R_MHX01A12	TM	YO29	0	12	S	0	12	S	4	11	IM																											No new data since 2012 cycle
8-MIC000.61	VAN-F03R_MIC01A14	A	YO09	0	11	S	0	10	S	0	11	S	1	11	S																							
8-MIL001.19	VAP-F24R_MIL01A00	A,TM,CR	YO60	0	36	S	1	36	S	2	36	S	1	12	S																							No data since 2014 cycle
8-MKT001.04	VAP-F23R_MKT01B00	TM	YO58	0	18	S	1	18	S	0	18	S	2	12	IM																							No data since 2014 cycle
8-MKT001.96	VAP-F23R_MKT01B00	TM	YO58	0	12	S	1	12	S	0	12	S	1	12	S																							Natural Condition report completed; no data since 2014 cycle
8-MKT002.77	VAP-F23R_MKT01A00	TM	YO58	0	12	S	3	12	IM	0	12	S	1	12	S																							Natural Condition report completed; no data since 2014 cycle
8-MLL001.19	VAP-F09R_MLL01A12	A	YO26	0	13	S	1	13	S	5	13	IM	7	13	IM																							No new data since 2012 cycle
8-MLP002.74	VAP-F12R_MLP01A00	A,TM	YO27	0	24	S	1	24	S	5	23	IM									0	S																
8-MLY001.58	VAP-F13R_MLY01A12	TM	YO35	0	23	S	4	23	IM	6	23	IM	4	12	IM																							No data since 2014 cycle
8-MNQ004.19	VAP-F13R_MNQ01A98	A,TM	YO32	0	6	S	0	6	S	3	6	IM									0	S																No new data since 2012 cycle
8-MNQ007.65	VAP-F13R_MNQ01A98	TM	YO32	0	6	S	0	6	S	3	6	IM																										No new data since 2012 cycle
8-MOT002.62	VAN-F19R_MOT01A04	A	YO46	0	8	S	0	8	S	1	8	IN	2	8	IM																							
8-MPN000.98	VAP-F25E_MPN06B06	TM	YO61		12	NA		12		0	12	S				0	10	S																			
8-MPN002.32	VAP-F25E_MPN05B06	C2,B	YO61		13	NA		13		0	13	W				0	1	W			0	IN	0	S	0	S					J				1		One sample event; WOE 2014: OH-M scenario 5, Category 3B
8-MPN004.39	VAP-F25E_MPN05A00	CB,TR	YO61		762	NA		746		12	762	S				15	71	IM			0	S													70		
8-MPN006.23	VAP-F25E_MPN05A00	TM	YO61		12	NA		12		0	12	S				5	12	IM																			
8-MPN016.38	VAP-F24E_MPN03B02	C2,B	YO59		12	NA		12		0	12	W				0	1	W	0	IN	0	IN	0	S	0	S					J				1		One sample event; 2011 WOE: category 2B TF-S scenario 6; no data since 2014 cycle
8-MPN017.45	VAP-F24E_MPN03A98	TM	YO59		11	NA		11		0	11	S																									No data since 2014 cycle
8-MPN017.46	VAP-F24E_MPN03A98	A,TR	YO59		36	NA		36		0	36	S	1	29	S																					34		
8-MPN020.73	VAP-F24E_MPN03A98	C2,B	YO59		6	NA		6		0	6	W	0	1	W				0	IN	0	W	0	S	0	S					FS				3		1 sample event; WOE - 2009 TF category 2A, scenario 2; no new data since 2012 cycle
8-MPN026.57	VAP-F23E_MPN03A06	C2,B	YO57		2	NA		2		0	2	W	0	1	W						0	W	1	O	0	S					J				1		One sample event; WOE 2013: TF-M scenario 1, Category 3B; Cd sed >PEC (data questionable)
8-MPN028.78	VAP-F23E_MPN03A06	C2,B	YO57		1	NA		1		0	1	W	0	1	W						0	W	0	S	0	S					J				1		One sample event; WOE 2014: TF-M scenario 4, Category 2B (sed toxicity due to iron-fixing bacteria)
8-MPN029.08	VAP-F23E_MPN03A06	CB,TR	YO57		209	NA		206		1	210	S	1	68	S						0	S													70		
8-MPN034.33	VAP-F23E_MPN03A06	TM	YO57		12	NA		12		0	12	S	2	9	IM																							
8-MPN036.55	VAP-F23E_MPN02A98	B	YO57		1	NA		1		0	1	W																				W						2007-2009 benthics; no new data since 2012 cycle
8-MPN039.10	VAP-F23E_MPN02A98	TM,B,TR	YO57		47	NA		47		4	47	S	3	33	S																W				12		2007-2010 benthics
8-MPN043.76	VAP-F23R_MPN01A00	FPM,TM,B	YO57	0	13	S		13	NA	0	13	S	0	12	S				0	IN	0	S	0	S							FS						2011 sed; 2011 benthics
8-MPN045.51	VAN-F21R_MPN01A06	FPM	YO55	0	2	S	0	2	S	0	2	S	0	1	W					IN		IN															
8-MPN054.17	VAN-F21R_MPN01B02	A,CB,TM	YO55	0	133	S	1	132	S	0	133	S	5	36	IM						0	S																Co-located with USGS
8-MPN075.84	VAN-F21R_MPN02A02	FPM	YO50	0	3	S	0	3	S	0	3	S	1	2	IN				0	S	0	S																
8-MPN083.62	VAN-F17R_MPN01A02	A,TM	YO47	0	10	S	0	10	S	0	10	S	1	11	S																							
8-MPN094.79	VAN-F17R_MPN02A02	B	YO47	0	6	S	0	5	S	0	6	S																			FS						
8-MPN094.94	VAN-F17R_MPN02A02	A,CB,TR	YO47	0	88	S	0	88	S	0	86	S	7	69	S						0	S															USGS Sampling
8-MTA001.69	VAN-F18R_MTA01A00	A,TR	YO45	0	35	S	0	35	S	0	35	S	8	35	IM																							
8-MTA008.96	VAN-F18R_MTA01A00	A,TM	YO45	0	21	S	0	21	S	0	21	S	3	22	IM																							
8-MTN000.96	VAN-F06R_MTN01A00	A,TM	YO12	0	17	S	0	17	S	0	17	S	3	17	IM																							
8-MUS000.57	VAN-F09R_MUS01A06	A,TM	YO22	0	12	S	0	11	S	0	12	S	2	12	IM																							
8-NAR005.42	VAP-F09R_NAR02A00	A,CB,TR	YO26	0	167	S	0	166	S	5	167	S	8	59	IM						0	S																Trend Station - increasing pH, decreasing TN
8-NAR027.32	VAP-F09R_NAR04B08	B,A	YO23	0	4	S	0	4	S	0	4	S																			FS						2010-2011 benthics
8-NAR034.92	VAN-F07L_NAR01A02	L	YO21	0	477	S	25	240	S	3	477	S	0	27	S						0	S													0	2	S	Lake Anna, lacustrine. Nutrient data pooled (8-NAR034.92, 8-NAR043.00, 8-NAR044.68). Chla FS 2012, 2014 (Not assessed for TP, algaecides not applied). DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with CMON station 8NAR-1-LACA.
8-NAR043.00	VAN-F07L_NAR02A02	L	YO21	0	386	S	39	324	S	1	386	S	0	26	S						0	S													0	2	S	Lake Anna, lacustrine. Nutrient data pooled (8-NAR034.92, 8-NAR043.00, 8-NAR044.68). Chla FS 2012, 2014 (Not assessed for TP, algaecides not applied). All non-nutrient data pooled (DEQ & CMON) (70/977) S, Temp (0/1222) S, pH (5/1214) S, Wat_Tox (0/83) S, E.coli (0/135) S.
8-NAR044.68	VAN-F07L_NAR02A02	L	YO20	0	171	S	6	139	S	1	171	S	0	13	S						0	S													0	2	S	Lake Anna, lacustrine. Nutrient data pooled (8-NAR034.92, 8-NAR043.00, 8-NAR044.68). Chla FS 2012, 2014 (Not assessed for TP, algaecides not applied). All non-nutrient data pooled (DEQ & CMON) DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																					
8-NAR047.69	VAN-F07L_NAR03A02	L,SS	YO20	0	489	S	62	433	S	0	478	S	0	41	S						0	S																Lake Anna, non-lacustrine, all stations pooled (DEQ & CMON): DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8-NAR054.17	VAN-F07L_NAR04A06	L	YO15	0	230	S	34	180	S	0	221	S	1	27	S						0	S																Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8NAR-12-LACA.
8-NAR058.53	VAN-F07L_NAR04A06	L	YO15	0	40	S	0	32	S	1	38	S	3	16	S						0	S																Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8NAR-12-LACA.
8-NAR061.09	VAN-F06R_NAR01A02	A,TR	YO12	0	34	S	0	33	S	1	34	S	12	34	IM																						
8-NAR063.15	VAN-F06R_NAR01A02	A,SS	YO12	0	1	W	0	1	W	0	1	W													IN													PCB sediment sample
8NAR-12-LACA	VAN-F07L_NAR04A06	CMON	YO15	0	61	S	0	53	S	0	57	S	0	25	S																							Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8NAR-12-LACA.
8NAR-1-LACA	VAN-F07L_NAR01A02	CMON	YO21	0	21	S	0	18	S	0	21	S	0	9	S																							Lake Anna, lacustrine. No nutrient data collected. All non-nutrient data pooled (DEQ & CMON) DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with 8-NAR034.92
8NAR-2-LACA	VAN-F07L_NAR02A02	CMON	YO21	0	73	S	0	69	S	0	69	S	0	25	S																							Lake Anna, lacustrine. No nutrient data collected. All non-nutrient data pooled (DEQ & CMON) (70/977) S, Temp (0/1222) S, pH (5/1214) S, Wat_Tox (0/83) S, E.coli (0/135) S.
8NAR-35-LACA	VAN-F07L_NAR04A06	CMON	YO15	0	28	S	0	27	S	0	26	S	1	24	S																							Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8NAR-12-LACA.
8NAR-3-LACA	VAN-F07L_NAR02A02	CMON	YO21	0	37	S	0	34	S	0	33	S	0	13	S						0	S															IN	Lake Anna, lacustrine. Incomplete monitoring years 2013, 2014 for Chla and TP (Algaecides not applied). All non-nutrient data pooled (DEQ & CMON) DO (70/977) S, Temp (0/1222) S, pH (5/1214) S, Wat_Tox (0/83) S, E.coli (0/135) S.
8NAR-44-LACA	VAN-F07L_NAR04A06	CMON	YO15	0	5	S	0	5	S	1	5	S	0	16	S																							Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8NAR-12-LACA.
8NAR-4-LACA	VAN-F07L_NAR02A02	CMON	YO20	0	57	S	0	53	S	0	57	S	0	22	S						0	S															IN	Lake Anna, lacustrine. Incomplete monitoring years 2013, 2014 for Chla and TP (Algaecides not applied). All non-nutrient data pooled (DEQ & CMON) DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8NAR-EX4-LACA	VAN-F06R_NAR01A02	CMON	YO12	0	8	S	0	8	S	1	8	IN	0	7	S																							Level II data: E. coli (0/1).
8NAR-EX5-LACA	VAN-F06R_NAR01A02	CMON	YO12	0	8	S	0	8	S	0	8	S	2	7	IM																							Level II data: E. coli (1/1).
8-NFD002.26	VAP-F05R_NFD01A00	A	YO10	0	12	S	0	12	S	0	12	S	8	12	IM																							No data since 2014 cycle
8-NIR003.96	VAN-F15R_NIR01A00	A,TR	YO38	0	35	S	0	34	S	0	33	S	2	35	S																							
8-NIR012.99	VAN-F15L_NIR01A02	L	YO38	0	81	S	3	37	S	1	81	S	0	14	S						0	S																Ni River Reservoir, lacustrine: Chla & TP FS (algaecides applied) 2010, 2011
8-NST000.58	VAN-F09R_NST01A08	B	YO22	0	2	S	0	2	S	0	2	S	0	2	S																		FS					
8-NST003.46	VAN-F09R_NST02A98	A,TR	YO22	0	39	S	0	38	S	3	39	S	2	39	S																							
8-NST007.84	VAN-F09R_NST03A08	A,TM	YO22	0	12	S	1	11	S	0	12	S	2	12	IM																							
8-NST011.67	VAN-F09R_NST04A08	A,TM	YO22	0	23	S	0	22	S	1	23	S	4	23	IM																							
8-NTH003.92	VAN-F02L_NTH01A06	L	YO04	0	70	S	1	41	S	2	70	S	0	14	S						0	S													0	2	S	Northeast Creek Reservoir, lacustrine: Chla FS 2012, 2013 (Not assessed for TP, algaecides not applied)
8-OPP000.97	VAP-F13R_OPP01A14	TM	YO30	0	13	S	0	13	S																													No data since 2014 cycle
8-OWN000.48	VAN-F03R_OWN01A04	A,B	YO07	0	14	S	0	14	S	0	14	S	0	12	S																		FS					
8-PCT000.76	VAN-F20R_PCT01A00	A,CB,USGS	YO48	0	44	S	1	44	S	0	43	S									0	S																Data collected by USGS
8-PCT002.29	VAN-F20R_PCT01A00	A,B,TR	YO48	0	34	S	3	34	S	3	33	S	3	32	S																		IM					
8-PCT002.95	VAN-F20R_PCT01A00	FPM,B	YO48	0	2	S	0	2	S	0	2	S	0	1	W					IN	0	S	0	S									J						Biological monitoring indicated an impacted benthic community; however, due to private property concerns and access problems at this location, follow-up monitoring occurred at a nearby site with access.
8-PCT005.44	VAN-F20R_PCT01A00	A,SS	YO48	0	8	S	4	8	IM	0	8	S							0	S	0	S																
8-PCT006.34	VAN-F20R_PCT01A00	A,SS	YO48	0	8	S	5	8	IM	1	8	IN	1	1	W				0	S	0	S																
8-PCT010.10	VAN-F20R_PCT02A02	A,TM	YO48	0	21	S	0	21	S	3	21	IM	3	22	IM																							
8-PGN000.34	VAN-F07L_NAR03A02	L	YO20	0	20	S	0	20	S	0	20	S	0	2	S						0	S																Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8PGN-7-LACA.
8PGN-7-LACA	VAN-F07L_NAR03A02	CMON	YO20	0	69	S	0	61	S	16	69	S	0	24	S																							Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8PGN-7-LACA.
8PHC-P12-LACA	VAN-F07R_PHC01A14	CMON	YO16	0	11	S	1	11	S	0	11	S	4	4	IM																							Level II data: E. coli (2/8).
8-PLD001.73	VAP-F12R_PLD01A12	TM	YO28	0	12	S	0	12	S	8	12	IM	2	12	IM																							No new data since 2012 cycle
8-PLS001.28	VAN-F07R_PLS01A12	A,SS	YO17	0	1	W	0	1	W	0	1	W													IN													PCB sediment sample
8-PLT002.82	VAN-F07R_PLT01A00	A,SS	YO18	0	1	W	0	1	W	0	1	W													IN													PCB sediment sample

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																						
8-PLT004.82	VAN-F07R_PLT01A00	SS	YO18																						IN													PCB sediment sample
8PLT-36-LACA	VAN-F07L_PLT01A04	CMON	YO18	0	40	S	0	40	S	2	35	S	2	26	S						0	S																Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8PLT-9-LACA	VAN-F07L_PLT01A04	CMON	YO18	0	72	S	0	64	S	4	63	S	0	24	S																						Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8-PMC002.13	VAN-F07L_PMC01A04	L,SS	YO18	0	246	S	25	216	S	0	246	S	0	26	S						0	S																Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8-PMC007.15	VAN-F07L_PMC02A02	L,SS	YO16	0	65	S	0	53	S	5	65	S	0	13	S						0	S																Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8PMC-11-LACA.
8-PMC009.85	VAN-F07R_PMC01A00	A,TR,SS	YO16	0	34	S	0	33	S	0	34	S	16	33	IM										IN													PCB sediment sample
8-PMC014.75	VAN-F07R_PMC02A02	A,B	YO16	0	13	S	0	13	S	0	13	S	3	12	IM																IM							
8PMC-11-LACA	VAN-F07L_PMC02A02	CMON	YO16	0	56	S	0	50	S	0	56	S	2	18	S																								Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with DEQ monitoring station 8-PMC007.15.
8PMC-38-LACA	VAN-F07L_PMC02A02	CMON	YO16	0	25	S	0	21	S	1	25	S	2	25	S						4	S																Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8PMC-8-LACA	VAN-F07L_PMC01A04	CMON	YO18	0	73	S	0	65	S	4	64	S	0	25	S																								Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S.
8PMC-LAB-DCR	VAN-F07L_PMC01A04	NONA	YO18										0	57	IN																								Lake Anna, non-lacustrine, Level II data: E.coli (0/57)
8PMC-P3-LACA	VAN-F07R_PMC01A00	CMON	YO16	0	12	S	0	12	S	0	12	S	3	4	IM																								Level II data: E. coli (0/8).
8PMC-P6-LACA	VAN-F07R_PMC02A02	CMON	YO16	0	12	S	0	12	S	0	12	S	2	4	IM																								Level II data: E. coli (0/9).
8-PMK000.77	VAP-F14E_PMK07A04	SS,TM	YO37		13	NA		13		0	13	S																										
8-PMK006.36	VAP-F14E_PMK06A00	CB,TR	YO37		272	NA		272		1	271	S				16	57	IM			0	S														59		
8-PMK009.34	VAP-F14E_PMK06A00	C2,B	YO37		8	NA		8		0	8	W				0	1	W	0	IN			0	S	0	S					FS					3		2009 WOE: Category 2A, OH Scenario 2; 1 sample event; no data since 2012 cycle
8-PMK016.23	VAP-F14E_PMK06A00	TM	YO37		12	NA		12		0	12	S				1	12	S																				
8-PMK016.95	VAP-F14E_PMK06A00	C2,B	YO37		8	NA		8		0	8	W				0	1	W	0	IN			1	O	0	S					J					1		One sample event; 2013 WOE: TF-M category 3B, scenario 1 (Cd > PEC <ER-M)
8-PMK017.90	VAP-F14E_PMK05B00	C2,B	YO37		13	NA		13		0	13	W				0	1	W			0	IN	1	O	0	S					IM					1		One sample event; 2012 WOE: category 5A scenario 1 (high potential due to multiple metal contamination of sed); ER-M zinc exceedance; no data since 2014 cycle
8-PMK021.55	VAP-F14E_PMK05B00	C2,B	YO37		6	NA		6		0	6	W				0	1	W			0	IN	0	S	0	S					FS					1		One sample event; 2012 WOE: category 2A TF-S scenario 4; no data since 2014 cycle
8-PMK021.58	VAP-F14E_PMK05B00	A,TM	YO37		24	NA		24		0	24	S				1	12	S																		6		No data since 2014 cycle
8-PMK025.87	VAP-F14E_PMK02A00	A,TM	YO36		12	NA		12		0	12	S	2	12	IM																							No data since 2014 cycle
8-PMK026.69	VAP-F14E_PMK02A00	C2,B	YO36		4	NA		4		0	4	W	0	1	W						0	W	1	O	0	S					J					1		One sample event; WOE 2013: TF-M scenario 6, Category 2B; Cd sed >PEC
8-PMK028.43	VAP-F14E_PMK02A00	TM	YO36		12	NA		12		0	12	S																										No data since 2014 cycle
8-PMK031.27	VAP-F14E_PMK02A00	C2,B	YO36		7	NA		7		0	7	W	0	1	W						0	W	0	S	0	S					FS					1		One sample event; WOE 2014: TF-M scenario 2, Category 2A
8-PMK034.17	VAP-F14E_PMK02A00	CB,TR	YO36		385	NA		379		6	385	S	4	69	S						0	S														69		
8-PMK039.74	VAP-F13E_PMK02A98	A	YO34		24	NA		24		0	24	S	2	12	IM																								No E. coli data since 2014 cycle
8-PMK044.64	VAP-F13E_PMK02A98	A,TM	YO34		24	NA		24		0	24	S	0	12	S																								No E. coli data since 2014 cycle
8-PMK048.80	VAP-F13E_PMK02A98	A,TM,TR	YO34		25	NA		25		0	35	S	5	30	IM																								
8-PMK051.83	VAP-F13E_PMK01A98	SS	YO31		1	NA		1		0	1	W																											no new data since 2012 cycle
8-PMK053.39	VAP-F13E_PMK01A98	SS	YO31		3	NA		3		0	3	S																											no new data since 2012 cycle
8-PMK056.87	VAP-F13E_PMK01A98	A,TR	YO31		65	NA		65		1	65	S	8	39	IM																								
8-PMK064.73	VAP-F13R_PMK01A98	TM	YO29	0	12	S	0	12	S	0	12	S	1	11	S																								
8-PMK070.45	VAP-F13R_PMK01A98	FPM	YO29	0	1	W	0	1	W	0	1	W	0	1	W				0	IN	0	IN																2013 metals
8-PMK072.34	VAP-F12R_PMK01A00	A,TM,PA	YO29	0	36	S	0	36	S	0	36	S	2	24	S																								
8-PMK082.34	VAP-F12R_PMK01B08	A,CB,TM,TR	YO27	0	153	S	0	150	S	2	153	S	12	58	IM						0	S																Trend Station - increasing alkalinity, temp, DO sat, TN, TSS
8-PMK088.11	VAP-F12R_PMK01B08	A,TM	YO27	0	36	S	0	36	S	1	36	S	2	24	S																								
8-PMK088.14	VAP-F12R_PMK01B08	FPM,B	YO27	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S																2012 benthics; no data since 2014 cycle
8-PMK092.12	VAP-F12R_PMK01B08	FPM,B	YO27	0	2	S	0	2	S	0	2	S	0	1	W				0	IN	0	S	0	S														2010 sed; 2010 benthics; no new data since 2012 cycle
8-PNI002.43	VAN-F17R_PNI01A10	A,TM	YO42	0	21	S	0	21	S	1	21	S	3	22	IM																								
8-PON000.35	VAP-F13R_PON01A02	TM	YO30	0	13	S	0	13	S	0	13	S																										No data since 2014 cycle
8-POP000.58	VAT-F27E_POP01A16	C2,B	YO68																												FS					13		C2 Benthic ProbMon, YRKPH
8-POR004.13	VAN-F16R_POR01A10	A,TM	YO41	0	10	S	0	10	S	0	10	S	1	11	S																								
8-POR008.97	VAN-F16R_POR01B02	A,B,CB	YO41	0	75	S	1	75	S	0	74	S	7	69	S						0	S										FS							
8-POR015.70	VAN-F16R_POR01C06	FPM,B	YO39	0	4	S	0	4	S	0	4	S	0	2	S						0	S	0	S								J							Biological monitoring indicated an impacted benthic community; however, due to private property concerns and access problems at this location, follow-up monitoring will occur at a nearby site with access. An observed effect is noted.
8-POR016.04	VAN-F16R_POR01C06	A	YO39	0	11	S	0	11	S	1	11	S	1	11	S																								

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																						
8-POR023.95	VAN-F16R_POR02B10	B	YO39	0	4	S	0	4	S	0	4	S																			FS							
8-QEN002.47	VAT-F26E_QEN01A02	A,TR	YO67					35	IM	0	35	S				10	32	IM																				YRKMH
8-QEN007.02	VAT-F26L_QEN01A06	L	YO67	0	139	S	4	58	IM	1	139	S	0	13	S						0	S												0	2	S	Waller Mill pooled nutrient data: Chlorophyll a (0 viol / 2 obs) S 2013, 2010 (no algaecide application). Waller Mill pooled DO and pH data: DO (30 viol / 212 obs) IM, pH (1 viol / 387 obs) S. Water Toxics: NH3 = S.
8-QEN007.22	VAT-F26L_QEN01A06	L	YO67	0	84	S	10	52	IM	0	84	S	0	13	S						0	S															Waller Mill pooled DO and pH data: DO (30 viol / 212 obs) IM, pH (1 viol / 387 obs) S. Water Toxics: NH3 = S.
8-QEN007.65	VAT-F26L_QEN01A06	L	YO67	0	109	S	13	60	IM	0	109	S	0	14	S						0	S															Waller Mill pooled DO and pH data: DO (30 viol / 212 obs) IM, pH (1 viol / 387 obs) S. Water Toxics: NH3 = S.
8-QEN008.58	VAT-F26L_QEN01A06	L	YO67	0	55	S	3	42	IM	0	55	S	0	11	S						0	S															Waller Mill pooled DO and pH data: DO (30 viol / 212 obs) IM, pH (1 viol / 387 obs) S. Water Toxics: NH3 = S.
8QEN-COLOQCUT1-NPSN	VAT-F26E_QEN01A02	NONA	YO67					2	IM																												National Park Service Northeast Coastal & Barrier Network, ChesBay Analysis CBPSEG: YRKMH.
8-RDB001.72	VAN-F02R_RDB01A04	A	YO03	0	11	S	0	10	S	0	11	S	6	11	IM																						
8-RDB003.36	VAN-F02R_RDB01A04	FPM,B	YO03	0	2	S	0	2	S	0	2	S	0	1	W					IN	0	S									FS						
8-RDY003.43	VAN-F21R_RDY02A10	A,B	YO49	0	13	S	0	13	S	0	13	S	1	11	S																IM						
8-RIG003.01	VAN-F07R_RIG01A02	FPM,B	YO17	0	2	S	0	2	S	0	2	S	0	1	W					IN	0	S	0	S							FS						Water metal data pooled with 8-RIG004.13.
8-RIG004.13	VAN-F07R_RIG01A02	FPM,B	YO17	0	2	S	0	2	S	0	1	W	0	1	W					IN		IN	0	S							FS						Water metal data pooled with 8-RIG003.01.
8RIG-T10A-LACA	VAN-F07R_RIG01A02	CMON	YO17	0	12	S	0	12	S	1	12	IN	2	4	IM																						Level II data: E. coli (1/8).
8RIG-T12-LACA	VAN-F07R_RIG01A02	CMON	YO17	0	12	S	0	12	S	0	12	S	2	4	IM																						Level II data: E. coli (3/7).
8-RKC001.35	VAN-F02R_RKC01A16	A	YO03	0	12	S	0	12	S	0	12	S	2	12	IM																						
8ROC-T5-LACA	VAN-F07R_ROC01A10	CMON	YO17	0	12	S	0	12	S	0	12	S	4	4	IM																						Level II data: E. coli (3/8).
8ROC-T8-LACA	VAN-F07R_ROC01A10	CMON	YO17	0	12	S	0	12	S	0	12	S	3	4	IM																						Level II data: E. coli (2/8).
8-ROT001.09	VAN-F22R_ROT01A06	A,B	YO52	0	19	S	0	18	S	3	19	IM	4	18	IM																FS						
8-ROT003.65	VAN-F22R_ROT01A06	A,TM	YO52	0	11	S	1	11	S	5	11	IM	1	11	S																						
8-SAR001.11	VAP-F04R_SAR03A98	A,CB,TR	YO11	0	50	S	0	50	S	1	50	S	12	37	IM																						Trend Station - increasing temp, DO, pH, TN
8-SAR021.22	VAP-F04R_SAR01A98	A,B	YO11	0	14	S	0	14	S	0	14	S	6	12	IM																FS						2010 benthics; no data since 2014 cycle
8-SAR028.79	VAN-F03R_SAR01A16	FPM,B	YO09	0	1	W	0	1	W	0	1	W	0	1	W					IN		IN									FS						
8-SAR030.01	VAN-F03R_SAR01B06	PA	YO09	0	12	S	0	11	S	0	12	S	1	12	S																						
8-SAR035.05	VAN-F03R_SAR01B06	A,TR	YO09	0	34	S	0	33	S	0	34	S	4	33	IM																						
8-SAR068.57	VAN-F03R_SAR03A06	A,TR	YO05	0	34	S	0	33	S	0	34	S	4	34	IM																						
8-SAR076.10	VAN-F02R_SAR01A00	B	YO04	0	2	S	0	2	S	0	2	S																			J						Fully supporting with observed effects. Dry conditions most of 2012. Site revisit recommended.
8-SAR089.35	VAN-F02R_SAR02A00	A,TR	YO03	0	34	S	1	32	S	0	34	S	11	34	IM																						
8-SAR093.47	VAN-F01R_SAR01A02	PA	YO01	0	12	S	0	11	S	0	12	S	1	12	S																						Colocated with 8SAR-F01B-HGSI
8-SAR094.59	VAN-F01R_SAR01A02	FPM,B	YO01	0	2	S	0	2	S	0	2	S	0	1	W					IN	0	S									FS						
8SAR-F01A-HGSI	VAN-F01R_SAR01A02	CMON	YO01	0	8	S	0	8	S	0	8	IN																									
8SAR-F01B-HGSI	VAN-F01R_SAR01A02	CMON	YO01	0	8	S	0	8	S	0	8	IN																									Colocated with 8-SAR093.47
8SAR-F02C-HGSI	VAN-F02R_SAR01A00	CMON	YO04	0	8	S	0	8	S	0	7	IN																									
8SAR-F02-HGSI	VAN-F02R_SAR02A00	CMON	YO03	0	3	S	0	3	S	0	3	IN																									
8SAR-F03A-HGSI	VAN-F03R_SAR02A02	CMON	YO05	0	8	S	0	8	S	0	8	IN																									
8SAR-F03B-HGSI	VAN-F03R_SAR01B06	CMON	YO07	0	2	S	0	2	IN	0	2	IN																									
8-SAR-SA1-ACB	VAP-F04R_SAR01A98	CMON	YO11	0	5	S	0	3	S	0	5	S	2	5	IN/O																						ACB - Level III Temp, DO, pH, Level II E. coli
8-SHC001.59	VAP-F04R_SHC01A12	FPM,B	YO11	0	2	S	0	2	S	0	2	S	1	1	W				0	IN	0	S	0	S							IN						2010 sed; 2010 Probmon; no new data since 2012 cycle
8-SHP001.14	VAN-F03R_SHP01A16	A	YO09	0	12	S	0	12	S	0	12	S	1	12	S																						
8-SLD-7-RMC	VAP-F12R_SLD01A04	CMON	YO27										0	4	IN																						Level 2 data - Randolph Macon College; no data since 2014 cycle
8-SLN001.46	VAP-F13R_SLN01A00	TM	YO29	0	12	S	5	12	IM	6	11	IM									0	S															No new data since 2012 cycle
8-SLN003.07	VAP-F13R_SLN01A00	TM	YO29	0	12	S	2	12	IM	6	11	IM																									No new data since 2012 cycle
8-STG000.73	VAP-F04R_STG01A06	FPM,B	YO11	0	2	S	0	2	S	1	2	IN	0	1	W				0	IN	0	S	0	S							FS						2009 Probmon; no new data since 2012 cycle
8-STG005.46	VAP-F04R_STG01A06	TM	YO11	0	9	S	1	9	IN	3	9	IM									0	S															
8-STH004.37	VAN-F19R_STH01A00	A,TR	YO46	0	29	S	0	29	S	0	28	S	1	29	S																						
8-STH010.79	VAN-F19R_STH03A08	A	YO46	0	11	S	1	11	S	0	11	S	0	11	S																						
8-THK000.09	VAN-F07R_THK01A02	A,SS	YO16	0	1	W	0	1	W	0	1	W												IN													PCB sediment sample
8THK-P10-LACA	VAN-F07R_THK01A02	CMON	YO16	0	12	S	0	12	S	0	12	S	4	4	IM																						Level II data: E. coli (3/8).
8-TLR005.30	VAN-F03R_TLR01A00	FPM,B	YO08	0	2	S	0	2	S	0	2	S	0	1	W					IN	0	S									IM						
8-TLR005.50	VAN-F03R_TLR01A00	A,PA	YO08	0	23	S	0	23	S	0	23	S	2	23	S																						
8-TLR009.82	VAN-F03R_TLR01A00	A	YO08	0	12	S	0	12	S	0	12	S	2	12	IM																						
8-TLR014.44	VAN-F03R_TLR01A00	B	YO08	0	2	S	1	2	IN	0	2	S																			IM						
8TLR-TAY2-ALL	VAN-F03R_TLR01A00	CMON	YO08	0	34	S	1	34	S	0	32	S	0	18	IN																						
8TLR-TAY3-ALL	VAN-F03R_TLR01A00	CMON	YO08	0	5	S	0	3	S	0	5	S	1	5	IN																						Level II data: DO (0/2).
8-TPT000.79	VAP-F13R_TPT01A98	TM	YO30	0	25	S	0	25	S	0	25	S	2	10	IM																						
8-TPT004.37	VAP-F13R_TPT01A98	PA,TM	YO30	0	13	S	0	13	S	0	13	S									0	S															
8-TPT006.97	VAP-F13R_TPT01A98	TM	YO30	0	13	S	6	13	IM	0	13	S																									No data since 2014 cycle
8-TPT009.17	VAP-F13R_TPT01A98	TM	YO30	0	13	S	4	13	IM	0	13	S																									No data since 2014 cycle
8-TPT010.77	VAP-F13R_TPT02A14	TM	YO30	0	13	S	0	13	S	0	13	S																									No data since 2014 cycle
8-TPT012.77	VAP-F13R_TPT02A14	TM	YO30	0	13	S	0	13	S	0	13	S																									No data since 2014 cycle

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																						
8-TPT013.57	VAP-F13R_TPT02A14	TM	YO30	0	13	S	3	13	IM	0	13	S																										No data since 2014 cycle
8-TPT015.04	VAP-F13R_TPT02A14	TM	YO30	0	13	S	1	13	S	0	13	S																										No data since 2014 cycle
8-TPT016.30	VAP-F13R_TPT02A14	TM	YO30	0	13	S	2	13	IM	0	13	S																										No data since 2014 cycle
8-TPT-RICH-05-NPS	VAP-F13R_TPT01A98	NONA	YO30	0	18	S	1	18	S	0	17	S																										NPS - level 3
8-TPT-TOTC1-ACB	VAP-F13R_TPT01A98	CMON	YO30	0	11	S	5	11	IN/O	1	11	S	1	11	IN																							ACB - Level III Temp, pH, Level II E. coli, Level II/III DO
8-TRY001.39	VAN-F07L_TRY01A04	L,SS	YO17	0	44	S	0	40	S	7	44	S	0	12	S								0	S														Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with citizen monitoring station 8TRY-10-LACA.
8-TRY004.98	VAN-F07R_TRY01A00	A,TM,SS	YO17	0	19	S	0	19	S	0	19	S	5	18	IM												IN										PCB sediment sample
8TRY-10-LACA	VAN-F07L_TRY01A04	CMON	YO17	0	68	S	0	59	S	0	68	S	0	20	S																							Lake Anna, non-lacustrine, all stations (DEQ & CMON) pooled. DO (192/2649) S, Temp (0/3151) S, pH (37/3090) S, Wat_Tox (6/295) S, E.coli (13/586) S. Colocated with DEQ monitoring station 8-TRY001.39.
8TRY-37-LACA	VAN-F07R_TRY01A00	CMON	YO17	0	26	S	0	25	S	0	25	S	3	24	IM																							
8TRY-T1-LACA	VAN-F07R_TRY01A00	CMON	YO17	0	12	S	1	12	IN	0	12	S	2	4	IM																							Level II data: E. coli (1/8).
8TRY-T3-LACA	VAN-F07R_TRY02A02	CMON	YO17	0	12	S	0	12	S	0	12	S	4	4	IM																							Level II data: E. coli (0/8).
8TRY-T6-LACA	VAN-F07R_TRY03A08	CMON	YO17	0	12	S	0	12	S	0	12	S	1	4	IN																							Level II data: E. coli (1/8).
8-TST001.35	VAP-F25R_TST01A98	TM	YO61	0	11	S	2	11	IM	0	11	S																										No data since 2014 cycle
8-TST001.81	VAP-F25R_TST01A98	TM	YO61	0	12	S	2	12	IM	0	12	S											0	S														
8-WEB002.00	VAP-F13R_MNQ01A98	TM	YO32	0	6	S	0	6	S	4	6	IM																										No new data since 2012 cycle
8-WHT001.33	VAN-F06R_WHT01A14	A	YO14	0	12	S	0	12	S	0	12	S	8	12	IM																							
8-WKN000.42	VAP-F23R_WKN02A12	TM	YO57	0	23	S	0	23	S	2	23	S	0	11	S																							No data since 2014 cycle
8-WKN003.16	VAP-F23R_WKN01A00	A	YO57	0	11	S	3	11	IM	4	11	IM											0	S														No data since 2014 cycle
8-WLR000.26	VAN-F01R_WLR01A04	A,B,SS	YO02	0	2	S	0	2	S	0	2	S	0	1	W																						FS	
8-WLR000.31	VAN-F01R_WLR01B10	A,B,SS	YO02	0	22	S	0	21	S	0	22	S	13	19	IM																						IM	
8WLR-F02B-HGSI	VAN-F01R_WLR01A04	CMON	YO02	0	7	S	0	7	S	0	7	IN																										
8-WOR000.72	VAT-F27E_WOR01A08	C2,B	YO69																																		J	14 C2 Benthic ProbMon, YRKPH
8-XBS000.17	VAP-F13R_XBS01A14	TM	YO30	0	13	S	1	13	S	0	13	S																										No data since 2014 cycle
8-XDM000.50	VAP-F14R_XDM01A00	A	YO36	0	12	S	1	12	S	1	12	S											0	S														No data since 2014 cycle
8-XDN000.12	VAP-F23R_XDN01A00	TM	YO58	0	23	S	0	23	S	1	23	S	2	11	IM																							No data since 2014 cycle; E. coli impairment mistakenly left off
8-XDW000.67	VAP-F13R_XDW01A08	SS,TM	YO31	0	24	S	1	24	S	4	23	IM	2	12	IM								0	S														elevated nitrates but no violation
8-XDX000.38	VAP-F13R_XDX01A04	SS	YO31	0	12	S	0	12	S	2	11	IM	3	12	IM																							No new data since 2012 cycle
8-XEG-15-RMC	VAP-F12R_XEG01A06	CMON	YO27										5	8	IN/O																							Randolph Macon College - level 2; no data since 2014 cycle
8-XEG-2-RMC	VAP-F12R_XEG01A06	CMON	YO27										1	4	IN/O																							Level 2 data - Randolph Macon College; no data since 2014 cycle
8-XHS000.49	VAP-F09R_XHS01A08	A,TM,B	YO26	0	52	S	0	51	S	0	51	S											0	S													IM	2011 and 2012 benthics
8-XHS000.72	VAP-F09R_XHS01A08	B,SS	YO26	0	2	S	0	2	S	0	2	S											0	IN													IM	No data since 2014 cycle; 2011 benthics
8-XIA000.89	VAN-F09R_XIA01A06	A,TM	YO22	0	12	S	0	11	S	0	12	S	3	12	IM																							
8-XIM000.53	VAP-F09R_XIM01A10	TM	YO26	0	12	S	0	12	S	2	12	IM											0	S														PWS
8-XIV000.88	VAP-F13R_MHX01A12	TM	YO29	0	12	S	0	12	S	4	11	IM																										No new data since 2012 cycle
8-XIW000.42	VAP-F13R_XIW01A12	TM	YO35	0	20	S	0	20	S	0	20	S	3	11	IM																							No data since 2014 cycle
8-XJA001.73	VAN-F07R_XJA01A12	A,SS	YO16	0	1	W	0	1	W	0	1	W															IN										PCB sediment sample
8-XJB000.47	VAN-F21R_XJB01A12	FPM	YO55	0	2	S	1	2	IN	1	2	IN	0	1	W						IN		0	S	0	S												
8-XJC001.12	VAP-F12R_XJC01A12	TM	YO28	0	12	S	0	12	S	5	12	IM	5	12	IM																							No new data since 2012 cycle
8-XJD000.02	VAP-F14R_XJD01A12	TM	YO36	0	11	S	1	11	S	5	11	IM	4	12	IM																							No data since 2014 cycle
8-XJE000.48	VAN-F11R_XJE01A14	FPM,B	YO24	0	2	S	0	2	S	0	2	S	0	1	W						IN		0	S													FS	
8-XJF000.27	VAN-F09R_XJF01A14	FPM,B	YO22	0	2	S	0	2	S	0	2	S	0	1	W						IN		0	S	0	S											IN	Borderline swamp with very deep channel resulting in insufficient sample size, and, therefore, an invalid sample. Location is on private property and very difficult to access.
8-XJG000.08	VAP-F23R_XJG01A14	TM	YO58	0	12	S	0	12	S	0	12	S	5	12	IM																							No data since 2014 cycle
8XJK-10-NPS	VAN-F15R_XJK01A12	NONA	YO38	0	52	S	4	51	S	0	52	S																										
8XJK-13-NPS	VAN-F15R_XJK01A12	NONA	YO38	0	2	S	0	2	S	0	2	S																										
8XJK-18-NPS	VAN-F15R_XJK01A12	NONA	YO38	0	52	S	0	51	S	0	52	S																										
8XJL-11-NPS	VAN-F15R_XJL01A12	NONA	YO38	0	51	S	1	50	S	0	51	S																										
8XJM-02-NPS	VAN-F15R_XJM01A12	NONA	YO38	0	51	S	9	50	IM	6	51	IM																										
8XJN-09-NPS	VAN-F15R_XJN01A12	NONA	YO38	0	52	S	0	51	S	3	52	S																										
8-XJP000.01	VAP-F09R_XJP01A14	TM	YO26	0	7	S	0	7	S	6	7	IM											0	S														
8-XJV001.81	VAN-F17R_XJV01A16	B	YO42	0	4	S	0	4	S	1	4	IN																									J	
8-XJW-16A-RMC	VAP-F12R_XJW01A14	CMON	YO27										2	2	IN/O																							Level 2 data - Randolph Macon College - no new data since 2012 cycle
8-XJW-16-RMC	VAP-F12R_XJW01A14	CMON	YO27										6	8	IN/O																							Level 2 data - Randolph Macon College; no data since 2014 cycle
8-XJY000.81	VAP-F24R_ZZZ01B14	SS	YO60	0	1	W	0	1	W	1	1	W											0	IN														
8-XJZ000.06	VAP-F24R_ZZZ01B14	SS	YO60	0	1	W	0	1	W	1	1	W											0	IN														
8-YRK001.64	VAT-F27E_YRK02C00	A,CB,TR	YO69					812	IM	0	812	S				0	58	S																			YRKPH
8-YRK011.14	VAT-F27E_YRK01A00	A,TR	YO68					1034	IM	0	1034	S				0	61	S																			YRKPH

Appendix 9 – Water Quality Monitoring Stations List

Station ID	Assessment Unit ID	Station Type(s)	VAHU6	CONVENTIONAL WATER COLUMN DATA									BACTERIA						WATER COLUMN				SEDIMENT				FISH TISSUE				BENTHIC	NUTRIENTS *						COMMENTS
				Temperature			Dissolved Oxygen			pH			E. coli			Enterococci			Metals		Other Toxics		Metals		Other Toxics		Metals		Other Toxics		BioMon	Total Phosphorous			Chlorophyll a			
				Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Samples	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Exceed	Status	Status	Exceed	Samples	Status	Exceed	Samples	Status	
York River Basin																																					
8-YRK022.70	VAT-F26E_YRK03A00	A,CB,TR,C	YO65					553	IM	0	553	S				0	59	S									0	S	1	O								2008 -OE Ftox_PCB in Spot; YRKMH
8-YRK031.39	VAT-F26E_YRK01A04	A,CB,TR	YO63					313	IM	0	313	S				7	59	IM																				YRKMH
PMK012.18	VAP-F14E_PMK06A00	CB	YO37		770	NA		770		1	893	S																										VIMS ConMon
PMK034.00	VAP-F14E_PMK02A00	CB	YO36		1211	NA		1211		0	1616	S																										VIMS ConMon
TF4.2	VAP-F14E_PMK02A00	CB-B	YO36																																			B-IBI = multiple; PMKTF
TSK000.23	VAT-F26E_TSK01A00	CB	YO65					1293	IM	23	1930	S																											Collected by VIMS, CONMON used for pH, ChesBay Analysis CBPSEG: YRKMH.
VA482894	VAT-F27E_YRK01D06	VDHB	YO69													1	20	IM																				Monthly Geometric Mean violation in 2013 along with multiple swimming advisories; no event to associate so new impairment in 2016 IR. YRKPH
VA714367	VAT-F27E_YRK01E06	VDHB	YO69													1	20	IM																				Monthly Geometric Mean violation in 2014 along with multiple swimming advisories; no event to associate so new impairment in 2016 IR. YRKPH.
WE4.2	VACB-R01E-MOB	CB	YO69		948	NA		482			948	S										0	S													160	NA	
YRK005.40	VAT-F27E_YRK02A00	CB	YO69					2059	IM	0	2067	S																											VIMS-ConMon, YRKPH
YRK015.09	VAT-F26E_YRK03A00	CB	YO66					1182	IM	0	1370	S																											VIMS-ConMon, YRKMH

* For lake/reservoir NUTRIENTS (i.e. Total Phosphorus or Chlorophyll a), "Exceed" refers to the number of exceedences of the Water Quality Standards criteria per monitoring year (April-October) and "Samples" represent the number of monitoring years. A minimum of two monitoring years are required to make a supporting (S) or impaired (IM) assessment determination. Less than two full monitoring years result in an insufficient (IN) determination. Also, nutrients are only assessed in lakes listed in Section 187 of the WQS if there is documented algaecide use.

NOTE: Values in VAHU6 refer to the 6th order watershed in version 4 of Virginia's portion of the National Watershed Boundary Dataset as it was the most current dataset available during the 2016 assessment data window.