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NPS Sampling and Analysis Plan

Cape Cod National Seashore

Herring River Restoration Project Mill Creek Water Control Structure

Prepared by



1/3/2025



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List of Abbreviations and Acronyms

CACO	Cape Cod National Seashore
COPC	Contaminant of Potential Concern
CSM	Conceptual Site Model
DEP	Department of Environmental Protection
DQI	Data Quality Indicator
DQO	Data Quality Objective
DU	Decision Unit
EDD	Electronic Data Deliverable
FSP	Field Sampling Plan
GPS	Global Positioning System
HRRP	Herring River Restoration Project
IDQTF	Intergovernmental Data Quality Task Force
IDW	Investigative-Derived Waste
ISM	Incremental Sampling Methodology
ITRC	Interstate Technology & Regulatory Council
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LIMS	Laboratory Information Management System
LOQ	Limit of Quantitation
MA	Massachusetts
MS/MD	Matrix Spike/Matrix Duplicate
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NELAP	National Environmental Laboratory Accreditation Program
NPS	National Park Service
PAH	Polycyclic Aromatic Hydrocarbon
PCBs	Polychlorinated biphenyls
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedure
SSMU	Sediment and Soil Management Unit



TOC	Total Organic Carbon
UCL	Upper Confidence Limit
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
WHG	Woods Hole Group



1 Introduction

This document serves as the Sampling and Analysis Plan (SAP) for the Herring River Restoration Project (HRRP) Mill Creek Water Control Structure (WCS) management unit. The Mill Creek WCS Sediment and Soil Management Unit (SSMU) is located within Cape Cod National Seashore (CACO), in Barnstable County, Massachusetts (MA). This sampling program will support the National Park Service (NPS) in implementing the HRRP by characterizing material to determine if it is suitable for reuse within CACO. A WCS is being constructed across Mill Creek to allow a partial, controlled re-introduction of tidal exchange in the Mill Creek sub-basin. Construction of the WCS required removal of sediment and soil which will need to be managed by either surface placement or burial, or removal off-Site. This study will characterize the sediment and soil to assist with determining management options based on the chemical concentrations of the dredged and excavated material.

The purpose of this SAP is to define:

- The purpose of this study;
- The use for the data generated;
- The quality of data needed to accomplish the goals of this study; and
- The data collection method.

This SAP was generated in accordance with the United States Environmental Protection Agency's (USEPA) Guidance on Systematic Planning Using the Data Quality Objectives Process (USEPA 2006a), Guidance for Quality Assurance Project Plans (USEPA 2002a), EPA Requirements for Quality Assurance Project Plans (USEPA 2001), and the Intergovernmental Data Quality Task Force's (IDQTF) Uniform Federal Policy for Quality Assurance Project Plans (IDQTF 2005).

The SAP comprises two parts: Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP). The FSP describes the number, types, and locations of samples and the types of analyses that will be conducted on the samples. The QAPP describes the project's policy, organization, and functional activities and the data quality objectives (DQOs) and measures necessary to achieve the goals of the study.

1.1 Purpose of Field Sampling

The purpose of this sampling event is to characterize material dredged and excavated from this SSMU in to determine if it is suitable for reuse within CACO. NPS will use data collected during this field investigation along with the decision management framework described in the Sediment and Soil Management Framework (SSMF; included as Appendix 1) in determining appropriate sediment management options for this SSMU. This SAP proposes the following activities:

- Collecting sediment samples from a stockpile of sediment dredged from Mill Creek and collecting soil samples from a stockpile of soil excavated to support construction of the WCS; and



- Analyzing sediment and soil samples for pesticides, herbicides, 13 priority pollutant metals, hexavalent chromium, polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), and total organic carbon (TOC) and grain size for sediment only.

NPS will use the data obtained from this investigation in accordance with the provisions outlined in the DQOs detailed in Section 4. Following completion of this investigation, a Sediment and Soil Management Plan for this SSMU will be prepared to report the results of the investigation and the sediment and soil management decisions as guided by the SSMF.

1.2 Sediment Management Unit Location

The SSMU is located in CACO in Wellfleet MA, south of Old Chequessett Neck Road and north of Chequessett Neck Road (see Figures 1 and 2). Mill Creek flows through the town of Wellfleet and is a tributary of the lower Herring River. An access road has been constructed off of Old Chequessett Neck Road to gain access to the SSMU.



2 Site Description, Previous Investigations, and Conceptual Site Model

This section summarizes the relevant environmental information and historical activities that have occurred to support the HRRP and presents the SSMU conceptual site model (CSM). The development of a clear and thorough CSM is a critical component for ensuring that key SSMU elements are considered before any samples are collected, gaining stakeholder approval, assisting the planning team in developing the DQOs (Section 4), and assisting the field team in making decisions in the field.

2.1 HRRP and SSMU Operational History

The HRRP site is an 1,100-acre floodplain located in and adjacent to CACO with over 6 miles of waterway. Modifications to the historically intertidal flood plain have led to reduced tidal flow, allowing seawater to extend only three-quarters of a mile upstream resulting in only 6.4-acres of vegetated salt marsh (less than 1% of the original salt marsh area). In 1909 a dike at Chequessett Neck Road was constructed to block tidal flow, purportedly to eliminate mosquitos. By that time, a tidal outlet at Duck Harbor closed through natural shoreline processes, further diminishing tidal exchange. In 1910, mosquito control drainage intensified in the diked wetlands, and in the 1920s and 1930s Herring River was straightened and channelized to increase drainage, leading to a rapid replacement of salt marsh grasses with freshwater wetland and upland plants. In addition, pesticides may have been historically introduced into the regional waterway and wetland areas to combat pests and support agriculture throughout Cape Cod and may be ubiquitous to these ecosystems in the region (Brody et al. 2002).

In 1984 NPS requested that Cape Cod Mosquito Control discontinue annual stream channelization in order to avoid chronic water quality degradation. The river was listed as impaired under the federal Clean Water Act in 2003, for low pH and metals caused by diking and drainage (NPS 2015). NPS and the Town of Wellfleet entered into the first of several Memoranda of Understanding in 2005 to plan, permit, and implement the HRRP to re-establish tidal exchange to the Herring River estuary and thereby remediate degraded conditions and restore native wetland habitats.

The sampling area is on land owned by NPS and is undeveloped marshland between Old Chequessett Neck Road and the Chequessett Club located on Chequessett Neck Road. After the Herring River was diked in 1909, portions of the Mill creek area were developed into private residences and the Chequessett Club golf course. Due to the restrictions of the tides caused by the dike at Chequessett Neck Road, invasive plants and upland vegetation have overgrown the surrounding Mill Creek area and block water flow through the creek. The blockage has contributed to the restricted tidal exchange by restricting natural tides even further and making it difficult for water to properly drain from Mill Creek.

As tides return to the Herring River estuary as the HRRP progresses, certain properties around Mill Creek may be submerged during flood tides, necessitating protection measures before tidal flow can be fully restored. To address this, NPS is building a WCS to regulate tides entering Mill Creek and shield low-lying areas from flood tides. This structure will feature a steel sheet pile wall with five adjustable tide gates. The tide gates are designed to completely open during low tide periods, ensuring that water will drain properly from the basin, but will control the extent of high tide that would otherwise impact properties (NPS 2024).



2.2 Due Diligence Assessment

A due diligence assessment was completed to determine analytical requirement recommendations for characterization of sediment and soil being proposed for reuse from this SSMU, and included an electronic data base search, review of historical use, review of historical and current aerial photographs, and review of readily available environmental assessments. VHB retained Environmental Data Resources (EDR) to conduct an environmental records search including historical aerial photographs, standard environmental records of sites within a 1-mile radius of the Site, and Sanborn maps. According to EDR, no Sanborn maps of the Site or surrounding area are available. Copies of the Radius Map Report and aerial photographs are provided as attachments to the due diligence memorandum, which is included as Appendix 2 and the text of which is copied below.

The land surrounding the SSMU is developed with some residential areas to the north and a golf course (the Chequessett Club) to the south. Aerial photographs were available for the years of 1938, 1952, 1960, 1971, 1985, 1991, 1995, 2008, 2010, 2014, and 2018, and were reviewed for the due diligence assessment. In the earliest aerial available from 1938, the area to the south of the Site is developed with a golf course. The area to the north remained relatively unchanged until residential buildings were developed sometime between 1971 and 1985. Roadways for the residential areas were also developed around this time in the areas north of the Site. From 1985 to present day, the Site and the surrounding areas have remained largely unchanged, with the exception of additional development of residential buildings to the north of the Site.

The roadways adjacent to the Site are local lightly travelled roads and as such it is unlikely that runoff from these roads would contribute greater than de minimis amounts of contaminants such as volatile organic compounds (VOCs) and petroleum-related constituents to the surrounding environment. Historical runoff from the golf course may have contributed contaminants such as pesticides, herbicides, and fungicides, including legacy products such as DDT or those that contained mercury, arsenic, or hexavalent chromium, to the surrounding areas.

According to the EDR Radius Map Report, there are no sites listed on available environmental records databases within 1-mile of the Site. The Site is listed with Facility Registry System ID 110071668743 for a Non-Major General Permit (ID MAR10053K) under the National Pollutant Discharge Elimination System (NPDES). One unmapped site with no location information was listed under the Site Transition List and Reportable Releases databases; this listing appears to be associated with a diesel release within Wellfleet Harbor in January 2003 that was addressed by the United States Coast Guard.

Due to incorrect mapping information on the Massachusetts Department of Environmental Protection (MassDEP) Energy & Environmental Affairs Data Portal, a release that occurred within 1-mile of the Site was not listed in the EDR Report. A release of unregistered mercurial fungicide Calo-gran reportedly occurred at a brush dump within 25 feet of Mill Creek on the Chequessett Club golf course, but the release is mapped on the MassDEP portal as occurring on Holbrook Avenue approximately 1.1 miles from the Site. The release is listed under Release Tracking Number 4-0016352. Calo-gran was reportedly used by an employee of the Chequessett Club in or around April 2000. Due to the unregistered status of Calo-gran, the Massachusetts Department of Food & Agriculture-Pesticide Bureau determined that its use was no longer allowed in Massachusetts and therefore that its use constituted a reportable release per the Massachusetts Contingency Plan. A surficial soil sample collected by NPS contained mercury at 340



ppm, an imminent hazard level per 310 CMR 40.0321. Impacted soils were excavated in October 2001 and transported off-site for disposal. The site was closed on November 14, 2001.

The findings of this due diligence assessment indicate that the stockpiled material should be characterized for pesticides, arsenic, and mercury (which are already required by the NPS Clean Fill Protocol and/or Mass DEP), in addition to herbicides and hexavalent chromium.

2.3 Summary of Previous Investigations

2.3.1 Sampling within the HRRP Area

Discrete and incremental sampling methodology (ISM) sediment sampling was conducted in 2017, 2018, and 2020 in the restoration area but outside of this SSMU to determine options for sediment re-use and documented in memorandums to the HRRP team prepared by ESS Group, Inc. (ESS) and EA Engineering (ESS Group 2019; ESS Group 2020; EA Engineering, Science, and Technology, Inc. 2020). Surface samples from the study area were collected from a depth interval of 0-15 centimeters (cm) and analyzed for pesticides, PCBs, metals, polyaromatic hydrocarbons (PAHs), and TOC, with a subset of samples analyzed for VOCs, extractable petroleum hydrocarbon (EPH), and grain size. Ecological risk-based screening thresholds (RBSTs) and human risk-based screening thresholds were developed in support of the project by Woods Hole Group (WHG). Cumulative human health risk-based screening thresholds were established at the mid-point (1E-05, or 1 in 10,000) of the acceptable excess cancer risk range (1E-04 to 1E-06) as defined by the National Oil and Hazardous Substances Pollution Contingency Plan (also known as, National Contingency Plan). The contaminant-specific risk-based screening thresholds were established at an excess cancer risk of 7.14E-07 to reflect cumulative effects of the detected contaminants.

Analytical results from the 2017, 2018, and 2020 sampling efforts indicated concentrations of pesticides (4,4'DDD, 4,4'DDE, 4,4'-DDT and dieldrin), arsenic, mercury and multiple PAHs above the project action levels discussed in Section 4.5.2. The chemical constituents detected in these samples may also be present in the stockpiled material that is being considered for reuse.

2.3.2 NPS Background Study

NPS conducted a background study in 2021 to obtain data from regional salt marshes on Cape Cod. The purpose of the study was to determine the anthropogenic background concentrations of pesticides and arsenic measured in HRRP site samples to help plan future sediment management. Due to historical pesticide usage on Cape Cod these contaminants may be ubiquitous to the area. To achieve this objective, NPS collected surface sediment samples from three background salt marshes on Cape Cod that represent historical conditions and planned future conditions of the HRRP site. In accordance with guidance, selected background areas have similar physical, chemical, geological, biological, and land-use characteristics as the restored HRRP site (USEPA 2017; Interstate Technology & Regulatory Council [ITRC 2014]; USEPA 2005; NAVFAC 2003; USEPA 2002b; USEPA 1995). The selected background areas also have similar land-use histories as the Site, and chemical constituents detected in the background samples may also be present in the stockpiled material.



Sediment samples were collected from each of the three background areas using ISM protocols. NPS completed assessments of the resulting data to demonstrate that representative samples from each background area were collected, and to demonstrate comparability among background areas. After establishing that the analytical results are representative and comparable, anthropogenic background concentrations – also called background threshold values (BTVs) – were calculated for each contaminant (VHB 2021). The BTVs determined by this study are shown in Table 1 of the SSMF (included as Appendix 1).

2.3.3 Sampling within Mill Creek

Previous sediment sampling activities occurred in 2018 and 2020 within Mill Creek to support the HRRP. Six discrete sediment samples were collected upstream of the WCS dredge and the excavation area (MCD-1, MCD-2, MCD-3, MC-SED-A, MC-SED-B, and MC-SED-C). While these samples weren't collected from the dredge area, they were collected nearby within the Mill Creek watershed and are likely impacted by similar chemical constituents as the SSMU. The samples were analyzed for 13 priority pollutant metals, pesticides, VOCs, PAHs, PCBs, and EPHs. The pesticide DDT, and its breakdown products DDD and DDE, were detected above the most stringent project screening levels identified in the project SSMF. Arsenic was also detected in two of the samples above project screening levels. No other constituents were detected above project screening levels.

The following VOCs were detected at low concentrations in one or more samples: 2-butanone, acetone, carbon disulfide, and toluene. These VOC detections were orders of magnitude below project action levels and the measured concentrations were consistent with laboratory contamination (acetone and toluene are common laboratory contaminants) or naturally occurring sources (2-butanone and carbon disulfide occur naturally, particularly in marsh areas). While this data is not usable for this study to characterize material within this SSMU because it was not collected from the dredge area, it does suggest that this SSMU may be impacted by arsenic and DDT and its breakdown products above project action levels and that this area is not impacted by VOCs.

2.4 Data Quality/Usability

Historical data is not usable for this study to characterize material because the sediment samples were not collected from the area dredged for construction of the WCS. However, historical data was used to inform sampling requirements for the stockpiled material.

2.5 Preliminary Identification of Data Gaps

Concentrations of contaminants detected in samples collected to support the HRRP but outside of this SSMU exceeded project screening levels developed by NPS for multiple constituents. Historical land use and therefore potential contaminants are expected to be similar for this SSMU as the locations of historical sampling, particularly the sampling and results described above in Section 2.3.3. Historical sampling did not include analysis for herbicides or hexavalent chromium, which were identified as contaminants of potential concern (COPCs) based on the due diligence assessment. Approximately 950 cubic yards (CY) of sediment were dredged and 500 CY of soil were excavated during construction of the



WCS. Sampling of this material is necessary to determine appropriate sediment and soil management options.

2.6 Contaminants of Potential Concern

COPCs for the SSMU include the contaminants that are required MassDEP (314 CMR 9.07 (2)), the United States Army Corps of Engineers (USACE) Regional Implementation Manual (314 CMR 9.07 (2)(b)6)), and the NPS Clean Fill Protocol (NPS 2020). While historical sampling in this region indicates pesticides may be present in sediment above applicable screening levels, sediment and soil will be sampled for a broader suite of contaminants per the MassDEP regulations, USACE standards, and NPS Clean Fill Protocol. Consistent with past sampling in support of the project, the due diligence assessment in Section 2.2 and historical sampling discussed in Section 2.3.3 indicated that this SSMU is unlikely to be impacted by sources of VOCs and EPH and therefore these analyses that are typically required by the MassDEP will not be included. The COPCs are:

- Pesticides
- Herbicides
- 13 Priority Pollutant Metals, plus hexavalent chromium
- PCBs
- SVOCs

2.7 Media of Potential Concern

Restoration plans for Mill Creek include the construction of a WCS to allow a partial, controlled re-introduction of tidal exchange in the Mill Creek sub-basin. The construction has begun and resulted in the removal of sediment and soil from the SSMU, which has been stockpiled in the project area (see Figure 2). Therefore, the sediment and soil that has been excavated from the Mill Creek SSMU are the media of potential concern.

2.8 Current and Future Property Use Scenarios

The goal of the HRRP is to restore the Herring River floodplain to its natural tidal marsh habitats. This will provide recreational opportunities for the general public (boating, fishing, birding) and restored habitat for shellfish and finfish, which could be harvested. For wildlife, restoration to an intertidal floodplain will allow for wetland access for finfish, shellfish, crustaceans, marsh birds, and mammals.

2.9 Conceptual Site Model

In order to restore Mill Creek and the surrounding salt marsh, a new WCS is under construction. Construction activities included the excavation of sediment from Mill Creek and of soil adjacent to Mill Creek. The sediment and soil will be characterized to determine the concentrations of COPCs in the material that has been stockpiled. Prior sampling within the Mill Creek watershed but outside of this SSMU indicate that material may be impacted by pesticides and arsenic, and the due diligence assessment



detailed in Section 2.2 indicates the material may also be impacted by mercury, herbicides, and hexavalent chromium. Depending on the concentration of COPCs in the sediment and soil, it may be appropriate to manage this material either by surface placement or burial in adjacent areas, or removal off-Site. If this material is managed by placement on the ground surface, ecological exposure routes include biological uptake between contaminants in sediment or soil and organisms that directly contact the sediments or soil and ingestion by predators of prey that have bioaccumulated contaminants from the sediment or soil. Human exposure routes include direct contact with and incidental ingestion of sediment or soil for recreational receptors (park visitors and park workers) that may walk, boat or bird at the site. For human receptors who fish or hunt at the site, exposure routes also include ingestion of harvested fish and shellfish.



3 DQO Planning Team and Stakeholders

Identifying an appropriate DQO Planning Team is key to successfully developing DQOs. The DQO Planning Team should include the primary decision-makers and project team members who will use the data generated from the DQOs. The size of the DQO Planning Team will often depend on the size and complexity of the site under investigation (USEPA 2006a).

3.1 DQO Planning Team

The DQO Planning Team develops the project DQOs according to the DQO process. The DQO process is iterative, and team members may be added or changed in order to address technical issues that were not initially identified. Table 3.1 below provides the DQO Planning Team for this project.

Table 3.1: DQO Planning Team

Name	Project Role	Area of Specialty
Geoff Sanders NPS Project Manager Chief of Natural Resources and Science, NPS-CACO Geoffrey_sanders@nps.gov	Provides information about current and future use of the Site, ensures consistency with HRRP, park coordination	CACO Natural Resources Chief
Tim Smith, NPS Technical Lead CACO Tim_P_Smith@nps.gov	Provides information about current and future use of the Site, ensures consistency with HRRP, park coordination	Park Point-of-contact, Biologist
Jeff Burke, Contractor Project Manager Classic Site Solutions JeffB@classicsitesolutions.com	Coordinates with NPS and Park, reviews SAP for completeness, coordinates with the analytical laboratory completing the laboratory analysis.	Engineer
VHB Jonathan Ordway, Federal Practice Leader, VHB jordway@vhb.com Stephanie Hunt, VHB Project Manager Senior Project Scientist, VHB shunt@vhb.com	Design the technical aspects of the investigation, senior review. Manages implementation of the SAP and manages the field sampling.	Site investigation and remediation.
Tracey Cohen Project Specialist/Contract Officer's Representative, Denver Service Center tracey_cohen@nps.gov	Reviews all work products, deliverables, timetables, invoices, etc. to ensure that work conforms to contract specifications.	Contracting Officer's Representative



3.2 Decision-Makers

The decision-makers have the ultimate authority for making final decisions based on the recommendations of the DQO Planning Team. The decision-maker for this project is Jennifer Flynn, CACO Superintendent.

3.3 Stakeholders

Stakeholders are parties who may be affected by the results of the investigation and/or persons who may later use the data resulting from the DQO process. Stakeholders for this investigation include the HRRP Technical Team, a multi-agency planning and technical support group comprised of Friends of Herring River, the Town of Wellfleet, MA Division of Ecological Restoration, National Oceanic and Atmospheric Administration, Natural Resources Conservation Service, U.S. Fish and Wildlife Service and CACO. The technical team provides support for the project's ultimate decision authority, the Herring River Executive Council.



4 Data Quality Objectives

The DQO process specifies anticipated project decisions, the data quality required to support those decisions, specific data types needed, data collection requirements, and analytical techniques necessary to generate the specified data quality. The process also ensures that the resources required to generate the data are justified.

The DQO process consists of the following seven steps, described in detail below:

1. State the problem.
2. Identify the goal of the investigation.
3. Identify the information inputs.
4. Define the boundaries of the investigation.
5. Develop the analytic approach.
6. Specify performance or acceptance criteria.
7. Develop the plan for obtaining data.

The following sections detail each step in the DQO process for this investigation.

4.1 State the Problem

Proposed restoration actions will require management of sediment and soil from the SSMU. Sediment and soil management methods may involve sediment or soil placement back into CACO, either on the ground surface or buried, or off-site disposal. Historical sampling from areas immediately adjacent to and outside of this SSMU but with similar land use histories indicates pesticides and arsenic may be present in sediment and soil above applicable screening criteria. However, sediment and soil will be sampled for a broader suite of contaminants to determine beneficial reuse options per the MassDEP regulations, USACE regional standards, and NPS Clean Fill Protocol.

The problem is to determine whether concentrations of contaminants required for analysis per the MassDEP regulations, USACE regional standards, and NPS Clean Fill Protocol exceed applicable screening criteria to understand reuse options for the material that has been removed during construction of the WCS.

4.2 Identify the Goal of the Investigation

The primary goal of this investigation is to provide sufficient data of adequate quality to measure the concentration of COPCs required for analysis per the MassDEP regulations, USACE regional standards, and NPS Clean Fill Protocol to determine sediment and soil management options.

4.2.1 Principal Study Question

The principal study questions support efficient collection of data needed to resolve the investigation problem identified in Section 4.1. Decision-making principal study questions (decision questions) will lead to the development of decision statements.



- *Decision Question:* Do concentrations of COPCs in the sediment and soil exceed applicable screening criteria that would allow for reuse of material within CACO?

Statement: Determine the concentrations of COPCs in the sediment and soil and compare to applicable screening criteria to determine management options.

4.3 Identify Information Inputs

The purpose of this step is to identify the data required to answer to the principal investigation question detailed in Section 4.2.1 and to determine which inputs require environmental measurements.

4.3.1 Previous Data Usability

No data has previously been collected from this SSMU.

4.3.2 Data to be Collected in the Current Investigation

The new data required to answer the principal investigation questions are as follows.

- **Metals:** MassDEP requires analysis of arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc; NPS Clean Fill Protocols require 13 priority pollutant metals analysis. Therefore, samples will be analyzed for the 13 priority pollutant metals, which includes the metals required by MassDEP.
- **SVOCs:** MassDEP requires analysis of PAHs; NPS Clean Fill Protocol requires analysis of SVOCs. Therefore, samples will be analyzed for SVOCs, which includes the PAHs required by MassDEP.
- **Pesticides:** Organochlorine pesticides are required for analysis by both the MassDEP and NPS Clean Fill Protocol. Therefore, samples will be analyzed for organochlorine pesticides.
- **PCBs:** PCBs are required for analysis by both the MassDEP and NPS Clean Fill Protocol. Therefore, samples will be analyzed for PCBs.
- **Herbicides:** NPS Clean Fill Protocol requires analysis of potential contaminants of concern identified by due diligence. Therefore, samples will be analyzed for herbicides.
- **Hexavalent Chromium:** NPS Clean Fill Protocol requires analysis of potential contaminants of concern identified by due diligence or are likely to be present based on analytical results. Therefore, samples will be analyzed for hexavalent chromium.

In addition, TOC and grain size will be analyzed to determine whether sediment has similar physical characteristics as the receiving marsh area if this study determines that beneficial reuse of sediment is suitable. Note that the receiving marsh area has not yet been identified and is not included in this sampling effort. Spatial coordinates of ISM decision units (DUs) will be determined using a sub-meter global positioning system (GPS) during field sampling. The FSP is detailed in Section 5 of this SAP.

4.4 Define the Boundaries of the Investigation

The objective of this step is to identify the DUs and to define the spatial and temporal elements of the investigation area. Figure 2 shows the locations of the stockpiles to be sampled, and Figures 3 and 4 show



the DUs. The sediment DU represents approximately 950 CY of material, and the soil DU represents approximately 500 CY of material.

4.4.1 Spatial Boundaries

The lateral extent of sampling is based on the extent of the sediment and soil stockpiles.

The vertical depth of the sampling is based on the estimated height of the sediment and soil stockpiles.

4.4.2 Temporal Boundaries

Samples will be collected once during this investigation.

4.4.3 Decision Units

DUs are the smallest user-defined area(s) for which a decision will be made based on sampling. Two DUs have been defined for this investigation, one that represents the 950 CY of sediment and one that represents the approximately 500 CY of soil. Sediment and soil management decisions for the SSMU will be determined on a DU basis (i.e. it may be determined that the sediment DU is acceptable for unrestricted reuse, while the soil DU may need to be disposed of off-site).

ISM techniques will be used to collect the samples. ISM is a structured composite sampling and processing protocol that serves to minimize data variability per DU by reducing sampling error, improving representativeness, and improving certainty by providing a statistically valid estimate of the mean concentration of the contaminant of concern for the volume of soil in the DU. In addition, background concentrations of contaminants were identified based on ISM samples; therefore, future sediment characterization sampling to support the HRRP should be conducted via ISM sampling for comparability.

The sediment ISM DU sample replicates will be composed of 40 approximately equal volume increments, while the soil ISM DU sample replicates will be composed of 30 approximately equal volume increments due to its smaller overall volume. This number of increments was selected in accordance with ISM guidance (ITRC 2020). Three replicates will be collected per DU to calculate the relative standard deviation (RSD) of COPCs.

4.5 Develop the Analytic Approach

This section defines the analytic or evaluation approach that will be used to answer the principal investigation question and what screening values or standards will be used.

4.5.1 Decision or Estimation Parameters

This section details the population parameters that will be applied to the sample population to draw conclusions or make inferences about the data set and to compare sample population results to the action levels defined in the following section.



- *Decision Question 1:* Do concentrations of COPCs in the sediment and soil exceed applicable screening criteria that would allow for reuse of material within CACO?

Parameter: Measured concentrations of COPCs in each DU will be evaluated against applicable screening criteria. The arithmetic mean and 95% upper confidence level of the mean (95UCL) of the three replicates collected from each DU will be used in this evaluation. The SSMF developed by NPS to support sediment management decisions within CACO as part of the HRRP will be used to determine whether the sediment and soil can be beneficially reused (see Appendix 1).

4.5.2 Action Levels

Analytical results will be compared to the preliminary human health and ecological risk-based screening levels determined by WHG, background concentrations determined by the NPS background study completed in 2021, MassDEP RCS-1 standards, and the NPS Clean Fill Protocol screening criteria. Justification for selection of these screening criteria is provided in the SSMF, which is included as Appendix 1. The lowest of these screening values for each COPC have been selected as the project action levels. Action levels and laboratory detection limits are presented in Table 6.

4.6 Performance or Acceptance Criteria

The purpose of this step is to establish the criteria needed to maximize the ability of the investigation to obtain the data needed to answer the principal investigation question accurately and with confidence.

4.6.1 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) measures will be implemented during the investigation to limit variability, mitigate the potential for false positive and/or false negative error, and increase the accuracy and defensibility of the collected data.

Standard operating procedures (SOPs) for field and laboratory work will be used to achieve acceptable data quality for the purposes of determining the concentration of COPCs in material that needs to be managed. VHB SOPs that will be used for this project for field activities are listed in Table 4 and are available upon request. Laboratory SOPs are listed in Table 4 and are provided in Appendix 3; all SOPs are for internal use and are not for distribution.

Project sensitivity requirements including the analyte method detection limit /limit of detection and reporting limit/limit of quantitation (LOQ) for sediment and soil as necessary to meet the project goals are defined in Table 6. Field and laboratory precision and accuracy are specified in Table 7.

Laboratory Quality Assurance/Quality Control

The laboratory project manager who will coordinate all analytical services is Opal Johnson of Eurofins in North Canton, Ohio. Eurofins-Canton will use/subcontract the PCB, pesticide and TOC analysis to Eurofins-Pittsburgh, PAH SIM and herbicide analysis to Eurofins-Lancaster, and grain size analysis to Eurofins-Burlington.



Lab certifications and audits provide an evaluation of the lab's capability to perform the necessary analysis with acceptable precision and accuracy. The Eurofins laboratories are certified through the National Environmental Laboratory Accreditation Program (NELAP).

The data quality indicators (DQIs) and their associated measurement performance criteria specific to each analytical method include Precision, Accuracy, Representativeness, Completeness, Comparability, and Sensitivity and are evaluated from QA/QC samples including, blanks, duplicates, matrix spikes, and instrument quality assurance samples described in detail in the laboratory SOPs attached in Appendix 3 (a list of laboratory SOPs applicable to this project is provided in Table 4). The numbers and types of the quality assurance/quality control samples are specified in Table 2. The project-specific sensitivity requirements necessary to meet project goals are specified in Table 6 and the project-specific QA/QC for each analytical method are specified in Table 7 and the lab SOPs. These QA/QC criteria, including specifications for method blanks, laboratory control samples, matrix spikes, matrix spike duplicates, matrix/lab duplicates, surrogates, and calibration criteria were established to meet DQOs of this project and are consistent with USEPA requirements and industry standards, with some modifications in the ISM sediment samples, as defined in the QA/QC Tables 4 through 7.

Field Quality Assurance/Quality Control

The field team will rely on SOPs to guide sample collection and documentation, which will minimize the variability introduced during sample collection. A list of SOPs is provided in Table 4. Sample containers, preservation, and holding times for all analytes are specified in Table 5. The field team will also follow procedures presented in Section 5 of this SAP.

Field Quality Control Samples

The following field QC samples are planned, as summarized in Table 2 with acceptance criteria as specified in Table 7:

- Three replicate ISM samples (A, B, & C) will be collected from each of the two DUs (a total of 6 ISM samples are to be collected consisting of 3 sediment samples and 3 soil samples) as a measure of representativeness;
- One matrix spike/matrix spike duplicate (MS/MSD) sample will be prepared and analyzed for all COPCs as measures of accuracy and precision in the site sediment matrix
- One matrix spike/matrix spike duplicate (MS/MSD) sample will be prepared and analyzed for all COPCs as measures of accuracy and precision in the site soil matrix; and
- One equipment blank samples will be collected and analyzed for all COPCs (minimum frequency of one per 20 samples) as a measure of potential field contamination.

A sample identification protocol for identifying field QC samples is provided in Section 5.2.1.

Decontamination Procedures

Section 5.1.2 describes how the field team will decontaminate field equipment and how often that procedure will be conducted and documented.



Instrument/Equipment Testing, Inspection, and Maintenance

No electrical or mechanized sampling equipment will be used during the sediment investigation.

Instrument/Equipment Calibration and Frequency

No electrical or mechanized sampling equipment requiring calibration will be used during the sediment investigation.

Inspection/Acceptance of Supplies and Consumables

The Field Team Leader will be responsible for ordering all necessary equipment and materials. All items that will contact samples must be new or properly decontaminated before use.

Special Training and Certification

All field personnel who collect samples during this investigation will have a valid 40-hour (and 8-hour refresher, as appropriate) Hazardous Waste Operations and Emergency Response training certificate. The VHB Project Manager who developed this SAP also attended a training on ISM sampling titled “Sampling for Defensible Environmental Decisions.” No additional special training is required.

Field Audits

A field audit will not be performed during this investigation. Instead, the VHB Project Manager will perform a desktop audit of field operations by questioning the Field Team Leader to ensure their understanding of this SAP and field procedures.

Data Quality Indicators Table

Data usability will be assessed mainly using DQIs, which will be represented by the following and are presented for each analytical group in Table 7:

- Precision: laboratory precision will be assessed using the laboratory control samples (LCS/LCSD); precision in the sample matrix will be assessed using MS/MSD and MD/lab duplicate results.
- Accuracy: field accuracy will be assessed using equipment blanks; laboratory accuracy will be assessed using method blanks, calibration criteria, and LCS recoveries; accuracy in the sample matrix will be assessed using the MS recovery results.
- Representativeness: will be assessed quantitatively through the RSD of ISM replicates and qualitatively for all data by verifying that sampling procedures and locations were followed as designed and checking that DQOs were met. To establish that the replicates collected from each DU are representative of the population of concentrations within that DU, an RSD of $\leq 50\%$ is desirable.
- Completeness: will be assessed by comparing the number of samples that are not rejected to the planned number of samples results.
- Comparability: will be assessed by evaluating whether DQOs were achieved and SOPs were followed.



- Sensitivity: field sensitivity will be assessed using the field equipment blanks; laboratory sensitivity will be assessed using the laboratory method blanks, LCS, and calibration criteria; sensitivity in the site matrix will be assessed based on the sample-specific LOQ or sample-specific reporting limit achieved for COPCs.

4.6.2 Decision Error Limits and Uncertainty Evaluation

The tolerable limits on decision errors, which are used to establish performance goals for the data collection design, are typically specified in this step. For each of the DUs, the grand mean (the arithmetic mean of the three replicate samples) and the 95UCL will be calculated. Statistical evaluations will be completed using the most recent version of EPA's ProUCL statistical software. ProUCL includes statistical routines to handle non-detect values, should any of the DU replicates be non-detect for a given constituent. These mean values from each DU will be compared to the project action limits. A yes/no decision will be made by comparing the statistical parameter to the PALs, without considering the variability associated with the field/laboratory results. As described in USEPA's DQO Guidance (USEPA 2001), in this situation, no formal statistical hypothesis tests are performed; therefore, it is not necessary to specify tolerable limits on making a wrong decision.

4.6.3 Data Validation and Usability

Data verification includes methods to evaluate the data's completeness, correctness, and conformance to the analytical method as well as procedural and/or contractual requirements. Data validation is the process of evaluating the analytical quality of the data, including both laboratory and field processes.

Data Verification

The following items will be reviewed by the VHB Project Manager to verify data:

- Generated by the field team: field notes, chain-of-custody records, corrective action documentation, project-related correspondence

The following items will be reviewed by the Laboratory Project Manager or their designated representative:

- Data generated by the laboratory: equipment calibration, testing, maintenance, and inspection logs

The following items will be reviewed by the Laboratory Project Manager, and Contractor Project Manager to verify data:

- Generated by the field team: chain-of-custody upon sample receipt
- Generated by the laboratory: laboratory reports; raw data and reported results for samples, standards, QC checks, and QC samples.

Data Validation

Third-party data validation will not be completed for this project. The Contractor Project Manager will validate data in accordance with the steps outlined in Tables 9 and 10.



4.7 Plan for Obtaining the Data

The purpose of this step is to describe the most resource-effective data collection design for generating data that will satisfy the DQOs specified in the preceding six steps. The planned investigation tasks are outlined in Section 5.



5 Field Sampling Plan

This section is the FSP for the Mill Creek WCS soil and sediment sampling investigation, which guides the data collection. All aspects of the investigation were developed during the DQO process included as Section 4. This section includes a subsection describing planning and decontamination. The remainder of this section describes the planned investigation for sediment sampling including:

- an explanation of sampling activities to be conducted with reference to figures illustrating the planned sample locations;
- a brief rationale for those sampling activities based on the DQOs established in the previous section;
- detailed protocols that reference SOPs, if available, for the sample collection methodologies; and
- a list of measurements to be conducted.

It is anticipated that the investigation activities described herein will be performed in one mobilization.

5.1 General Site Procedures

This subsection describes procedures that will be performed before or during the field investigation.

5.1.1 Site Preparation Procedures

Site reconnaissance will be conducted at the start of the field mobilization to identify any SSMU conditions that may impact the field program.

The sampling DUs may be altered in the field as necessary for characterization if stockpile locations or extent differ from what is presented on the Figures 3 and 4. Following the completion of work at each location, all investigation derived waste (IDW), such as personal protective equipment and trash associated with sample packaged and labeling, will be removed.

5.1.2 Equipment Decontamination Procedures

Decontamination areas for personnel and portable equipment will be established and used adjacent to each investigation area as necessary. All decontamination water will either be absorbed with paper towels or released adjacent to the sample location. Non-IDW trash will be disposed of in bins or dumpsters provided by or at a location specified by NPS.

Hand-held equipment will be decontaminated at the point-of-use before introducing it into a sampling point, and after completion of work at a sampling point. Trace decontamination of small equipment will follow removal of solids and gross contamination and generally consists of washing and scrubbing with a laboratory-grade detergent, such as Liquinox, and rinsing with a large volume of distilled water. Sampling equipment may be wiped with a detergent-saturated paper towel, followed by rinsing with water-saturated paper towel. A final triple rinse with deionized or distilled water will be performed. Equipment may be air dried or wiped dry with paper towels.



5.1.3 Mapping and Surveying

The corners of each DU will be recorded using a GPS with submeter accuracy. Adequate reception will be achieved when the GPS can connect to at least four satellites with a position dilution of precision of 8 or less. If GPS coordinates cannot be recorded at the submeter level, a staked reference position will be marked in the field and the location will be recorded by a licensed surveyor.

5.1.4 Dust, Vapor, Odor, and Noise Control

Sampling activities are not anticipated to create any excessive dust, vapor, odor or noise. Any noise, odor, or dust complaints received by the public will be evaluated immediately on-site, and practices will be changed to mitigate the situation. The CACO Point-of-Contact will also be informed immediately of the complaint and the response measures.

5.2 Sample Handling

This section describes the sample handling protocol for environmental samples collected during the investigation.

Sampling equipment will be decontaminated according to the specifications in Section 5.1.2 and the Field SOP specified in Table 4 before initiating sampling activities and will be protected from contamination until ready for use.

Sample containers will be clean, unused, and supplied by Eurofins. Following sampling, sample containers will be packed and transported via overnight shipping to the laboratory. Samples will be placed in coolers with ice and maintained at $\leq 6^{\circ}\text{C}$ in a secure location with the chain-of-custody throughout sample transport. The laboratory will be responsible for notifying Classic Site Solutions as soon as possible of any inconsistencies or breakage upon receipt, and within one day at the latest. The laboratory will obtain approval from Classic Site Solutions prior to disposing of any samples.

5.2.1 Sample Labeling

Samples will be assigned a unique sample identifier shown on the chain-of-custody form and sample container labels. Text table 5.2.1 summarizes the sample nomenclature for all samples, including ISM replicates, MS/MSDs, and equipment blanks.

Sample container labels will indicate the sample identifier, date and time of collection, identity of the sample collector, and type of analysis required. Labels will be completed using waterproof ink unless impracticable because of weather conditions such as rain.

Table 5.2.1: Sample Nomenclature

Sample Group	Sample Number	QA/QC Identifier
MC-DU#- (ISM DU, number 1 through 2)	Numerical identifier (in sequence) (e.g., -A, -B, -C...for each of the 3 ISM replicates)	-MS/MSD (e.g. MC-DU1-B-MS/MD; MS/MSD identifiers will be labeled on the chain-of-custody rather than the sample container)



Table 5.2.1: Sample Nomenclature

EB- (equipment blank)	Sampling equipment identifier (-Auger)	Not applicable
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5.2.2 Sample Handling and Chain-of-Custody

Field forms and chain-of-custody records will be used to maintain a record of sample collection, custody, and receipt by the laboratory. A chain-of-custody form supplied by the laboratory will list the sampler's initials, sample identifier, date and time of collection, matrix, preservative, and requested analyses. Accompanying chain-of-custody form(s) will be completed for each cooler of samples. The original form will be placed in the cooler in a waterproof plastic bag and a copy will be retained by the sampler.

Samples will be packed in coolers with bagged ice and sufficient padding to prevent breakage. A temperature blank will be provided in each cooler. Coolers will be sealed with a signed custody seal and packing tape. The custody seal will be attached such that the cooler cannot be opened without breaking the seal.

Samples will be delivered to the laboratory as required by hold times during or after the field program via overnight carrier. The waybill will be retained for recordkeeping. Common carrier tracking numbers will be indicated in the field book or on field forms.

5.2.3 Documentation and Records

A daily record of field activities will be recorded in field logbooks. Field forms will be used where appropriate. Blank copies of all field forms are included in Appendix 3.

5.3 Health and Safety

The approved Accident Prevention Plan is provided in Appendix 5

5.4 Sediment and Soil Sampling

Sediment and soil will be collected using ISM methods as detailed in the following sections and in the SOPs listed in Table 4.

5.4.1 Sediment and Soil Sampling Locations

Proposed sampling locations are shown on Figures 3 and 4. These DUs were selected to characterize the sediment and soil that has been excavated and stockpiled to support the Mill Creek WCS construction. 40 grids are associated with the sediment DU from which an increment will be collected from on a random basis (i.e. stratified random sampling), for a total of 3 increments from each grid (1 per replicate). 30 grids are associated with the soil DU from which an increment will be collected from on a random basis, for a total of 3 increments from each grid (1 per replicate). Fewer grids are proposed for soil sampling because it is a smaller volume of material. Sample locations may be altered based on field conditions and the actual extent of the stockpiles; any alterations from the proposed sampling locations will be documented in field notes.



5.4.2 Sediment and Soil Sampling Protocol

In the locations shown on Figures 3 and 4, temporary benchmarks will be established at the corners of the proposed ISM DUs using a sub-meter GPS. The field team will visually confirm the boundaries of the DU and alter the DU corners as necessary. The boundaries of the DU will be marked using flagging tape, pin flags, or stakes. A measuring tape, stakes, and string will be used to establish the 40 grids in the DU for sediment, and the 30 grids in the DU for soil. Markers will be removed after sample collection. A description of the ISM sample collection area will be provided on the ISM sample collection record field form (Appendix 3).

Each ISM DU sample replicate will be composed of 40 increments for sediment and 30 increments for soil collected using a stratified random sampling approach; three replicates (primary sample, first replicate, and second replicate) will be collected per DU (ITRC, 2020). Additional information regarding ISM sampling and stratified random sampling, including an instructional diagram, is provided in the HRRP Sediment Characterization Protocol (see Step 2: Clean Fill Sampling), which is included as Appendix 3 to the SSMF.

The goal of the sampling is to characterize sediment and soil that has been stockpiled as part of the Mill Creek WCS construction. Since the full depths of the stockpiles need to be characterized, sending the entire core from the target depth interval to the laboratory for subsampling and analysis is impractical due to the excessive volume of material. Therefore, in accordance with ITRC guidance, mass reduction will be accomplished by utilizing 5-gram Terra Core Samplers™. For sediment, a total of five 5-gram sub-samples will be collected from each of the 40 increment location for each replicate. This will result in a total of 1 kilogram of material per ISM sample replicate. For soil, a total of seven 5-gram sub-samples will be collected from each of the 30 increment locations for each replicate. This will result in a total of 1.05 kilogram of material per ISM sample per replicate.

The depth interval of each sample depends on the stockpile height. Example stockpile heights and number of Terra Core sub-samples required per ½-foot and 1-foot is provided in Table 5.4.2 below. An open-slot push probe with a 13-inch window will be used to obtain the material from each increment location, unless conditions require an alternative equivalent method. Mass reduction of each increment will then be completed using a dedicated Terra Core Samplers™ for each ISM sample. The following sampling protocol will be repeated 40 times for each sediment replicate, and 30 times for each soil replicate. Increments will be collected from unique locations within each grid cell for each replicate sample. The example provided below is assuming collection of 40 increments.

- a) Use a decontaminated open-slot push probe with attachments sufficient to reach the target sampling depth. Mark the desired depth with paint and/or tape. Verify the markings between replicates because there is a high potential for wear when contacting sediment or soil.
- b) Clear vegetation from the ground surface at the sampling location.
- c) If the elevation of the stockpile is 2 feet above surrounding ground surface, then 2 feet of material needs to be sampled. Advance the probe one foot and remove from sampling point. Collect 2.5 Terra Core sub-samples from interval. Clear the unsampled material from the probe using a gloved hand. Advance the probe again in the same hole from one to two fths. Remove from sampling point and collect an additional 2.5 Terra Core sub-samples from interval. Clear the unsampled material from the probe using a gloved hand.



- d) Decontaminate the probe and change gloves between DUs.

Table 5.4.2: Number of Terra Core Sub-Samples Per Foot for Various Sampling Depths

Stockpile height in feet	Number of Terra Core sub-samples for sediment (40 increments)		Number of Terra Core sub-samples for soil (30 increments)	
	Per 1/2 foot	Per 1 foot	Per 1/2 foot	Per 1 foot
0.5	5	NA	7	NA
1	NA	5	NA	7
1.5	1.6	3.4	2.3	4.7
2	NA	2.5	NA	3.5
2.5	1	2	1.4	2.8
3	NA	1.6	NA	2.3
3.5	0.8	1.4	1	2
4	NA	1.25	NA	1.75
4.5	0.6	1.1	0.6	1.6
5	NA	1	NA	1.4
5.5	0.5	0.9	0.5	1.3
6	NA	0.8	NA	1.2

Table Notes:

A total of 5 Terra Core sub-samples will be collected for each of the 40 increments for sediment, and a total of 7 Terra Core sub-samples will be collected for each of the 30 increments for soil. Terra Core sub-sample volumes will be estimated by marking the outside of the sub-samplers with the volume amount needed.

All samples will be collected into dedicated 1-gallon Ziploc bags and then the entire sample volume will be transferred into the laboratory provided sample container. Sample containers are specified in Table 5. Material not included in a sample increment will be returned to the sample location.

In addition, one five-point composite sample will be collected from each DU for grain size analysis from randomly selected locations and depths.

5.4.3 Sediment and Soil Field Measurements

If the shape of the ISM DU changed during sampling, a GPS will be used to record the revised DU boundaries.

5.4.4 Sediment and Soil Analytical Measurements/Methods

Sediment and soil samples will be analyzed for the following analytes and analytical methods, as specified in Table 4. Samples will be submitted to the laboratory for processing, which will include drying, disaggregating, sieving, and subsampling using the 2-Dimensional Slabcake method. Specific ISM processing notes and laboratory SOPs are listed in Table 4.



- 13 Priority Pollutant Metals: extraction by EPA method 3050B, EPA Method 6020B and mercury by EPA Method 7471B
- SVOCs: extraction by EPA method 3546; EPA Method 8270E
- Pesticides: extraction by EPA method 3546; Analysis by EPA Method 8081B
- PCBs: extraction by EPA method 3546; Analysis by EPA Method 8082A
- Hexavalent Chromium: extraction by EPA method 3060A; Analysis by EPA Method 7196A (in one replicate per DU only)
- Herbicides: extraction by EPA Method 3550B; Analysis by EPA Method 8151A
- TOC: Lloyd Kahn Method (sediment only)
- Grain Size: ASTM Standard D422 (sediment only)
- Percent Moisture/Percent Solids: lab SOP for dry-weight conversion



6 Data Management

This section describes how data are managed from the point when it is generated through use and storage. Project data, communications, and other information will be stored by Classic Site Solutions in a format useable to project personnel for at least 10 years following the investigation.

6.1 Documentation Control Systems

6.1.1 Project Document Control System

The Contractor Project Manager will maintain and manage hard copies and/or electronic copies of all project related documents. Electronic copies of information relating to this project are maintained on the project network files, which are backed up once per day.

6.1.2 Data Recording

Data generated during this project will be captured electronically or entered by hand into bound field or laboratory logbooks or preprinted forms (Appendix 3). Computer generated laboratory data will be managed using the laboratory information management system (LIMS); the LIMS used by Eurofins are described in their QA documentation.

6.2 Data Quality Assurance Procedures

The VHB Field Team Leader and Project Manager will monitor the progress of sample collection to verify that samples are collected as planned. The list of planned samples will be compared to the list of samples collected and picked up each day to confirm nomenclature accuracy.

The laboratory must maintain a formal Quality Management Plan to which they adhere, and which addresses all data generating aspects of daily operations. All data generation processes will be reviewed and modified as needed to meet project objectives. Periodic audits of field operations will be performed to check that data collection, documentation, and QA/QC procedures are being followed.

Data generation processes will be reviewed and modified as needed to meet project objectives. A desktop audit of field operations will be performed by the VHB Project Manager to check that data collection, documentation, and QA/QC procedures are being followed. Data entries created from hand-written notes will be QA checked by VHB technical staff for accuracy.

6.2.1 Laboratory Data Transmittal

Laboratory data are managed by Eurofins' LIMS beginning with the sample receiving process. Eurofins is required to provide laboratory data reports (sample results, QC summary information, and supporting raw data) including electronic data deliverables (EDDs) within the turnaround times specified in Table 5.



6.2.2 Data Storage and Retrieval

Completed forms, logbooks, photographs, data packages, and electronic files will be transmitted regularly to the Contractor Project Manager. Eurofins will maintain copies of all documents it generates as well as backup files of all electronic data relating to the analysis of samples. All project data will be submitted to NPS at the end of the investigation.



7 Assessment and Oversight

This section describes the measures that will be employed to ensure that this SAP is implemented properly.

7.1 Assessment and Corrective Actions

The VHB and Classic Site Solutions staff who are responsible for data control are specified in Table 3. VHB personnel will report to the VHB Project Manager who will report to the Contractor Project Manager. The VHB Project Manager and Contractor Project Manager are responsible for performing or coordinating the quality reviews specified in Table 3. The Contractor Project Manager is also responsible for verifying that corrective actions are implemented if QA problems are identified during quality reviews.

7.1.1 Field Audit and Response Actions

A desktop (i.e., not in-field) field sampling audit will be performed during the sampling by the VHB Project Manager. The field sampling audit will include the following:

- a brief interview with field staff involved in sampling to determine their familiarity with the SAP requirements;
- a review of all field forms related to the sampling that was performed; and,
- a review of the chain-of-custody forms that were submitted with samples.

Results of the field sampling audit are intended to confirm that proper protocols are being followed, or to make improvements to the systems that are in-place. Audit findings may be communicated to the sampling team during the audit if immediate changes are necessary.

7.1.2 Laboratory Audit and Response Actions

NELAP accreditation requires a NELAP-based audit. No additional laboratory audit will be completed for this project. An audit of Eurofins-Canton was performed for another NPS project in June and July of 2016 by a professional chemist under subcontract to NPS through The Johnson Company (which has since been acquired by VHB). The auditor's findings were presented in writing to the subject laboratory in a draft findings report in which the laboratory was requested to identify how corrective actions would be addressed, when corrective actions would be implemented, and how the corrective action effectiveness would be determined. The laboratory committed to addressing the concerns, and a final findings report was issued (Phoenix Chemistry Services, 2016). During the investigation, if the laboratory is unable to resolve identified deficiencies to NPS's satisfaction, the laboratory may be disqualified from performing certain or all analyses.



7.2 Quality Assessment Reporting

The VHB Field Team Leader will be responsible documenting field activities. The Laboratory Project Manager will be responsible for sending an e-mail acknowledging sample login to the Contractor Project Manager within a day of sample login. The Laboratory Project Manager will be responsible for producing the laboratory data package with EDD to the Contractor Project Manager within five weeks after the last sample was received.

7.2.1 Data Verification

Table 9 lists data verification procedures that will be implemented during the investigation.

7.2.2 Data Validation

Table 10 list data validation procedures that will be used to ensure the data meet the requirements detailed in Section 4.6.1.

7.3 Reconciliation with DQOs and Data Usability

The data usability assessment will be led by the Contractor Project Manager named in Table 3. The data usability assessment will be presented in the Background Sampling Report and will proceed as follows:

- Step 1: Review the project's objectives and sampling design: Review the key outputs defined during systematic planning (i.e., DQOs) to make sure they are still applicable. Review the sampling design for consistency with stated objectives. This provides the context for interpreting the data in subsequent steps.
- Step 2: Review the data verification and data validation outputs: Perform a review of the accuracy, precision, representativeness, and completeness of analytical results based on criteria specified in the analytical methods used. Review available QA reports produced by the laboratory. Perform basic calculations and summarize the data (using graphs, maps, tables, etc.). Look for patterns, trends, and anomalies (i.e., unexpected results). Review deviations from planned activities (e.g., number and locations of samples, holding time exceedances, damaged samples, and SOP deviations) and determine their impacts on the data usability. Evaluate implications of unacceptable QC sample results.
- Step 3: Verify the assumptions of the selected statistical method: Verify whether underlying assumptions for selected statistical methods (as documented in the SAP) are valid. Common assumptions include the distributional form of the data, independence of the data, dispersion characteristics, homogeneity, etc. Depending on the robustness of the statistical method, minor deviations from assumptions usually are not critical to statistical analysis and data interpretation. If serious deviations from assumptions are discovered, then another statistical method may need to be selected.
- Step 4: Implement the statistical method: Implement the specified statistical procedures for analyzing the data and review underlying assumptions. For decision projects that involve



hypothesis testing, consider the consequences for selecting the incorrect alternative; for estimation projects, consider the tolerance for uncertainty in measurements.

- Step 5: Document data usability and draw conclusions: Determine if the data can be used as intended, considering implications of deviations and corrective actions. Discuss DQIs Assess the performance of the sampling design and identify limitations on data use. Update the conceptual site model and document conclusions. Prepare the data usability summary report in as a narrative and/or in a table.



8 References

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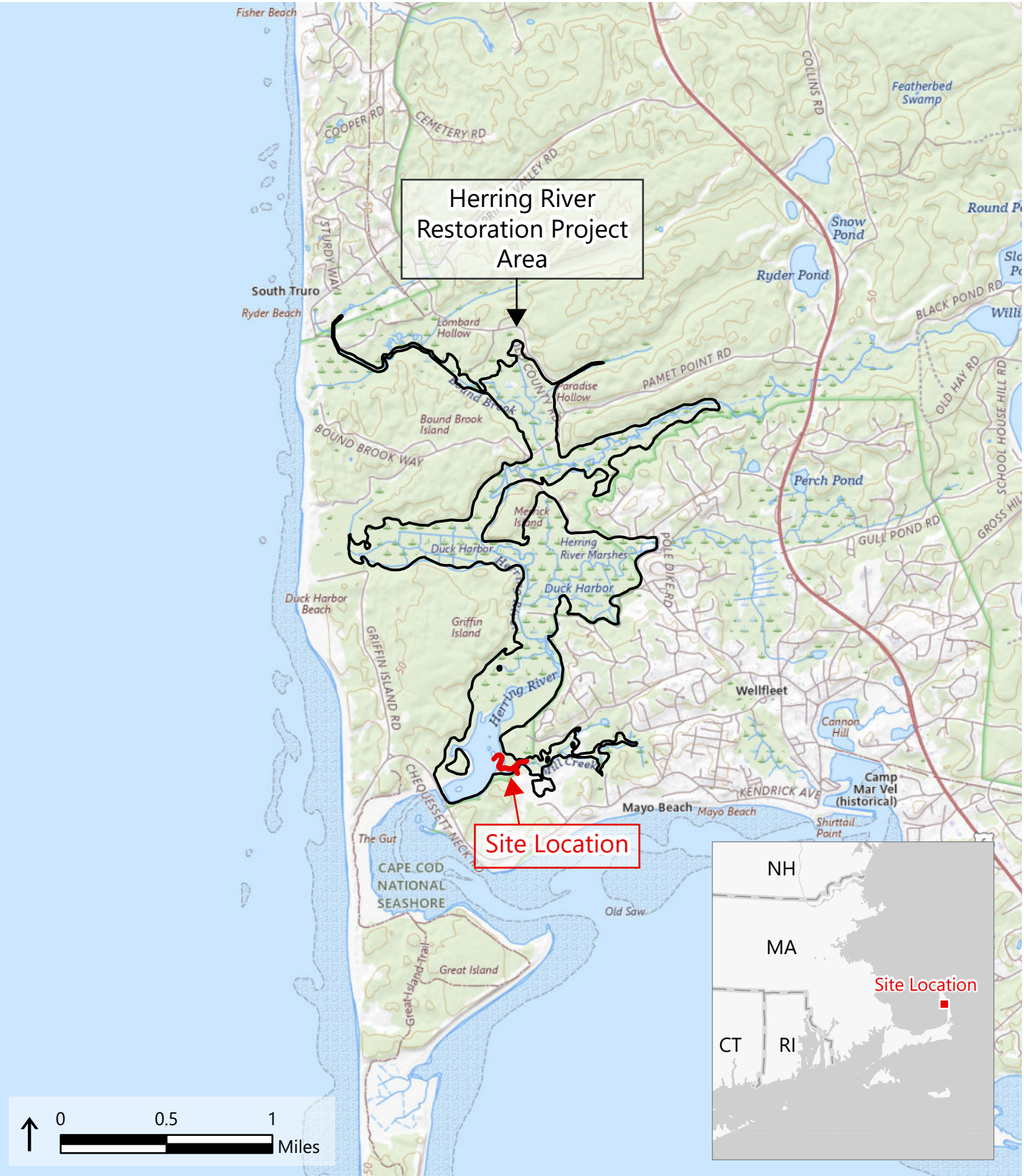
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Figures

Figure 1: Regional Site Location Map

NPS Herring River | Wellfleet, MA



Legend

- Mill Creek Water Control Structure Management Unit
- Herring River Tidal Restoration Area

Figure 2: Site Features Map

NPS Herring River | Wellfleet, MA



Legend

- | | | |
|-------------------------|--|----------------------|
| Soil Stockpile Area | Mill Creek Water Control Structure Management Unit | Sediment Dredge Area |
| Sediment Stockpile Area | Water Control Structure | Soil Excavation Area |
| | | Access Road |

*Note: Location of site features are approximate

Figure 3: Sediment Sampling Location Map

NPS Herring River | Wellfleet, MA



November 13, 2024



Legend

- Sediment ISM Grid
- Sediment Stockpile Decision Unit

Note: An incremental Sampling Methodology (ISM) increment will be collected from each of the 40 grid cells shown and composited into one ISM sample. This sampling protocol will be repeated three times in total to yield three composited ISM samples.

Figure 4: Soil Sampling Location Map

NPS Herring River | Wellfleet, MA



Legend

-  Soil ISM Grid
-  Soil Stockpile Decision Unit

Note: An incremental Sampling Methodology (ISM) increment will be collected from each of the 30 grid cells shown and composited into one ISM sample. This sampling protocol will be repeated three times in total to yield three composited ISM samples.



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TABLE 1 SAMPLING LOCATIONS DETAILS

SAMPLE ID	LOCATION	REASON FOR SAMPLING
MC-DU1-A/B/C	Mill Creek Sampling Area, see Figures 3 and 4 for specific locations.	Measure concentration of contaminants of potential concern in the sediment and soil to determine management options for each decision unit.
MC-DU2-A/B/C		



TABLE 2 SAMPLE TYPES AND TOTAL NUMBER OF CONTAINERS

SAMPLE ID	MATRIX	DEPTH (fbgs)	TYPE	METALS	SVOCs	PESTICIDES	PCBs	HERBICIDES	TOTAL ORGANIC CARBON	HEXAVALENT CHROMIUM ²	GRAIN SIZE
MC-DU1- and MS/MSD ¹	sediment	TBD	ISM	3 (A to C), Mark B jar for MS/MSD						1 (A only)	0
			Discrete	0						0	1
MC-DU2- and MS/MSD ¹	soil	TBD	ISM	3 (A to C), Mark B jar for MS/MSD						1 (A only)	0
			Discrete	0						0	0
Total Number of Containers				6						Same ISM container as other analyses	1
EB- [equipment]	Water	None	Field QC – Equipment Blank off ISM sample tool	1	1	1	1	1	0	0	0
Total Number of Aqueous Containers				1	1	1	1	1	0	0	0

Notes:

¹ No MS/MSD will be analyzed for Total Organic Carbon or hexavalent chromium.

² No separate jar needed for hexavalent chromium analysis.
fbgs = feet below surface

ISM = incremental sampling methodology

QC = quality control

MS/MSD = matrix spike/matrix spike duplicate

TBD = To be determined in the field



TABLE 3 PERSONNEL ROLES AND RESPONSIBILITIES

ORGANIZATION	PROJECT TITLE, NAME, AND CONTACT INFORMATION	RESPONSIBILITIES
National Park Service (NPS)	<i>Cape Cod National Seashore NPS Project Manager Geoffrey Sanders Geoffrey_sanders@nps.gov</i>	Review and approve of the sampling and analysis plan (SAP) before implementation. Approve changes to SAP before implementation. Approve corrective actions for field work and/or laboratory work before implementation if actions will affect the data quality or usability. Review and approve the sampling report.
VHB	<i>VHB Senior Review Jonathan Ordway jordway@vhb.com</i>	Provides internal review of SAP.
VHB	<i>VHB Project Manager Stephanie Hunt shunt@vhb.com</i>	Point of contact with Classic Site Solutions. Manage SAP and QAPP Preparation. Manages SAP implementation. Performs desktop audit of field activities. Discuss the need for corrective actions for field work with CSS, as appropriate.
Classic Site Solutions	<i>Contractor Project Manager Jeff Burke Classic Site Solutions JeffB@classicsitesolutions.com</i>	Point of contact with NPS. Manage all project phases. Review SAP and QAPP. Determine the need for corrective action for laboratory issues in conjunction with the Laboratory Project Manager and NPS, as appropriate. Discuss the need for corrective actions for field work and/or laboratory work with NPS, as appropriate.
VHB	<i>Field Team Leader Adam Robtoy arobtoy@vhb.com</i>	Lead the field work and document daily activities in field notes. Notify VHB Project Manager, Contractor Project Manager, and NPS when unforeseen circumstances require work stoppage and/or immediate corrective actions. Verify completeness of and file all field notes, chains of custody, shipping documents, corrective action forms, laboratory reports, and other project-related correspondence electronically on the VHB server. Carry out corrective actions as directed by the Contractor Project Manager.
Eurofins TestAmerica - Canton	<i>Laboratory Project Manager Opal Johnson opaljohnson@testamericainc.com</i>	Main point of contact at laboratory for all sample container ordering, shipping, sample receiving/logins, and chain of custody questions. Notify the Contractor Project Manager of the need for corrective action for analytical issues.



ORGANIZATION	PROJECT TITLE, NAME, AND CONTACT INFORMATION	RESPONSIBILITIES
		Provide the laboratory data package with electronic data deliverables within 5 weeks of sample receipt.



TABLE 4 STANDARD OPERATING PROCEDURES

TITLE, REVISION DATE AND/OR NUMBER	ORIGINATING ORGANIZATION	MATRIX/ANALYTICAL GROUP	EQUIPMENT TYPE	MODIFIED FOR PROJECT WORK?
Field SOPs				
SOP-JCO-007 Standard Operating Procedure for Chain of Custody Records, Rev 6/17	JCO ¹	N/A	N/A	No
SOP-JCO-018 Standard Operating Procedure for Deviation from Protocols or Standard Operating Procedures and for Notation, Correction, and Documentation of Unforeseen Circumstances, Rev. 4/18	JCO ¹	N/A	N/A	No
SOP-JCO-026 Standard Operating Procedure for Sampling of Organic and Inorganic Compounds, Rev. 4/18	JCO ¹	N/A	N/A	No
SOP-JCO-027 Standard Operating Procedure for Decontamination of Field Equipment, Rev. 4/18	JCO ¹	N/A	N/A	No
SOP-JCO-034 Standard Operating Procedure for Use of Field Log Books, Rev. 4/18	JCO ¹	N/A	N/A	No
Laboratory SOPs*				
<i>Sediment</i>				
<i>ISM Processing**</i>				
NC-OP-044 Soil Processing, Method: ASTM D6323-12, ITRC Guidance Document, Soil Fractionation Method for Michigan, Rev. 4, 1/13/21	Eurofins-Canton	Sediment	N/A	No
Metals – 6020 and 7471				
NC-IP-010 Acid Digestion for Solid Samples, Method SW846 3050B, Rev. 10, 10/17/22	Eurofins - Cleveland	Sediment preparation / metals	N/A	Yes – modified for 10 g sample
NC-IP-011 Acid Digestion for Aqueous Samples, Method SW846 3005A, 3010A, and MCAWW 200 Series, Rev. 11, 7/22/22	Eurofins-Canton	Aqueous equipment blank preparation / metals	N/A	No

¹ The Johnson Company (JCO) was acquired by VHB in March 2018.



TITLE, REVISION DATE AND/OR NUMBER	ORIGINATING ORGANIZATION	MATRIX/ANALYTICAL GROUP	EQUIPMENT TYPE	MODIFIED FOR PROJECT WORK?
NC-MT-002 Inductively Coupled Plasma – Mass Spectrometry, Method: EPA Method 200.8, SW846 Methods 6020B, Rev. 15, 12/20/23	Eurofins - Cleveland	Sediment digestate analysis and Aqueous Equipment Blank digestate analysis	Inductively Coupled Plasma Mass Spectrometer (ICP-MS)	No
NC-MT-014 Preparation and Analysis of Mercury in Aqueous and Solid Samples by Cold Vapor Atomic Absorption Spectroscopy, MCAWW Method 245.1, SW846 Method 7470A, and 7471B, Rev. 14, 12/20/23	Eurofins - Cleveland	Sediment digestate analysis and Aqueous Equipment Blank digestate analysis	Atomic Absorption Spectrophotometer	No
<i>Pesticides – 8081B</i>				
T-OE-SVOA-WI10928 Microwave Extraction by Method 3546 for Semivolatiles, Rev. 15, 4/19/24	Eurofins – Lancaster	Sediment extraction / pesticides		No
PIT-ORG-ORGP-SOP45818 Extraction of Organic Compounds from Waters, Based on SW-846 3500 and EPA 600 Series Methods, Rev. 24, 05/13/24	Eurofins-Pittsburgh	Aqueous equipment blank extraction / pesticides	Separatory Funnel	No
PIT-ORG-GCSV-SOP45811 Chlorinated Pesticides, Method: SW846 8081B, Rev. 13, 1/24/24	Eurofins - Pittsburgh	Sediment and aqueous extract analysis / pesticides	Gas Chromatograph (GC) with Electron Capture Detector (ECD)	No
<i>Polychlorinated Biphenyls (PCBs) – 8082A</i>				
PIT-ORG-ORGP-SOP45818 Extraction of Organic Compounds from Waters, Based on SW-846 3500 and EPA 600 Series Methods, Rev. 24, 05/13/24	Eurofins - Pittsburgh	Aqueous equipment blank extraction / PCBs	Separatory Funnel	No
T-OE-SVOA-WI10928 Microwave Extraction by Method 3546 for Semivolatiles, Rev. 15, 4/19/24	Eurofins – Lancaster	Sediment extraction / PCBs		No
PIT-ORG-GCSV-SOP45809 PCBs and PCBs as Congeners by GC/ECD, SW-846 8082A, Rev 13, 1/24/24	Eurofins-Pittsburgh	Sediment extract analysis / aqueous equipment blank extract analysis / PCBs	GC/ECD	No
<i>Semivolatile Organic Compounds (SVOCs) – 8270D</i>				



TITLE, REVISION DATE AND/OR NUMBER	ORIGINATING ORGANIZATION	MATRIX/ANALYTICAL GROUP	EQUIPMENT TYPE	MODIFIED FOR PROJECT WORK?
PIT-ORG-ORGP-SOP45820 Extraction of Organic Compounds from Solids, Sediments, Tissues, and Wipes Based on SW-846 3500 Series Methods, Rev. 6, 05/22/24	Eurofins – Pittsburgh	Sediment extraction / SVOCs		No
PIT-ORG-ORGP-SOP45818 Extraction of Organic Compounds from Waters, Based on SW-846 3500 and EPA 600 Series Methods, Rev. 24, 05/13/24	Eurofins - Pittsburgh	Aqueous equipment blank extraction / SVOCs	Separatory Funnel	No
T-SVOA-WI9252 Parent and Alkyl Substituted PAHs and Geochemical Biomarkers by 8270C/D/W SIM by GC/MS, Rev.10, 07/07/23	Eurofins – Lancaster	Sediment extract analysis / PAHs	GC/MS	No
NC-MS-018 GC/MS Analysis Based on Methods 8270E, Rev. 11, 12/22/23	Eurofins – Cleveland	Sediment and aqueous equipment blank extract analysis / SVOCs	GC/MS	No
<i>Herbicides – 8151A</i>				
T-PEST-WI9845 Chlorinated Herbicides by 8151A in Solids by GC-ECD, Rev. 19.1, 07/25/23	Eurofins-Lancaster	Sediment extract analysis / herbicides	GC/ECD	No
T-OE-PEST-WI0912 Ultrasonic Extraction of Chlorinated Herbicides by Method 3550B/C in a Solid Matrix	Eurofins - Lancaster	Sediment extraction / herbicides	Sonic Probe	No
T-OE-PEST-WI10919 Extraction of Chlorinated Herbicides in Water by SW-846 8151A, Rev. 22, 01/09/24	Eurofins-Lancaster	Aqueous equipment blank extraction / herbicides		No
T-PEST-WI9202 Analysis of Chlorinated Herbicides by 8151A in Water, Rev. 20, 05/31/2023	Eurofins-Lancaster	Aqueous equipment blank extract analysis / herbicides		No
<i>Hexavalent Chromium – 7196A</i>				
T-WC-WI11501 Hexavalent Chromium in Waters and Soils (Colorimetric) by SW-846 7196A, Rev. 16, 09/16/24	Eurofins-Lancaster	Sediment and aqueous analysis / hexavalent chromium		No
<i>Total Organic Carbon (TOC) – Lloyd Kahn</i>				



TITLE, REVISION DATE AND/OR NUMBER	ORIGINATING ORGANIZATION	MATRIX/ANALYTICAL GROUP	EQUIPMENT TYPE	MODIFIED FOR PROJECT WORK?
PIT-ORG-GC-SOP45792 TOC Analysis for Solids by Lloyd Kahn Method, Rev. 13, 06/05/24	Eurofins - Pittsburgh	Sediment/TOC	Oven	No
<i>Grain Size – D422</i>				
T-GEOo-SOP48219 Particle Size Analysis (ASTM D422-63, D6913-17, and D7928-17), Rev. 10, 04/13/23	Eurofins - Burlington	Sediment/grain size	Sieves	No

* Laboratory accreditation expiration dates will be provided in each data package received. Accreditation certifications will be updated throughout the project.

**ISM Processing Notes: Soil sampling protocol will result in slightly more than 1 kg of soil; therefore, each ISM soil sample will be collected into two jars. The laboratory must combine these two jars prior to implementing ISM processing as detailed below.

1. The ISM preparation will be modified to include a 10g ISM sample aliquot to improve representativeness for metals.
2. Non-soil and non-sediment debris, such as plant matter, rocks, shells of organisms, etc., should be removed by the field team and/or the lab prior to ISM preparation. If standing water is present in the sample upon receipt at the lab, the lab will fully homogenize the sample prior to ISM preparation. No decanting or removal of standing water should be performed by the lab.
3. Sample may be air-dried to remove moisture and facilitate sieving.
4. Milling is not recommended for organic contaminants and should not be performed for this project.
5. Sample is sieved; generally, to < 2mm particle size (#10 sieve) to exclude gravel and other large particles that may not have been removed in the field
6. Multi-incremental sub-sampling, using the 2-D slabcake method as described in the ISM guidance section 6.2.2.7, will be performed to obtain samples for chemical preparation/analysis.



TABLE 5 SAMPLE CONTAINERS, PRESERVATION, AND HOLD TIMES

ANALYTE/ANALYTE GROUP *	MATRIX	METHOD/(LABORATORY SOP ¹)	CONTAINER(S) (NUMBER, SIZE & TYPE PER SAMPLE)	PRESERVATION	HOLDING TIME	DATA PACKAGE TURNAROUND
Metals	Sediment ISM	EPA Method SW-846 6020B, EPA Method 7471B, EPA Method 3050B	1 L glass jar ² (1 kg sample size)	≤6°C	6 months	14 business days
	Soil ISM					
Pesticides	Sediment ISM	EPA Method SW-846 8081B low level, EPA Method 3546		≤6°C	Extraction: 14 days; Analysis: 40 days from extraction	14 business days
	Soil ISM					
Polychlorinated Biphenyls	Sediment ISM	EPA Method 8082A, EPA Method 3546		≤6°C	Extraction: 365 days; Analysis: 40 days from extraction	3-5 weeks
	Soil ISM					
Semivolatile Organic Compounds	Sediment ISM	EPA Method 8270E, EPA Method 3546		≤6°C	Extraction: 14 days; Analysis: 40 days from extraction	14 business days
	Soil ISM					
Total Organic Carbon	Sediment ISM	EPA Method Lloyd Kahn		≤6°C	14 days	3-5 weeks
	Soil ISM					
Hexavalent Chromium	Sediment ISM	EPA Method 7196A, EPA Method 3060A		≤6°C	30 days	14 business days
	Soil ISM					
Herbicides	Sediment ISM	EPA Method 8151A, EPA Method 3550B		≤6°C	Extraction: 14 days; Analysis: 40 days from extraction	14 business days
	Soil ISM					
Grain Size	Sediment Discrete	ASTM Standard D422	16 ounce glass wide mouth jar	None	None	3-5 weeks
	Soil ISM					
Metals	Equipment Blank Water	EPA Method SW-846 6020A, EPA Method 7471A, EPA Method SW-846 3010A	250 mL plastic	≤6°C, pH < 2 with HNO ₃	180 days; Hg: 28 days	14 business days



ANALYTE/ANALYTE GROUP *	MATRIX	METHOD/(LABORATORY SOP ¹)	CONTAINER(S) (NUMBER, SIZE & TYPE PER SAMPLE)	PRESERVATION	HOLDING TIME	DATA PACKAGE TURNAROUND
Pesticides	Equipment Blank Water	EPA Method SW-846 8081B, EPA Method SW-846 3510C	1 L glass	≤6°C	Extraction: 7 days; Analysis: 40 days from extraction	14 business days
Polychlorinated Biphenyls	Equipment Blank Water	EPA Method 8082, EPA Method SW-846 3510C	1 L glass	≤6°C	Extraction: 365 days; Analysis: 40 days from extraction	14 business days
Semivolatile Organic Compounds	Equipment Blank Water	EPA Method 8270, EPA Method SW-846 3510C	250 mL glass	≤6°C	Extraction: 7 days; Analysis: 40 days from extraction	14 business days
Herbicides	Equipment Blank Water	EPA Method 8151A	1 L glass	≤6°C	Extraction: 7 days; Analysis: 40 days from extraction	14 business days

Notes:

¹ Laboratory SOPs are listed in Table 4.

² Soil sampling protocol will result in slightly more than 1 kg of soil, therefore each ISM soil sample will be collected into two jars. The laboratory must combine these two jars prior to implementing ISM processing.

°C = degrees Celsius

SOP = Laboratory standard operating procedure

Laboratory Information:

Eurofins-North Canton, 4101 Shuffel Street, NW, North Canton, OH 44720

Contact: Opal Johnson, Opal.Johnson@testamericainc.com, (330) 966-9279.



TABLE 6.1 PROJECT ACTION LIMITS AND LABORATORY-SPECIFIC DETECTION/REPORTING LIMITS - SEDIMENT

Analyte	Units	SCREENING LEVELS							Lowest Applicable Screening Level	ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV ¹	NPS Background Study BTV	Literature- Based Background		Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
Organochlorine Pesticides											
4,4'-DDD	µg/Kg	8,000	-	100	10	7.81	42	-	42	0.0833	0.0175
4,4'-DDE	µg/Kg	6,000	115,000	100	10	N/A	58	-	58	0.0833	0.0170
4,4'-DDT	µg/Kg	6,000	1,170	240	24	N/A	-	-	24	0.0833	0.0598
Aldrin	µg/Kg	80	-	-	-	-	-	-	80	0.0833	0.0259
alpha-BHC	µg/Kg	50,000	-	-	-	-	-	-	50,000	0.0833	0.0205
beta-BHC	µg/Kg	10,000	-	-	-	-	-	-	10,000	0.0833	0.0229
Chlordane (technical)	µg/Kg	5,000	-	-	-	4.8	-	-	4.8	0.833	0.357
delta-BHC	µg/Kg	10,000	-	-	-	-	-	-	10,000	0.0833	0.0264
Dieldrin	µg/Kg	80	19,100	0.53	0.053	N/A	7.1	-	7.1	0.0833	0.0209
Endosulfan I	µg/Kg	500	-	-	-	-	-	-	500	0.0833	0.0226
Endosulfan II	µg/Kg	500	-	-	-	-	-	-	500	0.0833	0.0184
Endosulfan sulfate	µg/Kg	-	-	-	-	45	-	-	45	0.0833	0.0383
Endrin	µg/Kg	10,000	-	-	-	-	-	-	10,000	0.0833	0.0157
gamma-BHC (Lindane)	µg/Kg	3	-	-	-	0.99	-	-	0.99	0.0833	0.0215
Heptachlor	µg/Kg	300	-	-	-	-	-	-	300	0.0833	0.0261
Heptachlor epoxide	µg/Kg	100	-	-	-	-	-	-	100	0.0833	0.0213
Metals											
Antimony	mg/Kg	20	-	-	-	25	-	-	25	0.400	0.120
Arsenic	mg/Kg	20	877	1.7	0.17	N/A	23	-	23	1.00	0.0600
Beryllium	mg/Kg	90	-	-	-	-	-	-	90	0.200	0.0290
Cadmium	mg/Kg	70	-	-	-	4.2	-	-	4.2	0.200	0.0210
Chromium	mg/Kg	100	-	-	-	160	-	-	100	0.400	0.250
Chromium, Hexavalent	mg/Kg	100	-	-	-	-	-	-	100	0.420	0.140
Copper	mg/Kg	1,000	-	-	-	108	-	-	108	0.400	0.229



Analyte	Units	SCREENING LEVELS							Lowest Applicable Screening Level	ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV ¹	NPS Background Study BTV	Literature- Based Background		Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
Lead	mg/Kg	200	-	-	-	112	-	-	112	0.200	0.164
Mercury	mg/Kg	20	0.792	0.3		N/A	-	-	0.3	0.100	0.0180
Nickel	mg/Kg	600	3,500	200		N/A	-	-	200	0.400	0.244
Selenium	mg/Kg	400	-	-	-	-	-	-	400	1.00	0.120
Silver	mg/Kg	100	-	-	-	1.77	-	-	1.77	0.200	0.0100
Thallium	mg/Kg	8	-	-	-	-	-	-	8	0.200	0.125
Zinc	mg/Kg	1,000	-	-	-	271	-	-	271	4.00	3.64
Polychlorinated Biphenyls (PCBs)											
PCB-8	ug/Kg	-		-					0	1.00	0.361
PCB-18	ug/Kg	-		-					0	1.00	0.616
PCB-28	ug/Kg	-		-					0	1.00	0.529
PCB-44	ug/Kg	-		-					0	1.00	0.393
PCB-52	ug/Kg	-		-					0	1.00	0.401
PCB-66	ug/Kg	-		-					0	1.00	0.734
PCB-101	ug/Kg	-		-					0	1.00	0.274
PCB-105	ug/Kg	-		-					0	1.00	0.649
PCB-118	ug/Kg	-		-					0	1.00	0.674
PCB-128	ug/Kg	-		-					0	1.00	0.372
PCB-138	ug/Kg	-		-					0	1.00	0.403
PCB-153	ug/Kg	-		-					0	1.00	0.633
PCB-170	ug/Kg	-		-					0	1.00	0.500
PCB-180	ug/Kg	-		-					0	1.00	0.473
PCB-187	ug/Kg	-		-					0	1.00	0.537
PCB-195	ug/Kg	-		-					0	1.00	0.520
PCB-206	ug/Kg	-		-					0	1.00	0.453
Total PCBs	µg/Kg	1,000	6,500	26	3.7	N/A	-	35.4	35.4	-	-



Analyte	Units	SCREENING LEVELS							Lowest Applicable Screening Level	ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV¹	NPS Background Study BTV	Literature- Based Background		Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	µg/Kg	700	-	-	-	201	-	-	201	3.33	1.33
Acenaphthene	µg/Kg	4,000	-	-	-	89	-	-	89	1.67	0.667
Acenaphthylene	µg/Kg	1,000	5,450,000	79,000		N/A	-	-	1,000	1.67	0.333
Anthracene	µg/Kg	1,000,000	38,800	580,000		N/A	-	5.4	38,800	1.67	0.667
Benzo[a]anthracene	µg/Kg	7,000	28,100	56	5.6	N/A	-	20.3	20.3	1.67	0.667
Benzo[a]pyrene	µg/Kg	2,000	1,260,000	9	0.89	N/A	-	42.4	42.4	1.67	0.667
Benzo[b]fluoranthene	µg/Kg	7,000	12,500	65	6.5	-	-	89.7	89.7	1.67	0.667
Benzo[g,h,i]perylene	µg/Kg	1,000,000	1,260,000	45,000		-	-	30.1	45,000	1.67	0.667
Benzo[k]fluoranthene	µg/Kg	70,000	12,500	710	71	-	-	89.7	89.7	1.67	0.667
Chrysene	µg/Kg	70,000	2,870	390	39	N/A	-	32.9	39	1.67	0.333
Dibenz(a,h)anthracene	µg/Kg	700	1,260,000	8.2	0.82	N/A	-	8.5	8.50	1.67	0.667
Fluoranthene	µg/Kg	1,000,000	216,000	64,000		N/A	-	61.8	64,000	1.67	0.667
Fluorene	µg/Kg	1,000,000	5,450,000	33,000		N/A	-	3.5	33,000	1.67	0.667
Indeno[1,2,3-cd]pyrene	µg/Kg	7,000	1,260,000	140	14	-	-	28	28	1.67	0.667
Naphthalene	µg/Kg	4,000	-	-	-	391	-	21	391	3.33	1.33
Phenanthrene	µg/Kg	10,000	2,300	82,000		N/A	-	49.2	2,300	2.33	1.00
Pyrene	µg/Kg	1,000,000	216,000	28,000		N/A	-	4.4	28,000	1.67	0.667
LMW PAHs	µg/Kg	-	-	-	-	1,442	-	-	1,442	-	-
HMW PAHs	µg/Kg	-	-	-	-	6,676	-	-	6,676	-	-
Semi Volatile Organic Compounds											
1,1'-Biphenyl	µg/Kg	50	-	-	-	-	-	-	50	100	28.0
bis (2-chloroisopropyl) ether	µg/Kg	700	-	-	-	-	-	-	700	100	26.0
2,4,5-Trichlorophenol	µg/Kg	4,000	-	-	-	-	-	-	4,000	150	33.0
2,4,6-Trichlorophenol	µg/Kg	700	-	-	-	-	-	-	700	150	29.0
2,4-Dichlorophenol	µg/Kg	700	-	-	-	-	-	-	700	150	27.0



Analyte	Units	SCREENING LEVELS							Lowest Applicable Screening Level	ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV ¹	NPS Background Study BTV	Literature- Based Background		Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
2,4-Dimethylphenol	µg/Kg	700	-	-	-	-	-	-	700	150	36.0
2,4-Dinitrophenol	µg/Kg	3,000	-	-	-	-	-	-	3,000	330	171
2,4-Dinitrotoluene	µg/Kg	700	-	-	-	-	-	-	700	200	23.0
2,6-Dinitrotoluene	µg/Kg	100,000	-	-	-	-	-	-	100,000	200	36.0
2-Chloronaphthalene	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	100	28.0
2-Chlorophenol	µg/Kg	700	-	-	-	-	-	-	700	100	26.0
2-Methylphenol	µg/Kg	500,000	-	-	-	-	-	-	500,000	200	41.0
2-Nitroaniline	µg/Kg	-	-	-	-	-	-	-	-	200	38.0
2-Nitrophenol	µg/Kg	100,000	-	-	-	-	-	-	100,000	100	35.0
3,3'-Dichlorobenzidine	µg/Kg	3,000	-	-	-	-	-	-	3,000	150	95.0
3-Nitroaniline	µg/Kg	-	-	-	-	-	-	-	-	200	35.0
4,6-Dinitro-2-methylphenol	µg/Kg	50,000	-	-	-	-	-	-	50,000	330	104
4-Bromophenyl phenyl ether	µg/Kg	100,000	-	-	-	-	-	-	100,000	100	32.0
4-Chloro-3-methylphenol	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	150	38.0
4-Chloroaniline	µg/Kg	1,000	-	-	-	-	-	-	1,000	150	16.0
4-Chlorophenyl phenyl ether	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	100	28.0
4-Nitroaniline	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	200	26.0
4-Nitrophenol	µg/Kg	100,000	-	-	-	-	-	-	100,000	330	90.0
Acetophenone	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	100	25.0
Atrazine	µg/Kg	100,000	-	-	-	-	-	-	100,000	330	69.0
Benzaldehyde	µg/Kg	100,000	-	-	-	-	-	-	100,000	330	56.0
Bis(2- chloroethoxy)methane	µg/Kg	500,000	-	-	-	-	-	-	500,000	100	20.0
Bis(2-chloroethyl)ether	µg/Kg	700	-	-	-	-	-	-	700	100	22.0
Bis(2-ethylhexyl) phthalate	µg/Kg	90,000	-	-	-	2,600	-	-	2,600	150	56.0
Butyl benzyl phthalate	µg/Kg	100,000	-	-	-	-	-	-	100,000	150	51.0



Analyte	Units	SCREENING LEVELS							Lowest Applicable Screening Level	ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV ¹	NPS Background Study BTV	Literature- Based Background		Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
Caprolactam	µg/Kg	-	-	-	-	-	-	-	-	330	69.0
Carbazole	µg/Kg	-	-	-	-	-	-	-	-	100	27.0
Dibenzofuran	µg/Kg	100,000	-	-	-	-	-	-	100,000	100	29.0
Diethyl phthalate	µg/Kg	10,000	-	-	-	-	-	-	10,000	150	43.0
Dimethyl phthalate	µg/Kg	700	-	-	-	-	-	-	700	150	40.0
Di-n-butyl phthalate	µg/Kg	50,000	-	-	-	-	-	-	50,000	150	51.0
Di-n-octyl phthalate	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	150	50.0
Hexachlorobenzene	µg/Kg	700	-	-	-	-	-	-	700	40.0	14.0
Hexachlorobutadiene	µg/Kg	30,000	-	-	-	-	-	-	30,000	100	21.0
Hexachlorocyclopentadiene	µg/Kg	50,000	-	-	-	-	-	-	50,000	330	39.0
Hexachloroethane	µg/Kg	700	-	-	-	-	-	-	700	100	32.0
Isophorone	µg/Kg	100,000	-	-	-	-	-	-	100,000	100	26.0
N-Nitrosodi-n-propylamine	µg/Kg	50,000	-	-	-	-	-	-	50,000	100	37.0
N-Nitrosodiphenylamine	µg/Kg	100,000	-	-	-	-	-	-	100,000	100	27.0
Nitrobenzene	µg/Kg	500,000	-	-	-	-	-	-	500,000	100	22.0
Pentachlorophenol	µg/Kg	3,000	-	-	-	-	-	-	3,000	270	105
Phenol	µg/Kg	1,000	-	-	-	-	-	-	1,000	100	38.0
3 & 4 Methylphenol	µg/Kg	-	-	-	-	-	-	-	-	400	41.0
Herbicides											
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/Kg	-	-	-	-	N/A	-	-	-	36.0	12.0
4-(2,4-Dichlorophenoxy)butyric acid (2,4-DB)	µg/Kg	-	-	-	-	N/A	-	-	-	25.0	12.0
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	µg/Kg	-	-	-	-	N/A	-	-	-	1.70	0.820



Analyte	Units	SCREENING LEVELS							Lowest Applicable Screening Level	ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV ¹	NPS Background Study BTV	Literature- Based Background		Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
2-(2,4,5-Trichlorophenoxy) propionic acid (2,4,5-TP) (Silvex)	µg/Kg	-	-	-	-	N/A	-	-	-	1.70	0.750
Dalapon	µg/Kg	-	-	-	-	N/A	-	-	-	100	49.0
Dicamba	µg/Kg	-	-	-	-	N/A	-	-	-	29.0	14.0
Dichlorprop	µg/Kg	-	-	-	-	N/A	-	-	-	20.0	9.00
Methylchlorophenoxypropi onic acid (MCPP)	µg/Kg	-	-	-	-	N/A	-	-	-	7700	3800
2-Methyl-4- chlorophenoxyacetic acid (MCPA)	µg/Kg	-	-	-	-	1,200	-	-	1,200	2500	760

- = no applicable screening value

BTV = Background Threshold Value

ESV = Ecological Screening Value

HMW = High Molecular Weight

LMW = Low Molecular Weight

RBST = Risk-based screening threshold

N/A = NPS ESV not applicable, ecological RBST or background value is applicable

MCP RSC-1= Massachusetts Contingency Plan Reportable Concentration Soil 1 Values

mg/kg = milligrams per kilograms

µg/kg = micrograms per kilograms

BTVs determined by VHB (VHB 2021)

Literature-based background is the mean concentration reported in Quinn et al. 2001

¹For analytes with no project-specific ecological RBST or background value, NPS Ecological Screening Value Probable Effect Concentrations for marine sediment are listed (NPS 2018).



TABLE 6.2 PROJECT ACTION LIMITS AND LABORATORY-SPECIFIC DETECTION/REPORTING LIMITS - SOIL

Analyte	Units	SCREENING LEVELS					ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1 ¹	USEPA RSL ²	NPS COPEC Selection ESV ³	NPS Refined ESV ⁴	Lowest Applicable Screening Level	Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
Organochlorine Pesticides								
4,4'-DDD	µg/Kg	8000	2300	2	21	2	0.0833	0.0175
4,4'-DDE	µg/Kg	6000	2000	2	21	2	0.0833	0.017
4,4'-DDT	µg/Kg	6000	1900	2	21	2	0.0833	0.0598
Aldrin	µg/Kg	80	39	3.32	37	3.32	0.0833	0.0259
alpha-BHC	µg/Kg	50000	86	70	460	70	0.0833	0.0205
beta-BHC	µg/Kg	10000	300	3.98	270	3.98	0.0833	0.0229
Chlordane (technical)	µg/Kg	5000	1700	224	224	224	0.833	0.357
delta-BHC	µg/Kg	10000	-	70	70	70	0.0833	0.0264
Dieldrin	µg/Kg	80	34	4.5	4.9	4.5	0.0833	0.0209
Endosulfan I	µg/Kg	500	-	560	640	500	0.0833	0.0226
Endosulfan II	µg/Kg	500	-	560	640	500	0.0833	0.0184
Endosulfan sulfate	µg/Kg	-	38000	560	640	560	0.0833	0.0383
Endrin	µg/Kg	10000	1900	1.4	1.4	1.4	0.0833	0.0157
gamma-BHC (Lindane)	µg/Kg	3	570	5	9.5	3	0.0833	0.0215
Heptachlor	µg/Kg	300	130	59	59	59	0.0833	0.0261
Heptachlor epoxide	µg/Kg	100	70	-	-	70	0.0833	0.0213
Metals								
Antimony	mg/Kg	20	3.1	0.248	0.27	0.248	0.4	0.12
Arsenic ⁵	mg/Kg	20	0.68	0.25	18	20	1	0.06
Beryllium	mg/Kg	90	16	2.42	10	2.42	0.2	0.029
Cadmium	mg/Kg	70	0.71	0.27	0.36	0.27	0.2	0.021
Chromium	mg/Kg	100	-	0.34	0.4	0.34	0.4	0.25
Chromium, Hexavalent	mg/Kg	100	-	-	-	See Chromium	0.420	0.140
Copper	mg/Kg	1000	310	14	28	14	0.4	0.229
Lead	mg/Kg	200	400	0.94	11	0.94	0.2	0.164



Analyte	Units	SCREENING LEVELS					ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1 ¹	USEPA RSL ²	NPS COPEC Selection ESV ³	NPS Refined ESV ⁴	<i>Lowest Applicable Screening Level</i>	Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
Mercury	mg/Kg	20	1.1	0.013	0.013	0.013	0.1	0.018
Nickel	mg/Kg	600	140	10	38	10	0.4	0.244
Selenium	mg/Kg	400	39	0.331	0.52	0.331	1	0.12
Silver	mg/Kg	100	39	2	4.2	2	0.2	0.01
Thallium	mg/Kg	8	0.078	0.027	0.42	0.027	0.2	0.125
Zinc	mg/Kg	1000	2300	6.62	46	6.62	4	3.64
Polychlorinated Biphenyls (PCBs)								
PCB-8	ug/Kg	-	-	-	-	-	1.00	0.361
PCB-18	ug/Kg	-	-	-	-	-	1.00	0.616
PCB-28	ug/Kg	-	-	-	-	-	1.00	0.529
PCB-44	ug/Kg	-	-	-	-	-	1.00	0.393
PCB-52	ug/Kg	-	-	-	-	-	1.00	0.401
PCB-66	ug/Kg	-	-	-	-	-	1.00	0.734
PCB-101	ug/Kg	-	-	-	-	-	1.00	0.274
PCB-105	ug/Kg	-	120	-	-	120	1.00	0.649
PCB-118	ug/Kg	-	120	-	-	120	1.00	0.674
PCB-128	ug/Kg	-	-	-	-	-	1.00	0.372
PCB-138	ug/Kg	-	-	-	-	-	1.00	0.403
PCB-153	ug/Kg	-	-	-	-	-	1.00	0.633
PCB-170	ug/Kg	-	-	-	-	-	1.00	0.5
PCB-180	ug/Kg	-	-	-	-	-	1.00	0.473
PCB-187	ug/Kg	-	-	-	-	-	1.00	0.537
PCB-195	ug/Kg	-	-	-	-	-	1.00	0.52
PCB-206	ug/Kg	-	-	-	-	-	1.00	0.453
Total PCBs	µg/Kg	1000	230	40000	40000	230	-	-
Polycyclic Aromatic Hydrocarbons (PAHs)								
2-Methylnaphthalene	µg/Kg	700	24000	16000	16000	700	3.33	1.33
Acenaphthene	µg/Kg	4000	360000	250	20000	250	1.67	0.667



Analyte	Units	SCREENING LEVELS					ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1 ¹	USEPA RSL ²	NPS COPEC Selection ESV ³	NPS Refined ESV ⁴	Lowest Applicable Screening Level	Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
Acenaphthylene	µg/Kg	1000	-	120000	120000	1000	1.67	0.333
Anthracene	µg/Kg	1000000	1800000	6800	6800	6800	1.67	0.667
Benzo[a]anthracene	µg/Kg	7000	1100	730	730	730	1.67	0.667
Benzo[a]pyrene	µg/Kg	2000	110	1980	62000	110	1.67	0.667
Benzo[b]fluoranthene	µg/Kg	7000	1100	18000	18000	1100	1.67	0.667
Benzo[g,h,i]perylene	µg/Kg	1000000	-	25000	25000	25000	1.67	0.667
Benzo[k]fluoranthene	µg/Kg	70000	11000	71000	71000	11000	1.67	0.667
Chrysene	µg/Kg	70000	110000	3100	3100	3100	1.67	0.333
Dibenz(a,h)anthracene	µg/Kg	700	110	14000	14000	110	1.67	0.667
Fluoranthene	µg/Kg	1000000	240000	10000	10000	10000	1.67	0.667
Fluorene	µg/Kg	1000000	240000	3700	30000	3700	1.67	0.667
Indeno[1,2,3-cd]pyrene	µg/Kg	7000	1100	71000	71000	1100	1.67	0.667
Naphthalene	µg/Kg	4000	2000	1000	1000	1000	3.33	1.33
Phenanthrene	µg/Kg	10000	-	5500	5500	5500	2.33	1
Pyrene	µg/Kg	1000000	180000	10000	10000	10000	1.67	0.667
LMW PAHs	µg/Kg	-	-	29000	29000	29000	-	-
HMW PAHs	µg/Kg	-	-	1100	1100	1100	-	-
Semi Volatile Organic Compounds								
1,1'-Biphenyl	µg/Kg	50	4700	-	-	50	100	28
bis (2-chloroisopropyl) ether	µg/Kg	700	310000	-	-	700	100	26
2,4,5-Trichlorophenol	µg/Kg	4000	630000	4000	4000	4000	150	33
2,4,6-Trichlorophenol	µg/Kg	700	6300	10000	10000	700	150	29
2,4-Dichlorophenol	µg/Kg	700	19000	-	-	700	150	27
2,4-Dimethylphenol	µg/Kg	700	130000	10	-	10	150	36
2,4-Dinitrophenol	µg/Kg	3000	13000	20000	20000	3000	330	171
2,4-Dinitrotoluene	µg/Kg	700	1700	6000	6000	700	200	23
2,6-Dinitrotoluene	µg/Kg	100000	360	4000	4000	360	200	36
2-Chloronaphthalene	µg/Kg	1000000	480000	-	-	480000	100	28



Analyte	Units	SCREENING LEVELS					ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1 ¹	USEPA RSL ²	NPS COPEC Selection ESV ³	NPS Refined ESV ⁴	<i>Lowest Applicable Screening Level</i>	Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
2-Chlorophenol	µg/Kg	700	39000	390	390	390	100	26
2-Methylphenol	µg/Kg	500000	320000	670	670	670	200	41
2-Nitroaniline	µg/Kg	-	63000	5300	5300	5300	200	38
2-Nitrophenol	µg/Kg	100000	-	7000	7000	7000	100	35
3,3'-Dichlorobenzidine	µg/Kg	3000	1200	-	-	1200	150	95
3-Nitroaniline	µg/Kg	-	-	-	-	-	200	35
4,6-Dinitro-2-methylphenol	µg/Kg	50000	510	-	-	510	330	104
4-Bromophenyl phenyl ether	µg/Kg	100000	-	-	-	100000	100	32
4-Chloro-3-methylphenol	µg/Kg	1000000	630000	-	-	630000	150	38
4-Chloroaniline	µg/Kg	1000	2700	1000	1000	1000	150	16
4-Chlorophenyl phenyl ether	µg/Kg	1000000	-	-	-	1000000	100	28
4-Nitroaniline	µg/Kg	1000000	25000	-	-	25000	200	26
4-Nitrophenol	µg/Kg	100000	-	7000	7000	7000	330	90
Acetophenone	µg/Kg	1000000	780000	-	-	780000	100	25
Atrazine	µg/Kg	100000	2400	-	-	2400	330	69
Benzaldehyde	µg/Kg	100000	170000	-	-	100000	330	56
Bis(2-chloroethoxy)methane	µg/Kg	500000	19000	-	-	19000	100	20
Bis(2-chloroethyl)ether	µg/Kg	700	230	-	-	230	100	22
Bis(2-ethylhexyl) phthalate	µg/Kg	90000	39000	20	20	20	150	56
Butyl benzyl phthalate	µg/Kg	100000	290000	90000	90000	90000	150	51
Caprolactam	µg/Kg	-	3100000	-	-	3100000	330	69
Carbazole	µg/Kg	-	-	79000	79000	79000	100	27
Dibenzofuran	µg/Kg	100000	7800	6100	6100	6100	100	29
Diethyl phthalate	µg/Kg	10000	5100000	100000	100000	10000	150	43
Dimethyl phthalate	µg/Kg	700	-	10000	38000	700	150	40
Di-n-butyl phthalate	µg/Kg	50000	630000	11	11	11	150	51
Di-n-octyl phthalate	µg/Kg	1000000	63000	910	910	910	150	50
Hexachlorobenzene	µg/Kg	700	78	79	79	78	40	14



Analyte	Units	SCREENING LEVELS					ACHIEVABLE LABORATORY LIMITS	
		MCP RCS-1 ¹	USEPA RSL ²	NPS COPEC Selection ESV ³	NPS Refined ESV ⁴	Lowest Applicable Screening Level	Limit of Quantitation (LOQ) or Reporting Limit	Limit of Detection (LOD) or Method Detection Limit (MDL)
Hexachlorobutadiene	µg/Kg	30000	1200	-	-	1200	100	21
Hexachlorocyclopentadiene	µg/Kg	50000	180	10000	10000	180	330	39
Hexachloroethane	µg/Kg	700	1800	-	-	700	100	32
Isophorone	µg/Kg	100000	570000	-	-	100000	100	26
N-Nitrosodi-n-propylamine	µg/Kg	50000	78	-	-	78	100	37
N-Nitrosodiphenylamine	µg/Kg	100000	110000	20000	20000	20000	100	27
Nitrobenzene	µg/Kg	500000	5100	2200	4800	2200	100	22
Pentachlorophenol	µg/Kg	3000	1000	360	2100	360	270	105
Phenol	µg/Kg	1000	1900000	790	30000	790	100	38
3 & 4 Methylphenol	µg/Kg	-	320000	-	-	320000	400	41
Herbicides								
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/Kg	-	70000	-	-	70,000	36	12
4-(2,4-Dichlorophenoxy)butyric acid (2,4-DB)	µg/Kg	-	-	-	-	-	25	12
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	µg/Kg	-	63000	-	-	63,000	1.7	0.82
2-(2,4,5-Trichlorophenoxy) propionic acid (2,4,5-TP) (Silvex)	µg/Kg	-	51000	109	-	109	1.7	0.75
Dalapon	µg/Kg	-	190000	-	-	190,000	100	49
Dicamba	µg/Kg	-	190000	-	-	190,000	29	14
Dichlorprop	µg/Kg	-	-	-	-	-	20	9
Methylchlorophenoxypropionic acid (MCP P)	µg/Kg	-	6300	-	-	6,300	7700	3800
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	µg/Kg	-	3200	-	-	3,200	2500	760

- = no applicable screening value
HMW = High Molecular Weight



LMW = Low Molecular Weight
mg/kg = milligrams per kilograms
µg/kg = micrograms per kilograms
¹MCP RSC-1= Massachusetts Contingency Plan Reportable Concentration Soil 1 Values (May 2014)
²USEPA RSLs = U.S. Environmental Protection Agency Regional Screening Levels, Residential, TR=1E-06, THQ=0.1 (Nov 2023)
³NPS COPEC Selection ESV = National Park Service Contaminant of Potential Ecological Concern Selection Ecological Screening Value (Nov 2018)
⁴NPS Refined ESV = National Park Service Refined Ecological Screening Value (Nov 2018)
⁵MCP RSC-1 Value for arsenic is based on the State-wide background value for arsenic. Therefore, the arsenic screening level will default to this background value.



TABLE 7 LABORATORY QUALITY CONTROL AND DATA VALIDATION CRITERIA

QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
<i>Matrix: Sediment/Soil</i>	<i>Analytical Group: Metals (6020A/B)</i>			<i>SOP: NC-MT-002</i>	
Initial Calibration / Continuing Calibration	ICAL: minimum of blank + 1 standard CCV: mid-level of calibration range For establishing accuracy of calibration range and ongoing analytical accuracy	ICAL daily CCV every 10 samples	ICAL: see lab SOP CCV: 90-110% rec.	See lab SOP – recalibrate; reanalyze samples	Qualify data associated with ICAL or CCV outside acceptance limits
Method Blank (MB)	Reagent water containing all reagents specific to the method that is carried through the entire analytical procedure, including preparation/digestion and analysis.	One per preparation batch of up to 20 samples.	MB Target analytes < LOQ/RL	Re-preparation and re-analysis of all samples associated with an unacceptable MB is required when reportable concentrations are determined in the samples, except if all sample detects are > 10x MB level.	Target analytes < LOQ/RL. Associated sample results detected < MB levels may be negated (U) due to blank action.
Laboratory Control Sample (LCS) and/or LCS Duplicate (LCSD)	Known value standard from a source other than the calibration standards. LCS associated with Sediments may be a Standard Reference Material (SRM) from a verified source. Must be carried through all preparation/digestion and analytical procedures.	One per preparation batch up to 20 samples.	Recovery within 80 – 120% or within certified vendor control limits for solid LCS LCS/LCSD RPD ≤ 20%.	Re-preparation and re-analysis of the batch.	Recovery within 80 – 120% or within certified vendor control limits for solid LCS LCS/LCSD RPD ≤ 20%.

¹ Data validation (DV) criteria are based on project DQOs and the USEPA *National Functional Guidelines* (NFG) as documented in Table 10. For validation purposes, it is assumed the laboratory will perform calibration, maintenance and corrective actions per the specified method and laboratory method-specific SOPs. Professional judgement may be used during data validation, as allowed by the NFG, to take alternate DV actions based on cumulative QA/QC issues.



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
Matrix Spike & Matrix Duplicate (MS/MD)	An MS is a field sample to which known concentrations of target analytes have been added. An MD or lab duplicate is a second aliquot of the same sample prepared and analyzed along with the parent sample and MS. The MS/MD results are used to determine the effect of a matrix on the precision and accuracy of the analytical process.	One MS/MD pair must be processed for every 20 samples of the same matrix.	MS recovery 75-125% RPD $\leq$ 35%	Analyst shall determine if the MS is spiked properly. Recovery < 30%: re-digest and re-analyze associated sample(s). Otherwise, if LCS/LCSD is in-control, lab qualify data and narrate nonconformance. Note lab acceptance criterion for MD is RPD $\leq$ 20%; however, EPA allows RPD $\leq$ 35% for soil/sediment.	MS recovery 75-125% except if the sample concentration is > 4x the spike level (spike swamped out) Sediment sample/MD RPD $\leq$ 35%
Dilution Test	Performed to determine whether significant physical or chemical interferences exist due to the sample matrix. Test is performed by running a sample at 5x analytical dilution.	One sample per batch up to 20 samples.	% difference $\leq$ 10% for samples concentration 50x the MDL.	Lab narrate nonconformance. Note lab acceptance criterion is $\leq$ 10%; however, EPA allows $\leq$ 15% for soil/sediment.	Sediment: % difference $\leq$ 15%
Equipment Blank (EB)	Measure of potential field contamination	One per 20 samples	EB < LOQ/RL	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	EB < LOQ/RL
ISM Replicates A, B, C	Replicate ISM samples will be collected with a minimum of 40 increments each and a total of approximately 1Kg sediment each replicate to assess overall precision and representativeness of ISM sample results.	3 replicates to be collected / analyzed in each Decision Unit	RSD $\leq$ 50%	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	RSD $\leq$ 50% (consistent with on-site QA/QC acceptance criterion)
Matrix: Sediment/Soil	Analytical Group: Mercury (7471B)			SOP: NC-MT-014	



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
MB	Reagent water containing all reagents specific to the method that is carried through the entire analytical procedure, including preparation and analysis.	One per sample preparation batch of up to 20 samples.	Contaminants in the MB must be less than the RL. For common laboratory contaminants, no analytes detected >RL.	Investigate the source of the contamination. Redigest and reanalyze all associated samples if the sample concentration >RL and <10x the MB concentration.	Sample results ≤5X MB will be qualified not detected (U). ²
LCS	Known value standard from a source other than the calibration standards.	One per sample preparation batch of up to 20 samples.	Recovery within laboratory control limits. Recovery <30% is unacceptable.	Terminate analysis; correct the problem; re-prepare and reanalyze all samples associated with the LCS.	80-120%; LCS/LCSD RPD<15%
MS & MSD	Two field samples to which known concentrations of target analytes have been added.	One per 20 samples.	Recovery within laboratory control limits, or same as LCS, whichever is higher, RPD ≤50% for both analytes >5x QL otherwise ±QL unless the sample level is > 4x the spike added; then, evaluate precision in all three analyses.	Flag the data; use a separate flag if the sample level is >4x the spike added. If LCS is outside limits, re-prepare and reanalyze sample and MS/MSD.	MS/MSD 80-120% MS/MSD RPD <50 If sample concentration>4x the spike added precision in all three analyses, RSD<30
ISM Replicates A, B, C	Replicate ISM samples will be collected with a minimum of 40 increments each and a total of approximately 1Kg sediment each replicate to assess overall precision and representativeness of ISM sample results.	3 replicates to be collected / analyzed in each Decision Unit	RSD ≤ 50%	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	RSD ≤ 50% (consistent with on-site QA/QC acceptance criterion)

² Same data validation criteria will be used for equipment blanks



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
<i>Matrix: Sediment/Soil</i>	<i>Analytical Group: Pesticides (8081B)</i>			<i>SOP: PT-GC-006</i>	
DDT Breakdown evaluation	To verify the accuracy for reporting of 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD	Daily prior to ICV or CCV and sample analyses	Breakdown ≤15%	See SOP – perform maintenance on the GC injection system and column and then re-evaluate breakdown	Breakdown ≤ 15%
ICAL / CCV	For establishing accuracy of calibration range and ongoing analytical accuracy	ICAL: initially and when CCV fails CCV: daily prior to analysis of samples, at least every 12 hr or 20	ICAL: ≥ 5-levels of standards with lowest-level standard ≤ LOQ; %RSD ≤ 20% or $r^2 > 0.99$ CCV: mid-level standard; %D ≤ ± 20%	See lab SOP – recalibrate; reanalyze samples	Qualify data associated with ICAL or CCV outside acceptance limits
MB	Matrix-matched blank matrix (e.g. analyte-free reagent water or diatomaceous earth), which is carried through all extraction and analytical procedures.	One per extraction batch of up to 20 samples.	Target analytes < LOQ/RL	If MB result > LOQ/RL, if sample results > 10x level in the blank, no corrective action required. If samples < 10x level in the blank, entire analytical batch should be re-extracted and re-analyzed, if possible. Narrate issues if re-extraction and re-analysis not possible.	Target analytes < LOQ/RL. Associated sample results detected < MB levels may be negated (U) due to blank action.
LCS and/or LCSD	Matrix-matched blank matrix spiked with a known quantity of the target compounds, which is carried through all extraction and analytical procedures.	One per extraction batch up to 20 samples.	Recovery: 40-140% RPD ≤ 30%	If Recovery ≤ 10%, the entire analytical batch should be re-extracted and re-analyzed if possible. Narrate issues if re-extraction and re-analysis not possible.	Recovery: 40-140% RPD ≤ 30%.
Surrogates	Tetrachloro-m-xylene (TCMX) and Decachlorobiphenyl (DCB) used to assess accuracy in the matrices	Added to each sample and QC (MS/MSD, LCS/LCSD, MB) prior to extraction	Recovery 30-150% on both GC Columns	No action required if TCMX and DCB are acceptable on one of the GC Columns or if dilution has caused the surrogates to be “diluted out”. Otherwise, re-analyze or re-extract and re-analyze, if possible. Narrate issues if re-extraction and re-analysis not possible.	Recovery: 30-150%



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
MS/MSD	An MS is a field sample to which known concentrations of target analytes have been added. An MSD is a second aliquot of the same sample spiked and prepared and analyzed along with the parent sample and MS. The MS/MSD results are used to determine the effect of a matrix on the accuracy and precision of the analytical process.	One MS/MSD pair must be processed for every 20 samples of the same matrix. No MS/MSD required for EB.	Recovery 30-150% RPD $\leq$ 30%	If LCS/LCSD is acceptable, report MS/MSD noting exceedance issues with accuracy or precision in narrative.	Recovery 30-150% RPD $\leq$ 30%
Dual Column Precision	Evaluates accuracy for reporting of results.	Every detected result	RPD $\leq$ 40% for a detect between the 2 GC Columns (lab to report the highest of the 2 GC column values unless interference is present)	If RPD > 100%, dilute the extract and re-analyze. Qualify sample results appropriately (e.g., add "P" or "IP" to data) and narrate issue.	RPD $\leq$ 40%
Internal Standards (IS)	Added to each sample extract prior to analysis and used for quantitation of targets and to ensure accuracy of analysis.	Every field and QC sample extract	Area counts within 50-200% of area counts of IS in CCV RT within $\pm$ 30 sec of RT of IS in CCV	Reanalyze sample unless obvious chromatographic interferences are present. Narrate issue	Area counts within 50-200% of area counts of IS in CCV RT within $\pm$ 30 sec of RT of IS in CCV
EB	Measure of potential field contamination	One per 20 samples	EB Target analytes < LOQ/RL	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	EB Target analytes < LOQ/RL
ISM Replicates A, B, C	Replicate ISM samples will be collected with a minimum of 40 increments each and a total of approximately 1Kg sediment each replicate to assess overall precision and representativeness of ISM sample results.	3 replicates to be collected / analyzed in each Decision Unit	%RSD $\leq$ 50%	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	%RSD $\leq$ 50% (consistent with on-site QA/QC acceptance criterion)
Matrix: Sediment	Analytical Group: Total Organic Carbon (TOC) (Lloyd Kahn)			SOP: PT-GC-010	



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
ICAL CCV	Multi-concentration calibration curve for establishing accuracy of calibration range and ongoing analytical accuracy	ICAL: every 6-mo CCV: daily and every 20 burns	ICAL: $r > 0.995$ or $\%RSD \leq 20\%$ CCV: 85-115% rec	Perform instrument maintenance per manufacturer's instruction, change buffer solutions, recalibrate	Reject or qualify results associated with an initial calibration outside acceptance criteria
MB	Reagent water containing all reagents specific to the method that is carried through the entire analytical procedure.	One per analytical batch of up to 20 samples.	MB TOC < LOQ/RL	Re-preparation and re-analysis of all samples associated with an unacceptable MB is required when reportable concentrations are determined in the samples, except if all sample detects are > 10x MB level.	TOC < LOQ/RL. Associated sample results detected < MB levels may be negated (U) due to blank action.
LCS and/or LCSD	Known value standard from a source other than the calibration standards. LCS associated with Sediments may be a Standard Reference Material (SRM) from a verified source that is carried through the entire analytical procedure.	One per analytical batch up to 20 samples.	Recovery 85-115% or within certified vendor control limits for solid RPD $\leq 20\%$.	Re-preparation and re-analysis of the batch.	Recovery 75-125% or within certified vendor control limits for solid RPD $\leq 20\%$.
MS and MD	An MS is a field sample to which known concentrations of target analytes have been added. An MD or lab duplicate is a second aliquot of the same sample prepared and analyzed along with the parent sample and MS. The MS/MD results are used to determine the effect of a matrix on the precision and accuracy of the analytical process.	One MS/MD pair must be processed for every 20 samples of the same matrix.	MS recovery 75-125% RPD $\leq 35\%$	Analyst shall determine if the MS is spiked properly. Recovery < 30%: re-digest and re-analyze associated sample(s). Otherwise, if LCS/LCSD is in-control, lab qualify data and narrate nonconformance. Note lab acceptance criterion for MD is RPD $\leq 20\%$; however, EPA allows RPD $\leq 35\%$ for soil/sediment.	MS recovery 75-125% except if the sample concentration is > 4x the spike level (spike swamped out) Sediment sample/MD RPD $\leq 35\%$



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
ISM Replicates A, B, C	Replicate ISM samples will be collected with a minimum of 40 increments each and a total of approximately 1Kg sediment each replicate to assess overall precision and representativeness of ISM sample results.	3 replicates to be collected / analyzed in each Decision Unit	RSD ≤ 50%	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	RSD ≤ 50% (consistent with on-site QA/QC acceptance criterion)
<i>Matrix: Sediment/Soil</i>	<i>Analytical Group: PCBs as Congeners (8082A)</i>			<i>SOP: PT-GC-005</i>	
Initial Calibration / Continuing Calibration	ICAL: Minimum 6 points for Congeners CCV: mid-level of calibration range For establishing accuracy of calibration range and ongoing analytical accuracy	ICAL every 6 months CCV beginning of run and every 20 samples	ICAL: see lab SOP CCV: 80-120% rec.	See lab SOP – recalibrate; reanalyze samples	Qualify data associated with ICAL or CCV outside acceptance limits
MB	Reagent water containing all reagents specific to the method that is carried through the entire analytical procedure, including preparation/digestion and analysis.	One per preparation batch of up to 20 samples.	MB Target analytes < LOQ/RL	Re-preparation and re-analysis of all samples associated with an unacceptable MB is required when reportable concentrations are determined in the samples, except if all sample detects are > 10x MB level.	Target analytes < LOQ/RL. Associated sample results detected < MB levels may be negated (U) due to blank action.
LCS and/or LCSD	Known value standard from a source other than the calibration standards. LCS associated with Sediments may be a SRM from a verified source. Must be carried through all preparation/digestion and analytical procedures.	One per preparation batch up to 20 samples.	Within certified vendor control limits for solid LCS LCS/LCSD RPD ≤ 20%.	Re-preparation and re-analysis of the batch.	Recovery certified vendor control limits for solid LCS LCS/LCSD RPD ≤ 20%.



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
MS/MSD	An MS is a field sample to which known concentrations of target analytes have been added. An MSD is a second aliquot of the same sample spiked and prepared and analyzed along with the parent sample and MS. The MS/MSD results are used to determine the effect of a matrix on the accuracy and precision of the analytical process.	One MS/MSD pair must be processed for every 20 samples of the same matrix.	Within certified vendor control limits, RPD less than established vendor limit	Analyst shall determine if the MS is spiked properly. If outside control limits: re-digest and re-analyze associated sample(s). Otherwise, if LCS/LCSD is in-control, lab qualify data and narrate nonconformance.	MS recovery within limits except if the sample concentration is > 4x the spike level (spike swamped out)
Surrogates	TCMX and DCB used to assess accuracy in the matrices	Added to each sample and QC (MS/MSD, LCS/LCSD, MB) prior to extraction	Within certified vendor control limits on both GC Columns	No action required if TCMX and DCB are acceptable on one of the GC Columns or if dilution has caused the surrogates to be "diluted out". Otherwise, re-analyze or re-extract and re-analyze, if possible. Narrate issues if re-extraction and re-analysis not possible.	Recovery within control limits
Dual Column Precision	Evaluates accuracy for reporting of results.	Every detected result	RPD $\leq$ 40% for a detect between the 2 GC Columns (lab to report the highest of the 2 GC column values unless interference is present)	If RPD > 100%, dilute the extract and re-analyze. Qualify sample results appropriately (e.g., add "P" or "IP" to data) and narrate issue.	RPD $\leq$ 40%
EB	Measure of potential field contamination	One per 20 samples	EB < LOQ/RL	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	EB < LOQ/RL



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
ISM Replicates A, B, C	Replicate ISM samples will be collected with a minimum of 40 increments each and a total of approximately 1Kg sediment each replicate to assess overall precision and representativeness of ISM sample results.	3 replicates to be collected / analyzed in each Decision Unit	RSD ≤ 50%	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	RSD ≤ 50% (consistent with on-site QA/QC acceptance criterion)
<i>Matrix: Sediment/Soil</i>	<i>Analytical Group: SVOCs (8270)</i>			<i>SOP: NC-MS-018</i>	
MB	Sodium sulfate containing all reagents specific to the method that is carried through the entire analytical procedure, including preparation/digestion and analysis.	One per preparation batch of up to 20 samples.	MB Target analytes < LOQ/RL	Re-preparation and re-analysis of all samples associated with an unacceptable MB is required when reportable concentrations are determined in the samples, except if all sample detects are > 10x MB level.	Target analytes < LOQ/RL. Associated sample results detected < MB levels may be negated (U) due to blank action.
LCS and/or LCSD	Known value standard from a source other than the calibration standards. LCS associated with Sediments may be a SRM from a verified source. Must be carried through all preparation/digestion and analytical procedures.	One per preparation batch up to 20 samples.	Within certified vendor control limits for solid LCS LCS/LCSD RPD ≤ 20%.	Re-preparation and re-analysis of the batch.	Recovery certified vendor control limits for solid LCS LCS/LCSD RPD ≤ 20%.
MS/MSD	An MS is a field sample to which known concentrations of target analytes have been added. An MSD is a second aliquot of the same sample spiked and prepared and analyzed along with the parent sample and MS. The MS/MSD results are used to determine the effect of a matrix on the accuracy and precision of the analytical process.	One MS/MSD pair must be processed for every 20 samples of the same matrix.	Within certified vendor control limits, RPD less than established vendor limit	Analyst shall determine if the MS is spiked properly. If outside control limits: re-digest and re-analyze associated sample(s). Otherwise, if LCS/LCSD is in-control, lab qualify data and narrate nonconformance.	MS recovery within limits except if the sample concentration is > 4x the spike level (spike swamped out)



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
EB	Measure of potential field contamination	One per 20 samples	EB < LOQ/RL	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	EB < LOQ/RL
ISM Replicates A, B, C	Replicate ISM samples will be collected with a minimum of 40 increments each and a total of approximately 1Kg sediment each replicate to assess overall precision and representativeness of ISM sample results.	3 replicates to be collected / analyzed in each Decision Unit	RSD ≤ 50%	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	RSD ≤ 50% (consistent with on-site QA/QC acceptance criterion)
<i>Matrix: Sediment/Soil</i>	<i>Analytical Group: Herbicides (8151)</i>			<i>SOP: T-PEST-WI9845</i>	
MB	Sodium sulfate containing all reagents specific to the method that is carried through the entire analytical procedure, including preparation/digestion and analysis.	One per preparation batch of up to 20 samples.	MB Target analytes < LOQ/RL	Re-preparation and re-analysis of all samples associated with an unacceptable MB is required when reportable concentrations are determined in the samples, except if all sample detects are > 10x MB level.	Target analytes < LOQ/RL. Associated sample results detected < MB levels may be negated (U) due to blank action.
LCS and/or LCSD	Known value standard from a source other than the calibration standards. LCS associated with Sediments may be a SRM from a verified source. Must be carried through all preparation/digestion and analytical procedures.	One per preparation batch up to 20 samples.	Within certified vendor control limits for solid LCS LCS/LCSD RSD ≤ 20%.	Re-preparation and re-analysis of the batch.	Recovery certified vendor control limits for solid LCS LCS/LCSD RSD ≤ 20%.



QUALITY CONTROL CHECK	EXPLANATION	RUN FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	DATA VALIDATION CRITERIA ¹
MS/MSD	An MS is a field sample to which known concentrations of target analytes have been added. An MSD is a second aliquot of the same sample spiked and prepared and analyzed along with the parent sample and MS. The MS/MSD results are used to determine the effect of a matrix on the accuracy and precision of the analytical process.	One MS/MSD pair must be processed for every 20 samples of the same matrix.	Within certified vendor control limits, RPD less than established vendor limit	Analyst shall determine if the MS is spiked properly. If outside control limits: re-digest and re-analyze associated sample(s). Otherwise, if LCS/LCSD is in-control, lab qualify data and narrate nonconformance.	MS recovery within limits except if the sample concentration is > 4x the spike level (spike swamped out)
EB	Measure of potential field contamination	One per 20 samples	EB < LOQ/RL	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	EB < LOQ/RL
ISM Replicates A, B, C	Replicate ISM samples will be collected with a minimum of 40 increments for sediment and 30 increments for soil each and a total of approximately 1Kg sediment/soil each replicate to assess overall precision and representativeness of ISM sample results.	3 replicates to be collected / analyzed in each Decision Unit	RSD ≤ 50%	No lab corrective action unless reanalysis requested by project manager. Potential data usability issue.	RSD ≤ 50% (consistent with on-site QA/QC acceptance criterion)



TABLE 8 LABORATORY DATA DELIVERABLES

RECORD	METALS	PESTICIDES	SVOCS	PCBs	HEXAVALENT CHROMIUM	HERBICIDES	GRAIN SIZE	TOTAL ORGANIC CARBON
Narrative	X	X	X	X	X	X	X	X
Chain of custody	X	X	X	X	X	X	X	X
Sample Receipt Report	X	X	X	X	X	X	X	X
Summary results	X	X	X	X	X	X	X	X
Quality control (QC) summary results	X	X	X	X	X	X	X	X
Chromatograms/Spectra	N/A	X	X	X	N/A	X	N/A	N/A
Instrument raw data (all calibration reports, QC sample raw data, sample raw data for all analyses including dilutions and re-analyses, and preparation/extraction information)	X	X	X	X	X	X	X	X
Laboratory bench sheets/logs (all bench sheets must be included)	X	X	X	X	X	X	X	X
Electronic data deliverables	X	X	X	X	X	X	X	X

N/A = Not Applicable



TABLE 9 DATA VERIFICATION PROCEDURES

ITEM/DESCRIPTION	VERIFICATION (COMPLETENESS)	VALIDATION (CONFORMANCE TO SPECIFICATIONS)
Planning Documents/Records		
1. Approved quality assurance project plan (QAPP)	x	
2. Contract	x	
3. Field standard operating procedures (SOPs)	x	
4. Laboratory SOPs	x	
Field Records		
5. Field logbooks	x	x
6. Equipment calibration records	x	x
7. Chain-of-custody forms	x	x
8. Sampling diagrams/surveys	x	x
9. Sediment description logs	x	x
10. Relevant correspondence	x	x
11. Deviations	x	x
12. Field corrective action reports	x	x
Analytical Data Package		
13. Cover sheet (laboratory identifying information)	x	x
14. Case narrative	x	x
15. Inter-laboratory chain-of-custody documents	x	x
16. Sample receipt records	x	x
17. Sample chronology (i.e., dates and times of receipt, prep, analysis)	x	x
18. Laboratory bench sheets and instrument logs	x	x
19. LOD/MDL and LOQ/RL establishment and verification	x	x
20. Standards traceability	x	x
21. Instrument calibration records	x	x
22. Definition of laboratory qualifiers	x	x
23. Results reporting forms	x	x



TABLE 10 DATA VALIDATION PROCEDURES

Summary: All received data packages will be verified and validated internally. Validation will be performed by the contractor project manager according to the data validation procedures according to the analytical methods defined in this SAP and the DQOs defined in this SAP. Professional judgment will be applied as necessary and appropriate.

Analytical Group/Method:	Metals, SVOCs, PCBs, pesticides, hexavalent chromium, herbicides, and total organic carbon (TOC) (Metals – EPA Method 6020 and 7471B; SVOCs – EPA Method 8270D; PCBs – EPA Method 8082A; Pesticides – EPA Method 8081B; Hexavalent Chromium – EPA Method 7196A; Herbicides – EPA Method 8151A; TOC – EPA Lloyd Kahn)
Data deliverable requirements:	Table 9 (full lab data report as bookmarked pdf file and electronic data deliverable [EDD])
Analytical specifications:	Equipment calibration in SOPs, Tables 6 and 7
Measurement performance criteria (MPC):	Laboratory SOPs and Table 8
Percent of raw data reviewed:	As needed to evaluate narrative deviations
Percent of results to be recalculated:	0
Validation procedure:	Reference method and criteria presented in SOPs and Table 8.
Validation code*:	NV
Electronic validation program/version:	EQulS compliant EDD



Validation Code*	Validation Label	Description/Reference
S1VE	Stage 1 Validation Electronic	EPA 2009 Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use
S1VM	Stage 1 Validation Manual	
S1VEM	Stage 1 Validation Electronic and Manual	
S2aVE	Stage 2A Validation Electronic	
S2aVM	Stage 2A Validation Manual	
S2aVEM	Stage 2A Validation Electronic and Manual	
S2bVE	Stage 2B Validation Electronic	
S2bVM	Stage 2B Validation Manual	
S2bVEM	Stage 2B Validation Electronic and Manual	
S3VE	Stage 3 Validation Electronic	
S3VM	Stage 3 Validation Manual	
S3VEM	Stage 3 Validation Electronic and Manual	
S4VE	Stage 4 Validation Electronic	
S4VM	Stage 4 Validation Manual	
S4VEM	Stage 4 Validation Electronic and Manual	
NV	Not Validated	



Appendix 1 – Sediment and Soil Management Framework



DRAFT Sediment and Soil Management Framework

Cape Cod National Seashore Herring River Restoration Project

Prepared by



5/3/2024



Photo Source: <https://www.nps.gov/caco/learn/nature/herring-river-tidal-restoration-project.htm>



SIGNATORIES:

_____ Print NPS Region Leadership's Name/Title	_____ Signature	_____ Date
_____ Print Park Superintendent's Name/Title	_____ Signature	_____ Date

Ratified by:		

_____ Environmental Compliance and Cleanup Division	_____ Signature	_____ Date



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Figure 2	Sediment Management Decision Flowchart
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Table 3-1	Sediment Management Units
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List of Tables (Attached)

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Appendix 3	Sediment and Soil Characterization Protocol
Appendix 4	NPS Clean Fill Protocol
Appendix 5	Collaborative Risk Solutions LLC Alternative Cancer Risk Based Values



LIST OF ABBREVIATIONS AND ACRONYMS

CACO	Cape Cod National Seashore
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DEP	Department of Environmental Protections
DU	Decision Unit
ECCD	Environmental Compliance and Cleanup Division
EPH	Extractable Petroleum Hydrocarbon
ESV	Ecological Screening Value
HRRP	Herring River Restoration Project
IDQTF	Intergovernmental Data Quality Task Force
ISM	Incremental Sampling Methodology
ITRC	Interstate Technology & Regulatory Council
MA	Massachusetts
MCP	Massachusetts Contingency Plan
NCP	National Contingency Plan
NOAA	National Ocean and Atmospheric Administration
NPS	National Park Service
RBST	Risk-based Screening Threshold
RCS	Reportable Concentration Soil
SAP	Sampling and Analysis Plan
SMU	Sediment Management Unit
T&E	Threatened and Endangered
TOC	Total Organic Carbon
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WHG	Woods Hole Group



1 INTRODUCTION

This National Park Service (NPS) sediment and soil management framework (SSMF) was prepared to support the Herring River Restoration Project (HRRP). The HRRP Site (the “Site”) is within Cape Cod National Seashore (CACO, the “Park”) and the towns of Wellfleet and Truro, in Barnstable County, Massachusetts. NPS and the Town of Wellfleet have entered multiple Memoranda of Understandings to implement the HRRP to re-establish tidal exchange to the Herring River estuary and thereby remediate degraded conditions and restore native wetland habitats.

Proposed restoration actions include activities that will require management of sediment and soil within and outside of CACO. A general project Sediment Management Plan was prepared by EA Engineering, Science, and Technology Inc. to provide a framework for sediment management that will occur outside of CACO. This SSMF was prepared to provide a process with which to assess sediment and soil management options and facilitate risk management decisions for portions of the project that occur within CACO. This framework has the following sections:

Section 2: Background. Provides a background on the HRRP and the purpose of this framework.

Section 3: Sediment Management Units. Identifies the project elements that will require sediment management.

Section 4: Sediment and Soil Management Options. Identifies the potential options for sediment and soil management within CACO.

Section 5: Sediment and Soil Pre-Characterization. Discusses the process for pre-characterizing sediment and soil to determine which management option may be suitable.

Section 6: Decision Framework. Provides a framework for determining which sediment and soil management options are applicable.

Section 7: Additional Factors to Consider. Discusses the additional factors that decision makers will need to evaluate to determine which sediment and soil management option is most appropriate.

1.1 SEDIMENT AND SOIL MANAGEMENT DOCUMENTATION AND APPROVALS

This SSMF was ratified by NPS Environmental Compliance and Cleanup Division (ECCD) and approved at the regional and Park level. Decisions regarding sediment and soil management for this project will be documented in a Soil or Sediment Management Plan (SMP) that follows the template provided as Appendix 1. A separate SMP will be prepared for each project element as work progresses. The SMP must be approved by the region and the Park prior to implementation, per the signature block included in the appended template. In addition, the SMP must be approved by ECCD if sediment is identified as Category 2 or Category 3, or if soil is identified as Category 3 or 4.



2 BACKGROUND

This section provides a background of the HRRP and the purpose of this SSMF.

2.1 PROJECT BACKGROUND

The HRRP is being conducted to re-establish tidal exchange to the Herring River estuary. Tidal flow will be facilitated through replacement of a portion of the existing earthen dike and tidal control structure at Chequessett Neck Road with a new bridge and tide gate system; construction or alteration of other tidal control structures at the entrances to the Mill Creek and Upper Pole Dike Creek sub-basins; removal of a portion of High Toss Road where it crosses the marsh between the Lower Herring River and Lower Pole Dike Creek sub-basins; vegetation and marsh management; and measures to prevent water intrusion impacts to structures on public and private properties (see Figure 1).

Phase 1 of the Project will involve construction of all major water control infrastructure and allow tidal restoration to nearly two-thirds (570 acres) of the full restoration area (890 acres). Approximately 535 acres or 95% of the Phase 1 restoration area is within CACO boundaries and owned by NPS. Activities associated with later phases of the project will be dependent on how the restoration area responds to Phase I activities. Proposed restoration actions include activities that will require management of sediment and soil. Sediment management options for the HRRP Site include beneficial use to supplement marsh surface elevation, upland beneficial use, burial below the biologically active zone, or removal off-Site. Soil management options for the HRRP Site include upland surface reuse, upland burial, or removal off-Site.

While the Site is not a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Site, and actions conducted as part of the HRRP restoration do not constitute a removal or remedial action under CERCLA, NPS follows the CERCLA process when making decisions regarding potentially contaminated material placed within a Park boundary. Therefore, the need to manage on-Site or remove sediment or soil off-Site will be determined based on whether concentrations of contaminants exceed applicable screening levels. Applicable screening levels are described in Section 5.4 of this SSMF.

2.2 FRAMEWORK PURPOSE AND OBJECTIVES

This SSMF provides a generic framework for assessing the implications of selecting the various screening criteria. The framework outlines the process for assessing the impacts to various factors that should be considered if a decision is made to deviate from the most stringent screening criteria for either sediment or soil. The Park and NPS ECCD agreed that there is currently not enough information to establish a de-facto screening criteria for sediment or soil management decisions within CACO. It was determined that the exposure, uncertainty, and technical factors are likely to differ for the various construction/restoration elements and should thereby be evaluated separately for each project element (also called sediment or soil management units [SMUs]). When the appropriate screening criteria for a SMU has been selected, a separate SMP will be developed for that SMU that will identify the selected screening criteria and management requirements for that SMU.



Figure 1: Project Elements and Herring River Sub-Basins





3 SEDIMENT AND SOIL MANAGEMENT UNITS

Permitting and implementation of the project has been split into Class 1 and Class 2 activities. Class 1 activities are those that will be required to restore tidal flow, and have already been pre-characterized and permitted. Class 2 activities are ancillary activities that largely have yet to be identified and therefore not yet permitted, and include stream channel connectivity, marsh surface elevation restoration, incremental tidal restoration, and vegetation management. Sediment management options for each SMU will generally be evaluated independently as outlined by the process in this framework. The areas defined as Class 1 project elements that are located within the Park and therefore subject to this SSMF and the approximate dredge volume associated with each SMU are outlined in Table 3-1 below. A detailed description of each Class 1 element is provided in the general project Sediment Management Plan prepared by EA Engineering, Science, and Technology Inc and included as Appendix 2.

In addition to the SMUs, some project elements will also require soil management. The Mill Creek Dike project element will have a soil management component, and the High Toss Road and Miller-Frederickson Driveway project elements may as well. The volume of soil that will need to management as part of these project elements has not yet been quantified.

Text Table 3-1: Sediment Management Units

Location	Class 1 Element	Approx. Dredge Volume (yds ³)
Chequessett Neck Road Bridge	Bridge Construction	6,750
Mill Creek Dike	WCS	955
Mill Creek	Drainage Improvements	979
High Toss Road	Culvert Removal	60
Pole Dike Road	WCS	56
Miller Frederiksen Driveway	Culvert Replacement	< 2
Bound Brook Island Road (A)	Culvert Replacement	194
Bound Brook Island Road (B)	Culvert Replacement	25
Old County Road (A)	Culvert Replacement	14
Old County Road (B)	Culvert Replacement	15
Old County Road (C)	Culvert Replacement	< 10



4 MANAGEMENT OPTIONS

The subsections below describe the management options for sediment and for soil.

4.1 SEDIMENT MANAGEMENT OPTIONS

The following sediment management options will be considered for each SMU based on the results of laboratory analysis of contaminants, sediment physical parameters, and other risk management factors (see Sections 6 and 7). Maximizing beneficial reuse of dredged material is one of the goals of the HRRP.

No-Action: If alteration of a SMU is not required to fulfill project objectives no action could be considered. A no-action management decision may be appropriate in a scenario where contaminant concentrations within the biologically active zone are not posing risk, but buried contaminant concentrations are elevated and could pose risk if re-located to become biologically available.

Beneficial Reuse: Beneficial reuse of the dredge sediment is the preferred and primary management decision available. Beneficial reuse, when strategically placed near the dredge activity, offers the lowest cost management decision, and offers the opportunity to restore adjacent habitats. Whether beneficial reuse is appropriate for an SMU will largely be dependent on chemical analysis. In addition, composition of the dredge material (grain size and total organic carbon content) will be considered as it relates to the ecological compatibility with the area proposed for receiving dredged sediment. Treatment of dredged material with ultra-basic mineral sand or activated carbon to render contaminants not bioavailable may also be an option for material with elevated contaminant concentrations to make it suitable for beneficial reuse.

Burial: For dredged material where chemical analysis does not support surficial beneficial reuse, burial under clean sediment may be considered.

Off-Site Management: Off-site management of dredged sediments or soils may be considered when the analytical results from the sampling exhibit exceedances of applicable standards. Additional sampling at the direction of the receiving facility may be necessary.

4.2 SOIL MANAGEMENT OPTIONS

The following soil management options will be considered for each project element requiring soil management based on the results of laboratory analysis of contaminants and other risk management factors (see Sections 6 and 7).

No-Action: If excavation of soil is not required to fulfill project objectives no action could be considered.

Upland Surficial Reuse: Reusing excavated soil on site is the preferred and primary management decision available. Surficial reuse offers the lowest cost management decision, and offers the opportunity to avoid locating and transporting clean fill to fulfill project objectives that



could be fulfilled by reusing excavated material. Whether surficial reuse is appropriate will largely be dependent on chemical analysis.

Upland Burial: For excavated material where chemical analysis does not support upland surficial reuse, burial under clean soil may be considered. The purpose of burying the soil would be to prevent either ecological and/or human exposure.

Off-Site Management: Off-site management of excavated soils may be considered when the analytical results from the sampling exhibit exceedances of applicable standards. Additional sampling at the direction of the receiving facility may be necessary.



5 SEDIMENT AND SOIL PRE-CHARACTERIZATION

As construction moves forwards, each SMU will be pre-characterized to facilitate the risk management decision. Pre-characterization will include the following elements:

- Due Diligence Study
- Sediment or Soil Sampling
- Laboratory Analysis
- Comparison of Analytical Results to Applicable Screening Criteria

Each of these elements is discussed in more detail below, and expanded on in Appendix 3. Appendix 3 is the Sediment and Soil Characterization Protocol for the project, and is intended to provide the necessary information for project contractors to implement the characterization steps briefly described in this section. All Class 1 SMUs described in Table 3-1 have already been pre-characterized. Pre-characterization activities for Class 2 SMUs are ongoing.

5.1 DUE DILIGENCE STUDY

A due diligence assessment of the SMU shall be completed to determine potential contaminants of concern. For example, due diligence efforts that have already been conducted to support past sampling for the HRRP has shown that the volatile organic compound (VOC) and extractable petroleum hydrocarbon (EPH) analyses typically required by the Massachusetts Department of Environmental Protection (DEP) are likely to be unnecessary for many of the SMUs that are not near roadways or culverts, or other potential sources of these contaminants. The due diligence assessment shall include an electronic data base search, review of historical use, review of historical and current aerial photographs, and review of any available environmental assessments.

5.2 SEDIMENT OR SOIL SAMPLING

Sediment or soil sampling for each SMU will follow a SMU-specific Sampling and Analysis Plan (SAP). Each SAP will be generated in accordance with the United States Environmental Protection Agency's (USEPA) Guidance on Systematic Planning Using the Data Quality Objectives Process (USEPA 2006a), Guidance for Quality Assurance Project Plans (USEPA 2002), EPA Requirements for Quality Assurance Project Plans (USEPA 2001), and the Intergovernmental Data Quality Task Force's (IDQTF) Uniform Federal Policy for Quality Assurance Project Plans (IDQTF 2005). Each SAP will generally follow the sampling protocols as detailed in this section.

Sampling of each SMU will be conducted via incremental sampling methodology (ISM). ISM sampling will be used to characterize the sediment or soil that needs to be managed because ISM sample results tend to be more representative, repeatable, and unbiased compared to discrete sample results, therefore providing a more reliable estimate of contaminant concentration (Interstate Technology & Regulatory



Council [ITRC] 2020). In addition, project-specific background concentrations for sediment were established via ISM samples; therefore, future sampling of SMUs should be conducted via ISM for comparability with the background concentrations.

Each ISM sample replicate will be composed of 40 increments; three replicates (primary sample, first replicate, and second replicate) will be collected per Decision Unit (DU). Depending on the size of an SMU, one or more DUs may be required to characterize the SMU. The number of DUs per SMU will be determined based on the volume of material that needs to be characterized and will be completed in accordance with the NPS Clean Fill Protocol (included as Appendix 4). In accordance with this protocol, one DU will be assessed per 1,000 cubic yards of material in an SMU. For example, if an SMU consists of 2,000 cubic yards, two DUs would be established for that SMU. If one DU has contaminant concentrations below all applicable screening criteria and the other does not, the two DUs would be managed separately even though they originate from the same SMU.

Chemical and physical analysis of sediments or soils will meet analytical requirements of MassDEP (314 CMR 9.07 (2)), the United States Army Corps of Engineers Regional Implementation Manual (314 CMR 9.07 (2)(b)6)), and the NPS Clean Fill Protocol.

5.3 LABORATORY ANALYSIS

Samples will be analyzed in accordance with each SMU-specific SAP, which will include a quality assurance project plan that details sample numbers, quality assurance/quality control samples and numbers, and data validation and usability criteria.

Sediment and soil samples will be submitted to the laboratory identified in the SMU-specific SAP for processing, which will include drying, disaggregating, sieving, and subsampling using the 2-Dimensional Slabcake method¹. Unless the due diligence assessment indicates certain chemical analyses are unnecessary or that additional chemical analysis may be necessary, sediment and soil samples will be analyzed for the following parameters:

- 13 Priority Pollutant Metals via EPA Methods 6020B and 7471B
- Semi Volatile Organic Compounds via EPA Method 8270E
- Pesticides via EPA Method 8081A
- Polychlorinated Biphenyls via National Oceanic and Atmospheric Administration (NOAA) Summation of Congeners Method 8082A
- VOCs via EPA Method 8260B
- EPH via MA EPH Method
- Total organic carbon (Lloyd Kahn Method)
- Grain Size via ASTM D422

¹ If the due diligence assessment indicates VOCs and EPH are contaminants of potential concern for a SMU, note that ISM samples for these analyses must be collected separately from bulk samples collected for other parameters and preserved in methanol immediately after collection, and are not subject to the same laboratory processing protocols (ITRC, 2020).



Applicable analytical methods may be revised to current standard of practice methods if the above methods are updated.

5.4 COMPARISON TO APPLICABLE SCREENING CRITERIA

5.4.1 Sediment Screening Criteria

In support of the project, Collaborative Risk Solutions LLC and Woods Hole Group (WHG) determined preliminary background concentrations based on a literature review of local conditions and other estuary environment, ecological project-specific risk-based screening thresholds (RBSTs), and human health RBSTs (Collaborative Risk Solutions LLC 2019; WHG Undated Draft; Collaborative Risk Solutions LLC 2022). Concentrations of arsenic, DDx compounds, and dieldrin were detected above the literature-based background values and RBSTs in sediment samples collected from areas that will require sediment management. Therefore, NPS conducted a background study of Cape Cod salt marshes to establish background concentrations of these analytes, which were reported in the July 2021 Background Study Report (VHB 2021). These RBSTs and background values have only been developed for sediment, as the bulk of material management required for the project will be sediment.

Sediment analytical results will be compared to the following screening criteria (see Attached Table 1 for numerical values):

- MA Contingency Plan (MCP) Reportable Concentration Soil (RCS)-1 Values: These are human health-based values based on a target risk level of 1E-05. Per the MCP, the RCS-1 screening levels are applicable to locations with the highest potential for exposure, such as residences, playgrounds, and schools, and to locations within the boundaries of a groundwater resource area (MA DEP 2014).
- Project-specific ecological RBSTs developed by WHG.
- Project-specific human health RBSTs developed by WHG and Collaborative Risk Solutions LLC at 1E-05 and 1E-06 cumulative target risk levels. The 1E-06 cancer risk-based number were developed by WHG and Collaborative Risk Solutions LLC for this Sediment Management Framework and are included as Appendix 5.
- Draft literature-based background values identified by WHG (WHG undated). WHG performed a literature review to identify measured concentrations of contaminants in sediment from other salt marshes on the U.S. Atlantic coast. This review identified one local salt marsh study (Quinn et al. 2001) from CACO, in addition to six additional salt marsh studies from South Carolina, New Jersey, and Virginia. Only the local Quinn et al. values are considered in this SMF, as the results from other studies are not representative of local conditions.
- Project-specific background concentrations developed by NPS (VHB 2021).
- NPS ecological screening values (ESVs) per the Clean Fill Protocol. Table 2 of the NPS Clean Fill Protocol lists EPA Region 3 Biological Technical Assistance Group Ecologically Protective Backfill Values, which are outdated screening levels developed for soil and only consider terrestrial receptors and exposure and cannot be applied to sediment. Therefore, in accordance



with the NPS Clean Fill Protocol, NPS ESVs² were instead selected as screening values for this project. These ESVs will only be considered absent project-specific ecological RBSTs and/or background concentrations.

5.4.2 Soil Screening Criteria

No project specific RBSTs or background values have been developed for soil. Therefore, soil screening criteria includes only generic screening criteria available from MA DEP, NPS, and USEPA.

Soil analytical results will be compared to the following screening criteria (see Attached Table 2 for numerical values):

- MCP RCS-1 Values: These are human health-based values based on a target risk level of 1E-05. Per the MCP, the RCS-1 screening levels are applicable to locations with the highest potential for exposure, such as residences, playgrounds, and schools, and to locations within the boundaries of a groundwater resource area (MA DEP 2014).
- USEPA Regional Screening Levels (RSLs) for soil: USEPA RSLs for the residential scenario, based on a target risk level of 1E-06 and target hazard quotient of 0.1. These screening levels assume a residential exposure scenario (365 days of exposure for 70 years), and are therefore conservative considering the expected exposure scenarios for visitors or Park workers (USEPA 2023).
- NPS ESVs for soil (NPS 2018): There are two tiers of ESVs considered in this framework: 1) the Screening Level Ecological Risk Assessment (SLERA) Contaminants of Potential Ecological Concern (COPEC) Selection ESVs and 2) the Refined SELRA ESVs. These ESVs consider all ecological receptor types (mammals, birds, plants, and invertebrates). These ESVs were developed by NPS for use at NPS sites in a SLERA and are values compiled or developed by various regulatory agencies, published in the scientific literature, or derived from experimental studies reported in the scientific literature. These ESVs are not intended to serve as remediation or removal goals, but can be conservatively used to establish screening criteria that are protective of ecological receptors. For this SSMF, the SLERA COPEC Selection ESVs should be considered when there is the potential for threatened or endangered (T&E) species to be present in the soil placement area. Otherwise, the Refined SLERA ESVs should be used.

² NPS Ecological Screening Value Probable Effect Concentrations for Marine Sediment were selected (NPS 2018)



6 DECISION FRAMEWORK

6.1 SEDIMENT

The cumulative human health RBSTs developed by WHG for sediment were established at the mid-point (1E-05, or 1 in 10,000) of the acceptable excess cancer risk range (1E-04 to 1E-06) as defined by the National Oil and Hazardous Substances Pollution Contingency Plan (also known as National Contingency Plan [NCP]) for sediment management decisions that will occur outside of CACO. The NCP instructs that target risk levels between 1E-06 to 1E-04 can be selected at remediation sites, but that 1E-06 is considered the “point of departure” and any deviation from that point must be adequately explained. The risk management decision to deviate from this point of departure may be based on multiple considerations such as exposure factors, uncertainty factors, technical factors, etc.

While a target risk level of 1E-05 has been proposed for the HRRP Site for sediment management activities to occur outside of CACO, a more conservative target risk level of 1E-06 may be appropriate for sediment management activities within CACO. This decision framework outlines the process for assessing the impacts to various factors that should be considered if a decision is made to deviate from the NCP point of departure target risk level of 1E-06.

Sediment management decisions for each SMU will be evaluated as shown on the flow chart below (Figure 2). The following four categories of sediment are defined by this decision framework.

Category 1: If analytical results indicate contaminant concentrations are below all of the screening criteria identified in Section 5.4.1 the material is suitable for beneficial reuse.

Category 2: If concentrations are less than the MCP RCS-1 criteria, ecological RBSTs, and human health RBSTs at the 1E-05 target risk level, but greater than the human health RBSTs at the 1E-06 target risk level and the NPS ESVs³, the additional factors discussed in Section 7 should be considered to determine appropriate sediment management options for that SMU. Sediment management options for this category include beneficial reuse on the marsh surface, burial within the marsh below the biologically active zone, or off-site disposal.

Category 3: If concentrations are less than the higher of the MCP RCS-1 criteria and NPS ESVs, but above all other applicable criteria, only off-site disposal or burial should be permitted. The additional factors identified in Section 7 should be considered when determining whether burial within the marsh below the biologically active zone or off-site disposal is most appropriate.

Category 4: If concentrations exceed the higher of the MCP RCS-1 criteria and NPS ESVs, then only off-site disposal should be considered.

Attached Table 3 shows the screening criteria applicable to each sediment Category. As described above, Category 1 screening levels are the most conservative, and sediment with chemical concentrations below the Category 1 screening levels is suitable for all beneficial reuse scenarios. Category 2 screening levels differ from Category 1 screening levels in that they consider the 1E-05 human health RBSTs rather than

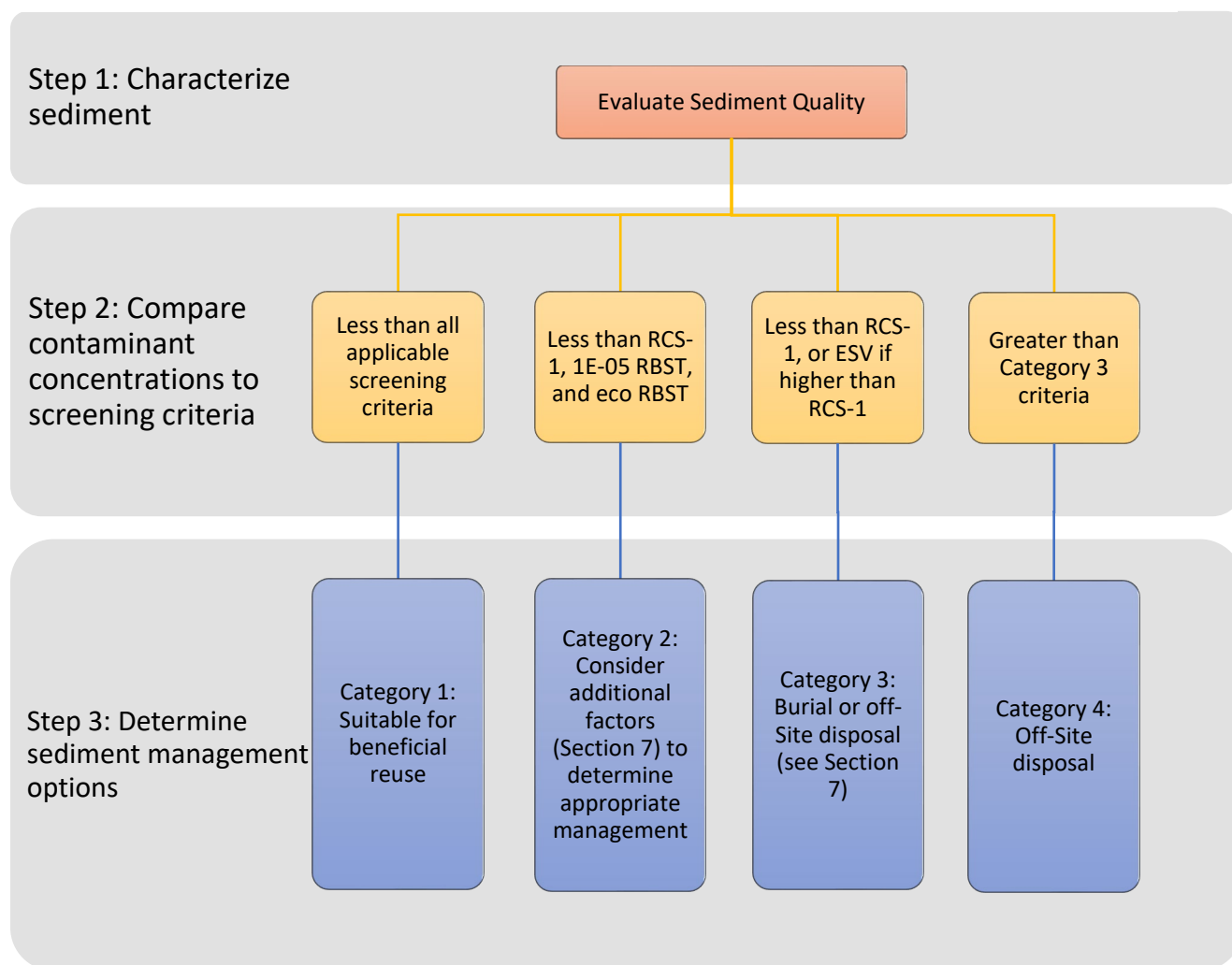
³ Per the NPS Clean Fill Protocol, NPS, in its sole discretion exercising professional judgment, may allow exceedances of these concentration limits under certain circumstances.



the 1E-06 human health RBSTs. The MCP RCS-1 criteria define the Category 3 screening levels; if chemical concentrations are detected above the MCP RCS-1 criteria sediment will be classified as Category 4 sediment. NPS ESVs are only considered for Category 1 screening levels, or if the NPS ESV is the only screening criteria available for an analyte or higher than the other applicable screening criteria for a category.

Note that for some analytes, like many of the VOCs, the MCP RCS-1 or the NPS ESVs are the only applicable screening criteria. When there is only one applicable screening criteria all of the categories will have the same screening value. In addition, when the site-specific or literature-based background concentration is greater than the lowest of the applicable screening criteria, the background concentration is selected as the screening criteria for that category.

Figure 2: Sediment Management Decision Flow Chart





6.2 SOIL

Soil management decisions for each SMU will be evaluated as shown on the flow chart below (Figure 3). The following five categories of soil are defined by this decision framework.

Category 1: If analytical results indicate contaminant concentrations are below all of the screening criteria identified in Section 5.4.2 the material is suitable for upland surficial reuse, including in areas where T&E species may be present.

Category 2: If analytical results indicate contaminant concentrations are below all of the screening criteria identified in Section 5.4.2 with the exception of the SLERA COPEC Selection ESVs, the material is suitable for upland surficial reuse, except for areas where T&E species may be present.

Category 3: If concentrations are less than the Refined SLERA ESVs and MCP RCS-1 criteria, the soil is classified as Category 3. Category 3 material is defined as material that is suitable for ecological exposure, but exceeds the 1E-06 human health-based screening levels (the USEPA RSLs). Soil management options for this category include:

- Surficial reuse in areas where human exposure is limited and where T&E species are not present,
- Burial if reused in an area where human or T&E species exposure is likely, or
- Off-site disposal if a risk management decision is made that material should not exceed the 1E-06 risk level.

Category 4: Category 4 material is defined as material that does not exceed the MCP RCS-1 criteria. Soil management options for this category include:

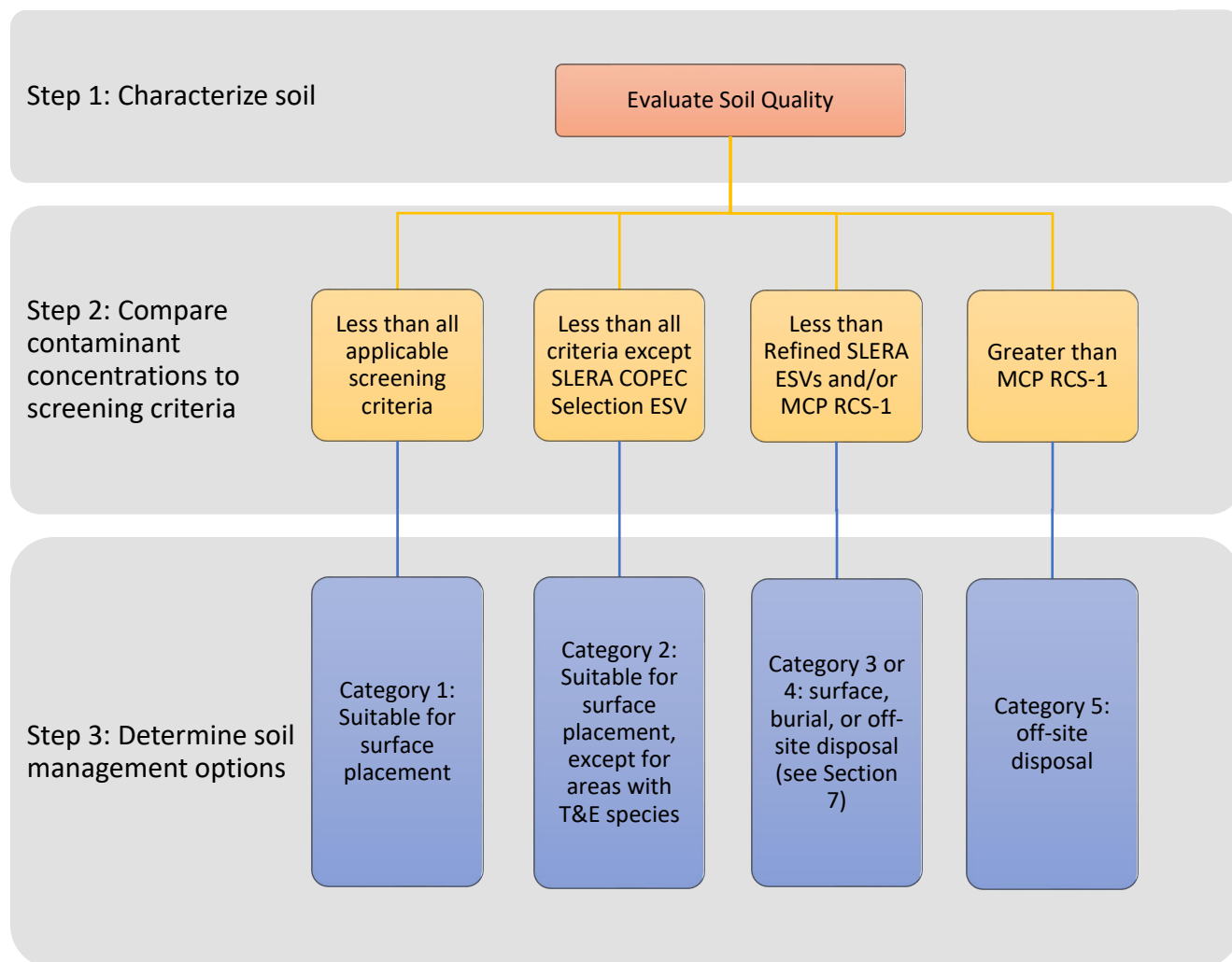
- Surficial reuse in areas where human exposure is limited and ecological exposure is unlikely,
- Burial if reused in an area where human or ecological exposure is likely, or
- Off-site disposal if a risk management decision is made that material should not exceed the 1E-06 risk level.

Category 5: If concentrations exceed the MCP RCS-1 criteria, then only off-site disposal should be considered.

Attached Table 4 shows the screening criteria applicable to each sediment Category. As described above, Category 1 screening levels are the most conservative, and soil with chemical concentrations below the Category 1 screening levels is suitable for all reuse scenarios. Category 2 material is also suitable for all reuse scenarios, except for where T&E species may be present. The Category 3 screening levels are the Refined SLERA ESV and the MCP RCS-1 criteria, and this material may be suitable for all reuse scenarios but additional factors (see Section 7) should be considered. The Category 4 screening level is the MCP RCS-1 criteria. Category 4 material may be suitable for all reuse scenarios but additional factors (see Section 7) should be considered. Material that exceeds the MCP RCS-1 criteria is considered Category 5 material and would need to be disposed of outside of CACO.



Figure 3: Soil Management Decision Flow Chart





7 ADDITIONAL FACTORS TO CONSIDER

To determine the appropriate sediment management options for an SMU where sediment is determined to fall within Category 2 or Category 3 as defined in Section 6.1, or appropriate soil management options for when soil fall within Category 3 or 4, the following factors will need to be considered:

- Potential for exposure and potential risk associated with exposure
- Technical and administrative feasibility
- Cost
- Community and stakeholder acceptance

Each of these factors are discussed in more detail in the following sections.

7.1 POTENTIAL FOR EXPOSURE

For Category 2 or 3 sediment, or Category 3 or 4 soil, the Park should consider the following when determining what reuse scenario is appropriate:

1. Is the receiving area an area of the Park that receives visitors, or where Park workers could be exposed?
2. Are visitors likely to wade or fish in the receiving area?
3. Could this area of the Park receive more visitors in the future?
4. Could material that is placed in the receiving area mobilize to areas more likely to receive visitors?
5. For Category 2 sediment or Category 3 soil, how many contaminants exceed the 1E-06 risk level? By how much do these contaminants exceed the 1E-06 risk level?
6. For Category 3 sediment, how many contaminants exceed the 1E-05 risk level or NPS ESVs? By how much do these contaminants exceed the 1E-05 risk level or NPS ESVs?
7. For Category 4 soil, how many contaminants exceed the NPS ESVs? By how much do these contaminants exceed the NPS ESVs?
8. For constituents that exceed the NPS ESVs, is the receiving area spatially limited such that it is less than the home range of receptors expected to occur at the Site? Can material be amended to reduce bioavailability?

Project decision makers will need to consider these factors along with the additional factors discussed in the following sections to determine the appropriate end use of the material. In general, it may be determined that if the answer to Questions 1 through 4 are “yes” for Category 2 sediment, then material should not be placed on the marsh surface. However, if only few contaminants exceed the 1E-06 risk level, and only be a small amount (e.g. by 1.5x rather than 5x), then it may be determined that placement on the marsh surface should be further considered. Similarly, if the answer to Question 6 is “yes” for Category 3 sediment, but few contaminants exceed the 1E-05 risk level or NPS ESVs and only by a small



amount, then it may be determined that burial on-site below the biologically active zone should be further considered.

7.2 TECHNICAL AND ADMINISTRATIVE FEASIBILITY

The Park should consider the following when assessing technical feasibility of different end-use options for Category 2 or 3 sediments, or Category 3 or 4 soils:

1. What is the volume of material that needs to be managed?
2. What heavy machinery will be required for each management option?
3. How would heavy machinery access the SMU?
4. How large of a staging area would be required to support each management option?
5. What are the health and safety risks to site workers for each management option?
6. Is there a suitable receiving area within close proximity of the dredging/excavation area?
7. Would reusing dredged/excavated material in that receiving area provide an ecosystem benefit (e.g. augmenting subsiding marsh surface to prevent future impoundments)?
8. If on-site burial below the biologically active zone is selected, is there a local source of clean cover material?
9. If off-site disposal is selected, is there a suitable local receiving facility?

7.3 COST

Costs associated with implementing each end-use option should be considered when selecting a management option. Cost alone should not drive the management decision, but should be considered with the other factors discussed in this Section. For example, if analytical results of Category 2 sediment exceed the 1E-06 risk level slightly for few contaminants, there is low likelihood for human exposure, and the cost to import clean fill to cover buried dredged sediment is significantly more expensive than surface placement of the material, the Park may choose surface placement for that material.

7.4 COMMUNITY AND STAKEHOLD ACCEPTANCE

The HRRP is a collaborative effort that leverages expertise and funding from multiple federal, State, and local entities. As such, there are numerous stakeholders and communities associated with the HRRP, including a formalized Stakeholder Group representing residents and constituencies in Wellfleet, Truro, and the Outer Cape Cod region, a Regulatory Oversight Group, representing local, state, and federal regulatory agencies, the Herring River Technical Team, and a host of other government and non-government entities providing funding and technical support.

While the main purpose of the HRRP is to re-establish tidal flow, an additional important goal is addressing marsh subsidence in the Herring River estuary. If left to persist, the subsided former salt marsh



surface would interfere with many of the ecosystem benefits associated with restoring tidal exchange. The subsided surface would allow for water to backup and form impoundments, which would increase breeding habitat for mosquitos and become anoxic, creating poor water quality and stressing fish and other marine wildlife. Therefore, beneficially reusing dredged sediment to augment the subsided marsh surface is generally recognized as preferred over importing clean fill.

In addition, if the communities of Wellfleet and Truro have the potential to endure significant impacts and construction-related disturbance as part of the restoration project, then management methods that reduce impacts related to heavy machinery and traffic to the surrounding communities are likely to be preferred. Furthermore, since the screening levels used to make sediment management decisions outside of the Park are the less conservative MCP RCS-1 values and 1E-05 cumulative target risk level RBSTs, there could be negative public perception related to the Park enforcing a more stringent standard for sediment management decisions on Park land.

Decision makers will need to carefully consider these factors when making sediment management decisions for Category 2 and Category 3 material and soil management decisions for Category 3 and Category 4 material, while balancing the responsibility of NPS to prevent unacceptable impacts or impairment of Park resources and values, and protecting public health, public welfare, and the environment from hazardous substances.



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TABLES

Table 1
Applicable Screening Criteria - Sediment

Analyte	Units	MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV ¹	NPS Background Study BTV	Literature- Based Background	Lowest Applicable Screening Level	Basis
Organochlorine Pesticides										
4,4'-DDD	µg/Kg	8,000	-	100	10	7.81	42	-	42	Background
4,4'-DDE	µg/Kg	6,000	115,000	100	10	N/A	58	-	58	Background
4,4'-DDT	µg/Kg	6,000	1,170	240	24	N/A	-	-	24	Human RBST 1E-06
Aldrin	µg/Kg	80	-	-	-	-	-	-	80	RCS-1
alpha-BHC	µg/Kg	50,000	-	-	-	-	-	-	50,000	RCS-1
beta-BHC	µg/Kg	10,000	-	-	-	-	-	-	10,000	RCS-1
Chlordane (technical)	µg/Kg	5,000	-	-	-	4.8	-	-	4.8	NPS ESV
delta-BHC	µg/Kg	10,000	-	-	-	-	-	-	10,000	RCS-1
Dieldrin	µg/Kg	80	19,100	0.53	0.053	N/A	7.1	-	7.1	Background
Endosulfan I	µg/Kg	500	-	-	-	-	-	-	500	RCS-1
Endosulfan II	µg/Kg	500	-	-	-	-	-	-	500	RCS-1
Endosulfan sulfate	µg/Kg	-	-	-	-	45	-	-	45	NPS ESV
Endrin	µg/Kg	10,000	-	-	-	-	-	-	10,000	RCS-1
Endrin ketone	µg/Kg	-	-	-	-	-	-	-	-	
gamma-BHC (Lindane)	µg/Kg	3	-	-	-	0.99	-	-	0.99	NPS ESV
Heptachlor	µg/Kg	300	-	-	-	-	-	-	300	RCS-1
Heptachlor epoxide	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
Hexachlorobenzene	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
Methoxychlor	µg/Kg	2,000,000	-	44		-	-	-	44	Human RBST
Metals										
Antimony	mg/Kg	20	-	-	-	25	-	-	25	NPS ESV
Arsenic	mg/Kg	20	877	1.7	0.17	N/A	23	-	23	Background
Beryllium	mg/Kg	90	-	-	-	-	-	-	90	RCS-1
Cadmium	mg/Kg	70	-	-	-	4.2	-	-	4.2	NPS ESV
Chromium	mg/Kg	100	-	-	-	160	-	-	100	RCS-1
Copper	mg/Kg	1,000	-	-	-	108	-	-	108	NPS ESV
Lead	mg/Kg	200	-	-	-	112	-	-	112	NPS ESV
Mercury	mg/Kg	20	0.792	0.3		N/A	-	-	0.3	Human RBST
Nickel	mg/Kg	600	3,500	200		N/A	-	-	200	Human RBST
Selenium	mg/Kg	400	-	-	-	-	-	-	400	RCS-1
Silver	mg/Kg	100	-	-	-	1.77	-	-	1.77	NPS ESV
Thallium	mg/Kg	8	-	-	-	-	-	-	8	RCS-1
Zinc	mg/Kg	1,000	-	-	-	271	-	-	271	NPS ESV

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Applicable Screening Criteria - Sediment

Analyte	Units	MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV ¹	NPS Background Study BTV	Literature- Based Background	Lowest Applicable Screening Level	Basis
Polychlorinated Biphenyls (PCBs)										
Total PCBs	µg/Kg	1,000	6,500	26	3.7	N/A	-	35.4	35.4	Background
Polycyclic Aromatic Hydrocarbons (PAHs)										
2-Methylnaphthalene	µg/Kg	700	-	-	-	201	-	-	201	NPS ESV
Acenaphthene	µg/Kg	4,000	-	-	-	89	-	-	89	NPS ESV
Acenaphthylene	µg/Kg	1,000	5,450,000	79,000		N/A	-	-	1,000	RCS-1
Anthracene	µg/Kg	1,000,000	38,800	580,000		N/A	-	5.4	38,800	Ecological RBST
Benzo[a]anthracene	µg/Kg	7,000	28,100	56	5.6	N/A	-	20.3	20.3	Background
Benzo[a]pyrene	µg/Kg	2,000	1,260,000	9	0.89	N/A	-	42.4	42.4	Background
Benzo[b]fluoranthene	µg/Kg	7,000	12,500	65	6.5	-	-	89.7	89.7	Background
Benzo[g,h,i]perylene	µg/Kg	1,000,000	1,260,000	45,000		-	-	30.1	45,000	Human RBST
Benzo[k]fluoranthene	µg/Kg	70,000	12,500	710	71	-	-	89.7	89.7	Background
Chrysene	µg/Kg	70,000	2,870	390	39	N/A	-	32.9	39	Human RBST 1E-06
Dibenz(a,h)anthracene	µg/Kg	700	1,260,000	8.2	0.82	N/A	-	8.5	8.50	Background
Fluoranthene	µg/Kg	1,000,000	216,000	64,000		N/A	-	61.8	64,000	Human RBST
Fluorene	µg/Kg	1,000,000	5,450,000	33,000		N/A	-	3.5	33,000	Human RBST
Indeno[1,2,3-cd]pyrene	µg/Kg	7,000	1,260,000	140	14	-	-	28	28	Background
Naphthalene	µg/Kg	4,000	-	-	-	391	-	21	391	NPS ESV
Phenanthrene	µg/Kg	10,000	2,300	82,000		N/A	-	49.2	2,300	Ecological RBST
Pyrene	µg/Kg	1,000,000	216,000	28,000		N/A	-	4.4	28,000	Human RBST
LMW PAHs	µg/Kg	-	-	-	-	1,442	-	-	1,442	NPS ESV
HMW PAHs	µg/Kg	-	-	-	-	6,676	-	-	6,676	NPS ESV
Semi Volatile Organic Compounds										
1,1'-Biphenyl	µg/Kg	50	-	-	-	-	-	-	50	RCS-1
bis (2-chloroisopropyl) ether	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
2,4,5-Trichlorophenol	µg/Kg	4,000	-	-	-	-	-	-	4,000	RCS-1
2,4,6-Trichlorophenol	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
2,4-Dichlorophenol	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
2,4-Dimethylphenol	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
2,4-Dinitrophenol	µg/Kg	3,000	-	-	-	-	-	-	3,000	RCS-1
2,4-Dinitrotoluene	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
2,6-Dinitrotoluene	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
2-Chloronaphthalene	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
2-Chlorophenol	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
2-Methylphenol	µg/Kg	500,000	-	-	-	-	-	-	500,000	RCS-1
2-Nitroaniline	µg/Kg	-	-	-	-	-	-	-	-	
2-Nitrophenol	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
3,3'-Dichlorobenzidine	µg/Kg	3,000	-	-	-	-	-	-	3,000	RCS-1

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3-Nitroaniline	µg/Kg	-	-	-	-	-	-	-	-	
4,6-Dinitro-2-methylphenol	µg/Kg	50,000	-	-	-	-	-	-	50,000	RCS-1
4-Bromophenyl phenyl ether	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
4-Chloro-3-methylphenol	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
4-Chloroaniline	µg/Kg	1,000	-	-	-	-	-	-	1,000	RCS-1
4-Chlorophenyl phenyl ether	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
4-Nitroaniline	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
4-Nitrophenol	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Acetophenone	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
Atrazine	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Benzaldehyde	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Bis(2-chloroethoxy)methane	µg/Kg	500,000	-	-	-	-	-	-	500,000	RCS-1
Bis(2-chloroethyl)ether	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
Bis(2-ethylhexyl) phthalate	µg/Kg	90,000	-	-	-	2,600	-	-	2,600	NPS ESV
Butyl benzyl phthalate	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Caprolactam	µg/Kg	-	-	-	-	-	-	-	-	
Carbazole	µg/Kg	-	-	-	-	-	-	-	-	
Dibenzofuran	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Diethyl phthalate	µg/Kg	10,000	-	-	-	-	-	-	10,000	RCS-1
Dimethyl phthalate	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
Di-n-butyl phthalate	µg/Kg	50,000	-	-	-	-	-	-	50,000	RCS-1
Di-n-octyl phthalate	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
Hexachlorobenzene	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
Hexachlorobutadiene	µg/Kg	30,000	-	-	-	-	-	-	30,000	RCS-1
Hexachlorocyclopentadiene	µg/Kg	50,000	-	-	-	-	-	-	50,000	RCS-1
Hexachloroethane	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
Isophorone	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
N-Nitrosodi-n-propylamine	µg/Kg	50,000	-	-	-	-	-	-	50,000	RCS-1
N-Nitrosodiphenylamine	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Nitrobenzene	µg/Kg	500,000	-	-	-	-	-	-	500,000	RCS-1
Pentachlorophenol	µg/Kg	3,000	-	-	-	-	-	-	3,000	RCS-1
Phenol	µg/Kg	1,000	-	-	-	-	-	-	1,000	RCS-1
3 & 4 Methylphenol	µg/Kg	-	-	-	-	-	-	-	-	

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Applicable Screening Criteria - Sediment

Analyte	Units	MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV ¹	NPS Background Study BTV	Literature- Based Background	Lowest Applicable Screening Level	Basis
Volatile Organic Compounds										
1,1,1,2-Tetrachloroethane	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
1,1,1-Trichloroethane	µg/Kg	30,000	-	-	-	-	-	-	30,000	RCS-1
1,1,2,2-Tetrachloroethane	µg/Kg	5	-	-	-	-	-	-	5	RCS-1
1,1,2-Trichloroethane	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
1,1-Dichloroethane	µg/Kg	400	-	-	-	-	-	-	400	RCS-1
1,1-Dichloroethene	µg/Kg	3,000	-	-	-	-	-	-	3,000	RCS-1
1,1-Dichloropropene	µg/Kg	-	-	-	-	-	-	-	-	
1,2,3-Trichlorobenzene	µg/Kg	-	-	-	-	-	-	-	-	
1,2,3-Trichloropropane	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
1,2,4-Trichlorobenzene	µg/Kg	2,000	-	-	-	-	-	-	2,000	RCS-1
1,2,4-Trimethylbenzene	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
1,2-Dibromo-3-Chloropropane	µg/Kg	10,000	-	-	-	-	-	-	10,000	RCS-1
1,2-Dibromoethane	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
1,2-Dichlorobenzene	µg/Kg	9,000	-	-	-	-	-	-	9,000	RCS-1
1,2-Dichloroethane	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
1,2-Dichloroethene, Total	µg/Kg	300	-	-	-	-	-	-	300	RCS-1
1,2-Dichloropropane	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
1,3,5-Trimethylbenzene	µg/Kg	10,000	-	-	-	-	-	-	10,000	RCS-1
1,3-Dichlorobenzene	µg/Kg	3,000	-	-	-	-	-	-	3,000	RCS-1
1,3-Dichloropropane	µg/Kg	500,000	-	-	-	-	-	-	500,000	RCS-1
1,4-Dichlorobenzene	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
1,4-Dioxane	µg/Kg	200	-	-	-	-	-	-	200	RCS-1
2,2-Dichloropropane	µg/Kg	-	-	-	-	-	-	-	-	
2-Butanone	µg/Kg	4,000	-	-	-	-	-	-	4,000	RCS-1
2-Chloroethyl vinyl ether	µg/Kg	500,000	-	-	-	-	-	-	500,000	RCS-1
2-Chlorotoluene	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
2-Hexanone	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
4-Chlorotoluene	µg/Kg	-	-	-	-	-	-	-	-	
4-Isopropyltoluene	µg/Kg	-	-	-	-	-	-	-	-	
4-Methyl-2-pentanone	µg/Kg	400	-	-	-	-	-	-	400	RCS-1
Acetone	µg/Kg	6,000	-	-	-	-	-	-	6,000	RCS-1
Benzene	µg/Kg	2,000	-	-	-	-	-	-	2,000	RCS-1
Bromobenzene	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Bromochloromethane	µg/Kg	-	-	-	-	-	-	-	-	
Bromodichloromethane	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
Bromoform	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
Bromomethane	µg/Kg	500	-	-	-	-	-	-	500	RCS-1

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Analyte	Units	MCP RCS-1	Ecological RBST	Human RBST 1E-05	Human RBST 1E-06	NPS ESV ¹	NPS Background Study BTV	Literature- Based Background	Lowest Applicable Screening Level	Basis
Carbon disulfide	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Carbon tetrachloride	µg/Kg	5,000	-	-	-	-	-	-	5,000	RCS-1
Chlorobenzene	µg/Kg	1,000	-	-	-	-	-	-	1,000	RCS-1
Chloroethane	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Chloroform	µg/Kg	200	-	-	-	-	-	-	200	RCS-1
Chloromethane	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
cis-1,2-Dichloroethene	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
cis-1,3-Dichloropropene	µg/Kg	10	-	-	-	-	-	-	10	RCS-1
Cyclohexane	µg/Kg	500,000	-	-	-	-	-	-	500,000	RCS-1
Dibromochloromethane	µg/Kg	5	-	-	-	-	-	-	5	RCS-1
Dibromomethane	µg/Kg	500,000	-	-	-	-	-	-	500,000	RCS-1
Dichlorodifluoromethane	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
Ethylbenzene	µg/Kg	40,000	-	-	-	-	-	-	40,000	RCS-1
Freon TF	µg/Kg	-	-	-	-	-	-	-	-	
Hexachlorobutadiene	µg/Kg	30,000	-	-	-	-	-	-	30,000	RCS-1
Isobutyl alcohol	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
Isopropylbenzene	µg/Kg	-	-	-	-	-	-	-	-	
m&p-Xylene	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Methyl acetate	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Methyl iodide	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Methyl t-butyl ether	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
Methylcyclohexane	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Methylene Chloride	µg/Kg	100	-	-	-	-	-	-	100	RCS-1
n-Butylbenzene	µg/Kg	-	-	-	-	-	-	-	-	
n-Propylbenzene	µg/Kg	-	-	-	-	-	-	-	-	
o-Xylene	µg/Kg	-	-	-	-	-	-	-	-	
sec-Butylbenzene	µg/Kg	-	-	-	-	-	-	-	-	
Styrene	µg/Kg	3,000	-	-	-	-	-	-	3,000	RCS-1
tert-Butylbenzene	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Tetrachloroethene	µg/Kg	1,000	-	-	-	-	-	-	1,000	RCS-1
Tetrahydrofuran	µg/Kg	500,000	-	-	-	-	-	-	500,000	RCS-1

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Toluene	µg/Kg	30,000	-	-	-	-	-	-	30,000	RCS-1
trans-1,2-Dichloroethene	µg/Kg	1,000	-	-	-	-	-	-	1,000	RCS-1
trans-1,3-Dichloropropene	µg/Kg	10	-	-	-	-	-	-	10	RCS-1
Trichloroethene	µg/Kg	300	-	-	-	-	-	-	300	RCS-1
Trichlorofluoromethane	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
Vinyl acetate	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1
Vinyl chloride	µg/Kg	700	-	-	-	-	-	-	700	RCS-1
Xylenes, Total	µg/Kg	100,000	-	-	-	-	-	-	100,000	RCS-1
Total Petroleum Hydrocarbons	µg/Kg	1,000,000	-	-	-	-	-	-	1,000,000	RCS-1

Notes

- = no applicable screening value

BTV = Background Threshold Value

ESV = Ecological Screening Value

HMW = High Molecular Weight

LMW = Low Molecular Weight

RBST = Risk-based screening threshold

N/A = NPS ESV not applicable, ecological RBST or background value is applicable

MCP RSC-1= Massachusetts Contingency Plan Reportable Concentration Soil 1 Values

mg/kg = milligrams per kilograms

µg/kg = micrograms per kilograms

BTVs determined by VHB (VHB 2021)

Literature-based background is the mean concentration reported in Quinn et al. 2001

¹For analytes with no project-specific ecological RBST or background value, NPS Ecological Screening Value Probable Effect Concentrations for marine sediment are listed (NPS 2018).

Table 2
Applicable Screening Criteria - Soil

Analyte	Units	MCP RCS-1 ¹	USEPA RSL ²	NPS COPEC Selection ESV ³	NPS Refined ESV ⁴	Lowest Applicable Screening Level	Basis
Organochlorine Pesticides							
4,4'-DDD	µg/Kg	8000	2300	2	21	2	COPEC Selection ESV
4,4'-DDE	µg/Kg	6000	2000	2	21	2	COPEC Selection ESV
4,4'-DDT	µg/Kg	6000	1900	2	21	2	COPEC Selection ESV
Aldrin	µg/Kg	80	39	3.32	37	3.32	COPEC Selection ESV
alpha-BHC	µg/Kg	50000	86	70	460	70	COPEC Selection ESV
beta-BHC	µg/Kg	10000	300	3.98	270	3.98	COPEC Selection ESV
Chlordane (technical)	µg/Kg	5000	1700	224	224	224	COPEC Selection ESV
delta-BHC	µg/Kg	10000	-	70	70	70	COPEC Selection ESV
Dieldrin	µg/Kg	80	34	4.5	4.9	4.5	COPEC Selection ESV
Endosulfan I	µg/Kg	500	-	560	640	500	RCS-1
Endosulfan II	µg/Kg	500	-	560	640	500	RCS-1
Endosulfan sulfate	µg/Kg	-	38000	560	640	560	COPEC Selection ESV
Endrin	µg/Kg	10000	1900	1.4	1.4	1.4	COPEC Selection ESV
Endrin ketone	µg/Kg	-	-	-	-	-	
gamma-BHC (Lindane)	µg/Kg	3	570	5	9.5	3	RCS-1
Heptachlor	µg/Kg	300	130	59	59	59	COPEC Selection ESV
Heptachlor epoxide	µg/Kg	100	70	-	-	70	RSL
Hexachlorobenzene	µg/Kg	700	78	79	79	78	RSL
Methoxychlor	µg/Kg	2000000	32000	5100	5100	5100	COPEC Selection ESV
Metals							
Antimony	mg/Kg	20	3.1	0.248	0.27	0.248	COPEC Selection ESV
Arsenic ⁵	mg/Kg	20	0.68	0.25	18	20	RCS-1/Background
Beryllium	mg/Kg	90	16	2.42	10	2.42	COPEC Selection ESV
Cadmium	mg/Kg	70	0.71	0.27	0.36	0.27	COPEC Selection ESV
Chromium	mg/Kg	100	-	0.34	0.4	0.34	COPEC Selection ESV
Copper	mg/Kg	1000	310	14	28	14	COPEC Selection ESV
Lead	mg/Kg	200	400	0.94	11	0.94	COPEC Selection ESV
Mercury	mg/Kg	20	1.1	0.013	0.013	0.013	COPEC Selection ESV
Nickel	mg/Kg	600	140	10	38	10	COPEC Selection ESV
Selenium	mg/Kg	400	39	0.331	0.52	0.331	COPEC Selection ESV
Silver	mg/Kg	100	39	2	4.2	2	COPEC Selection ESV
Thallium	mg/Kg	8	0.078	0.027	0.42	0.027	COPEC Selection ESV

Table 2
Applicable Screening Criteria - Soil

Zinc	mg/Kg	1000	2300	6.62	46	6.62	COPEC Selection ESV
Polychlorinated Biphenyls (PCBs)							
PCB-8	ug/Kg	-	-	-	-	-	
PCB-18	ug/Kg	-	-	-	-	-	
PCB-28	ug/Kg	-	-	-	-	-	
PCB-44	ug/Kg	-	-	-	-	-	
PCB-52	ug/Kg	-	-	-	-	-	
PCB-66	ug/Kg	-	-	-	-	-	
PCB-101	ug/Kg	-	-	-	-	-	
PCB-105	ug/Kg	-	120	-	-	120	RSL
PCB-118	ug/Kg	-	120	-	-	120	RSL
PCB-128	ug/Kg	-	-	-	-	-	
PCB-138	ug/Kg	-	-	-	-	-	
PCB-153	ug/Kg	-	-	-	-	-	
PCB-170	ug/Kg	-	-	-	-	-	
PCB-180	ug/Kg	-	-	-	-	-	
PCB-187	ug/Kg	-	-	-	-	-	
PCB-195	ug/Kg	-	-	-	-	-	
PCB-206	ug/Kg	-	-	-	-	-	
PCB-209	ug/Kg	-	-	-	-	-	
Total PCBs	ug/Kg	1000	230	40000	40000	230	RSL
Polycyclic Aromatic Hydrocarbons (PAHs)							
2-Methylnaphthalene	ug/Kg	700	24000	16000	16000	700	RCS-1
Acenaphthene	ug/Kg	4000	360000	250	20000	250	COPEC Selection ESV
Acenaphthylene	ug/Kg	1000	-	120000	120000	1000	RCS-1
Anthracene	ug/Kg	1000000	1800000	6800	6800	6800	COPEC Selection ESV
Benzo[a]anthracene	ug/Kg	7000	1100	730	730	730	COPEC Selection ESV
Benzo[a]pyrene	ug/Kg	2000	110	1980	62000	110	RSL
Benzo[b]fluoranthene	ug/Kg	7000	1100	18000	18000	1100	RSL
Benzo[g,h,i]perylene	ug/Kg	1000000	-	25000	25000	25000	COPEC Selection ESV
Benzo[k]fluoranthene	ug/Kg	70000	11000	71000	71000	11000	RSL
Chrysene	ug/Kg	70000	110000	3100	3100	3100	COPEC Selection ESV
Dibenz(a,h)anthracene	ug/Kg	700	110	14000	14000	110	RSL
Fluoranthene	ug/Kg	1000000	240000	10000	10000	10000	COPEC Selection ESV
Fluorene	ug/Kg	1000000	240000	3700	30000	3700	COPEC Selection ESV
Indeno[1,2,3-cd]pyrene	ug/Kg	7000	1100	71000	71000	1100	RSL

Table 2
Applicable Screening Criteria - Soil

Naphthalene	µg/Kg	4000	2000	1000	1000	1000	COPEC Selection ESV
Phenanthrene	µg/Kg	10000	-	5500	5500	5500	COPEC Selection ESV
Pyrene	µg/Kg	1000000	180000	10000	10000	10000	COPEC Selection ESV
LMW PAHs	µg/Kg	-	-	29000	29000	29000	COPEC Selection ESV
HMW PAHs	µg/Kg	-	-	1100	1100	1100	COPEC Selection ESV
Semi Volatile Organic Compounds							
1,1'-Biphenyl	µg/Kg	50	4700	-	-	50	RCS-1
bis (2-chloroisopropyl) ether	µg/Kg	700	310000	-	-	700	RCS-1
2,4,5-Trichlorophenol	µg/Kg	4000	630000	4000	4000	4000	RCS-1 and ESVs
2,4,6-Trichlorophenol	µg/Kg	700	6300	10000	10000	700	RCS-1
2,4-Dichlorophenol	µg/Kg	700	19000	-	-	700	RCS-1
2,4-Dimethylphenol	µg/Kg	700	130000	10	-	10	COPEC Selection ESV
2,4-Dinitrophenol	µg/Kg	3000	13000	20000	20000	3000	RCS-1
2,4-Dinitrotoluene	µg/Kg	700	1700	6000	6000	700	RCS-1
2,6-Dinitrotoluene	µg/Kg	100000	360	4000	4000	360	RSL
2-Chloronaphthalene	µg/Kg	1000000	480000	-	-	480000	RSL
2-Chlorophenol	µg/Kg	700	39000	390	390	390	COPEC Selection ESV
2-Methylphenol	µg/Kg	500000	320000	670	670	670	COPEC Selection ESV
2-Nitroaniline	µg/Kg	-	63000	5300	5300	5300	COPEC Selection ESV
2-Nitrophenol	µg/Kg	100000	-	7000	7000	7000	COPEC Selection ESV
3,3'-Dichlorobenzidine	µg/Kg	3000	1200	-	-	1200	RSL
3-Nitroaniline	µg/Kg	-	-	-	-	-	
4,6-Dinitro-2-methylphenol	µg/Kg	50000	510	-	-	510	RSL
4-Bromophenyl phenyl ether	µg/Kg	100000	-	-	-	100000	RCS-1
4-Chloro-3-methylphenol	µg/Kg	1000000	630000	-	-	630000	RSL
4-Chloroaniline	µg/Kg	1000	2700	1000	1000	1000	RCS-1 and ESVs
4-Chlorophenyl phenyl ether	µg/Kg	1000000	-	-	-	1000000	RCS-1
4-Nitroaniline	µg/Kg	1000000	25000	-	-	25000	RSL
4-Nitrophenol	µg/Kg	100000	-	7000	7000	7000	COPEC Selection ESV
Acetophenone	µg/Kg	1000000	780000	-	-	780000	RSL
Atrazine	µg/Kg	100000	2400	-	-	2400	RSL
Benzaldehyde	µg/Kg	100000	170000	-	-	100000	RCS-1
Bis(2-chloroethoxy)methane	µg/Kg	500000	19000	-	-	19000	RSL
Bis(2-chloroethyl)ether	µg/Kg	700	230	-	-	230	RSL
Bis(2-ethylhexyl) phthalate	µg/Kg	90000	39000	20	20	20	COPEC Selection ESV
Butyl benzyl phthalate	µg/Kg	100000	290000	90000	90000	90000	COPEC Selection ESV

Table 2
Applicable Screening Criteria - Soil

Caprolactam	µg/Kg	-	3100000	-	-	3100000	RSL
Carbazole	µg/Kg	-	-	79000	79000	79000	COPEC Selection ESV
Dibenzofuran	µg/Kg	100000	7800	6100	6100	6100	COPEC Selection ESV
Diethyl phthalate	µg/Kg	10000	5100000	100000	100000	10000	RCS-1 and ESVs
Dimethyl phthalate	µg/Kg	700	-	10000	38000	700	RCS-1
Di-n-butyl phthalate	µg/Kg	50000	630000	11	11	11	COPEC Selection ESV
Di-n-octyl phthalate	µg/Kg	1000000	63000	910	910	910	COPEC Selection ESV
Hexachlorobenzene	µg/Kg	700	78	79	79	78	RSL
Hexachlorobutadiene	µg/Kg	30000	1200	-	-	1200	RSL
Hexachlorocyclopentadiene	µg/Kg	50000	180	10000	10000	180	RSL
Hexachloroethane	µg/Kg	700	1800	-	-	700	RCS-1
Isophorone	µg/Kg	100000	570000	-	-	100000	RCS-1
N-Nitrosodi-n-propylamine	µg/Kg	50000	78	-	-	78	RSL
N-Nitrosodiphenylamine	µg/Kg	100000	110000	20000	20000	20000	COPEC Selection ESV
Nitrobenzene	µg/Kg	500000	5100	2200	4800	2200	COPEC Selection ESV
Pentachlorophenol	µg/Kg	3000	1000	360	2100	360	COPEC Selection ESV
Phenol	µg/Kg	1000	1900000	790	30000	790	COPEC Selection ESV
3 & 4 Methylphenol	µg/Kg	-	320000	-	-	320000	RSL
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	µg/Kg	100	2000	-	-	100	RCS-1
1,1,1-Trichloroethane	µg/Kg	30000	810000	260000	260000	30000	RCS-1
1,1,2,2-Tetrachloroethane	µg/Kg	5	600	-	-	5	RCS-1
1,1,2-Trichloroethane	µg/Kg	100	150	-	-	100	RCS-1
1,1-Dichloroethane	µg/Kg	400	3600	210000	210000	400	RCS-1
1,1-Dichloroethene	µg/Kg	3000	23000	11000	11000	3000	RCS-1
1,1-Dichloropropene	µg/Kg	-	-	-	-	-	
1,2,3-Trichlorobenzene	µg/Kg	-	6300	20000	20000	6300	RSL
1,2,3-Trichloropropane	µg/Kg	100000	5.1	-	-	5.1	RSL
1,2,4-Trichlorobenzene	µg/Kg	2000	5800	270	270	270	COPEC Selection ESV
1,2,4-Trimethylbenzene	µg/Kg	1000000	30000	-	-	30000	RSL
1,2-Dibromo-3-Chloropropane	µg/Kg	10000	5.3	-	-	5.3	RSL
1,2-Dibromoethane	µg/Kg	100	36	-	-	36	RSL
1,2-Dichlorobenzene	µg/Kg	9000	180000	920	920	920	COPEC Selection ESV
1,2-Dichloroethane	µg/Kg	100	460	850	850	100	RCS-1
1,2-Dichloroethene, Total	µg/Kg	300	-	24000	24000	300	RCS-1
1,2-Dichloropropane	µg/Kg	100	1600	700000	700000	100	RCS-1

Table 2
Applicable Screening Criteria - Soil

1,3,5-Trimethylbenzene	µg/Kg	10000	27000	-	-	10000	RCS-1
1,3-Dichlorobenzene	µg/Kg	3000	-	740	740	740	COPEC Selection ESV
1,3-Dichloropropane	µg/Kg	500000	160000	-	-	160000	RSL
1,4-Dichlorobenzene	µg/Kg	700	2600	890	890	700	RCS-1
1,4-Dioxane	µg/Kg	200	5300	1830	1830	200	RCS-1
2,2-Dichloropropane	µg/Kg	-	-	-	-	-	
2-Butanone	µg/Kg	4000	2700000	350000	350000	4000	RCS-1
2-Chloroethyl vinyl ether	µg/Kg	500000	-	-	-	500000	RCS-1
2-Chlorotoluene	µg/Kg	100000	160000	-	-	100000	RCS-1
2-Hexanone	µg/Kg	100000	20000	360	360	360	COPEC Selection ESV
4-Chlorotoluene	µg/Kg	-	160000	-	-	160000	RSL
4-Isopropyltoluene	µg/Kg	-	-	-	-	-	
4-Methyl-2-pentanone	µg/Kg	400	3300000	9700	9700	400	RCS-1
Acetone	µg/Kg	6000	7000000	1200	1200	1200	COPEC Selection ESV
Benzene	µg/Kg	2000	1200	24000	24000	1200	RSL
Bromobenzene	µg/Kg	100000	29000	-	-	29000	RSL
Bromochloromethane	µg/Kg	-	15000	-	-	15000	RSL
Bromodichloromethane	µg/Kg	100	290	-	-	100	RCS-1
Bromoform	µg/Kg	100	19000	-	-	100	RCS-1
Bromomethane	µg/Kg	500	680	-	-	500	RCS-1
Carbon disulfide	µg/Kg	100000	77000	810	810	810	COPEC Selection ESV
Carbon tetrachloride	µg/Kg	5000	650	58600	58600	650	RSL
Chlorobenzene	µg/Kg	1000	28000	2400	40000	1000	RCS-1
Chloroethane	µg/Kg	100000	540000	-	-	100000	RCS-1
Chloroform	µg/Kg	200	320	8000	8000	200	RCS-1
Chloromethane	µg/Kg	100000	11000	-	-	11000	RSL
cis-1,2-Dichloroethene	µg/Kg	100	6300	89600	89600	100	RCS-1
cis-1,3-Dichloropropene	µg/Kg	10	-	-	-	10	RCS-1
Cyclohexane	µg/Kg	500000	650000	-	-	500000	RCS-1
Dibromochloromethane	µg/Kg	5	8300	-	-	5	RCS-1
Dibromomethane	µg/Kg	500000	2400	-	-	2400	RSL
Dichlorodifluoromethane	µg/Kg	1000000	8700	-	-	8700	RSL
Ethylbenzene	µg/Kg	40000	5800	-	-	5800	RSL
Freon TF	µg/Kg	-	670000	-	-	670000	RSL
Hexachlorobutadiene	µg/Kg	30000	1200	-	-	1200	RSL
Isobutyl alcohol	µg/Kg	1000000	780000	-	-	780000	RSL

Table 2
Applicable Screening Criteria - Soil

Isopropylbenzene	µg/Kg	-	190000	-	-	190000	RSL
m&p-Xylene	µg/Kg	100000	-	4162	4162	4162	COPEC Selection ESV
Methyl acetate	µg/Kg	100000	7800000	-	-	100000	RCS-1
Methyl iodide	µg/Kg	100000	-	38	38	38	COPEC Selection ESV
Methyl t-butyl ether	µg/Kg	100	47000	-	-	100	RCS-1
Methylcyclohexane	µg/Kg	100000	9800	-	-	9800	RSL
Methylene Chloride	µg/Kg	100	35000	2600	2600	100	RCS-1
n-Butylbenzene	µg/Kg	-	390000	-	-	390000	RSL
n-Propylbenzene	µg/Kg	-	380000	-	-	380000	RSL
o-Xylene	µg/Kg	-	64000	4162	4162	4162	COPEC Selection ESV
sec-Butylbenzene	µg/Kg	-	780000	-	-	780000	RSL
Styrene	µg/Kg	3000	600000	1200	1200	1200	COPEC Selection ESV
tert-Butylbenzene	µg/Kg	100000	780000	-	-	100000	RCS-1
Tetrachloroethene	µg/Kg	1000	8100	180	180	180	COPEC Selection ESV
Tetrahydrofuran	µg/Kg	500000	1800000	-	-	500000	RCS-1
Toluene	µg/Kg	30000	490000	23000	23000	23000	COPEC Selection ESV
trans-1,2-Dichloroethene	µg/Kg	1000	7000	89600	89600	1000	RCS-1
trans-1,3-Dichloropropene	µg/Kg	10	-	-	-	10	RCS-1
Trichloroethene	µg/Kg	300	410	1387	42000	300	RCS-1
Trichlorofluoromethane	µg/Kg	1000000	2300000	52000	52000	52000	COPEC Selection ESV
Vinyl acetate	µg/Kg	1000000	91000	-	-	91000	RSL
Vinyl chloride	µg/Kg	700	59	120	120	59	RSL
Xylenes, Total	µg/Kg	100000	58000	1400	1400	1400	COPEC Selection ESV
Total Petroleum Hydrocarbons	µg/Kg	1000000	-	-	-	1000000	RCS-1

Notes

- = no applicable screening value

mg/kg = milligrams per kilograms

HMW = High Molecular Weight

µg/kg = micrograms per kilograms

LMW = Low Molecular Weight

¹MCP RSC-1 = Massachusetts Contingency Plan Reportable Concentration Soil 1 Values (May 2014)

²USEPA RSLs = U.S. Environmental Protection Agency Regional Screening Levels, Residential, TR=1E-06, THQ=0.1 (Nov 2023)

³NPS COPEC Selection ESV = National Park Service Contaminant of Potential Ecological Concern Selection Ecological Screening Value (Nov 2018)

⁴NPS Refined ESV = National Park Service Refined Ecological Screening Value (Nov 2018)

⁵MCP RSC-1 Value for arsenic is based on the State-wide background value for arsenic. Therefore, the arsenic screening level will default to this background value.

Table 3
Sediment Management Categories and Screening Criteria

Analyte	Units	Category 1	Category 2	Category 3
Organochlorine Pesticides				
4,4'-DDD	µg/Kg	42	100	8,000
4,4'-DDE	µg/Kg	58	100	6,000
4,4'-DDT	µg/Kg	24	240	6,000
Aldrin	µg/Kg	80	80	80
alpha-BHC	µg/Kg	50,000	50,000	50,000
beta-BHC	µg/Kg	10,000	10,000	10,000
Chlordane (technical)	µg/Kg	4.8	5,000	5,000
delta-BHC	µg/Kg	10,000	10,000	10,000
Dieldrin	µg/Kg	7.1	7.1	80
Endosulfan I	µg/Kg	500	500	500
Endosulfan II	µg/Kg	500	500	500
Endosulfan sulfate	µg/Kg	45	45	45
Endrin	µg/Kg	10,000	10,000	10,000
Endrin ketone	µg/Kg	-	-	-
gamma-BHC (Lindane)	µg/Kg	0.99	3	3
Heptachlor	µg/Kg	300	300	300
Heptachlor epoxide	µg/Kg	100	100	100
Hexachlorobenzene	µg/Kg	700	700	700
Methoxychlor	µg/Kg	44	44	2,000,000
Metals				
Antimony	mg/Kg	20	20	25
Arsenic	mg/Kg	23	23	23
Beryllium	mg/Kg	90	90	90
Cadmium	mg/Kg	4.2	70	70
Chromium	mg/Kg	100	100	160
Copper	mg/Kg	108	108	1,000
Lead	mg/Kg	112	200	200
Mercury	mg/Kg	0.3	0.3	20
Nickel	mg/Kg	200	200	600
Selenium	mg/Kg	400	400	400
Silver	mg/Kg	2	100	100
Thallium	mg/Kg	8	8	8
Zinc	mg/Kg	271	1,000	1,000
Polychlorinated Biphenyls (PCBs)				
Total PCBs	µg/Kg	35.4	35.4	1,000
Polycyclic Aromatic Hydrocarbons (PAHs)				
2-Methylnaphthalene	µg/Kg	201	700	700
Acenaphthene	µg/Kg	89	4,000	4,000
Acenaphthylene	µg/Kg	1,000	1,000	1,000
Anthracene	µg/Kg	38,800	38,800	1,000,000
Benzo[a]anthracene	µg/Kg	20.3	56	7,000
Benzo[a]pyrene	µg/Kg	42.4	42.4	2,000
Benzo[b]fluoranthene	µg/Kg	89.7	89.7	7,000
Benzo[g,h,i]perylene	µg/Kg	45,000	45,000	1,000,000
Benzo[k]fluoranthene	µg/Kg	89.7	710	70,000
Chrysene	µg/Kg	39	390	70,000

Table 3
Sediment Management Categories and Screening Criteria

Analyte	Units	Category 1	Category 2	Category 3
Dibenz(a,h)anthracene	µg/Kg	8.5	8.5	700
Fluoranthene	µg/Kg	64,000	64,000	1,000,000
Fluorene	µg/Kg	33,000	33,000	1,000,000
Indeno[1,2,3-cd]pyrene	µg/Kg	28	140	7,000
Naphthalene	µg/Kg	391	4,000	4,000
Phenanthrene	µg/Kg	2,300	2,300	10,000
Pyrene	µg/Kg	28,000	28,000	1,000,000
LMW PAHs	µg/Kg	1,442	1,442	1,442
HMW PAHs	µg/Kg	6,676	6,676	6,676
Semi Volatile Organic Compounds				
1,1'-Biphenyl	µg/Kg	50	50	50
bis (2-chloroisopropyl) ether	µg/Kg	700	700	700
2,4,5-Trichlorophenol	µg/Kg	4,000	4,000	4,000
2,4,6-Trichlorophenol	µg/Kg	700	700	700
2,4-Dichlorophenol	µg/Kg	700	700	700
2,4-Dimethylphenol	µg/Kg	700	700	700
2,4-Dinitrophenol	µg/Kg	3,000	3,000	3,000
2,4-Dinitrotoluene	µg/Kg	700	700	700
2,6-Dinitrotoluene	µg/Kg	100,000	100,000	100,000
2-Chloronaphthalene	µg/Kg	1,000,000	1,000,000	1,000,000
2-Chlorophenol	µg/Kg	700	700	700
2-Methylphenol	µg/Kg	500,000	500,000	500,000
2-Nitroaniline	µg/Kg	0	0	0
2-Nitrophenol	µg/Kg	100,000	100,000	100,000
3,3'-Dichlorobenzidine	µg/Kg	3,000	3,000	3,000
3-Nitroaniline	µg/Kg	0	0	0
4,6-Dinitro-2-methylphenol	µg/Kg	50,000	50,000	50,000
4-Bromophenyl phenyl ether	µg/Kg	100,000	100,000	100,000
4-Chloro-3-methylphenol	µg/Kg	1,000,000	1,000,000	1,000,000
4-Chloroaniline	µg/Kg	1,000	1,000	1,000
4-Chlorophenyl phenyl ether	µg/Kg	1,000,000	1,000,000	1,000,000
4-Nitroaniline	µg/Kg	1,000,000	1,000,000	1,000,000
4-Nitrophenol	µg/Kg	100,000	100,000	100,000
Acetophenone	µg/Kg	1,000,000	1,000,000	1,000,000
Atrazine	µg/Kg	100,000	100,000	100,000
Benzaldehyde	µg/Kg	100,000	100,000	100,000
Bis(2-chloroethoxy)methane	µg/Kg	500,000	500,000	500,000
Bis(2-chloroethyl)ether	µg/Kg	700	700	700
Bis(2-ethylhexyl) phthalate	µg/Kg	2,600	90,000	90,000
Butyl benzyl phthalate	µg/Kg	100,000	100,000	100,000
Caprolactam	µg/Kg	0	0	0
Carbazole	µg/Kg	0	0	0
Dibenzofuran	µg/Kg	100,000	100,000	100,000
Diethyl phthalate	µg/Kg	10,000	10,000	10,000
Dimethyl phthalate	µg/Kg	700	700	700

Table 3
Sediment Management Categories and Screening Criteria

Analyte	Units	Category 1	Category 2	Category 3
Di-n-butyl phthalate	µg/Kg	50,000	50,000	50,000
Di-n-octyl phthalate	µg/Kg	1,000,000	1,000,000	1,000,000
Hexachlorobenzene	µg/Kg	700	700	700
Hexachlorobutadiene	µg/Kg	30,000	30,000	30,000
Hexachlorocyclopentadiene	µg/Kg	50,000	50,000	50,000
Hexachloroethane	µg/Kg	700	700	700
Isophorone	µg/Kg	100,000	100,000	100,000
N-Nitrosodi-n-propylamine	µg/Kg	50,000	50,000	50,000
N-Nitrosodiphenylamine	µg/Kg	100,000	100,000	100,000
Nitrobenzene	µg/Kg	500,000	500,000	500,000
Pentachlorophenol	µg/Kg	3,000	3,000	3,000
Phenol	µg/Kg	1,000	1,000	1,000
3 & 4 Methylphenol	µg/Kg	0	0	0
Volatile Organic Compounds				
1,1,1,2-Tetrachloroethane	µg/Kg	100	100	100
1,1,1-Trichloroethane	µg/Kg	30,000	30,000	30,000
1,1,2,2-Tetrachloroethane	µg/Kg	5	5	5
1,1,2-Trichloroethane	µg/Kg	100	100	100
1,1-Dichloroethane	µg/Kg	400	400	400
1,1-Dichloroethene	µg/Kg	3,000	3,000	3,000
1,1-Dichloropropene	µg/Kg	-	-	-
1,2,3-Trichlorobenzene	µg/Kg	-	-	-
1,2,3-Trichloropropane	µg/Kg	100,000	100,000	100,000
1,2,4-Trichlorobenzene	µg/Kg	2,000	2,000	2,000
1,2,4-Trimethylbenzene	µg/Kg	1,000,000	1,000,000	1,000,000
1,2-Dibromo-3-Chloropropane	µg/Kg	10,000	10,000	10,000
1,2-Dibromoethane	µg/Kg	100	100	100
1,2-Dichlorobenzene	µg/Kg	9,000	9,000	9,000
1,2-Dichloroethane	µg/Kg	100	100	100
1,2-Dichloroethene, Total	µg/Kg	300	300	300
1,2-Dichloropropane	µg/Kg	100	100	100
1,3,5-Trimethylbenzene	µg/Kg	10,000	10,000	10,000
1,3-Dichlorobenzene	µg/Kg	3,000	3,000	3,000
1,3-Dichloropropane	µg/Kg	500,000	500,000	500,000
1,4-Dichlorobenzene	µg/Kg	700	700	700
1,4-Dioxane	µg/Kg	200	200	200
2,2-Dichloropropane	µg/Kg	-	-	-
2-Butanone	µg/Kg	4,000	4,000	4,000
2-Chloroethyl vinyl ether	µg/Kg	500,000	500,000	500,000
2-Chlorotoluene	µg/Kg	100,000	100,000	100,000
2-Hexanone	µg/Kg	100,000	100,000	100,000
4-Chlorotoluene	µg/Kg	-	-	-
4-Isopropyltoluene	µg/Kg	-	-	-
4-Methyl-2-pentanone	µg/Kg	400	400	400
Acetone	µg/Kg	6,000	6,000	6,000
Benzene	µg/Kg	2,000	2,000	2,000
Bromobenzene	µg/Kg	100,000	100,000	100,000

Table 3
Sediment Management Categories and Screening Criteria

Analyte	Units	Category 1	Category 2	Category 3
Bromochloromethane	µg/Kg	-	-	-
Bromodichloromethane	µg/Kg	100	100	100
Bromoform	µg/Kg	100	100	100
Bromomethane	µg/Kg	500	500	500
Carbon disulfide	µg/Kg	100,000	100,000	100,000
Carbon tetrachloride	µg/Kg	5,000	5,000	5,000
Chlorobenzene	µg/Kg	1,000	1,000	1,000
Chloroethane	µg/Kg	100,000	100,000	100,000
Chloroform	µg/Kg	200	200	200
Chloromethane	µg/Kg	100,000	100,000	100,000
cis-1,2-Dichloroethene	µg/Kg	100	100	100
cis-1,3-Dichloropropene	µg/Kg	10	10	10
Cyclohexane	µg/Kg	500,000	500,000	500,000
Dibromochloromethane	µg/Kg	5	5	5
Dibromomethane	µg/Kg	500,000	500,000	500,000
Dichlorodifluoromethane	µg/Kg	1,000,000	1,000,000	1,000,000
Ethylbenzene	µg/Kg	40,000	40,000	40,000
Freon TF	µg/Kg	-	-	-
Hexachlorobutadiene	µg/Kg	30,000	30,000	30,000
Isobutyl alcohol	µg/Kg	1,000,000	1,000,000	1,000,000
Isopropylbenzene	µg/Kg	-	-	-
m&p-Xylene	µg/Kg	100,000	100,000	100,000
Methyl acetate	µg/Kg	100,000	100,000	100,000
Methyl iodide	µg/Kg	100,000	100,000	100,000
Methyl t-butyl ether	µg/Kg	100	100	100
Methylcyclohexane	µg/Kg	100,000	100,000	100,000
Methylene Chloride	µg/Kg	100	100	100
n-Butylbenzene	µg/Kg	-	-	-
n-Propylbenzene	µg/Kg	-	-	-
o-Xylene	µg/Kg	-	-	-
sec-Butylbenzene	µg/Kg	-	-	-
Styrene	µg/Kg	3,000	3,000	3,000
tert-Butylbenzene	µg/Kg	100,000	100,000	100,000
Tetrachloroethene	µg/Kg	1,000	1,000	1,000
Tetrahydrofuran	µg/Kg	500,000	500,000	500,000
Toluene	µg/Kg	30,000	30,000	30,000
trans-1,2-Dichloroethene	µg/Kg	1,000	1,000	1,000
trans-1,3-Dichloropropene	µg/Kg	10	10	10
Trichloroethene	µg/Kg	300	300	300
Trichlorofluoromethane	µg/Kg	1,000,000	1,000,000	1,000,000
Vinyl acetate	µg/Kg	1,000,000	1,000,000	1,000,000
Vinyl chloride	µg/Kg	700	700	700
Xylenes, Total	µg/Kg	100,000	100,000	100,000
Total Petroleum Hydrocarbons	µg/Kg	1,000,000	1,000,000	1,000,000

Table 3
Sediment Management Categories and Screening Criteria

Analyte	Units	Category 1	Category 2	Category 3
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Notes

- = no applicable screening value

mg/kg = milligrams per kilograms

HMW = High Molecular Weight

µg/kg = micrograms per kilograms

LMW = Low Molecular Weight

Category 1 = No beneficial reuse restrictions

Category 2 = Consider additional factors (see Section 7); surface placement, burial, or off-site disposal may be appropriate

Category 3 = Consider additional factors (see Section 7); burial or off-site disposal may be appropriate

Table 4
Soil Management Categories and Screening Criteria

Analyte	Units	Category 1	Category 2	Category 3	Category 4
Organochlorine Pesticides					
4,4'-DDD	µg/Kg	2	21	21	8000
4,4'-DDE	µg/Kg	2	21	21	6000
4,4'-DDT	µg/Kg	2	21	21	6000
Aldrin	µg/Kg	3.32	37	37	80
alpha-BHC	µg/Kg	70	86	460	50000
beta-BHC	µg/Kg	3.98	270	270	10000
Chlordane (technical)	µg/Kg	224	224	224	5000
delta-BHC	µg/Kg	70	70	70	10000
Dieldrin	µg/Kg	4.5	4.9	4.9	80
Endosulfan I	µg/Kg	500	500	500	500
Endosulfan II	µg/Kg	500	500	500	500
Endosulfan sulfate	µg/Kg	560	640	640	-
Endrin	µg/Kg	1.4	1.4	1.4	10000
Endrin ketone	µg/Kg	-	-	-	-
gamma-BHC (Lindane)	µg/Kg	3	3	3	3
Heptachlor	µg/Kg	59	59	59	300
Heptachlor epoxide	µg/Kg	70	70	100	100
Hexachlorobenzene	µg/Kg	78	78	79	700
Methoxychlor	µg/Kg	5100	5100	5100	2000000
Metals					
Antimony	mg/Kg	0.248	0.27	0.27	20
Arsenic ⁵	mg/Kg	20	20	20	20
Beryllium	mg/Kg	2.42	10	10	90
Cadmium	mg/Kg	0.27	0.36	0.36	70
Chromium	mg/Kg	0.34	0.4	0.4	100
Copper	mg/Kg	14	28	28	1000
Lead	mg/Kg	0.94	11	11	200
Mercury	mg/Kg	0.013	0.013	0.013	20
Nickel	mg/Kg	10	38	38	600
Selenium	mg/Kg	0.331	0.52	0.52	400
Silver	mg/Kg	2	4.2	4.2	100
Thallium	mg/Kg	0.027	0.078	0.42	8

Table 4

Soil Management Categories and Screening Criteria

Zinc	mg/Kg	6.62	46	46	1000
Polychlorinated Biphenyls (PCBs)					
PCB-8	ug/Kg	-	-	-	-
PCB-18	ug/Kg	-	-	-	-
PCB-28	ug/Kg	-	-	-	-
PCB-44	ug/Kg	-	-	-	-
PCB-52	ug/Kg	-	-	-	-
PCB-66	ug/Kg	-	-	-	-
PCB-101	ug/Kg	-	-	-	-
PCB-105	ug/Kg	120	120	-	-
PCB-118	ug/Kg	120	120	-	-
PCB-128	ug/Kg	-	-	-	-
PCB-138	ug/Kg	-	-	-	-
PCB-153	ug/Kg	-	-	-	-
PCB-170	ug/Kg	-	-	-	-
PCB-180	ug/Kg	-	-	-	-
PCB-187	ug/Kg	-	-	-	-
PCB-195	ug/Kg	-	-	-	-
PCB-206	ug/Kg	-	-	-	-
PCB-209	ug/Kg	-	-	-	-
Total PCBs	ug/Kg	230	230	1000	1000
Polycyclic Aromatic Hydrocarbons (PAHs)					
2-Methylnaphthalene	ug/Kg	700	700	700	700
Acenaphthene	ug/Kg	250	4000	4000	4000
Acenaphthylene	ug/Kg	1000	1000	1000	1000
Anthracene	ug/Kg	6800	6800	6800	1000000
Benzo[a]anthracene	ug/Kg	730	730	730	7000
Benzo[a]pyrene	ug/Kg	110	110	2000	2000
Benzo[b]fluoranthene	ug/Kg	1100	1100	7000	7000
Benzo[g,h,i]perylene	ug/Kg	25000	25000	25000	1000000
Benzo[k]fluoranthene	ug/Kg	11000	11000	70000	70000
Chrysene	ug/Kg	3100	3100	3100	70000
Dibenz(a,h)anthracene	ug/Kg	110	110	700	700
Fluoranthene	ug/Kg	10000	10000	10000	1000000
Fluorene	ug/Kg	3700	30000	30000	1000000
Indeno[1,2,3-cd]pyrene	ug/Kg	1100	1100	7000	7000

Table 4

Soil Management Categories and Screening Criteria

Naphthalene	µg/Kg	1000	1000	1000	4000
Phenanthrene	µg/Kg	5500	5500	5500	10000
Pyrene	µg/Kg	10000	10000	10000	1000000
LMW PAHs	µg/Kg	29000	29000	29000	-
HMW PAHs	µg/Kg	1100	1100	1100	-
Semi Volatile Organic Compounds					
1,1'-Biphenyl	µg/Kg	50	50	50	50
bis (2-chloroisopropyl) ether	µg/Kg	700	700	700	700
2,4,5-Trichlorophenol	µg/Kg	4000	4000	4000	4000
2,4,6-Trichlorophenol	µg/Kg	700	700	700	700
2,4-Dichlorophenol	µg/Kg	700	700	700	700
2,4-Dimethylphenol	µg/Kg	10	700	700	700
2,4-Dinitrophenol	µg/Kg	3000	3000	3000	3000
2,4-Dinitrotoluene	µg/Kg	700	700	700	700
2,6-Dinitrotoluene	µg/Kg	360	360	4000	100000
2-Chloronaphthalene	µg/Kg	480000	480000	1000000	1000000
2-Chlorophenol	µg/Kg	390	390	390	700
2-Methylphenol	µg/Kg	670	670	670	500000
2-Nitroaniline	µg/Kg	5300	5300	5300	-
2-Nitrophenol	µg/Kg	7000	7000	7000	100000
3,3'-Dichlorobenzidine	µg/Kg	1200	1200	3000	3000
3-Nitroaniline	µg/Kg	-	-	-	-
4,6-Dinitro-2-methylphenol	µg/Kg	510	510	50000	50000
4-Bromophenyl phenyl ether	µg/Kg	100000	100000	100000	100000
4-Chloro-3-methylphenol	µg/Kg	630000	630000	1000000	1000000
4-Chloroaniline	µg/Kg	1000	1000	1000	1000
4-Chlorophenyl phenyl ether	µg/Kg	1000000	1000000	1000000	1000000
4-Nitroaniline	µg/Kg	25000	25000	1000000	1000000
4-Nitrophenol	µg/Kg	7000	7000	7000	100000
Acetophenone	µg/Kg	780000	780000	1000000	1000000
Atrazine	µg/Kg	2400	2400	100000	100000
Benzaldehyde	µg/Kg	100000	100000	100000	100000
Bis(2-chloroethoxy)methane	µg/Kg	19000	19000	500000	500000
Bis(2-chloroethyl)ether	µg/Kg	230	230	700	700
Bis(2-ethylhexyl) phthalate	µg/Kg	20	20	20	90000
Butyl benzyl phthalate	µg/Kg	90000	90000	90000	100000

Table 4

Soil Management Categories and Screening Criteria

Caprolactam	µg/Kg	3100000	3100000	-	-
Carbazole	µg/Kg	79000	79000	79000	-
Dibenzofuran	µg/Kg	6100	6100	6100	100000
Diethyl phthalate	µg/Kg	10000	10000	10000	10000
Dimethyl phthalate	µg/Kg	700	700	700	700
Di-n-butyl phthalate	µg/Kg	11	11	11	50000
Di-n-octyl phthalate	µg/Kg	910	910	910	1000000
Hexachlorobenzene	µg/Kg	78	78	79	700
Hexachlorobutadiene	µg/Kg	1200	1200	30000	30000
Hexachlorocyclopentadiene	µg/Kg	180	180	10000	50000
Hexachloroethane	µg/Kg	700	700	700	700
Isophorone	µg/Kg	100000	100000	100000	100000
N-Nitrosodi-n-propylamine	µg/Kg	78	78	50000	50000
N-Nitrosodiphenylamine	µg/Kg	20000	20000	20000	100000
Nitrobenzene	µg/Kg	2200	4800	4800	500000
Pentachlorophenol	µg/Kg	360	1000	2100	3000
Phenol	µg/Kg	790	1000	1000	1000
3 & 4 Methylphenol	µg/Kg	320000	320000	-	-
Volatile Organic Compounds					
1,1,1,2-Tetrachloroethane	µg/Kg	100	100	100	100
1,1,1-Trichloroethane	µg/Kg	30000	30000	30000	30000
1,1,2,2-Tetrachloroethane	µg/Kg	5	5	5	5
1,1,2-Trichloroethane	µg/Kg	100	100	100	100
1,1-Dichloroethane	µg/Kg	400	400	400	400
1,1-Dichloroethene	µg/Kg	3000	3000	3000	3000
1,1-Dichloropropene	µg/Kg	-	-	-	-
1,2,3-Trichlorobenzene	µg/Kg	6300	6300	20000	-
1,2,3-Trichloropropane	µg/Kg	5.1	5.1	100000	100000
1,2,4-Trichlorobenzene	µg/Kg	270	270	270	2000
1,2,4-Trimethylbenzene	µg/Kg	30000	30000	1000000	1000000
1,2-Dibromo-3-Chloropropane	µg/Kg	5.3	5.3	10000	10000
1,2-Dibromoethane	µg/Kg	36	36	100	100
1,2-Dichlorobenzene	µg/Kg	920	920	920	9000
1,2-Dichloroethane	µg/Kg	100	100	100	100
1,2-Dichloroethene, Total	µg/Kg	300	300	300	300
1,2-Dichloropropane	µg/Kg	100	100	100	100

Table 4

Soil Management Categories and Screening Criteria

1,3,5-Trimethylbenzene	µg/Kg	10000	10000	10000	10000
1,3-Dichlorobenzene	µg/Kg	740	740	740	3000
1,3-Dichloropropane	µg/Kg	160000	160000	500000	500000
1,4-Dichlorobenzene	µg/Kg	700	700	700	700
1,4-Dioxane	µg/Kg	200	200	200	200
2,2-Dichloropropane	µg/Kg	-	-	-	-
2-Butanone	µg/Kg	4000	4000	4000	4000
2-Chloroethyl vinyl ether	µg/Kg	500000	500000	500000	500000
2-Chlorotoluene	µg/Kg	100000	100000	100000	100000
2-Hexanone	µg/Kg	360	360	360	100000
4-Chlorotoluene	µg/Kg	160000	160000	-	-
4-Isopropyltoluene	µg/Kg	-	-	-	-
4-Methyl-2-pentanone	µg/Kg	400	400	400	400
Acetone	µg/Kg	1200	1200	1200	6000
Benzene	µg/Kg	1200	1200	2000	2000
Bromobenzene	µg/Kg	29000	29000	100000	100000
Bromochloromethane	µg/Kg	15000	15000	-	-
Bromodichloromethane	µg/Kg	100	100	100	100
Bromoform	µg/Kg	100	100	100	100
Bromomethane	µg/Kg	500	500	500	500
Carbon disulfide	µg/Kg	810	810	810	100000
Carbon tetrachloride	µg/Kg	650	650	5000	5000
Chlorobenzene	µg/Kg	1000	1000	1000	1000
Chloroethane	µg/Kg	100000	100000	100000	100000
Chloroform	µg/Kg	200	200	200	200
Chloromethane	µg/Kg	11000	11000	100000	100000
cis-1,2-Dichloroethene	µg/Kg	100	100	100	100
cis-1,3-Dichloropropene	µg/Kg	10	10	10	10
Cyclohexane	µg/Kg	500000	500000	500000	500000
Dibromochloromethane	µg/Kg	5	5	5	5
Dibromomethane	µg/Kg	2400	2400	500000	500000
Dichlorodifluoromethane	µg/Kg	8700	8700	1000000	1000000
Ethylbenzene	µg/Kg	5800	5800	40000	40000
Freon TF	µg/Kg	670000	670000	-	-
Hexachlorobutadiene	µg/Kg	1200	1200	30000	30000
Isobutyl alcohol	µg/Kg	780000	780000	1000000	1000000

Table 4
Soil Management Categories and Screening Criteria

Isopropylbenzene	µg/Kg	190000	190000	-	-
m&p-Xylene	µg/Kg	4162	4162	4162	100000
Methyl acetate	µg/Kg	100000	100000	100000	100000
Methyl iodide	µg/Kg	38	38	38	100000
Methyl t-butyl ether	µg/Kg	100	100	100	100
Methylcyclohexane	µg/Kg	9800	9800	100000	100000
Methylene Chloride	µg/Kg	100	100	100	100
n-Butylbenzene	µg/Kg	390000	390000	-	-
n-Propylbenzene	µg/Kg	380000	380000	-	-
o-Xylene	µg/Kg	4162	4162	4162	-
sec-Butylbenzene	µg/Kg	780000	780000	-	-
Styrene	µg/Kg	1200	1200	1200	3000
tert-Butylbenzene	µg/Kg	100000	100000	100000	100000
Tetrachloroethene	µg/Kg	180	180	180	1000
Tetrahydrofuran	µg/Kg	500000	500000	500000	500000
Toluene	µg/Kg	23000	23000	23000	30000
trans-1,2-Dichloroethene	µg/Kg	1000	1000	1000	1000
trans-1,3-Dichloropropene	µg/Kg	10	10	10	10
Trichloroethene	µg/Kg	300	300	300	300
Trichlorofluoromethane	µg/Kg	52000	52000	52000	1000000
Vinyl acetate	µg/Kg	91000	91000	1000000	1000000
Vinyl chloride	µg/Kg	59	59	120	700
Xylenes, Total	µg/Kg	1400	1400	1400	100000
Total Petroleum Hydrocarbons	µg/Kg	1000000	1000000	1000000	1000000

Notes

- = no applicable screening value

HMW = High Molecular Weight

LMW = Low Molecular Weight

Category 1 = No beneficial reuse restrictions. Appropriate for use where human and ecological exposure possible.

Category 2 = Appropriate for use where human and ecological exposure possible, EXCLUDING threatened and endangered species.

Category 3 = Appropriate for use where human and ecological exposure possible. Uses 1E-05 target risk level.

Category 4 = Material that exceeds this screening level should be disposed of off-site.



APPENDIX 1: SEDIMENT AND SOIL MANAGEMENT PLAN TEMPLATE



APPENDIX 2: EA ENGINEERING SEDIMENT MANAGEMENT PLAN



APPENDIX 3: SEDIMENT AND SOIL CHARACTERIZATION PROTOCOL



APPENDIX 4: NPS CLEAN FILL PROTOCOL



APPENDIX 5: COLLABORATIVE RISK SOLUTIONS LLC ALTERNATIVE CANCER RISK BASED VALUES



Appendix 2 – Due Diligence Assessment



To: Classic Site Solutions

Date: October 30, 2024

Memorandum

Project #: 21854.00 (filing
34043.15)

From: Vanasse Hangen Brustlin, Inc.

Re: Mill Creek Due Diligence Assessment

Introduction

This due diligence assessment was completed for the Mill Creek sediment and soil management unit (SSMU), or Site, under the National Park Service Sediment and Soil Management Framework for the Herring River Restoration Project (HRRP) within Cape Cod National Seashore (CACO), and the National Park Service Clean Fill Protocol. This due diligence assessment was completed to determine analytical requirement recommendations for characterization of sediment and soil being proposed for reuse within CACO, and included an electronic data base search, review of historical use, review of historical and current aerial photographs, and review of readily available environmental assessments.

VHB retained Environmental Data Resources (EDR) to conduct an environmental records search including historical aerial photographs, standard environmental records of sites within a 1-mile radius of the Site, and Sanborn maps. According to EDR, no Sanborn maps of the Site or surrounding area are available. Copies of the Radius Map Report and aerial photographs are provided as attachments to this memorandum.

Due Diligence Assessment

The land surrounding the SSMU is developed with some residential areas to the north and a golf course (the Chequesset Yacht & Country Club) to the south. Aerial photographs were available for the years of 1938, 1952, 1960, 1971, 1985, 1991, 1995, 2008, 2010, 2014, and 2018, and were reviewed for the due diligence assessment. In the earliest aerial available from 1938, the area to the south of the Site is developed with a golf course. The area to the north remained relatively unchanged until residential buildings were developed sometime between 1971 and 1985. Roadways for the residential areas were also developed around this time in the areas north of the Site. From 1985 to present day, the Site and the surrounding areas have remained largely unchanged, with the exception of additional development of residential buildings to the north of the Site.

The roadways adjacent to the Site are local lightly travelled roads and as such it is unlikely that runoff from these roads would contribute greater than de minimis amounts of contaminants such as volatile organic compounds (VOCs) and petroleum-related constituents to the surrounding environment. Historical runoff from the golf course may have contributed contaminants such as pesticides, herbicides, and fungicides, including legacy products such as DDT or those that contained mercury, arsenic, or hexavalent chromium, to the surrounding areas.

According to the EDR Radius Map Report, there are no sites listed on available environmental records databases within 1-mile of the Site. The Site is listed with Facility Registry System ID 110071668743 for a Non-Major General Permit (ID MAR10053K) under the National Pollutant Discharge Elimination System (NPDES). One unmapped site with no location information was listed under the Site Transition List and Reportable Releases databases; this listing appears to be associated with a diesel release within Wellfleet Harbor in January 2003 that was addressed by the United States Coast Guard.

Due to incorrect mapping information on the Massachusetts Department of Environmental Protection (Mass DEP) Energy & Environmental Affairs Data Portal, a release that occurred within 1-mile of the Site was not listed in the EDR Report. A release of unregistered mercurial fungicide Calo-gran reportedly occurred at a brush dump within 25 feet of Mill Creek on the Chequesset Yacht & Country Club golf course, but the release is mapped on the Mass DEP portal as occurring on Holbrook Avenue approximately 1.1 miles from the Site. The release is listed under Release Tracking Number 4-0016352 and documentation that is available on the Mass DEP Energy & Environmental Affairs Data Portal regarding the release is attached to this memorandum. Calo-gran was reportedly used by an employee of the Chequesset Yacht & Country Club in or around April 2000. Due to the unregistered status of Calo-gran, the Massachusetts Department of Food & Agriculture-Pesticide Bureau determined that its use was no longer allowed in Massachusetts and therefore that its use constituted a reportable release per the Massachusetts Contingency Plan. A surficial soil sample collected by NPS contained mercury at 340 ppm, an imminent hazard level per 310 CMR 40.0321. Impacted soils were excavated in October 2001 and transported off-site for disposal. The site was closed on November 14, 2001.

Previous sediment sampling activities occurred in 2018 and 2020 within Mill Creek to support the HRRP. Six discrete sediment samples were collected upstream of the water control structure and the excavation area. The samples were analyzed for 13 priority pollutant metals, pesticides, VOCs, polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and extractable petroleum hydrocarbons (EPHs). The pesticide DDT, and its breakdown products DDD and DDE, were detected above the most stringent project screening levels identified in the project Soil and Sediment Management Framework. Arsenic was also detected in two of the samples above project screening levels. No other constituents were detected above project screening levels.

Recommended Analyte List for Sediment and Soil Characterization

While historical sampling in the vicinity of this SSMU indicates pesticides and arsenic may be present in sediment above project screening levels, VHB recommends sampling soil and sediment proposed for reuse for a broader suite of contaminants in accordance with the NPS Clean Fill Protocol and Mass DEP (314 CMR 9.07 (1)(h)). Historical sampling and the due diligence assessment indicates that this SSMU is unlikely to be impacted by sources of VOCs or EPH, and therefore VHB recommends that these analyses that are typically required by the Mass DEP (VOCs and EPH) and NPS Clean Fill Protocol (VOCs only) are not necessary for characterization of the material.

Based on the findings of this due diligence assessment, it is recommended that sediment and soil samples from this SSMU are analyzed for the following:

- 13 Priority Pollutant Metals via EPA Method 6020 and mercury via EPA Method 7471
- Hexavalent Chromium via EPA Method 7196¹
- Semivolatile Organic Compounds (SVOCs) via EPA Method 8270 with selective ion monitoring for PAHs
- Pesticides via EPA Method 8081
- Herbicides via EPA Method 8151¹

¹ These analyses are not specifically required by the NPS Clean Fill Protocol or Mass DEP but are recommended based on the results of the due diligence assessment.

- PCBs via EPA Method 8082A Summation of Congeners
- Total Organic Carbon: Lloyd Kahn Method
- Grain Size: ASTM Standard D422



Mill Creek Water Control Structure

505 Old Chequesset Neck Rd

Wellfleet, MA 02667

Inquiry Number: 7788170.5

October 10, 2024

The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/10/24

Site Name:

Mill Creek Water Control Struct
505 Old Chequesset Neck Rd
Wellfleet, MA 02667
EDR Inquiry # 7788170.5

Client Name:

VHB
100 State Street
Montpelier, VT 05602
Contact: Stephanie Hunt



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2018	1"=500'	Flight Year: 2018	USDA/NAIP
2014	1"=500'	Flight Year: 2014	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2008	1"=500'	Flight Year: 2008	USDA/NAIP
1995	1"=500'	Acquisition Date: April 03, 1995	USGS/DOQQ
1991	1"=500'	Flight Date: April 04, 1991	USGS
1985	1"=500'	Flight Date: March 26, 1985	USDA
1971	1"=500'	Flight Date: May 07, 1971	USGS
1960	1"=500'	Flight Date: May 19, 1960	USGS
1952	1"=500'	Flight Date: July 13, 1952	USDA
1938	1"=500'	Flight Date: November 21, 1938	USGS

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INQUIRY #: 7788170.5

YEAR: 2018

— = 500'





INQUIRY #: 7788170.5

YEAR: 2014

— = 500'





INQUIRY #: 7788170.5

YEAR: 2010

— = 500'



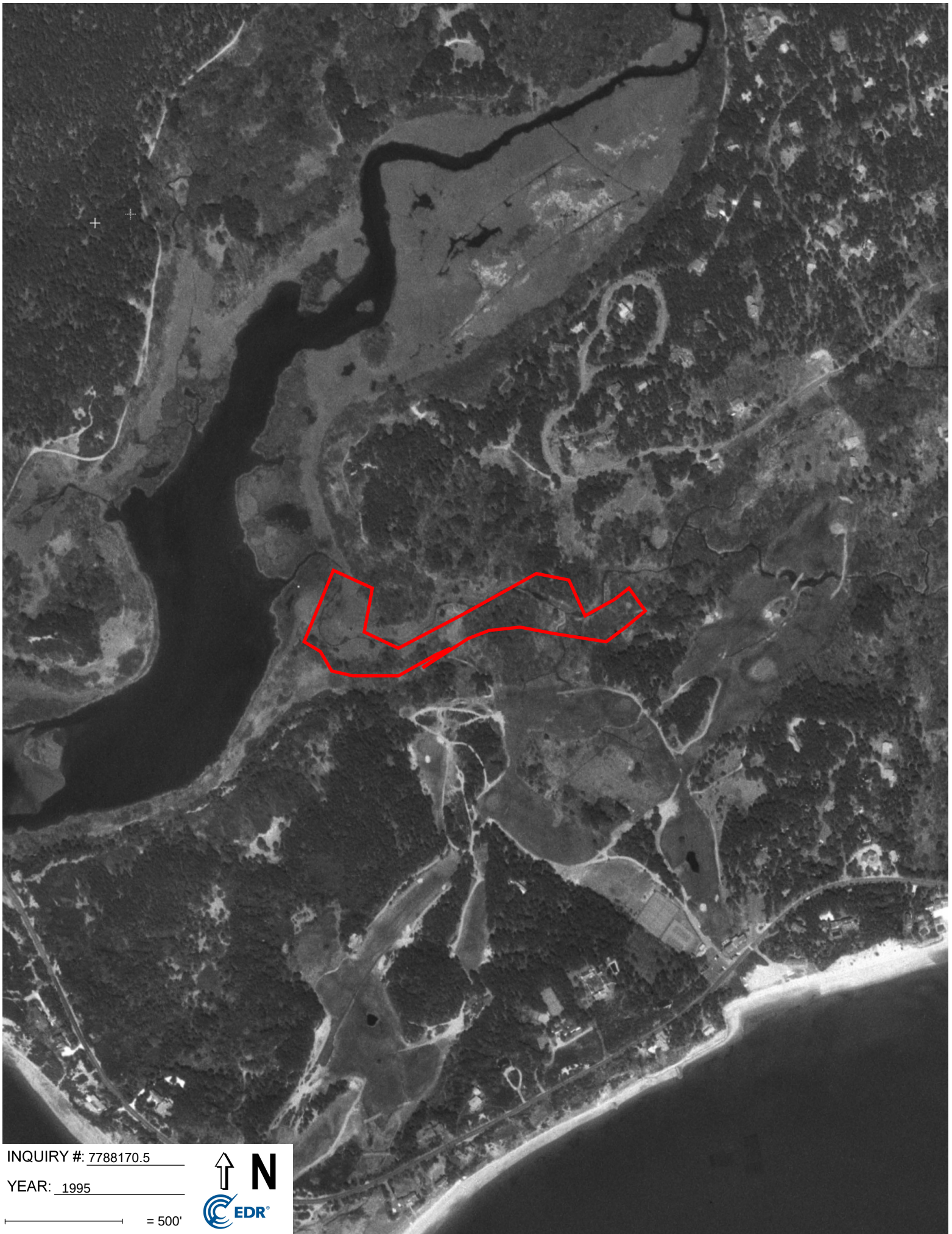


INQUIRY #: 7788170.5

YEAR: 2008

— = 500'





INQUIRY #: 7788170.5

YEAR: 1995

— = 500'





INQUIRY #: 7788170.5

YEAR: 1991

— = 500'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.

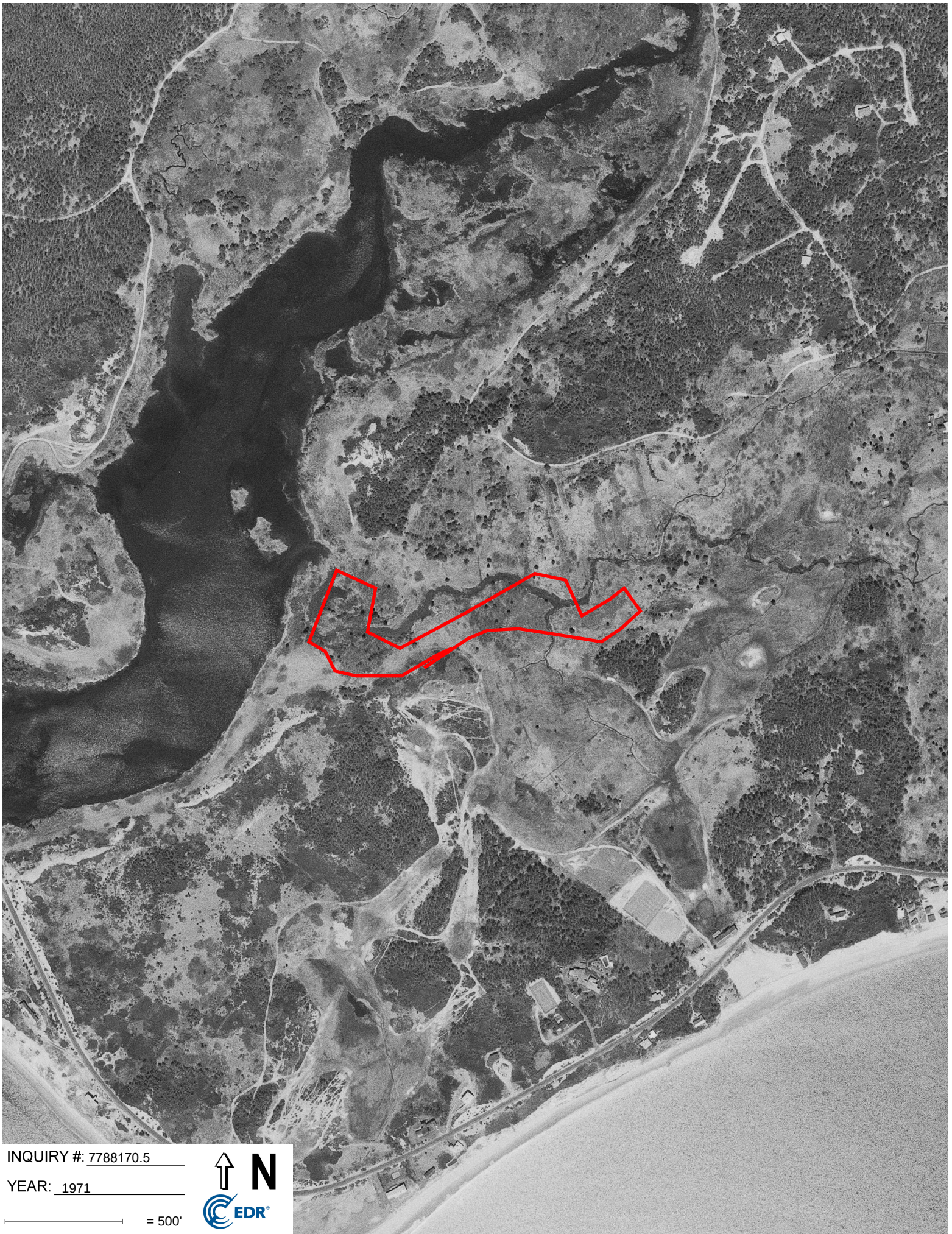


INQUIRY #: 7788170.5

YEAR: 1985

— = 500'





INQUIRY #: 7788170.5

YEAR: 1971

— = 500'





INQUIRY #: 7788170.5

YEAR: 1960

— = 500'



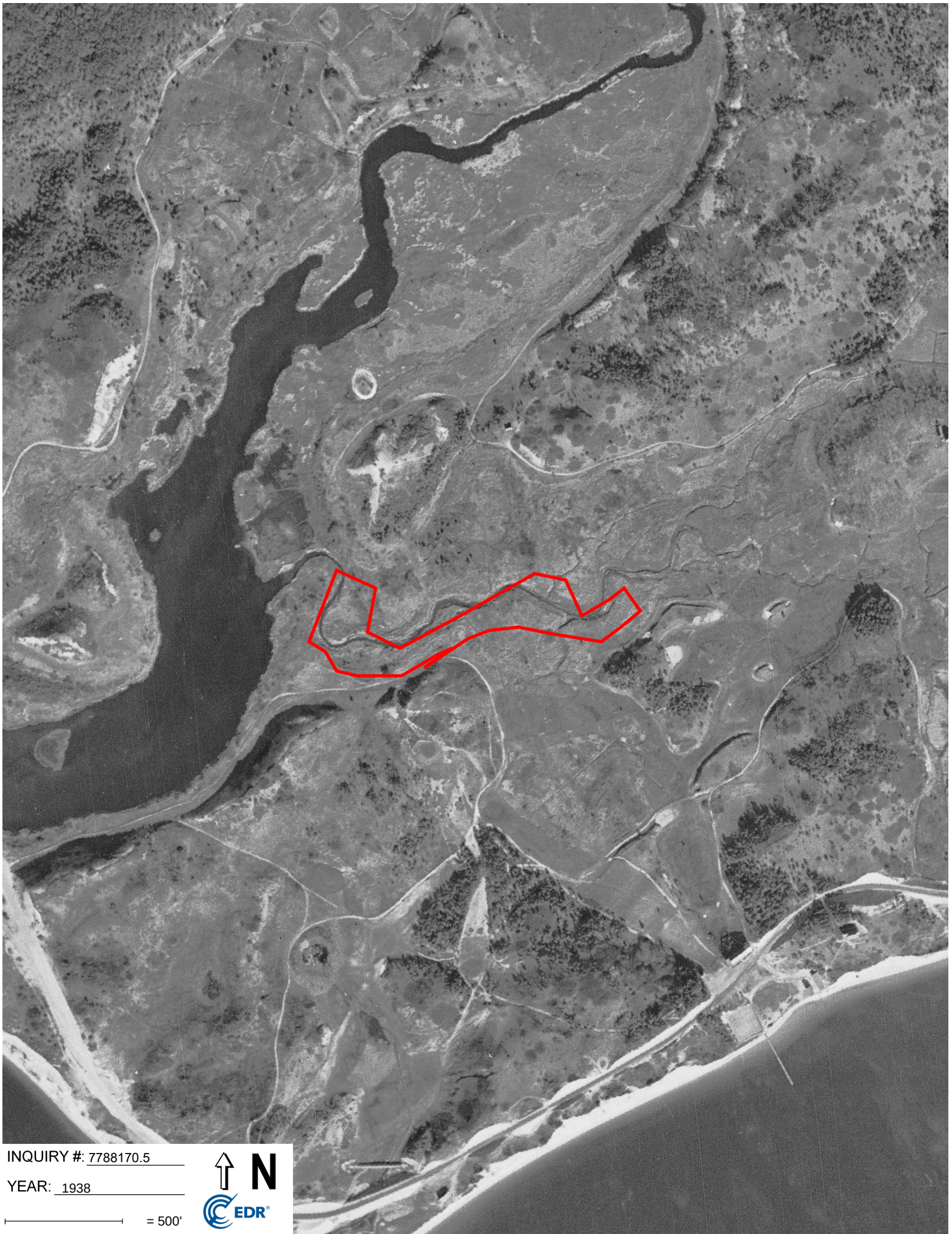


INQUIRY #: 7788170.5

YEAR: 1952

— = 500'





INQUIRY #: 7788170.5

YEAR: 1938

— = 500'



Mill Creek Water Control Structure

505 Old Chequesset Neck Rd
Wellfleet, MA 02667

Inquiry Number: 7788170.2s
October 09, 2024

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

505 OLD CHEQUESSET NECK RD
WELLFLEET, MA 02667

COORDINATES

Latitude (North):	41.9336340 - 41° 56' 1.08"
Longitude (West):	70.0554900 - 70° 3' 19.76"
Universal Tranverse Mercator:	Zone 19
UTM X (Meters):	412493.1
UTM Y (Meters):	4642733.0
Elevation:	17 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	17175417 WELLFLEET, MA
Version Date:	2021

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20180817
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
505 OLD CHEQUESSETT NECK RD
WELLFLEET, MA 02667

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	MILL CREEK WATER CON	OLD CHEQUESSETT NECK	FINDS		TP
A2	MILL CREEK WATER CON	OLD CHEQUESSETT NECK	ECHO		TP

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
MILL CREEK WATER CON OLD CHEQUESSETT NECK WELLFLEET, MA 02667	FINDS Registry ID:: 110071668743	N/A
MILL CREEK WATER CON OLD CHEQUESSETT NECK WELLFLEET, MA 02667	ECHO Registry ID: 110071668743	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL..... National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS..... Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

EXECUTIVE SUMMARY

Lists of Federal RCRA generators

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-VSQG..... RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROLS..... Institutional Controls Sites List

Federal ERNS list

ERNS..... Emergency Response Notification System

Lists of state- and tribal hazardous waste facilities

SHWS..... Reportable Releases Database

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF..... Solid Waste Facility Database/Transfer Stations

Lists of state and tribal leaking storage tanks

LUST..... Leaking Underground Storage Tank Listing
LAST..... Leaking Aboveground Storage Tank Sites
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

Lists of state and tribal registered storage tanks

FEMA UST..... Underground Storage Tank Listing
UST..... Summary Listing of all the Tanks Registered in the State of Massachusetts
AST..... Aboveground Storage Tank Database
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

INST CONTROL..... Sites With Activity and Use Limitation

Lists of state and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

Lists of state and tribal brownfield sites

BROWNFIELDS..... Completed Brownfields Covenants Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

EXECUTIVE SUMMARY

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
US CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS..... Liens Information Listing
LIENS 2..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
SPILLS..... Historical Spill List
RELEASE..... Reportable Releases Database
SPILLS 90..... SPILLS 90 data from FirstSearch
SPILLS 80..... SPILLS 80 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act
TRIS..... Toxic Chemical Release Inventory System
SSTS..... Section 7 Tracking Systems
ROD..... Records Of Decision
RMP..... Risk Management Plans
RAATS..... RCRA Administrative Action Tracking System
PRP..... Potentially Responsible Parties
PADS..... PCB Activity Database System
ICIS..... Integrated Compliance Information System
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS..... Material Licensing Tracking System
COAL ASH DOE..... Steam-Electric Plant Operation Data
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER..... PCB Transformer Registration Database
RADINFO..... Radiation Information Database
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS..... Incident and Accident Data
CONSENT..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV..... Indian Reservations

EXECUTIVE SUMMARY

FUSRAP.....	Formerly Utilized Sites Remedial Action Program
UMTRA.....	Uranium Mill Tailings Sites
LEAD SMELTERS.....	Lead Smelter Sites
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
US MINES.....	Mines Master Index File
ABANDONED MINES.....	Abandoned Mines
MINES MRDS.....	Mineral Resources Data System
DOCKET HWC.....	Hazardous Waste Compliance Docket Listing
UXO.....	Unexploded Ordnance Sites
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
PFAS NPL.....	Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES.....	Federal Sites PFAS Information
PFAS TSCA.....	PFAS Manufacture and Imports Information
PFAS TRIS.....	List of PFAS Added to the TRI
PFAS RCRA MANIFEST.....	PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR.....	PFAS Contamination Site Location Listing
PFAS WQP.....	Ambient Environmental Sampling for PFAS
PFAS NPDES.....	Clean Water Act Discharge Monitoring Information
PFAS PROJECT.....	NORTHEASTERN UNIVERSITY PFAS PROJECT
PFAS ECHO.....	Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAIN.....	Facilities in Industries that May Be Handling PFAS Listing
PFAS PT 139 AIRPORT.....	All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC.....	Aqueous Foam Related Incidents Listing
BIOSOLIDS.....	ICIS-NPDES Biosolids Facility Data
UST FINDER.....	UST Finder Database
UST FINDER RELEASE.....	UST Finder Releases Database
E MANIFEST.....	Hazardous Waste Electronic Manifest System
PFAS.....	PFAS Contaminated Sites Listing
AIRS.....	Permitted Facilities Listing
ASBESTOS.....	ASBESTOS
DRYCLEANERS.....	Regulated Drycleaning Facilities
ENF.....	Enforcement Action Cases
Financial Assurance.....	Financial Assurance Information Listing
GWDP.....	Ground Water Discharge Permits
HW GEN.....	List of Massachusetts Hazardous Waste Generators
MERCURY.....	Mercury Product Recycling Drop-Off Locations Listing
NPDES.....	NPDES Permit Listing
TIER 2.....	Tier 2 Information Listing
TSD.....	TSD Facility
UIC.....	Underground Injection Control Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto.....	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner.....	EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS.....	Recovered Government Archive State Hazardous Waste Facilities List
--------------	--

EXECUTIVE SUMMARY

RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

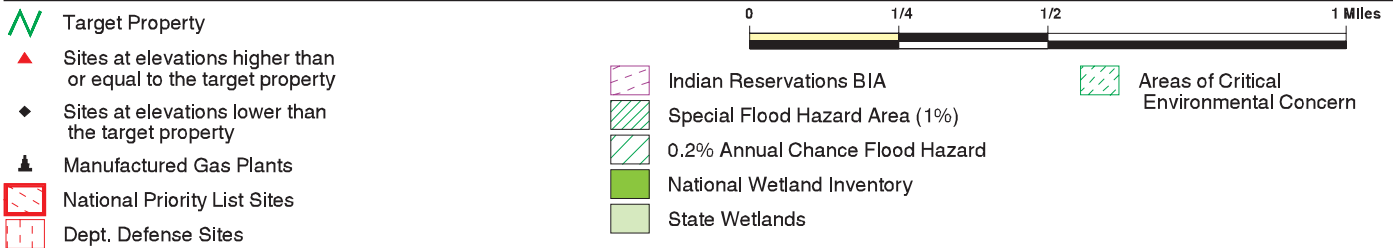
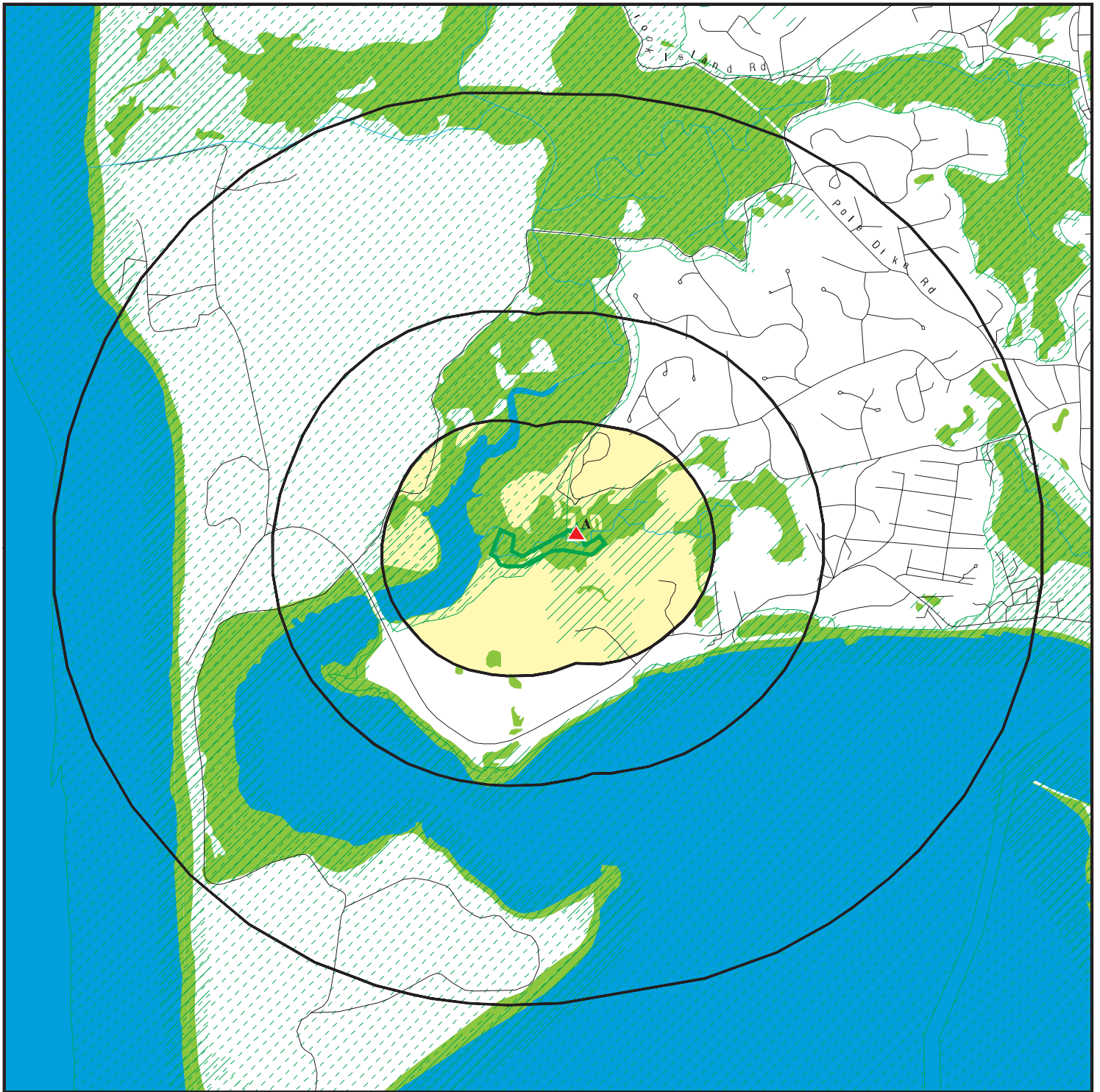
Site Name

NO LOCATION AID

Database(s)

SHWS, RELEASE

OVERVIEW MAP - 7788170.2S

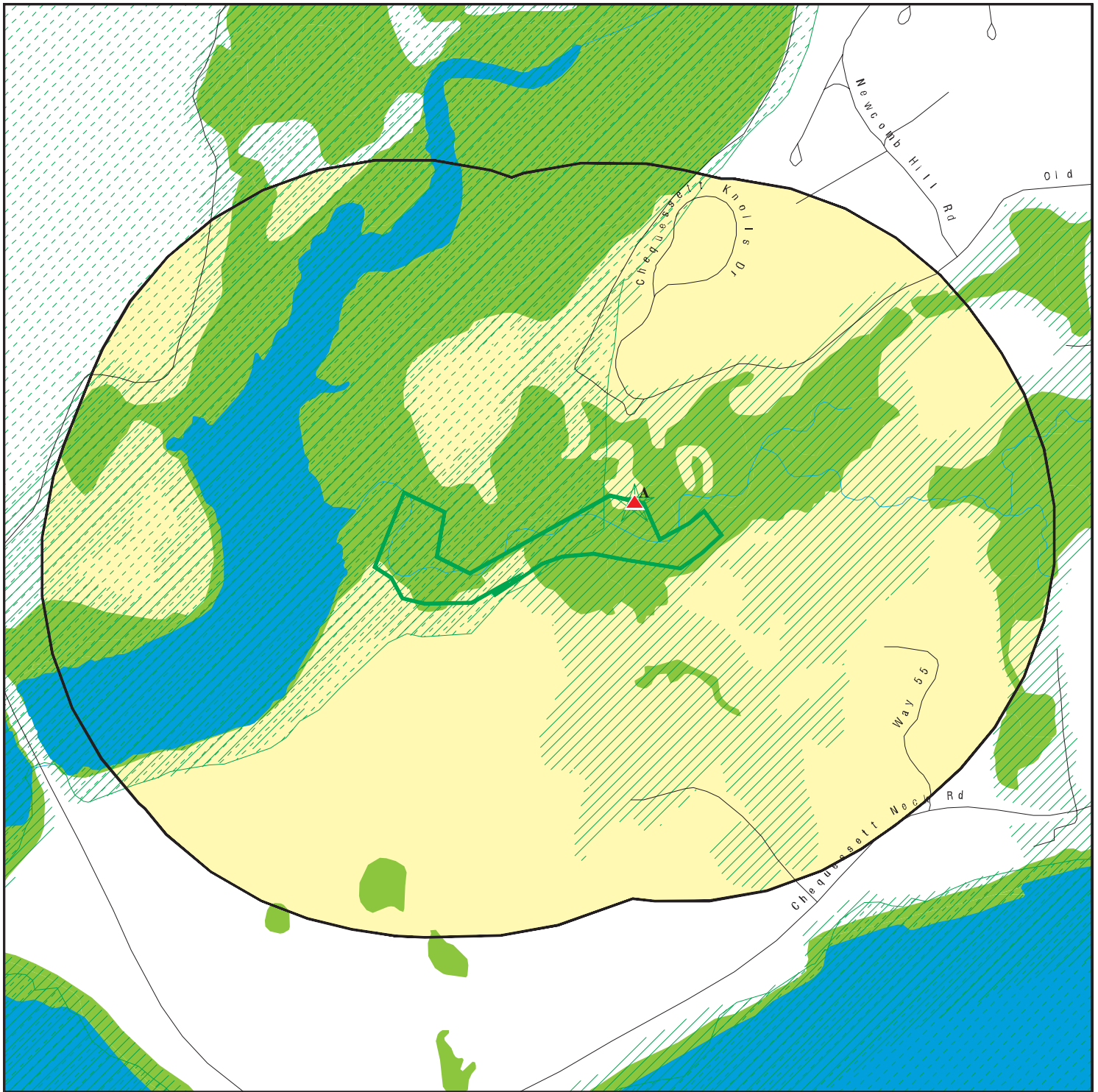


This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Mill Creek Water Control Structure
 ADDRESS: 505 Old Chequesset Neck Rd
 Wellfleet MA 02667
 LAT/LONG: 41.933634 / 70.05549

CLIENT: VHB
 CONTACT: Stephanie Hunt
 INQUIRY #: 7788170.2s
 DATE: October 09, 2024 4:49 pm

DETAIL MAP - 7788170.2S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  Special Flood Hazard Area (1%)
-  0.2% Annual Chance Flood Hazard
-  National Wetland Inventory
-  State Wetlands

-  Areas of Critical Environmental Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Mill Creek Water Control Structure
 ADDRESS: 505 Old Chequesset Neck Rd
 Wellfleet MA 02667
 LAT/LONG: 41.933634 / 70.05549

CLIENT: VHB
 CONTACT: Stephanie Hunt
 INQUIRY #: 7788170.2s
 DATE: October 09, 2024 4:50 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Lists of Federal NPL (Superfund) sites</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
<i>Lists of Federal Delisted NPL sites</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Lists of Federal sites subject to CERCLA removals and CERCLA orders</i>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<i>Lists of Federal CERCLA sites with NFRAP</i>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<i>Lists of Federal RCRA facilities undergoing Corrective Action</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Lists of Federal RCRA TSD facilities</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Lists of Federal RCRA generators</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	TP		NR	NR	NR	NR	NR	0
<i>Lists of state- and tribal hazardous waste facilities</i>								
SHWS	1.000		0	0	0	0	NR	0
<i>Lists of state and tribal landfills and solid waste disposal facilities</i>								
SWF/LF	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal leaking storage tanks</i>								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LAST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal registered storage tanks</i>								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
<i>State and tribal institutional control / engineering control registries</i>								
INST CONTROL	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal voluntary cleanup sites</i>								
INDIAN VCP	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal brownfield sites</i>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<u>ADDITIONAL ENVIRONMENTAL RECORDS</u>								
<i>Local Brownfield lists</i>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Landfill / Solid Waste Disposal Sites</i>								
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Hazardous waste / Contaminated Sites</i>								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
<i>Local Land Records</i>								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
<i>Records of Emergency Release Reports</i>								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
RELEASE	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
SPILLS 80	TP		NR	NR	NR	NR	NR	0
<i>Other Ascertainable Records</i>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
MINES MRDS	0.250		0	0	NR	NR	NR	0
FINDS	TP	1	NR	NR	NR	NR	NR	1
ECHO	TP	1	NR	NR	NR	NR	NR	1
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS TRIS	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS PROJECT	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAIN	0.250		0	0	NR	NR	NR	0
PFAS PT 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
BIOSOLIDS	TP		NR	NR	NR	NR	NR	0
UST FINDER	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST FINDER RELEASE	0.500		0	0	0	NR	NR	0
E MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
ASBESTOS	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
GWDP	TP		NR	NR	NR	NR	NR	0
HW GEN	0.250		0	0	NR	NR	NR	0
MERCURY	0.500		0	0	0	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
TIER 2	TP		NR	NR	NR	NR	NR	0
TSD	0.500		0	0	0	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0

- Totals --		2	0	0	0	0	0	2
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NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

A1
Target
Property
MILL CREEK WATER CONTROL STRUCTURE AND DRAINAGE IM
OLD CHEQUESSETT NECK ROAD
WELLFLEET, MA 02667

FINDS **1031184548**
N/A

Site 1 of 2 in cluster A

Actual:
17 ft.

FINDS:
Registry ID: 110071668743

[Click Here for FRS Facility Detail Report:](#)

Environmental Interest/Information System:

The National Pollutant Discharge Elimination System (NPDES) module of the Integrated Compliance Information System (ICIS). Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A2
Target
Property
MILL CREEK WATER CONTROL STRUCTURE AND DRAINAGE IM
OLD CHEQUESSETT NECK ROAD
WELLFLEET, MA 02667

ECHO **1031105827**
N/A

Site 2 of 2 in cluster A

Actual:
17 ft.

ECHO:
Envid: 1031105827
Registry ID: 110071668743
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110071668743>
Name: MILL CREEK WATER CONTROL STRUCTURE AND DRAINAGE IMPROVEMENTS PROJECT
Address: OLD CHEQUESSETT NECK ROAD
City,State,Zip: WELLFLEET, MA 02667

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WELLFLEET	S108117511	NO LOCATION AID	WELLFLEET HBR	02667	SHWS, RELEASE

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 08/27/2024	Source: EPA
Date Data Arrived at EDR: 09/03/2024	Telephone: N/A
Date Made Active in Reports: 09/19/2024	Last EDR Contact: 10/01/2024
Number of Days to Update: 16	Next Scheduled EDR Contact: 01/06/2025
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 08/27/2024	Source: EPA
Date Data Arrived at EDR: 09/03/2024	Telephone: N/A
Date Made Active in Reports: 09/19/2024	Last EDR Contact: 10/01/2024
Number of Days to Update: 16	Next Scheduled EDR Contact: 01/06/2025
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/27/2024
Date Data Arrived at EDR: 09/03/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 10/01/2024
Next Scheduled EDR Contact: 01/06/2025
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 06/07/2024
Date Data Arrived at EDR: 06/25/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 09/24/2024
Next Scheduled EDR Contact: 01/09/2025
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/24/2024
Date Data Arrived at EDR: 08/01/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/01/2024
Next Scheduled EDR Contact: 01/20/2025
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/24/2024	Source: EPA
Date Data Arrived at EDR: 08/01/2024	Telephone: 800-424-9346
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 10/01/2024
Number of Days to Update: 27	Next Scheduled EDR Contact: 01/20/2025
	Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/03/2024	Source: EPA
Date Data Arrived at EDR: 06/07/2024	Telephone: 800-424-9346
Date Made Active in Reports: 06/20/2024	Last EDR Contact: 09/17/2024
Number of Days to Update: 13	Next Scheduled EDR Contact: 12/30/2024
	Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/03/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/07/2024	Telephone: (888) 372-7341
Date Made Active in Reports: 06/20/2024	Last EDR Contact: 09/17/2024
Number of Days to Update: 13	Next Scheduled EDR Contact: 12/30/2024
	Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/03/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/07/2024	Telephone: (888) 372-7341
Date Made Active in Reports: 06/20/2024	Last EDR Contact: 09/17/2024
Number of Days to Update: 13	Next Scheduled EDR Contact: 12/30/2024
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/03/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/07/2024	Telephone: (888) 372-7341
Date Made Active in Reports: 06/20/2024	Last EDR Contact: 09/17/2024
Number of Days to Update: 13	Next Scheduled EDR Contact: 12/30/2024
	Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/03/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/07/2024	Telephone: (888) 372-7341
Date Made Active in Reports: 06/20/2024	Last EDR Contact: 09/17/2024
Number of Days to Update: 13	Next Scheduled EDR Contact: 12/30/2024
	Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/14/2024	Source: Department of the Navy
Date Data Arrived at EDR: 02/16/2024	Telephone: 843-820-7326
Date Made Active in Reports: 04/04/2024	Last EDR Contact: 07/31/2024
Number of Days to Update: 48	Next Scheduled EDR Contact: 11/18/2024
	Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/24/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/08/2024	Telephone: 703-603-0695
Date Made Active in Reports: 08/15/2024	Last EDR Contact: 08/08/2024
Number of Days to Update: 7	Next Scheduled EDR Contact: 12/02/2024
	Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/24/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/08/2024	Telephone: 703-603-0695
Date Made Active in Reports: 08/15/2024	Last EDR Contact: 08/08/2024
Number of Days to Update: 7	Next Scheduled EDR Contact: 12/02/2024
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/11/2024

Date Data Arrived at EDR: 06/17/2024

Date Made Active in Reports: 09/04/2024

Number of Days to Update: 79

Source: National Response Center, United States Coast Guard

Telephone: 202-267-2180

Last EDR Contact: 09/17/2024

Next Scheduled EDR Contact: 12/30/2024

Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

SHWS: Site Transition List

Contains information on releases of oil and hazardous materials that have been reported to DEP.

Date of Government Version: 07/10/2024

Date Data Arrived at EDR: 07/16/2024

Date Made Active in Reports: 08/07/2024

Number of Days to Update: 22

Source: Department of Environmental Protection

Telephone: 617-292-5990

Last EDR Contact: 10/03/2024

Next Scheduled EDR Contact: 01/13/2025

Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

LF PROFILES: Landfill Profiles Listing

This spreadsheet describes landfills that have actively accepted waste or have closed under MassDEP Solid Waste Regulations first adopted in 1971 (310 CMR 16.00 and 310 CMR 19.00). The list does not include landfills that closed before 1971 (and which never had a MassDEP permit or approval), or for which agency data is incomplete.

Date of Government Version: 07/01/2015

Date Data Arrived at EDR: 10/27/2015

Date Made Active in Reports: 12/14/2015

Number of Days to Update: 48

Source: Department of Environmental Protection

Telephone: 617-292-5868

Last EDR Contact: 09/26/2024

Next Scheduled EDR Contact: 01/06/2025

Data Release Frequency: Varies

SWF/LF: Solid Waste Facility Database/Transfer Stations

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 06/28/2024

Date Data Arrived at EDR: 06/28/2024

Date Made Active in Reports: 09/24/2024

Number of Days to Update: 88

Source: Department of Environmental Protection

Telephone: 617-292-5989

Last EDR Contact: 09/26/2024

Next Scheduled EDR Contact: 01/06/2025

Data Release Frequency: Annually

Lists of state and tribal leaking storage tanks

LAST: Leaking Aboveground Storage Tank Sites

Sites within the Releases Database that have a AST listed as its source.

Date of Government Version: 07/10/2024

Date Data Arrived at EDR: 07/16/2024

Date Made Active in Reports: 08/07/2024

Number of Days to Update: 22

Source: Department of Environmental Protection

Telephone: 617-292-5500

Last EDR Contact: 10/03/2024

Next Scheduled EDR Contact: 01/13/2025

Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST: Leaking Underground Storage Tank Listing

Sites within the Leaking Underground Storage Tank Listing that have a UST listed as its source.

Date of Government Version: 07/10/2024	Source: Department of Environmental Protection
Date Data Arrived at EDR: 07/16/2024	Telephone: 617-292-5990
Date Made Active in Reports: 08/07/2024	Last EDR Contact: 10/03/2024
Number of Days to Update: 22	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Quarterly

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/11/2024	Source: EPA, Region 5
Date Data Arrived at EDR: 05/30/2024	Telephone: 312-886-7439
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 07/10/2024
Number of Days to Update: 90	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 05/07/2024	Source: EPA Region 1
Date Data Arrived at EDR: 05/30/2024	Telephone: 617-918-1313
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 07/10/2024
Number of Days to Update: 90	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 05/07/2024	Source: EPA Region 10
Date Data Arrived at EDR: 05/30/2024	Telephone: 206-553-2857
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 07/10/2024
Number of Days to Update: 90	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/07/2024	Source: EPA Region 6
Date Data Arrived at EDR: 05/30/2024	Telephone: 214-665-6597
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 07/10/2024
Number of Days to Update: 90	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/07/2024	Source: EPA Region 4
Date Data Arrived at EDR: 05/30/2024	Telephone: 404-562-8677
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 07/10/2024
Number of Days to Update: 90	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/07/2024	Source: EPA Region 8
Date Data Arrived at EDR: 05/30/2024	Telephone: 303-312-6271
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 07/10/2024
Number of Days to Update: 90	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 05/07/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/30/2024	Telephone: 415-972-3372
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 07/10/2024
Number of Days to Update: 90	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 05/07/2024	Source: EPA Region 7
Date Data Arrived at EDR: 05/30/2024	Telephone: 913-551-7003
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 07/10/2024
Number of Days to Update: 90	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 03/15/2024	Source: FEMA
Date Data Arrived at EDR: 03/19/2024	Telephone: 202-646-5797
Date Made Active in Reports: 06/17/2024	Last EDR Contact: 09/25/2024
Number of Days to Update: 90	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

UST: Summary Listing of all the Tanks Registered in the State of Massachusetts
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 03/04/2024	Source: Department of Fire Services, Office of the Public Safety
Date Data Arrived at EDR: 04/26/2024	Telephone: 617-556-1035
Date Made Active in Reports: 07/19/2024	Last EDR Contact: 10/03/2024
Number of Days to Update: 84	Next Scheduled EDR Contact: 01/20/2025
	Data Release Frequency: Quarterly

AST 2: Aboveground Storage Tanks
Aboveground storage tanks

Date of Government Version: 07/08/2024	Source: Department of Fire Services
Date Data Arrived at EDR: 07/10/2024	Telephone: 978-567-3181
Date Made Active in Reports: 09/27/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 79	Next Scheduled EDR Contact: 01/20/2025
	Data Release Frequency: Varies

AST: Aboveground Storage Tank Database
Registered Aboveground Storage Tanks.

Date of Government Version: 07/02/2024	Source: Department of Public Safety
Date Data Arrived at EDR: 07/09/2024	Telephone: 617-556-1035
Date Made Active in Reports: 09/27/2024	Last EDR Contact: 10/08/2024
Number of Days to Update: 80	Next Scheduled EDR Contact: 01/20/2025
	Data Release Frequency: No Update Planned

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/11/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

INST CONTROL: Sites With Activity and Use Limitation

Activity and Use Limitations establish limits and conditions on the future use of contaminated property, and therefore allow cleanups to be tailored to these uses.

Date of Government Version: 07/10/2024
Date Data Arrived at EDR: 07/16/2024
Date Made Active in Reports: 08/07/2024
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: 617-292-5990
Last EDR Contact: 10/03/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: Quarterly

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/10/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS 2: Potential Brownfields Listing

A listing of potential brownfields site locations in the state.

Date of Government Version: 07/11/2023
Date Data Arrived at EDR: 07/27/2023
Date Made Active in Reports: 10/16/2023
Number of Days to Update: 81

Source: Department of Environmental Protection
Telephone: 617-556-1007
Last EDR Contact: 07/25/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

BROWNFIELDS: Completed Brownfields Covenants Listing

Under Massachusetts law, M.G.L. c. 21E is the statute that governs the cleanup of releases of oil and/or hazardous material to the environment. The Brownfields Act of 1998 amended M.G.L. c. 21E by establishing significant liability relief and financial incentives to spur the redevelopment of brownfields, while ensuring that the Commonwealth's environmental standards are met. Most brownfields are redeveloped with the benefit of liability protections that operate automatically under M.G.L. c. 21E.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/26/2024
Date Made Active in Reports: 04/17/2024
Number of Days to Update: 82

Source: Office of the Attorney General
Telephone: 617-963-2423
Last EDR Contact: 07/25/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Annually

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/10/2024
Date Data Arrived at EDR: 06/11/2024
Date Made Active in Reports: 09/04/2024
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/11/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 07/22/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014

Date Data Arrived at EDR: 08/06/2014

Date Made Active in Reports: 01/29/2015

Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service

Telephone: 301-443-1452

Last EDR Contact: 07/18/2024

Next Scheduled EDR Contact: 11/04/2024

Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 05/20/2024

Date Data Arrived at EDR: 05/21/2024

Date Made Active in Reports: 08/08/2024

Number of Days to Update: 79

Source: Drug Enforcement Administration

Telephone: 202-307-1000

Last EDR Contact: 08/19/2024

Next Scheduled EDR Contact: 12/02/2024

Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/20/2024

Date Data Arrived at EDR: 05/21/2024

Date Made Active in Reports: 08/08/2024

Number of Days to Update: 79

Source: Drug Enforcement Administration

Telephone: 202-307-1000

Last EDR Contact: 08/19/2024

Next Scheduled EDR Contact: 12/02/2024

Data Release Frequency: Quarterly

Local Land Records

LIENS: Liens Information Listing

A listing of environmental liens.

Date of Government Version: 03/07/2018

Date Data Arrived at EDR: 03/09/2018

Date Made Active in Reports: 06/21/2018

Number of Days to Update: 104

Source: Department of Environmental Protection

Telephone: 617-292-5628

Last EDR Contact: 08/20/2024

Next Scheduled EDR Contact: 11/26/2024

Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 08/27/2024

Date Data Arrived at EDR: 09/03/2024

Date Made Active in Reports: 09/19/2024

Number of Days to Update: 16

Source: Environmental Protection Agency

Telephone: 202-564-6023

Last EDR Contact: 10/01/2024

Next Scheduled EDR Contact: 01/06/2025

Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/14/2024	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 06/17/2024	Telephone: 202-366-4555
Date Made Active in Reports: 06/24/2024	Last EDR Contact: 09/17/2024
Number of Days to Update: 7	Next Scheduled EDR Contact: 12/30/2024
	Data Release Frequency: Quarterly

RELEASE: Reportable Releases

Contains information on all releases of oil and hazardous materials that have been reported to DEP

Date of Government Version: 07/10/2024	Source: Department of Environmental Protection
Date Data Arrived at EDR: 07/16/2024	Telephone: 617-292-5990
Date Made Active in Reports: 08/07/2024	Last EDR Contact: 10/03/2024
Number of Days to Update: 22	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Quarterly

MA SPILLS: Historical Spill List

The Spills Database was the release notification tracking system for spills that occurred prior to October 1, 1993. This information should be considered to be primarily of historical interest since all of the listed spills have either been cleaned up or assigned new tracking numbers and moved to the Reportable Releases or Sites Transition List databases.

Date of Government Version: 09/30/1993	Source: Department of Environmental Protection
Date Data Arrived at EDR: 12/03/2003	Telephone: 617-292-5720
Date Made Active in Reports: 12/31/2003	Last EDR Contact: 12/03/2003
Number of Days to Update: 28	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 12/11/2012	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 02/08/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

SPILLS 80: SPILLS80 data from FirstSearch

Spills 80 includes those spill and release records available from FirstSearch databases prior to 1990. Typically, they may include chemical, oil and/or hazardous substance spills recorded before 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 80.

Date of Government Version: 03/10/1998	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 03/05/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 61	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/07/2024
Date Made Active in Reports: 06/20/2024
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 05/13/2024
Date Data Arrived at EDR: 05/14/2024
Date Made Active in Reports: 08/08/2024
Number of Days to Update: 86

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/12/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/11/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/03/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/05/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 06/10/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 09/04/2024
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EPA WATCH LIST: EPA Watch List

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 07/25/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/01/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 10/03/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/13/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 86

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/25/2024
Next Scheduled EDR Contact: 01/06/2025
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 07/11/2024
Date Data Arrived at EDR: 07/11/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 1

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/11/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 08/27/2024	Source: EPA
Date Data Arrived at EDR: 09/03/2024	Telephone: 703-416-0223
Date Made Active in Reports: 09/19/2024	Last EDR Contact: 10/01/2024
Number of Days to Update: 16	Next Scheduled EDR Contact: 12/09/2024
	Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/01/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/17/2024	Telephone: 202-564-8600
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 07/11/2024
Number of Days to Update: 86	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 09/19/2023	Source: EPA
Date Data Arrived at EDR: 10/03/2023	Telephone: 202-564-6023
Date Made Active in Reports: 10/19/2023	Last EDR Contact: 10/01/2024
Number of Days to Update: 16	Next Scheduled EDR Contact: 11/11/2024
	Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 05/23/2024	Source: EPA
Date Data Arrived at EDR: 07/02/2024	Telephone: 202-566-0500
Date Made Active in Reports: 09/26/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 86	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 09/25/2024
Number of Days to Update: 79	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/06/2024	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 06/07/2024	Telephone: 301-415-0717
Date Made Active in Reports: 09/04/2024	Last EDR Contact: 07/11/2024
Number of Days to Update: 89	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2022	Source: Department of Energy
Date Data Arrived at EDR: 11/27/2023	Telephone: 202-586-8719
Date Made Active in Reports: 02/22/2024	Last EDR Contact: 10/03/2024
Number of Days to Update: 87	Next Scheduled EDR Contact: 12/09/2024
	Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/05/2019	Telephone: N/A
Date Made Active in Reports: 11/11/2019	Last EDR Contact: 08/22/2024
Number of Days to Update: 251	Next Scheduled EDR Contact: 12/09/2024
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/06/2019	Telephone: 202-566-0517
Date Made Active in Reports: 02/10/2020	Last EDR Contact: 08/01/2024
Number of Days to Update: 96	Next Scheduled EDR Contact: 11/11/2024
	Data Release Frequency: Varies

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2019	Telephone: 202-343-9775
Date Made Active in Reports: 09/23/2019	Last EDR Contact: 09/18/2024
Number of Days to Update: 84	Next Scheduled EDR Contact: 01/06/2025
	Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2008
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 01/28/2020	Telephone: 202-366-4595
Date Made Active in Reports: 04/17/2020	Last EDR Contact: 07/23/2024
Number of Days to Update: 80	Next Scheduled EDR Contact: 11/04/2024
	Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/30/2024
Date Data Arrived at EDR: 07/08/2024
Date Made Active in Reports: 09/26/2024
Number of Days to Update: 80

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/25/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/01/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/03/2023
Date Data Arrived at EDR: 03/03/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 98

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 05/08/2024
Date Data Arrived at EDR: 08/14/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 14

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 08/27/2024
Date Data Arrived at EDR: 09/03/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 10/01/2024
Next Scheduled EDR Contact: 01/06/2025
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/06/2024
Date Data Arrived at EDR: 08/14/2024
Date Made Active in Reports: 08/15/2024
Number of Days to Update: 1

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/14/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/02/2024
Date Made Active in Reports: 09/26/2024
Number of Days to Update: 86

Source: DOL, Mine Safety & Health Admini
Telephone: 202-693-9424
Last EDR Contact: 10/02/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 04/15/2024
Date Data Arrived at EDR: 05/22/2024
Date Made Active in Reports: 08/15/2024
Number of Days to Update: 85

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011	Source: USGS
Date Data Arrived at EDR: 06/08/2011	Telephone: 703-648-7709
Date Made Active in Reports: 09/13/2011	Last EDR Contact: 08/22/2024
Number of Days to Update: 97	Next Scheduled EDR Contact: 12/02/2024
	Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System Mineral Resources Data System

Date of Government Version: 08/23/2022	Source: USGS
Date Data Arrived at EDR: 11/22/2022	Telephone: 703-648-6533
Date Made Active in Reports: 02/28/2023	Last EDR Contact: 08/22/2024
Number of Days to Update: 98	Next Scheduled EDR Contact: 12/02/2024
	Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/13/2024	Source: Department of Interior
Date Data Arrived at EDR: 06/14/2024	Telephone: 202-208-2609
Date Made Active in Reports: 09/04/2024	Last EDR Contact: 09/10/2024
Number of Days to Update: 82	Next Scheduled EDR Contact: 12/16/2024
	Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 08/13/2024	Source: EPA
Date Data Arrived at EDR: 08/20/2024	Telephone: (617) 918-1111
Date Made Active in Reports: 08/28/2024	Last EDR Contact: 08/20/2024
Number of Days to Update: 8	Next Scheduled EDR Contact: 12/09/2024
	Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/06/2023	Source: Department of Defense
Date Data Arrived at EDR: 09/13/2023	Telephone: 703-704-1564
Date Made Active in Reports: 12/11/2023	Last EDR Contact: 10/03/2024
Number of Days to Update: 89	Next Scheduled EDR Contact: 01/20/2025
	Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/23/2024
Date Data Arrived at EDR: 06/28/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 10/01/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/13/2024
Date Data Arrived at EDR: 05/14/2024
Date Made Active in Reports: 08/08/2024
Number of Days to Update: 86

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 10/02/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 10/02/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 10/02/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 07/01/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2024	Telephone: 202-272-0167
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 11	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 07/01/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2024	Telephone: 202-272-0167
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 11	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020	Source: Department of Health & Human Services
Date Data Arrived at EDR: 03/17/2021	Telephone: 202-741-5770
Date Made Active in Reports: 11/08/2022	Last EDR Contact: 07/18/2024
Number of Days to Update: 601	Next Scheduled EDR Contact: 11/04/2024
	Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 07/01/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2024	Telephone: 202-272-0167
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 11	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

PFAS PROJECT: NORTHEASTERN UNIVERSITY PFAS PROJECT

The PFAS Contamination Site Tracker records qualitative and quantitative data from each site in a chart, specifically examining discovery, contamination levels, government response, litigation, health impacts, media coverage, and community characteristics. All data presented in the chart were extracted from government websites, such as state health departments or the Environmental Protection Agency, and news articles.

Date of Government Version: 05/19/2023	Source: Social Science Environmental Health Research Institute
Date Data Arrived at EDR: 04/05/2024	Telephone: N/A
Date Made Active in Reports: 06/06/2024	Last EDR Contact: 09/05/2024
Number of Days to Update: 62	Next Scheduled EDR Contact: 12/16/2024
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits. Caveats and Limitations: Less than half of states have required PFAS monitoring for at least one of their permittees and fewer states have established PFAS effluent limits for permittees. New rulemakings have been initiated that may increase the number of facilities monitoring for PFAS in the future.

Date of Government Version: 07/01/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2024	Telephone: 202-272-0167
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 11	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 07/01/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2024	Telephone: 202-272-0167
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 11	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

PFAS ECHO FIRE TRAIN: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facility's name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 07/01/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2024	Telephone: 202-272-0167
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 11	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

PFAS PT 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration's document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 07/01/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2024	Telephone: 202-272-0167
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 11	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 07/01/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2024	Telephone: 202-267-2675
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 10/02/2024
Number of Days to Update: 11	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014	Source: EPA
Date Data Arrived at EDR: 02/05/2015	Telephone: 202-564-2497
Date Made Active in Reports: 03/06/2015	Last EDR Contact: 09/25/2024
Number of Days to Update: 29	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 12/16/2016	Source: EPA, Office of Water
Date Data Arrived at EDR: 01/06/2017	Telephone: 202-564-2496
Date Made Active in Reports: 03/10/2017	Last EDR Contact: 09/25/2024
Number of Days to Update: 63	Next Scheduled EDR Contact: 01/13/2025
	Data Release Frequency: No Update Planned

BIOSOLIDS: ICIS-NPDES Biosolids Facility Data

The data reflects compliance information about facilities in the biosolids program.

Date of Government Version: 04/14/2024	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/16/2024	Telephone: 202-564-4700
Date Made Active in Reports: 07/12/2024	Last EDR Contact: 07/16/2024
Number of Days to Update: 87	Next Scheduled EDR Contact: 10/28/2024
	Data Release Frequency: Varies

UST FINDER RELEASE: UST Finder Releases Database

US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

Date of Government Version: 06/08/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/31/2023	Telephone: 202-564-0394
Date Made Active in Reports: 01/18/2024	Last EDR Contact: 08/08/2024
Number of Days to Update: 79	Next Scheduled EDR Contact: 11/18/2024
	Data Release Frequency: Semi-Annually

UST FINDER: UST Finder Database

EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories. UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 106

Source: Environmental Protection Agency
Telephone: 202-564-0394
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

E MANIFEST: Hazardous Waste Electronic Manifest System

EPA established a national system for tracking hazardous waste shipments electronically. This system, known as e-Manifest, will modernize the nation's cradle-to-grave hazardous waste tracking process while saving valuable time, resources, and dollars for industry and states.

Date of Government Version: 07/24/2023
Date Data Arrived at EDR: 04/18/2024
Date Made Active in Reports: 06/06/2024
Number of Days to Update: 49

Source: Environmental Protection Agency
Telephone: 833-501-6826
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Varies

PFAS: PFAS Contaminated Sites Listing

Detection of Per- and Polyfluoroalkyl Substances (PFAS) in drinking water.

Date of Government Version: 06/01/2024
Date Data Arrived at EDR: 06/26/2024
Date Made Active in Reports: 09/16/2024
Number of Days to Update: 82

Source: Department of Environmental Protection
Telephone: 617-292-6770
Last EDR Contact: 09/18/2024
Next Scheduled EDR Contact: 01/06/2025
Data Release Frequency: Varies

AIRS: Permitted Facilities Listing

A listing of Air Quality permit applications.

Date of Government Version: 07/08/2024
Date Data Arrived at EDR: 07/08/2024
Date Made Active in Reports: 07/10/2024
Number of Days to Update: 2

Source: Department of Environmental Protection
Telephone: 617-292-5789
Last EDR Contact: 10/02/2024
Next Scheduled EDR Contact: 01/20/2025
Data Release Frequency: Varies

ASBESTOS: Asbestos Notification Listing

Asbestos sites

Date of Government Version: 06/05/2024
Date Data Arrived at EDR: 06/06/2024
Date Made Active in Reports: 09/03/2024
Number of Days to Update: 89

Source: Department of Environmental Protection
Telephone: 617-292-5982
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

DRYCLEANERS: Regulated Drycleaning Facilities

A listing of Department of Environmental Protection regulated drycleaning facilities that use perchloroethylene under the Environmental Results Program.

Date of Government Version: 06/27/2024
Date Data Arrived at EDR: 07/08/2024
Date Made Active in Reports: 07/23/2024
Number of Days to Update: 15

Source: Department of Environmental Protection
Telephone: 617-292-5633
Last EDR Contact: 10/03/2024
Next Scheduled EDR Contact: 01/20/2025
Data Release Frequency: Varies

ENFORCEMENT: Enforcement Action Cases

A listing of enforcement action cases tracked by Department of Environmental Protection programs, including Solid Waste and Hazardous Waste.

Date of Government Version: 07/08/2024
Date Data Arrived at EDR: 07/08/2024
Date Made Active in Reports: 07/10/2024
Number of Days to Update: 2

Source: Department of Environmental Quality
Telephone: 617-292-5979
Last EDR Contact: 10/03/2024
Next Scheduled EDR Contact: 01/20/2025
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FIN ASSURANCE 1: Financial Assurance Information Listing

Information for hazardous waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 12/01/2010
Date Data Arrived at EDR: 12/23/2010
Date Made Active in Reports: 02/03/2011
Number of Days to Update: 42

Source: Department of Environmental Protection
Telephone: 617-292-5970
Last EDR Contact: 08/27/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

FIN ASSURANCE 2: Financial Assurance Information Listing

A listing of financial assurance information for underground storage tanks. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 03/04/2024
Date Data Arrived at EDR: 04/26/2024
Date Made Active in Reports: 07/19/2024
Number of Days to Update: 84

Source: Office of State Fire Marshal
Telephone: 978-567-3100
Last EDR Contact: 10/03/2024
Next Scheduled EDR Contact: 01/20/2025
Data Release Frequency: Varies

FIN ASSURANCE 3: Financial Assurance Information listing

Information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay

Date of Government Version: 10/24/2022
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 03/07/2023
Number of Days to Update: 54

Source: Department of Environmental Protection
Telephone: 617-292-5970
Last EDR Contact: 09/25/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: Varies

GWDP: Ground Water Discharge Permits

The Ground Water Discharge Permits datalayer (formerly known as Groundwater Discharge Points) is a statewide point dataset containing approximate locations of permitted discharges to groundwater.

Date of Government Version: 11/20/2023
Date Data Arrived at EDR: 01/24/2024
Date Made Active in Reports: 04/09/2024
Number of Days to Update: 76

Source: MassGIS
Telephone: 617-556-1150
Last EDR Contact: 07/23/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

HW GEN: List of Massachusetts Hazardous Waste Generators

Permanent generator identification numbers for all Massachusetts generators of hazardous waste and waste oil that have registered with or notified MassDEP of their hazardous waste activities.

Date of Government Version: 06/13/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 09/11/2024
Number of Days to Update: 86

Source: Department of Environmental Protection
Telephone: 617-292-5500
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Semi-Annually

MERCURY: Mercury Product Recycling Drop-Off Locations Listing

A listing of locations, collecting and recycling for mercury-added products. Mercury is toxic to the human nervous system, as well as fish and animals. Mercury can enter the body either through skin absorption or through inhalation of mercury vapors. At room temperature, small beads of mercury will vaporize.

Date of Government Version: 02/12/2024
Date Data Arrived at EDR: 02/13/2024
Date Made Active in Reports: 02/21/2024
Number of Days to Update: 8

Source: Department of Environmental Protection
Telephone: 617-292-5632
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPDES: NPDES Permit Listing

Listing of treatment plants in Massachusetts that hold permits to discharge to groundwater.

Date of Government Version: 05/06/2024
Date Data Arrived at EDR: 05/07/2024
Date Made Active in Reports: 07/30/2024
Number of Days to Update: 84

Source: Department of Environmental Protection
Telephone: 508-767-2781
Last EDR Contact: 08/06/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

TIER 2: Tier 2 Information Listing

A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/09/2023
Date Made Active in Reports: 11/30/2023
Number of Days to Update: 21

Source: Massachusetts Emergency Management Agency
Telephone: 508-820-2019
Last EDR Contact: 10/03/2024
Next Scheduled EDR Contact: 01/20/2025
Data Release Frequency: Annually

TSD: TSD Facility

List of Licensed Hazardous Waste Treatment, Storage Disposal Facilities (TSDFs) in Massachusetts.

Date of Government Version: 06/13/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 09/11/2024
Number of Days to Update: 86

Source: Department of Environmental Protection
Telephone: 617-292-5580
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Varies

UIC: Underground Injection Control Listing

A list of UIC registration data and their locations

Date of Government Version: 05/06/2024
Date Data Arrived at EDR: 05/07/2024
Date Made Active in Reports: 05/21/2024
Number of Days to Update: 14

Source: Department of Environmental Protection
Telephone: 617-566-1172
Last EDR Contact: 08/06/2023
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Protection in Massachusetts.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Protection in Massachusetts.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/05/2024
Date Data Arrived at EDR: 05/07/2024
Date Made Active in Reports: 08/01/2024
Number of Days to Update: 86

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/06/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 09/25/2024
Next Scheduled EDR Contact: 01/13/2025
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 1

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 07/25/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/03/2024
Next Scheduled EDR Contact: 01/20/2025
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data

Hazardous waste manifest information.

Date of Government Version: 10/28/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/09/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 10/03/2024
Next Scheduled EDR Contact: 01/20/2025
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Oil/Gas Pipelines

Source: Endeavor Business Media

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data

Source: Endeavor Business Media

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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: MassDEP

Telephone: 617-292-5907

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

MILL CREEK WATER CONTROL STRUCTURE
505 OLD CHEQUESSET NECK RD
WELLFLEET, MA 02667

TARGET PROPERTY COORDINATES

Latitude (North):	41.933634 - 41° 56' 1.08"
Longitude (West):	70.05549 - 70° 3' 19.76"
Universal Transverse Mercator:	Zone 19
UTM X (Meters):	412493.1
UTM Y (Meters):	4642733.0
Elevation:	17 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	17175417 WELLFLEET, MA
Version Date:	2021

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

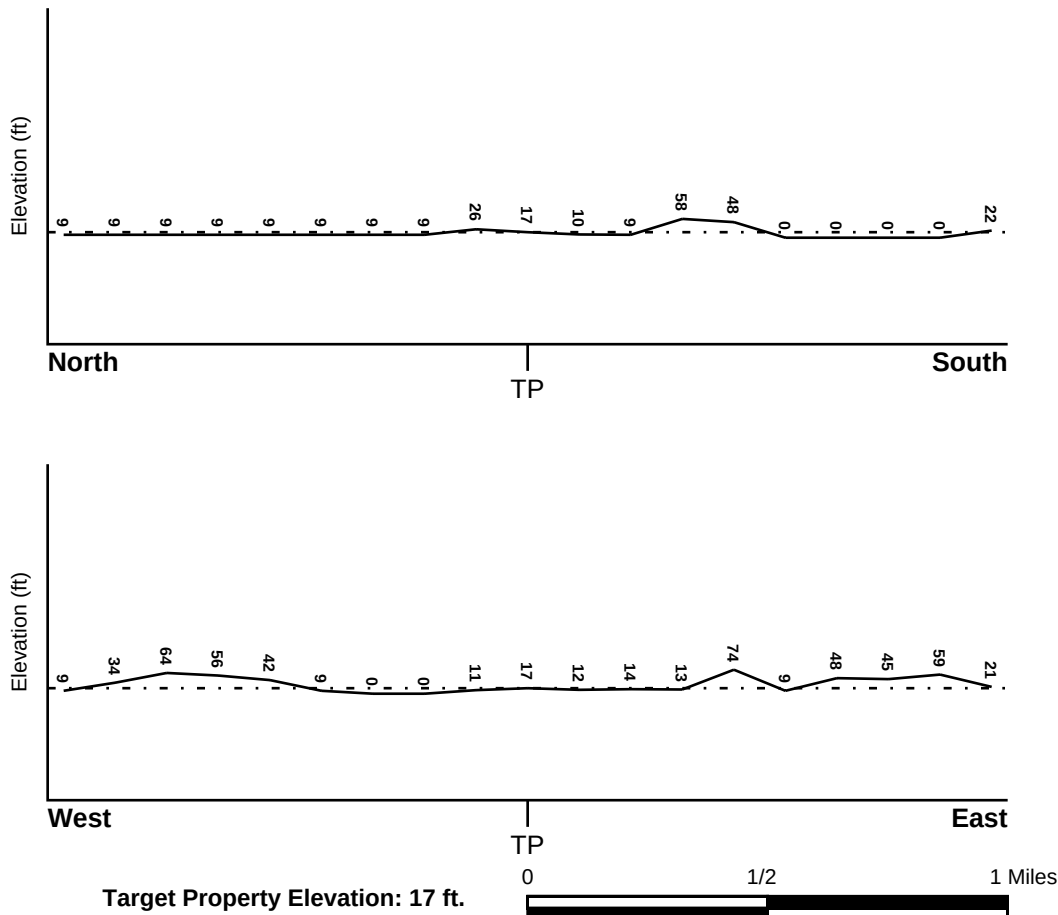
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
25001C0241J	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
25001C0229J	FEMA FIRM Flood data
25001C0233J	FEMA FIRM Flood data
25001C0237J	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
WELLFLEET (DIGITAL)	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

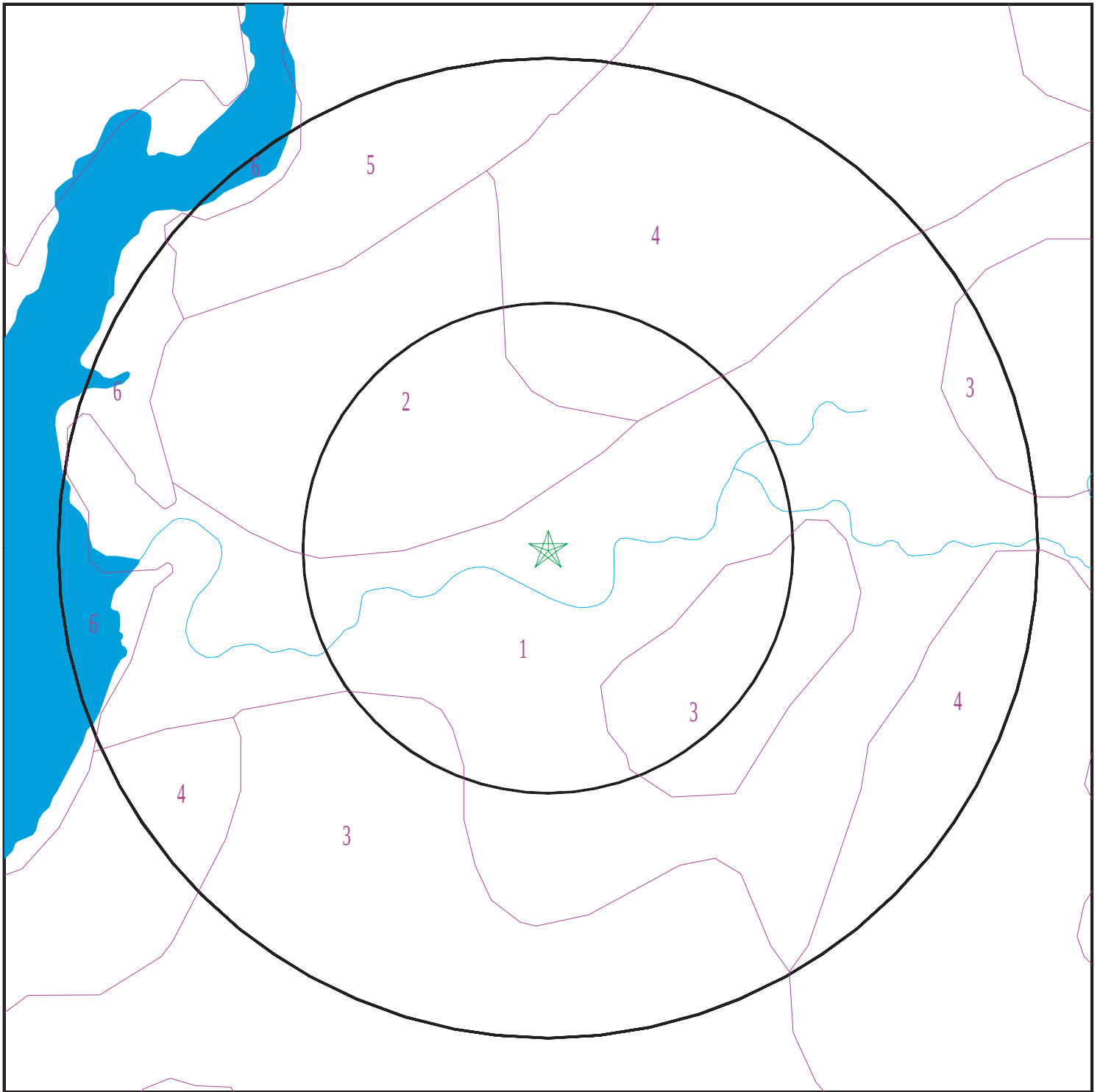
Era:	Cenozoic
System:	Quaternary
Series:	Pleistocene
Code:	Qp (decoded above as Era, System & Series)

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 7788170.2s



- ★ Target Property
- SSURGO Soil
- Water



SITE NAME: Mill Creek Water Control Structure
ADDRESS: 505 Old Chequesset Neck Rd
Wellfleet MA 02667
LAT/LONG: 41.933634 / 70.05549

CLIENT: VHB
CONTACT: Stephanie Hunt
INQUIRY #: 7788170.2s
DATE: October 09, 2024 4:51 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Maybid

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Very poorly drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Not reported	Not reported	Max: 1.41 Min: 0	Max: 7.3 Min: 6.1
2	7 inches	19 inches	silty clay loam	Not reported	Not reported	Max: 1.41 Min: 0	Max: 7.3 Min: 6.1
3	19 inches	64 inches	silty clay loam	Not reported	Not reported	Max: 1.41 Min: 0	Max: 7.3 Min: 6.1

Soil Map ID: 2

Soil Component Name: Carver

Soil Surface Texture: coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
2	7 inches	16 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
3	16 inches	64 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6

Soil Map ID: 3

Soil Component Name: Carver

Soil Surface Texture: coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
2	7 inches	16 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
3	16 inches	64 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6

Soil Map ID: 4

Soil Component Name: Carver

Soil Surface Texture: coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
2	7 inches	16 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
3	16 inches	64 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6

Soil Map ID: 5

Soil Component Name: Freetown

Soil Surface Texture: muck

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Very poorly drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	muck	Not reported	Not reported	Max: 42.34 Min: 4.23	Max: Min:
2	5 inches	64 inches	muck	Not reported	Not reported	Max: 42.34 Min: 4.23	Max: Min:

Soil Map ID: 6

Soil Component Name: Water, saline

Soil Surface Texture: water

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:

Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	5 inches	64 inches	water	Not reported	Not reported	Max: Min:	Max: Min:

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS40000463034	0 - 1/8 Mile North
2	USGS40000462972	1/8 - 1/4 Mile SSW
A3	USGS40000462999	1/8 - 1/4 Mile ESE
A4	USGS40000462991	1/8 - 1/4 Mile ESE
B6	USGS40000463073	1/4 - 1/2 Mile NNE
B7	USGS40000463071	1/4 - 1/2 Mile NNE
B8	USGS40000463072	1/4 - 1/2 Mile NNE
C10	USGS40000463067	1/2 - 1 Mile WNW
C11	USGS40000463066	1/2 - 1 Mile WNW
D12	USGS40000463108	1/2 - 1 Mile NNE
D13	USGS40000463111	1/2 - 1 Mile North
14	USGS40000463054	1/2 - 1 Mile WNW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
15	MA4318028	1/2 - 1 Mile ESE

Note: PWS System location is not always the same as well location.

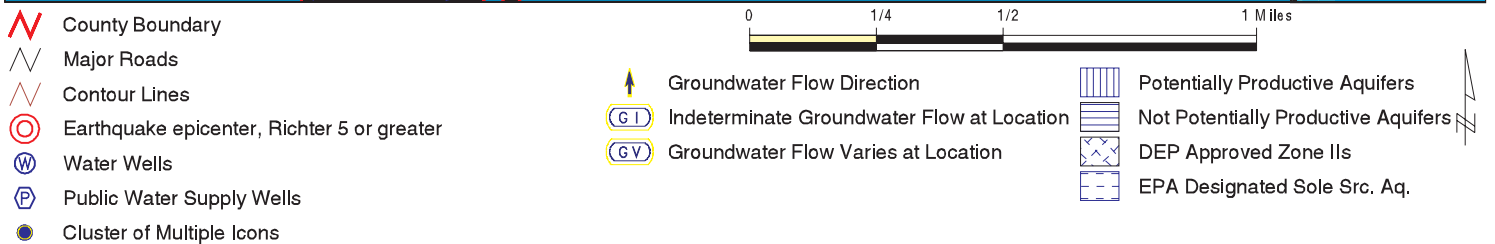
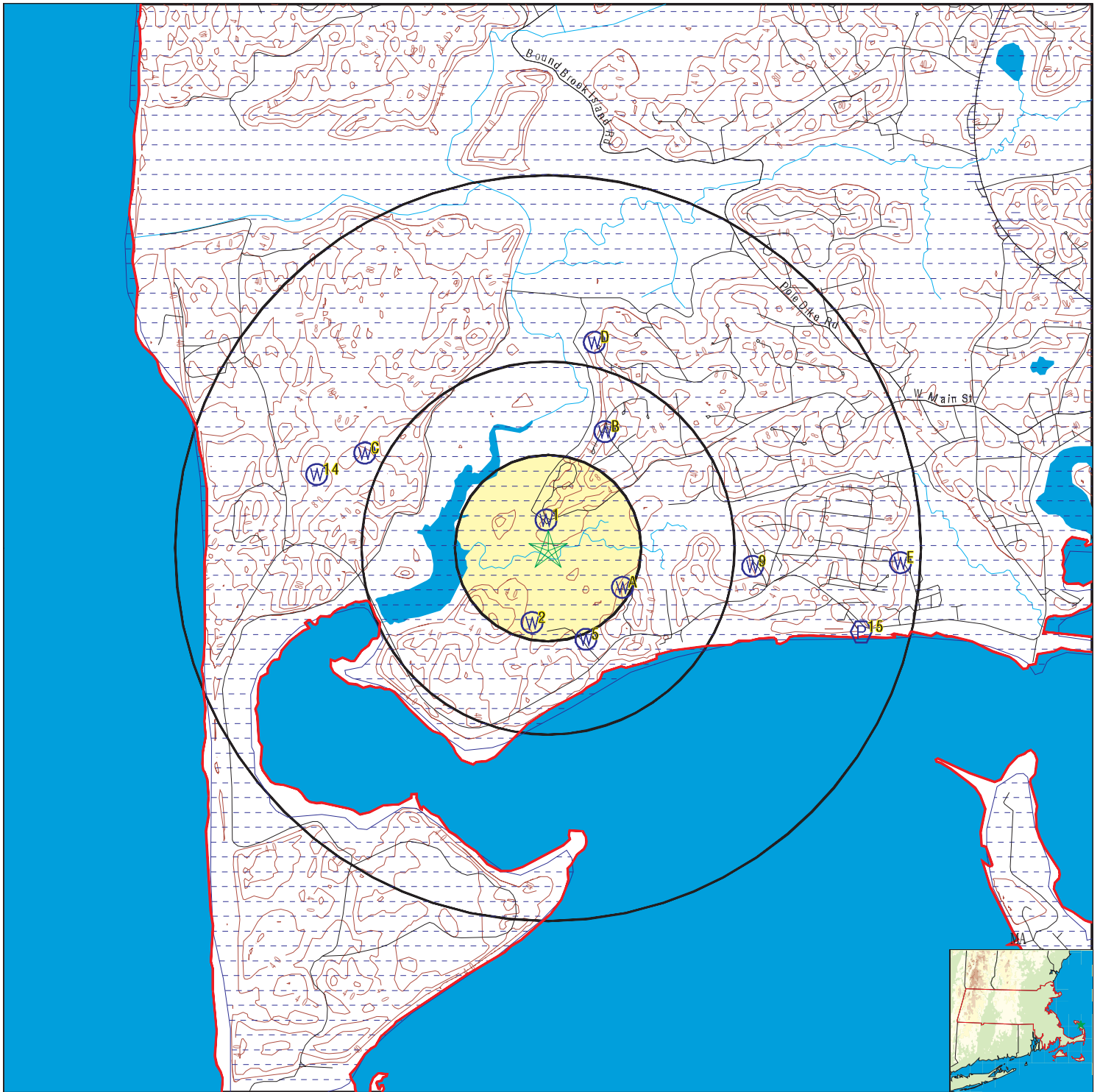
STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
5	MA1100000002717	1/4 - 1/2 Mile SSE
9	MA1100000002396	1/2 - 1 Mile East
E16	MA1100000002419	1/2 - 1 Mile East
E17	MA1100000000912	1/2 - 1 Mile East
E18	MA1100000000699	1/2 - 1 Mile East

GEOCHECK - PHYSICAL SETTING SOURCE SUMMARY

OTHER STATE DATABASE INFORMATION

PHYSICAL SETTING SOURCE MAP - 7788170.2s



SITE NAME: Mill Creek Water Control Structure
 ADDRESS: 505 Old Chequesset Neck Rd
 Wellfleet MA 02667
 LAT/LONG: 41.933634 / 70.05549

CLIENT: VHB
 CONTACT: Stephanie Hunt
 INQUIRY #: 7788170.2s
 DATE: October 09, 2024 4:51 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

1
North
0 - 1/8 Mile
Higher

FED USGS USGS40000463034

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-WNW 134	Type:	Well
Description:	NPS OBSERVATION WELL FOR HERRING RIVER PROJECT		
HUC:	01090002	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Units:	Not Reported		
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Stratified Deposits, Undifferentiated		
Aquifer Type:	Unconfined single aquifer	Construction Date:	20030911
Well Depth:	104.21	Well Depth Units:	ft
Well Hole Depth:	104.5	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	1	Level reading date:	2003-09-11
Feet below surface:	4.43	Feet to sea level:	Not Reported
Note:	Water level was affected by tide stage.		

2
SSW
1/8 - 1/4 Mile
Lower

FED USGS USGS40000462972

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-WNW 133	Type:	Well
Description:	NPS MONITORING WELL FOR HERRING RIVER PROJECT		
HUC:	01090002	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Units:	Not Reported		
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Stratified Deposits, Undifferentiated		
Aquifer Type:	Unconfined single aquifer	Construction Date:	20030911
Well Depth:	93.32	Well Depth Units:	ft
Well Hole Depth:	97	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	1	Level reading date:	2003-09-11
Feet below surface:	13.59	Feet to sea level:	Not Reported
Note:	Water level was affected by tide stage.		

A3
ESE
1/8 - 1/4 Mile
Higher

FED USGS USGS40000462999

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-WNW 141	Type:	Well
Description:	NPS HERRING RIVER OBS WELL		
HUC:	01090002	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Units:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Stratified Deposits, Undifferentiated		
Aquifer Type:	Unconfined single aquifer	Construction Date:	20040909
Well Depth:	135.38	Well Depth Units:	ft
Well Hole Depth:	135.5	Well Hole Depth Units:	ft
Ground water levels, Number of Measurements: 1			
Feet below surface:		Level reading date:	2004-09-10
43.62		Feet to sea level:	Not Reported
Note: Water level was affected by tide stage.			

A4 ESE 1/8 - 1/4 Mile Higher

FED USGS USGS40000462991

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-WNW 140	Type:	Well
Description:	NPS HERRING RIVER OBS WELL		
HUC:	01090002	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Units:	Not Reported		
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Stratified Deposits, Undifferentiated		
Aquifer Type:	Unconfined single aquifer	Construction Date:	20040909
Well Depth:	80	Well Depth Units:	ft
Well Hole Depth:	80.2	Well Hole Depth Units:	ft
Ground water levels, Number of Measurements: 1			
Feet below surface:		Level reading date:	2004-09-10
4.40		Feet to sea level:	Not Reported
Note: Water level was affected by tide stage.			

5 SSE 1/4 - 1/2 Mile Lower

MA WELLS MA1100000002717

WELLS:

PWS Source ID:	4318071-01G
Site Name:	CHEQUESSETT YACHT COUNTRY CLUB
PWS Type:	Transient Non-Community
DEP Region:	4
Zone II #:	0

DWP Water Quality Testing System (WQTS) Information:

Water Supplier Name:	CHEQUESSETT YACHT COUNTRY CLUB
Source Name:	WELL # 1
Water Supplier Status:	Active
Source Status:	Active
Source Classification:	Transient Non Community
Source Availability:	ACTIVE

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

B6
NNE
1/4 - 1/2 Mile
Higher

FED USGS USGS40000463073

Organization ID: USGS-MA
Organization Name: USGS Massachusetts Water Science Center
Monitor Location: MA-WNW 117 Type: Well
Description: ZONE OF TRANSITION WELL FOR NPS
HUC: 01090002 Drainage Area: Not Reported
Drainage Area Units: Not Reported Contrib Drainage Area: Not Reported
Contrib Drainage Area Units: Not Reported
Aquifer: Sand and gravel aquifers (glaciated regions)
Formation Type: Stratified Deposits, Undifferentiated
Aquifer Type: Unconfined single aquifer Construction Date: 19900501
Well Depth: 96.2 Well Depth Units: ft
Well Hole Depth: 98 Well Hole Depth Units: ft

Ground water levels, Number of Measurements: 1 Level reading date: 1990-05-03
Feet below surface: 6.73 Feet to sea level: Not Reported
Note: Not Reported

B7
NNE
1/4 - 1/2 Mile
Higher

FED USGS USGS40000463071

Organization ID: USGS-MA
Organization Name: USGS Massachusetts Water Science Center
Monitor Location: MA-WNW 118 Type: Well
Description: ZONE OF TRANSITION WELL FOR NPS
HUC: 01090002 Drainage Area: Not Reported
Drainage Area Units: Not Reported Contrib Drainage Area: Not Reported
Contrib Drainage Area Units: Not Reported
Aquifer: Sand and gravel aquifers (glaciated regions)
Formation Type: Stratified Deposits, Undifferentiated
Aquifer Type: Unconfined single aquifer Construction Date: 19900503
Well Depth: 121.26 Well Depth Units: ft
Well Hole Depth: 122 Well Hole Depth Units: ft

Ground water levels, Number of Measurements: 1 Level reading date: 1990-05-03
Feet below surface: 44.16 Feet to sea level: Not Reported
Note: Not Reported

B8
NNE
1/4 - 1/2 Mile
Higher

FED USGS USGS40000463072

Organization ID: USGS-MA
Organization Name: USGS Massachusetts Water Science Center
Monitor Location: MA-WNW 119 Type: Well
Description: ZONE OF TRANSITION WELL FOR NPS--NO SCREEN
HUC: 01090002 Drainage Area: Not Reported
Drainage Area Units: Not Reported Contrib Drainage Area: Not Reported
Contrib Drainage Area Units: Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Stratified Deposits, Undifferentiated		
Aquifer Type:	Unconfined single aquifer	Construction Date:	19900430
Well Depth:	126.5	Well Depth Units:	ft
Well Hole Depth:	127	Well Hole Depth Units:	ft

9
East
1/2 - 1 Mile
Higher

MA WELLS **MA1100000002396**

WELLS:

PWS Source ID:	4318019-01G
Site Name:	CHEQUESSETT VILLAGE COTTAGES
PWS Type:	Transient Non-Community
DEP Region:	4
Zone II #:	0

DWP Water Quality Testing System (WQTS) Information:

Water Supplier Name:	CHEQUESSETT VILLAGE COTTAGES
Source Name:	WELL 1
Water Supplier Status:	Active
Source Status:	Active
Source Classification:	Transient Non Community
Source Availability:	ACTIVE

C10
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS40000463067**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-WNW 78	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Stratified Deposits, Undifferentiated		
Aquifer Type:	Unconfined single aquifer	Construction Date:	19670809
Well Depth:	95.9	Well Depth Units:	ft
Well Hole Depth:	96	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	17	Level reading date:	1977-04-01
Feet below surface:	56.29	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1977-01-26	Feet below surface:	56.45
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-12-01	Feet below surface:	56.64
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-10-27	Feet below surface:	56.61
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1976-09-28	Feet below surface:	56.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-26	Feet below surface:	56.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-27	Feet below surface:	56.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-29	Feet below surface:	56.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-25	Feet below surface:	56.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-28	Feet below surface:	56.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-24	Feet below surface:	55.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-25	Feet below surface:	55.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-21	Feet below surface:	55.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-16	Feet below surface:	56.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-25	Feet below surface:	56.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-04	Feet below surface:	56.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-08-24	Feet below surface:	56.43
Feet to sea level:	Not Reported	Note:	Not Reported

C11
WNW
1/2 - 1 Mile
Higher

FED USGS USGS40000463066

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-WNW 77	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	196708	Well Depth:	95
Well Depth Units:	ft	Well Hole Depth:	105
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1967-08-14
Feet below surface:	56.00	Feet to sea level:	Not Reported
Note:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

D12
NNE
1/2 - 1 Mile
Higher

FED USGS USGS40000463108

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-WNW 116	Type:	Well
Description:	ZONE OF TRANSITION WELL FOR NPS		
HUC:	01090002	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Units:	Not Reported		
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Stratified Deposits, Undifferentiated		
Aquifer Type:	Unconfined single aquifer	Construction Date:	19900502
Well Depth:	127.09	Well Depth Units:	ft
Well Hole Depth:	127.5	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	1	Level reading date:	1990-05-03
Feet below surface:	48.25	Feet to sea level:	Not Reported
Note:	Not Reported		

D13
North
1/2 - 1 Mile
Higher

FED USGS USGS40000463111

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-WNW 115	Type:	Well
Description:	ZONE OF TRANSITION WELL FOR NPS		
HUC:	01090002	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Units:	Not Reported		
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Stratified Deposits, Undifferentiated		
Aquifer Type:	Unconfined single aquifer	Construction Date:	19900501
Well Depth:	90.98	Well Depth Units:	ft
Well Hole Depth:	92	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	1	Level reading date:	1990-05-03
Feet below surface:	4.77	Feet to sea level:	Not Reported
Note:	Not Reported		

14
WNW
1/2 - 1 Mile
Higher

FED USGS USGS40000463054

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-415611070040501	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

15
ESE
1/2 - 1 Mile
Lower

FRDS PWS MA4318028

Epa region:	01	State:	MA
Pwsid:	MA4318028	Pwsname:	WELLFLEETER CONDOS ASSN.
Cityserved:	Not Reported	Stateserved:	MA
Zipsserved:	Not Reported	Fipscounty:	25001
Status:	Closed	Retpopsrvt:	75
Pwssvconn:	20	Psource longname:	Groundwater
Pwstype:	NTNCWS	Owner:	Private
Contact:	NICK C KANAVOS		
Contactorgname:	WELLFLEETER CONDOS ASSN. C/O MACLACHLAN		
Contactphone:	5082251151	Contactaddress1:	275 KENDRICK AVE; P.O.BOX 772
Contactaddress2:	Not Reported	Contactcity:	WELLFLEET
Contactstate:	MA	Contactzip:	02667
Pwsactivitycode:	I		
PWS ID:	MA4318028	PWS type:	Mailing
PWS name:	WELLFLEETER CONDOS ASSN	PWS address:	PO BOX 772
PWS city:	WELLFLEET	PWS state:	MA
PWS zip:	026670000	PWS name:	WELLFLEETER CONDOS ASSN.
PWS type code:	NTNC	Retail population served:	75
Contact:	NICK C KANAVOS	Contact address:	275 KENDRICK AVE; P.O.BOX 772
Contact address:	WELLFLEET	Contact city:	MA
Contact state:	02	Contact zip:	5082251151
Contact telephone:	Not Reported		
PWS ID:	MA4318028	Activity status:	Active
Date system activated:	9003	Date system deactivated:	Not Reported
Retail population:	00000075	System name:	WELLFLEETER CONDOS ASSN
System address:	KENDRICK AVE	System city:	WELLFLEET
System state:	MA	System zip:	026670000
Population served:	Under 101 Persons	Treatment:	Untreated
Latitude:	415549	Longitude:	0700223
Latitude:	415549	Longitude:	0700223
Violation id:	1	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4000	Contamination Name:	Gross Alpha, Excl. Radon and U
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	340	Rule name:	Rads
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	10	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4006	Contamination Name:	Combined Uranium
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	340	Rule name:	Rads
Violation measur:	Not Reported	Unit of measure:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	11	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4172	Contamination Name:	38-STRONTIUM-89
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	500	Rule name:	Not Regulated
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	12	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4270	Contamination Name:	55-CESIUM-134
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	500	Rule name:	Not Regulated
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	13	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4264	Contamination Name:	53-IODINE-131
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	340	Rule name:	Rads
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	2	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4002	Contamination Name:	Gross Alpha, Incl. Radon and U
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	500	Rule name:	Not Regulated
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	3	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4020	Contamination Name:	Radium-226
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	340	Rule name:	Rads
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	4	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4030	Contamination Name:	Radium-228
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	340	Rule name:	Rads
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	5	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4100	Contamination Name:	Gross Beta Particle Activity
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	340	Rule name:	Rads

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	6	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4012	Contamination Name:	Photon Emitters
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	500	Rule name:	Not Regulated
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	7	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4174	Contamination Name:	38-STRONTIUM-90
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	340	Rule name:	Rads
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	8	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4004	Contamination Name:	Radon
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	500	Rule name:	Not Regulated
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation id:	9	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	4102	Contamination Name:	Tritium
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	340	Rule name:	Rads
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		
Violation ID:	1	Orig Code:	S
Enforcemnt FY:	2008	Enforcement Action:	01/16/2008
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	10	Orig Code:	S
Enforcemnt FY:	2008	Enforcement Action:	01/16/2008
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	11	Orig Code:	S
Enforcemnt FY:	2008	Enforcement Action:	01/16/2008
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	12	Orig Code:	S
Enforcemnt FY:	2008	Enforcement Action:	01/16/2008
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	13	Orig Code:	S
Enforcemnt FY:	2008	Enforcement Action:	01/16/2008

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 2
Enforcement FY: 2008
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Orig Code: S
Enforcement Action: 01/16/2008

Violation ID: 3
Enforcement FY: 2008
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Orig Code: S
Enforcement Action: 01/16/2008

Violation ID: 4
Enforcement FY: 2008
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Orig Code: S
Enforcement Action: 01/16/2008

Violation ID: 5
Enforcement FY: 2008
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Orig Code: S
Enforcement Action: 01/16/2008

Violation ID: 6
Enforcement FY: 2008
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Orig Code: S
Enforcement Action: 01/16/2008

Violation ID: 7
Enforcement FY: 2008
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Orig Code: S
Enforcement Action: 01/16/2008

Violation ID: 8
Enforcement FY: 2008
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Orig Code: S
Enforcement Action: 01/16/2008

Violation ID: 9
Enforcement FY: 2008
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Orig Code: S
Enforcement Action: 01/16/2008

Violation ID: Not Reported
Enforcement FY: 2004
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Not Reported

Orig Code: S
Enforcement Action: 08/11/2004

PWS name: WELLFLEETER CONDOS ASSN.
PWS type code: NTNC
Contaminant: Gross Alpha, Excl. Radon & U
Violation type: 3
Compliance end date: 6/30/2007 0:00:00
Enforcement action: State Formal NOV Issued

Population served: 75
Violation ID: 1
Compliance start date: 4/1/2007 0:00:00
Enforcement date: 1/16/2008 0:00:00
Violation measurement: Not Reported

PWS name: WELLFLEETER CONDOS ASSN.
PWS type code: NTNC
Contaminant: Combined Uranium
Compliance start date: 4/1/2007 0:00:00
Enforcement date: 1/16/2008 0:00:00
Violation measurement: Not Reported

Population served: 75
Violation ID: 10
Violation type: 3
Compliance end date: 6/30/2007 0:00:00
Enforcement action: State Formal NOV Issued

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	11
Contaminant:	38-Strontium-89	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	1/16/2008 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		
PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	12
Contaminant:	55-Cesium-134	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	1/16/2008 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		
PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	13
Contaminant:	53-Iodine-131	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	1/16/2008 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		
PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	2
Contaminant:	Gross Alpha, Incl. Radon & U		
Violation type:	3	Compliance start date:	4/1/2007 0:00:00
Compliance end date:	6/30/2007 0:00:00	Enforcement date:	1/16/2008 0:00:00
Enforcement action:	State Formal NOV Issued	Violation measurement:	Not Reported
PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	3
Contaminant:	Radium-226	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	1/16/2008 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		
PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	4
Contaminant:	Radium-228	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	1/16/2008 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		
PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	5
Contaminant:	Gross Beta Particle Activity		
Violation type:	3	Compliance start date:	4/1/2007 0:00:00
Compliance end date:	6/30/2007 0:00:00	Enforcement date:	1/16/2008 0:00:00
Enforcement action:	State Formal NOV Issued	Violation measurement:	Not Reported
PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	6
Contaminant:	Photon Emitters	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	1/16/2008 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		
PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	7
Contaminant:	38-Strontium-90	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	1/16/2008 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	8
Contaminant:	Radon	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	1/16/2008 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		

PWS name:	WELLFLEETER CONDOS ASSN.	Population served:	75
PWS type code:	NTNC	Violation ID:	9
Contaminant:	Tritium	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	1/16/2008 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		

E16
East
1/2 - 1 Mile
Higher

MA WELLS MA1100000002419

WELLS:

PWS Source ID:	4318040-03G
Site Name:	WELL 3
PWS Type:	Community Groundwater Well
DEP Region:	4
Zone II #:	0

DWP Water Quality Testing System (WQTS) Information:

Water Supplier Name:	HARBORSIDE VILLAGE
Source Name:	WELL 3
Water Supplier Status:	Active
Source Status:	Active
Source Classification:	Community surface and groundwater sources
Source Availability:	ACTIVE

E17
East
1/2 - 1 Mile
Higher

MA WELLS MA1100000000912

WELLS:

PWS Source ID:	4318040-01G
Site Name:	WELL # 1
PWS Type:	Community Groundwater Well
DEP Region:	4
Zone II #:	0

DWP Water Quality Testing System (WQTS) Information:

Water Supplier Name:	HARBORSIDE VILLAGE
Source Name:	WELL # 1
Water Supplier Status:	Active
Source Status:	Inactive
Source Classification:	Community surface and groundwater sources
Source Availability:	Inactive

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

E18
East
1/2 - 1 Mile
Higher

MA WELLS MA1100000000699

WELLS:

PWS Source ID:	4318040-02G
Site Name:	WELL 2
PWS Type:	Community Groundwater Well
DEP Region:	4
Zone II #:	0

DWP Water Quality Testing System (WQTS) Information:

Water Supplier Name:	HARBORSIDE VILLAGE
Source Name:	WELL 2
Water Supplier Status:	Active
Source Status:	Inactive
Source Classification:	Community surface and groundwater sources
Source Availability:	Inactive

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

MA_ACECS_ID 15

MA_ACECS_ID 15

MA_ACECS_ID 15

MA_ACECS_ID 15

MA_ACECS_ID 15

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: MA Radon

Radon Test Results

County	% of sites>4 pCi/L	Median
BARNSTABLE	15	1.6

Federal EPA Radon Zone for BARNSTABLE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 02667

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.000 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: MassDEP

Telephone: 617-292-5907

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Massachusetts Geographic Information System (MassGIS) Datalayers

Source: Executive Office of Environmental Affairs

Telephone:

Public Water Supply Database

Telephone:

The Public Water Supply datalayer contains the locations of public community surface and groundwater supply sources and public non-community supply sources as defined in 310 CMR 22.00.

Areas of Critical Environmental Concern

Telephone:

The Areas of Critical Environmental Concern (ACEC) datalayer shows the location of areas that have been designated ACECs by the Secretary of Environmental Affairs. ACEC designation requires greater environmental review of certain kinds of proposed development under state jurisdiction within the ACEC boundaries. The ACEC Program is administered by the Department of Environmental Management (DEM) on behalf of the Secretary of Environmental Affairs. The Massachusetts Coastal Zone Management (MCZM) Office managed the original Coastal ACEC Program from 1978 to 1993, and continues to play a key role in monitoring coastal ACECs. Procedures for ACEC designation and the general policies governing the effects of designation are contained in the ACEC regulations (301 CMR 12.00). The ACEC datalayer has been compiled by MCZM and DEM and includes both coastal and inland areas.

EPA Designated Sole Source Aquifers

Telephone:

The Sole Source Aquifer datalayer was compiled by the Department of Environmental Protection (DEP) Division of Water Supply (DWS). Seven Sole Source Aquifers have been designated by the US Environmental Protection Agency (EPA) for Massachusetts. A Sole Source Aquifer (SSA) is an aquifer designated by US EPA as the sole or principal source of drinking water for a given aquifer service area; that is, an aquifer which is needed to supply 50% or more of the drinking water for that area and for which there are no reasonably available alternative sources should that aquifer become contaminated. The aquifers were defined by an EPA hydrogeologist.

Aquifers

Telephone:

MassGIS produced an aquifer datalayer composed of 20 individual panels, generally based on the boundaries of the major drainage basins. Areas of high and medium yield were mapped. This datalayer includes polygon attribute coding to help in the identification of areas in which cleanup of hazardous waste sites must meet drinking water standards, as defined in the Massachusetts Contingency Plan (MCP) (310 CMR 40.00000).

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Non-Potential Drinking Water Source Areas

Telephone:

Non-Potential Drinking Water Source Areas (NPDWSA) are regulatory in nature representing one of many considerations used in determining the standards to which ground water must be cleaned in the event of a release of oil or hazardous material. NPDWSAs are not based on existing water quality and do not indicate poor ambient conditions.

DEP Approved Zone IIs

Telephone:

The Department of Environmental Protection (DEP) approved Zone IIs datalayer was compiled by the DEP Division of Water Supply (DWS). The database contains 281 approved Zone IIs statewide. As stated in 310 CMR 22.02, a Zone II is 'that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation.) It is bounded by the groundwater divides which result from pumping the well and by the contact of the aquifer with less permeable materials such as till or bedrock. In some cases, streams or lakes may act as recharge boundaries. In all cases, Zone IIs shall extend up gradient to its point of intersection with prevailing hydrogeologic boundaries (a groundwater flow divide, a contact with till or bedrock, or a recharge boundary).' These data are used in association with the Public Water Supplies datalayer. The following describes certain unique features of this association.\n - Any proposed new well which will pump at least 100,000 gallons per day must have a Zone II delineation completed and approved by DEP prior to the well coming on line. \n- Additionally, a new source may not be on-line yet, but other, older wells may fall within its Zone II boundary.\n - Further, existing wells must have a Zone II delineated as a condition of receiving a water withdrawal permit under the Water Management Act.

OTHER STATE DATABASE INFORMATION

RADON

State Database: MA Radon

Source: Department of Health

Telephone: 413-586-7525

Radon Test Results

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRRA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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Mill Creek Water Control Structure

505 Old Chequesset Neck Rd

Wellfleet, MA 02667

Inquiry Number: 7788170.3

October 09, 2024

Certified Sanborn® Map Report



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/09/24

Site Name:

Mill Creek Water Control Struct
505 Old Chequeset Neck Rd
Wellfleet, MA 02667
EDR Inquiry # 7788170.3

Client Name:

VHB
100 State Street
Montpelier, VT 05602
Contact: Stephanie Hunt



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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 81DE-46A5-B012

PO # 87075.24

Project Mill Creek Due Diligence

UNMAPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.



Sanborn® Library search results

Certification #: 81DE-46A5-B012

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☒ Library of Congress
- ☒ University Publications of America
- ☒ EDR Private Collection

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Appendix 3 – Field Forms

Incremental Sampling Methodology (ISM) Sample Collection Record

Decision Unit ID: _____

Sample Medium: _____

Project Name: _____

Project #: _____

Site Location: _____

Date: _____

Weather Conditions: _____

Time On-Site: _____

Sampler: _____

1. SAMPLE LOCATION AND COLLECTION METHODOLOGY INFORMATION:

Description of sampling unit location: _____

Dimensions of sampling unit: _____ Coordinate system: _____

GPS coordinates of DU corners	

Increment collection method: _____

Sample depth range: _____

Total number of increments collected: _____

2. SAMPLE INFORMATION:

Analysis Methods	Field or fixed lab analysis	Type of container	Sample notes, observations, comments
1. EPA 6020B and 7471B, Metals, Percent Moisture 2. EPA Method 8081B, Pesticides 3. EPA Method 8270E with SIM, SVOCs 4. EPA Method 8082A, PCBs 5. EPA Method 7196A, Hexavalent Chromium 6. EPA Method 8151A, Herbicides 7. EPA Method Lloyd Kahn, Total Organic Carbon 8. ASTM Method D422, Grain Size	Fixed	1 x 1 L Glass Jar, No preservatives. 16 oz glass for grain size	

Original Name/Time: _____

Grain Size Sample Name/Time: _____

Duplicate Name/Time: _____

Triplicate Name/Time: _____

General comments / notes: _____
_____Lab Designation: Eurofins Canton, 4101 Shuffel Street NW, North Canton, OH 44720 (330)497-9396

Chain of Custody #: _____ Shipper Tracking #: _____



Appendix 4 – Standard Operating Procedures (Available Upon Request)



Appendix 5 – Health and Safety Plan