

2014
MAMMOTH HOT SPRINGS
(PWS#5680092C)
Water Quality Report



2014 Consumer Confidence Report

Mammoth Hot Springs (PWS#5680092C) currently serves 200 plus year-round residents and 3,000 visitors (summer) per day. Last year, the Mammoth Hot Springs Water Plant produced a total of 75.3 million gallons and a maximum production of 0.766 million gallons on a single day.

The Mammoth Hot Springs Utility crew also operates and maintains the following water and wastewater systems: Stephen's Creek, Indian Creek, Roosevelt, Slough Creek, Lamar, Pebble Creek, Tower Falls, and Northeast Entrance.

In 2013, the Mammoth Water Plant utility crew worked with the North District crafts shops in updating the Northeast water system, replacing 30+ year-old valves at the Mammoth Water Plant, and annual inspection of backflow prevention devices.

Source Water is taken from, Indian and Panther Creeks, as well, as the Gardiner River. The Mammoth Water Plant is in the process of updating it's source water assessment plan.

Treatment Process - The source water is treated with aluminum sulfate, potassium permanganate, an organic polymer and a poly aluminum chloride (PAC) compound before passing through layers of sand and gravel to remove dirt and debris particles (turbidity). The final phase of the treatment process is the addition of a 12% sodium hypochlorite solution - a disinfectant used to kill bacteria and other microbes.

These processes are operated by a team of trained, Wyoming state certified water and wastewater professionals and assisted by supervisor computerized control and data acquisition systems (SCADA).

Sampling - Routine sampling and testing is an important part of our water quality and assurance program and includes the following:

Daily: Chlorine residuals, turbidity, pH, and temperature

Weekly: Bacteria (Total Coliform)

Monthly: Total Alkalinity and Hardness

Quarterly: Total Organic Carbon

Yearly: Trihalomethanes, Haloacetic acids, Volatile Organic Chemicals, Inorganics, and Nitrates

3 Years: Synthetic Organic Chemicals, Lead & Copper

6 years: Radionuclides

Monitoring - The Mammoth Water Quality Laboratory, Energy Laboratories in Billings, Montana and Inter-Mountain Laboratories in Sheridan, Wyoming are the core of our quality assurance program. These certified laboratories follow precise drinking water analyses established by the U.S. Environmental Protection Agency.

In order to ensure your tap water is safe, the Environmental Protection Agency has set very stringent levels or **Maximum Contaminant Levels (MCLs)** - the highest allowable level a contaminant is allowed in drinking water. A person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Monitoring Requirements Not Met for Mammoth Hot Springs

In September, 2013, the Mammoth Hot Springs Water System failed to monitor for additional Total Coliform samples, following a positive Total Coliform sample taken on August 9, 2013. While 4 repeat samples taken on August 10, 2013 were all negative, the Total Coliform Rule requires an additional number of samples be taken the following month. We failed to do so. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During September, 2013 we did not complete all the monitoring or testing for Total Coliform and therefore cannot be sure of the quality of your drinking water during that time.

What should I do?

There is nothing you need to do at this time.

Table 1 lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for this contaminant, how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were taken.

Contaminant	Required sampling frequency	Number of samples taken	When samples should have been taken	When samples were taken
Total Coliform	1 sample every month 5 samples the following month after a positive Total Coliform sample	3	September, 2013	September 4, 2013 September 9, 2013 September 16, 2013

Table 2 lists those substances that **were detected** during the monitoring period of January 1, 2013 to December 31, 2013 and/or the most recent monitoring. It is important to remember that the presence of these constituents does not necessarily pose a health risk.

The following terms and abbreviations have been defined, to help you better understand some terms you may not be familiar with:

Action Level (AL)-the concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow.

Maximum Contaminant Level Goal (MCLG) - the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Nephelometric Turbidity Unit (NTU)-a measure of water clarity. Turbidity in excess of 5 NTU is just noticeable to the average person.

Picocuries per liter (pCi/L) – a measure of radioactivity in water.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (ug/L) – one part per billion corresponds to one minute in two thousand (2,000) years or a single penny in \$10,000,000

RAA = Running Annual Average

TT = Treatment Technique

If you have any questions about this report or concerning your water utility, please contact Mammoth Water Plant at 307.344.2353 or PO Box 168, Yellowstone National Park, WY 82190.

Prepared June 18th, 2014 by Janet A. Lewis, Environmental Health Technician. Reviewed and approved by Ralph C. Jerla, Water Treatment Plant Supervisor.

Table 2 TEST RESULTS							
Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological							
Total Coliform	Y – monitoring violation	8/9/13			presence of coliform bacteria in 5% of monthly samples	0	Naturally present in the environment
Turbidity	N	5/17/13	0.29 NTUs	NTUs	0.30 NTUs	TT = 0.3NTU TT = 99.9% of samples < 0.3 ntus	Soil runoff
Inorganics							
Barium	N	5/16/13	0.05	ppm	0.05	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	N	5/16/13	0.2	ppm	2.0	4	Erosion of natural deposits; Water additive which promotes strong teeth.
Nitrate + Nitrite as N	N	5/16/13	0.08	ppm	1.0	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium	N	5/16/13	3.0	ppm	1.0	No MCL	Erosion of natural deposits
Sulfate	N	5/16/13	6.0	ppm	1.0	No MCL	Erosion of natural deposits
Lead and Copper							
Lead	N	6/4/12	90% = 0.0175	ppb	0	AL = 15.0	Corrosion of household plumbing systems, erosion of natural deposits
Copper	N	6/4/12	90% = 0.06745	ppm	0	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Radioactive Contaminants							
Gross Alpha	N	3/13/13	3.4 +/-0.8	pCi/L	2.0	15.0	Erosion of natural deposits
Volatile Organic Contaminants							
Halo acetic Acids (HAA5s)	N	8/6/13	8.8	ppb	0.5	60.0	By-product of drinking water chlorination
Trihalo-methanes (THMs)	N	2/6/13	15.0	ppb	0.5	80.0	By-product of drinking water chlorination
Total Organic Carbon							
	N	5/16/13	3.1 RAA = 1.4	ppm	2.0		Organic matter