TOWN of PLAINVILLE WATER DEPARTMENT - 2017 WATER QUALITY REPORT

Massachusetts Department of Environmental Protection Public Water Supply **ID #4238000**

Address: 171 East Bacon Street - P.O. Box 1565

Contact Person: Dennis Morton

Telephone : 508-695-6871 Fax : 508-695-6736

Internet Address: www.plainville.ma.us

The Quality of Your Drinking Water

The Plainville Water Department is committed to providing you with high quality drinking water that meets or surpasses state and federal standards for quality and safety. Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). MassDEP inspects our system for its technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, your water system is operated by 4 Massachusetts certified operators who oversee the routine operations of our system.

This year we launched our annual unidirectional flushing program. The Water Department flushed 58 miles of water main throughout town during the fall of 2017. Unidirectional flushing programs remove tuberculation, iron, manganese, and bacteria from the water system and helps improve water quality. The flushing, along with other operational changes has reduced our dirty water problem and complaints.

Where Does Our Drinking Water Come From?

Water to Plainville is provided by a blended groundwater and surface water source treated at Turnpike Lake Well Water Treatment Facility located at 171 East Bacon Street, 3 groundwater wells near Lake Mirimichi and water from the Town of North Attleboro.

Source Name	Mass DEP Source ID#	Source Type	Location of Source
Well #1	4238000-01G	Groundwater	171 East Bacon Street
Well #2	4238000-02G	Groundwater	171 East Bacon Street
Well #5	4238000-05G	Groundwater	171 East Bacon Street
Well #1	4238000-06G	Groundwater	Mirimichi Pump Station
Well #2	4238000-07G	Groundwater	Mirimichi Pump Station
Well #3	4238000-08G	Groundwater	Mirimichi Pump Station
Well #3	4238000-03G	Groundwater	Rear of 33 West Bacon Street

How Are These Sources Protected? (SWAP)

DEP prepared a Source Water Assessment Program (SWAP) Report for the water supply serving our water system. The purpose of the report was to assess the susceptibility of our drinking water sources to contamination. The results of the assessment are available at the Plainville Water Department Office and online at**:**

https://www.mass.gov/files/documents/2016/08/my/4238000.pdf

Some of the land uses that exist within groundwater recharge areas include: gas stations, auto repair shops, electrical manufacturers, and underground storage tanks. The Plainville Water System was assigned a high susceptibility ranking in the SWAP Report. We have established protective land use restrictions to reduce exposure to certain contaminants including bylaws to protect Zone II drinking water well recharge areas. For more information, call Dennis Morton, Water & Sewer Operations Supervisor, at 508-695-6871. Residents can help protect sources by:

- Practicing good septic system maintenance
- Taking hazardous household chemicals to hazardous materials collection days
- Limiting pesticide and fertilizer use, etc.

Is My Water Treated?

In order to maintain compliance with Federal and State Drinking Water Standards, Plainville well water must be treated before it reaches consumers' taps. The Turnpike Lake Treatment Plant treats water from wells 1, 2, and 5 at 171 East Bacon Street. Water from these wells is filtered for iron and manganese removal, pH adjusted for corrosion control, and disinfected with chlorine and ultraviolet light.

The wells at Mirimichi Pump Station are treated with an air stripper, chlorinated and pH adjusted using the appropriate treatment techniques.

We regularly and routinely receive water from the Town of North Attleboro. The water we receive from North Attleboro is treated with chlorine, pH adjusted, fluoridated and has iron and manganese removed by pressure filtration method. This treated water is in exchange for the same volume of raw untreated water that we pump from our well at the rear of the highway department off West Bacon Street, which is treated at the Joint Drinking Water Treatment Plant, located on Whiting Street in North Attleboro.

Substances Found in Your Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of the some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Sources of Drinking Water (both Tap Water and Bottled Water) include lakes, rivers, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land, or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in source water include:

- **Microbial contaminants** such as viruses and bacteria may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- **Inorganic contaminants** such as salts and metals, can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming;
- **Pesticides and Herbicides** which may come from a variety of sources such as agricultural, urban storm water runoff and residual uses;
- **Organic chemical contaminants** including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can come from gas stations, urban storm water runoff and septic systems;
- **Radioactive contaminants** can be naturally occurring or be the result of oil and gas production and mining.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

In order to ensure that Tap Water is safe to drink, The Department of Environmental Protection (DEP) and US Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by Public Water Supply Systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide protection for public health.

Cross Connections

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For instance; you are spraying fertilizer on your lawn, you hook up your garden hose to the sprayer that contains the fertilizer, if the water pressure drops because of an incident in the water system such as the opening of a fire hydrant while your hose is still connected to the fertilizer, it may be sucked back into the water system drinking water pipes through the hose connection. An attachment on your hose called a backflow prevention device can prevent such occurrences. The Plainville Water Department suggests and recommends the installation of backflow prevention devices such as hose bib vacuum breakers, which are available at hardware stores at a reasonable cost, be installed on all outside hose connections at all properties connected to the Plainville Water System.

Definitions Related to this Report

Maximum Contaminant Level (MCL) – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

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.

Maximum Residual Disinfectant Level (MRDL) – The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) – The level of a drinking water disinfectant (chlorine, chloramines, chlorine dioxide) below which there is no known of expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water.

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

90th Percentile – Out of every 10 homes sampled, 9 were at or below this level.

Variances and Exemptions – State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

ppm = parts per million, or milligrams per liter (mg/l)
ppb = parts per billion, or micrograms per liter (ug/l)
ND = Not Detected
N/A = Not Applicable

Secondary Maximum Contaminant Level (SMCL) – These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

Massachusetts Office of Research and Standards Guideline (ORSG) – This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

Water Quality Testing Summary

The water quality information presented in the following table is from the most recent round of testing done in accordance with EPA and MassDEP regulations. All results are from samples collected during calendar year 2017 unless otherwise noted. Only the detected contaminants are shown.

Inorganic Contaminants	**Date(s) Collected**	**Range Detected**	**Highest Detected Level**	**MCL or MRDL**	**MCLG or MRDLG**	**Violation (Y/N)**	**Possible Sources**
Nitrate (ppm)	5/31/2017	0.28 – 1.22	1.22	10	10	N	Fertilizer runoff
Perchlorate (ppb)	9/9/2017	0.05 – 0.07	0.07	2	1	N	Rocket propellant, fireworks, flares, blasting agents
Chlorine (ppm)	Daily	0.52 – 1.35	1.35	4 (MRDL)	4 (MRDLG)	N	Water additive used to control microbes
Inorganic Contaminants	**Year Sampled**	**90th Percentile**	**AL**	**MCLG**	**# of Sites**	**Sites above AL**	**Potential Sources**
Lead (ppm)	2017	0.003	0.015	-	21	0	Corrosion of household plumbing
Copper (ppm)	2017	0.09	1.3	-	21	0	Corrosion of household plumbing
Disinfection Contaminants	**Date(s) Collected**	**Range Detected**	**Highest Detected Level**	**MCL or MRDL**	**MCLG or MRDLG**	**Violation (Y/N)**	**Possible Sources**
Haloacetic Acids (HAA5s) (ppb)	Quarterly	17 – 61	61*	60	-	Y	Byproduct of drinking water chlorination
System Total Trihalomethanes (TTHMs) (ppb)	Quarterly	40 – 110	110*	80	-	Y	Byproduct of drinking water chlorination
Site 1 Total Trihalomethanes (TTHMs) (ppb)	Quarterly	67 – 100	100	80	-	Y	Byproduct of drinking water chlorination
Site 2 Total Trihalomethanes (TTHMs) (ppb)	Quarterly	40 – 110	110	80	-	Y	Byproduct of drinking water chlorination

Secondary Contaminants	Date(s) Collected	Range Detected	Highest Detected Level	SMCL	ORSG	Violation (Y/N)	Possible Sources
Manganese (ppb)	5/12/2017 5/31/201	ND – 361	361	50	300	N	Naturally found mineral in the earth

*Highest Running Annual Average (RAA) = highest running annual average of four consecutive quarters

Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Plainville Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at:

http://www.epa.gov/safewater/lead

Manganese

Manganese is a naturally occurring mineral found in rocks and soil and in water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The USEPA and MassDEP have set an aesthetics based Secondary Maximum Contaminant Level (SMCL) for Manganese of 50 ug/L or 50 parts per billion, and health advisory levels. Drinking water may naturally have manganese and, when concentrations are greater than 50ug/L, the water may be discolored and taste bad. Over a lifetime, EPA recommends that people drink water with manganese levels less than 300 ug/L and over the short term, EPA recommends that people limit their consumption of water levels over 1000 ug/L primarily due to concerns about possible neurological effects. Children up to 1 year of age should not be given water with manganese concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days. More information is available at:

http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_manganese_dwreport.pdf

Plainville filters most of its drinking water to remove manganese at the Turnpike Lake Water Treatment Plant and water from Well #3 is pumped to North Attleboro for the same treatment before being returned to Plainville. During 2017 Plainville Water Department tested for Manganese at the Turnpike Lake wells and Lake Mirimichi wells. Manganese levels at the Turnpike Lake wells were not detected. Manganese at the Lake Mirimichi wells was detected at 86 ppm and 361 ppb. In October 2017 the Mirimichi wells were taken offline and we are currently researching best treatment options for removing Manganese at that well site.

Disinfection Byproducts

Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) form when free chlorine used for disinfection reacts with naturally occurring organic matter in water. TTHM and HAA5 levels exceeded MCL levels for the third and fourth quarters of 2017. This exceedance is not an emergency and no corrective action by consumers is necessary. If a situation arises where the water is no longer safe to drink, consumers will be notified within 24 hours. If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from your health care providers about drinking this water.

ABOUT OUR VIOLATION

Plainville is required to monitor drinking water for TTHM and HAA5 levels on a quarterly basis at two specific locations in the distribution system. The standard for TTHMs is 80 ppb and the standard for HAA5s is 60 ppb. Compliance is determined on a quarterly basis by averaging all samples collected at each location for the last year (Running Annual Average).

The results from the third quarter of 2017 showed that our system exceeded the MCL for TTHMs at one of the two locations. On September 14, 2017 DEP issued a Notice of Noncompliance with Compliance Schedule Approval (NON-CSA). We complied with the requirements on the NON-CSA, including notification to all addresses in Town.

The results from the fourth quarter of 2017 showed that our system exceed the MCL for TTHMs at both sampling locations and the MCL for HAA5s at one of the sampling locations. On February 2, 2018 DEP issued an Administrative Consent Order (#0003812). We are complying with all requirements of the ACO including additional water quality monitoring and public notification quarterly. We have been working with our engineers to minimize creation of disinfection byproducts and expect to return to compliance before the end of 2018. However, since compliance is determined from the Running Annual Average, we will likely remain out of compliance until the third quarter of 2018.