TOWN of PLAINVILLE WATER DEPARTMENT - 2014 WATER QUALITY REPORT

Address: 171 East Bacon Street - P.O. Box 1565
Contact Person: James Marshall, Superintendent
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. 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 (800-426-4791).

Substances Found in Your Water 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;** include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, an can come from gas stations, urban storm water runoff and septic systems; **Radioactice contaminants** can be naturally occurring or be the result of oil and gas production and mining. 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 (FD0 and Massachusetts Department of Public Health ((DPH) regulations establish limits for contaminants in bottled water that must provide protection for public health. ALL DRINKING WATER, including bottled water, may reasonably be expected to contain at least small amount s of some contaminats. The presence of contaminants does not necessarily indicate the water pose a health risk. MORE INFORMATION ABOUT CONTAMINANTS AND POTENTIAL HEALTH EFFECTS CAN BE OBTAINED BY CALLING THE EPA'S SAFE DRINKING WATER HOTLINE 800-426-4791.

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	423000-02G	Groundwater	171 East Bacon Street
Well #5	4238000-05G	Groundwater	171 East Bacon Street
Well #6	4238000-06G	Groundwater	Mirimichi Pump Station
Well #6a	4238000-07G	Groundwater	Mirimichi Pump Station
Well #6b	4238000-08G	Groundwater	Mirimichi Pump Station
Well #3	4238000-03G	Groundwater	Rear of 33 West Bacon Street

Is My Water Treated?

Mass DEP and USEPA determined that Well #2 at 171 East Bacon Street was to be considered groundwater under the direct influence of surface water and we were ordered to either treat the well in a particular manner of remove it from service permanently. We have, since 2003 treated the water with chlorine and ultraviolet light as disinfectants for this reason. The water from wells 1, 2 and 5 are also filtered for iron and manganese removal. The wells at Mirimichi 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. 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. The water we receive from North Attleboro is treated with chlorine, pH adjusted, fluoridated and has iron and manganese removed by pressure filtration method.

Cross Connection Education

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 Dept. suggests and recommends the installation of backflow prevention devices such as hose bib vacuum breakers, available at hardware stores at reasonable cost be installed on all outside hose connections at all properties connected to Plainville Water System.

How Are These Sources Protected? (SWAP)

What is SWAP? The Source Water Protection and Protection program Mass DEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

What is My System's Ranking?

A susceptibility ranking of high was assigned to this system using the information collected during the assessment by MassDEP as follows:

Zone II #: 495 ***Susceptibility:*** High

Well Names Source IDs

Well #3 4238000-03G

Zone II #: 496 ***Susceptibility:*** High

Well Names Source IDs

Well #1 4238000-01G

Well #2 4238000-02G

Well #5 4238000-05G

Source Water Protection Conclusions and Recommendations

Current Land Uses and Source Protection:

As with many water supply protection areas, Plainville's Zone IIs contain potential sources of contamination. However, source protection measures reduce the risk of actual contamination, as illustrated in Figure 2. The water supplier is commended for taking an active role in promoting source protection measures in the Water Supply Protection Areas through:

- Adopting local bylaws to protect the Zone IIs.
- Using State Revolving Fund money to delineate Zone II protection areas for all of Plainville's sources of drinking water.
- Owning and controlling the Zone Is around each of the system's wells.
- Inspecting the Zone Is regularly.

Source Protection Recommendations:

To better protect the sources for the future:

ü Convene a Wellhead Protection Committee with members representing local government, businesses, citizen's groups, the water department and other stakeholders.

ü The water department should be a partner in the Phase II Stormwater Rule planning for Plainville.

ü Use the buildout analysis for Plainville to identify critical land for water supply protection. To view buildout maps for Plainville, visit EOEA's website at http://commpres.env.state.ma.us/community/cmty_main.asp?communityID=238#Absolute

ü Educate residents on ways they can help you to protect drinking water sources.

ü Work with emergency response teams to ensure that they are aware of the stormwater drainage in your Zone II and to cooperate on responding to spills or accidents.

ü Partner with local businesses to ensure the proper storage, handling, and disposal of hazardous materials.

ü Monitor progress on any ongoing remedial action conducted for the known oil or contamination sites.

ü Develop and implement a Wellhead Protection Plan.

Where Can I See The SWAP Report?

The complete SWAP report is available at The Plainville Water Department Office and online at *http://www.mass.gov/dep/water/drinking/sourcewa.htm#reports* . For more information, call *James Marshall, Superintendent 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.*

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.
MRDLG's 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)
ppt = parts per trillion, or nanograms per liter
pCi/l = picocuries per liter (a measure of radioactivity)
NTU = Nephelometric Turbidity Units
ND = Not Detected
N/A = Not Applicable
mrem/year = millimrems per year (a measure of radiation absorbed by the body)

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.

Substances Found In Our Drinking Water

Unregulated Contaminants

Sodium or salt was detected on 4/18/2014 at a level above the ORSG (Massachusetts Office of Research and Development) Guideline of 20 ppm. The samples were taken from the raw water sources . The source of sodium to the drinking water may be from the use of improper storage of sodium containing de-icing compounds, road salt or in water softening agents. The Health Effect of sodium is that some people who drink water containing sodium at high concentrations for many years could experience and increase in blood pressure.

Regulated Contaminants

Lead and Copper: During the period of 2009-2011 Plainville tested for lead and copper and were successful in achieving results allowing for a reduced amount of monitoring. We now monitor 20 residential sites every three years and at least three schools including our local schools and day care centers every year. The testing performed during 2014 was below the trigger level action and results for any specific location can be obtained by contacting our office or contacting DEP.
Synthetic Organic Chemicals: Plainville sampled for SOC contaminants at Turnpike Lake Water Treatment Plant on 11/18/2014, the results showed none..
Inorganic Chemicals: the wells at Lake Mirimichi were tested for Inorganics during 2014 and nothing was found in the water.
Perchlorate was tested for at Lake Mirimichi and was determined to be below the MCL of 2.0 ppm , our level was 0.06 ppm.
Disinfection ByProducts also known as (THM and HAA5): were tested for quarterly at 2 locations in the distribution system

Iron and Manganese

During 2014 Plainville Water Department tested for Iron and Manganese at the well head or Raw Water source. These samples should have been taken at the finished tap or after treatment. The sampling results at the chart of contaminants shows Raw Water Quality and IS NOT indicative of the Finished Water delivered to the distribution system. At the time of this report we have not performed sampling of the Finished Water; but we intend to do so immediately.
"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."

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

Plainville filters most of it's drinking water to remove iron and manganese at the Turnpike Lake Water Plant and water from well #3 is pumped to North Attleboro for the same treatment and returned to Plainville. The Lake Mirimichi wells utilize air stripping or oxidation for removal of iron and manganese, although not to a level of zero.
UNREGULTED CONTAMINANTS RULE: Plainville Water Department participated in the Federal EPA program during 2014, the results of the sampling is not yet tabulated or available for publication, but ***WILL*** appear in the 2015 report of the Plainville Water Department.

Regulated & Secondary Contaminants								
Substance or Contaminant	Units	Source Average	Range of Detect	Highest Level Allowed (MCL) or (MRDL)	MCLG or MRDLG	violation (Y/N)	Potential Sources	Date
Sodium	PPM	82.04	15.2-131.0	None	None	N	Natural sources, runoff from use of road salt,by-product of treatment process	4/18/2014
Iron (Raw)	PPM		ND-4.3	0.3				4/18/2014
Manganese(Raw)	PPM		0.008-.673	0.05				4/18/2014
Regulated Contaminants								
Substance or Contaminant	Units	Highest Level	Range of Detect	Highest Level Allowed (MCL) or (MRDL)	MCLG or MRDLG	violation (Y/N)	Potential Sources	Date
INORGANICS								
Perchlorate	UG/L	0.07		2	0.012	N	Rocket Propellants, fireworks,munitions,flares,blasting agents	8/20/2014
Disinfectants and Disinfection By-Products								
Substance or Contaminant	Units	Highest Level	Range of Detect	Highest Level Allowed (MCL) or (MRDL)	MCLG or MRDLG	violation (Y/N)	Potential Sources	Date
Total Trihalomethanes (TTHM)	UG/L	55.5	64.2 - 0.7		80	N	byproduct of drinking water treatment	Annual Average Quarterly
Haloacetic Acids (HAA5)	UG/L	28.9	2.8-8.1		60	N	byproduct of drinking water treatment	Annual Average Quarterly
Total Chlorine	PPM	2	0.20 - 2.0	4	4	N	water additive used to control microbes	daily
Synthetic Organics								
Dalapon	UG/l	1.1	0.0 - 1.1	300	1	N	component of fertilizer	Grab