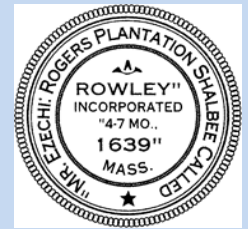


2014 Annual Drinking Water Quality Report ROWLEY WATER DEPARTMENT

Mass DEP PWSID # 3254000



PUBLIC WATER SYSTEM INFORMATION

The Town of Rowley is committed to providing its residents with drinking water of the highest quality possible and we strive to improve all facets of our water system. Our goal is to ensure that we will have ample water supplies now and in the future that are contaminant free. Please review this report it is intended to increase public awareness of water issues and contains important information about our water system.

On October 8, 2010 the Town of Rowley was issued an Administrative Consent Order (ACO) to address the fecal contamination at the town wells by constructing a water treatment plant capable of 4-log virus removal. The Town of Rowley sent a letter to the Mass DEP in December 2014 to inform the DEP that the Town has completed all the items set forth in the ACO and has received confirmation from the Mass DEP that Rowley has complied with the ACO. This means the DEP is satisfied with what Rowley has done and has met the conditions in the ACO.

Town of Rowley Water Department received four monitoring and reporting violations in 2014 from the Massachusetts Department of Environmental Protection (Mass DEP) for not sampling in the specified time frame on the Mass DEP sampling schedule. The Primary Operator is responsible for making sure these samples are collected and the results are submitted to the Mass DEP. This is a TIER 3 violation and requires public notification. The following is a list of the violation:

- Lead and copper samples were due to be collected between June 1, 2014-September 30, 2014. We did not sample until November 2014. The Water Department failed to collect the 20 lead and copper samples due in Quarter three 2014 resulting in a violation from the Mass DEP and increased monitoring from 20 samples per year to 20 samples two times a year.
- Total Coliform Rule. The Water Department is required to collect bacteria samples in October 2014. The Water Department failed to collect the compliance bacteria samples due in October 2014 resulting in a violation from the Mass DEP. The Water Department collected samples on 9/29/2014. These samples did not count for the October sampling. The samples we collected counted only as extra samples in September.
- Manganese: The Water Department is required to collect a manganese sample from Well #3 in August 2014 and we did not resulting in the violation from the Mass DEP.
- Gross alpha and Radium 226 and 228 (Radiological): The Water Department is required to collect a sample from Well #3 between July1, 2014- September 30, 2014. We did not sample resulting in the violation from the Mass DEP.

PUBLIC WATER SYSTEM INFORMATION

Address:	401 Central Street PO Box 29 Rowley, MA 01969	Board of Water Commissioners:	Timothy Toomey Roy Ricker, Sr. Stuart Dalzell, Sr.
Phone:	(978) 948-2640	Water Superintendent:	MaryBeth Wiser
Website:	www.rowleywater.org	For billing or payment questions or to schedule an appointment please contact Customer Service by phone at (800) 553-5191, or by email at customer-service@pennichuck.com	
Hours:	7:00AM – 3:00PM Monday – Friday		

WATER SYSTEM IMPROVEMENTS: Our water system is routinely inspected by Mass DEP. Mass DEP 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 qualified, licensed operators certified by Mass DEP, who oversee the routine operations of our system. As a result of an Administrative Consent Order (ACO) from the Mass DEP. The Town of Rowley had to build a water treatment plant as one of the conditions of that order. The Town hired Weston and Sampson Engineers in 2010 to begin the design process. Construction began in July 2012. On August 27, 2014 we began to pump water from Well #3 on Boxford Road via a 10 inch transmission water main to the \$12M filtration plant. We began to introduce the treated water into the system through a water main which enters on Haverhill Street or Rte. 133 via the Pinegree Farm Road.

The next step was to cut and cap the old connection to the system for Well #5. This began in September 2014. Well #5 consists of six wells or a well field. Each of those wells were cleaned and inspected. These wells were pumped to the filtration plant as they were completed from October to November 2014. As of November 2014 the water department has the capability of running well 3 and the 6 wells from the #5 well field through the treatment plant as the demand in the system requires. Yes the water filtration plant is a 100% complete and operational. The plant is designed to remove iron and manganese from the groundwater.

FLUSHING: The Rowley Water Department flushed the water mains in November and December 2014. The Water Department periodically flushes the fire hydrants throughout the town. The hydrant-flushing program is very important to the maintenance of the Town's water distribution system. During this process, it is not uncommon for a yellow, brown or reddish tint to appear in the water. Harmless mineral deposits settle in the water mains, and flushing the system stirs the deposits causing the discoloration. Flushing removes the sediments from the mains and also serves the following purposes:

- Improves water quality in the distribution system.
- Verifies the proper operation of fire hydrants and valves.
- Helps find weaknesses in the water system.
- Checks for closed valves and weak flows in the water mains.
- Verifies adequate fire flows for fire-fighting.



YOUR DRINKING WATER SOURCE

Source Name	MassDEP Source ID	Source Type
Well #2	3254000-02G	Groundwater
Well #3	3254000-03G	Groundwater
Well #5	3254000-05G	Groundwater

WHERE DOES MY DRINKING WATER COME FROM? The drinking water for the Town of Rowley comes from three groundwater wells located on Town-owned parcels of land within the Parker River Basin.

OPPORTUNITIES FOR PUBLIC PARTICIPATION: The Board of Water Commissions meet twice a month at the Water Department office located on 401 Central Street. Please contact the Water Department, at (978) 948-2640 for more information or visit our website www.rowleywater.com.

HOW ARE THESE SOURCES PROTECTED? Mass DEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving the Town of Rowley. The SWAP Report assesses the susceptibility of public water supplies. A susceptibility rating of *high* was assigned to this system using the information collected during Mass DEP's assessment, due to the absence of hydrological barriers that could prevent migration of contamination into the Town's groundwater supply. The complete SWAP Report is available at <http://www.mass.gov/dep/water/drinking/swapreps.htm>



With careful use, and by reducing sources of pollution, our groundwater will continue to be an important natural resource for years to come! Residents can help protect water sources by:

- Practicing good septic system maintenance.
- Limiting pesticide and fertilizer use and disposing of hazardous household chemicals at hazardous material collection days.
- Supporting water supply protection initiatives at the next town meeting.

IS MY WATER TREATED? Our water system makes every effort to provide you with good quality drinking water. Well #3 and Well #5 are treated and filtered through the treatment plant. We add sodium hypochlorite for disinfection to protect you against microbial contaminants, potassium permanganate for manganese removal, ortho-polyphosphate for sequestration of iron, and sodium hydroxide for pH adjustment and corrosion control. Well #2 is treated with sodium hypochlorite for disinfection to protect you against microbial contaminants, ortho-polyphosphate for sequestration of iron, and sodium hydroxide for pH adjustment and corrosion control.

IS MY WATER TESTED? The water quality of our system is constantly monitored by us and MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required. Last year we collected more than 200 samples to determine the presence of biological, organic and inorganic contaminants. Sources of drinking water (both tap water and bottled water) include rivers, lakes, 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 from human activity. Contaminants that may be present in source water include:

- **Microbial contaminants** – include viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants** – include salts and metals, which 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 agriculture, urban storm water runoff, and residential uses.
- **Organic chemical contaminants** – include synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also 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 activities.

In order to ensure that tap water is safe to drink, the Mass DEP and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water 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 the same protection for public health. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of 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 at (800) 426-4791.

EDUCATIONAL INFORMATION

WATER CONSERVATION: Municipal water systems face many challenges such as: meeting seasonal water demands, finding new supply sources to keep pace with growth, resource protection, water conservation, environmental protection, and the increasing stringent regulations for improved water quality. Our sustainability, as it relates to water, is dependent upon our ability to stay abreast of these changing conditions and implementation of future plans. Unfortunately, there is no “magic wand” that will make the problems go away. Therefore, sound planning is crucial. Regardless of our future supply conditions, water conservation and

prudent supply management will still be our number one priority to ensure the long term availability of our water supplies. We are committed to conserving our water supplies and complying with Massachusetts state regulatory requirements governing the operation of water systems. A conscientious effort on everyone's part is necessary for these conservation measures to have a positive effect. Your efforts are most appreciated, as we must all work together to preserve this most valuable resource for generations to come. Household water conservation not only saves water, but it saves energy too; energy needed to heat water and to run appliances. Your water meter is equipped with a leak detector. If you see a dripping faucet, you have a leak somewhere. Check all faucets for leaks; even a slow drip can waste up to 20 gallons of water in a day! Check for toilet leaks by putting a few drops of food coloring in the toilet's tank. An "invisible" leak in the toilet wastes up to 100 gallons in a day. Only run full loads through your washing machine and dishwasher.

HERE ARE SOME MORE WATER SAVING TIPS:

- When washing dishes by hand, don't let the water run while rinsing
- Check your sprinkler system frequently and adjust sprinklers so only your lawn is watered and not the house, sidewalk, or street.
- Run your washing machine and dishwasher only when they are full and you could save 1000 gallons a month.
- Keep a pitcher of water in the refrigerator instead of running the tap for cold drinks, so that every drop goes down you not the drain.
- Minimize evaporation by watering during the early morning hours, when temperatures are cooler and winds are lighter.
- Use a layer of organic mulch around plants to reduce evaporation and save hundreds of gallons of water a year.
- Use a broom instead of a hose to clean your driveway or sidewalk and save 80 gallons of water every time.
- Only water your lawn when needed. A lawn only needs 1" of water each week.
- Install low-volume toilets.

CROSS CONNECTIONS: The purpose of this program is to protect the public potable water supply from the possibility of contamination or pollution by isolating such contaminants or pollutants which could backflow or back-siphon into the public water system. To promote the elimination or control of existing cross connections, actual or potential between its customers in-plant potable water system, and non-potable systems. To provide for the maintenance of a continuing program of cross connection control which will effectively prevent the contamination or pollution of all potable water systems by cross connection. For information regarding our program please visit the Rowley Water Department webpage at www.rowleywater.com.

- **Back-siphonage** is the reversal of normal flow in a system caused by negative pressure, vacuum or partial vacuum in the supply piping. This can be created when there is a stoppage of the water supply due to fire-fighting, main repairs or main breaks or leaks.
- **Back Pressure** is the backflow of normal flows in a system due to an increase in the downstream pressure above that of the supply pressure. Which is possible in installations such as heating systems, elevated tanks and pressure producing systems. Water tends to flow in the direction of least resistance.

Have you ever considered all of the places that you use water in your home? You may be surprised how many different ways that water can be used and possibly misused. Here are some things you can be aware of to protect the purity of water you drink, cook with or bath in.

✓ **Irrigation**

Sprinkler systems make watering you lawn and garden easier, however, if not properly installed and maintained contaminants can enter your drinking water. Water that pools around the sprinkler heads may contain contamination from chemical, fertilizer or animal waste. To help protect your water install an Atmospheric Vacuum Breaker (AVB), Pressure Vacuum Breaker (PVB), or a Reduced Pressure Principal Assembly (RP). You should consult with a professional lawn irrigation contactor or a licensed plumber.

✓ **Outside Faucets**

The garden hose is the most common cross connection in the home. It acts like an extension of the water line. The hose is attached to the outdoor faucet and the other end is connected to an aspirator that contains insecticides, fertilizer or other chemicals used with the aspirator. Another common cross connection is to leave the other end of the hose submerged in a bucket of soapy water or just by laying down on the ground. You can install a hose bibb vacuum breaker. This will isolate the faucet and protect the water supply from contamination. Each spigot at your home should have a hose-bib vacuum breaker installed. This is a simple, inexpensive device, which can be purchased at any plumbing or hardware store. Installation is as easy as attaching your garden hose to a spigot.

✓ **Sinks, Tubs**

Make sure all faucets and spray hoses are above the flood rim for your sinks in the bathroom and kitchen. Make sure when filling sinks and tubs an air gap is between the end of the faucet and the water line. Without an air gap the contents may be back-siphoned into the line during a loss of pressure. Be sure to return kitchen sink sprayer to its resting place after use.

✓ **Toilets**

Toilets need water to flush the waste material to the sewer system. The water that flushes the toilet enters the tank at the bottom through a small hose. The float valve (or anti-siphon ballcock) inside the tank should be the correct type so that the contents of the tank does not get back into the drinking water in your home. Proper installation for the refill tube and float valve is above the water level in the tank.

✓ **Boilers**

Pressure may build up inside the boiler. The water pressure in the boiler may exceed the pressure of the water feeding the boiler. This could cause a back-pressure situation and push the water into the water supply. Installing a backflow preventer with an intermediate vent will protect against back- pressure and back-siphonage and can be used under continuous pressure.

✓ **Washing machine**

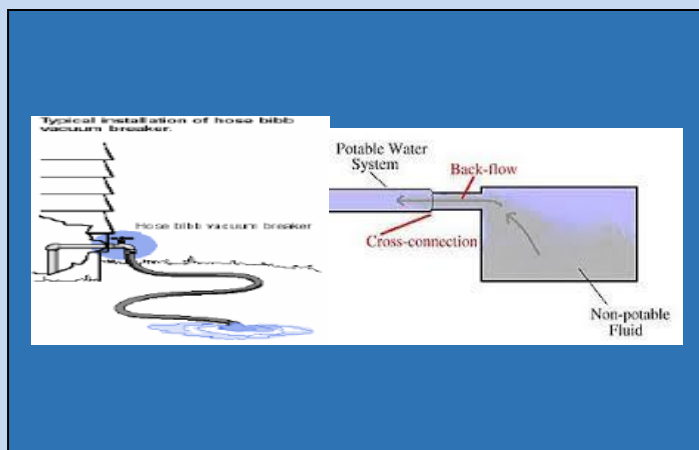
The washing machine has a built in air gap from the factory. However you can install a single lever shutoff valve that shuts off both the hot and cold water to prevent flooding if one of the hoses breaks.

✓ **Water heater**

Thermal expansion occurs whenever water is heated. The backflow preventer stops the expanded water from returning to the water supply. Since the water cannot be compressed, the expanded water volume can cause a rapid increase in pressure in the piping and will often exceed the temperature setting and pressure relief valve. Installing an atmospheric vacuum breaker and a thermal expansion tank will help absorb the thermal expansion and maintain a balanced system pressure. Your system should be checked at least once every three years to ensure safe operation.

This combined cooperative effort between the Town of Rowley and customers will help ensure your water supply is protected in the distribution system and ultimately in residential homes and businesses. Remember you should contact a licensed plumber for installation of the devices.

For more information on cross connection backflow prevention contact MaryBeth Wisser, Water Superintendent @ 978-948-2640 x201. You can also visit the following websites:



- <http://www.epa.gov/safewater/crossconnection.html>
- <http://www.awwa.org>
- <http://www.usc.edu/dept/fccchr/beta/foundation.html>
- <http://www.dep.us.gov>

SENSITIVE POPULATIONS: 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 at (800) 426-4791.

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 Town’s public water system 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>.

Contaminant	Date(s) Collected	Highest Result Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Lead and Copper							
Lead (ppb)	11/2014		15	0	40	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	11/2014		1.3	1.3	40	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

MANGANESE: is a naturally occurring mineral found in rocks, soil and groundwater, and surface 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 United States Environmental Protection Agency (EPA) and Mass DEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (micrograms per liter), or 50 parts per billion. In addition, Mass DEP’s Office of Research and Standards (ORS) has set a drinking water guideline for manganese (ORSG), which closely follows the EPA public health advisory for manganese. ***Drinking water may naturally have manganese and, when concentrations are greater than 50 µg/l, the water may be discolored and taste bad. Over a lifetime, the EPA recommends that people drink water with manganese levels less than 300 µg/l and over the short term, EPA recommends that people limit their consumption of water with 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. The ORSG differs from the EPA’s health advisory because it expands the age group to which a lower manganese concentration applies from children less than 6 months of age to children up to 1 year of age to address concerns about children’s susceptibility to manganese toxicity.***

Secondary Contaminant	Date Collected	Average Detected	Result or Range Detected	SMCL	ORSG or Health Advisory	Possible Sources
Manganese (ppb)	1/9/14	0.65	0-0.65	50	300*	Erosion of natural deposits

See: EPA Drinking Water Health Advisory for Manganese and Mass DEP Office of Research and Standards Guideline (ORSG) for Manganese

http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf
<http://www.mass.gov/eea/agencies/massdep/water/drinking/manganese-in-drinking-water.html>

SODIUM: Sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled. Rowley's water has an Ave. of 100mg/l.

UNREGULATED CONTAMINANTS are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted. US EPA has established a lifetime health advisory (HA) value of 300 ppb for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1000

HARDNESS: Hardness in drinking water is defined as those minerals that dissolve in water having a positive electrical charge. The presence or absence of the hardness minerals in drinking water is not known to pose a health risk to users. Hardness is normally considered an aesthetic water quality factor. The presence of some dissolved mineral material in drinking water is typically what gives the water its characteristic and pleasant taste. The town of Rowley has hardness of 71-100mg/l or 4.0 -5.0 grains per gallon. For more information visit www.epa.gov **Hardness creates the following consumer problems:**

- Produces soap scum most noticeable on tubs and showers.
- Produces white mineral deposits on dishes more noticeable on clear glassware.
- Reduces the efficiency of devices that heat water. As hardness deposits build in thickness, they act like insulation, reducing the efficiency of heat transfer.

Categorizing Hardness

Soft water	0-50
Moderately hard water	51-100
Hard water	101-150
Very hard water	151 and up

PHARMACEUTICALS AND PERSONAL CARE PRODUCTS were first called "PPCPs" only a few years ago, but these bioactive chemicals (substances that have an effect on living tissue) have been around for decades. Their effect on the environment is now recognized as an important area of research. Some PPCPs are easily broken down and processed by the human body or degrade quickly in the environment, but others are not easily broken down and processed, so they enter septic systems and sewers. PPCPs dissolve easily and don't evaporate at normal temperatures or pressure, PPCPs make their way into the soil and into aquatic environments via sewage, treated sewage sludge (biosolids), and irrigation with reclaimed water. **DO NOT FLUSH DOWN SINK OR TOILET** The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. For disposal of non-liquid medications, call your local pharmacy where you bought them.

Sources of PPCPs:

- ❖ Human activity
- ❖ Residues from pharmaceutical manufacturing
- ❖ Residues from hospitals
- ❖ Illicit drugs
- ❖ Veterinary drug use, especially antibiotics and steroids

PPCPs:

- ❖ Prescription and over-the counter drugs
- ❖ Veterinary drugs
- ❖ Fragrances
- ❖ Cosmetics
- ❖ Sun-screen products
- ❖ Diagnostic agents
- ❖ Nutraceuticals (e.g., vitamins)

SUGGESTED WATER QUALITY TESTING FOR PRIVATE WELLS: If you have a private well, then water quality testing should be important to you and your family. Some contaminants in drinking water have been linked to cancer and toxicity, posing a risk to human health. Many contaminants often have no taste, odor, or color. Their presence can only be determined by laboratory testing. Well water originates as rain and snow that then filters into the ground. As it soaks through the soil, the water can dissolve materials that are present on or in the ground, becoming contaminated. Some contaminants are naturally occurring in soil and rock. These include contaminants such as bacteria, radon, arsenic, uranium, and other minerals. Other contaminants find their way onto the land from human activities. Industrial and commercial activities, improper waste disposal, road salting, and fuel spills can introduce hazardous substances to the ground. However, even typical residential activities, such as the use of fertilizers and pesticides, fueling of lawn equipment, and disposal of household chemicals, can contaminate the ground when done improperly. That is why taking measures to protect your well from contamination is so important. For more information visit www.epa.gov

Annual	Every 3 to 5 years
Arsenic	Radon
Bacteria	Uranium
Chloride	Gross Alpha
Copper	Volatile organic compounds (VOCs)
Hardness	
Iron	
Lead	
Manganese	
Nitrate/Nitrite	
pH	
Sodium	



Radon: is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will be (in most cases) a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries of radon per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call Mass DEP radon program or call EPA's Radon Hotline, 800.SOS.RADON."

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. 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.)



The Pall membranes are a form of water treatment that uses hollow-fiber microfiltration or ultrafiltration membrane technology to produce pure water from any water source. The Pall filters remove bacteria, protozoan cysts, viruses, iron, manganese, arsenic, and other solid particulate to deliver water that consistently measures up to even the toughest standards.

2014 WATER QUALITY TEST RESULTS

WHAT DOES THIS DATA REPRESENT? The water quality information presented in the table is from the most recent round of testing done in accordance with the MASS DEP regulations. All data shown was collected during the last calendar year unless otherwise noted in the tables.

Contaminant	Date(s) Collected	Highest Result Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Arsenic (ppb)	4/25/14	4.4	0.0-4.4	10	-----	NO	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	4/25/14	0.018	0.0064-0.018	2	2	NO	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Nitrate (ppm)	5/5/14	1.00	0.21-1.00	10	10	NO	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Organic Contaminants							
Bromodichloromethane (ppb)	1/9/14	9.2	5.3-9.2	---	---	---	By-product of drinking water chlorination
Bromoform (ppb)	1/9/14	5.7	4.0-5.7	---	---	---	By-product of drinking water chlorination
Chlorodibromomethane (ppb)	1/9/14	0.51	0-0.51	---	---	---	By-product of drinking water chlorination
Chloroform (ppb)	1/9/14	1.5	0-1.5	---	---	---	By-product of drinking water chlorination
Secondary Contaminants							
Chloride (ppm)	1/9/14	180	8-180	250	---	---	Runoff from road de-icing, use of inorganic fertilizers, landfill leachates, septic tank effluents, animal feeds, industrial effluents, irrigation drainage, and seawater intrusion in coastal areas
Iron (ppb)	1/9/14	0.35	0-0.35	0.30	---	---	Naturally occurring, corrosion of cast iron pipes
Sodium (ppm)	2/21/14	124	16.7-124	---	---	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	1/9/14	15	15-15	250	---	---	Natural sources

ABBREVIATIONS:

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.

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.

ppm = parts per million, or milligrams per liter (mg/l) **ppb** = parts per billion, or micrograms per liter (ug/l)

pCi/L = picocuries per liter (a measure of radioactivity)

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

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.

ND = Not Detected

N/A = Not Applicable

TT = treatment technique