

FOXBOROUGH WATER AND SEWER DEPARTMENT, TOWN OF FOXBOROUGH, MASSACHUSETTS
2017 ANNUAL DRINKING WATER QUALITY REPORT
DEP PWS ID#: 4099000

This report is required under the Federal Safe Drinking Water Act. The Foxborough Water and Sewer Department prepared this report.

I. PUBLIC WATER SYSTEM INFORMATION

Address: 70 Elm Street, Foxborough, MA 02035
Contact Person: Robert Worthley
Telephone #: (508) 543-1209

Internet Address:
www.foxboroughma.gov/Pages/FoxboroughMA_Water/index
Fax #: (508) 543-1227

We encourage public interest and participation in our community's decisions affecting drinking water. Regular Board meetings occur at least once a month. The public is welcome. Please call the office to obtain specific dates and times of meetings.

Water System Improvements

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP) 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 certified operators who oversee the routine operations of our system. As part of our ongoing commitment to you, last year we made several improvements to our system. The most significant improvements included the completion of a pipeline at Station #2 which provides 4 log removal of viruses. This addition was instrumental in preventing bacterial contamination of our system. Another milestone has been the amount of work that has gone into the designing and permitting of the Chestnut St. Water Treatment Plant. This facility will be a major part of the long-term solution to providing clean water to the community. We will continue with the installation of radio read meters, and the cleaning and reconditioning of wells. The Foxborough Water Department will continue the water saving rebate program that allows residents with older 5-to 8-gallon flush toilets to change to water-saving 1.28-gallon or lower per flush toilets. Residents who wish to participate in the program must show proof of installation and will then receive a \$100 refund from the Town of Foxborough Water Department. A \$75 rebate is offered for washing machines with an Energy Star water factor of 4.0 or less. Rain barrels can help conserve water for outside watering needs, and are available at a discounted rate. Please contact the Water Department for details.

The last Sanitary Survey was completed by the MassDEP in May 2018.

2. YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?

The Town of Foxborough is supplied solely from groundwater sources which are located in the Boston Harbor, Ten Mile River and Taunton River Basins. Water is pumped from 13 gravel-packed wells located in six different well fields throughout the Town of Foxborough. There is also a small section of town that is supplied by Mansfield, due to the location of water mains. In addition, there are also emergency connections with the Towns of Mansfield, Plainville, Sharon, Walpole and Wrentham.

Station 1:	Boston Harbor River Basin (01G,02G)	Station 4:	Taunton River Basin (12G)
Station 2:	Taunton River Basin (04G, 05G, 06G)	Station 5:	Boston Harbor River Basin (13G)
Station 3:	Taunton River Basin (07G, 08G, 09G, 10G)	Station 6:	Ten Mile River Basin (14G, 15G)

The Town of Foxborough in 1989 adopted a Water Resource Protection By-Law for protection of the Town's drinking water wells.

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants; a disinfectant is added to protect you against microbial contaminants, the water is treated to reduce lead and copper concentrations, and the water is filtered to reduce levels of iron and manganese.

MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply sources 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. This ranking was assigned due to the presence of at least one high threat land use within the water supply protection area that could be a source of potential contamination by microbiological pathogens and chemicals. The Water Department also completed the Vulnerability Analysis and Emergency Response Plan Study. For further information, please contact the Water Department.

Where Can I See The SWAP Report?

The complete SWAP report is available at the Water Department's website at http://www.foxboroughma.gov/Pages/FoxboroughMA_Water/SWAP.pdf. For more information, call Bob Worthley at (508) 543-1209.

Residents can help protect sources by:

Practicing good septic system maintenance; taking hazardous household chemicals to hazardous materials collection days; and by limiting pesticide and fertilizer use.

3.**SUBSTANCES FOUND IN TAP WATER**

The 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, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which 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, U.S. Environmental Protection Agency (EPA) and MassDEP prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration (FDA) and Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

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 (1-800-426-4791).

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 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 appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

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 Foxborough 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>.

4.**IMPORTANT DEFINITIONS**

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

90th Percentile: Out of every 10 homes sampled, 9 were at or below this level. This number is compared to the action level to determine lead and copper compliance.

Level 1 Assessment: A Level 1 Assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

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 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 below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

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 = millirem per year (a measure of radiation absorbed by the body)

Office of Research and Standards Guideline (ORS): 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.

Running Annual Average (RAA): The average of four consecutive quarters of data.

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

5.**WATER QUALITY TESTING RESULTS****What Does This Data Represent?**

The water quality information presented in the tables is from the most recent round of testing done in accordance with the regulations. All results shown were from samples collected during the last calendar year unless otherwise noted in the tables. Only the detected contaminants are shown. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

MassDEP has reduced the monitoring requirements for inorganic contaminants for several wells, because these sources are not at risk of contamination. The last sample collected for inorganic contaminants for these wells was taken in 2009 and was found to meet all applicable EPA and MassDEP standards. Radioactive contaminants were sampled in 2012. In 2017, the Water Department voluntarily sampled additional school and childcare locations for lead and copper.

	Date(s) Collected	90 th Percentile	Action Level	MCLG	# of Sites Sampled	# of Sites above Action Level	Possible Source of Contamination
Lead (ppb)	2017	2	15	0	30	1	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2017	0.32	1.3	1.3	30	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

School/Childcare Sampling Locations sampled in 2017	Lead ppb	> Action Level	Copper ppm	> Action Level
212 Main ST- Classroom Sink	1	NO	0.29	NO
212 Main ST- Kitchen Sink	1	NO	0.26	NO
12 Gilmore St.- Upstairs Classroom Sink	7	NO	0.19	NO
12 Gilmore St.- Downstairs Kitchen Sink	2	NO	0.37	NO
242 South St. – Kitchen Sink	2	NO	0.25	NO
242 South St. – Pre School Sink	2	NO	0.33	NO
143 Green St. - Kitchen	2	NO	0.73	NO
143 Green St. - Bubbler	1	NO	1.02	NO
67 Mechanic St.-Kitchen	ND	NO	0.25	NO
67 Mechanic St.-Bubbler	ND	NO	0.23	NO

Regulated Contaminant	Date(s) Collected	Highest Detected Level	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Nitrate (ppm)	2017	3.88	1.11 – 3.88	10	10	NO	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Perchlorate	2017	0.08	0.08 – 0.4	2	N/A	NO	Rocket propellants, fireworks, munitions, flares, blasting agents
Radioactive Contaminants							
Gross Alpha (pCi/l)	2012	1.86	-0.881-1.86	15	0	NO	Erosion of natural deposits
Radium 226 + 228 (pCi/L)	2012	0.808	-0.235 – 0.808	5	0	NO	Erosion of natural deposits

Disinfectants and Disinfection By-Products							
Regulated Contaminant	Date Collected	Highest Running Annual Average*	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation	Possible Source of Contamination
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2017	45.6	14.3– 63.9	80	-----	NO	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Quarterly in 2017	19.6	2.1 – 27.1	60	-----	NO	Byproduct of drinking water chlorination
Chlorine (ppm) (free)	Monthly in 2017	AVG 0.65	0.00- 1.38	4	4	NO	Water additive used to control microbes

*Results represent the highest concentration upon which our system's compliance is based, not necessarily the highest concentration detected.

Unregulated and Secondary Contaminants *1	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Inorganic Contaminants						
Sodium (ppm) **2	2015	33.5 – 67.2	47.74	----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process

Other Organic Contaminants - When detected at treatment plant as VOC residuals, not TTHM compliance						
Bromodichloromethane (ppb)	2017	2 – 3.9	2.95	---	---	By-product of drinking water chlorination
Chloroform (ppb)	2017	0.6 – 3.5	1.84	---	---	By-product of drinking water chlorination
Chlorodibromomethane (ppb)	2017	0.7 – 2.3	1.63	---	---	By-product of drinking water chlorination

Secondary Contaminants ***3						
Manganese (ppb)	2017	ND – 515	140	50	Health Advisory of 300 ppb	Erosion of natural deposits

UCMR 3	Year	Range	Average
1,4-dioxane (ppb)	2014	nd - 0.14	0.045
Chlorate (ppb)	2014	88 - 1000	289.21
Chloromethane (ppb)	2014	nd - 1.3	0.1083
chromium (total) (ppb)	2014	nd - 0.2	0.025
chromium-6 (ppb)	2014	nd - 0.17	0.0825
Cobalt (ppb)	2014	nd - 8.1	0.4208
Strontium (ppb)	2014	69 - 210	114.21
Vanadium (ppb)	2014	nd - 2.3	0.1208

*1 *Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted. These samples above were collected in 2014 as part of Third Unregulated Contaminant Rule. The complete table of results is available at http://www.foxboroughma.gov/Pages/FoxboroughMA_Water/UCMR3%2006.16.16.pdf If there are any questions, please contact Robert Worthley, at (508) 543-1209.*

**2. *The ORSG for sodium is 20ppm. Above this level, sodium sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the levels of sodium in their drinking water where exposures are carefully being controlled. Some people who drink water containing sodium at high concentrations for many years could experience an increase in blood pressure.*

***3. *The EPA has established a lifetime Health Advisory for manganese at 300 ppb and an acute Health Advisory at 1000 ppb.*

6. COMPLIANCE WITH DRINKING WATER REGULATIONS

Does My Drinking Water Meet Current Health Standards? Yes.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify any problems that were found during these assessments. During the past year, we were required to conduct one (1) Level 1 assessment. One (1) Level 1 assessment was completed. In addition, we were required to take two (2) corrective actions and we completed two (2) of these actions. We are now swabbing sample taps with alcohol prior to collecting the sample, and adding chlorine to our corrosion control phosphate.

7. EDUCATIONAL INFORMATION

Manganese is a naturally occurring mineral found in rocks, soil, 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 MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (microgram per liter), or 50 parts per billion. In addition, MassDEP'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 ppb, the water may be discolored and taste bad. Over a lifetime, the EPA recommends that people drink water with manganese levels less than 300 ppb and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ppb, primarily due to concerns about possible neurological effects. Children younger than one year old should not be given water with manganese concentrations over 300 ppb, nor should formula for infants be made with that water for more than a total of ten days throughout the year.*** 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 six months of age to children up to one year of age to address concerns about children's susceptibility to manganese toxicity. See EPA Drinking Water Health Advisory for manganese at:

https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_0.pdf and MassDEP Office of Research and Standards (ORS) for manganese <http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html#11>

To help alleviate the concerns with manganese, The Foxborough Water Department is removing iron and manganese by utilizing the Witch Pond and Oak Street Water Treatment Plants. Other sources are blended with the filtered water using the wells having the lowest manganese first, as needed, to meet seasonal demands. We are moving from the design to the bid phase of the Chestnut Street Water Treatment Plant, which will remove iron and manganese from the wells off Chestnut and Mechanic Streets. Treatment with a blended sodium phosphate is used for sequestration and corrosion control for the sources which are not currently filtered. Unidirectional flushing of the distribution system will continue to be conducted in the spring and fall, as weather permits, to remove sediments from the water mains.

Contamination from Cross Connection – Cross connections that could contaminate drinking water distribution lines are a major concern. A cross-connection occurs whenever the drinking water supply is or could be in contact with potential sources of pollution or contamination. Cross-connections exist in piping arrangements or equipment that allowed the drinking water to come in contact with non-potable liquids, solids or gases (hazardous to humans) in the event of a backflow.

Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by an equipment or system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (backpressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy water demand, causing the water to flow backward inside the water distribution system (backsiphonage). Backflow is a problem that many water consumers are unaware of; a problem that each and every water customer has a responsibility to help prevent.

Without the proper protection, something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact, over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards. They are:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bib vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with a backflow preventer.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.

We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow device. Each backflow device is tested and inspected according to the frequency specified by MassDEP based on the type of device to make sure that it is providing maximum protection. For more information, visit our Web site at:

http://www.foxboroughma.gov/Pages/FoxboroughMA_Water/Cross%20Connection%20Info%2006.13.2018.pdf

If you are an owner of a cross connection control device, you play a critical role in partnering with your local water system in keeping our water supply safe. By following the required annual or semiannual device testing mandated by the Cross Connection Control Regulations at 310 CMR 22.22, and keeping your device in good repair, you prevent contaminants from entering the water supply.

310 CMR 22.22 Sec. 13 (D)

Owners' Responsibility - Cross Connection Control Reduced Pressure Backflow Preventers and Double Check Valve Assemblies Testing and Repair Policy

In accordance with Drinking Water Regulations of MASS 310 CMR 22.22 Sec. 13 (D), all installations of reduced pressure backflow preventer assemblies shall be tested semi-annually by the supplier of water. In addition, double check valve assemblies shall be tested annually by the supplier of water. All tests must be conducted by a certified Backflow Prevention Device tester in accordance with the regulated test procedures. The result of these tests must be recorded on the Standard Inspection and Maintenance Report Form. This form must be completely filled out (including the cross connection ID# from the DEP permit), signed and dated by the owner and the certified tester. All copies of the Inspection and Maintenance Report Forms shall be maintained by the owner. The owner or owner's agent must maintain on the premises a spare parts kit and any special tools required for removal and reassembling of devices which are to be tested. The presence of these materials must be recorded on the Inspection and Maintenance Report Form. Devices failing a test or found defective shall be overhauled, repaired or replaced by a plumber of a mechanical fire sprinkler contractor. They must be licensed by the Commonwealth of Massachusetts and re-inspected within two weeks of the initial inspection date.

Office hours are Monday, Wednesday and Thursday 8:30 A.M. to 4:00 P.M.; Tuesday – 8:30 A.M. to 4:00 P.M. and 5:00 P.M. to 8:00 P.M. and Friday – 8:30 A.M. to 12:30 P.M. For water problems outside of normal hours, please call the Foxborough Police Department at (508) 543-1212.



Our Water Management Act Permit requires the Town of Foxborough to limit the amount of water used by our residential customers to 65 gallons per person per day. To meet this requirement, The Town of Foxborough must, per the permit, limit nonessential outdoor water use between May 1st and September 30th.

Effective May 1, 2018

WATERING WITH SPRINKLERS WILL BE PERMITTED AS FOLLOWS:

Odd-Numbered Homes – MONDAY and THURSDAY

Even-Numbered Homes –TUESDAY and FRIDAY

From 6:00 p.m. to 9:00 p.m. ONLY

Watering with handheld hoses is allowed every day before 9:00 a.m. and after 5:00 p.m.

Water Department
Town of Foxborough
70 Elm Street
Foxborough, MA 02035

PRSRT STD
U.S. Postage Paid
Foxboro, MA
Permit No. 9

**2017
Water Quality Report**

Postal Customer
Foxborough, MA 02035