



Town of Topsfield 2019 Water Quality Report

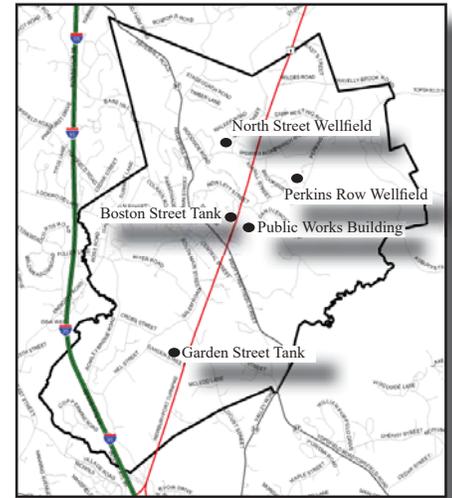
The Quality of Your Drinking Water

The Topsfield Water Department (PWS ID# 3298000) is committed to providing our customers with high quality drinking water that meets or surpasses state and federal standards for quality and safety. To ensure delivery of a quality product, we have made significant investments in treatment facilities, water quality monitoring and the distribution system. We are pleased to report the results of our calendar year 2019 water testing to inform you about your drinking water. Each year, we will be mailing you information about water quality. Results of more recent testing is available at <http://watertesting.topsfieldpublicworks.org>.

The new water treatment facility started treating all of our water on March 6, 2019. This report contains water quality data and other information for calendar year 2019. Some of the data pertains to early 2019, prior to the opening of the plant which may not be representative of our current water quality.

Any Questions?

Want to know more about the Topsfield water supply system or interested in participating in the decision making-process? Please call Greg Krom, Superintendent, at the Topsfield Water Department at (978) 887-1517 with any questions, comments or concerns. We are located at the Public Works Facility, 279 Boston Street. You can also email us at water@topsfield-ma.gov or visit our website: www.topsfieldpublicworks.org. Customers are encouraged to attend and participate in the Board of Water Commissioners meetings which occur the 2nd Wednesday of every month at the Public Works Facility. If you would like to receive email notifications about water supply events such as hydrant flushing, water bans or water quality topics then please visit our website to subscribe to our email list.



Topsfield's Water System

Our water system is supplied by two groundwater well fields and pumping stations located at North Street (3298000-01G) and Perkins Row (3298000-02G). The system has two water storage tanks and approximately 50 miles of water main piping. The new water treatment facility, located at the Public Works Facility (3298000-03G) started full operations on March 6, 2019.

Topsfield's Water Treatment

In order to meet state and federal requirements for public drinking water, our source water receives treatment before it is supplied to our customers. We treat our water by several methods including aeration, corrosion control, disinfection, iron & manganese removal, sequestration and fluoridation. *Aeration and iron & manganese removal (greensand filtration) were added in March 2019.*

Many drinking water sources in New England are naturally corrosive. So, the water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful metals, such as lead and copper, to the water. For this reason it is beneficial to make the water neutral or slightly alkaline. This is done by adding one, or a combination of several, approved chemicals. The Topsfield Water Department adds potassium hydroxide to its water and removes carbon dioxide through aeration. These methods adjust the water to a non-corrosive pH. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

All reservoirs and some groundwater sources contain numerous microorganisms, some of which can cause people to become sick. To eliminate disease-carrying organisms, it is necessary to disinfect the water. Disinfection does not sterilize the water; it removes harmful organisms. Sterilization is too costly and kills all organisms, even though most are not harmful. The Topsfield Water Department uses sodium hypochlorite as its primary disinfectant. Chlorine destroys organisms by penetrating cell walls and reacting with enzymes. Disinfection with chlorine has been proven effective at ensuring that water is free of harmful organisms and safe to drink.

Iron and Manganese are often present in groundwater at levels that can discolor the water, or cause it to take on an unpleasant odor or taste. Even though the water may still be safe to drink, treatment is often desirable. Treatment consists of removing iron & manganese via greensand filtration and adding an orthophosphate/polyphosphate blend to the water. This addition results in a chemical reaction, known as sequestration, which prevents the iron and manganese from forming nuisance particles. All chemicals used for sequestration are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International) or UL, both accredited by the American National Standards Institute (ANSI). Chemicals must also meet standards established by the American Water Works Association (AWWA).

In addition, fluoride is added to the water to promote strong, healthy teeth.

Water System Improvements

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (DEP). The DEP inspects our system for 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 a Massachusetts certified operator who oversees the routine operations of our system. As part of our ongoing commitment to you, last year we made the following investments in our system:

Water System Improvements (continued)

- Construction of the water treatment facility was completed in early 2019 and went online in March 2019. We noticed an immediate change in water quality throughout the distribution system. Manganese levels leaving the treatment plant and throughout most of the distribution system are below detectable limits. Disinfectant residuals are more consistent and durable and lead and copper levels are lower as well.

The Substances Found in Your Tap Water

In order to ensure that tap water is safe to drink, EPA, and MassDEP prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. FDA and Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health. 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 land's surface or through the ground, it dissolves naturally-occurring minerals and radioactive material, and can be polluted by animals or 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 distribution, 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.

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 (800-426-4791).

Is Our Water Safe for Everyone?

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/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 (800-426-4791).

Help To Protect Our Water Supply!

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) Report for our water supply sources. The SWAP report assesses the susceptibility of public water supplies. A copy of the SWAP report is available at the Public Works Facility. Our SWAP report has indicated that our groundwater is highly susceptible to contamination from residential activities adjacent to the wells; residential land uses; accidental spills from local roadways and Route 1; hazardous materials storage; existing contamination sites; auto repair shops and service stations; cemeteries; and agricultural activities. As a consumer, you have an impact on the quality of our water supply sources, and therefore, the quality of the water you drink. The land around our groundwater wells is mainly forested and residential with lesser amounts zoned as commercial. When rain falls or snow melts, the seemingly small amounts of chemicals and other pollutants around your property may be transferred by groundwater or overland flow to the wells.

Concerns about Lead in Drinking Water

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 Topsfield 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 the 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>.

Per- and Polyfluoroalkyl Substances (PFAS)

Many states, including Massachusetts, are taking steps to regulate PFAS in drinking water. USEPA required a cross section of water suppliers from across the country to test for six of these compounds in 2013-14. The tests conducted at our sources indicated concentrations were below detectable limits (20 parts per trillion for each compound). Improved testing methods and equipment over the years now allow labs to detect these compounds at much lower concentrations.

Although not required, preliminary tests for eighteen PFAS were taken during 2019. These tests were conducted due to the amount of time elapsed since the last round of tests, the lower detection limits for these compounds, and plans to regulate these compounds to previously undetectable concentrations. Some PFAS were detected and are shown in the results table below. Additional samples were taken in 2020 and we plan to regularly sample for these contaminants in the future. Please visit our water quality website, watertesting.topsfieldpublicworks.org, to view the latest test results.

Our system's reported PFAS results met regulations in effect during 2019 but the results warrant further testing and monitoring. If you are a sensitive consumer (pregnant women, nursing mothers, and infants) you can minimize your exposure by using bottled water that has been tested for PFAS for drinking, for making infant formula and cooking foods that absorb water. Please consult your health practitioner if you have any health related questions. For a consumer fact sheet on PFAS see <https://www.mass.gov/doc/massdep-fact-sheet-pfas-in-drinking-water-questions-and-answers-for-consumers/download>

Water Quality Summary

Listed below are the contaminants that were detected in Topsfield's drinking water or were detected in prior years and were not retested during 2019. *The presence of contaminants does not necessarily indicate that the water poses a health risk.* A complete listing of all tests conducted is available at visit <http://watertesting.topsfieldpublicworks.org>.

Samples Collected from Our Sources								
Substance	Units	Highest Level Detected	Range Detected	Highest Level Allowed (EPA's MCLs)	Ideal Goals EPA's)	OSRG	Possible Sources of Contaminant	Health Effects
INORGANIC CHEMICALS								
Barium	ppm	0.048	0.0106 - 0.0480	2	2	-	Erosion of natural deposits; runoff from orchards	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Copper	ppm	0.0033	ND - 0.0033	1.3	-	-	Erosion of natural deposits,	Please see Copper entry in Samples Taken From Your Faucets below.
Lead ¹	ppb	ND	ND	0.015	0	-	Erosion of natural deposits.	Please see Lead entry in Samples Taken From Your Faucets below.
Nitrate	ppm	2.31	2.31	10	10	-	Runoff from fertilizer use; leaching from septic systems; erosion of natural deposits.	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Strontium ¹	ppb	134.9	86- 134.9			1500	Naturally-occurring element; historically commercial use of strontium has been in the faceplate glass of cathode ray tube televisions to block x-ray emissions	Consuming high levels of strontium in drinking water could interfere with bone growth, especially in children and in individuals whose diet is low in calcium and protein.
RADIONUCLIDES								
Alpha Emitters ¹	pCi/L	0.0963	0.647 - 0.963	15	0	-	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years have an increased risk of getting cancer.
Combined Radium ¹	pCi/L	1.818	1.199 - 1.818	5	0	-	Erosion of natural deposits	Some people who drink water containing Radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
UNREGULATED CONTAMINANTS								
Substance	Units	Range Detected		Average Detected	Suggested MCL	OSRG	Possible Sources of Contaminant	Health Effects
Chlorate ¹	ppb	23.0 - 127.3		84.2	210	-	Agricultural defoliant or descant; disinfection byproduct; and used in production of chlorine dioxide	People exposed to high concentrations of chlorate in drinking water could experience effects on the thyroid, blood, and kidneys. Because it inhibits thyroid iodide uptake, people deficient in dietary iodide are most at risk of chlorate's thyroid effects, which in turn could impact fetal and neonatal development.
Manganese	ppb	ND - 72		4	50	300	Erosion of natural deposits	Infants and children who drink water containing manganese at high concentrations may have learning and behavior problems. People with liver disease who drink water containing manganese at high concentrations may have neurological disorders.
Nickel	ppb	ND - 1.3		0.7	-	100	Discharge from domestic wastewater, landfills, and mining and smelting operations	Some people who drink water containing nickel at high concentrations for many years could experience effects on the lung, stomach, blood, liver, kidneys, immune system, reproduction and development.
Sodium ^{2,3}	ppm	36 - 45.3		39.7	20	-	Naturally present in the environment	Some people who drink water containing sodium at high concentrations for many years could experience an increase in blood pressure.
Sulfate ¹	ppm	11.4 - 18.9		18.9	250	-	Natural sources	Some people who drink water containing sulfate at high concentrations for many years could experience diarrhea.

Samples Collected from Our Sources							
PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)							
Substance	Units	Range Detected	Average Detected	USEPA Health Advisory	OSRG MCL	Possible Sources of Contaminant	Health Effects
Perfluorobutanesulfonic Acid (PFBS)	ppt	2.34 - 2.95	2.645	-	-	Man-made chemical; used in products to make them stain, grease, heat and water resistant.	Based on studies of laboratory animals, people exposed to elevated levels of PFBS for several years could experience effects on the liver, blood and kidneys. Various lines of evidence indicate PFBS is less toxic than other PFAS considered here.
Perfluoroheptanoic Acid (PFHpA)	ppt	2.06 - 3.55	2.805	-	-	Man-made chemical; used in products to make them stain, grease, heat and water resistant.	Although PFHpA has not been well studied, it is chemically very similar to PFOA and the other perfluorinated compounds considered here and may cause similar effects.
Perfluorohexanoic Acid (PFHxA)	ppt	3.88 - 5.59	4.485	-	-	Directly emitted to the environment or are formed indirectly from the environmental degradation or metabolism of precursor substances. Some are or have been used in a wide variety of industrial and consumer applications.	Not well studied. Insufficient information to assess effects but maybe similar to those of PFOS and PFOA. Potencies may differ.
Perfluorooctanesulfonic Acid (PFOS)	ppt	4.48 - 7.21	5.845	-	--	Surfactant or emulsifier; used in fire-fighting foam, circuit board etching acids, alkaline cleaners, floor polish, and as a pesticide active ingredient for insect bait traps; U.S. manufacture of PFOS was phased out in 2002; however, PFOS may be still generated incidentally or in imported products	Studies in laboratory animals indicate that exposures to elevated levels of PFOS may adversely affect the immune system, liver, thyroid and fetal development. Elevated rates of some types of cancer have been reported in some studies. Scientists are working to better understand the degree of risk to people.
Perfluorooctanoic Acid (PFOA)	ppt	ND - 7.6	3.8	-	-	Perfluorinated aliphatic carboxylic acid; used for its emulsifier and surfactant properties in or as fluoropolymers (such as Teflon), fire-fighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films	Long-term exposure to PFOA in drinking water may affect the liver and elevate cholesterol levels. Studies on laboratory animals exposed to PFOA have raised concerns about potential effects on development, including breast development, and on cancer risk. Scientists are working to better understand the degree of risk to people.
Total of PFOS & PFOA (EPA)	ppt	12.08 - 20.8	16.44	70	-	This is a health advisory set by the USEPA for the summed total of PFOS and PFOA.	
Total of PFOS, PFOA, PFHxS, PFNA, and PFHpA (MassDEP 2019 Rule)	ppt	14.14 - 24.36	19.25	-	70	Discharges and emissions from industrial and manufacturing sources associated with the production of these PFAs, including production of moisture and oil resistant coatings on fabrics and other materials. Additional sources include the use and disposal of products containing these PFAs such as fire-fighting foams.	Some people who drink water containing these PFAs in excess of the MCL may experience certain adverse health effects. These could include effects on the liver, blood, immune system, thyroid, and fetal development. These PFAs may also elevate the risk of certain cancers.
Those listed above plus PFDA (Mass-DEP 2020 Rule)						20	

Samples Collected from Your Faucets							
Substance	Units	Highest Level Detected	Range Detected	Highest Level Allowed (EPA's MCLs)	Ideal Goals (EPA's MC-LGs)	Possible Sources of Contaminant	Health Effects
MICROBIOLOGY							
Total Coliform Bacteria (Highest number detected per month)		1	0 - 1	1	0	Naturally present in the environment	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.
Fecal Coliform Bacteria (Highest number detected per month)		0	0	0	0	Human and animal fecal waste	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and the people with severely compromised immune systems.
INORGANIC CHEMICALS							
Fluoride	ppm	0.9	0.6 - 0.9	4 (MRDL)	4	Water additive which promotes strong teeth.	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.
DISINFECTION BY-PRODUCTS							
TTHMs - Total Tri-Halomethanes	ppb	37.7	24.6 - 37.7	80	-	By-product of drinking water chlorination.	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
Haloacetic Acids (HAA5)	ppb	ND	ND	60	-		Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
DISINFECTANT							
Substance	Units	Highest Quarterly Average	Range Detected	MRDL	MRDLG	Possible Sources of Contaminant	Health Effects
Free Chlorine	mg/L	0.28	0.11 - 0.28	4	4	Water additive to inactivate harmful organisms.	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects in their eyes and nose.
LEAD & COPPER							
Substance	Units	90th Percentile	Range Detected	Action Level (EPA's MCLs)	Ideal Goals (EPA's MC-LGs)	Possible Sources of Contaminant	Health Effects
Copper (0 samples exceeded action level)	ppm	0.1180	0.0192 - 0.1240	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
Lead (0 sample exceeded action level)	ppb						

Samples Collected from Your Faucets						
Substance	Units	Highest Level Detected	Range Detected	OSRG	Possible Sources of Contaminant	Health Effects
UNREGULATED CONTAMINANTS						
Bromodichloromethane	ppb	9.17	6.75 - 9.17	-	Trihalomethane; by-product of drinking water chlorination	Some people who drink water containing bromodichloromethane at high concentrations for many years could experience liver and kidney problems
Bromoform	ppb	4.49	3.53 - 4.49	-	Trihalomethane; by-product of drinking water chlorination	Some people who drink water containing bromoform at high concentrations for many years could experience liver and kidney problems
Chloroform	ppb	12.6	3.9 - 12.6	70	Trihalomethane; by-product of drinking water chlorination	Some people who drink water containing chloroform at high concentrations for many years could experience liver and kidney problems and may have an increased risk of cancer.
Dibromochloromethane	ppb	12.8	10.4 - 12.8	-	Trihalomethane; by-product of drinking water chlorination	Some people who drink water containing dibromochloromethane at high concentrations for many years could experience liver and kidney problems

Definitions

Maximum Contaminant Level (MCL) - This is 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 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 or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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

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

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

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.

Unregulated Contaminant - Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulations are warranted.

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

ppm - One part of contaminant per million parts of water.

ppb - One part of contaminant per billion parts of water.

ppt - One part of contaminant per trillion parts of water.

UR - Unregulated contaminant

ND - Substance not detected in the sample

pCi/L - Picocuries per liter is a measure of the radioactivity in water.

Notes:

- 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.
- Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.
- The Massachusetts Office of Research and Standards has set a guideline of 20 ppm for sodium.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Monitoring Requirements Not Met for Topsfield Water Department

Chemical Application Reports Submitted Late

Water treatment chemicals are added to our water to improve water quality and allow us to meet drinking water regulations. Chemical addition requires many safeguards and regular testing to ensure the proper dosage is maintained. In addition to the safeguards and regular testing, we are required to submit monthly reports to the Massachusetts Department of Environmental Protection documenting how much water was withdrawn, the amount of chemical added, the dosage, and any water quality tests conducted. The report is due on the 10th day of the following month. The reports for October 2018 through January 2019 were submitted late.

Monitoring Violation

Our water system violated a drinking water regulation during June 2019. Even though this was not emergency, as our customers, you have a right to know what happened and what we did to correct this situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During June 2019 we had a positive Total Coliform Bacteria test in the distribution system and conducted follow-up testing in the distribution system. However, we did not simultaneously test our water sources for Enterococci as required by the Groundwater Rule and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant we did not properly test for during June 2019, how often we are supposed to sample for Enterococci and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were taken.

Contaminant	Required sampling frequency	Number of samples taken	When all should have been taken	When samples were taken
Enterococci	Test water sources when distribution or plant sample tests positive for Total Coliform Bacteria	0	June 6, 2019	June 11, 2019

What happened? What is being done?

We routinely test six to eight sites in the distribution system for Total Coliform Bacteria. In June 2019, one of these tests came back positive for Total Coliform and negative for E. coli. The site was retested along with sites immediately upstream and downstream to see if it was an isolated incident or the first indication of a larger problem. All of tests were negative for Total Coliform. We were in violation of the Groundwater Rule because our source water should have been tested for Enterococci bacteria at the same time.

As a result of this violation, our sampling procedures have changed. Source water bacteria samples are now collected on the same day as distribution samples. If a distribution site tests positive, the water source test results are already in hand thereby satisfying the testing requirement. Additional source water testing would be required if a source tested positive.

For more information, please contact Gregory Krom, Water Superintendent, at (978) 887-1517, gkrom@topsfield-ma.gov or at Topsfield Water Department, 279 Boston Street, Topsfield, MA 01983.

Topsfield Water Department

Cross Connection Control Program

The Topsfield Water Department makes every effort to ensure that the water delivered to your home and business is clean and safe. Our staff works very hard to protect the quality of the water delivered to our customers from the time the water is extracted from the wells until it exits the distribution system. But what happens when the water reaches your home or business? Is there still a need to protect the water quality from contamination caused by a cross-connection? If so, how?

What is a cross-connection?

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 allows the drinking water to come in contact with non-potable liquids, solids or gases (hazardous to humans), or unapproved water sources such as a private wells. Contaminated water can be drawn into the potable water system during a backflow event.

What is a backflow?

Backflow is the undesired reversal of water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by equipment or system such as a boiler or air-conditioning unit 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.

What can I do to help prevent a cross-connection?

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 on 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.

If you are the owner or manager of a property that is being used as a commercial, industrial or institutional facility you must have your property's plumbing system surveyed for cross-connections by a licensed cross connection control surveyor. If your *non-residential property* has not been surveyed for cross-connection contact the Topsfield Water Department to schedule a free cross-connection survey.

Why am I receiving this information?

The Massachusetts Drinking Water Regulations, 310 CMR 22.00, requires all public water systems to have an approved and fully implemented Cross Connection Control Program (CCCP). The Topsfield Water Department is working to protect the public health of its drinking water customers from the hazards posed by unprotected cross-connections through the implementation of its cross-connection control program. Providing customers with information about cross connections, including the publication of this brochure, is a required component of our cross connection control plan.

Where can I learn more?

More information about our program can be found on our website, www.topsfieldpublicworks.org, or by contacting Greg Krom at (978) 887-1517 or gkrom@topsfield-ma.gov.

