



Town of Franklin, Massachusetts 2019 Drinking Water Report

This report describes Franklin's drinking water sources and treated water quality for the calendar year 2019, and programs that protect the high quality of our water supply. This publication is mandated by the federal public right-to-know regulation requiring community water suppliers to provide specific treated water quality information annually to their customers. This report includes additional information beyond the minimum federal requirements in order to respond to typical questions our customers ask about Franklin's water system.

Important Information About Drinking Water

All sources of drinking water (both tap water and bottled water) including rivers, lakes, streams, ponds, reservoirs, springs, and wells, contain some naturally occurring contaminants or substances. Because water is the universal solvent, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animal and human activity.

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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

Removing all contaminants would be extremely expensive and in nearly all cases would not provide greater protection of health. To ensure that your water is safe to drink, the Massachusetts Department of Environmental Protection (MassDEP) and the EPA regulates the allowable amount of certain contaminants in the water provided by public water systems. The Food and Drug Administration and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health. This report provides you with information about the contaminants found naturally in your drinking water, the levels at which they are found, and the likely source of each contaminant.

Contaminants that can be present include:

- **Microbial contaminants**, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- **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.
- **Organic chemical contaminants**, including 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**, that can be naturally-occurring or be the result of oil and gas production and mining activities.

Water Leak Detection Survey

A leak detection survey was performed by Conservation Technologies, Inc. on the entire Franklin water distribution system between October 29, 2019 and December 6, 2019. This survey covered 158 miles of distribution mains and detected 14 leaks. The estimated volume of losses from all of these leaks was 1,732,000 gallons.

Lead Information

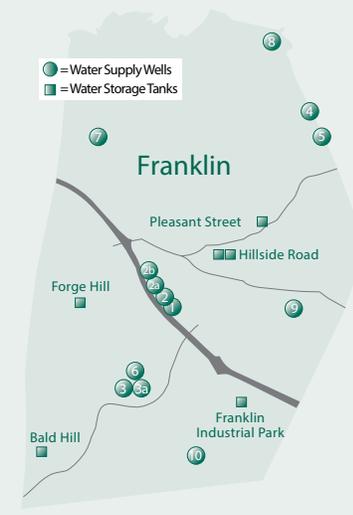
Since the inception of Franklin's corrosion control program in the early 1990s, lead and copper levels have remained well below the EPA action levels (AL). As shown in the table on page 2, the most recent round of testing found lead levels ranging from non-detect to 3 parts per billion (ppb) (AL=15 ppb) and copper levels ranging from 0.04 to 0.47 parts per million (ppm) (AL=1.3 ppm). 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 Franklin Department of Public Works Water Division 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 drinking 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 epa.gov/safewater/lead

Franklin's Water Sources

Currently the Town of Franklin obtains its drinking water from 13 groundwater supply wells. In recent years this supply has been unable to meet peak water demands due to rapid growth and development in Franklin as well as declining water quality and capacity in some of our wells. As a result, and as required by our water withdrawal permit, annual water usage restrictions have been implemented during the spring and summer months. Franklin's water mains have interconnections with Bellingham, Medway, Wrentham, and Norfolk. In the event of an emergency, Franklin could utilize these interconnections to maintain water pressure throughout the distribution system.

In addition to the 13 active water supply wells, the Town operates 6 booster pumping stations, 6 water storage tanks, 2,000 hydrants, 158 miles of water main and approximately 9,000 water services.



Well #	Location	Source ID #
1	Hayward St.	2101000-01G
2	Hayward St.	2101000-02G
2a	Hayward St.	2101000-011G
2b	Hayward St.	2101000-012G
3	Grove St.	2101000-03G
3a	Grove St.	2101000-13G
4	Miller St.	2101000-04G
5	Miller St.	2101000-05G
6	Grove St.	2101000-06G
7	Elizabeth Ave.	2101000-07G
8	Populatic St.	2101000-08G
9	East Central St.	2101000-09G
10	Vine St.	2101000-10G

Customer Views Welcome

If you have any questions about this report or are interested in learning more about Franklin's water supply system, water quality, and other related information, please contact Robert Cantoreggi, Director of Public Works at 508-520-4910. You may also attend the Town Council meetings, which are held two times per month on the second floor of the Municipal Building. **For more information about the Town Council meetings, visit: franklinma.gov/town-council**

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Franklin Water Meets All Safety and Health Standards

We test our water regularly through a certified laboratory. During 2019 we collected thousands of water samples in the system that were then tested for compliance with federal and state health standards both at the source and throughout the distribution system. State and federal regulators routinely monitor our compliance and testing protocols to assure that we deliver safe drinking water to our customers.

2019 Treated Water Quality Data

Listed below are 36 substances detected in Franklin's drinking water during 2019. Also listed are parameters that were not tested in 2019 as a result of a monitoring waiver, but are required to be reported until the next round of testing is performed. In addition, not listed are more than 98 other substances for which we tested that were not detected during 2019.

Substance	Highest Detected Levels	Range of Detected Levels	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Source of Contamination
Regulated After Treatment					
Barium ¹	0.1 ppm	ND – 0.1 ppm	2 ppm	2 ppm	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride ²	0.8 ppm	0.16 – 0.8 ppm	4 ppm	4 ppm	Water additive which promotes strong teeth
Gross Alpha ³	2.2 pCi/L	0.52 – 2.2 pCi/L	15 pCi/L	0	Erosion of natural deposits
Nitrate	4.62 ppm	0.40 – 4.62 ppm	10 ppm	10 ppm	Runoff from fertilizer use; Leaching from septic systems; Erosion of natural deposits
Perchlorate	0.46 ppb	0.07 – 0.46 ppb	2 ppb	NA	Rocket propellants, fireworks, munitions, flares, blasting agents
Radium ¹	1.38 pCi/L	1.20 – 1.38 pCi/L	5.0 pCi/L	0	Erosion of natural deposits
Regulated in the Distribution System					
Chlorine (free)	0.30 ppm ⁴	ND – 2.6 ppm ⁵	4 ppm (MRDL)	4 ppm (MRDLG)	Water additive used to control microbes
Haloacetic Acids	8.7 ppb	0.72 – 8.7 ppb	60 ppb	NA	By-product of drinking water chlorination
Total Trihalomethanes	41 ppb	30 – 41 ppb	80 ppb	NA	By-product of drinking water disinfection
Regulated at the Customer's Tap					
Lead ⁶	3 ppb ⁷	ND – 3 ppb	AL = 15 ppb	0	Corrosion of household plumbing systems
Copper ⁶	0.41 ppm ⁷	0.04 – 0.47 ppm	AL = 1.3 ppm	1.3 ppm	Corrosion of household plumbing systems

Fecal Indicator	Result	Range	MCL	MCLG	Violation (Y/N)	Possible Sources of Contamination
Regulated in the Groundwater Source Water						
E. coli (in groundwater source) ⁸	1 positive sample	ND – 1	0	0	No	Human and animal fecal waste

Substance	Result of Range Detected	Average Detected	SMCL	Noticeable Aesthetic Effects Above the SMCL
Secondary Contaminants				
Aluminum	ND – 70 ppb	17 ppb	50 ppb	Colored water
Chloride	34.4 – 214 ppm	103 ppm	250 ppm	Salty taste
Color	ND – 5 CU	3 CU	15 CU	May produce a visible tint
Copper	ND – 0.03 ppm	0.02 ppm	1 ppm	Metallic taste; blue-green staining
Iron	20 – 780 ppb	130 ppb	300 ppb	Taste and deposition on plumbing fixtures
Manganese ⁹	ND – 363 ppb	47 ppb	50 ppb	Taste and deposition on plumbing fixtures
Odor	ND – 5 TON	4 TON	3 TON	"Rotten-egg", musty or chemical smell
Sulfate	9.34 – 15.9 ppm	12.4 ppm	250 ppm	Salty taste
Total Dissolved Solids (TDS)	140 – 500 ppm	293 ppm	500 ppm	Metallic taste
Zinc	ND – 0.007 ppm	0.006 ppm	5 ppm	Hardness; deposits; colored water; staining; salty taste

Substance	Date Collected	Average Annual Results	Range of Detected Levels	Sources of Contamination
Unregulated Contaminants¹⁰				
Calcium	Various	11.2 ppm	5.08 – 16.5 ppm	Erosion of natural deposits
Bromodichloromethane ¹¹	1/29/19	600 ppt	No range, single sample	By-product of drinking water disinfection
Bromoform ¹¹	1/29/19	1.0 ppb	No range, single sample	By-product of drinking water disinfection
Chlorodibromomethane ¹¹	01/29/2019 and 03/28/2019	0.8 ppb	0.5 – 1.3 ppb	By-product of drinking water disinfection
Chloroform ¹¹	01/29/2019 and 03/28/2019	0.8 ppb	0.6 – 1.0 ppb	By-product of drinking water disinfection
Hardness	Various	39.4 ppm	17.2 – 55.5 ppm	Erosion of natural deposits
Magnesium	Various	2.72 ppm	1.10 – 4.11 ppm	Erosion of natural deposits
Potassium	Various	34.7 ppm	20.1 – 53.6 ppm	Erosion of natural deposits
Sodium ^{3, 12}	Various	78.8 ppm	32.7 – 143 ppm	Erosion of natural deposits
UCMR4¹⁰				
HAA6Br	11/14/19	2.58 ppb	1.97 – 3.20 ppb	By-product of drinking water disinfection
HAA9	11/14/19	3.59 ppb	2.33 – 4.85 ppb	By-product of drinking water disinfection

Terms and Abbreviations:

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

CU – Color Unit

MCL (Maximum Contaminant Level) – 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.

MCLG (Maximum Contaminant Level Goal) – 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.

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

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

SMCL (Secondary Maximum Contaminant Level) – Concentration limit for a contaminant which may have aesthetic effects such as taste, odor, or staining.

ND – Not detected

NA – Not available

pCi/L – Picocuries per liter is a measure of the radioactivity in water. A picocurie is 10-12 curies and is the quantity of radioactive material producing 2.22 nuclear transformations per minute.

ppb (Part Per Billion) – One part per billion is the equivalent of \$1 in \$1,000,000,000.

ppm (Part Per Million) – One part per million is the equivalent of \$1 in \$1,000,000.

ppt (Part Per Trillion) – One part per trillion is the equivalent of \$1 in \$1,000,000,000,000

TON – Threshold Odor Number

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

Footnotes:

1. Results from the most recent testing in 2018.
2. EPA's MCL for fluoride is 4 ppm. Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.
3. Results from the most recent testing in 2015.
4. The highest level detected is based on the average of four quarterly samples.
5. This range represents the individual results of all samples, rather than the averages.
6. Results from the most recent testing in 2017.
7. Level shown indicates the 90th percentile, which is used to determine compliance with the Lead and Copper Rule and must be below the AL.
8. On August 27, 2019, we sampled Well No. 3 for E. coli. On August 28, 2019, we were notified that Well No. 3 tested positive for E. coli. Well No. 3 had been shut down on August 27, 2019 for an unrelated matter, and was kept offline upon receipt of the E. coli result. Water from Well No. 3 is disinfected with chlorine and had a free chlorine residual of 0.52 mg/L at the time of positive bacteria result. In addition, all distribution system samples were negative from E. coli and other bacteria and had a detectable chlorine residual. Well No. 3 was isolated and 5 repeat samples taken which were free of E. coli at which time MassDEP lifted the Tier 1 Notification. Upon investigation by Water Department personnel, the suspected cause of the positive E. coli result was construction adjacent to Well No. 3 for a replacement well to supplement supply. Soil surrounding Well No. 3 had been disrupted and likely caused the bacteria infiltration to Well No. 3. As a result, Well No. 3 remained offline until construction was complete in October 2019.
9. EPA has established a lifetime health advisory (HA) of 300 ppb to protect against potential neurological effects, and 1-day and 10-day HA of 1.0 ppm for acute exposure. Manganese is naturally present in the environment.
10. Unregulated contaminants are those for which EPA has not established drinking water standards. UCMR4 contaminants are those for which EPA is determining their occurrence in drinking water and whether future regulation is warranted.
11. These contaminants are regulated as a group under Trihalomethanes, but not as an individual contaminant and therefore these results are listed under the unregulated contaminants.
12. The MassDEP Office of Research and Standards has set a guideline concentration of 20 ppm for sodium. Sodium sensitive individuals, such as those experience hypertension, kidney failure, or congestive heart disease, should be aware of the sodium levels where exposures are being carefully controlled.

Vulnerability

Some people may be more vulnerable to contaminants 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 provider. 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 800-426-4791.

Information on Fluoridation

Trace amounts of fluoride occur naturally in all water supplies. In many Massachusetts communities the fluoride level is adjusted to approximately 0.7 ppm so that it is optimal for better oral health. Over 3.9 million people in 140 Massachusetts communities and 184 million people in the U.S. receive the health and economic benefits of fluoridation.

Cross Connection Control Program

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For instance, you're going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops (say because of fire hydrant use in the town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow-prevention device can prevent this problem.

The Franklin Water Department recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase this at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town!

Information About Manganese

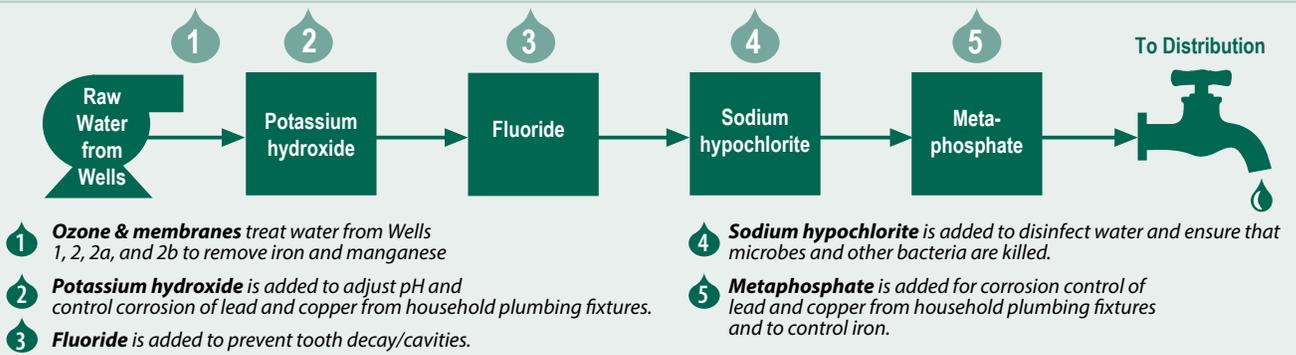
Manganese is a naturally occurring mineral found in rocks, soil, ground-water, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 micrograms per liter (µg/L), or 50 parts per billion (ppb). 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 (HA) 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 HA 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 HA for manganese at: epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_o.pdf and MassDEP ORSG for manganese mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html

Well #6 has been shut down since 2016, as it contains the highest levels of manganese. Franklin is currently building a new treatment facility for Wells #6 and #3 to improve the water quality and reliability of our system. Franklin hopes to bring the new water treatment plant online in spring 2021.

Monitoring Waivers: MassDEP has reduced the monitoring requirements for inorganic chemicals (IOCs) for Wells 4, 5, 6, 8 and 9 and asbestos because these sources are not at risk of contamination. The last sample collected for these contaminants was taken in 2012 and 2011, respectively and were found to meet all applicable EPA and MassDEP standards.

Franklin's Drinking Water Treatment Process



Source Water Assessment and Protection (SWAP) Program

The Source Water Assessment and Protection (SWAP) program assesses the susceptibility of public water supplies to contamination due to land uses and activities within the recharge area of the water supply. Franklin's water supply consists of 13 wells and their locations are shown in the figure on the cover page of this report. A susceptibility ranking of high was assigned to this system using the information collected during the assessment by the MassDEP. A high ranking is given to any water supply that has at least one high threat land use within the water supply protection area. Since Franklin has ten high threat land uses within the protection area the town must be assigned a high susceptibility ranking. Potential sources of contamination within the water supply protection area are: body shops, gas stations, furniture stripping and refinishing, paint shops, railroad tracks and yards, foundries or metal fabricators, fuel oil distributors, machine/metalworking shops, landfills and dumps, and large quantity hazardous waste. This ranking does not imply that Franklin has poor

water quality or will have poor water quality in the future. It only draws attention to various activities within the watershed that may be potential sources of contamination.

The SWAP then assesses what the town is doing to prevent contamination and recommends other measures that can be taken to further protect the sources. Some source protection measures Franklin has already implemented include maintaining tight security at the supply wells, protecting open space vital to water supply protection through an active land acquisition program, and having an aggressive Aquifer Protection Bylaw. If you would like more information, the complete SWAP report is available at the Franklin Board of Health and online at mass.gov/eea/docs/dep/water/drinking/swap/cero/4101000.pdf

For more information contact Deacon Perrotta, Director of Operations, at 508-520-4910.

Franklin Department of Public Works

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