Town of Franklin, Massachusetts
2020 Drinking Water Report

This report describes Franklin's drinking water sources and treated water quality for the calendar year 2020, 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 (FDA) 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:

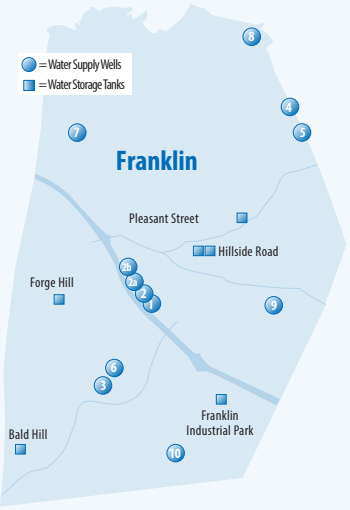
- **Microbial contaminants,** such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Pesticides and herbicides,** which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential 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 byproducts 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 Nov. 3– Dec. 2020. This survey covered 160 miles of distribution mains and detected six leaks. The estimated volume of losses from all of these leaks was 11,000,000 gallons.

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. Additionally, 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

Additional Information and Updates

- The water department foreman David Allard is retiring this spring after over 34 years of service to the Town. Dave served the town with the utmost professionalism and personal pride, he will be greatly missed.
- The Town is excited to introduce you to WaterSmart. It's part of our commitment to provide you with the best tools to better manage your water use and your bill. This tool will allow us to notify you of unusual usage or rebate opportunities – saving you money, one drop at a time! We encourage you to get started today by logging on to the **WaterSmart Web Portal** found here: *franklinma.watersmart.com*. Register for this free service by entering your billing account number and email address. You can then access all of your utility data as soon as it becomes available each billing period, see how your water use compares to similar sized homes in your neighborhood, and get access to customized recommendations on how you can save water and money. We hope you take advantage of this exciting new service!
- 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*.
- Well #6 has been shut down since 2016, as it contains the highest levels of manganese. Franklin is currently building a new treatment facility at Grove Street for Wells #6 and #3 to improve the water quality and reliability of our system. The new Grove Street Water Treatment Plant will be brought on-line during late Spring 2021.

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Franklin Water Meets All Safety and Health Standards

We test our water regularly through a certified laboratory. During 2020, 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.

2020 Treated Water Quality Data

Listed below are 30 substances detected in Franklin's drinking water during 2020. Also listed are parameters that were not tested in 2020 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 around 100 other substances for which we tested that were not detected during 2020.

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]	0.9 ppm	0.1 – 0.9 ppm	4 ppm	4 ppm	Water additive that promotes strong teeth
Gross Alpha	3.6 pCi/L	0.78 – 3.6 pCi/L	15 pCi/L	0	Erosion of natural deposits
Nitrate	4.34 ppm	0.43 – 4.3 ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic systems; erosion of natural deposits
Perchlorate	0.36 ppb	0.06 – 0.36 ppb	2 ppb	NA	Rocket propellants, fireworks, munitions, flares, blasting agents
PFAS6	14 ppt[3]	2.4 – 14 ppt	20 ppt	NA	Discharges and emissions from industrial and manufacturing sources associated with the production or use 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.
Radium	1.68 pCi/L	0.10 – 1.68 pCi/L	5.0 pCi/L	0	Erosion of natural deposits
Regulated in the Distribution System					
Chlorine (free)	0.39 ppm[4]	0.01 – 5.0 ppm[5]	4 ppm (MRDL)	4 ppm (MRDLG)	Water additive used to control microbes
Haloacetic Acids	ND	ND	60 ppb	NA	Byproduct of drinking water chlorination
Total Trihalomethanes	19 ppb	12 – 19 ppb	80 ppb	NA	Byproduct of drinking water disinfection
Regulated at the Customer's Tap					
Lead[1]	3 ppb[6]	ND – 3 ppb	AL = 15 ppb	0	Corrosion of household plumbing systems
Copper[1]	0.41 ppm[6]	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)[7]	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	90 ppb	90 ppb[8]	50 ppb	Colored water
Chloride	70.2 ppm	70.2 ppm[8]	250 ppm	Salty taste
Iron	ND – 510 ppb	109 ppb	300 ppb	Taste and deposition on plumbing fixtures
Manganese[9]	6 – 99 ppb	37 ppb	50 ppb	Taste and deposition on plumbing fixtures
Odor	7 TON	7 TON[8]	3 TON	"Rotten-egg", musty or chemical smell
Sulfate	9.82 ppm	9.82 ppm[8]	250 ppm	Salty taste
Total Dissolved Solids (TDS)	230 ppm	230 ppm[8]	500 ppm	Metallic taste
Zinc	0.1 ppm	0.1 ppm[8]	5 ppm	Hardness; deposits; colored water; staining; salty taste

Substance	Date Collected	Average Annual Results	Range of Detected Levels	Sources of Contamination
Unregulated Contaminants[10]				
Calcium	2/25/20	14 ppm[8]	14 ppm	Erosion of natural deposits
Chlorodibromomethane	Various	0.6 ppb	0.5 – 1 ppb	Byproduct of drinking water disinfection
Chloroform	Various	0.5 ppb	ND – 0.5 ppb	Byproduct of drinking water disinfection
Hardness	2/25/20	46.3 ppm[8]	46.3 ppm	Erosion of natural deposits
Magnesium[11]	Various	2.72 ppm	1.10 – 4.11 ppm	Erosion of natural deposits
Potassium	2/25/20	35.7 ppm[8]	35.7 ppm	Erosion of natural deposits
UCMR4				
HAA5	9/3/20 and 5/19/20	2.46 ppb	ND – 3.26 ppb	Byproduct of drinking water disinfection
HAA6Br	5/19/20	5.1 ppb	4.5 – 5.7 ppb	Byproduct of drinking water disinfection
HAA9	5/19/20	6.9 ppb	6.1 – 7.7 ppb	Byproduct 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. Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.
3. MassDEP requires that the single highest quarterly average be reported and notes that PFAS6 is a site specific parameter that would not be averaged across sites. Only one sample was taken at each site in 2020, therefore the highest result has been reported.
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. Level shown indicates the 90th percentile, which is used to determine compliance with the Lead and Copper Rule and must be below the AL.
7. On August 11, 2020, we sampled Well No. 4 for E.Coli. On August 12, 2020, we were notified that Well No. 4 tested positive for E.Coli. Well No. 4 was shut down immediately and re-sampled on August 12, 2020. Water from Well No. 4 was disinfected with chlorine and had a free chlorine residual of 0.5 mg/L at the time of positive bacteria result. In addition, all distribution system samples were negative for E.Coli and other bacteria and had a detectable chlorine residual. Well No. 4 was run to waste and five additional samples on both the raw and finished water were taken with all results negative for the presence of bacteria. The chlorine residual from the finished water tap was 0.95 mg/L.
8. Level shown representative of only one data point.
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. Results from the most recent testing in 2019.

Understanding PFAS

Per- and polyfluoroalkyl substances (PFAS) are a large group of man-made organic chemicals that include PFOA, PFOS, and GenX. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States, since the 1940s. PFAS are found in firefighting foams, but also found in a wide range of consumer products that people use daily such as cookware, pizza boxes, and stain repellents. There is research that shows exposure to PFAS can lead to adverse health outcomes in humans. While consumer products and food are the largest source of exposure to these chemicals for most people, drinking water can be an additional source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility; for example, an airfield where PFAS were used for firefighting or a facility where these chemicals were produced or used.

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.

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 example, if you need 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 back-flow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase this tool at a hardware store or plumbing supply store. This is a great action for you to take to not only protect the water in your home, but also help with the drinking water quality in your town!

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.

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 adjacent table, 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*.

Level 2 Assessment

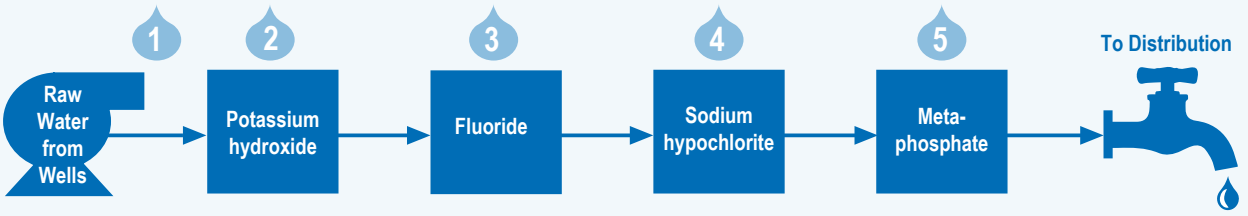
A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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 perform one Level 2 assessment for our water system. This assessment and all MassDEP required corrective actions were completed, including increasing chlorine residual and instituting water restrictions to manage tank levels.

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 samples collected for these contaminants were taken in 2012 and 2011, respectively and were found to meet all applicable EPA and MassDEP standards.

Franklin's Drinking Water Treatment Process



1. ***Ozone & membranes*** *treat water from Wells 1, 2, 2a and 2b to remove iron and manganese.*
2. ***Potassium hydroxide*** *is added to adjust pH and control corrosion of lead and copper from household plumbing fixtures.*
3. ***Fluoride*** *is added to prevent tooth decay/cavities.*
4. ***Sodium hypochlorite*** *is added to disinfect water and ensure that microbes and other bacteria are killed.*
5. ***Metaphosphate*** *is added for corrosion control of lead and copper from household plumbing fixtures and to control iron.*

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 10 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 shops, paint shops, railroad tracks and yards, foundries or metal fabricators, fuel oil distributors, machine/metalworking shops, landfills and dumps, and large quantity hazardous waste disposal locations. This ranking does not mean 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 contami-nation 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 *mass.gov/eea/docs/dep/water/drinking/swap/cero/4101000.pdf*.

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

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