



Town of Franklin, Massachusetts 2021 Drinking Water Report

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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 at 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 regulate 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

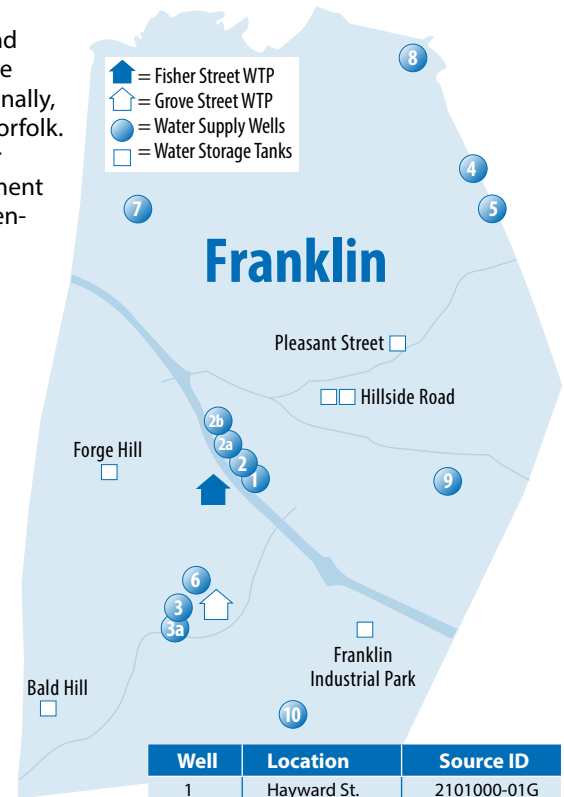
for contaminants in bottled water that must provide the same protection for public health. This report provides you with information about the contaminants found naturally in your drinking water, the levels at which they are found, and the likely source of each contaminant.

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.

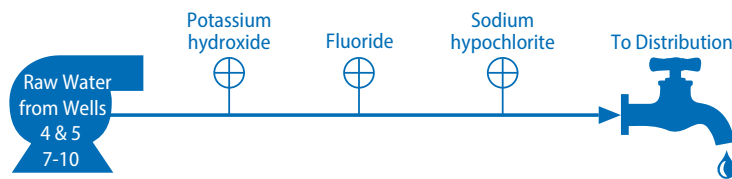
Franklin's Drinking Water Sources

The Town of Franklin obtains its drinking water from 13 active groundwater supply wells and operates two water treatment plants (WTP), six booster pumping stations, six water storage tanks, 2,000 hydrants, 170 miles of water main, and more than 9,500 water services. Additionally, Franklin's water mains have interconnections with Bellingham, Medway, Wrentham, and Norfolk. In the event of an emergency, Franklin could use these interconnections to maintain water pressure throughout the distribution system. The water system is operated by the Department of Public Works. Department personnel consist of a Superintendent, an Assistant Superintendent and an eleven person crew.

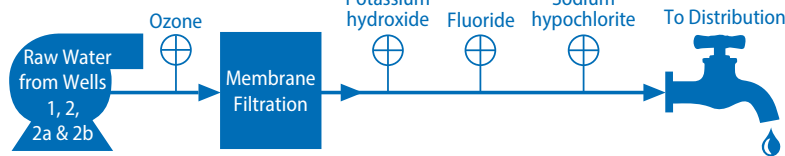


Drinking Water Treatment Processes

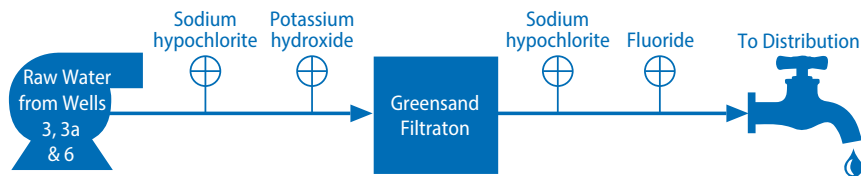
Well Sources without Filtration



Fisher Street WTP



Grove Street WTP



Sodium hypochlorite (hypo) is added to disinfect water and ensure that microbes and other bacteria are killed. Hypo can also be added upstream of filtration to oxidize material in the water.

Potassium hydroxide is added to adjust pH and control corrosion of lead and copper household plumbing fixtures.

Fluoride is added to prevent tooth decay/cavities.

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

2021 Treated Water Quality Data

Listed below are 31 substances detected in Franklin's drinking water during 2021. Also listed are parameters that were not tested in 2021 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 2021.

Substance	Highest Detected Levels	Range of Detected Levels	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Source of Contamination
Regulated After Treatment					
Barium	0.2 ppm	No range, one sample	2 ppm	2 ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride ^[1]	0.75 ppm	0.1 – 0.75 ppm	4 ppm	4 ppm	Water additive that promotes strong teeth
Gross Alpha	8.15 pCi/L	0.85 – 8.15 pCi/L	15 pCi/L	0	Erosion of natural deposits
Nitrate	4.05 ppm	0.59 – 4.05 ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic systems; erosion of natural deposits
Perchlorate	0.32 ppb	0.12 – 0.32 ppm	2 ppb	NA	Rocket propellants, fireworks, munitions, flares, blasting agents
PFAS6	20 ppt ^[2]	2.1 – 37 ppt ^[2]	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 firefighting foams. ‡
Radium	2.23 pCi/L	0.51 – 2.23 pCi/L	5.0 pCi/L	0	Erosion of natural deposits
Regulated in the Distribution System					
Chlorine (free)	0.58 ppm ^[3]	ND – 2.2 ppm ^[4]	4 ppm (MRDL)	4 ppm (MRDLG)	Water additive used to control microbes
Haloacetic Acids	17.9 ppb	16.8 – 17.9 ppb	60 ppb	NA	Byproduct of drinking water chlorination
Total Trihalomethanes	59 ppb	33 – 59 ppb	80 ppb	NA	Byproduct of drinking water disinfection
Regulated at Customer Tap					
Lead	3 ppb ^[5]	ND – 9 ppb	AL = 15 ppb	0	Corrosion of household plumbing systems
Copper	0.69 ppm ^[5]	0.02 – 0.85 ppm	AL = 1.3 ppm	1.3 ppm	Corrosion of household plumbing systems

Substance	Average Detected	Results of Range Detected	SMCL or ORSG	Noticeable Aesthetic Effects Above the SMCL/ORSG
Secondary Contaminants				
Aluminum	18.6 ppb	ND – 30 ppb	50 ppb	Colored water
Chloride	111 ppm	36.1 – 204 ppm	250 ppm	Salty taste
Copper ^[6]	0.04 ppm	ND – 0.09 ppm	1 ppm	Erosion of natural deposits
Iron	88.9 ppb	ND – 400 ppb	300 ppb	Taste and deposition on plumbing fixtures
Manganese ^[7]	30.1 ppb	ND – 57 ppb	50 ppb	Taste and deposition on plumbing fixtures
Nickel	0.004 ppm	ND – 0.0012	0.1 ppm	Discharge from domestic wastewater, landfills, and mining and smelting operations
Odor	6 TON	ND – 9 TON	3 TON	"Rotten egg," musty, or chemical smell
Sodium	62.6 ppm	23.1 – 102.0 ppm	20 ppm	Erosion of natural deposits
Sulfate	12.5 ppm	8.6 – 16 ppm	250 ppm	Salty taste
Total Dissolved Solids (TDS)	268 ppm	150 – 430 ppm	500 ppm	Metallic taste
Zinc	0.01 ppm	ND – 0.03 ppm	5 ppm	Hardness, deposits, colored water, staining, salty taste

Substance	Date Collected	Average Annual Results	Range of Detected Levels	Sources of Contamination
Unregulated Contaminants ^[8]				
Alkalinity	Various	61.6 ppm	40.0 – 84.5 ppm	Naturally occurring in the source water
Bromodichloromethane	9/28/21	0.88 ppb	ND – 5.3 ppb	Byproduct of drinking water disinfection
Calcium	Various	16.6 ppm	9.6 – 29.2 ppm	Erosion of natural deposits
Chloroform	9/28/21	0.98 ppb	ND – 5.9 ppb	Byproduct of drinking water disinfection
Hardness	Various	55.4 ppm	33.5 – 93.9 ppm	Erosion of natural deposits
Magnesium	Various	3.32 ppm	2.1 – 4.5 ppm	Erosion of natural deposits
Potassium	Various	35.5 ppm	27.0 – 59.2 ppm	Erosion of natural deposits
Perfluorohexanoic Acid (PFHxA)	Various	2.0 ppt	ND – 3.8 ppt	Refer to ‡ above
Perfluorobutanesulfonic Acid (PFBS)	Various	2.9 ppt	ND – 4.9 ppt	Refer to ‡ above

Footnotes:

[1] EPA's MCL for fluoride is 4 ppm. Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.
 [2] 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. The range of detected results include all individual values without averaging. The 37 ppt result

was from Well 8 which was subsequently taken off-line. See "Understanding PFAS" for more information.
 [3] The highest level detected is based on the rolling annual average of each month.
 [4] This range represents the individual results of all samples, rather than the averages.

[5] Level shown indicates the 90th percentile, which is used to determine compliance with the Lead and Copper Rule and must be below the AL.
 [6] Copper is listed twice in this table. The first represents the results of 20 samples taken at the customer's tap, at locations approved by MassDEP. The second represents results found at an approved sample location.

[7] 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.
 [8] Unregulated contaminants are those for which EPA has not established drinking water standards.

Understanding PFAS

Per- and polyfluoroalkyl substances (PFAS) are a large group of human-made organic chemicals that 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 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 the water supply. The MassDEP has enacted a standard of 20 parts per trillion (ppt) for the sum of the following six PFAS (PFAS6) compounds: PFOS (perfluorooctanesulfonic acid), PFOA (perfluorooctanoic acid), PFNA (perfluorononanoic acid), PFHxS (perfluorohexanesulfonic acid), PFHpA (perfluoroheptanoic acid) and PFDA (perfluorodecanoic acid). A "part per trillion" is analogous to a grain of sand in an Olympic size swimming pool. More information on PFAS and Franklin's drinking water can be found online at franklinma.gov/water-sewer-division/pages/and-polyfluoroalkyl-substances-pfas-drinking-water.

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, under "Regulated at Customer Tap," the most recent round of testing continued this pattern of compliance with lead and copper levels. 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 it 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 at 800-426-4791 or at epa.gov/safewater/lead.

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.

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.

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, to spray fertilizer on your lawn, you hook your hose up 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 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. More than 3.9 million people in 140 Massachusetts communities and 184 million people in the U.S. receive the health and economic benefits of fluoridation.

Additional Information and Updates

Have you heard about the Grove Street Water Treatment Plant?

This new plant was brought online at the end of May 2021. The WTP filters iron and manganese from Wells 3, 3a, and 6 which has greatly improved the overall water quality and reliability of our system. Refer to the map of Franklin on the first page of this report for the WTP location.



Do you know about the WaterSmart Web Portal?

This free service allows you to access all of your utility data, compare your water use to similarly sized homes in your neighborhood, and get access to customized recommendations on how you can save water and money. Take advantage of this service online at franklinma.watersmart.com by registering with your billing account number and email address.

Do you have questions?

For questions about this report, and to learn more about Franklin's water supply system, water quality, and other related information, please contact Robert Cantoreggi, Director of Public Works, or Doug Martin, Water and Sewer Superintendent 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.

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.

Franklin Water Meets All Safety and Health Standards

We test our water regularly through a certified laboratory. During 2021, 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 ensure that we deliver safe drinking water to our customers.



Water Leak Detection Survey

Conservation Technologies Inc. performed a leak detection survey on the entire Franklin water distribution system between Oct. 13 and Nov. 12, 2021. This survey covered 160 miles of distribution mains and detected six leaks. The estimated volume of loss from these leaks was 15,200,000 gallons.

Monitoring Waivers

MassDEP reduced the monitoring requirements for inorganic chemicals (IOCs) for Wells 4, 5, 6, 8, and 9 and asbestos for all wells 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.

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 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 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/doc/franklin-water-department-swap-report/download.

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

Franklin Department of Public Works

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Franklin, MA 02038



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FRANKLIN, MA 02038

2021 Drinking Water Report Town of Franklin, Massachusetts

This report describes Franklin's drinking water sources and treated water quality for the calendar year 2021 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.