

TOWN OF WRENTHAM ANNUAL WATER QUALITY REPORT 2022

Important Information About Your Drinking Water



Drinking Water Consumer Confidence Report for the Year 2022

MASSDEP Public Water Supplier ID #4350000

The Wrentham Department of Public Works Water Division 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 water distribution system. We are pleased to report the results of our 2022 water testing to inform you about your drinking water. Each year you will receive a postcard directing you to our Annual Water Quality Report on the Town's website. In addition, copies of the Report will be available at public buildings and upon request at the DPW office located at 360 Taunton Street.

For further information regarding the Wrentham water system please contact Dean Johnson, Water Division Manager, at the Wrentham Department of Public Works at 508.384.5477. Public participation opportunities are available at the Board of Selectmen meetings every 1st and 3rd Tuesday of the month at 6:30 P.M. at Town Hall located at 79 South Street and at Town Meetings.

Wrentham's Water System

Wrentham's water system includes five groundwater supply wells, three treatment facilities for the entire groundwater supply, three water storage tanks, and approximately 98 miles of water main piping. In addition, the Town maintains six emergency interconnections with neighboring water distribution systems including two with the Town of Norfolk, one with the Town of Foxborough, and one with the Town of Franklin. The other two connections are with the Wrentham Development Center (WDC), which operates the Wrentham State School.

Wrentham's wells have the following source identification numbers (ID) with the Massachusetts Department of Environmental Protection (MASSDEP):

Well Name	MASSDEP ID
Franklin Street Well No. 2	4350000-03G
Franklin Street Well No. 3	4350000-04G
Thurston Street Well No. 4	4350000-02G
Lake Pearl Well No. 5	4350000-05G
Crocker Pond Well No. 6	4350000-06G

Franklin Street Well Nos. 2 and 3 are located to the north of Lake Pearl. Thurston Street Well No. 4 is located in the eastern part of Wrentham near Route 1. Well No. 5 is located adjacent to Lake Pearl, and Well No. 6 is located adjacent to Crocker Pond.

Wrentham’s Water Treatment

Wrentham’s source water receives treatment before it is supplied to its customers in order to meet state and federal public drinking water requirements. We treat our water for corrosion control and disinfection as shown in the table below. The pH of the water is raised with potassium hydroxide to reduce its corrosivity in household plumbing. Ultraviolet (UV) light is used for disinfection of the water from the wells. Hypochlorite is used for disinfection of the water distribution system.

Treatment	Treatment Facility No. 3 Well Nos. 2 and 3	Treatment Facility No. 4 Well Nos. 4 and 6	Treatment Facility No. 5 Well No. 5
pH Adjustment for Corrosion Control	Yes	Yes	Yes
Ultraviolet Light for Disinfection	Yes	Yes	Yes
Hypochlorite for Disinfection	Yes	Yes	Yes

Source Water Assessment and Protection (SWAP) Report

The Massachusetts Department of Environmental protection (MASSDEP) completed its SWAP Report for all of the Wrentham’s water supply sources in 2003. This Report assesses the susceptibility of public water supplies to potential contamination by microbiological pathogens and chemicals. It is intended to be used as a planning tool to support local and state efforts to improve water supply protection. A susceptibility ranking of “high” was assigned to the Town’s system using the information collected during the assessment. The wells are located in aquifers with high vulnerability to contamination due to the absence of hydrological barriers (i.e. clay) that can prevent migration of contamination.

The complete SWAP Report is available at the Wrentham DPW office located at 360 Taunton Street or on the Town of Wrentham’s Water Division website under the Reports tab. Please call the Water Division at 508.384.5477 for a hard copy of the Report or more information.

Educational Information

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA’s Safe Drinking Water Hotline (1-800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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 (1-800-426-4791).

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.

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 Wrentham 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 it 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>.

Variations and Exemptions

At no time during 2022 did the Wrentham Water System operate under a state or federal variance or exemption.

Abbreviations and Definitions

The following abbreviations and definitions may be helpful in understanding the data presented in this Report:

MFL: million fibers per liter

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter ($\mu\text{g/L}$)

ppt: parts per trillion or nanograms per liter (ng/L)

pCi/L: picocuries per liter (a measure of radioactivity)

NTU: Nephelometric Turbidity Units

ND: Not detected

UR: Unregulated

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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

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

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

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

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.

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

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

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

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Wrentham Water Quality

Listed below are contaminants detected in Wrentham’s drinking water in 2022. The state allows us to monitor for some contaminants less frequently than once per year because the concentrations of these contaminants do not change frequently. Not listed are over 100 other contaminants that we tested for but did not detect.

Disinfectant Residuals Monitoring - No Violations

It is important to maintain a disinfectant residual throughout the water distribution system. Wrentham uses sodium hypochlorite (chlorine) as its disinfectant for this purpose. We monitor for the disinfectant as Free Chlorine at the same sampling points in the distribution system as our bacteriological monitoring. The monitoring results for the year 2022 are as follows:

Contaminant	Collection Date(s)	Highest Result	Range Detected	MCL	Violation (Y/N)	Sources of Contamination
Chlorine (Free) (ppm)	Monthly 2022	1.50	0.17 - 1.50	4	N	Water additive used to control microbes

Disinfectant By-Product Monitoring - No Violations

Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5) are disinfection by-products that are formed by the interaction of sodium hypochlorite (chlorine) used as a disinfectant and natural organic matter in the source water. The chemical compounds that make up TTHMs include chloroform, bromoform, dichlorobromomethane, and dibromochloromethane. The chemical compounds that make up HAA5 are monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid. Wrentham has two MASSDEP designated monitoring locations: 713 Dedham Street and the Oak Hill Wastewater Treatment Facility. The results of our annual monitoring of these disinfection by-products during 2022 were as follows:

Contaminant	Collection Date	Highest Result	Range Detected	MCL	Violation (Y/N)	Sources of Contamination
Total Trihalomethanes (TTHMs) (ppb)	9/6/2022	37	33 - 37	80	N	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	9/6/2022	6.6	6.0 - 6.6	60	N	Byproduct of drinking water disinfection

Total Coliform Bacteria Monitoring - No Monitoring Violations

Total Coliform Bacteria are groups of various bacteria that serve as a monitoring indicator of a potential health concern of microbial contamination. Coliform 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. The Revised Total Coliform Rule (RTCR) includes a treatment technique trigger based on more than 5% positive sample measurements in the distribution system for any given month. The RTCR requires that water systems conduct an assessment to “find and fix” any sanitary defects whenever a treatment technique trigger occurs.

Water samples are taken at designated system sampling points widely distributed throughout Town that are monitored approximately two times per month. When there is a Total Coliform positive sample result, repeat samples must be collected and analyzed for Total Coliform and *E. Coli* bacteria, whose presence indicates that the water may be contaminated with human or animal wastes.

Lead and Copper Monitoring - No Violations

The purpose of our corrosion control treatment using potassium hydroxide is to reduce the acidity of the source water thereby reducing its corrosiveness. Lead and copper can become present in your drinking water when the water corrodes those elements from household plumbing. The measurement of lead and copper in the “first draw” of tap water from selected households is used to monitor the effectiveness of our corrosion control treatment.

In 2022 Wrentham conducted lead and copper monitoring of 32 MASSDEP designated homes for “first draw” analyses of lead and copper. The monitoring was conducted in July and August. The AL is based on the 90th percentile of each sample period. The results of this monitoring are in compliance with the regulation and are shown below.

Contaminant	Date(s) Collected	90 TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	July and August 2022	2	15	0	32	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	July and August 2022	0.070	1.3	1.3	32	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

In September 2022, Wrentham also conducted first draw lead and copper sampling at two locations within the Vogel School and two locations within the Little Red Schoolhouse. The lead and the copper results at both locations met their respective ALs during sampling in September.

Contaminant	Date(s) Collected	Location	Result	Action Level	MCLG
Lead (ppb)	9/15/2022	Vogel School, Room 7 Sink	ND	15	0
Copper (ppm)	9/15/2022		0.080	1.3	1.3
Lead (ppb)	9/15/2022	Vogel School, Room 2 Sink	ND	15	0
Copper (ppm)	9/15/2022		0.086	1.3	1.3
Lead (ppb)	9/15/2022	Little Red Schoolhouse, Bathroom Sink	2	15	0
Copper (ppm)	9/15/2022		0.031	1.3	1.3
Lead (ppb)	9/15/2022	Little Red Schoolhouse, Kitchen Sink Kitchen	ND	15	0
Copper (ppm)	9/15/2022		0.033	1.3	1.3

Synthetic Organic Contaminant Monitoring

Synthetic Organic Contaminants (SOCs) generally represent pesticides, herbicides, and polychlorinated biphenols (PCBs). Wrentham was not required to monitor by DEP for SOC's in 2022 at any of its water sources. No SOC's were detected during two monitoring rounds in 2021. The next required monitoring for SOC's will be in 2024.

Volatile Organic Contaminant Monitoring - No Violations

Volatile Organic Contaminants (VOCs) are a group of chemicals, many of which are solvents (e.g. trichloroethylene) and fuel additives (e.g. MTBE and toluene) along with disinfection by-products. A total of fifty-six (56) VOCs are monitored in the water pumped from each of the treatment facilities. Monitoring conducted in August 2022 indicated that no VOCs were detected in the finished water of Treatment Facilities Nos. 3 and 4 entering the distribution system. Treatment Facility No. 5 did have low and sub parts-per-billion concentrations of three disinfection by-products that were significantly below their respective Maximum Contaminant Levels MCL's.

Inorganic Contaminant Monitoring

Wrentham was not required to monitor for Inorganic Contaminants (IOC's) in the finished water of each treatment facility in 2022. The next required monitoring for IOC's will be in 2024.

Asbestos Monitoring - No Violation

The primary source of asbestos in Wrentham drinking water is the decay and deterioration of asbestos cement pipe materials in the distribution system. Asbestos monitoring was conducted in May 2022 in the proximity of 27 Circle Drive since this portion of the distribution system has asbestos cement piping. The reported result was significantly below the MCL for asbestos.

Contaminant	Collection Date	Highest Result	Range Detected	MCL	Violation (Y/N)	Sources of Contamination
Asbestos (Fiber greater than 10 micrometers) (MFL)	5/9/2022	<0.18	<0.18	7	N	Decay of asbestos cement in water mains; erosion of natural deposits

Radionuclide Monitoring

Radionuclides are radioactive particles present in the water supply. Radionuclide monitoring includes testing for Gross Alpha, Radium 226 and 228, Uranium and combined Radium. Radium 226 and 228 are naturally occurring radioactive minerals. Radionuclide monitoring for Gross Alpha and Combined Radium 226 and 228 was conducted in November 2021 for the Franklin Street Facility and Well No. 4 with no violations. Wrentham was not required to monitor by DEP for radionuclides in 2022 at any of its water sources. The next required monitoring for Radionuclides will be in 2030.

Radon

There is presently no regulatory standard for radon in drinking water. Radon is a radioactive gas that occurs naturally in some ground waters. It has an ORSG of 10,000 pCi/L. Other sources of radon gas are from soils at the foundation of homes, and radon inhaled directly while smoking cigarettes. It poses a lung cancer risk when elevated levels of radon gas are released from water into the air as occurs during showers, bathing, or washing dishes and clothes. It is also a stomach cancer risk when you drink water containing elevated levels of radon. Radon gas released from drinking water is a relatively small part of the total radon in air.

Nitrate and Perchlorate Monitoring - No Violations

Nitrate was monitored in May and June 2022 in the finished water of all three treatment facilities. All results were below the MCL of 10.0 ppm. Nitrate is formed from the breakdown of fertilizers, septic tank leachate, and natural decomposition. Perchlorate was monitored in August 2022 in the finished water of all three water treatment facilities. All results were below the MCL of 2 ppb. Its presence is primarily the result of sodium hyperchlorite chemical breakdown.

Contaminant	Date(s) Collected	Highest Result Detected	Range Detected	MCL Or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Nitrate (ppm)	5/10/2022 and 6/7/2022	1.5	0.60 - 1.5	10	10	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Perchlorate (ppb)	8/9/2022	0.347	0.189 - 0.347	2	N/A	N	Rocket propellants, fireworks, munitions, flares, blasting agents, breakdown product of hypochlorite

Sodium Monitoring

Sodium is a leachate of road deicing salts, water treatment chemicals, and natural deposits. No regulatory standard has been established for sodium. A guideline for people with hypertension is to avoid water with levels above 20 ppm. Wrentham was not required by DEP to monitor for sodium in 2022. During the May 2021 monitoring, Wrentham’s drinking water had a sodium range of approximately 34 to 42 ppm. The next monitoring for sodium will be in 2024.

Secondary Contaminant Monitoring

The following contaminants describe Wrentham’s general water quality characteristics. Secondary contaminants are not considered to have health impacts, but rather describe characteristics of the water which impact water-use appliances, soap lathering, taste, and aesthetics. Monitoring of the finished water from all three water treatment facilities took place in May and June 2022 with the following results:

Contaminant	Result or Range Detected	SMCL	ORSG	Possible Source
Aluminum (ppb)	ND (<0.1)	50 - 200	200	Residue from water treatment process: erosion of natural deposits
Chloride (ppm)	53 - 85	250	250	Runoff and leaching from natural deposits; seawater influence
Color (C.U.)	ND (<5)	15	N/A	Naturally occurring organic material
Copper (ppm)	ND (0.01)	1	N/A	Naturally occurring organic material
Iron (ppb)	ND (<0.05)	300	N/A	Naturally occurring, corrosion of cast iron pipes
Manganese* (ppb)	ND (<10)	50	Health Advisory of 300	Natural sources as well as discharges from industrial uses

Contaminant	Result or Range Detected	SMCL	ORSG	Possible Source
pH	7.9 - 8.3	6.5-8.5	N/A	Runoff and leaching from natural deposits; seawater influence
Silver (ppb)	ND (<7)	100	N/A	Erosion of natural deposits
Sulfate (ppm)	7 - 9	250	N/A	Runoff and leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS) (ppm)	200 - 250	500	N/A	Erosion of natural deposits.
Zinc (ppm)	ND (<0.050)	5	N/A	Erosion of natural deposits, leaching from plumbing materials

Unregulated Contaminants

Unregulated Contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future drinking water regulations are warranted. Wrentham was not required to test for unregulated contaminants in 2022.

PFAS Contaminants - No Violations

Wrentham is closely monitoring a family of chemicals called per- and polyfluoroalkyl substances (PFAS) that have been detected in some public water supplies in Massachusetts and across the nation. These are a class of human-made chemicals that are persistent and have been used in products we all use for decades.

The Massachusetts Department of Environmental Protection (MassDEP) has issued a drinking water standard for the sum of six specific **regulated** PFAS compounds (PFAS6). This standard requires all Massachusetts public water suppliers to test for PFAS. The sum of PFAS6 compounds may not exceed 20 nanograms per liter (ng/L), also equal to 20 parts per trillion (ppt): the maximum contaminant level (MCL). Some people who drink water containing these PFAS6 compounds in excess of the MCL may experience certain adverse effects. These could include effects on the liver, blood, immune system, thyroid, and fetal development. They may also elevate the risk of certain cancers.

MassDEP has also required that a group of twelve **unregulated** PFAS compounds in addition to the **regulated** PFAS6 compounds be tested by water suppliers. These twelve **unregulated** PFAS compounds do not have MCLs.

Using test methods at MassDEP certified laboratories that can detect the presence of these chemicals down to levels below one ppt, we found evidence that some of these chemicals are in our water but at levels below the regulatory standard. The results of testing for **regulated**

PFAS6 compounds conducted between January and November 2022 at the three water treatment facilities are shown below.

Franklin Street Well Nos. 2 and 3 (combined)					
Contaminant	Date(s) Collected	Highest Result Detected	Range Detected	MCL	Violation (Y/N)
PFAS6 (ppt)	Jan. - Nov. 2022	7.2	2.4 - 7.2	20	N

Well Nos. 4 and 6 (combined)					
Contaminant	Date(s) Collected	Highest Result Detected	Range Detected	MCL	Violation (Y/N)
PFAS6 (ppt)	Jan. - Nov. 2022	8.7	8.6 - 8.7	20	N

Well No. 5					
Contaminant	Date(s) Collected	Highest Result Detected	Range Detected	MCL	Violation (Y/N)
PFAS6 (ppt)	Jan. - Nov. 2022	5.1	ND - 5.1	20	N

The results of testing for the **unregulated** PFAS compounds also conducted between January and November 2022 at the three water treatment facilities having detectable levels are shown below.

Franklin Street Well Nos. 2 and 3 (combined)			
Contaminant	Date(s) Collected	Highest Result Detected	Range Detected
Perfluorobutane Sulfonic Acid (PFBS) (ppt)	Ja. - Nov. 2022	4.8	4.8

Well Nos. 4 and 6 (combined)			
Contaminant	Date(s) Collected	Highest Result Detected	Range Detected
Perfluorobutane Sulfonic Acid (PFBS) (ppt)	Jan. - Nov. 2022	2.3	2.1 - 2.3
Perfluorohexanoic Acid (PFHxA) (ppt)	Jan. - Nov. 2022	2.1	1.8 - 2.1

Well No. 5			
Contaminant	Date(s) Collected	Highest Result Detected	Range Detected
Perfluorobutane Sulfonic Acid (PFBS) (ppt)	Jan. - Nov. 2022	4.8	4.5 - 4.8

Cross Connection Education

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 at the same time you turn on the hose, the fertilizer may be sucked back into the drinking water pipes through the hose. This problem can be prevented by using an attachment on your hose called a backflow-prevention device.

The Wrentham Department of Public Works 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! For additional information on cross connections and on the status of your water systems cross connection program, please contact the Wrentham Department of Public Works office at 508.384.5477.

System Improvements

As part of our ongoing commitment to provide our customers with the highest water quality, in 2022 the following actions were undertaken towards improving our water system:

- Franklin Street Well No. 3
 - Located a new replacement well site for the existing Well No. 3.

- Drilled a test well that will be used as part of the Mass DEP approval process for the new replacement well location
- New Water Source Exploration
 - Began to explore for a new water source in West Wrentham.
 - Two potential source locations were identified; one of which appears to be superior to the other.

Water Rates

There was no change in the 2022 water rates from those applied in 2021. The calendar year 2022 water rates (Dollars (\$) per 1,000 gallons) are shown below. Consumption from January 1, 2022 to December 31, 2022 were at the FY 2022 rates.

Consumption (Gallons)	FY 2022 Water Rates
1 - 15,000	\$6.46
15,001 - 50,000	\$8.08
Over 50,000	\$9.22

A semi-annual base charge was applied to each water bill based on the size of the customer's water meter as follows:

Meter Size (Inches)	Semi-Annual Base Charge
5/8	\$ 50.00
3/4	\$75.00
1	\$125.00
1-1/4	\$175.00
1-1/2	\$250.00
2	\$400.00
3	\$750.00
4	\$1,250.00
6	\$2,500.00