

2016 Water Quality Report Wenham Water Department

USEPA Consumer Confidence Report
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The Quality of your Drinking Water

Wenham's water quality meets or exceeds all state and federal requirements. Regular laboratory testing is conducted in strict accordance with state and federal regulations.

The Wenham Water System

Our water is drawn from two gravel-packed wells (approximately 50-feet deep), located off Pleasant Street. These wells draw from beneath the Great Wenham Swamp (backwaters to the Ipswich River), which provides a natural filter. We do add three chemicals to the water as it enters the system: sodium fluoride as required by law to promote strong teeth, calcium hypochlorite (chlorine) for disinfection and zinc orthophosphate to reduce the natural corrosiveness of the water. Our water is naturally corrosive and with required addition of chlorine, it has a tendency to corrode and dissolve lead solder and copper pipes in household plumbing, which could lead to increased lead and copper levels if not treated. The water is pumped to the 750,000 gallon storage tank on "Lord's Hill" and the 600,000 gallon storage tank at the Iron Rail property and then through over 27 miles of water mains to our users.

Source Water Assessment Plan Report

The land around public water supply wells is delineated by the Massachusetts Department of Environmental Protection (*MassDEP*) as either "Zone I" – land within 400 feet of a well, or "Zone II" – the area which contributes water to the wells. To provide for a continuing source of clean water, and in conjunction with the *MassDEP*, we completed a "Source Water Assessment Plan" in 2001. This effort assessed activities near our wells that have the potential to threaten our water quality. The plan notes the following potential issues:

1. Inappropriate activities conducted in the Zone I (we do not own or control all of Zone I);
2. Underground storage tanks present in Zone II;
3. Septic systems present in Zone II;
4. Stormwater catch basins in Zone II;

The Wenham Water Department is addressing these issues by:

1. Working with property owners within Zone I on methods of safeguarding the groundwater;
2. Working with the Fire Department to inventory and inspect underground storage tanks. A bylaw was enacted by the voters of Wenham to require testing of these tanks;
3. Working with the Board of Health to educate residents concerning the proper care of their septic systems and compliance with Title 5 regulations;
4. Working with the Conservation Commission to evaluate potential impacts to wetland and Town water quality;
5. Working with the Department of Public Works to keep catch basins clean and in good repair; and
6. Coordinating wellhead protection plans with Danvers, Topsfield, Beverly and Hamilton to ensure out-of-town protection of our watershed.

The complete report is available at the Wenham Water Department, the Wenham Board of Health or online at <http://www.mass.gov/eea/docs/dep/water/drinking/swap/nero/3320000.pdf>

Vulnerability

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 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).

Violations

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During 2015 we failed to collect samples according to the approved sampling plan for lead and copper and therefore cannot be sure of the quality of your drinking water during that time.

What happened?

In 2003 MassDEP approved a reduced lead and copper sampling plan listing twenty addresses to be sampled every three years. Since that time one residential address was changed to reflect the new street address after the property was subdivided. We also had a resident who no longer wanted to participate in the program so an alternate home was chosen of similar construction. During an audit of our lead and copper sampling plan it was discovered that samples collected at these two addresses were not listed in the plan.

What should I do?

There is nothing you need to do. All twenty samples in 2015 were below state and federal action levels.

What is being done?

On July 19, 2016 we submitted a compliance schedule and an updated sampling plan for review and approval by MassDEP.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Conservation

Outside Water Use: The state has required that outside watering must be reduced. Watering a lawn, when it is not needed, wastes water and costs money. Watering during the early morning and evening is most efficient and effective. The Town of Wenham bylaw prohibits watering in the middle of the day (9:00 am to 5:00 pm) from May 1st to September 30th including private wells. If you have an automatic irrigation system, you must have a rain sensor installed.

Inside Water Use: The state has also required increased efficiency in the home. Suggestions include:

- Fixing all leaking faucets and toilets
- Use of Energy Star appliances: Replacing a clothes washer that uses 45 gallons per load with a high efficiency one using 20 gallons per load could save your household 5,000 gallons/ year.
- If your dishwasher is more than ten years old, consider a new more efficient machine. A dishwasher built before 1994 wastes more than 10 gallons of water per cycle. A new, ENERGY STAR qualified dishwasher will save, on average, 1,300 gallons of water over its lifetime
- Replacing an old 3.5 gallon per flush toilet with a 1.6 gallon per flush one could save your household an average of 9,337 gallons/ year

Water Quality Summary

The Wenham Water Department regularly monitors the quality of your drinking water according to Federal and State laws. During the year we conduct tests for multiple substances, including coliform and e-coli bacteria, volatile organic compounds (VOC's) and inorganic compounds (such as metals, minerals and salts). Samples are collected from the wells and at several locations around town. As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It is important to remember that the presence of these constituents does not necessarily pose a health risk. Further information about contaminants and potential health risks can be obtained by calling the Environmental Protection Agency's toll free Safe Drinking Water Hotline at 800-426-4791.

Lead in Your Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Wenham Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water>

Water Quality Results

The table below shows regulated and unregulated substances that were detected during the monitoring period of January 1st to December 31st, 2016. You will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

- **ppm:** (parts per million) - one per million measured by weight (i.e., 1/1,000th of a gram in a liter)
- **ppb:** (parts per billion) – one per billion measured by weight (1/1,000,000th of a gram in a liter)
- **pCi/L:** - (picoCuries per liter) - a measure of radioactivity
- **AL:** (*Action Level*) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **MCL:** (*Maximum Contaminant Level*) - The “Maximum Allowed” is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **MCLG:** (*Maximum Contaminant Level Goal*) The “Goal” is 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.
- **SMCL:** (Secondary Maximum Contaminant Level) – These standards are developed to protect the aesthetic qualities of drinking water and are not health based.
- **ND:** None Detected
- **NS:** No Standard

Lead and Copper

Contaminant	Action Level	Sites Above Action Level	90 th Percentile	Likely Source of Contaminant
Lead	0.015 ppm	0	0.0019 ppm	Corrosion of household plumbing
Copper	1.3 ppm	0	0.69 ppm	Corrosion of household plumbing

Unregulated and Secondary Contaminants

Constituent	SMCL	Results	Possible Source
Iron (ppm)	0.3	ND	Naturally occurring, and corrosion of cast iron pipes
Manganese (ppm)*	0.05	0.18	Naturally occurring from natural deposits
Aluminum (ppm)	0.2	ND	Byproduct of treatment process
Chloride (ppm)	250	110	Runoff from road de-icing, use of inorganic fertilizers, landfill leachate, septic tank effluent, animal feeds, industrial effluent, irrigation and drainage
Total Dissolved Solids	500	430	Naturally occurring
Turbidity	NS	0.29	Soil runoff
Color (C.U.)	15	0	Naturally occurring organic material
Magnesium	NS	17	Naturally occurring from natural deposits
Hardness (CaCO ₃ - ppm)	NS	260	Naturally occurring minerals (CaCO ₃)
Odor (T.O.N.)	3	1	Naturally occurring for natural deposits and decay of organic material
pH	6.5 – 8.5	7.6	
Silver (ppm)	0.1	ND	Naturally occurring from natural deposits
Alkalinity (CaCO ₃ – ppm)	NS	130	Naturally occurring from natural deposits
Zinc (ppm)	5	0.018	Naturally occurring from natural deposits, leaching from plumbing materials
Sulfate (ppm)	250	34	Naturally occurring from natural deposits
Calcium (ppm)	NS	75	Naturally occurring mineral
Sodium (ppm)**	20	30	Erosion of natural deposits and road salt

* The EPA has established a lifetime health advisory (HA) of 0.3 ppm for manganese to protect against concerns of potential neurological effects and has a one day and ten day HA of 1.0 ppm for acute exposure.

** There is no MCL for sodium; however the MassDEP office of Research and Standards has established a guideline limit of 20 ppm based on an eight ounce serving. Sodium sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

Regulated Contaminant

CONTAMINANT	MCLG	MCL	HIGHEST LEVEL DETECTED	LIKLEY SOURCE
Fluoride	4 ppm	4 ppm	0.8 ppm	Water additive that promotes strong teeth. Soluble natural deposits.
Nitrate	10 ppm	10 ppm	3.3 ppm	Naturally present from inorganic fertilizers, septic tank effluent, animal feeds and industrial effluent.
Chlorine (Free)	4 ppm	4 ppm	0.90 ppm	Water additive used for disinfection.
Haloacetic Acids (HAA5)	0	60 ppb	6.8 ppb	By-product of chlorine disinfection.
Total (TTHMs) Trihalomethanes	0	80 ppb	37 ppb	By-product of chlorine disinfection.
Volatile Organic Compounds	0	Various	ND	By-products of industrial processes and petroleum production, gas stations, urban storm water run-off and from septic systems.