

# 2014 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 at the south end of Pleasant Pond, off Pleasant Street. These wells draw from 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 is added as required by law to promote strong teeth, zinc orthophosphate to reduce the natural corrosiveness of the water and calcium hypochlorite (chlorine) for disinfection. 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 into 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**

Our system had no violations in 2014 of State or Federal water quality standards.

## **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 1<sup>st</sup> to September 30<sup>th</sup> 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 5000 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 9337 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 <http://www.epa.gov/safewater/lead>.”

## Water Quality Results

The table below shows regulated and unregulated substances that were detected during the monitoring period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2013. 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., 1/1000<sup>th</sup> 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.
- **N/A:** Not Applicable
- **N/D:** None Detected

### Regulated Contaminant

CONTAMINANT	MCLG	MCL	HIGHEST LEVEL DETECTED	LIKLEY SOURCE
Fluoride	4ppm	4ppm	1.2ppm	Water additive that promotes strong teeth. Soluble natural deposits.
Nitrate	10ppm	10ppm	2.5ppm	Naturally present from inorganic fertilizers, septic tank effluent, animal feeds and industrial effluent.
Nitrite	1ppm	1ppm	0.064ppm	
Chlorine (Free)	4ppm	4ppm	0.83ppm	Water additive used for disinfection.
Haloacetic Acids (HAA5)	0	60ppb	8.6ppb	By-product of chlorine disinfection.
Total (TTHMs) Trihalomethanes	0	80ppb	36ppb	By-product of chlorine disinfection.
Perchlorate	0	2000ppb	N/D	Byproduct of some but not all blasting agents and explosives, fireworks, old bleach, some fertilizers.
Gross Alpha Particle Activity	0	15pCi/L	5.74pCi/L	Erosion of natural deposits
Volatile Organic Compounds	0	Various	N/D	By-products of industrial processes and petroleum production, gas stations, urban storm water run-off and from septic systems.

## Lead and Copper

Contaminant	Action Level	Sites Above Action Level	90 <sup>th</sup> Percentile	Likely Source of Contaminant
Lead	0.015ppm	0	0.0010ppm	Corrosion of household plumbing
Copper	1.3ppm	0	0.27ppm	Corrosion of household plumbing

## Unregulated and Secondary Contaminant

Constituent	Results	SMCL	Possible Source
Iron (ppm)	N/D	0.3	Naturally occurring, and corrosion of cast iron pipes
Manganese (ppm)*	0.12	0.05	Naturally occurring from natural deposits
Aluminum (ppm)	N/D	0.2	Byproduct of treatment process
Chloride (ppm)	78	250	Runoff from road de-icing, use of inorganic fertilizers, landfill leachate, septic tank effluent, animal feeds, industrial effluent, irrigation and drainage
Total Dissolved Solids	300	500	Naturally occurring
Turbidity	0.23	<i>None</i>	Soil runoff
Color (C.U.)	0	15	Naturally occurring organic material
Magnesium	14	<i>None</i>	Naturally occurring from natural deposits
Hardness (CaCO <sub>3</sub> - ppm)	210	<i>None</i>	Naturally occurring minerals (CaCO <sub>3</sub> )
Odor (T.O.N.)	1	3	Naturally occurring for natural deposits and decay of organic material
pH	7.3	6.5 – 8.5	
Silver (ppm)	N/D	0.1	Naturally occurring from natural deposits
Alkalinity (CaCO <sub>3</sub> – ppm)	130	<i>None</i>	Naturally occurring from natural deposits
Zinc (ppm)	0.015	5	Naturally occurring from natural deposits, leaching from plumbing materials
Sulfate (ppm)	25	250	Naturally occurring from natural deposits
Calcium (ppm)	62	<i>None</i>	Naturally occurring mineral
Sodium (ppm)**	22	20	Erosion of natural deposits and road salt

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

\*\* There is no MCL for Sodium; however the MassDEP office of Research and Standards has established a guideline limit of 20ppm based on an eight ounce serving.