



2018 Consumer Confidence Report

For

Wenham Water Dept.
Wenham, Massachusetts
MASSDEP PWSID # 3320000

This report is a summary of the drinking water quality that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to state and federal standards.

PUBLIC WATER SYSTEM INFORMATION

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Water System Improvements

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). MassDEP inspects our system for its technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, your water system is operated by a Massachusetts certified operator who oversees the routine operations of our system. During our last sanitary survey on September 17, 2017, MassDEP found no violations or deficiencies and no required changes were identified.

Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, you may attend the following meetings or educational events: The Water Commission meets on a monthly basis unless otherwise needed. Please check the Town of Wenham website for posted meetings.

YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?

Our water is drawn from two gravel-packed wells (approximately 50-feet deep), located off Pleasant Street. These wells draw from the Great Wenham Swamp (backwaters to the Ipswich River), which provides a natural filter. 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.

Your water is provided by the following sources listed below:

Source Name	MassDEP Source ID#	Source Type	Location of Source
G.P. Well#1	3320000-01G	Groundwater	Pleasant Street
G.P. Well#2	3320000-02G	Groundwater	Pleasant Street

Is My Water Treated?

Yes. Our water is naturally corrosive and 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. We add three chemicals to the water as it enters the system: zinc orthophosphate to reduce the natural corrosiveness of the water, calcium hypochlorite (chlorine) for disinfection and sodium fluoride is added to promote strong teeth. We make every effort to provide you with safe and pure drinking water. The water quality of our system is constantly monitored by us and MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required.

How Are These Sources Protected?

MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

What is My System's Ranking?

A susceptibility ranking of high was assigned to this system using the information collected during the assessment by MassDEP based on the presence of at least one high threat land use within the Zone II.

Where Can I See The SWAP Report?

The complete SWAP report is available at the Wenham Water Dept. office and online at <http://www.mass.gov/eea/docs/dep/water/drinking/swap/nero/3320000.pdf> For more information, call Erik Mansfield at (978) 468-5520 x6

What Are the Key Issues For Our Water Supply?

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

What Can Be Done To Improve Protection?

- Work with property owners within Zone 1 on methods of safeguarding the groundwater;
- Work 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;
- Work with the Board of Health to educate residents concerning the proper care of their septic systems and compliance with title 5 regulations;
- Work with the Conservation Commission to evaluate potential impacts to wetland and Town water quality;
- Work with the Department of Public Works to keep catch basins clean and in good repair; and
- Coordinate wellhead protection plans with Danvers, Topsfield, Beverly and Hamilton to ensure out-of-town protection of our watershed.

Residents can help protect sources by:

- Practice good septic system maintenance
- Support water supply protection initiatives
- Take hazardous household chemicals to hazardous materials collection days
- Limit pesticide and fertilizer use, etc.

SUBSTANCES FOUND IN TAP WATER

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, and 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 by-products 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.

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

All 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 (800-426-4791).

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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 Dept. 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>.

IMPORTANT DEFINITIONS

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 that a water system must follow.

90th Percentile – Out of every 10 homes sampled, 9 were at or below this level.

Secondary Maximum Contaminant Level (SMCL) – These standards are developed to protect the 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.

Massachusetts 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.

Maximum Residual Disinfectant Level (MRDL) -- The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) 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 (chlorine, chloramines, chlorine dioxide) below which there is no known expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

ppm = parts per million, or milligrams per liter (mg/l)
ppb = parts per billion, or micrograms per liter (ug/l)
ppt = parts per trillion, or nanograms per liter
pCi/l = picocuries per liter (a measure of radioactivity)
NTU = Nephelometric Turbidity Units
ND = Not Detected
<0.50 = Not Detected
N/A = Not Applicable
mrem/year = millirem per year (a measure of radiation absorbed by the body)

WATER QUALITY TESTING RESULTS

What Does This Data Represent?

The water quality information presented in the table is from the most recent round of testing done in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the table.

MassDEP has reduced the monitoring requirements for inorganic contaminants, synthetic organic contaminants and perchlorate because the source is not at risk of contamination. The last samples collected for these contaminants were taken on 04/14/2009, 02/06/2012, 08/08/2017 and were found to meet all applicable US EPA and MassDEP standards.

	Date(s) Collected	90 TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	09/18/2018	0.0038	15	0	20	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	09/18/2018	0.449	1.3	1.3	20	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Asbestos (MFL)	05/11/15	ND		7	7	N	Decay of asbestos cement water mains; erosion of natural deposits
Fluoride (ppm) ■	Daily	1.0	0.5 – 1.0	4	4	N	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
■ Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.							
Nitrate (ppm)	04/09/18	2.93		10	10	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Nitrite (ppm)	05/17/17	3.79		1	1	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Volatile Organic Contaminants							
Benzene (ppb)	08/21/18	<0.50		5	0	N	Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride (ppb)	08/21/18	<0.50		5	0	N	Discharge from chemical plants and other industrial activities
Chlorobenzene (ppb)	08/21/18	<0.50		100	100	N	Discharge from and agricultural chemical factories
o-Dichlorobenzene (ppb)	08/21/18	<0.50		600	600	N	Discharge from industrial chemical factories

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
p-Dichlorobenzene (ppb)	08/21/18	<0.50		5	5	N	Discharge from industrial chemical factories
1,2-Dichloroethane (ppb)	08/21/18	<0.50		5	0	N	Discharge from industrial chemical factories
1,1-Dichloroethylene (ppb)	08/21/18	<0.50		7	7	N	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene (ppb)	08/21/18	<0.50		70	70	N	Breakdown product of trichloroethylene and tetrachloroethylene
trans-1,2-Dichloroethylene (ppb)	08/21/18	<0.50		100	100	N	Discharge from industrial chemical factories
Dichloromethane (ppb)	08/21/18	<0.50		5	0	N	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane (ppb)	08/21/18	<0.50		5	0	N	Discharge from industrial chemical factories
Ethylbenzene (ppb)	08/21/18	<0.50		700	700	N	Leaks and spills from gasoline and petroleum storage tanks
Styrene (ppb)	08/21/18	<0.50		100	100	N	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene (PCE) (ppb)	08/21/18	<0.50		5	0	N	Discharge from factories and dry cleaners; residual of vinyl-lined water mains
1,2,4-Trichlorobenzene (ppb)	08/21/18	<0.50		70	70	N	Discharge from textile-finishing factories
1,1,1-Trichloroethane (ppb)	08/21/18	<0.50		200	200	N	Discharge from use in septic system cleaners
1,1,2-Trichloroethane (ppb)	08/21/18	<0.50		5	3	N	Discharge from industrial chemical factories
Trichloroethylene (TCE) (ppb)	08/21/18	<0.50		5	0	N	Discharge from metal degreasing sites and other factories
Toluene (ppm)	08/21/18	<0.50		1	1	N	Leaks and spills from gasoline and petroleum storage tanks; discharge from petroleum factories
Vinyl Chloride (ppb)	08/21/18	<0.50		2	0	N	Leaching from PVC piping; discharge from plastics factories
Xylenes (ppm)	08/21/18	<0.50		10	10	N	Leaks and spills from gasoline and petroleum storage tanks; discharge from petroleum factories; discharge from chemical factories
Radioactive Contaminants							
Gross Alpha (pCi/l) (minus uranium)	02/04/14	5.74		15	0	N	Erosion of natural deposits
Radium 226 & 228 (pCi/L) (combined values)	08/08/17	1.188		5	0	N	Erosion of natural deposits
Disinfectants and Disinfection By-Products							

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Total Trihalomethanes (TTHMs) (ppb)	04/14/18	19		80	N/A	N	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	04/14/18	5.2		60	N/A	N	Byproduct of drinking water disinfection
Chlorine (ppm) (free)	Daily	0.88	0.30 – 0.88	4	4	N	Water additive used to control microbes

Unregulated and Secondary 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 regulation is warranted.

Unregulated Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Manganese* (ppb)	08/21/18	0.0178 – 0.220	0.119	50	300	Erosion of natural deposits
* US EPA has established a lifetime health advisory (HA) value of 300 ppb for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1000 ppb for acute exposure.						
Sodium (ppm)	04/09/18	29.8 – 38.8	34.3	N/A	20	Discharge from the use and improper storage of sodium-containing de-icing compounds or in water-softening agents

Secondary Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Manganese* (ppb)	08/21/18	0.0178 – 0.220	0.119	50	Health Advisory of 300	Natural sources as well as discharges from industrial uses
* EPA has established a lifetime Health Advisory (HA) for manganese of 0.3 mg/L and an acute HA at 1.0 mg/L (Add health language listed below if detect is over 300 ppb)						

6. COMPLIANCE WITH DRINKING WATER REGS

Does My Drinking Water Meet Current Health Standards?

Yes. We are committed to providing you with the best water quality available. We are proud to report that last year your drinking water met all applicable health standards regulated by the state and federal government.

Drinking Water Violations

None

7. EDUCATIONAL INFORMATON

Do I Need To Be Concerned about Certain Contaminants Detected in My Water?

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.

Cross-Connection Control and Backflow Prevention

The Wenham Water Dept. makes every effort to ensure that the water delivered to your home and business is clean, safe and free of contamination. Our staff works very hard to protect the quality of the water delivered to our customers from the time the water is extracted via deep wells from underground aquifers throughout the entire treatment and distribution system. But what happens when the water reaches your home or business? Is there still a need to protect the water quality from contamination caused by a cross-connection? If so, how?

What is a backflow?

Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by equipment or a system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (back pressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy water demand causing the water to flow backward inside the water distribution system (back siphonage). Backflow is a problem that many water consumers are unaware of, a problem that each and every water customer has a responsibility to help prevent.

What can I do to help prevent a cross-connection?

Without the proper protection something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards, they are:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bib vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with backflow preventers.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.



The Wenham 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 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 Erik Mansfield at (978) 468-5520 x6.

8. ADDITIONAL INFORMATION

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:

- Fix 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
- Replace 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

The mission of the Water Department is to provide safe, clean drinking water that meets or exceeds government standards, water for fire protection and good customer service in a cost effective manner. Please enjoy Wenham Water but don't waste it. Reach out if you need or want more information.

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