

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribe regulations limiting 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, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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. Substances 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, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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 by-products of industrial processes and petroleum production, and which may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.



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# Annual WATER QUALITY REPORT

*Reporting Year 2011*

*Presented By*  
Town of Uxbridge Water Division



## Meeting the Challenge

We are proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2011. Over the years, we have dedicated ourselves to providing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts or concerns about the information in this report. After all, well-informed customers are our best allies.

## Public Water System Award

During 2011, the Uxbridge Water Division was presented a Public Water System Award for outstanding performance and achievement from the Massachusetts Department of Environmental Protection.



## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

## Where Does My Water Come From?

The Town of Uxbridge customers receive their water from two groundwater sources, each containing three gravel-packed wells. The Blackstone Well Field is located at the Water Division Office on Blackstone Street. The second source is the Bernat Well Field located on town-owned property on the east side of South Main Street. Both well fields are replenished from various underground sources.

In 2012, the Rosenfield Well Field, located on Quaker Highway, will be completed and put into service. This source consists of a single gravel-packed well. Please help protect your investment by monitoring land use near these well fields.

To learn more about our watershed on the internet, go to the U.S. EPA's Surf Your Watershed at [www.epa.gov/surf](http://www.epa.gov/surf).

## Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

## Water Use Restriction

In accordance with the requirements of the Water Management Act Permit issued by the Massachusetts Department of Environmental Protection, the Uxbridge Water Division has enacted Mandatory Water Use Restrictions from May 1st until September 30th between the hours of 9 a.m. and 5 p.m. This restriction prohibits all nonessential water use during this time frame.

## WHOM TO CALL

For more information about this report or for all general problems concerning leaks, meters, hydrants, or mains, call William Buna at the Water Division at (508) 278-8631 (Monday through Friday, 7 a.m. to 3 p.m.).

Emergency: For emergency service after business hours, please call the Uxbridge Police at (508) 278-7755.

Billing and Information: For billing, final readings, and other customer service questions, call the Department of Public Works (DPW) Office at (508) 278-8616.

This report will be posted in the Uxbridge Town Hall and the Uxbridge Public Library. Extra copies will also be available in the DPW Office located at 147 Hecla Street.



Sampling Results

During the past year, we have taken dozens of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contamination Level (MCL), we feel it is important that you know exactly what was detected and how much of each substance was present in the water.

The state requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES						
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOATION TYPICAL SOURCE
Barium (ppm)	2011	2	2	0.032	0.025–0.032	No Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride <sup>1</sup> (ppm)	2011	4	4	0.13	0.10–0.13	No Water additive that promotes strong teeth
Nitrate (ppm)	2011	10	10	1.5	1–1.5	No Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2011	2	NA	0.15	ND–0.15	No Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives.
Tap water samples were collected for lead and copper analyses from sample sites throughout the community						
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOATION TYPICAL SOURCE
Copper (ppm)	2009	1.3	1.3	0.4	0/20	No Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2009	15	0	2	0/20	No Corrosion of household plumbing systems; Erosion of natural deposits
SECONDARY SUBSTANCES						
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH TYPICAL SOURCE
Iron (ppb)		2011	300	NA	223	ND–223 Leaching from natural deposits; Industrial wastes
Manganese <sup>2</sup> (ppb)		2011	50	NA	292	ND–292 Leaching from natural deposits
Sulfate (ppm)		2011	250	NA	15	11–15 Runoff/leaching from natural deposits; Industrial wastes
UNREGULATED AND OTHER SUBSTANCES <sup>3</sup>						
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE		
Hardness [as CaCO <sub>3</sub> ] (ppm)	2011	41.5 (average)	30.4–47.3	Natural impurities such as manganese and calcium found in groundwater		
Sodium (ppm)	2011	58	27–58	Naturally occurring common element found in soil and water; Runoff from seasonal road treatment		

<sup>1</sup> Fluoride is a naturally occurring contaminant and is not added to the drinking water.

<sup>2</sup> Manganese is a naturally occurring mineral. At a level greater than 50 ppb, the water will appear brown, taste unpleasant, and may leave black stains on fixtures or on laundry. While manganese is part of a healthy diet, it can be harmful if consumed in large concentrations; infants should not drink water that contains manganese above this level, especially if they are bottle fed. The U.S. EPA has established a lifetime health advisory (HHA) of 300 ppb for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HHA of 1,000 ppb for acute exposure.

<sup>3</sup> Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

Source Water Assessment and Protection

The Massachusetts Department of Environmental Protection (DEP) completed an assessment of Uxbridge water sources and prepared a report that documents specific threats, such as underground storage tanks, auto repair shops, and transportation corridors. It also recommends actions we can take to protect our water supply. The DEP has assessed our susceptibility as high, based on the presence of at least one high-threat land use in our water supply protection areas. This Source Water Assessment and Protection (SWAP) report is available at the DEP's Central Office in Worcester or online at [www.mass.gov/dep/water/drinking/2304000.pdf](http://www.mass.gov/dep/water/drinking/2304000.pdf).

How Is My Water Treated and Purified?

The treatment process consists of a series of steps. First, raw water is drawn from our water sources and treated with potassium hydroxide. This chemical is used for pH adjustment and as a corrosion inhibitor (to protect distribution pipes and household plumbing). A polyphosphate is also added to sequester the iron and manganese that naturally occur in ground water throughout New England. All listed chemical treatments are conducted by trained licensed water operators. Finally, the water is pumped into the High Street underground tank and to the water tank on Richardson Street. The final destination from the storage tanks is your home or business. Uxbridge does not currently treat the water with chlorine or fluoride.

What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer to make sure that it is providing maximum protection. A backflow preventer must be installed by a licensed plumber with a necessary permit.

For more information, review the Cross-Connection Control Manual from the U.S. EPA's Web site at <http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/index.cfm>. You can also call the Safe Drinking Water Hotline at (800) 426-4791.

Definitions

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

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

**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 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 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 contaminants.

**NA:** Not applicable  
**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 at (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

Fact or Fiction

Tap water is cheaper than soda pop. *(Fact: You can refill an 8 oz. glass of tap water approximately 15,000 times for the same cost as a single six-pack of soda pop. And water has no sugar or caffeine.)*

Methods for the treatment and filtration of drinking water were developed only recently. *(Fiction: Ancient Egyptians treated water by siphoning water out of the top of huge jars after allowing the muddy water from the Nile River to settle. And Hippocrates, known as the father of medicine, directed people in Greece to boil and strain water before drinking it.)*

A typical shower with a non-low-flow shower head uses more water than a bath. *(Fiction: A typical shower uses less water than a bath.)*

Water freezes at 32 degrees Fahrenheit. *(Fiction: You can actually chill very pure water past its freezing point (at standard pressure) without it ever becoming solid.)*

The Pacific Ocean is the largest ocean on Earth. *(Fact: The Atlantic Ocean is the second largest and the Indian Ocean is the third largest.)*

A single tree will give off 70 gallons of water per day in evaporation. *(Fact)*