

Annual Drinking Water Quality Report for 2011  
For  
Whitinsville Water Company & Northbridge Water Department  
Whitinsville, Massachusetts  
MASSDEP PWSID # 2216000 & 2216006



This report is a snapshot of 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.

**I. PUBLIC WATER SYSTEM INFORMATION**

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**Water System Improvements**

The water company has nearly completed design of the iron removal filtration system for the wellfield on Carr Street. New filters will be installed in a small building that will be constructed adjacent to the existing well station. The water from the existing well station will pass through the filters prior to entering the system. The filters will remove virtually all of the iron and manganese in the raw water. Construction is anticipated to start in July and the filter system should be complete and operational by the end of 2012.

## 2. YOUR DRINKING WATER SOURCE

### Where Does My Drinking Water Come From?

Your water is provided by the following sources listed below:

Source Name	MassDEP Source ID#	Source Type	Location of Source
Whitin Wellfield	2216000-01G	Groundwater	Carr St., Northbridge
Sutton Wellfield	2216000-02G	Groundwater	Mendon Rd., Sutton

### Is My Water Treated?

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we provide the following treatment:

- We add a disinfectant to protect you against microbial contaminants.
- We filter the water to remove small particles and organisms such as sediment, algae and bacteria.
- We chemically treat the water to reduce corrosiveness and reduce lead and copper concentrations.
- We chemically treat the water to sequester iron and manganese.

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.

Our water system makes 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 if any treatment may be required.

### How Are These Sources Protected?

Whitinsville Water Company has unique water sources in that the company owns a series of reservoirs that are used to recharge the groundwater from where the wells withdraw the water from the ground. These reservoirs are extremely well protected as the company owns over a thousand acres of land dedicated to watershed protection. 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. A copy of the report can be found at <http://www.mass.gov/dep/water/drinking/ceroreps.htm>.

## 3. SUBSTANCES FOUND IN TAP WATER AND TESTED

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. However, bottled water providers are NOT required to report information to you about their water sources and testing. 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).

#### 4. 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.

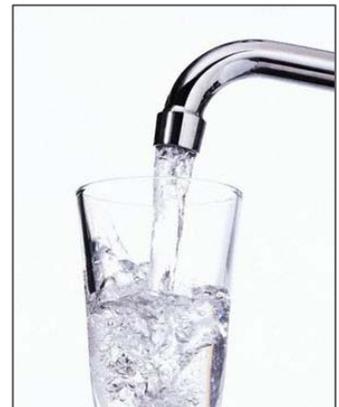
**Maximum Residual Disinfectant Level (MRDL)** -- The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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

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

**90<sup>th</sup> Percentile** – Out of every 10 homes sampled, 9 were at or below this level.

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  
N/A = Not Applicable  
mrem/year = millirem per year (a measure of radiation absorbed by the body)



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

**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.

## 5. WATER QUALITY TESTING RESULTS

### What Does This Data Represent?

The water quality information presented in the table(s) 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(s).

MassDEP has reduced the monitoring requirements for synthetic organic contaminants because the source is not at risk of contamination. The last sample collected for these contaminants was taken in 2006 and was found to meet all applicable US EPA and MassDEP standards.

	Date(s) Collected	90 <sup>TH</sup> percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	2009	2	15	0	60	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2009	0.1	1.3	1.3	60	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

	Highest # Positive in a month	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	0	1	0	N	Naturally present in the environment
Fecal Coliform or <i>E.coli</i>	0	*	0	N	Human and animal fecal waste

\* Compliance with the Fecal Coliform/*E.coli* MCL is determined upon additional repeat testing.

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
<b>Inorganic Contaminants</b>							
Barium (ppm)	April 2011	0.003	0-0.003	2	2	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm) ■	April 2011	0.23	0-0.23	4	4	N	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm)	April 2011	0.64	0-0.64	10	10	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
<b>Disinfectants and Disinfection By-Products</b>							
Total Trihalomethanes (TTHMs) (ppb)	<i>Quarterly</i>	<i>9.1</i>	<i>3.7-9.1</i>	80	-----	N	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	<i>Quarterly</i>	<i>3.8</i>	<i>0-3.8</i>	60	-----	N	Byproduct of drinking water disinfection
Chlorine (ppm) (free)	<i>Monthly</i>	<i>0.35</i>	<i>0.22-0.35</i>	4	4	N	Water additive used to control microbes

■ Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.

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 and Secondary Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
<b>Inorganic Contaminants</b>						
Sodium (ppm)	April 2011	4.5-6.5	5.5	----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	April 2011	4.4-5.0	4.7	250	----	Natural sources
<b>Secondary Contaminants</b>						
Iron (ppb)	<i>Quarterly</i>	0 -1.9	0.95	0.3	---	Naturally occurring, corrosion of cast iron pipes
Manganese (ppb)	<i>Quarterly</i>	0 -0.39	0.195	0.05	---	Erosion of natural deposits

\* The EPA has established a lifetime health advisory (HA) value of 0.3 mg/L for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1 mg/L for acute exposure.

**6. COMPLIANCE WITH DRINKING WATER REGS**

**Does My Drinking Water Meet Current Health Standards?**

We are committed to providing you with the best water quality available. Every year we conduct hundreds of water quality tests at the sources and in the system. We are happy to report that there was not a single violation of state health standards for all the tests performed. Also, all tests were performed in the required time frames.

**7. EDUCATIONAL INFORMATON**

**State Required Mandatory Language for Public Water Systems**

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. Whitinsville Water Company 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>.

Manganese is a naturally occurring mineral found in rocks, soil and groundwater and surface water. The USEPA and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 0.05 mg/L (50 micrograms per liter (ug/L) or 50 parts per billion (ppb)). EPA has also set a health guideline for lifetime exposure to manganese in drinking water of 0.3 mg/L (300 ppb). EPA considered this level to be a protective limit for adults from potential neurological effects over a lifetime of exposure. For short-term 10-day exposures, EPA advises that levels in drinking water be below 1 mg/L (100 ppb). Infants and children less than 3 years of age should consume drinking water with manganese levels below 0.3 mg/L (300 ppb), or preferably as low as possible. This recommendation is based on concerns about effects to the nervous system that are more likely to occur in younger children, and because formula-fed infants/children already receive adequate manganese as an added essential nutrient in their formula.

**8. WATER RESTRICTIONS**

In accordance with the requirements of the Water Management Act Permit issued by the Massachusetts Department of Environmental Protection the Whitinsville Water Company and the Town of Northbridge have enacted Mandatory Water Use Restrictions from May 1<sup>st</sup> until September 30<sup>th</sup> between the hours of 9AM and

5PM. The restriction prohibits all non-essential outdoor water use during this timeframe.

Examples of "Nonessential" outdoor water uses include:

- \* irrigation of lawns via sprinklers or automatic irrigation systems;
- \* washing of vehicles, except in a commercial car wash or as necessary for operator safety; and
- \* washing of exterior building surfaces, parking lots, driveways or sidewalks, except as necessary to apply surface treatments such as paint, preservatives, stucco, pavement or cement.

Examples of water uses that may be allowed:

- \* irrigation to establish a new lawn and new plantings during the months of May and September;
- \* irrigation of public parks and recreational fields by means of automatic sprinklers outside the hours of 9 a.m. to 5 p.m.; and
- \* irrigation of lawns, gardens, flowers and ornamental plants by means of a hand-held hose.

Examples of water uses NOT subject to mandatory restrictions:

- \* for health and safety reasons;
- \* by regulation;
- \* for the production of food and fiber;
- \* for the maintenance of livestock; or
- \* to meet the core functions of a business (for example, irrigation by golf courses as necessary to maintain tees, greens, and limited fairway watering, or irrigation by plant nurseries as necessary to maintain stock).



Violators of the water restrictions will be subject to enforcement, which may include termination of water service.

## 9. CROSS CONNECTION

One of the many activities water suppliers concern themselves with is preventing non potable materials from entering the water supply once the water is in the distribution system. Under certain conditions, it is possible for water to flow from inside a building back into the distribution system and contaminate the water supply. In an effort to prevent such an event from occurring, certain devices are installed as part of the plumbing system which only allows water to flow into a building. These devices are known as "back flow preventers." They are commonly referred to as "check valves."

The WWC installs check valves on all new houses immediately after the meter. Homes constructed prior to the early 1980's do not have check valves. Most commercial buildings, schools, fire sprinkler lines and offices have been surveyed and specific backflow devices have been installed where required. The more advanced back flow prevention devices are required to be tested by the WWC at least once per year to ensure proper operation.

Homeowners should be aware of the potential dangers associated with backflow occurrences for the safety of the occupants of the house as well as the neighbors. The following are actions which can be taken to reduce the possibility of contaminated water entering the water system:

- Install "hose bib" type backflow preventers on all outside faucets. They are inexpensive, easy to install and available at all plumbing stores.
- Do not leave a hose submerged in a pool or bucket of water.
- Never use mechanical equipment to add pressure to the water unless the proper back flow prevention devices are installed.
- All irrigation systems are required to have an Atmospheric Backflow Preventer.

## 10. TIPS FOR IRON

The Whitin well field on Carr Street is the source of the iron in the water which can cause discoloration under certain circumstances. As noted previously, the water company is in the process in installing treatment at this wellfield to remove the iron which should be in place by the end of 2012. Until then we must use the Whitin well field to meet the needs of the system, particularly during summer months. Although there are no adverse health effects due to iron in the water, the iron does result in aesthetic concerns. The following are some helpful suggestions you may wish to implement in order to reduce the aesthetic effects of the iron:

1. **FLUSH THE HOT WATER TANK** - The majority of concerns associated with the discolored water are associated with hot water. This is due to the fact that heat is an enzyme to any chemical reaction and the heat converts the liquid (dissolved) iron to the solid iron which we can then see. Every few months, flush the hot water tank by opening the spigot and running water to waste through a hose or into a bucket until the water clears. This will remove the accumulated iron from the bottom of the hot water tank which will help to keep the water clear while also improving the heating efficiency.
2. **USE IRON OUT OR EQUIVALENT** – Become familiar with the product called Iron Out which is used to clean iron stains or remove stains from clothes. Iron out is available at most hardware stores. There are also other products which are designed to reduce the effects of iron.
3. **INSTALL A CARTRIDGE TYPE FILTER** – There is a simple “cartridge type” filter that can be installed on the water line as it enters the house for a very reasonable cost. The maintenance of the simple filters is very easy and very inexpensive. We recommend to use a 50 micron cartridge filter. We sell them at the office at cost. The cartridges remove some of the iron if it is already in the solid form.

We do not recommend purchasing a water softener or any other type of elaborate filter system. Again, by the end of 2012 there will be no iron from our water sources.

## 11. WATER FACTS

Your tap water costs less than 1 penny per gallon. Bottled water costs more than \$1 per gallon. Your tap water is regulated by the Federal EPA and the State DEP. All states are required to (at a minimum) adopt the Federal testing requirements. Bottled water is regulated by the FDA. Bottled water sold only in the same state it is bottled is not subject to FDA regulation, but state regulation. State regulations for testing requirements for bottled water vary from state to state. State oversight of bottled water is very limited compared to tap water oversight. Generally, testing requirements for tap water are more stringent than for bottled water. Bottled waters do not have to report to the public when they



fail to test or exceed a standard as public water suppliers do. Bottled waters spend millions of dollars per year to convince you that their water is pure and worth the cost. Many bottle waters are simply municipal water that has been repackaged and sold for profit. The National Resource Defense Council conducted a four year study on bottled water and tap water and concluded that “*there is no assurance that just because water comes out of a bottle it is any cleaner or safer than water from the tap*”. A summary of the report can be found at <http://www.nrdc.org/water/drinking/bw/exesum.asp>.



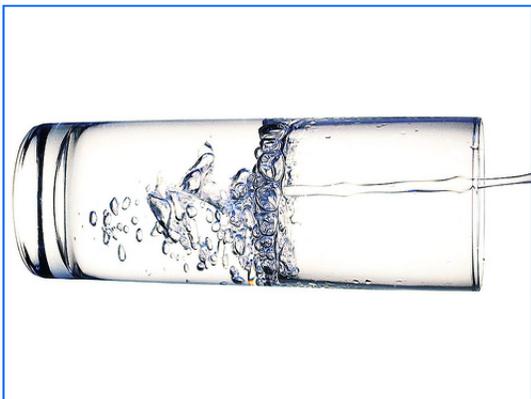
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