

2010 Annual Drinking Water Quality Report
For
Townsend Water Department
Townsend, Massachusetts
MASSDEP PWSID # 2299000

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. We are committed to providing you with information because informed customers are our best allies.

I. 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. As part of our ongoing commitment to you, last year we made the following improvements to our system:*
 1. A 40kw Photovoltaic (PV) Solar Array System was constructed at our Harbor Trace Pumping Station. Funding for this project was federal stimulus funds provided by the American Recovery and Reinvestment Act (ARRA) in the amount of \$325,000. Initial data indicates an approximate 40% savings in energy costs.
 2. **Witch's Brook Pump Station 2:** A new Pump and Motor with a Variable Frequency Drive (VFD) was installed to replace the existing pump and motor. Also replaced was the automatic transfer switch which automatically starts the generator in the event of a power outage. Also power and instrumentation wiring was replaced and upgraded and moved from overhead to underground. Water Department personnel provided the excavation for the underground wiring. Also for testing purposes Water Department personnel installed and replaced 4 isolation gates and a hydrant between the two stations. Funding was also provided by (ARRA).
 3. We began the initial steps to implement a "Supervisory Control and Data Acquisition" (SCADA) system. This requires the installation of the appropriate software and equipment at all facilities to monitor, control, and receive real time data at all facilities. This also provides us with the ability to control and monitor all aspects of each facility remotely allowing us to operate and control pumps and pump stations more efficiently resulting in reduced energy costs.

Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, you may attend the following meetings: The Board of Water Commissioners meets the second Monday of each month at 5:30 p.m. Meetings are held at the Water Department office located at 540 Main St. in West Townsend. Please feel free to attend and participate in these meetings.

2. YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?

Your water is provided by the following sources listed below:

Source Name	DEP Source ID#	Source Type	Location of Source
Main Street Well	2299000-01G	Groundwater	Main Street (West side of town)
Cross Street Well	2299000-02G	Groundwater	Off Cross Street
Harbor Trace Well	2299000-03G	Groundwater	Harbor Trace Road
Witch's Brook Well 1	2299000-04G	Groundwater	Ash Street
Witch's Brook Well 2	2299000-05G	Groundwater	Ash Street

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 treat the water with Sodium Hydroxide. This form of treatment controls the lead and copper content in the water and also makes the water less corrosive to household plumbing and fixtures.

The water quality of our system is constantly monitored by us and the DEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required.

How Are These Sources Protected?

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) report for sources supplying the Townsend Water System. The SWAP report identifies the wellhead protection areas, assesses the susceptibility of public water supplies and notes the key issues pertaining to: 1) inappropriate activities in Zones I and II; 2) residential land uses; 3) transportation corridors; 4) oil or hazardous material contamination sites; and 5) comprehensive wellhead protection planning. The term Zone II refers to the land area that contributes water to a well under the most severe pumping and recharge conditions that can be realistically imagined, i.e., pumping a well at its full capacity for 180 days without rainfall. The SWAP report also ranks the overall susceptibility of the system to contamination and recommends future actions to protect the sources. DEP's ranking for the Townsend Water Department was moderate, noting the presence of at least one high threat land use within the water supply protection areas.

The Townsend Water Department has responded to the report's recommendations by monitoring the Zones I & II, educating residents in the form of informational flyers, cooperating with any agency while we continue to monitor stormwater drainage in and around the Zone IIs, and inspecting any remedial action in the area of our Zone IIs.

What is My System's Ranking?

A susceptibility ranking of moderate was assigned to this system using the information collected during the assessment by the DEP.

Where Can I See The SWAP Report?

The complete SWAP report is available at the Townsend Water Department, the Townsend Board of Health, and the DEP Central Regional Office in Worcester and online at <http://www.mass.gov/dep/water/drinking/sourcewa.htm#reports>. For more information, call Superintendent Paul Rafuse at 978-597-2212.

What Can Be Done To Improve Protection?

The SWAP report recommends:

Ways residents can help protect water sources are: 1) practicing good septic system maintenance; 2) supporting any water supply protection articles at future Town Meetings; 3) taking hazardous household chemicals to hazardous materials collection days; and 4) limiting pesticide and fertilizer use, etc.

3. 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. [INSERT THE NAME OF YOUR UTILITY] 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>.

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.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water.

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.

Variances and Exemptions – State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

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).

	Date(s) Collected	90 TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	9/24/2010 – 9/30/2010	0.006	15	0	20	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	9/24/2010 – 9/30/2010	0.4	1.3	1.3	20	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Lead: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at 800.426.4791.

Copper

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

	Highest # Positive in a month	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	6	1	0	Yes	Naturally present in the environment
Fecal Coliform or <i>E.coli</i>	0	*	0	N/A	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
Inorganic Contaminants							
Barium (ppm)	6/23/2009	0.027	0.0-0.027	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Nitrate (ppm)	2/22/2010 6/23/2010 9/23/2010 12/14/2010	5.4	0.76-5.4	10	10	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Volatile Organic Contaminants							
Tetrachloroethylene (PCE) (ppb)	2/22/2010	0.6	0.0-0.6	5	0	No	Discharge from factories and dry cleaners; residual of vinyl-lined water mains
Radioactive Contaminants							

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
Radium 226 (pCi/L)	6/23/2009	0.4	0.0-0.4	5	0	No	Erosion of natural deposits

Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants less than six months old. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

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. However some contaminants that were tested last year did not meet all applicable health standards regulated by the state and federal government and are considered to be violations. Violations are issued for exceeding an MCL or failure to monitor for a contaminant in a timely manner. The table below describes any violations that occurred, the type of violation, and date range of the violation followed by an explanation of actions taken to address the violations.

CONTAMINANT	VIOLATION	DATE RANGE, MONTH, OR QUARTER OF OCCURANCE	ACTIONS TAKEN TO ADDRESS VIOLATION
* Total Coliform Bacteria	Exceedence of monthly MCL	June, July, and August	Chlorine disinfectant was added and additional testing was performed .
** Iron & Manganese	Monitoring	3 rd & 4 th Qtr.	Upon notification DEP was consulted and additional testing was performed.
Nitrate	Monitoring	3 rd Qtr.	Upon notification DEP was consulted and additional testing was performed.

* In all instances bacteria was detected in the storage tanks and could be isolated from the system. Bacteria was eliminated in 48 hours, in most cases bacteria was eliminated in 24 hours.

** Due to changes in state sampling schedules we inadvertently sampled according to a previous sampling schedule. There was no threat to public health and make up sapling was subsequently performed.

Our water system and MassDEP monitor and record the effectiveness of actions taken in response to contaminant violations. The health effect statement for contaminants is listed are.

Health Effects Statements

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Total Coliform: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

7. EDUCATIONAL INFORMATON

Do I Need To Be Concerned About Certain Contaminants Detected In My 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 Townsend 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>.

Info Statement on the Importance of a CCR:

This report contains very important information about your drinking water. Please translate it, or speak with someone who understands it.