

**Town of Southwick, MA**  
**Department of Public Works, Water Division**  
**2014 DRINKING WATER QUALITY REPORT**  
**PWS 1279000**

The Southwick Department of Public Works (DPW) is pleased to present this Consumer Confidence Report to all Customers in the water supply service area. This report is part of the 1996 Safe Drinking Water Act Amendments and is required by the United States Environmental Protection Agency (USEPA) and the Massachusetts Department of Environmental Protection (Mass DEP). The information that follows will describe the testing and monitoring completed by the Town of Southwick to ensure the residents will enjoy a pure and clean source of drinking water. DPW is pleased to notify our customers that there were no water quality violations in 2014.

### **Distribution System Overview**

Southwick's water system is composed of 51 miles of water mains, 2 wells, 4 pumping stations, and 2 storage tanks. Southwick also maintains an interconnection with Springfield Water and Sewer Commission (SWSC) to provide a supplemental water supply source during times of peak demand. Southwick's drinking water originates from the Great Brook Aquifer. Over the years, the Town has purchased over 170 acres of land over the aquifer in order to control land use and preserve water quality. Southwick's Source Water Assessment and Protection (SWAP) report is available for review at the DPW or available online through Mass DEP's website at <http://www.mass.gov/eea/docs/dep/water/drinking/swap/wero/1279000.pdf>.

Upgrades to the distribution system are and will be on-going. Our second new one million gallon storage tank was completed in September 2014. Future upgrades include enhancing the security at all facilities, a chlorination system at our well source, and replacement meters for all customers. These upgrades are an important part of supplying quality water to our water users.

### **Contaminants in Drinking Water**

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 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 can result from urban storm 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 storm water 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 can also come from gas stations, urban storm water runoff, and septic systems.
  - **Radioactive contaminants**, which can be naturally occurring or the result of oil and gas production and mining activities.

### **Lead and 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. DPW 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 water 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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

### **Testing Procedures**

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) also establishes limits for contaminants in bottled water which must provide the same protection for public health. DPW hires state-certified laboratories to verify that the water supplied is potable and meets all government standards. These samples are scheduled in accordance with Mass DEP standards and performed throughout the year. The water is monitored at the well site, storage tanks, and throughout the distribution system. The data presented herein represents finished water in the distribution system during calendar year 2014.

#### DISINFECTANTS AND DISINFECTION BY-PRODUCTS

Regulated Contaminant	Collection Schedule	Highest Result of Running Average Detected	Range Detected	MCL or MRDL	Violation (Yes/No)	MCLG	Possible Sources of Contamination
<i>Organics</i>							
TTHMs (ppb) (Total Trihalomethanes)	Quarterly	42	22-61	80	No	N/A	By-product of Drinking Water Chlorination
HAA5 (ppb) (Total Haloacetic Acids)	Quarterly	41.75	26-53	60	No	N/A	By-product of Drinking Water Chlorination
<i>Inorganics</i>							
Nitrate (ppm)	Annually	3.75	N/A	10	No	10	Natural Deposits, Storm Water, Fertilizer Run-off
Barium (ppm)	Annually	0.275	N/A	2	No	2	Natural Deposits
Perchlorate (ppb)	Annually	ND	N/A	2	No	0	By-product of Rocket Fuel, Fireworks and Explosives

#### LEAD AND COPPER (2014 TEST RESULTS)

Regulated Contaminant	Collection Schedule	MCLG	MCL	90 <sup>th</sup> Percentile	# of Sites Sampled	# of Sites Above AL	Possible Sources of Contamination
Lead (ppb)	Annually	0	AL = 15.0	4.9	20	2	Corrosion of Household Plumbing Systems
Copper (ppm)	Annually	1.3	AL = 1.3	0.091	20	0	Corrosion of Household Plumbing Systems

#### UNREGULATED CONTAMINANTS

Unregulated Contaminant*	Dates Collected	SMCL	ORSG	Number Of Sites Sampled	Maximum Amount Detected	Violation (Yes/No)	Possible Sources of Contamination
Sodium (ppm)	2014	N/A	20	2	11	No	Natural Deposits
Sulfate (ppm)	2008	250	N/A	2	14	No	Natural Deposits
Maganese(ppb)	2014	50	300	2	ND	No	Natural Deposits

\*Unregulated contaminants are those for which EPA has not published drinking water standards. The purpose of regulation is necessary. Unregulated Contaminant Monitoring Rule 3 (UCMR 3) is a list of 30 contaminants that EPA requires community drinking water systems to monitor in 2013. A new list is issued every 5 years.

#### Health Effects

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. Some people may be more vulnerable to contaminants in drinking water than the general population. People whose immune systems may be compromised because of chemotherapy, organ transplants, or HIV/Aids or other immune disorders, some elderly, and infants can be particularly at risk from infections.

In accordance with the Long Term 2 Enhanced Surface Water Treatment Rule, the Springfield Water & Sewer Commission began monitoring for Cryptosporidium in 2006. The results indicate that no further treatment is required, other than treatment already provided, which includes infiltration.

<u>Test Dates</u>	<u>Results</u>
07/10/2007	0.1 oocysts/liter
08/14/2007	0.1 oocysts/liter

Cryptosporidium is a microbial parasite found in surface water throughout the United States. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Monitoring indicates the presents of these organisms in the reservoir water. Current test methods do not determine if the organisms are dead or if they are capable of causing health problems. Most healthy individuals are able to overcome health problems associated with Cryptosporidium within a few weeks. However, immunocompromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immunocompromised individuals are encouraged to consult their doctor regarding appropriate precautions to prevent infection. Cryptosporidium must be ingested for it to cause health problems, and may be passed through other means than drinking water. Symptoms of infection include nausea, diarrhea and abdominal cramps.

Those concerned about the health effects presented in this report should seek advice from their health care providers. Guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from EPA's Safe Drinking Water Hotline (1-800-426-4791).

## Contamination from Cross-Connection

Protection of the Public Water Supply is critical, and a vital component is proper backflow prevention and cross-connection control. A cross-connection is formed at any point where a drinking water line connects to equipment, systems containing chemicals, or water sources of questionable quality. DPW is required to implement and follow a cross-connection control program to prevent backflow. DPW surveys properties (mainly non-residential) to look for potential cross-connections and will require proper backflow prevention devices when a need is determined. In addition, known backflow prevention devices are tested at a minimum yearly, depending on the type of device and the hazard it protects. Prior approval from DPW is required for the installation, repair, replacement, relocation, and removal of backflow prevention devices.

**Cross-connection** means any actual or potential physical connection or arrangement between a pipe conveying potable water from a public water system and any non-potable water supply, piping arrangement or equipment, including but not limited to waste pipe, soil pipe, sewer, drain, and other unapproved sources. Cross-connections can be found at heating and ventilation equipment, fire suppression systems, factory or plant equipment, irrigation systems, hose spigots, utility sinks, chemical processing facilities, etc. Cross-connections hazards such as these can be prevented through the installation of a backflow prevention devices.

**Backflow** means the flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply from any source other than the intended source, either by back-siphonage or back-pressure.

**Back-siphonage** is when there is a decrease in the water distribution system pressure, for example a water main break, firefighting (use of fire hydrants) or other high demand uses. When this happens, water from your building's plumbing may backflow into the public system.

**Back-pressure** is when the water pressure in a building's plumbing is increased above the pressure in the public water system, say by a pump in a factory; if this happens, the water in the building's plumbing can be forced back into the public water system.

### Simple steps to take around your home and yard to avoid cross-connections and backflow:

- Install hose bib vacuum breakers on all exterior spigots. These are available at hardware and plumbing stores.
- Toilets should be equipped with a ballcock with an integral anti-siphon valve.
- All sinks, tubs and tanks should have a proper air gap to prevent back-siphonage between bottom of the faucet/spout and rim or edge which may be treated with chemicals.
- Boilers should be equipped with an approved backflow prevention device.

### Informational Links:

Mass DEP Cross Connection Control Program Regulations: <http://www.mass.gov/eea/docs/dep/water/ccdefreg.pdf>

USEPA Cross Connection Control Manual:

[http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/crossconnectioncontrol\\_manual.cfm](http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/crossconnectioncontrol_manual.cfm)

Foundation for Cross-Connection Control and Hydraulic Research: <http://www.usc.edu/dept/fccchr/>

## Sanitary Survey Results

In May 2012, Mass DEP conducted a sanitary survey of the Town's public water system. A sanitary survey is an on-site review of the water sources, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the system's ability to distribute safe drinking water. Southwick failed to update the Town's water distribution system map and submit a copy to Mass DEP by December 31, 2012, as required in the Sanitary Survey. This requirement has since been satisfied. There were no other violations placed on Southwick during 2013 and 2014.

## Definitions

**AL = Action Level.** The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

**HDL = Highest Detected Level.**

**IDSE = Initial Distribution System Evaluation.** A study conducted by water systems to monitor trihalomethanes (THMs) and haloacetic acids (HAA5). Water systems will use results from the IDSE to select compliance monitoring locations for the Stage 2 Disinfection By-Products Rule.

**MCL = Maximum Contaminant Level.** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to 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 (ex. chlorine, chloramines, chlorine dioxide, etc.).

**MRDLG = Maximum Residual Disinfectant Level Goal.** The level of a drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**mrem/year = millirem per year.** A measure of radiation absorbed by the body.

**N/A = Not applicable.**

**ND = Not detected.**

**NTU = Nephelometric Turbidity Units.** A numerical value indicating the cloudiness of water.

**ORSG = Massachusetts Office of Research and Standards Guideline.** The concentration of a chemical in drinking water, at or below, which adverse health effects are unlikely to occur after lifetime exposure. If exceeded, it serves as an indicator of the potential need for further action.

**ppb = parts per billion (ug/l).**

**ppm = parts per million (mg/l).**

**ppt = parts per trillion (ng/l).**

**pCi/l = picocuries per liter.** A measure of radioactivity.

**PWS = Public Water System.**

**SMCL = Secondary Maximum Contaminant Level.** Standards developed to protect the aesthetic qualities of drinking water and are not health based.

**TT = Treatment Technique.** A required process intended to reduce the level of a contaminant in drinking water.

**Variations & Exemptions.** Mass DEP or EPA permission not required to meet an MCL or a treatment technique under certain conditions.

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