



Southbridge Water Department



2019

PWS ID: #2278000

REPORT ON WATER QUALITY

This report is a snapshot of the quality of drinking water that we provided in 2018. It reflects results of sampling conducted in 2019, as well as prior years. Included are details about where your water comes from, what it contains, and how it compares to state and federal standards. We are providing you with this information because informed customers are our best allies. For more information on your public water system please visit the Town's website at <http://www.ci.southbridge.ma.us>

Where Does My Water Come From?

The Southbridge Water Department is committed to providing our customers with high quality drinking water that meets or surpasses state and federal standards for quality and safety. We monitor both our source and distribution systems very closely. The standards we operate under were enacted by the U.S. Congress as the Safe Drinking Water Act in 1974 and were amended in 1986 and 1996.

The Town of Southbridge water system consists of five surface water reservoirs, one filtration facility, six pumping stations, four water storage tanks, one re-chlorination facility and approximately 100 miles of water main.

Four reservoirs are located on Hatchet Brook and one on Cohasse Brook. The Town of Southbridge owns a major portion of the Hatchet Brook Reservoir watershed and a large portion of the Cohasse Brook reservoir watershed. The remainder of the acreage is largely low-density residential development. Water is delivered to consumers via low service and high service systems.

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

SWAP (Source Water Assessment and Protection)

The MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the Southbridge Water Department. The report assesses the susceptibility of public water supplies to contamination and makes recommendations.

Our system was commended for taking an active role in promoting source protection in the Water Source Protection areas. A susceptibility ranking of **high** was assigned to all five of our water sources.

This report is available at the Southbridge Water Department office, located at 185 Guelphwood Road in Southbridge, MA, the Board of Health and also at the MassDEP website: <http://www.mass.gov/eea/docs/dep/water/drinking/swap/cero/2278000.pdf>. If you have any questions, please contact the Southbridge Water Department at (508) 764-3207.

Special Precautions

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA and the Center for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

Treatment Techniques Used By the Southbridge Water Department

Corrosion Control - Many drinking water sources in New England are naturally corrosive (i.e. they have a pH of less than 7.0). The water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful metals, such as lead and copper, to the water. For this reason it is beneficial to add chemicals that make the water neutral or slightly alkaline. This is done by adding any one, or a combination of several, approved chemicals. The Southbridge Water Department adds sodium hydroxide to its water. This adjusts the water to a non-corrosive pH. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

Adsorption Clarification (Package Plant) - Small particles and organisms such as sediment, algae and bacteria can cause water to take on unpleasant odors or tastes, and sometimes make it unhealthy to drink. To remove this material, we chemically treat the water and then pass it through two types of filtering units - an adsorption clarifier and a mixed media filter bed. The process begins with Aluminum Sulfate being added to the water at an established rate. This causes the small particles to coagulate, or stick together and form particles of increasing size. The chemically treated water then flows into the adsorption clarifier, which is a chamber filled with HDPE (high density polyethylene) media. As the turbid water passes through this unit, the large particles adhere to the clarifier media. This effectively removes up to 95 percent of all impurities. The cleaner water then flows onto a filter bed. Filters are comprised of garnet, sand and anthracite coal, which trap the remaining particles. Over time, filters start to clog and need to be cleaned using a high-flow backwash process.

Disinfection - All reservoirs and some ground water sources contain numerous microorganisms some of which can cause people to become ill. To eliminate disease carrying organisms it is necessary to disinfect the water. Disinfection does not sterilize the water, but it does destroy harmful organisms. Sterilization kills all microorganisms, even though most are not harmful. However, it is too costly to use on a routine basis. Southbridge uses sodium hypochlorite (chlorine) as its primary disinfectant. Chlorine destroys organisms by penetrating cell walls and reacting with enzymes. Disinfection with chlorine has been proven effective at ensuring that water is free of harmful organisms and safe to drink.

Sequestration (for iron and manganese) - Iron and manganese are often present in water at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water may still be safe to drink, treatment is often desirable. Southbridge uses this technique which consists of adding phosphates to the water. This results in a chemical reaction, known as sequestration, which prevents the iron and manganese from forming nuisance particles.

Fluoridation - Southbridge adds Sodium Fluoride to help in the prevention of tooth decay.

Opportunities to Participate

Any matters that concern your drinking water supply or issues you would like to see addressed can be presented at the regularly scheduled meeting of the DPW sub-committee meetings. Visit our town website at <http://www.ci.southbridge.ma.us/departments-of-public-works> for more information.

Treatment and Distribution facilities are operated and maintained by WhiteWater, Inc. for the Southbridge Department of Public Works, Water Division. If you have any questions about this report, please contact the Water Division Office at (508) 764-3207.

Additional copies of this report are available upon request and at:

www.ci.southbridge.ma.us/water-department

www.whitewateronline.com

Southbridge Town Hall

Jacobs Edwards Library

Charlton Town Hall

WhiteWater
WATER & WASTEWATER SOLUTIONS

DISTRIBUTION SYSTEM WATER QUALITY

This report summarizes only those items detected during sampling - not all contaminants that are monitored.

Microbial Results	Highest # Positive in a Month	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform	0	1	0	No	Naturally present in the environment
Fecal coliform-E.coli	0	*	0	No	Human and animal fecal waste

*Compliance with the Fecal Coliform/E.Coli MCL is determined upon additional testing.

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. You water is tested monthly and has been found to be free of these contaminants.

Lead & Copper	Date(s) Collected	90th Percentile of Sample	Action Level	MCLG	# of Sites sampled	# of Sites Above Action Level	Exceeds Action Level?	Possible Source of Contamination
Lead (ppb)	9/11/2018-	1	15	0	33	0	No	Corrosion of household plumbing systems
Copper (ppm)	9/14/2018	0.10	1.3	1.3		0	No	Corrosion of household plumbing systems

TESTING FOR LEAD

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. **Southbridge 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>.

SOURCE WATER CHARACTERISTICS

Key to Tables

- ppm – Parts per million, corresponds to one penny in \$10,000
- ppb – Parts per billion, corresponds to one penny in \$10,000,000
- pCi/L – Picocuries per liter (a measure of radioactivity)
- ND – Not detected
- n/a - not applicable
- RAA –Running annual average
- TT—Treatment technique

The sources of drinking water in the United States (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 storm water 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. These contaminants can also come from gasoline storage, urban storm water runoff, and septic systems.

- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

SUMMARY OF FINISHED WATER CHARACTERISTICS

Turbidity	TT	Highest Level Found	Lowest Monthly % of Samples Less than .30 NTU	Violation	Major Source in Drinking Water
Daily Compliance (NTU)	1	0.19	-	No	Soil Runoff
Monthly Compliance *	At Least 95%	-	100.0%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

* Monthly turbidity compliance related to a specific treatment technique (TT). Our system filters the water so at least 95% of our samples each month must be below the turbidity limits specified in the regulations.

Regulated Contaminants	Date(s) Collected	Highest Detect Value	Highest Source Average	Range Detected	MCL	MCLG	Violation	Possible Source of Contamination
Inorganic Contaminants								
Fluoride (ppm)	Monthly 2019	0.8	0.8	0.5-0.8	4	4	No	Water additive which promotes strong teeth
Nitrate (ppm)	4/2/19	0.043	n/a	n/a	10	10	No	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Nitrite (ppm)	Monthly 2019	0.012	n/a	ND-0.012	1	1	No	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Perchlorate (ppb)	7/11/17	0.170	n/a	n/a	2	n/a	No	Rocket propellants, fireworks, munitions, flares, blasting agents

Disinfection By-Products	Sampling Dates	Highest Running Annual Average	System Range	MCL	MCLG	Violation	Major Source in Drinking Water
Total Trihalomethanes (TTHM) (ppb)	Quarterly 2019	58.25	30-64	80	-	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)		38	24-36	60	-	No	By-product of drinking water chlorination
Chlorine Residual (ppm)		1.52	1.31-1.65	4	4	No	Water additive used to control microbes

Unregulated Contaminants	Date(s) Collected	Result or Range Detected	Highest Source Average	SMCL	ORSG	Possible Source of Contamination
Inorganic Contaminants						
Sodium (ppm)	4/9/19	8	n/a	-	20	Erosion of natural deposits, chemical treatment
Sulfate (ppm)	4/2/19	3	n/a	250	-	Natural sources

Sodium is a naturally-occurring common element found in soil and water. It is necessary for the normal functioning of regulating fluids in human systems. Some people, however, have difficulty regulating fluid volume as a result of several diseases, including congestive heart failure and hypertension. The guideline of 20 mg/L for sodium represents a level in water that physicians and sodium sensitive individuals should be aware of in cases where sodium exposures are being carefully controlled. For additional information, contact your health care provider, your local board of health or the Massachusetts Department of Public Health, Bureau of Environmental Health Assessment at 617-624-5757.

SOME TERMS DEFINED

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

MCLG - (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

MCL - (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

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

ORSG - (Massachusetts Office of Research and Standards Guideline): This is the concentration of a chemical in drinking water, at or below which, adverse, non-cancer health effects are likely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

Total Coliform: A bacteria that indicates other potentially harmful bacteria may be present.

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

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

Turbidity: A measure of the clarity of water. Turbidity is measured in Nephelometric Turbidity Units. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for bacterial growth.

TTHM – Total Trihalomethanes: Group of organic chemicals that are formed in the water treatment process by the reaction of the disinfectant chlorine with natural organic matter in the source water. Compliance is based on a running annual average.

Information about Lead in Drinking Water

You have no doubt seen a lot of media attention in the past few months regarding lead in drinking water. This began in Flint, Michigan, but has since become a topic of conversation and attention in Massachusetts, and other states as well.

Because of concern there may be, our department would like to provide information regarding lead in drinking water to help our customers understand more about the topic.

- Lead is not found in any of the water sources that we use in Southbridge.
- When water enters your property from the street, there is no lead in the water.
- If the plumbing in your house or facility does not contain lead, then there is no pathway for lead to leach into your water.
- Lead could be present in the water service line and plumbing materials that are inside your house or facility. If your property has lead pipes, lead solder, or fixtures that contain lead, then lead could leach into the water over time.
- The amount of leaching can be affected by water quality parameters such as the pH balance of the water in pipes. We treat our drinking water, continuously monitoring pH levels, and maintaining proper water quality parameters in the water system to minimize the potential for any leaching to occur.
- We have a testing plan that has been approved by the Mass Dept. of Environmental Protection (MassDEP) and we test in accordance with MassDEP requirements.
- This testing is done at representative locations throughout the entire water system. These locations are determined by MassDEP.
- Our test results have continuously met all requirements of this rule which indicates that the treatment we have in place has been effective.

If you would like to learn more about lead and drinking water, please feel free to contact our office at 508-764-3207 or visit the following websites:

<http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-in-drinking-water.html>
<https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water>

Cross Connection Control and Backflow Protection

A cross connection is a connection between a drinking water pipe and a polluted source. When the water system has a pressure drop, usually due to a leak in the system, water can sometimes siphon back into the system. An example is when homeowners fertilize their lawn with garden hose type attachments. These devices provide an avenue for the pollutant to siphon backwards into the home or the water system. We recommend that you install a backflow prevention device such as a hose bib vacuum breaker on all outside faucets. They can be obtained at your local plumbing or hardware store and are easy to attach. This is a great way for you to protect your home as well as the water system.



Typical HBVB

FOR YOUR INFORMATION

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 Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Where to go for more information

Massachusetts Department of Environmental Protection (MassDEP)
 617-292-5885.

<http://www.mass.gov/eea/agencies/massdep>

Massachusetts drinking water education partnership

<http://www.mass.gov/eea/agencies/massdep/water/drinking>

This report is also available online at www.whitewateronline.com

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Town of Southbridge
 41 Elm St.
 Southbridge, MA 01550