

## 2016 Water Quality Report

### Water Source Information

Your water comes from

Source Name	Source Water Type
LANGILLE BROOK DIVERSION	Surface Water
KELLY BROOK DIVERSION	Surface Water
STICKNEY BROOK DIVERSION	Surface Water
WELL #1	Groundwater
WELL #2	Groundwater
WELL #3	Groundwater
PLEASANT VALLEY RESERVOIR	Surface Water

The State of Vermont Water Supply Rule requires Public Community Water Systems to develop a Source Protection Plan. This plan delineates a source protection area for our system and identifies potential and actual sources of contamination. Please contact us if you are interested in reviewing the plan.

### Drinking Water Contaminants

The sources of drinking water (both tap water and bottled water) include surface water (streams, lakes) and ground water (wells, springs). As water travels over the land's surface or through the ground, it dissolves naturally-occurring minerals. It also picks up substances resulting from the presence of animals and human activity. Some "contaminants" may be harmful. Others, such as iron and sulfur, are not harmful. Public water systems treat water to remove contaminants, if any are present.

In order to ensure that your water is safe to drink, we test it regularly according to regulations established by the U.S. Environmental Protection Agency and the State of Vermont. These regulations limit the amount of various contaminants:

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, may come from a variety of sources such as storm water run-off, agriculture, and residential users.

Radioactive contaminants, which can be naturally occurring or the result of mining activity

Organic contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also come from gas stations, urban storm water run-off, and septic systems.

### Water Quality Data

The table below lists all the drinking water contaminants that we detected during the past year. It also includes the date and results of any contaminants that we detected within the past five years if tested less than once a year. The presence of these contaminants in the water does not necessarily show that the water poses a health risk.

Terms and abbreviations - In this table you may find terms you might not be familiar with. To help you better understand these terms we have provided the following definitions:

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

**Level 1 Assessment:** A level 1 Assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**Level 2 Assessment:** A Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**Locational Running Annual Average (LRAA):** The average of sample analytical results for samples taken at a particular monitoring location during four consecutive calendar quarters.

**Maximum Contamination Level (MCL):** The “Maximum Allowed” MCL is 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.

**Maximum Contamination Level Goal (MCLG):** The “Goal” is the level of a contaminant in drinking water below which there is no known or expected risk to human health. MCLG’s allow for a margin of safety.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. Addition a disinfectant may help control microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG):** 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 disinfectants in controlling microbial contaminants.

**Nephelometric Turbidity Unit (NTU):** NTU is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Parts per billion (ppb) or Micrograms per liter (µg/l):** (one penny in ten million dollars)

**Parts per million (ppm) or Milligrams per liter (mg/l):** (one penny in ten thousand dollars)

**Picocuries per liter (pCi/L):** a measure of radioactivity in water

**Running Annual Average (RAA):** The average of 4 consecutive quarters (when on quarterly monitoring); values in table represent the highest RAA for the year.

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

**90th Percentile:** Ninety percent of the samples are below the action level. (Nine of ten sites sampled were at or below this level).

## Detected Contaminants BRATTLEBORO WATER DEPT

Disinfection Residual	RAA	Range	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.847	0.100 - 1.450	mg/l	4.0	4.0	Water additive to control microbes

Microbiological	Result	MCL *	MCLG	Typical Source
No Detected Results were Found in the Calendar Year of 2016				

\*As of April 1, 2016, there is no MCL for total coliform. Instead more than 1 positive monthly sample requires a treatment technique.

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
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BROMOCHLOROACE TIC ACID	03/05/2013	2.2	2.2 - 2.2	ppb			
Nitrate	08/09/2016	0.5	0 - 0.5	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Radionuclides	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
No Detected Results were Found							

Disinfection ByProducts	Monitoring Period	LRAA	Range	Unit	MCL	MCLG	Typical Source
Total Haloacetic Acids (HAA5)	2016	35	13.3 - 30.3	ppb	60	0	By-product of drinking water disinfection
Total Trihalomethanes	2016	42	14.8 - 47.1	ppb	80	0	By-product of drinking water chlorination

Lead and Copper	Date	90 <sup>th</sup> Percentile	Range	Unit	AL*	Sites Over AL	Typical Source
Copper	2012 to 2014	0.26	0 - 0.42	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead	2012 to 2014	2	0 - 5	ppb	15	0	Corrosion of household plumbing systems; Erosion of natural deposits

\* The lead and copper AL (Action Level) exceedance is based on the 90<sup>th</sup> percentile concentration, not the highest detected result.

### Violation(s) that occurred during the year

*We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. The below table lists any drinking water violations we incurred during 2016. A failure to perform required monitoring means we cannot be sure of the quality of our water during that time.*

Type	Category	Analyte	Compliance Period
No Violations Occurred in the Calendar Year 2016			

### Revised Total Coliform Rule (RTCR) TT Violation(s)

No RTCR TT Violations

### Additional information (including steps taken to correct any violations listed above)

#### Level 1 Assessment(s)

No Level 1 Assessment was required.

#### Level 2 Assessment(s)

No Level 2 Assessment was required.

### Health information regarding drinking water

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 infants, can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from EPA's Safe Drinking Water Hotline (1-800-426-4791).

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline.

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. BRATTLEBORO WATER DEPT 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 drinking 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>.

**Public Notice - Permit to Operate Issued January 14, 2013:** The Water System is required to notify all users of the following compliance schedule contained in the Permit to Operate issued by the State of Vermont Agency of Natural Resources:

1. On or before January 1, 2016, the Permittee shall replace the interior coating for the Black Mountain Storage Tank with a new coating that meets the requirements of the Rule and any necessary cathodic protection, *or* replace the storage tank with a new storage tank that meets the requirements of the Rule.

**Public Notice - Uncorrected Significant Deficiencies:** The system is required to inform the public of any significant deficiencies identified during a sanitary survey conducted by the Drinking Water and Groundwater Protection Division that have not yet been corrected. For more information please refer to the schedule for compliance in the system's Operating Permit.

Date Identified	Deficiency	Facility
No Significant Deficiencies		

On September 13, 2016, demolition of the above Black Mountain Storage Tank began. All existing tank infrastructure was removed and the same site prepared for the erection of a new glass fused to steel Statewide Aquastore storage tank. Temporary water service was put into operation for the World Learning campus, along with temporary siting for emergency service antennas. The new one million gallon tank was completed on November 9, 2016. Following a period of time for sealant cure and disinfection, the "new" Black Mountain Storage Tank was put into service on December 16, 2016.

The Brattleboro Water Department is currently involved in a two year study of the surface

supply to monitor for the presence of E. Coli and coliform bacteria, Giardia Lamblia and Cryptosporidium. This study is part of the Long Term2 Enhanced Surface Water Treatment Rule. Samples are collected monthly for a two year period with the analyses being done by Analytical Services, Inc. in Williston, Vermont.

Preparations are being made for the sampling and testing for Lead and Copper in the distribution system which will take place between June and September in 2017.

### **Distribution information**

**Plans are being drawn up for the installation of new water main on Cottage Street.**

**Work is to resume on the Chestnut Hill Dam Improvement Project.**