

BARRE TOWN WATER SYSTEM - VT0005566

Consumer Confidence Report - 2019

This report is a snapshot of the quality of the water that we provided in 2019. Included are the details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards. We are committed to providing you with information because informed customers are our best allies. This report is designed to inform you about the quality water and services we deliver to you every day. To learn more, please attend any of our regularly scheduled meetings which are held:

6:00 PM on Tuesday nights at Barre Town Municipal Building located at 149 Websterville Road in Websterville, VT.

The person who can answer questions about this report is:

Town Engineer, Josh Martineau Telephone: 802-479-2595 and/or Email: jmartineau@barretown.org

Water System Operator, Jay Hrubovcak Telephone: 802-476-3522 and/or Email: jhrubovcak@barretown.org

Water Source Information

Your water comes from:

Source Name	Source Water Type
WELL 1	Groundwater
BARRE CITY - DIX RESERVOIR	Surface Water
GRANITEVILLE SOURCES	Ground Water under the Influence of 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 million (ppm) or Milligrams per liter (mg/l): (one penny in ten thousand dollars)

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

Parts per trillion (ppt) or Nanograms per liter (ng/l): (one penny in ten billion 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).

Per- and polyfluoroalkyl substances (PFAS): a group of over 4,000 human-made chemicals (they do not occur naturally) that have been used in industry and consumer products worldwide and includes:

(PFNA): Perfluorononanoic Acid

(PFOA): Perfluorooctanoic Acid

(PFOS): Perfluorooctane Sulfonic Acid

(PFHpA): Perfluoroheptanoic Acid

(PFHxS): Perfluorohexane Sulfonic Acid

(11Cl-PF3OUdS): 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic Acid

(9Cl-PF3ONS): 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic Acid

(DONA): 4,8-Dioxa-3H-perfluorononanoic Acid

(HFPO-DA): Hexafluoropropylene Oxide Dimer Acid

(NEtFOSAA): N-ethyl perfluorooctanesulfonamidoacetic Acid

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(PFTA): Perfluorotetradecanoic Acid
(PFTrDA): Perfluorotridecanoic Acid
(PFUnA): Perfluoroundecanoic Acid

Detected Contaminants BARRE TOWN WATER SYSTEM

Disinfection Residual	RAA	RANGE	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.263	0.110 - 0.710	mg/l	4	4	Water additive to control microbes

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Barium	01/24/2017	0.025	0.025 - 0.025	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate	02/26/2019	1.5	1.5 - 1.5	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
PFBS	11/14/2019	2.56	2.56 - 2.56	ppt	NA	NA	Belongs to a group of manmade chemicals used widely in manufacturing and consumer products

Radionuclides	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Gross Alpha Particle Activity*	03/26/2015	0.157	0.157 - 0.157	pCi/L	NA	0	Erosion of natural deposits

*Gross Alpha particle activity results include Uranium activity. However, the EPA has set a maximum contaminant level (MCL) for "adjusted" Gross Alpha particle activity (including radium-226 but excluding Uranium) at 15 pCi/L. To determine compliance with the "adjusted" Gross Alpha MCL, a separate Uranium result is required for the adjustment calculation, and it must be converted from mass (ug/L) to activity (pCi/L). The estimated Uranium activity is then subtracted from the Gross Alpha particle activity lab result to yield the "adjusted" Gross Alpha result in pCi/L.

Disinfection ByProducts	Collection Year	Highest LRAA	Range	Unit	MCL	MCLG	Typical Source
Total Trihalomethanes	2019	26	7 - 44	ppb	80	0	By-product of drinking water chlorination
Total Haloacetic Acids (HAA5)	2019	11	0 - 25	ppb	60	0	By-product of drinking water chlorination

Lead and Copper	Collection Year	90th Percentile	Range	Unit	AL [#]	Sites Over AL	Typical Source
Lead	2017	2.9	0 - 4.4	ppb	15	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	2017	0.97	0.084 - 1.1	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from

							wood preservatives
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*The lead and copper AL (Action Level) exceedance is based on the 90th percentile concentration, not the highest detected result.

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. BARRE TOWN WATER SYSTEM 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>.

Distribution Information

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place and distributing copies by hand or mail.

Per- and Polyfluoroalkyl Substances (PFAS) are contaminants you may see reported in your Consumer Confidence Report (CCR) for the first time.

What are PFAS?

PFAS are a group of over 4,000 human-made chemicals (they do not occur naturally) that have been used in industry and consumer products worldwide since at least the 1950s. These chemicals are used to make household and commercial products that resist heat and chemical reactions and repel oil, stains, grease, and water. Some common products that may contain PFAS include non-stick cookware, water-resistant clothing and materials, cleaning products, cosmetics, food packaging materials, and some personal care products. Due to their resilient chemical nature, they don't readily degrade once they are released into the environment. In addition, the common use of these chemicals in industry and consumer products has led to their widespread impact on the environment. The impact of these chemicals on your drinking water continues to be studied.

Why are PFAS being tested in my drinking water?

In May 2019, Act 21 (S.49), an act relating to the regulation of per- and polyfluoroalkyl substances (PFAS) in drinking and surface waters, was signed by Governor Scott. This Act provides a comprehensive framework to identify PFAS contamination and to issue new rules to regulate PFAS levels in drinking water.

What if PFAS have been detected in my drinking water?

Act 21 set an interim standard for the detected concentration of five PFAS in drinking water, or the combined concentration of any of the 5 PFAS, which should not exceed **20 parts per trillion (ppt)**. The interim standard is based on the Health Advisory established by the Vermont Department of Health. The five PFAS are:

(PFNA): Perfluorononanoic Acid

(PFOA): Perfluorooctanoic Acid

(PFOS): Perfluorooctane Sulfonic Acid

(PFHpA): Perfluoroheptanoic Acid

(PFHxS): Perfluorohexane Sulfonic Acid

If your water has been tested and the **sum any of the five PFAS listed above is confirmed to exceed 20 ppt**, a Do Not Drink notice will be issued informing you not to use your water for drinking or cooking, brushing teeth, making ice cubes, making baby formula, washing fruits and vegetables or any other consumptive use. You will be advised to use another source of water for consumption which may include bottled water.

An additional 13 PFAS were required to be tested for, per Act 21. These additional 13 PFAS, listed below, currently do not have an established health-based standard and are not counted toward the combined standard of 20 ppt:

(11Cl-PF3OUdS): 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic Acid

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(PFUnA): Perfluoroundecanoic Acid

Where can I learn more about PFAS in drinking water?

For information about the health effects of PFAS, please visit www.healthvermont.gov/water/pfas or call the Vermont Department of Health at 1-800-439-8550. If you have specific health concerns, contact your health care provider.

WEBSTERVILLE WATER SYSTEM - VT0005247

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Water Source Information

Your water comes from:

Source Name	Source Water Type
QUARRY HOLE (BARCLAY QUARRY)	Surface Water
QUARRY HOLE (NO. 1)	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.

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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.

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Detected Contaminants WEBSTERVILLE WATER SYSTEM

Disinfection Residual	RAA	RANGE	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.831	0.020 - 1.780	mg/l	4	4	Water additive to control microbes

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Nitrate	02/26/2019	0.084	0.084 - 0.084	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
Combined Radium (-226 & -228)	02/18/2019	1.2	1.2 - 1.2	pCi/L	5	0	Erosion of natural deposits
Radium-226	02/18/2019	0.614	0.614 - 0.614	pCi/L	5	0	Erosion of natural deposits
Radium-228	02/18/2019	0.586	0.586 - 0.586	pCi/L	5	0	Erosion of natural deposits

Disinfection ByProducts	Collection Year	Highest LRAA	Range	Unit	MCL	MCLG	Typical Source
Total Trihalomethanes	2019	27	27 - 27	ppb	80	0	By-product of drinking water chlorination
Total Haloacetic Acids (HAA5)	2019	29	29 - 29	ppb	60	0	By-product of drinking water chlorination

Lead and Copper	Collection Year	90th Percentile	Range	Unit	AL*	Sites Over AL	Typical Source
Lead	2018	2.1	0 - 2.5	ppb	15	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	2018	0.31	0.078 - 0.31	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

*The lead and copper AL (Action Level) exceedance is based on the 90th 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 2019. 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
MONITORING, ROUTINE MAJOR	Failure to Monitor	Volatile Organic Chemicals	04/01/2019 - 06/30/2019

To be Completed by the Water System. *List any steps taken to correct the violations listed above:*

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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	Significant Deficiencies	Facility
07/27/2017	Operation and Maintenance (O&M) Manual Needed	
10/17/2019	Inadequate Water Pressure (Under Normal, Peak, or Maximum Flow Conditions)	

To be Completed by the Water System. *Describe any interim measures taken or work completed for the deficiencies listed above:*

Public Notice - Permit to Operate Issued: 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 December 1, 2016**, the permittee shall submit record drawings and an update to the Water System's Operations and Maintenance Manual which describe the newly installed system controls to the Division.

To be completed by the Water System:

Describe any interim measures completed or progress to date for the compliance schedule(s) listed above.

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Why are PFAS being tested in my drinking water?

In May 2019, Act 21 (S.49), an act relating to the regulation of per- and polyfluoroalkyl substances (PFAS) in drinking and surface waters, was signed by Governor Scott. This Act provides a comprehensive framework to identify PFAS contamination and to issue new rules to regulate PFAS levels in drinking water.

What if PFAS have been detected in my drinking water?

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Where can I learn more about PFAS in drinking water?

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GRANITEVILLE FIRE DISTRICT 4 - VT0005248

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_____ (date/time) at _____ (location).

The person who can answer questions about this report is: Jen Malnati

Telephone: (802) 272-8756 and/ or Email jenmalnati@yahoo.com

Water Source Information

Your water comes from:

Source Name	Source Water Type
# 1 WELL (RESERVOIR 1)	Ground Water under the Influence of Surface Water
GALE RES INF GALL 2-1+2-1A (A)	Groundwater
RES 1 NORTH LINE INF GALL 1-1 (A)	Ground Water under the Influence of Surface Water
RES 1 SOUTH LINE INF GALL (A)	Ground Water under the Influence of Surface Water
RESERVOIR 3 COLLECTION BOX	Groundwater
RES 1	Ground Water under the Influence of Surface Water
RES 2	Ground Water under the Influence of Surface Water
WELL 3 (RESERVOIR 2)	Ground Water under the Influence of Surface Water
BARRE TOWN CONNECTION	Surface Water
RES 1 INF GALL 1-17 (B)	Ground Water under the Influence of Surface Water
RES 1 INF GALL 1-18 (C)	Ground Water under the Influence of Surface Water
RES 1 NORTH LINE INF GALL 1-2 (B)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL (C)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL 1-4 (D)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL 1-5 (E)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL 1-6 (F)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL 1-7 (G)	Ground Water under the Influence of Surface Water
RES I SOUTH LINE INF GALL (B)	Ground Water under the Influence of Surface Water
RES I SOUTH LINE INF GALL (C)	Ground Water under the Influence of Surface Water
RES 1 SOUTH LINE INF GALL (D)	Ground Water under the Influence of Surface Water
RES 1 SOUTH LINE INF GALL (E)	Ground Water under the Influence of Surface Water
GALE RES INF GALL 2-2 TO 2-9 (B)	Groundwater
GALE RES INF GALL 2-2 TO 2-9 (C)	Groundwater
GALE RES INF GALL 2-2 TO 2-9 (D)	Groundwater

GALE RES INF GALL 2-2 TO 2-9 (E)	Groundwater
GALE RES INF GALL 2-2 TO 2-9 (F)	Groundwater
GALE RES INF GALL 2-2 TO 2-9 (G)	Groundwater
RES 3 SPRING 3-1 (B)	Groundwater
RES 3 SPRING 3-2 (C)	Groundwater
WELL 6	Groundwater

Buyer	Seller
BARRE TOWN WATER SYSTEM	BARRE CITY WATER SYSTEM

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

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

Parts per trillion (ppt) or Nanograms per liter (ng/l): (one penny in ten billion 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).

Per- and polyfluoroalkyl substances (PFAS): a group of over 4,000 human-made chemicals (they do not occur naturally) that have been used in industry and consumer products worldwide and includes:

(PFNA): Perfluorononanoic Acid

(PFOA): Perfluorooctanoic Acid

(PFOS): Perfluorooctane Sulfonic Acid

(PFHpA): Perfluoroheptanoic Acid

(PFHxS): Perfluorohexane Sulfonic Acid

(11Cl-PF3OUdS): 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic Acid

(9Cl-PF3ONS): 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic Acid

(DONA): 4,8-Dioxa-3H-perfluorononanoic Acid

(HFPO-DA): Hexafluoropropylene Oxide Dimer Acid

(NEtFOSAA): N-ethyl perfluorooctanesulfonamidoacetic Acid

(NMeFOSAA): N-methyl perfluorooctanesulfonamidoacetic Acid

(PFBS): Perfluorobutane Sulfonic Acid

(PFDA): Perfluorodecanoic Acid

(PFDoA): Perfluorododecanoic Acid

(PFHxA): Perfluorohexanoic Acid

(PFTA): Perfluorotetradecanoic Acid

(PFTrDA): Perfluorotridecanoic Acid

(PFUnA): Perfluoroundecanoic Acid

Detected Contaminants GRANITEVILLE FIRE DISTRICT 4

Disinfection Residual	RAA	RANGE	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.315	0.200 - 0.500	mg/l	4	4	Water additive to control microbes

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Nitrate	05/29/2019	0.21	0.21 - 0.21	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Disinfection ByProducts	Collection Year	Highest LRAA	Range	Unit	MCL	MCLG	Typical Source
Total Trihalomethanes	2019	7	7 - 7	ppb	80	0	By-product of drinking water chlorination

Lead and Copper	Collection Year	90th Percentile	Range	Unit	AL*	Sites Over AL	Typical Source
Lead	2019	1.5	0 - 1.6	ppb	15	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	2019	0.15	0.027 - 0.17	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

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

Level 1 Assessment(s)

During the past year we were required to conduct one Level 1 Assessment(s). One Level 1 Assessment(s) were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

Level 2 Assessment(s)

During the past year we were required to conduct one Level 2 Assessment(s). One Level 2 Assessment(s) were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

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. GRANITEVILLE FIRE DISTRICT 4 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>.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that were found during these assessments.

Distribution Information

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place and distributing copies by hand or mail.

Per- and Polyfluoroalkyl Substances (PFAS) are contaminants you may see reported in your Consumer Confidence Report (CCR) for the first time.

What are PFAS?

PFAS are a group of over 4,000 human-made chemicals (they do not occur naturally) that have been used in industry and consumer products worldwide since at least the 1950s. These chemicals are used to make household and commercial products that resist heat and chemical reactions and repel oil, stains, grease, and water. Some common products that may contain PFAS include non-stick cookware, water-resistant clothing and materials, cleaning products, cosmetics, food packaging materials, and some personal care products. Due to their resilient chemical nature, they don't readily degrade once they are released into the environment. In addition, the common use of these chemicals in industry and consumer products has led to their widespread impact on the environment. The impact of these chemicals on your drinking water continues to be studied.

Why are PFAS being tested in my drinking water?

In May 2019, Act 21 (S.49), an act relating to the regulation of per- and polyfluoroalkyl substances (PFAS) in drinking and surface waters, was signed by Governor Scott. This Act provides a comprehensive framework to identify PFAS contamination and to issue new rules to regulate PFAS levels in drinking water.

What if PFAS have been detected in my drinking water?

Act 21 set an interim standard for the detected concentration of five PFAS in drinking water, or the combined concentration of any of the 5 PFAS, which should not exceed **20 parts per trillion (ppt)**. The interim standard is based on the Health Advisory established by the Vermont Department of Health. The five PFAS are:

- (PFNA):** Perfluorononanoic Acid
- (PFOA):** Perfluorooctanoic Acid
- (PFOS):** Perfluorooctane Sulfonic Acid
- (PFHpA):** Perfluoroheptanoic Acid
- (PFHxS):** Perfluorohexane Sulfonic Acid

If your water has been tested and the **sum any of the five PFAS listed above is confirmed to exceed 20 ppt**, a Do Not Drink notice will be issued informing you not to use your water for drinking or cooking, brushing teeth, making ice cubes, making baby formula, washing fruits and vegetables or any other consumptive use. You will be advised to use another source of water for consumption which may include bottled water.

An additional 13 PFAS were required to be tested for, per Act 21. These additional 13 PFAS, listed below, currently do not have an established health-based standard and are not counted toward the combined standard of 20 ppt:

- (11Cl-PF3OUdS):** 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic Acid
- (9Cl-PF3ONS):** 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic Acid
- (DONA):** 4,8-Dioxa-3H-perfluorononanoic Acid
- (HFPO-DA):** Hexafluoropropylene Oxide Dimer Acid
- (NEtFOSAA):** N-ethyl perfluorooctanesulfonamidoacetic Acid
- (NMeFOSAA):** N-methyl perfluorooctanesulfonamidoacetic Acid
- (PFBS):** Perfluorobutane Sulfonic Acid
- (PFDA):** Perfluorodecanoic Acid
- (PFDoA):** Perfluorododecanoic Acid
- (PFHxA):** Perfluorohexanoic Acid
- (PFTA):** Perfluorotetradecanoic Acid
- (PFTrDA):** Perfluorotridecanoic Acid
- (PFUnA):** Perfluoroundecanoic Acid

Where can I learn more about PFAS in drinking water?

For information about the health effects of PFAS, please visit www.healthvermont.gov/water/pfas or call the Vermont Department of Health at 1-800-439-8550. If you have specific health concerns, contact your health care provider.

What could we expect to find in our water?

As water travels over the surface of land or through the ground it dissolves naturally occurring minerals and in some cases radioactive material. It can also pick up substances resulting from human activity or from the presence of animals.

Contaminants that may be present in source water include:

Microbial contaminants: such as viruses and bacteria, which may come from septic systems, agricultural livestock operations and wildlife;

Inorganic contaminants: like salts and metals, which can occur naturally or result from domestic waste water discharges and agricultural uses;

Pesticides and Herbicides: that may come from agriculture and residential uses;

Organic chemical contaminants: that include synthetic and volatile compounds coming from septic tanks and careless disposal of household chemicals, and

Radioactive contaminants: that occur naturally.

Who makes the decisions about our water?

Our City Council. We encourage public interest and participation in our community's decisions that affect drinking water.

How is this done?

By attending the Council meetings on **Tuesday evening at 7:00 p.m.**, in **City Hall, Council Chambers, at 6 North Main Street**, when there are water related issues on the agenda. The Saturday edition of our local newspaper publishes a notice of these meetings.

Health Information

The EPA (Environmental Protection Agency) establishes regulations that limit the amount of certain contaminants in drinking water, thus providing the consumer with water that is both palatable and potable (safe). Also, the **FDA (Food & Drug Administration)** promulgates rules and restrictions that limit contaminants in the bottled water industry in order to provide the same protection for the general public.

All drinking water, including bottled water, may contain small amounts of contaminants. Their presence does not always mean that water poses a health risk. However, some people may be more vulnerable to contaminants in drinking water than the general public. Immunocompromised persons with cancer who are undergoing chemotherapy, who have had organ transplants, who suffer from HIV/AIDS or other immune system disorders may be more susceptible to infections. Other groups at greater risk to infections would be the elderly and infant populations. These people should seek advice from their health care provider.

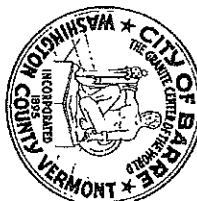
You can contact **EPA's Safe Drinking Water**

Hotline at 1-800-426-4791 for more information about contaminants in drinking water and their potential health effects. Their guidelines will provide measures to lessen the risk of infection by Cryptosporidium, Giardia, and other microbial contaminants.

*Gross Alpha particle activity results include Uranium activity. However, the EPA has set a maximum containment level (MCL) for "adjusted" Gross Alpha particle activity (including Radium-226 but excluding Uranium) at 15pCi/L. To determine compliance with the "adjusted" Gross Alpha MCL, a separate Uranium result is required for the adjustment calculation, and it must be converted from mass (µg/L) to activity (pCi/L). The estimated Uranium activity is then subtracted from the Gross Alpha particle activity lab result to yield the "adjusted" Gross Alpha result in pCi/L.

City of Barre Water Dept.
6 North Main Street, Suite 5
Barre, VT 05641

**City of Barre
Water Quality Report
2019**



We are proud to report that water provided to the greater Barre area meets or exceeds established water quality standards!

Why are we telling you this?

This is an annual report on the quality of water delivered by the City of Barre. It meets the Federal Safe Drinking Water Act (SDWA) requirement for "Consumer Confidence Reports" and contains information on the source of our water, what's in the water and the health risks associated with any contaminants that may be present. Safe water is vital to our community. Please read this report carefully. If you have any questions, you may call the Water Filtration Facility 476-6885.

Where does our drinking water come from?

The City of Barre's water supply is located in the Town of Orange. The surface water fed by streams and springs is stored in three impoundments known as The Thurman W. Dix Reservoir and the Upper and Lower Reservoirs. The Dix Reservoir, designed in 1950, holds almost all (93%) of the raw untreated water.

To help protect the area around the reservoirs, known as the watershed, Barre has developed a Source Protection Plan that was approved by the State of Vermont on Dec. 29, 1997. April 2008, 2011 and December 2015. The area totaling 11.1 square miles is broken down into three zones based on distance from the surface water supply.

The Plan provides a more comprehensive look at the possible sources of contamination within our watershed.

The 6 million gallon per day water treatment facility receives water directly from the Lower Orange Reservoir. Our treatment process reduces or eliminates turbidity, bacteria, viruses, parasites, color, taste, odor and organics.

The finished water is transported from the facility to the distribution system via a 20" cast iron water main. The system is comprised of two different zones known as the high and low pressure areas. These areas provide water for approximately 15,000 customers.

Highlights of 2019

- The Water system was required to sample for Unregulated Contaminants as specified by the Environmental Protection Agency's Unregulated Contaminant Monitoring 4 rule. Total Organic Carbon was measured at 3 mg/L and Bromide was recorded at 0.005 mg/L. The reporting limit for TOC is 0.5 mg/L and bromide is 0.005 mg/L. Total Organic Carbon is a non-specific indicator of water quality. Many other contaminants were tested for with them being under the reported detection limit. We can supply the testing list and if interested please call the Water department office at (802) 476-0250. We occasionally receive requests for the following chemical constituents: Alkalinity 55 mg/L, Hardness 67 mg/L, Calcium 24 mg/L, and magnesium 1.6 mg/L.
- The Facility produced 457.37 million gallons. Production averaged 1,255 million gallons per day.

Key maintenance activities include: Replaced soft start capacitor blower #1, Rebuilt raw water #1, Rebuilt air Facility compressor #2.

continued in right column

WATER QUALITY -- DATA TABLE -- 2019

Standard Group / Analyte	Unit	MCL	MCLG	Health Advisory Level	Sample Date	Sample No.	Value	Health Advisory	Notes	Health
Fluoride	ppm	1.0	1.0	0.7	12/20/19	01	0.12	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Chloride	ppm	0.2	0.2	0.7	7/20/20	01	4.4	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Zinc	ppm	0.3	0.3	0.3	3/20/20	01	0.1	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Iron	ppm	0.3	0.3	0.3	12/20/19	01	0.1	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Lead	ppb	0.05	0.05	0.01	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Cadmium	ppb	0.05	0.05	0.01	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Mercury	ppb	0.02	0.02	0.01	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Chromium	ppb	0.1	0.1	0.05	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Copper	ppb	1.3	1.3	0.8	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Barium	ppb	2,000	2,000	1,000	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Strontium	ppb	7,000	7,000	3,500	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Vanadium	ppb	30	30	15	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Antimony	ppb	0.05	0.05	0.01	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Asbestos	ppb	0.01	0.01	0.005	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Radon	pCi/L	4,000	4,000	3,000	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Lead	ppb	0.05	0.05	0.01	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Copper	ppb	1.3	1.3	0.8	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Chromium	ppb	0.1	0.1	0.05	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Turbidity	NTU	0.5	0.5	0.1	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes
Chlorine	mg/L	4.0	4.0	1.0	7/20/20	01	0.0	0.0	None from leadline test. Exceeds from sample collected from natural levels	Yes

- During a Water Supply Division inspection on July 10, 2018 it was noted that the Route 302 pressure reducing vault piping may have been under water for ground water intrusion. In the event of pipe failure ground water could enter distribution system. A sump pump was added to the vault to prevent water accumulation.
 - Per and Poly Fluorinated Alkyl Acids were tested for at point of entry to distribution system. NONE were detected. This chemical if detected at or above 20 parts per trillion, a do not drink notice would have been issued.
 - 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 City of Barre 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>.
- ### Key to Water Quality Data Table
- Maximum Contaminant level (MCL): The highest level of a contaminant that is allowed in drinking water.
 - MCLs are set as close to the MCLG as feasible using the best available treatment.
 - Maximum Contaminant level Goal (MCLG): 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.
 - Action level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
 - 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).
 - Parts per Million (ppm) or Milligrams per Liter (mg/L): One penny in \$10,000.
 - Parts per Billion (ppb) or Micrograms per Liter (ug/L): One penny in \$10 million dollars.
 - Picocuries per Liter (pCi/L): A measure of radioactivity.
 - NTUs: Nephelometric Turbidity Units
 - n/a: Not Applicable
 - MRDL Maximum Residual Disinfectant Level
 - MRDLG Maximum Residual Disinfectant Goal
 - LRAA Long Range Annual Average
- The Water System is responsible for the collection of a minimum of 15 bacteriological samples per month.