

Annual Drinking Water Quality Report for 2016
Chesterfield Water District (former Village of Keeseville Water System)
PO Box 456 Keeseville, NY 12944
(Public Water Supply ID NY1500283)

INTRODUCTION

To comply with State regulations, the Town of Chesterfield will be annually issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year, we conducted tests for over 80 contaminants and found some of the contaminants at a level higher than the State allows. We found a group of disinfection byproducts called Haloacetic Acids at a level higher than the State allows, and we provided public notice of each MCL violation throughout 2016. As we told you at that time, we are working with the DOH to correct the problem. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards. If you have any questions about this report or concerning your drinking water, please contact Dave Winter, Water Operator (518) 834-9042. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled town board meetings. The meetings are held at the Town Hall at 7:00pm on the first Tuesday of every month. We would also be pleased to discuss any drinking water issues in person.

WHERE DOES OUR WATER COME FROM?

In general, 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 from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The source of water for the Chesterfield Water District is Butternut Pond, a shallow natural pond. The water intake piping is 16" cast iron piping and extends approximately 180 feet into the pond. Water from Butternut Pond flows by gravity to the dual sand water filtration plant, where the water is filtered and disinfected with liquid chlorine and an orthophosphate corrosion control additive. Water is then pumped into a 308,000 gallon glass lined water tank at the filtration plant and flows to the water district through approximately 25,000 ft. of 12" ductile iron main. There a 500,000 gallon storage tank located on the west side of Prospect Mountain.

The NYS Dept. of Health completed a source water assessment for this system based on available information. This assessment found a moderate susceptibility to contamination for this source of drinking water. Land cover and its associated activities within the assessment area does not increase the potential for contamination. While there are some facilities present, permitted discharges do not likely represent an important threat to source water quality, based on their density in the assessment area. There are no noteworthy contamination threats associated with other discrete contaminant sources. Additional sources of potential contamination include roadways. While lakes are not generally considered to have a high natural sensitivity to phosphorus in SWAP, this lake already has algae problems. Therefore, additional phosphorus contribution would likely result in future water quality degradation. The Health Dept. will use this information to direct future source water protection activities. These may include water quality monitoring, resource management, planning, and education programs.

FACTS AND FIGURES

Our water system serves approximately 2,300 through 1,000 service connections. The total water produced in 2016 was 78.033 million gallons and our average daily production was 213,000 gallons per day. The current water rates for all water customers are \$62.75 per quarter for up to 9,000 gallons and \$8.00 for each additional 1,000 gallons, and an additional \$40.00 per quarter for debt service for each property in the district.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. The table presented below depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year

because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791), the New York State Department of Health at (518) 891-1800.

Contaminant	Violation	Date of	Level	Unit Measure-		Regulatory	Likely Source of Contamination
Microbiological							
Turbidity ¹	No	3/1/16	0.923 ¹	NTU	n/a	TT=<1NTU	Soil Runoff
Turbidity	No	2016	99.9% <	NTU	n/a	TT=95% of	Soil Runoff
Radioactive							
Radium 226 & 228	No	2014	0.3	pCi/L	0	5 (MCL)	Erosion of natural deposits
Gross Alpha	No	2014	0	pCi/L	0	15 (MCL)	Erosion of natural deposits.
Gross Beta	No	2014	0	pCi/L	0	50 (MCL)	Erosion of natural deposits.
Inorganic							
Barium	No	2016	0.0034	mg/l	2	2 (MCL)	Erosion of natural deposits
Copper	No	2016	0.058 ²	mg/L	1.3	1.3 (AL)	Corrosion of household plumbing systems.
Fluoride	No	2016	0.20	mg/l	n/a	2.2 (MCL)	Naturally occurring
Lead	No	2016	3 ²	ug/L	0	15 (AL)	Corrosion of household plumbing systems.
Nitrate	No	2016	0.05	mg/L	10	10 (MCL)	Runoff from fertilizer use; leaching from septic
Sodium	No	2016	33 ⁴	mg/L	n/a	(see Health	Naturally occurring; Road salt; Water softeners;
Disinfections							
Total Trihalomethanes	No	2016	71 ⁵ 33 – 59 ⁶	ug/L	n/a	80(MCL)	By-products of drinking water chlorination needed to kill harmful organisms. THMs are formed when source water contains measurable
Haloacetic Acids	Yes	2016	90 ⁵	ug/L	n/a	60(MCL)	By-products of drinking water chlorination

NOTES:

¹ Turbidity is a measure of the cloudiness of our water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Our single highest measurement for the year occurred on 3/1/2016 (0.923 NTU). State regulations require that turbidity must always be below 1NTU. The regulations require that 95% of the turbidity samples collected each month have measurements below 0.3 NTU.

² The level presented represents the 90th percentile of the 10 sites tested in 2016. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the lead and copper values detected at your water system. In this case, 10 samples were collected at your water system and the 90th percentile value was the second highest value.

³ The level presented represents a range of the samples collected in 2016. The action level for lead and copper was not exceeded at any of the 10 test sites

⁴ Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

⁵ The value represents the highest Locational Running Annual Average of the samples collected.

⁶ The values represent the range of the samples collected.

DEFINITIONS:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

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

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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

Action Level (AL): 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.

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

Milligrams per liter (mg/l): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (ug/l): Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Picocuries per liter (pCi/L): A measure of the radioactivity in water.

WHAT DOES THIS INFORMATION MEAN?

Disinfection Byproducts The Village of Keeseville received a violation of Subpart 5-1 of the State Sanitary Code for exceeding the Maximum Contaminant Level (MCL) for Haloacetic Acids. The violations are a result of water samples collected in 2016. The Maximum Contaminant Level for Haloacetic Acids is 60 ug/l (micrograms per liter). Haloacetic acids are a group of chemicals that includes mono-, di- and trichloroacetic acids and mono- and dibromoacetic acids. Haloacetic acids are formed in drinking water during treatment by chlorine, which is the most commonly used disinfectant in New York State. Chlorine reacts with certain acids that are in naturally-occurring organic material (e.g., decomposing vegetation such as tree leaves, algae or other aquatic plants) in surface water sources such as rivers and lakes. The amount of haloacetic acids in drinking water can change from day to day, depending on the temperature, the amount of organic material in the water, the amount of chlorine added, and a variety of other factors. Drinking water is disinfected by public water suppliers to kill bacteria and viruses that could cause serious illnesses. For this reason, disinfection of drinking water by chlorination is beneficial to public health.

Some studies of people who drank chlorinated drinking water for 20 to 30 years show that long term exposure to disinfection by-products (possibly including haloacetic acids) is associated with an increased risk for certain types of cancer. However, how long and how frequently people actually drank the water as well as how much haloacetic acids the water contained is not known for certain. Therefore, we do not know for sure if the observed increased risk for cancer is due to haloacetic acids, other disinfection by-products, or some other factor. The individual haloacetic acids dichloroacetic acid and trichloroacetic acid cause cancer in laboratory animals exposed to high levels over their lifetimes. Dichloroacetic acid and trichloroacetic acid are also known to cause other effects in laboratory animals after high levels of exposure, primarily on the liver, kidney and nervous system and on their ability to bear healthy offspring. Chemicals that cause effects in animals after high levels of exposure may pose a risk to humans exposed to similar or lower levels over long periods of time.

We are working with the New York State Department of Health and have made many changes to the water system in order to correct the problem. We've increased our flushing program, installed a mixer in the storage tank at the water plant, improved the filter maintenance procedures, started applying a drinking water additive to control disinfection by-products and are continuing to research options to correct the problem. For more information, please contact the Town Office at 834-9042.

Lead Lead was present in our system at very low levels and the 90th percentile lead concentration did not exceed the Action Level for lead. Even though the lead levels were low, we are required to present the following information on lead in 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. The Village of Keeseville 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>.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

All monitoring and reporting requirements are satisfied in a timely manner. The water system is in full compliance with all other regulations.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Some people may be more vulnerable to disease causing microorganisms or pathogens 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 from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*, *Giardia* and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

WHY SAVE WATER AND HOW TO AVOID WASTING IT?

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:

- ◆ Saving water saves energy and some of the costs associated with both of these necessities of life;
- ◆ Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- ◆ Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential firefighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- ◆ Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- ◆ Turn off the tap when brushing your teeth.
- ◆ Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it up and you can save almost 6,000 gallons per year.
- ◆ Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.
- ◆ Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances, then check the meter after 15 minutes, if it moved, you have a leak.

CLOSING

We are working diligently to resolve the disinfection byproduct violations, a mixer was installed in the storage tank by the filtration plant and we are applying a corrosion control additive, and we are looking into ways to improve the maintenance of the filtration plant and the distribution system. The disinfection byproduct levels are dropping with our efforts, the last 2 quarterly samples met the water quality standards, but the violation cannot be resolved until the average of the 4 most recent quarterly samples is below the maximum contaminant level.

Thank you for allowing us to continue to provide your family with quality drinking water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements. We ask that all our customers help us protect our water sources, which are the heart of our community. Please call our office if you have questions.