Annual Drinking Water Quality Report for 2023

Varick Water District #4

NY4914541

INTRODUCTION

To comply with State regulations, the Town of Varick 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, your tap water met all State drinking water health standards. 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 Ben **Karlsen** @ 315-719-7844. We want you to be informed about your drinking water. If you want to learn more, please attend any of our Town Board meetings. The meetings are held on the first Tuesday of each month at 7:00 P.M. in the Varick Town Meeting Room.

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.

Varick Water District # 4 purchases surface water drawn from Cayuga Lake via the Town of Fayette Water District # 3. Water is treated by the Town of Seneca Falls. During 2023, our system did not experience any restriction of our water source. The treatment plants water intake is located 1,850ft from the western shore of Cayuga Lake and is in 25 feet of water.

DESCRIPTION OF THE TREATMENT PROCESS:

Raw water is drawn into the treatment plant through a 30" diameter intake line. As the raw water enters the treatment plant, a coagulant is added to assist in the settling of particles that may be in the water prior to filtration. The coagulant currently being used is PAC (poly-aluminum chloride). This chemical causes the particles to attract to each other and become dense enough to settle by gravity. The treatment plant also has the ability to add activated carbon for taste and odor control. After settling takes place, the water enters one of the five filters located in the main building of the plant. The water passes through a layer of anthracite coal, GAC (granular activated carbon) and several layers of sand to remove any remaining particles larger than 0.3 NTU[1]. After filtration, the water enters a 450,000-gallon clear well tank that is located beneath the main filter building. This filtered water then passes through an ultra-violet light unit for disinfection. Gaseous chlorine is then added to the filtered/treated water to establish a free chlorine residual. This free chlorine residual prevents any bacteria growth in the distribution system. The now potable water is then pumped through a 20" diameter transmission main to the distribution system to supply the users and maintain the level of the storage towers. Information regarding the Cayuga Lake watershed can be found on the Internet at www.cayugawatershed.org or by contacting the Genesee/Finger Lakes Regional Planning Council, 1427 Monroe Avenue, Rochester, NY 14618, 585-442-3770. This website is an excellent source of information regarding the characterization of the entire watershed.

SUMMARY OF THE SWAP (SOURCE WATER ASSESSMENT PROGRAM):

The NYS DOH has evaluated this PWS's (Public Water System's) susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph(s) below. It is important to stress that these assessments were created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for this PWS. This PWS provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards. This assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for phosphorus, DBP precursors, and pesticide contamination. While there is not a great density of permitted discharges in assessment area, the total amount of wastewater discharged from these facilities is high enough to raise the potential for contamination (particularly for protozoa). There is also noteworthy contamination susceptibility associated with other discrete contaminant sources.

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, E. Coli, turbidity, alkalinity, total organic carbon, 21 inorganic compounds, nitrate, 25 volatile organic compounds, total trihalomethanes, 52 synthetic organic compounds, a full suite of PFOA/PFOS compounds, 1,4 dioxane, microcystin (blue green algae) and metals. The table included in this report 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. In 2023 we were also required to collect and analyze drinking water samples for the following unregulated contaminants: EPA Method 533 for perfluorinated and polyfluorinated alkyl substances in drinking water. Anyone interested in copies of the individual laboratory reports can contact the Chief Operator @ 315-568-2316.

It should be noted that all drinking water, including bottled drinking water, might 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) or the Seneca County Health Department at 315-539-1945.

TABLE OF DETECTED CONTAMINANTS

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg./Max) (Range)	Unit of Measure	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
Turbidity (Distribution System) (See Note 3)	NO	9/20/23 (Highest)	0.23 Avg 3.11 Max 0.02-3.11 Range	NTU	N/A	TT= > 5 NTU	Soil Runoff.
Turbidity (Leaving Treatment Plant) (See Note 3)	NO	7/5/23 (Highest)	0.08 Avg 0.20 Max 0.03-0.20 Range	NTU	0.30	1.0	Soil Runoff.
Total Coliform	NO	07/13/23	2 Positive Coliform Samples	N/A	N/A	TT= >2 Positive Samples	Naturally present in the environment.
Chlorine	NO	8/1/23 (Highest)	1.50 Avg 2.40 Max 0.50-2.40 Range	mg/L	N/A	4.0	Additive to drinking water to control microbes.
Nitrate	NO	8/31/23	0.78	mg/L	10	10	Runoff from fertilizer use; Leaching from septic tanks; sewage; Erosion of natural.
Barium	NO	8/31/23	0.026	mg/L	2.0	2.0	Naturally occurring.
Chromium	NO	8/31/23	0.0020	mg/L	0.10	0.10	Naturally occurring.
Sodium	NO	8/31/23	33	mg/L	(see Health Effects)	N/A	Naturally occurring; Road salt;
Total Trihalomethanes Disinfection By-Products	NO	1 sample per quarter @ 2 sites	47.8 Avg 38-60 Range @ Site #1 42.5 Avg 31-63 Range @ Site #2	µg/L	N/A	80	By-products of drinking water chlorination needed to kill harmful organisms.
Haloacetic Acid Disinfection By-Products	NO	1 sample per quarter @ 2 sites	23 Avg 17-29 Range @ Site #1 21.2 Avg 15.9-31 Range @ Site #2	µg/L	N/A	60	By-products of drinking water chlorination needed to kill harmful organisms.
Copper (See Note 1)	NO	07/06/23 (Highest)	0.047-90th% 0.0017 – 0.11 (range)	mg/ L	1.3	AL = 1.3	Corrosion of household plumbing systems; Erosion of natural deposits;

Lead (See Note 2)	NO	07/06/23 (Highest)	<1-90th% <1 – 1.1 (range)2	µg/L	15	AL = 15	Corrosion of household plumbing systems; Erosion of natural deposits.
Fluoride	NO	08/31/23	0.12	mg/ L	N/A	2.23 = MCL	Naturally occurring.
Nickel	NO	08/31/23	0.0016	mg/ L	N/A	N/A	Discharge from stainless steel factories.
Total Organic Carbon	NO	05/4/23 (Highest)	1.64 Avg 2.0 Max 1.2-2.0 Range	mg/ L	N/A	N/A	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts.
Perfluorobutanoic acid (PFBA) (Unregulated) (See Note 4)	NO	03/07/23	2.8	ng/l	50000	N/A	PFBA is a breakdown product of other PFAS that are used in stain-resistant fabrics, paper food packaging, photographic film, and carpets.
Microcystin From HABs (In Raw Water)	NO	09/05/23 (Highest)	AVE: 0.59 Range <0.3-0.91	µg/L	0	N/A	Harmful algae blooms.
Total Trihalomethanes Disinfection By-Products Varick WD #4	NO	1 sample per quarter	67.65 Highest Avg 34.6-82 Range	µg/L	N/A	80	By-products of drinking water chlorination needed to kill harmful organisms.
Haloacetic Acid Disinfection By-Products Varick WD #4	NO	1 sample per quarter	28.875 Avg 23.6-34.9 Range	µg/L	N/A	60	By-products of drinking water chlorination needed to kill harmful organisms.

Notes:

1 – The level presented represents the 90th percentile of the 20 sites tested. 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 copper values detected at your water system. In this case, 20 samples were collected at your water system and the 90th percentile value was 0.047 mg/l. The action level for copper was not exceeded at any of the sites tested.

2 – The level presented represents the 90th percentile of the 20 samples collected. The action level for lead was not exceeded at any of the sites tested. The 90th percentile value for lead is <1 µg/L

3 – Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. Our highest single turbidity measurement for the year occurred on 7/5/23 (0.20 NTU). State regulations require that turbidity must always be below 5 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.5 NTU.

4- All perfluoroalkyl substances, besides PFOA and PFOS, are considered Unspecified Organic Contaminants (UOC) which have an MCL = 0.05 mg/L = 50,000 ng/L. These contaminants are currently unregulated.

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.

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

Non-Detects (ND): Laboratory analysis indicates that the constituent is not present.

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

Nanograms per liter *(ng/l):* Corresponds to one part of liquid in one trillion parts of a liquid (parts per trillion – ppt.

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

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.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table, our system had no MCL violations. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below New York State requirements. It should be noted that the action level for lead was exceeded in one of the samples collected. Based on this result we are required to present the following information on lead in drinking water:

SANITARY CODE VIOLATIONS:

A sanitary survey was completed by the Seneca County health department in October of 2023. The system was found in compliance with sanitary code, and no violations were reported.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

Our water system completed all required sampling in 2023, and continues to meet all rules and

regulations.

Lead

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 Town of Varick is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact Ben Karlsen from the Town of Varick at 315-719-7844. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at *http://www.epa.gov/safewater/lead*.

Health Effects of Sodium in Water

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.

Information on harmful Algae blooms (Blue Green Algae):

The Town of Seneca Falls routinely monitors lake conditions to spot harmful algae blooms by our intake lines. During the HAB (Harmful Algae Bloom) season, we frequently sample for microcystin in our raw and finished water. Levels of the toxin have been detected in the raw untreated water entering the facility, but our treatment process has been successful in removing all of the toxin to ensure your drinking water remains unaffected.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2023, our system was in compliance with applicable State drinking water operating and monitoring requirements..

INFORMATION ON RADON

Radon is a naturally occurring radioactive gas found in soil and outdoor air that may also be found in drinking water and indoor air. Some people exposed to elevated radon levels over many years in drinking water may have an increased risk of getting cancer. The main risk is lung cancer from radon entering indoor air from soil under homes.

For additional information call your state radon program (1-800-458-1158) or call EPA's Radon Hotline (1-800-SOS-Radon).

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded state and federal regulations, 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, 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 fire fighting 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.

SYSTEM IMPROVEMENTS:

Moving forward with the installation of a new CO2 injection system at the treatment plant. Currently we have no means of controlling the raw water pH that comes out of the lake. This system will now enable us to lower the pH of the raw water to better utilize chemicals, and provide a better product to our customers.

• Along with the Co2 Injection system we are working on a caustic soda feed system. This system will allow us to increase the finish water pH before it enters the distribution system. Being able to control finish water pH will help to keep the water from corroding the pipes, and helps with corrosion control.

• Replaced one of the 150HP variable frequency drives, and 150HP electric motors that power our high lift pumps, these were 20 years old and passed their useful life expectancy.

• Both UV reactors have been rebuilt, and inspected by our staff for proper operation. These are crucial to our treatment process as UV light is our main source of disinfection.

• Rebuilt high lift pump #3 with new impellers, shaft, wear rings, and seals.

IN CLOSING

Thank you for allowing us to continue to provide your family and/or business with quality drinking water this year. 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.

WATER DEPARTMENT STAFF - 2023

Benjamin Karlsen