ANNUAL WATER QUALITY REPORT 2023

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City of Batavia PWS #1800544

ANNUAL
WATER QUALITY REPORT
2023

Introduction

To comply with state regulations, the **City of Batavia PWS #1800544** issues our Annual Water Quality Report to inform the customers about the quality of their drinking water. A printed copy of this report is available upon request by calling 585-345-6400, option 2

Meeting the Challenge

The City of Batavia is pleased to present our annual water quality report for the period of January 1 to December 31, 2023. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to you. As new drinking water safety concerns emerge, we stay attentive to meeting the goals of source water protection, water conservation, and community education, while continuing to service the needs of all our water users.

For more information about this report or for any questions relating to your drinking water, please call Tom Phelps, Superintendent of Water and Wastewater, at (585) 345-6324, or Nelson Weibel, Chief Water Plant Operator, at (585) 345-6400, option 2.

Where Does My Water Come From

The City of Batavia receives its water from two sources. Three wells are located on Cedar St. and draw water from the Tonawanda Valley Watershed, one of the largest underground aquifers in New York State. Our well water is exceptionally clear, with an average turbidity of less than 0.05 NTU. Unfortunately, well water in this area is hard (containing dissolved minerals) and requires softening to bring it to a condition that customers find acceptable. Our other source of water is Tonawanda Creek. While the creek has provided us with sufficient quantities and quality of water for over 90 years, it is a surface water source and is susceptible to rapid changes in quality. Weather events and runoff can quickly increase turbidity, making creek water harder and less cost-effective to treat. Creek water is used to supplement our wells and serve as a backup supply. In December of 2020, the City started purchasing water from the Monroe County Water Authority on the east end in addition to city water to help supply the Agricultural Park.

ANNUAL
WATER QUALITY REPORT
2023

Source Water Assessment

In 2002, the New York Department of Health conducted a source water assessment. It assessed both potential and actual threats to Batavia's drinking water sources. The susceptibility rating in the state source water assessment is based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface into the wells. The susceptibility rating is an estimate of the source water's potential for contamination; it does not imply that the water delivered to consumers is or will become contaminated. A list of contaminants found in water can be found in the section "Substances That Could Be in Water." The source water assessments give resource managers more information about how to protect source waters in the future. Our water is derived from three drilled wells and the Tonawanda Creek. According to the source water assessment, these wells have a medium-high to very high susceptibility to microbials, nitrates, petroleum products, industrial solvents, and other industrial contaminants according to the source water assessment. These ratings are due primarily to the close proximity of permitted discharge facilities (industrial/commercial facilities that discharge wastewater into the environment and are regulated by the state and/or federal government) to the wells and the associated industrial activity in the assessment area. Furthermore, the wells draw from an unconfined aquifer with unknown hydraulic conductivity. The source water assessment for the Tonawanda Creek discovered an elevated susceptibility to contamination for this source of drinking water.

The amount of agricultural land in the assessment area results in elevated potential for microbials, phosphorus, DBP precursors, and pesticides contamination. In addition, the moderate density of CAFOs (Concentration Animal Feeding Operations) in the assessment may add to the potential for contamination. While some facilities are present, based on their density in the assessment area, permitted discharges are unlikely to pose a significant threat to source water quality. However, it appears that the total amount of wastewater discharged in surface water in this assessment area is high enough to increase the risk of contamination (particularly for protozoa). There is also notable contamination susceptibility associated with other discrete contaminant resources, such as mines. Finally, it should be noted that relatively high flow velocities make river drinking water supplies highly sensitive to existing and new sources of microbial contamination. While the source water assessment indicates that our wells and the Tonawanda Creek are susceptible to microbials, please keep in mind that the City of Batavia's water is filtered and disinfected to ensure that the finished water delivered to your home meets New York State's drinking water standards for microbial contamination. A copy of the assessment, including a map of the assessment area, can be obtained by contacting the Genesee County Health Department at (585) 344-2580 or Scott Allen at the City of Batavia Bureau of Maintenance at (585) 345-6315.

Over the last year, hundreds of water samples have been collected to determine the presence of any total coliform, inorganic compounds, nitrate, nitrite, lead and copper, volitale organic compounds, total trihalomethanes, haleoacetic acids, radiological and synthetic organic compounds. The tables below only show the contaminants that were detected in the water. Because the concentrations of certain substances do not change frequently, the state requires us to monitor for them less frequently than once a year. In these cases, the most recent sample data are included, as well as well as the year the sample was collected.

ANNUAL
WATER QUALITY REPORT
2023

How is My Water Treated and Purified

Batavia's well water is very clear and requires little treatment other than softening. Soft water cleans better and requires less soap to clean effectively.

Tonawanda Creek enters the water plant through mechanical screens that keep creek debris out. In a flash mixer, creek water is combined with well water before water treatment chemicals are introduced. Ferric sulfate is added as a coagulant to neutralize the charges on particles suspended in water, allowing them to clump together and drop out. To soften the raw water, calcium oxide is added. Lime will cause calcium, magnesium, and other minerals to precipitate or drop out of the water.

The water is then sent to large softening tanks, where it is gently stirred by large paddles. The stirring allows the chemically treated water to form a sludge layer. The sludge is made up of chemicals we added to the water as well as compounds in the water including, clay, silt, dirt, microorganisms, and other minerals that allow most of the impurities to now drop out of the water.

The next step is the settling basin, where the water's velocity is reduced to allow suspended particles to settle to the bottom and be removed. At this point, we add carbon dioxide to lower the pH, and then chlorine to disinfect the water and inhibit the growth of organisms in the drinking water.

The water is channeled from the settling basin to 12 large rapid sand filters. Sand filters allow water to pass through while retaining practically all remaining particles, resulting in very clear finished water with a turbidity of roughly 0.02 NTU. We also add a small, controlled amount of fluoride (0.7 to 0.9mg/l) at this time to help prevent cavities and support good oral health.

Finally, a small amount of polyphosphate corrosion inhibitor is added to prevent minerals dissolved in the water from precipitating onto your pipes. Pumps then push out our finished water at a pressure of around 70 pounds per square inch through the distribution system, two elevated tanks, and into your homes and businesses.

Fluoridation of our Water

Our system is one of the many water systems throughout New York State with a controlled, low level of fluoride for consumer dental health protection. According to the United States Center for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at an optimal range of 0.7 to 0.9 ppm. To ensure the fluoride supplement in your water provides optimal dental health protection, the State Department of Health requires that we monitor the fluoride level on a daily basis. During this reporting year, monitoring showed fluoride levels in your water were within 1% of the optimal range over 84% of the time. None of the monitoring results showed any levels of fluoride that approach the 2.2-ppm MCL for fluoride.

Taste and Odor

Your water may occasionally taste or smell like chlorine. To avoid bacteria development in the distribution system, we must maintain a chlorine residual. To reduce or eliminate this, simply store water in a refrigerated container overnight. An inexpensive carbon filter may also be used for this, which some pitchers have already built in.

ANNUAL
WATER QUALITY REPORT
2023

Important Health Information

Some people may be more susceptible than others to disease causing microorganisms or pathogens in drinking water than the general population. Immunocompromised persons, such as cancer patients receiving chemotherapy, organ transplant recipients, people with HIV/AIDS or other immune system abnormalities, the elderly, and infants, are especially vulnerable to infections. These individuals should consult with their healthcare providers regarding their drinking water. The Safe Drinking Water Hotline at (800) 426-4791 can provide EPA/CDC guidance on recommended measures to reduce the risk of infection by Cryptosporidium, Giardia, and other microbial infections.

If present, elevated levels of lead can cause major health concerns, particularly in pregnant women, babies, and young children. Because of the materials used in your home's plumbing, lead levels in your home may be higher than in other homes in the neighborhood. We are 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 reduce the risk of lead exposure by flushing your tap for 30 seconds to two minutes before using it 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Substances That Could Be In Water

The sources of drinking water (both bottled and tap) 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 can pick up substances caused by the presence of animal or human activity. Contaminants that may be present in source water include microbial contaminants, inorganic contaminants, pesticides and herbicides, organic chemical contaminants, and radioactive contaminants.

Drinking water, including bottled water, may reasonably be expected to contain a small amount of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. To ensure that tap water is safe to drink, the State of New York and the United States Environmental Protection Agency (EPA) issue regulations that limit the amount of certain contaminants in water supplied by public water systems. The State Health Department and the FDA establish limits for contaminants in bottled water, which must provide the same level of public health protection. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

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.

Source of Substances in Water

- **1.4 Dioxane**: Released from industrial or commercial sources and is associated with hazardous waste sites. Alkalinity: Natural minerals, Lime softening.
- **Lithium**: Found in nearly all igneous rocks and in the waters of many mineral springs.
- **Barium**: Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
- **Calcium**: Mineral deposits.
- **Chloride**: Naturally occurring or indicative of road salt contamination. Chlorine Residual: Water additive used to control microbes.
- **Chromium**: A trace element that is naturally present in many foods.
- **Copper**: Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives.
- **Cyanide**: Can be produced in nature from certain bacteria , fungi, and algae.
- **Fluoride**: Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer Haloacetic Acids (HAAs): By-product of drinking water disinfection needed to kill harmful organisms.
- **Lead**: Corrosion of household plumbing systems; Erosion of natural deposits. Magnesium: Dissolution on nickel in well water.
- **Manganese**: Naturally occurring; Indicative of landfill contamination. Nickel: Runoff from fertilizer use; Erosion of natural deposits.
- **Nitrate**: Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. Sodium: Naturally occurring; Road salt; Water softeners; Animal waste.
- **Sulfate**: Naturally occurring.
- **Total Organic Carbon**: Naturally present in the environment.
- **Total Trihalomethanes** *(TTHMs)*: By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
- **Turbidity**: Soil Runoff.

ANNUAL
WATER QUALITY REPORT
2023

Key Terms and Abbreviations

- **90th Percentile**: The levels reported for lead and copper represent the 90th percentile of the total number of 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 lead and copper values detected at your water system.
- **AL** *(Action Level)*: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **MCL** *(Maximum Contaminant Level)*: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as possible.
- **MCLG** *(Maximum Contaminant Level Goal)*: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow MRDL (Maximum Residual Disinfectant Level) – 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.
- **MRDLG** *(Maximum Residual Disinfectant Level Goal)*: 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 contaminants.
- **NA**: Not applicable
- **ND** *(Not Detected)*: Indicates that the substance was not found by laboratory analysis.
- **NTU** (Nephelometric Turbidity Unit) – Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **ppb** *(parts per billion)*: One part substance per billion parts water (or micrograms per liter).
- **ppm** *(parts per million)*: One part substance per million parts water (or milligrams per liter).
- **TT** *(Treatment Technique*): A required process intended to reduce the level of a contaminant in drinking water

ANNUAL
WATER QUALITY REPORT
2023

Water Quality Table 2023

Detected Substances (Unit of measure)	Date Sampled	MCL (MRDL)*	MCLG (MRDLG)	Amount Detected	Range Low-High	Violation
1.4 Dioxane (ppb)	11/10/2023	1	NA	0.036	0.036	No
Copper (ppm)	8/3/2023	1.3	1.3	0.022	NA	No
Chloride (ppm)	8/3/2023	250	NA	138	NA	No
Sulfate (ppm)	8/3/2023	NA	NA	35.4	NA	No
Barium (ppb)	8/3/2023	2	2	17.7	NA	No
Chlorine Residual (ppm)	Hourly	4*	1.3*	1.05-Ave.	0.75-1.34	No
Fluoride (ppm)	8/3/2023	2.2	NA	0.56	NA	No
Fluoride (ppm)	Daily	2.2	NA	Yearly Ave. 0.67	0..53/1.40	No
Nitrate as N (ppm)	8/3/2023	10	10	0.66	NA	No
Total Organic Carbon (TOCs) (ppm)	Monthly	TT	NA	0.83 (Ave.)	ND-1.6	No
Sodium (ppm)	8/3/2023	TT	NA	66.2	NA	No
Alkalinity as CaCO3 (ppm)	8/3/2023	NA	NA	73.9	NA	No
Calcium (ppm)	8/3/2023	NA	NA	15.9	NA	No
Magnesium (ppm)	8/3/2023	NA	15	17.3	NA	No
Lithium (ppb)	Quarterly	NA	NA	11.7 (Ave.)	ND/12.1	No
Haloacetic Acids (ppb)	Quarterly	60	60	9.7[1]	2.2-10.7	No
Total Trihalomethanes (TTHM) (ppb)	Quarterly	80	80	37.7[1]	17.7-35.4	No
Turbidity (NTU)	Daily	TT<1.0	NA	0.01	0.01-0.03	No
Turbidity (lowest monthly percent of samples meeting limits (NTU)	Daily	TT<0.3NTU	NA	100%	NA	No
Turbidity (Distribution System) (NTU)	Weekly	<5	NA	0.45 (Ave.)	0.01-0.32	No

Detected Substances

Substance (Unit of measure)	Date Sampled	AL	MCLG	Amount Detected 90%(percentile)	Range Low-High	Sites Above AL Total Sites	Violation
Copper (ppm)	7/21/2022	1.3	1.3	0.0245	.0029-.037	0-30	No
Lead (ppm)	7/21/2022	0.15	0	0.0026	ND-0.0130	0-30	No

Lead and Copper: The level presented represents the 90th percentile of the 30 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal or below it. The 90th percentile is equal to or greater than 90% of the lead and copper values detected in Batavia. Thirty samples were collected in 2022. The Action Level of 0.015 ppm for lead and 1.3 ppm for copper was not exceeded at any of the 30 sites tested. The level listed represents the 90th percentile of the 30 samples collected in 2022

Some Additional Detected Notes

[1] **Disinfection Byproducts:** This level represents the highest locational running annual average (LRAA) calculated from data collected.

Turbidity: A measure of the cloudiness of the water. It is tested because it is a good indicator of the effectiveness of the filtration system. Our highest single turbidity measurement for the year occurred as indicated in the table. State regulations require that turbidity must always be below 1 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU *(note that TT is dependent upon filtration method: conventional, 0.3 NTU; slow sand, 1.0 NTU; or diatomaceous earth filtration, 1.0 NTU).* Although the month as indicated in the date column was the month when we had the fewest measurements meeting the treatment technique for turbidity, the levels recorded were within the acceptable range allowed and did not constitute a treatment technique violation. The highest measurement of the monthly average distribution results for the year occurred as indicated in the table.

Facility Modifications and Improvements for 2023

In 2023, the City of Batavia water plant team refurbished one of our large sand water filters, removing all of the old media and sand, cleaning and inspecting the filter box, sanitizing it, and replacing it with new media and sand. We emptied both of our large softeners for cleaning, inspection, and repair. In collaboration with Genesee County, the City cleaned and inspected the raw water intake pipe leading to the plant from the creek as well as cleaning and repairing the intake vault that's over 100 years old. We also removed and rebuilt one of our main creek water pumps, which has been in service for more than 25 years, restoring its capacity and reliability. We replaced the roof on one our well houses and replaced the steam boiler's heating system to a more efficient model.

Facts and Figures for 2023

During 2023, the City of Batavia Water Filtration Plant processed a total of 1.15 billion gallons of water, treating an average of 3.2 million gallons per day. We serve a population of 15,600 people and supply water to roughly 5,600 service connections. In 2023, we sold 1.1 billion gallons of water. 299.6 million gallons were sold through Genesee County meters to the Town of Batavia, Elba, Oakfield, and Darien. In addition, 64.5 million gallons were used in the water plant for testing and processing. A total of 348 million gallons, or 33%, were not metered and are unaccounted for which includes water for fire hydrants, city maintenance, parks, the spray park at Austin Park, and water lost due to leaks or water breaks comprise the unaccounted amount. In 2023, the average charge for water billed was $6.27 per thousand gallons. All of your 2023 tap water met all State drinking water regulations and Health Department standards, as it has in previous 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 your drinking water meets health standards. During 2023 the City received a monitoring violation for missing the collection of a radiological sample. The sample was collected on December 5th and found to be negative.

Water Conservation Tips

You can help to conserve water and save money by becoming aware of how much water your household uses and looking for ways to use less whenever possible. It is not difficult to conserve water. Here are few tips:

- Load your dishwasher to full capacity. Dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded.
- 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 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. Wait a few minutes to see if the color appears in the bowl. It is common to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Check your water meter for hidden leaks. Simply turn off all water-using faucets and appliances. After 15 minutes, recheck the meter. If it moved, you have a leak.

Community Participation

Major decisions concerning your drinking water are made by the Batavia City Council. Meetings are held at 7 p.m. on the second and fourth Mondays of each month in the Council Chambers of City Hall, One Batavia City Centre. You are invited to attend these meetings in order to become more informed or to voice your opinion in the decision-making process affecting your water.

Water Main Flushing

Water is delivered to homes, businesses, and fire hydrants in your neighborhood via distribution mains (pipes). Although the water entering the pipes is of very high quality, the quality of the water can deteriorate in certain areas of the system over time. Water main flushing is the process of cleaning the inside of water mains with a rapid flow of water.

Flushing maintains water quality in many ways. For example, flushing removes sediments like iron and manganese. Although these do not pose a health risk, they can affect the taste and clarity of the water. Additionally, the sediment can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within the distribution system. Flushing helps remove stale water and ensure the supply of fresh water with sufficient levels of disinfectant and acceptable taste and smell.

Though uncommon, some short-term deterioration of water quality may occur in your neighborhood during flushing operations. At that time, you should avoid using tap water for household purposes. Allow the cold water to run for a few minutes at full stream before using it, and avoid washing clothes or using hot water to prevent sediment from entering your hot water tank.

Please contact us if you have any questions or want further information regarding flushing.

MCWA Source Water Assessment

MCWA's primary water source is Lake Ontario which is treated at the Shoremont Plant in Greece and the Webster Plant. They also operate the Corfu Plant, which is a small well supply in the Village of Corfu, and purchase water from the City of Rochester and the Erie County Water Authority (ECWA). The New York State Department of Health has evaluated the susceptibility of water supplies statewide to potential contamination under the Source Water Assessment Program (SWAP). In general, the Great Lakes sources used by Shoremont and ECWA are not very susceptible because of the size and quality of the Great Lakes. Hemlock and Canadice Lakes, used by the Hemlock Plant, are also not very susceptible because of their size and controlled watersheds. The well water used by the Corfu Plant is more susceptible, but the confined nature of the aquifer provides protection against the few nearby potential contaminant sources. Because storm and wastewater contamination are potential threats to any source water, the water provided to MCWA's customers undergoes rigorous treatment and testing prior to its delivery. The Shoremont Plant and the purchased water producers all use a similar treatment process: coagulation, filtration, and disinfection. Coagulants are added to clump together suspended particles, enhancing their removal during filtration. Chlorine is used to disinfect the water and to provide the residual disinfectant that preserves the sanitary quality of the water as it travels from each plant to your home. Fluoride is also added to help prevent tooth decay. The treatment process at the Corfu Water Plant consists of filtration, softening, and disinfection with chlorine. These plants are in full compliance with all New York State and U.S. EPA operational and monitoring requirements. For more information on the State's Source Water Assessment plan and how you can help protect the source of your drinking water, contact MCWA Customer Service at (585) 442-7200 or visit their website at www.MCWA.com.

ANNUAL WATER QUALITY REPORT 2023

MCWA Water Quality Summary Table

2023 Calendar Year Results -

Detected Substances:	Supply Source -			MCWA Production Water:		MCWA Purchased Water:		Likely Sources in Drinking Water:	Water Quality Violation:
				SWTP & WWTP -	CWTP -	Rochester -	ECWA -		
	Source - (Source Type)			Lake Ontario (Surface Water)	Well Field (Groundwater)	Hemlock Lake (Surface Water)	Lake Erie (Surface Water)		
	Units	MCLG	Regulatory Limit	Range of detected values:					Yes or No
Barium	mg/L	2	2	0.018 - 0.021	0.09 - 0.1	0.014	0.02	Erosion of natural deposits	No
Chloride	mg/L	NA	250	23 - 29	49 - 84	35 - 39	20 - 22	Naturally occurring	No
Chromium	µg/L	100	100	ND	ND - 2.6	ND	ND	Erosion of natural deposits	No
Fluoride	mg/L	NA	2.2	0.2 - 0.98	0.13 - 0.15	0.08 - 0.77	0.2 - 0.73	Naturally occuring & additive for dental health	No
Manganese	µg/L	NA	300	ND	6.1 - 21	ND	ND	Naturally occurring	No
Nitrate	mg/L	10	10	ND - 0.5	ND	ND	0.28	Erosion of natural deposits	No
Perfluorooctanesulfonic acid (PFOS)	ng/L	NS	10	ND - 2.5	ND	ND	ND	Environmental releases from textile sources	No
Perfluorobutanoic acid (PFBA)	ng/L	NS	10	ND - 3.1	ND - 2.7	ND - 3.2	ND - 5.2	Environmental releases from textile sources	No
Selenium	µg/L	50	50	ND - 3.6	ND - 7.1	ND	ND	Erosion of natural deposits	No
Sodium	mg/L	NA	NS	14 - 17	81 - 94 *	19 - 21 *	12 - 14	Naturally occurring	No
Sulfate	mg/L	NA	250	24 - 27	46 - 59	11 - 12	19 - 20	Naturally occurring	No
Turbidity - Turbidity is a measure of cloudiness or clarity of the water. Turbidity has no health effects. MCWA monitors turbidity because it is a good indicator of the effectiveness of our filtration systems and water quality. State regulations require that turbidity must always be below 1 NTU in the combined filter effluent. The regulations also require that 95% of samples collected from the entry point have measurements below 0.3 NTU and the highest monthly average for distribution system samples be below 5 NTU. Averages, annual ranges and lowest monthly percentages are listed.									
Turbidity - Entry Point	NTU	NA	TT	0.04 (0.01 - 0.09) 100% < 0.3 NTU	NR	0.05 (0.03 - 0.14) 100% < 0.3 NTU	0.08 (0.03 - 0.19) 100% < 0.3 NTU	Soil Runoff	No
Turbidity - Distribution	NTU	NA	5	2.44 - 10/06/2023	2.36 - 10/24/2023	2.44 - 10/06/2023	2.36 - 10/24/2023	Soil Runoff	No
Microbial Pararmeters - For total coliform bacteria, a Treatment Technique violation occures when more than 5% of monthly samples are positive. The highest monthly % positive and number of positive samples is listed. For E. coli bacteria, a MCL violation occurrs when a total coliform positive sample is positive for E. coli and a repeat total coliform sample is positive or when a total coliform positive sample is negative for E. coli but a repeat total coliform sample is positive and the sample is also positive for E. coli. The number of positive E. coli samples is listed.									
Total Coliform Bacteria	NA	0	TT	0.3% - September 1 sample	0% None Detected.	0.3% - September 1 sample	0% None Detected.	Naturally present in the environment	No
Escherichia coli (E. coli) Bacteria	NA	0	1	1 sample - 10/31/23	ND	1 sample - 10/31/23	ND	Human and animal fecal waste	No
Disinfectant and Disinfectant By-products (DBPs) - Chlorine has a MRDL (Maximum Residual Disinfectant Level) and MRDLG (MRDL Goal) rather than an MCL and MCLG (Averages and ranges are listed). For the DBPs (Total Trihalomethanes and Haloacetic Acids) the annual system averages, ranges for all locations, and highest locational running annual averages for all locations are listed.									
Chlorine Residual - Entry Point	mg/L	NA	MRDL = 4	1.16 (0.83 - 1.33) 0.82 (0.54 - 1.05)	1.14 (0.62 - 1.65)	0.9 (0.71 - 1.37)	1.41 (0.62 - 1.86)	Additive for control of microbes	No
Chlorine Residual - Distribution	mg/L	NA	MRDL = 4	0.6 (ND - 2.03)	0.7 (ND - 1.7)	0.6 (ND - 2.03)	0.7 (ND - 1.7)	Additive for control of microbes	No
Total Trihalomethanes (TTHMs)	µg/L	NA	80	39 (2 - 79) Max. LRAA = 57	50 (24 - 92) Max. LRAA = 57	39 (2 - 79) Max. LRAA = 57	50 (24 - 92) Max. LRAA = 57	Byproduct of water chlorination	No
Haloacetic Acids (HAAs)	µg/L	NA	60	11.5 (ND - 35) Max. LRAA = 19.3	9.6 (ND - 24) Max. LRAA = 16.9	11.5 (ND - 35) Max. LRAA = 19.3	9.6 (ND - 24) Max. LRAA = 16.9	Byproduct of water chlorination	No
Lead and Copper - 90% of samples must be less than the Action Level (AL). The 90th Percentile, the number of samples exceeding the AL, and the range of results are listed. (2023 monitoring period)									
Copper - Customer Tap Samples	mg/L	1.3	AL = 1.3	0.259 (None) 0.0023 - 0.68	0.142 (None) 0.004 - 0.29	0.259 (None) 0.0023 - 0.68	0.142 (None) 0.004 - 0.29	Corrosion of household plumbing	No
Lead - Customer Tap Samples	µg/L	0	AL = 15	7.2 (Five) ND - 53	0.63 (None) ND - 2.8	7.2 (Five) ND - 53	0.63 (None) ND - 2.8	Corrosion of household plumbing	No
* There is no MCL set for sodium in water. However, EPA recommends that 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.									
Unregulated Contaminant Monitoring (UCMR5) - The EPA issues a new list of no more than 30 unregulated contaminants to be monitored by public water systems. This provides baseline occurrence data that the EPA combi with toxicological research to make decisions about future drinking water regulations. UCMR5 was published in 2021 and requires public water systems to participate in monitoring between 2023 - 2025 using analytical methods developed by the EPA and consesus organizations. MCWA began UCMR5 monitoring in 2023. UCMR5 detected substances are listed. The complete list of UCMR5 substances may be found in the AWQR supplment.									
Metals:	Entry Points:			Lake Ontario Supplies -		Purchased Water Supplies -		Groundwater Supply -	Water Quality Violation:
	Units	Regulatory Limit		SWTP	WWTP	Rochester	ECWA	CWTP	Yes or No
Lithium	µg/L	NA		ND	ND	ND	NR	12.1	NA
Per & Polyfluorinated Alkyl Acids (PFAS):									
[29 PFAS Substances]	ng/L	NA		ND	ND	ND	NR	ND	NA

For more information on the MCWA's water quality monitoring program call Customer Service at 585-442-7200 or visit our website at: www.mcwa.com.

ANNUAL WATER QUALITY REPORT 2023

Cryptosporidium

Cryptosporidium is a microbial pathogen present in varying concentrations in many surface waters and groundwater under the direct influence of surface water. Cryptosporidium is removed/inactivated through a combination of filtration and disinfection or by disinfection.

In 2022, the MCWA analyzed a total of four source water samples for Cryptosporidium taken from Lake Ontario at the Shoremont and Webster water treatment plants. Cryptosporidium was detected in two raw water samples, one collected in February and one collected in November, at the Shoremont water treatment plant. In our treatment processes at this plant, Cryptosporidium is removed/inactivated by a combination of filtration and disinfection.

The MCWA encourages individuals with weakened immune systems to consult their health care provider regarding appropriate precautions to avoid infection. Ingestion of Cryptosporidium may cause cryptosporidiosis, an intestinal illness, and may spread through means other than drinking water. Person to person transmission may also occur in day care centers or other settings where handwashing practices are inadequate. Please contact your local health department for more information on cryptosporidiosis.

Compounds Tested For But Not Detected:

Benzene	Trichlorofluoromethane	Endothall	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
Bromobenzene	1,2,3-Trichloropropane	Glyphosate	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)
Bromochloromethane	1,2,4-Trimethylbenzene	Hexachlorobenzene	Perfluoro-3-methoxypropanoic acid (PFMPA)
Bromomethane	1,3,5-Trimethylbenzene	Hexachlorocyclopentadiene	Perfluoro-4-methoxybutanoic acid (PFMBA)
n-Butylbenzene	Vinyl Chloride	3-Hydroxycarbofuran	Perfluorobutanesulfonic acid (PFBS)
sec-Butylbenzene	o-Xylene	3,5-Dichlorobenzoic Acid	Perfluorooctanoic Acid (PFOA)
tert-Butylbenzene	m, p-Xylene	Methomyl	Perfluorodecanoic acid (PFDA)
Carbon Tetrachloride	Total Xylene	Metolachlor	Perfluorododecanoic acid (PHDoA)
Chlorobenzene	Acifluorfen	Metribuzin	Perfluoroheptanesulfonic acid (PFHpS)
Chloroethane	Alachlor	Oxamyl (vydate)	Perfluoroheptanoic acid (PFHpA)
Chloromethane	Aldicarb	Paraquat	Perfluorohexanesulfonic acid (PFHxS)
2-Chlorotoluene	Aldicarb sulfoxide	Perchlorate	Perfluorohexanoic acid (PFHxA)
4-Chlorotoluene	Aldicarb sulfone	Picloram	Perfluorononanoic acid (PFNA)
Dibromomethane	Atrazine	Propachlor	Perfluoropentanesulfonic acid (PFPeS)
1,2-Dichlorobenzene	Baygon	Simazine	Perfluoropentanoic acid (PFPeA)
1,3-Dichlorobenzene	Bentazon	2, 3, 7, 8-TCDD (Dioxin)	Perfluorotetradecanoic acid (PFTA)
1,4-Dichlorobenzene	Carbofuran	Antimony	Perfluorotridecanoic acid (PFTA)
Dichlorodifluoromethane	Chlordane	Beryllium	Perfluoroundecanoic acid (PFUnA)
1,1 Dichloroethane	Dibromochloropropane	Cyanide	
1,2-Dichloroethane	2, 4-D	Mercury	
1,1-Dichloroethene	Endrin	Nickel	
cis-1,2-Dichloroethene	Ethylene Dibromide	Nitrite	
trans-1,2-Dichloroethene	Heptachlor	Silver	
1,2-Dichloropropane	Heptachlor Epoxide	Thallium	
1,3-Dichloropropane	Lindane (gamma-BHC)	Zinc	
2,2-Dichloropropane	Methoxychlor	Surfactants (Foaming Agents)	
1,1-Dichloropropene	p,p' DDD	Cryptosporidium	
1,3-Dichloropropene(cis)	p,p' DDE	Giardia Lamblia	
1,3-Dichloropropene(trans)	p,p' DDT	Monobromoacetic acid	
Ethylbenzene	PCB's Total	Monochloroacetic acid	
Hexachlorobutadiene	Pentachlorophenol	Tribromoacetic acid	
p-Isopropyltoluene	Toxaphane	Gross Alpha Particles	
Methyl Tert-butyl ether (MTBE)	2, 4, 5-TP (Silvex)	Radium 226	
Methylene Chloride (Dichloromethane)	Aldrin	Radium 228	
n-Propylbenzene	Benzo(a)pyrene	Combined Radium 226/228	
Styrene	Butachlor	Uranium	
1,1,1,2-Tetrachloroethane	Carbaryl	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	
1,1,2,2-Tetrachloroethane	Dalapon	1H,1H, 2H, 2H-perfluorodecane sulfonic acid (8:2FTS)	
Tetrachloroethene	Di(2-Ethylhexyl) Adipate	1H,1H, 2H, 2H-perfluorohexane sulfonic acid (4:2FTS)	
Toluene	Di(2-Ethylhexyl) phthalate (DEHP)	1H,1H, 2H, 2H-perfluorooctane sulfonic acid (6:2FTS)	
1,2,3-Trichlorobenzene	Dicamba	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	
1,2,4-Trichlorobenzene	Dieldrin	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	
1,1,1-Trichloroethane	Dinoseb	Hexafluoropropylene oxide dimer acid (HFPO-DA)(GenX)	
1,1,2-Trichloroethane	1, 4-Dioxane	N-ethyl Perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	
Trichloroethene	Diquat	N-methyl Perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	

SCAN CODE FOR AWQR REPORT: