Monroe County Water Authority
475 Norris Drive
Rochester, New York 14610

2018 Annual
Water Quality Report

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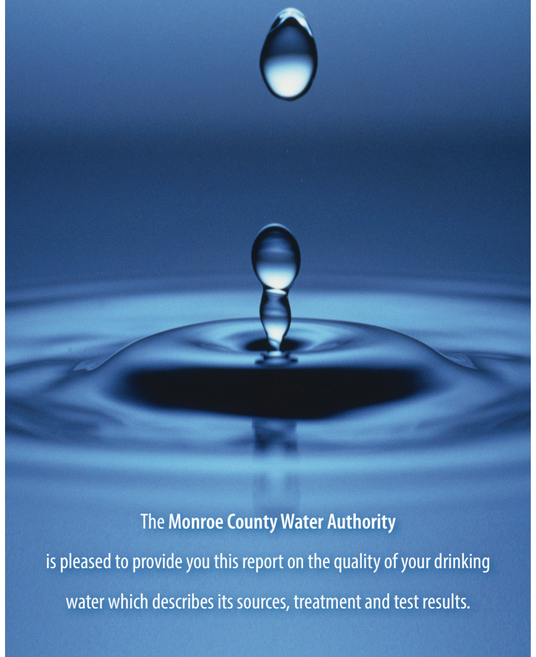
Monroe County Water Authority

2018 Annual Water Quality Report



The **Monroe County Water Authority**
is pleased to provide you this report on the quality of your drinking water which describes its sources, treatment and test results.

MCWA Water Quality Summary Table

Detected Substances — **2018 results except as noted**

Supply				Shoremont & Webster WTPs	Corfu WTP	*Purchased Water* Hemlock WTP	*Purchased Water* ECWA		Water Quality Violation
Source (Source Type)				Lake Ontario (Surface Water)	Well Field (Groundwater)	Hemlock Lake (Surface Water)	Lake Erie (Surface Water)		
Substances	Units	MCLG	MCL	Range of detected values				Likely Source	Yes or No
Arsenic	µg/L	0	10	ND - 2.6	ND	ND	ND	Erosion of natural deposits	No
Barium	mg/L	2	2	0.018 - 0.024	0.007 - 0.014	0.014 - 0.018	0.022 - 0.023	Erosion of natural deposits	No
Chloride	mg/L	NA	250	25 - 30	35 - 78	36 - 38	21 - 24	Naturally occurring	No
Combined Radium (226+228)	pCi/L	0	5	ND (2012)	ND (2012)	1.08	1.15 - 1.25 (2013)	Erosion of natural deposits	No
Fluoride	mg/L	NA	2.2	0.13 - 1.03	0.11 - 0.33	0.1 - 1.05	0.61 - 0.78	Natural and additive - promotes strong teeth	No
Nitrate	mg/L	10	10	0.18 - 0.34	ND	ND - 0.22	ND - 0.23	Erosion of natural deposits	No
Sodium	mg/L	NA	NS	13 - 17	56 - 94*	20 - 21*	10 - 14	Naturally occurring	No
Sulfate	mg/L	NA	250	25 - 27	41 - 50	12 - 13	20 - 21	Naturally occurring	No
Turbidity - Turbidity is a measure of cloudiness 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 monthly average for distribution system samples be below 5 NTU. Averages, ranges and lowest monthly percentages are listed.									
Turbidity - Entry Point	NTU	NA	TT	0.05 (0.01 - 0.12) 100% < 0.3 NTU	NR	0.05 (0.03 - 0.26) 100% < 0.3 NTU	0.1 (0.05 - 0.23) 100% < 0.3 NTU	Soil Runoff	No
Turbidity - Distribution	NTU	NA	5	3.51 - March	2.99 - August	3.51 - March	2.99 - August	Soil Runoff	No
Microbiological - No more than 5% of monthly samples can be positive. The highest monthly % positive and number of samples is listed. Since we had 2 total coliform positive samples in September in the town of Richmond, we triggered a Level 1 assessment. This assessment is to assess the coliform contamination and take corrective action against defects in the water system.									
Total Coliform Bacteria	NA	0	TT	1.2% - September 4 samples	ND	1.2% - September 4 samples	ND	Naturally occurring	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 average, range for all locations, and highest locational running annual average for all locations are listed.									
Chlorine Residual - Entry Point	mg/L	NA	MRDL = 4	1.17 (0.9 - 1.42) 0.76 (0.53 - 1.39)	0.8 (0.45 - 1.49)	0.89 (0.7 - 1.75)	1.40 (0.53 - 1.98)	Additive for control of microbes	No
Chlorine Residual - Distribution	mg/L	NA	MRDL = 4	0.55 (ND - 2.09)	0.45 (ND - 1.4)	0.55 (ND - 2.09)	0.45 (ND - 1.4)	Additive for control of microbes	No
Total Trihalomethanes (TTHMs)	µg/L	NA	80	38.6 (16 - 73)	42.6 (19 - 62)	38.6 (16 - 73)	42.6 (19 - 62)	Byproduct of water chlorination	No
				Max. LRAA = 50.8	Max. LRAA = 47.8	Max. LRAA = 50.8	Max. LRAA = 47.8		
Haloacetic Acids (HAAs)	µg/L	NA	60	12.8 (ND - 30)	9.1 (ND - 20)	12.8 (ND - 30)	9.8 (ND - 20)	Byproduct of water chlorination	No
				Max. LRAA = 21.3	Max. LRAA = 13.3	Max. LRAA = 21.3	Max. LRAA = 13.3		
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.									
Copper - Customer Tap Samples	mg/L	1.3	AL = 1.3	0.160 (None) 0.005 - 0.200	0.110 (None) 0.005 - 0.240	0.160 (None) 0.005 - 0.200	0.110 (None) 0.005 - 0.240	Corrosion of household plumbing	No
Lead - Customer Tap Samples	µg/L	0	AL = 15	7.2 (Two) ND - 29	3.0 (One) ND - 76	7.2 (Two) ND - 29	3.0 (One) ND - 76	Corrosion of household plumbing	No

*There is no MCL set for sodium in water. However, EPA has recommended 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 (UCMR4) - Every few years the USEPA issues a new list of up to 30 unregulated contaminants for which public water systems must monitor. This provides baseline occurrence data that the EPA combines with toxicological research to make decisions about future drinking water regulations. MCWA began monitoring for the fourth list (UCMR 4) in 2018. For more information on this process go to https://drinktap.org/Water-Info/Whats-in-My-Water/Unregulated-Contaminant-Monitoring-Rule-UCMR.

Alcohols, Indicators, Metals, Pesticides, SVOCs, and Cyantoxins	Entry Points			Lake Ontario Supply		Purchased Water Supplies		Groundwater Supply	Water Quality Violation
	Units	MCL		Shoremont WTP	Webster WTP	Hemlock Lake	Lake Erie	Corfu WTP	Yes or No
Manganese	µg/L	NA		ND	ND	ND	2.0 (2.0)	10 (10)	NA
Bromide	µg/L	NA		37 (37)	37 (37)	22 (22)	ND (ND)	NR	NA
Total Organic Carbon	mg/L	NA		2.4 (2.4)	2.2 (2.2)	2.6 (2.6)	2.0 (2.0)	NR	NA
HAA Groups	Distribution System			Combined System Summary					
Total HAA (5)	µg/L	60		9.5 (3.2 - 15)					No
Total HAA (6) Br	µg/L	NA		0.49 (0.54 - 7.4)					NA
Total HAA (9)	µg/L	NA		14.04 (3.8 - 19)					NA
Bromochloroacetic acid	µg/L	NA		1.43 (0.54 - 2.3)					NA
Bromodichloroacetic acid	µg/L	NA		2.25 (ND - 3.2)					NA
Chlorodibromoacetic acid	µg/L	NA		0.8 (ND - 1.4)					NA
Dibromoacetic acid	µg/L	NA		0.42 (ND - 1.3)					NA
Dichloroacetic acid	µg/L	NA		3.6 (2.1 - 5.1)					NA
Trichloroacetic acid	µg/L	NA		5.52 (0.95 - 10)					NA

Key Terms Used In Water Quality Table

MCL = Maximum Contaminant Level, the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as possible.

MCLG = Maximum Contaminant Level Goal, the level of a contaminant below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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 contamination.

LRAA= Locational Running Annual Average - The average annual contaminant concentration at a monitoring site.

pCi/L = picoCuries per liter

TT = Treatment Technique, a required process intended to reduce the level of a contaminant in drinking water.

Level 1 Assessment = A level 1 assessment is an evaluation of the water system to identify potential problems and determine, if possible, why total coliform bacteria have been found in our water system.

AL = Action Level, the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

ND = Not Detected, absent or present at less than testing method detection level. All testing methods are EPA approved with detection limits much less than the MCL.

NA = Not applicable

NR = Not Required
NS = No standard

mg/L = milligram (1/1,000 of a gram) per liter = ppm = parts per million

ug/L = microgram (1/1,000,000 of a gram) per liter = ppb = parts per billion

ng/L = nanogram (1/1,000,000,000 of a gram) per liter = ppt = parts per trillion

NTU = Nephelometric Turbidity Unit, a measure of water clarity.

Compounds Tested For But Not Detected

Benzene
Bromobenzene
Bromochloromethane
Bromomethane
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon Tetrachloride
Chlorobenzene
Chloroethane
Chloromethane
2-Chlorotoluene
4-Chlorotoluene
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1 Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
1,3-Dichloropropene(Cis)
1,3-Dichloropropene(Trans)
Methyl Tert-butyl ether (MTBE)
Ethylbenzene
Hexachlorobutadiene
p-Isopropyltoluene
Methyl Tert-butyl ether (MTBE)
Methylene Chloride (Dichloromethane)
n-Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl Chloride
o-Xylene
m, p-Xylene
Total Xylene
Aldrin
Atrazine
Benzo(a)pyrene
Bis(2-Ethylhexyl)Phthalate
Butachlor
Chlordane
Di(2-Ethylhexyl) Adipate
Dieldrin
Endrin
Heptachlor
Heptachlor Epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Isophorone
Lindane (gamma-BHC)
Methoxychlor
Metolachlor
Metribuzin
p,p' DDD
p,p' DDE
p,p' DDT
PCB's Total
Pentachlorophenol
Propachlor
Simazine
Total Chlordane
Toxaphane
Antimony
Beryllium
Chromium
Cyanide
Mercury
Nickel
Nitrite
Selenium
Silver
Thallium
Zinc
Surfactants (Foaming Agents)
Gross Alpha
Total Uranium
Germanium
alpha-Hexachlorocyclohexane
Chlorpyrfos
Dimethipin
Ethoprop
Oxyfluoren
Profenofos
Tebuconazole
Permethrin, cis & trans
Tribufos
Butylated hydroxyanisole
o-Toluidene
Quinoline
1-Butanol
2-Methoxyethanol
2-Propen-1-ol
Monobromoacetic acid
Monochloroacetic acid
Tribromoacetic acid

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

MONROE COUNTY WATER AUTHORITY

Abundant. Inexpensive. Pure.

The Monroe County Water Authority is the third largest water supplier in New York State, producing and delivering an average of 20 billion gallons of drinking water every year. As a public benefit corporation organized in 1950 under the New York State Public Authorities Law, our sole purpose is to provide you with quality water and reliable service at an affordable price.

Many communities have been unable or unwilling to make the investments necessary to maintain their water systems. That's not the case with the Monroe County Water Authority. In 2018 we invested 19.4 million dollars in infrastructure improvements. Our commitment to efficiency and cost control is shown in our water rate history. Our rates are below the national average and the lowest 25% for northeast suppliers. It costs an average Authority residential customer about $26 a month for all the water they need.

The Monroe County Water Authority's 211 employees are dedicated to providing you all the clean, safe drinking water you need, whenever you need it.

This annual water quality report is being provided to all of our customers in compliance with U.S. Environmental Protection Agency (USEPA) and New York State Department of Health regulations. For more news check our website at www.MCWA.com.

Source and Treatment

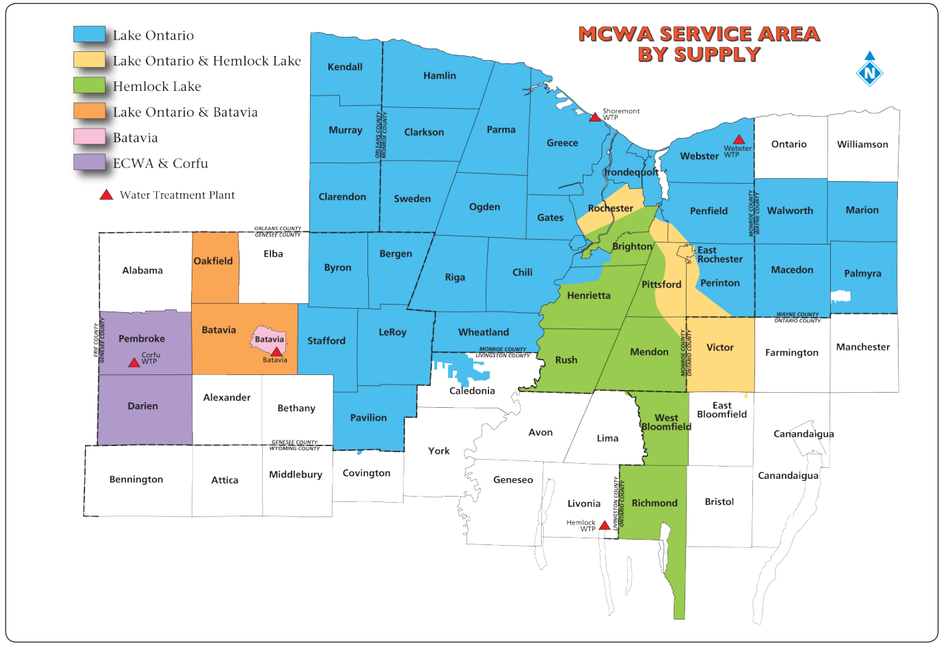
Our primary water source is Lake Ontario which is treated at our Shoremont Plant in Greece and our Webster Plant in Webster. We also operate the Corfu Plant, a small groundwater supply in the Village of Corfu, and purchase water from the City of Rochester and the Erie County Water Authority (ECWA). The Distribution System Map in this report shows the typical service area for each of the treatment plants. The boundaries between the service areas change day to day as we manage the sources to optimize water delivery to our customers.

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 MCWA 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 waste water contamination are potential threats to any source water, the water provided to our customers undergoes rigorous treatment and testing prior to our customers delivery.

Our Lake Ontario plants 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 USEPA 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 our website at www.MCWA.com.



MCWA STATISTICS

WATER WITHDRAWN FROM LAKE ONTARIO	**54.7** Million Gallons Per Day
AVERAGE SYSTEM USE	**57.9** Million Gallons Per Day
NON-BILLABLE WATER (MAINTENANCE, FLUSHING, FIREFIGHTING, LEAKS)	**7.67** Million Gallons Per Day
ANNUAL COST FOR AVERAGE RESIDENTIAL CUSTOMER	**$295** Per Year
POPULATION SERVED	**749,000** Wholesale and Retail
NUMBER OF ACCOUNTS	**185,751**
MILES OF WATER MAINS	**3,340**
NUMBER OF FIRE HYDRANTS	**26,400**

Water Quality

Drinking water sources (both tap and bottled water) include lakes, reservoirs, rivers and streams, springs and wells. As water travels over land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from animal or human activity. Contaminants that may be present in untreated water include inorganic and organic chemicals, pesticides and herbicides, and radioactive and microbiological contaminants. In order to ensure that your tap water is safe to drink, the federal Safe Drinking Water Act and state Public Health Law established regulations that set limits on contaminant levels in water provided by public water systems. These limits are known as Maximum Contaminant Levels (MCLs). The regulations also specify testing, reporting, and public notification requirements for each contaminant. MCWA's water quality monitoring program exceeds federal and State requirements. Health departments also review our operating and monitoring data for compliance and independently monitor the distribution system.

Some constituents we tested for were detected, but at levels well below the allowable MCL. A table of these detected contaminants is provided on the next page. It's important to remember all 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. Additional information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at (800) 426-4791.

We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and correct any problems that were found during these assessments.

During the past year we were required to conduct one Level 1 Assessment in the town of Richmond. One Level 1 Assessment was completed. In addition, we were required to take two corrective actions and we have completed two of these actions.

Some people may be more vulnerable to disease-causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as chemotherapy patients, organ transplant recipients, 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 providers about drinking water. EPA/CDC (Centers for Disease Control) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia, and other microbiological contaminants are available from the Safe Drinking Water Hotline (800) 426-4791 or the Monroe County Department of Public Health, 111 Westfall Road, Rochester, NY 14620, (585) 753-5057.

Fluoride

MCWA is one of the many New York water utilities providing drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the U.S. Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at an optimal level of 0.7 mg/L. To ensure optimal dental protection, the State Department of Health requires that we monitor fluoride levels on a daily basis. In 2018 the fluoride levels in your water were within 0.2 mg/L of the CDC's recommended optimal level 98% of the time. The highest monitoring result was 1.03 mg/L, below the 2.2 mg/L MCL for fluoride.

Conservation

Lake Ontario provides an abundance of water to the communities we serve, and our customers greatly benefit by having this natural resource close to home. However, it takes power to treat and move the water to your houses. Therefore, conserving energy is helpful to providing clean, safe water to you.

Although our water rates are below the national average, no one wants to pay for water that is wasted whether by accident or on purpose. To save water, fix leaky faucets and toilets promptly, replace washers when garden hoses start to drip, and water your lawn in the early morning. After 10 a.m. the sun's heat draws water from the lawn through evaporation. When you water early, you can water less because more of the water is absorbed into the lawn. To find more water saving tips, visit us online at www.MCWA.com.

Home Treatment Units

There are businesses that sell home treatment units by telling you water supplied by the Monroe County Water Authority is not safe. Save your money. The water we provide is consistently better than the drinking water regulations require and we can prove it.

FOR MORE INFORMATION

If you have questions about this report, your bill, or Monroe County Water Authority operations, call Customer Service at **(585) 442-7200**. To view the MCWA Board of Directors meeting schedule, visit us online at **www.MCWA.com.**

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. There is no detectable lead in the water we deliver to your home. Lead in drinking water is primarily from lead-bearing materials and components associated with service lines and home plumbing. Although our testing indicates this is not a problem for our customers, it is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. The Monroe County Water Authority 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 at www.mcwa.com/MyWater/LeadInDrinkingWater.aspx or from the USEPA's Safedrinking Water Hotline (800-426-4791) and website (www.epa.gov/safewater/lead).

Taste and Odor

Sometimes you may find your water tastes or smells like chlorine. The water is safe to drink. We are required to maintain a chlorine residual in the distribution system to prevent the growth of bacteria. To eliminate or reduce the taste of chlorine in your water, simply store tap water in a container overnight in your refrigerator. An inexpensive carbon filter can be used for this also.

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