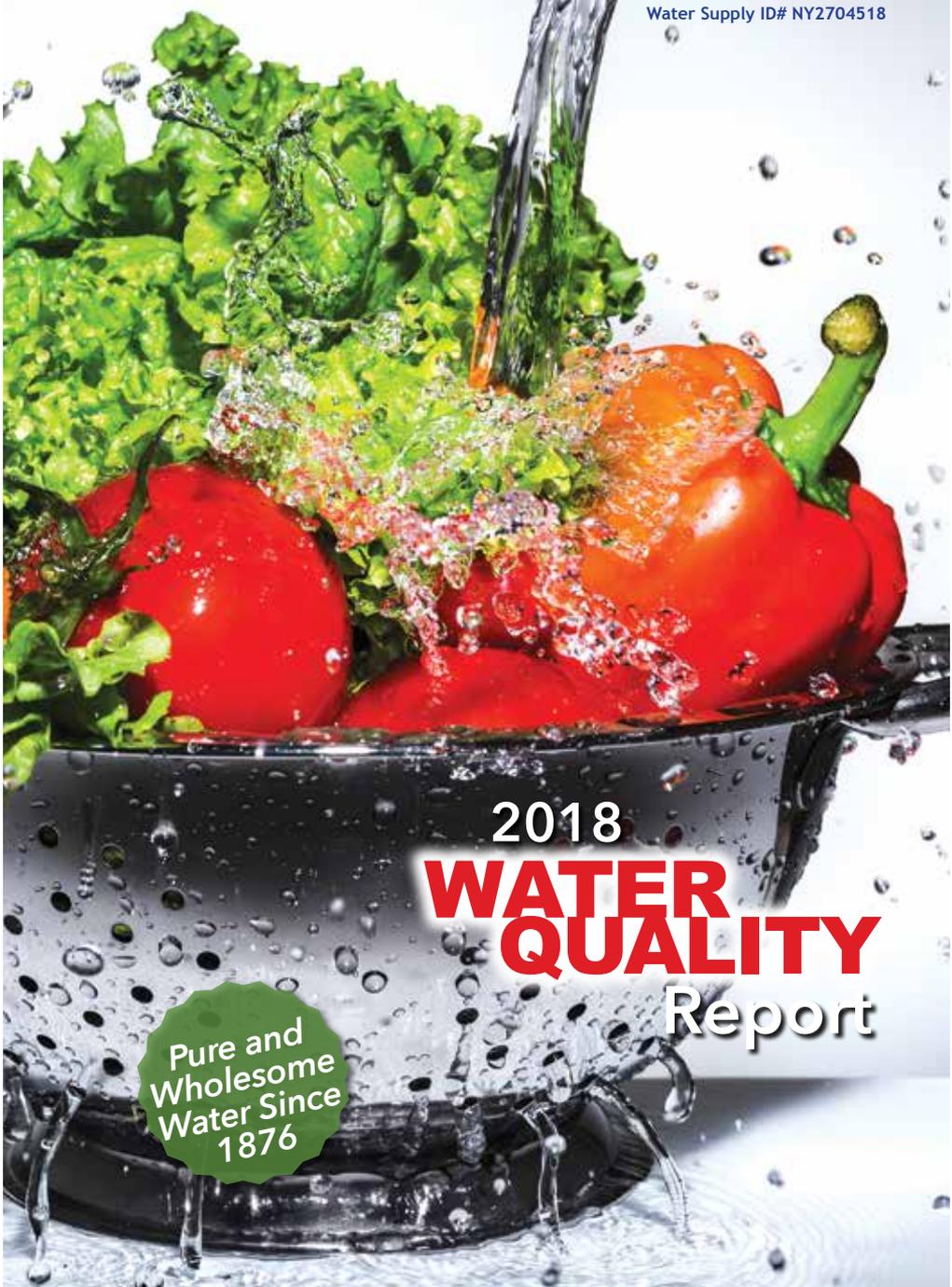




City of Rochester, New York

Department of Environmental Services
Bureau of Water

Water Supply ID# NY2704518



2018

WATER QUALITY

Report

Pure and
Wholesome
Water Since
1876

THE CITY OF ROCHESTER WATER BUREAU is pleased to present your 2018 Water Quality Report. This report includes water quality information for the 2018 calendar year. The US Environmental Protection Agency (EPA) requires all water utilities to produce and distribute water quality reports on an annual basis. In 2018, the City met or exceeded all of the drinking water standards set by the EPA and the New York State Department of Health (NYSDOH).

The City of Rochester Water Bureau provides water to 210,000 people and many businesses located within the City of Rochester. In addition, the City partners with the Livingston County Water & Sewer Authority (LCW&SA), Monroe County Water Authority (MCWA) and the Village and Town of Lima to provide water to some of their service areas. The Rochester Water Bureau is committed to providing safe, high quality water and excellent service, while adhering to safe and environmentally friendly practices. The Water Bureau is a part of the Department of Environmental Services, governed by the Mayor of the City of Rochester.

Providing safe and reliable drinking water requires a team of over 120 experienced, dedicated and specially trained employees. Over 35 Water Bureau employees have obtained NYSDOH certification as water system operators.

In 2018, the City continued its commitment to water quality through its involvement with the Partnership for Safe Water. The goal of this voluntary American Water Works Association (AWWA) and EPA program is to help water utilities optimize strategies to provide consumers with quality water that exceeds what current

regulations require. 2018 marked the 17th year in a row that the Hemlock Filtration Plant earned the Partnership's "Director's Award for Filtration Plants."

This report provides information about your water system including the source of your drinking water, its treatment and water quality test results. Should you have any questions or require further information, please contact us at **(585) 428-6680, ext 1**.



WHERE DOES MY DRINKING WATER COME FROM AND HOW IS IT TREATED?

Since 1876, Rochester residents have relied upon Hemlock and Canadice lakes for their drinking water supply. The City also purchases water from MCWA's Shoremont treatment plant on Lake Ontario. (MCWA water quality information is available at MCWA.com.) The Hemlock Water Filtration Plant is a direct filtration plant with a capacity of 48 million gallons per day and employs processes involving pH adjustment, coagulation, filtration, disinfection and fluoridation.

Filtration & Disinfection:

During coagulation, chemicals are added to untreated water, causing the natural particulates to clump together into larger particles called floc. The floc is removed by filtration and the water is then disinfected with chlorine.

Corrosion Control:

The City uses carbon dioxide to adjust water pH as part of its corrosion control strategy. A pH range of 7.7-8.0 is maintained to ensure water in the distribution system is stable and not corrosive to pipes. This pH range, along with the natural hardness and alkalinity levels in the water have ensured that the City is in compliance with the Lead and Copper Rule.

Fluoridation:

The City of Rochester 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

HOW CAN I SAVE MONEY ON WATER? Simple changes in your daily routine can save you money on your water bill and also reduce stress on the environment. Always repair dripping and leaking faucets, toilets and garden hoses. Log on to <http://www.dec.ny.gov/lands/5009.html> for more conservation tips.



2018 STATISTICS

The City of Rochester has a population of 210,000, and approximately 58,400 metered accounts. The base charge for water was \$3.62 per 1,000 gallons.

The average daily production at the Hemlock Water Filtration Plant was 37.1 million gallons per day (MGD). Of that, 11.1 MGD is sold to wholesale water customers and 19.6 MGD is delivered to city customers. The balance, an average of 6.4 MGD, is non-revenue water used for firefighting purposes, water main flushing, or otherwise attributed to distribution system leaks, meter and billing inaccuracies and water illegally obtained. The Water Bureau continues to focus on reducing the amount of non-revenue water.

we monitor fluoride levels on a daily basis. In 2018 the fluoride levels in your water were within 0.1 mg/L of the CDC's recommended optimal level greater than 99% of the time.

Water treated at the Hemlock Filtration Plant flows to the city by gravity through three large pipelines. Along the way, water is sold wholesale to water districts in the Town and Village of Lima, LCW&SA and MCWA. The treated water is stored in the City's three reservoirs—Rush Reservoir, Cobbs Hill Reservoir and Highland Park Reservoir. It is disinfected again as it exits each reservoir and enters a complex grid (over 550 miles) of water mains that distribute the water to city customers. Lake Ontario water from MCWA is pumped into the City distribution system at the Mt. Read Boulevard pump station, near West Ridge Road. Some areas of the city receive either Hemlock Lake or Lake Ontario water—or a mixture of both—depending on the season.

SOURCE WATER ASSESSMENT SUMMARY:

To raise awareness about the importance of preventing water pollution, the NYDOH has evaluated the susceptibility of water supplies statewide for potential contamination under the Source Water Assessment Program (SWAP). Through its assessment of the Hemlock/Canadice Lake watershed SWAP identified several potential sources of contamination, none particularly noteworthy. The City's extensive testing of these pristine lakes confirms that contamination from human activity is negligible. For more information on **SWAP**, please call (585) 428-6680, or the Monroe County Department of Public Health (MCDPH) at (585) 753-5057.

WHAT TYPES OF WATER SYSTEM IMPROVEMENTS WERE COMPLETED OR INITIATED IN 2018?

The City is diligent in reinvesting in your water system through its capital improvement program. In 2018, the Water Bureau spent more than \$8 million on system improvements to the Hemlock Filtration Plant, transmission system, distribution system, reservoirs and dams. Some of the program highlights are as follows: installation of 1.3 miles of new water main, including valves, hydrants and service lines and cleaning and lining 8.3 miles of existing water main in the City's distribution system. Improvements to the filtration plant automation controls and security systems were also made. The ongoing programs of recalibrating and/or replacing customers' water meters (5,346 in 2018), inspecting all fire hydrants and operating main line valves, conducting water main flushing, and sampling and testing the water were also performed.

IMPORTANT INFORMATION FROM THE EPA:

- *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 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 1-800-426-4791.*

- *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 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.

To ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

- *Some people may be more vulnerable to disease-causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised*





individuals, such as people with cancer undergoing chemotherapy, organ transplant recipients, people with HIV/AIDS or other immune system disorders, some elderly and infants may be particularly at risk from infections. These people should seek advice from their health care providers 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 (1-800-426-4791)**.

SHOULD I BE CONCERNED ABOUT CHEMICAL CONTAMINANTS IN MY WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants and we have found no contaminants in our water at levels that raise concern. Some substances such as chlorine and fluoride are added to the water supply for health reasons.

IS THERE LEAD IN MY DRINKING WATER?

Lead is a toxic metal known to have negative health effects for people of all ages, particularly **pregnant**

women, infants and young children. Lead has been linked to learning disabilities, behavioral problems and other issues.

Lead is not found in Rochester's source water or in the water mains. Lead can be present in the service lines connecting homes to water mains and in brass fixtures, faucets and solder in copper plumbing. These items can pass lead into the water you use for drinking and cooking. Because lead poses health risks, the EPA has set a Maximum Contaminant Level Goal (MCLG) of zero for lead. Due to the potential health risks of lead, follow these steps to find out if there is lead in your water.

- 1. Check Available Records:** Water service material records are available in the Property Information Application at maps.cityofrochester.gov. Enter address and click "Water" tab or call the Water Dispatch office at (585) 428-7500.
- 2. Have Your Water Tested for Free:** Contact the Water Bureau's Laboratory at (585) 428-6680 Ext 1, or by email to: watertest@cityofrochester.gov.

- 3. Inspect Your Plumbing:** To identify sources of lead in your plumbing go to: www.lslr-collaborative.org/identifying-service-line-material.html
Contact a licensed plumber: call the City's Bureau of Buildings and Zoning Permit Office at (585) 428-6526 or go to www.cityofrochester.gov/licensedtrades/

Simple Steps you can take to reduce lead:

- **Use ONLY Cold Water** for drinking, cooking and preparing baby formula. Hot water dissolves lead more quickly.
- **Flush your pipes** any time water has been unused for more than 4-6 hours. Lead levels are highest when water has been sitting in the pipe.
- **Periodically Clean Faucet Screens** which can accumulate lead and rust particles.
- **Use a Water Filter**—If you have concerns about levels of lead in your water, consider using a water filter that is certified by the NSF International to remove lead. Find out more on filter certification at www.nsf.org

Additional information is available at:

- www.cityofrochester.gov/drinkingwatersafety
- EPA's Safe Drinking Water Hotline at 1-800-426-4791
- www.epa.gov/safewater/lead
- Coalition to Prevent Lead Poisoning: www.letsmakeleadhistory.org.

CRYPTOSPORIDIUM AND GIARDIA

Cryptosporidium is a microbial pathogen found in surface water and groundwater under the influence of surface water. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal.

The Long Term 2 Enhanced Surface Water Treatment Rule (LT2) requires that uncovered finished water storage reservoirs either be covered or have treatment installed to inactivate *cryptosporidium*. In order to comply with LT2, the City of Rochester entered into a compliance agreement with the Monroe County Department of Health and the New York State Department of Health in 2012.

The Agreement requires the City to conduct routine *Cryptosporidium* monitoring (twice monthly) from both Highland and Cobb's Hill reservoirs. During 2018, as part of our routine sampling plan, 48 samples were collected and analyzed for *Cryptosporidium* oocysts. (24 from Highland and 24 from Cobbs Hill). No *Cryptosporidium* or *Giardia* was detected in any of the samples collected.

WHAT IF I HAVE QUESTIONS?

For more information about Water Bureau activities, fees and other water-related issues, visit: www.cityofrochester.gov/waterbureau or call (585) 428-7500. You may contact a customer service representative by dialing 311. Call (585) 428-5990 if outside of the city limits. Our offices are at **10 Felix Street, Rochester, NY, 14608.**

TABLE OF DETECTED CONTAMINANTS

ENTRY POINT – TREATMENT PLANT EFFLUENT

SUBSTANCE	UNITS	MCLG	MCL	HEMLOCK AVERAGE (RANGE)	ONTARIO AVERAGE (RANGE)	LIKELY SOURCE	MEETS EPA STANDARDS
COMBINED RADIUM 226+228	pCi/L	0	5	1.08	ND	Erosion of natural deposits	Yes
ALKALINITY	mg/L	NA	NA	68 (62-74)	87 (87-89)	Naturally occurring	NA
ALUMINUM	mg/L	NA	0.2	0.008	73 (35-160)	Treatment Process	Yes
ARSENIC	mg/L	0	0.01	ND	0.0007 (ND-0.003)	Industrial	Yes
BARIUM	mg/L	2	2	0.015	0.020 (0.018-0.022)	Erosion of natural deposits	Yes
CALCIUM	mg/L	NA	NA	25 (24-26)	34 (33-34)	Naturally occurring	NA
COPPER	mg/L	1.3	1.3	0.004	ND	Erosion of natural deposits, corrosion of plumbing	Yes
CHLORIDE	mg/L	250	250	34 (30-37)	25 (25-30)	Natural deposits, road salt, water treatment chemicals	Yes
CHROMIUM 6	mg/L	NA	NA	0.00003	NA	Industrial	NA
FLUORIDE	mg/L	NA	2.2	0.69 (0.10-1.05)	0.70 (0.41-0.92)	Water treatment additive to promote dental health	Yes
MAGNESIUM	mg/L	NA	NA	5.8	8.7 (8.4-8.8)	Naturally occurring	NA
NITRATE/NITRITE	mg/L	10	10	0.12 (0.05-0.17)	NA	Fertilizers, erosion of natural deposits, septic tank leachate	Yes
NITRATE	mg/L	10	10	ND	0.27 (0.24-0.34)	Fertilizers, erosion of natural deposits, septic tank leachate	Yes
PH	SU	NA	NA	7.8 (7.2-8.0)	7.5 (7.1-7.7)	Naturally occurring, treatment process	NA
POTASSIUM	mg/L	NA	NA	1.3	1.4 (1.2-1.5)	Naturally occurring	NA
SPECIFIC CONDUCTIVITY	Umhos/cm	NA	NA	284 (271-292)	295 (280-300)	Naturally occurring	NA
SODIUM	mg/L	NA	NA	18	14 (13-15)	Natural deposits, road salt, water treatment chemicals	NA
SULFATE	mg/L	NA	250	12 (12-13)	26 (25-27)	Naturally occurring	Yes
TOTAL DISSOLVED SOLIDS	mg/L	NA	NA	150	175 (160-190)	Naturally occurring	NA
TOTAL HARDNESS	mg/L	NA	NA	81	120	Naturally occurring	NA
THALLIUM	mg/L	0.0005	0.002	ND-0.0003	ND	Industrial	Yes

TABLE OF DETECTED CONTAMINANTS CONTINUED

ENTRY POINT – TREATMENT PLANT EFFLUENT

SUBSTANCE	UNITS	MCLG	MCL	HEMLOCK AVERAGE (RANGE)	ONTARIO AVERAGE (RANGE)	LIKELY SOURCE	MEETS EPA STANDARDS
Water Clarity Treatment Requirements (TT) - 95% of samples each month must be less than 0.3 NTU. Annual Range and lowest monthly percentage are listed below for entry						point. Turbidity is a measure of water clarity and is used to gauge filtration process.	
TURBIDITY-ENTRY POINT	NTU	NA	95% < 0.3 NTU	100% of samples < 0.3 NTU (0.03-0.26)		Soil Runoff	Yes
Disinfectant and Disinfectant By-products (DBPs) –Entry Point. Chlorine has a MDRL (maximum disinfectant Residual Level) and MDRLG (MDRL Goal) of 4 mg/L rather						than an MCL and MCLG.	
CHLORINE-ENTRY POINT	mg/L	4	4	0.89 (0.70-1.75)		Required Treatment Chemical	Yes
TOTAL ORGANIC CARBON	mg/L	NA	TT	2.26 (2.19-2.34)		Naturally Occurring	Yes
UV254	Abs/cm	NA	NA	0.033 (0.031-0.034)		Naturally Occurring	Yes
TOTAL THMS	ug/L	NA	80	14		By-product of chlorination	Yes
HALOACETIC ACIDS	ug/L	NA	60	6		By-product of chlorination	Yes

CITY OF ROCHESTER DISTRIBUTION SYSTEM

Microbiological Contaminants – The distribution system monthly maximum and annual average % positive for total coliform bacteria are listed below. Total Coliform is a group of bacteria used to indicate the general sanitary conditions in a water system. Most species of this group do not present a health concern, but one species, E. coli can be pathogenic. In 1993, the State Health Department granted the City a “biofilm” variance, or exception to the Total Coliform MCL. Biofilm is a layer of bacteria that can be found on almost all surfaces, including the inside wall of water pipes. The variance does not apply to E. coli.

SUBSTANCE	UNITS	MCLG	MCL	AVERAGE (RANGE)	LIKELY SOURCE	MEETS EPA STANDARDS
TOTAL COLIFORM	% Positive	0	NA	1.3% (June) 0.4% (Annual)	Naturally Occurring	Yes
Water Clarity Treatment Requirements (TT) For the distribution system the highest monthly average and range are reported. Turbidity is a measure of water clarity						and is used to gauge filtration process.
TURBIDITY - DISTRIBUTION	NTU	NA	5 NTU	0.16 (July) (<0.005 - 3.10)	Soil Runoff, Corrosion of Plumbing	Yes
Disinfectant and Disinfectant By-products (DBPs) Distribution System – Average (Highest LRAA for Total THMs and Haloacetic Acids) and Range are listed below.						Chlorine has a MDRL (Maximum Disinfectant Residual Level) and MDRLG (MDRL Goal) rather than an MCL and MCLG. LRAA=Locational Running Annual Average
CHLORINE	mg/L	4	4	0.81 (0.02-2.50)	Required Treatment Chemical	Yes
UV254	Abs/cm	NA	NA	0.029 (0.024-0.032)	Naturally Occurring	Yes

TABLE OF DETECTED CONTAMINANTS CONTINUED

CITY OF ROCHESTER DISTRIBUTION SYSTEM

SUBSTANCE	UNITS	MCLG	MCL	AVERAGE (RANGE)	LIKELY SOURCE	MEETS EPA STANDARDS
TOTAL THMS	ug/L	NA	80	44 (22-68)	By-product of chlorination	Yes
HALOACETIC ACIDS	ug/L	NA	60	27 (9-43)	By-product of chlorination	Yes
Lead and Copper (2018 Survey) –Test results for 90% of distribution system samples must be less than the Action Level (AL) The 90th percentile and the range of results					are listed below. Six out of 63 samples tested exceeded the lead AL. Zero out of 63 samples exceeded the copper AL.	
LEAD	ug/L	0	15	11.7 (ND-63)	Corrosion of plumbing	Yes
COPPER	ug/L	1300	1300	217 (ND- 630)	Corrosion of plumbing	Yes
Unregulated Contaminant Monitoring Rule 4 – Once every 5 years the EPA requires public water systems to participate in unregulated contaminant monitoring. In 2016 the EPA established a list of no more than 30 unregulated contaminants referred to as UCMR4. The City began participation in UCMR4 in 2018 and will conclude sampling					activities for this rule in the third quarter of 2019. The monitoring results provide the basis for future regulatory actions to protect public health. Detected Contaminants for the Hemlock and Lake Ontario Treatment Plants and the Distribution System are reported.	

SUBSTANCE	UNITS	MCLG	MCL	HEMLOCK DISTRIBUTION SYSTEM 2018 RANGE	LAKE ONTARIO SYSTEM 2018 RANGE	MEETS EPA STANDARDS
BROMOCHLOROACETIC ACID	ug/L	NA	NA	0.92-2.99	0.54-2.30	NA
BROMODICHLOROACETIC ACID	ug/L	NA	NA	2.38-2.96	ND-3.20	NA
CHLORODIBROMOACETIC ACID	ug/L	NA	NA	0.36-0.75	ND-1.40	NA
DIBROMOACETIC ACID	ug/L	NA	NA	ND-0.38	ND-1.30	NA
DICHLOROACETIC ACID	ug/L	NA	NA	3.70-27.50	2.10-5.10	NA
TRICHLOROACETIC ACID	ug/L	NA	NA	7.40-25.40	0.95-10.00	NA

NOTE: The following contaminants were tested for but not found: Benzene, Bromobenzene, Bromochloromethane, Bromomethane, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloromethane, 2-Chlorotoluene, 4-Chlorotoluene, 1,2-Dibromo-3-chloropropane (DBCP), 1,2-Dibromoethane (EDB), 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropylene, cis-1,3-Dichloropropylene, trans-1,3-Dichloropropylene, Ethyl benzene, Hexachlorobutadiene, Isopropylbenzene, 4-Isopropyltoluene, Methyl-t-butyl ether (MTBE), Naphthalene, n-Propylbenzene, Styrene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Tetrachloroethylene, Toluene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Trichlorofluoromethane, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Vinyl chloride, o-Xylene, m,p-Xylene,

Total Xylene, 2,3,7,8- Tetrachlorodibenzo-p-Dioxin, 1,2-Dibromo-3-Chloropropane (DBCP), 1,2-Dibromoethane (EDB), PCB Screen, Chlordane, Toxaphene, 2,4-D, Dacthal, Dalapon, Dicamba, Dinoseb, Pentachlorophenol, Picloram, 2,4,5-TP (Silvex), Alachlor, Aldrin, Atrazine, Benzo(a)pyrene, Gama-BHC (Lindane), Butachlor, Dieldrin, Di(2-ethylhexyl) adipate, Di(2-ethylhexyl) phthalate, Aldicarb, Aldicarb Sulfoxide, Bis(2-Ethylhexyl)phthalate, Endrin, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Methoxychlor, Metolachlor, Metribuzin, Propachlor, Simazine, Aldicarb, Aldicarb sulfone, Aldicarb sulfoxide, Carbaryl, Carbofuran, 3-Hydroxycarbofuran, Methomyl, Oxamyl, Glyphosate, Endothall, Diquat, Gross Alpha, Total Uranium, Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Total Cyanide, Iron, Manganese, Mercury, Nitrite, Selenium, Silver, Zinc, Foaming Agents (MBAS), and Asbestos.

All tested contaminants not shown in the table were not detected. The complete list of contaminants tested is available at www.cityofrochester.gov/waterquality.

DEFINITION OF TERMS

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

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the 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.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

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

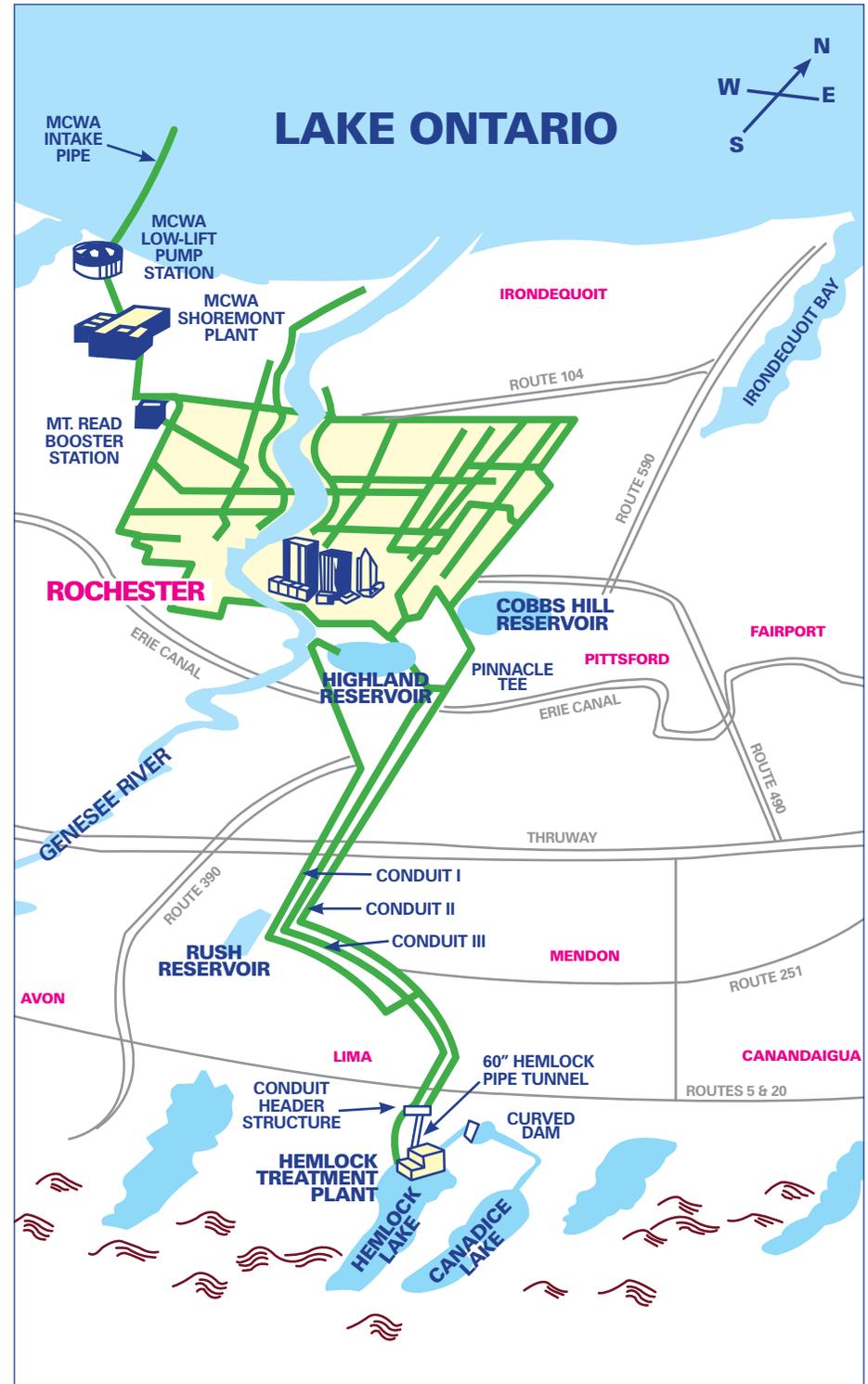
Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

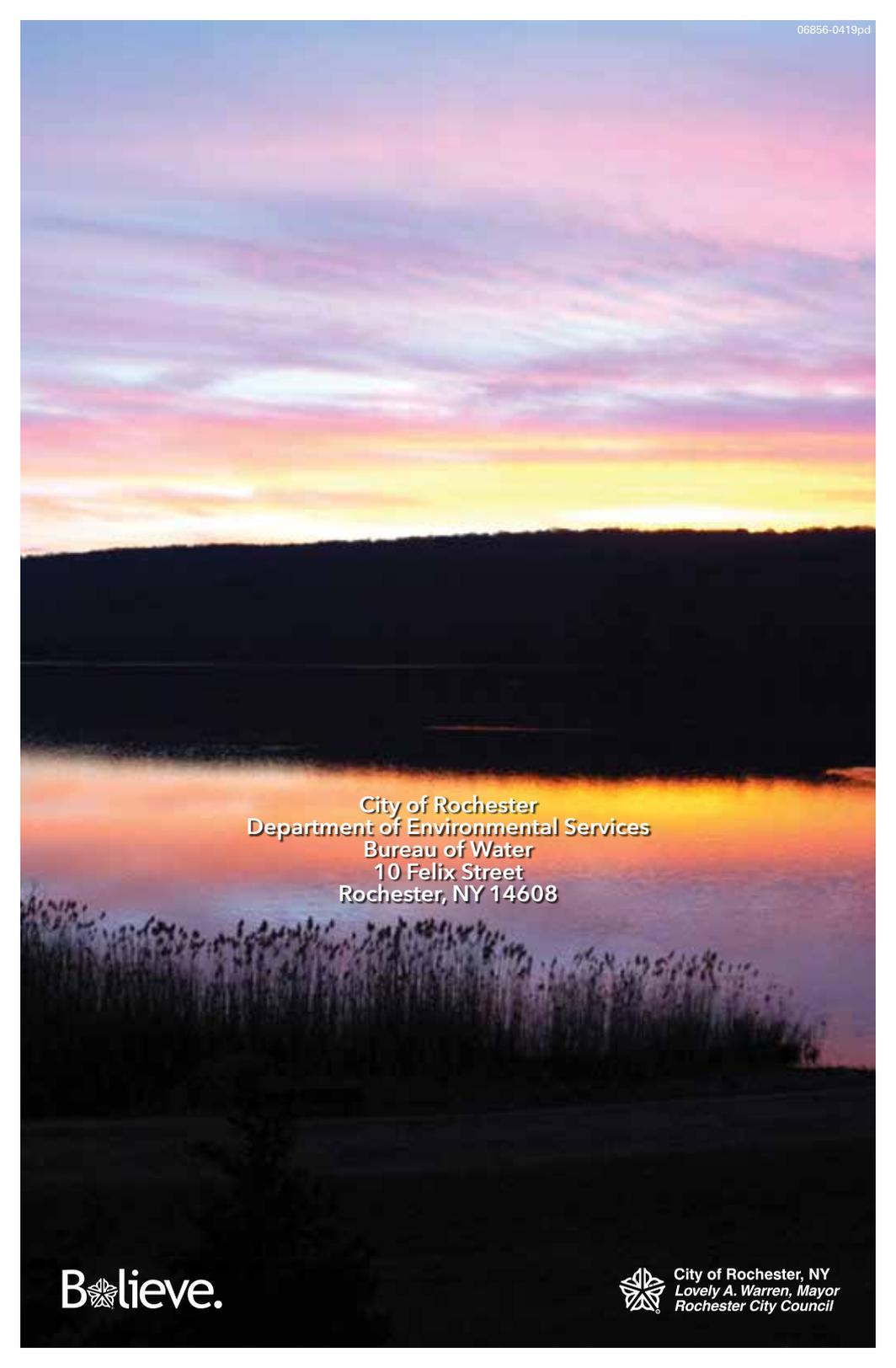
Milligrams per liter (mg/l): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

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

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

NA: Not applicable





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