



Troy Water- Drink it up!

2022 Annual Water Report

GLWA in Partnership with City of Troy Provides Water Quality/Consumer Confidence Report to Residents

Drinking water quality is important to our community and the region. The City of Troy and the Great Lakes Water Authority (GLWA) are committed to meeting state and federal water quality standards including the Lead and Copper Rule. With the Great Lakes as our water source and proven treatment technologies, the GLWA consistently delivers safe drinking water to our community. The City of Troy operates the system of water mains that carry this water to your home's service line. This year's Water Quality Report highlights the performance of GLWA and Troy's water professionals in delivering some of the nation's best drinking water.

Together, we remain committed to protecting public health and maintaining open communication with the public about our drinking water. The majority of Troy's drinking water comes from the Lake Huron Water Treatment Plant located in Port Huron. A small percentage of Troy's water comes from the Northeast Water treatment plant in Detroit. Both water plants are operated and owned by the Great Lakes Water Authority (GLWA). GLWA filters and treats the raw water at the plants before releasing the water into the pipes that deliver water to Troy. There are seven main connections with master water meters spread out along Troy's borders that supply water to the City.



At these points of connection, the GLWA distribution system ends and Troy's system begins. Troy maintains 550 miles of water main, over 6,000 hydrants, seven master meter facilities, and more than 28,000 water meters serving our 87,294 residents, businesses and public facilities. Troy residents consume approximately 3.5 billion gallons of water per year. Our goal is to provide a safe, healthy water supply with quality service to our customers.

For convenience, you may choose to use the free Direct Payment service for your water bill. The City continues sending a billing statement, but payments are automatically deducted from your account on the due date.

For information, or an application, please call the Treasurer's office at

248.524.3333. If you have questions about

Troy's water service, please contact the Department of Public Works at 248.524.3370.

The Source of our Water

The majority of Troy's source water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. A small percentage of Troy's source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River in the U.S. and part of the Thames River, Little River, Turkey Creek, and Sydenham watersheds in Canada. The MI Dept. of Environmental Quality

in partnership with the U.S. Geological Survey, the GLWA, and the MI Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination.

The susceptibility rating is a seven-tiered scale ranging from very low to very high based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards. The susceptibility of our Detroit River source water intakes were determined to be highly susceptible to potential contamination.

However, all four GLWA water treatment plants that use source water from the Detroit River have historically provided satisfactory treatment of this source water to meet drinking water standards.

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in a National Pollutant Elimination System permit discharge program and has an emergency response management plan.

GLWA has a Surface Water Intake Protection plan for the Lake Huron and Belle Isle water intakes. The plan has seven elements: roles and duties of government units and water supply agencies, delineation of a source water protection areas, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new water sources, public participation, and public education activities. If you would like to know more information about the Source Water Assessment Report. Please, contact GLWA at 313.926.8127.

What's in our Drinking Water?

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. The sources of drinking water (both tap and bottled) 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 sometimes, radioactive

material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, septic systems and residential uses.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

To ensure 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. The State and EPA require us to test our water on a regular basis to ensure its safety. We met all monitoring and reporting requirements for 2022.

SAFE DRINKING WATER

More information about contaminants (including lead), testing methods, potential health effects, and steps you can take to minimize exposure, can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 800.426.4791 or from their website at [epa.gov/safewater](https://www.epa.gov/safewater).

2022 Lake Huron Water Treatment Plant and Northeast Water Treatment Plant | 2022 Regulated Detected Contaminants Table
Teal ink results are for Lake Huron Water Treatment Plant. **Orange** are for Northeast Water Treatment Plant. Black are for both.

2022 Inorganic Chemicals - Monitoring at Plant Finished Water Tap

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Level Detected	Range of Detection	Violation Yes/No	Major Sources in Drinking Water
Fluoride	7/12/2022	ppm	4	4	0.71 0.59	N/A	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	7/12/2022	ppm	10	10	0.51 0.97	N/A	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium	5/16/17	ppm	2	2	0.01 0.01	N/A	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits

2022 Disinfection By-Products - Stage 2 Monitoring in Distribution System

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation Yes/No	Major Sources in Drinking Water
(TTHM) Total Trihalomethanes	2022	ppb	N/A	80	35.2	16 - 53	No	By-product of drinking water chlorination
(HAA5) Haloacetic Acids	2022	ppb	N/A	60	18.5	15 - 23	No	By-product of drinking water chlorination

2022 Disinfection Residuals - Monitoring in Distribution System

Regulated Contaminant	Test Date	Units	Health Goal MRDLG	Allowed Level MRDL	Highest RAA	Range of Detection	Violation Yes/No	Major Sources in Drinking Water
Total Chlorine Residual	2022	ppm	4	4	0.79 0.69	0.64-0.85 0.55-0.76	No	Water additive used to control microbes

2022 Turbidity - Monitored every Four Hours at Plant Finished Water Tap

Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation	Major Sources in Drinking Water
0.35 NTU, 0.10 NTU	100%	No	Soil runoff

2022 Microbiological Contaminants - Monthly Monitoring in Distribution System

Contaminant	MCLG	MCL	Highest # Detected	Violation	Major Sources in Drinking Water
Total Coliform	0	Presence of Coliform bacteria > 5% of monthly samples	in 1 month - 0	No	Naturally present in the environment
E.coli or fecal		A routine sample and repeat sample are total	entire year - 0	No	Human waste & animal fecal waste
coliform bacteria	0	coliform positive, and one is also fecal or E.coli positive			

2022 Lead and Copper Monitoring at Customers' Tap

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Range of Detection	# of samples over AL	Violation Yes/No	Major Sources in Drinking Water
Lead	2022	ppb	0.0	15	0	0 - 2.1	0	No	Lead service lines; Corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits
Copper	2022	ppm	1.3	1.3	0.069	0.003 - 0.234	0	No	Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood preservatives

*The 90th percentile value means 90% of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL add'l requirements must be met.

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
Total Organic Carbon ppm	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each quarter and because the level was low, there is no requirement for TOC removal.	Erosion of natural deposits

2022 Special Monitoring

Regulated Contaminant	Test Date	MCLG	MCL	Level Detected	Typical Source of Contamination
Sodium (ppm)	7/12/2022	N/A	N/A	5.4 5.6	Erosion of natural deposits

Radionuclides - Monitored at the Plant Finished Tap in 2014

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Level Detected	Violation Yes/No	Major Sources in Drinking Water
Combined Radium	5/13/14	pCi/L	0	5	0.86 + or - 0.55	No	Erosion of natural deposits

2022 Lake Huron Tap Water Mineral Analysis									
Parameter	Units	Max.	Min.	Avg.	Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	0.44	0.04	0.09	Chloride	ppm	10.6	8.3	8.0
Total Solids	ppm	156	98	100	Phosphorus	ppm	0.48	0.39	0.36
Total Dissolved Solids	ppm	142	108	100	Free Carbon Dioxide	ppm	7.3	4.5	4.8
Aluminum	ppm	0.072	0.011	0.027	Total Hardness	ppm	104	80	77
Iron	ppm	0.4	0.2	0.2	Total Alkalinity	ppm	90	74	66
Copper	ppm	0.008	ND	0.001	Carbonate Alkalinity	ppm	ND	ND	ND
Magnesium	ppm	8.4	7.2	6.2	Bi-Carbonate Alkalinity	ppm	90	74	66
Calcium	ppm	27.2	24.3	20.8	Non-Carbonate Hardness	ppm	30	ND	11
Sodium	ppm	5.3	4.5	4.0	Chemical Oxygen Demand	ppm	6.6	ND	3.5
Potassium	ppm	1.1	0.9	0.8	Dissolved Oxygen	ppm	14	9.2	9.7
Manganese	ppm	0.001	ND	ND	Nitrite Nitrogen	ppm	ND	ND	ND
					Nitrate Nitrogen	ppm	0.51	0.30	0.31
Lead	ppm	ND	ND	ND	Fluoride	ppm	0.79	0.62	0.57
Zinc	ppm	0.070	ND	0.008	pH		7.60	7.36	6.21
Silica	ppm	2.5	1.6	1.8	Specific Conductance @ 25 °C	µohms	228	159	170
Sulfate	ppm	24.0	18.2	17.7	Temperature	°C	22.2	5.6	10.8

2022 Northeast Tap Water Mineral Analysis									
Parameter	Units	Max.	Min.	Avg.	Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	0.09	0.03	0.04	Chloride	ppm	14.4	8.3	10.7
Total Solids	ppm	163	110	138	Phosphorus	ppm	0.50	0.24	0.42
Total Dissolved Solids	ppm	169	98	136	Free Carbon Dioxide	ppm	12.6	6.9	8.9
Aluminum	ppm	0.111	0.016	0.047	Total Hardness	ppm	104	76	92
Iron	ppm	0.5	0.2	0.3	Total Alkalinity	ppm	100	70	79
Copper	ppm	0.003	0.001	0.002	Carbonate Alkalinity	ppm	ND	ND	ND
Magnesium	ppm	8.5	7.2	7.7	Bi-Carbonate Alkalinity	ppm	100	70	78
Calcium	ppm	28.0	24.8	26.0	Non-Carbonate Hardness	ppm	34	ND	14
Sodium	ppm	7.1	4.8	5.4	Chemical Oxygen Demand	ppm	10.2	ND	3.3
Potassium	ppm	1.1	0.9	1.0	Dissolved Oxygen	ppm	14.1	7.6	11.1
Manganese	ppm	ND	ND	ND	Nitrite Nitrogen	ppm	ND	ND	ND
					Nitrate Nitrogen	ppm	0.97	0.25	0.39
Lead	ppm	ND	ND	ND	Fluoride	ppm	0.80	0.50	0.58
Zinc	ppm	0.010	ND	0.001	pH		7.34	7.08	7.25
Silica	ppm	2.5	1.6	2.1	Specific Conductance @ 25 °C	µohms	283	167	218
Sulfate	ppm	31.3	19.9	26.7	Temperature	°C	23.1	6.0	14.5

2022 GLWA Cryptosporidium — Giardia Statement:

GLWA voluntarily monitors our source water for the presence of Cryptosporidium and Giardia in 2020. The presence of Cryptosporidium and Giardia were detected in the source water at the Belle Isle Detroit River Intake serving Water Works Park, Springwells and the Northeast treatment plants. Cryptosporidium was detected once in March and Giardia once in April. All other samples monitored in 2020 were absent for the presence of Cryptosporidium and Giardia. Current test methods do not enable us to determine if these organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. Cryptosporidium must be ingested for it to cause disease and may be passed through other means than drinking water. Surface water treatment systems like GLWA must provide treatment so that 99.9% Giardia is removed or inactivated.

WANT A COPY OF THIS WATER REPORT? This annual report provided by GLWA in partnership with the City of Troy, will provide information on any problems that may occur throughout the year. We also invite public participation in decisions that affect drinking water quality. Copies are available at City Hall, 500 W. Big Beaver; Troy Public Library, 510 W. Big Beaver; and Troy Community Center, 3179 Livernois. For more information, or to request a copy, call the Troy Water Department at 248.524.3370.

KEY TO THE DETECTED CONTAMINANTS TABLE

> - Greater than | **N/A** - Not applicable | **ND** - Not detected

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

°C (Celsius) - A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.

HAA5 (Haloacetic Acids) - HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.

Level 1 (Level 1 Assessment) - A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in the water system.

Level 2 (Level 2 Assessment) - A very detailed study of the water system to identify potential problems and determine (if possible) why an E.coli MCL violation occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

LRAA (Locational Running Annual Average) - The average of analytical results for samples at a particular monitoring location during the previous four quarters.

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 feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal) - The level of contaminant in drinking water below which there is no known expected risk to health.

MRDL (Maximum Residual Disinfectant Level) - 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.

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

NTU (Nephelometric Turbidity Units) - Turbidity is a measure of the cloudiness of the water.

pCi/L Picocuries Per Liter - A measure of radioactivity

ppb (Parts per billion) - One ppb is equivalent to one microgram per liter. A microgram = 1/1000 milligram.

ppm (Parts per million) - One ppm is equivalent to one milligram per liter. A milligram = 1/1000 gram.

mg/L (Milligrams per liter) - A milligram = 1/1000 gram. 1 milligrams per liter is equal to 1 ppm.

RAA (Running Annual Average) - The average of analytical results for all samples during the previous four quarters.

SMCL (Secondary Maximum Contaminant Level) - An MCL which involves a biological, chemical or physical characteristic of water that may adversely affect the taste, odor, color or appearance (aesthetics), which may thereby affect public confidence or acceptance of the drinking water.

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

TTHM (Total Trihalomethanes) - The sum of chloroform, bromodichloromethane, dibromochloromethane, and bromoform. Compliance is based on the total.

µohms (microohms) - Measure of conductance of water

Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, and some elderly and infants can be particularly at risk of infection. These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800.426.4791).

If present, elevated levels of lead can cause serious

health problems, especially for pregnant women and young children. Infants and children who drink water containing lead could experience delays in their physical and mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Troy 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 two minutes before



PROTECT YOURSELF FROM LEAD EXPOSURE

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

1.800.462.4791

or at epa.gov/safewater/lead

using the water for drinking or cooking. If you have a lead service line it is recommended that you run your water for five minutes to flush water from both your home plumbing and the lead service line. If you are concerned about lead in your water, you may wish to have your water tested.

The number of water service lines in the City of Troy = 28,452. The number of lead service lines in the City of Troy=0. The Number of unknown material service lines in the City of Troy=<10,000. *Service line material is considered unknown for any service line installed before 1989 and has not had any information updated after 1989. While the City of Troy has always required copper type water services and have records on all service lines, we must consider anything installed before 1989 as an “unknown material.” The City of Troy and the Great Lakes Water Authority are committed to safeguarding our water supply and delivering the

highest quality drinking water to protect public health. Please contact us with any questions or concerns about your water.

Insuring Healthy Water for the Future

In 2016, the Michigan Department of Environmental, Great Lakes and Energy approved GLWA’s Surface Water Intake Protection plans for the Lake Huron water intake. The plan has seven elements: roles and duties of government units and water supply agencies, delineation of a source water protection areas, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new water sources, public participation and public education activities. If you would like to know more information about the Source Water Assessment report, please contact GLWA at 313.926.8102.

PROPER DISPOSAL OF RV WASTE

Planning a vacation this summer in your RV?

Consider the proper way of disposing waste from your vehicle.



We know you would not drive to the beach and empty your RV’s waste tank into the ocean. But did you know it is illegal to dump any form of hazardous materials and pollutants (motor oils, grease, and other chemicals) into storm drains? All harmful materials dumped into the storm drains end up in the lakes and rivers which impacts the habitat of aquatic wildlife and endangers human recreational activities. We want RV owners to protect the environment while enjoying it! **Visit rvdumps.com for a list of proper disposal facilities.**