

Customer Service Center  
City Hall  
1101 S. Saginaw St.  
Flint, MI 48501

Postage

A graphic featuring a blue water splash with ripples, set against a light blue background. The text is overlaid on this graphic.

**City of Flint** **2022**

**Annual Water Quality Report**

The Annual Water Quality Report provides important information about your drinking water. This report includes information about the source of the water, health information, charts that summarize regulatory required testing results, and a table giving explanations of important terms to understand when viewing the test results. The City of Flint Department of Utilities is dedicated to providing quality drinking water to the residents of the community. The Flint Water Plant operates and maintains a certified drinking water laboratory to assure compliance with all state and federal regulations. We are committed to prompt and thorough notification to the consumers if there is any reason for concern about the quality of the drinking water. Information about your drinking water is available on the City of Flint web page at [www.cityofflint.com](http://www.cityofflint.com) or by calling the City of Flint Water Plant at (810) 787-6537. The Safe Drinking Water Hotline at (800) 426-4791 is a resource for health-related questions and water quality issues. General drinking water information can also be found on the U.S. Environmental Protection Agency (EPA) web site at [www.epa.gov/safewater/](http://www.epa.gov/safewater/).

## Water Source

Your source of water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environment, Great Lakes, and Energy (EGLE), in partnership with the Detroit Water and Sewerage Department and several other governmental agencies, performed a Source Water Assessment (SWA) in 2004 to determine the susceptibility or relative potential of contamination. The susceptibility rating is on a seven-tiered scale ranging from “very low” to “very high” based primarily on geologic sensitivity, water chemistry, and contamination 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.

Great Lakes Water Authority (GLWA) voluntarily developed and received approval in 2015 for a surface water protection program (SWIPP) for the Lake Huron Water Treatment Plant. The program includes seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection area, identification of potential of source water protection area, management approaches for protection, contingency plans, siting of new sources and public participation and education. If you would like more information about the SWA or the SWIPP please, contact your water department at (810) 787-6537.

## General Information

### **Information for people with special health concerns**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk. These people should seek advice about drinking water from their health care providers. U.S EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hot Line (800-426-4791).

### **The sources of all 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. More information about contaminants and potential health effects can be obtained by calling the United States Environmental Protection Agency’s safe water drinking water hotline (1-800-426-4791).

Both tap water and bottled water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

### **Contaminants that may be present in source water include:**

- **Microbial contaminants**, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, 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, and residential uses.

- **Organic Chemical contaminants**, including synthetic and volatile organic chemicals, are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production in mining activities.

In order to ensure that tap water is safe to drink, the **EPA** prescribes regulations which limit the number of certain contaminants in water provided by public water systems. **FDA** regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

There is nothing more important to our community than quality drinking water. We will continue to work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children’s future.

**Moving Forward**

The City of Flint and the Great Lakes Water Authority are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health. The following pages of this report include the results of 2022 regulatory testing. If you have any questions about this report or other water related concerns, please contact the City of Flint Water Treatment Plant at (810) 787-6537.

**Contact Information**

- Water Treatment Plant: (810) 787-6537
- Water Service Center: (810) 787-7202
- Water Pollution Control: (810) 766-7210
- Customer Service: (810) 766-7015

**City of Flint & Great Lakes Water Authority - Lake Huron Water Treatment Plant**

**Water Quality Data**

The table below lists all the drinking water contaminants that we detected during the 2022 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1, 2022 – December 31, 2022. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of water quality, but some are more than one year old.

<b>Great Lakes Water Authority – Lake Huron Water Treatment Plant</b>							
<b>PRIMARY STANDARDS</b> – Required sampling for substances which have federally enforced regulations, these substances are directly related to the safety of drinking water.							
<b>Inorganic/Organic Chemicals</b>	<b>Sample Date</b>	<b>MCLG</b>	<b>MCL</b>	<b>Highest Level Detected</b>	<b>Range of all Results</b>	<b>Violation</b>	<b>Likely source</b>
Fluoride (ppm)	7-12-22	4	4	0.71	N/A	No	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	7-12-22	10	10	0.51	N/A	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

**Great Lakes Water Authority – Lake Huron Water Treatment Plant (Primary Water Source)**

Disinfectant Residual	Sample Date	MRDLG	MRDL	Highest Level RAA	Range of all Results	Violation	Likely source
Total Chlorine (ppm)	Daily	4.0	4.0	0.79	0.64 – 0.85	No	Water additive used to control microbes.
<b>TOC Removal</b>							<b>Likely source</b>
Total Organic Carbon (TT)	The Total Organic Carbon (TOC) 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 are no TOC removal requirements.						Naturally present in the environment
Turbidity	Sample Date	MCLG	MCL/TT	Highest Result	Range of all Results	Violation	Likely source
NTU Filtered Water	Daily	N/A	TT = 1 NTU	0.35	N/A	No	Soil run-off
% of samples Filtered Water	Daily	N/A	95% <0.3NTU	98.4%	N/A	No	Soil run-off
<b>ADDITIONAL MONITORING</b> – Required and non-required sampling for substances that do not have federally enforced regulations, these substances are not directly related to your health. They reflect aesthetic qualities such as taste, odor and appearance.							
Sampled at Plant Tap	Sample Date	MCLG	MCL	Highest Level	Range of all Results	Violation	Likely source
Sodium (ppm)	7-12-22	N/A	N/A	5.4	N/A	No	Erosion of natural deposits

**Genesee County Drain Commission—Lake Huron GDC Water Treatment Plant (Secondary Water Source)**

**PRIMARY STANDARDS** – Required sampling for substances which have federally enforced regulations, these substances are directly related to the safety of drinking water.

Inorganic/Organic Chemicals	Sample Date	MCLG	MCL	Highest Level Detected	Range of all Results	Violation	Likely source
Barium (ppm)	2022	2	2	0.014	N/A	No	Discharge from metal refineries and coal-burning factories; discharge from industries
Fluoride (ppm)	Daily	4	4	0.82	0.36-0.82	No	Water additive to protect teeth
Arsenic (ppm)	03-18-2021	0	10	0.54	N/A	No	Erosion of natural deposits; Runoff from orchard; runoff from glass and Electronics production wastes.

**Genesee County Drain Commission—Lake Huron GDC Water Treatment Plant (Secondary Water Source)**

Disinfectant Residual	Sample Date	MRDLG	MRDL	Highest Level RAA	Range of all Results	Violation	Likely source
Total Chlorine (ppm)	2022	4.0	4.0	0.70	0.39 - 1.06	No	Disinfectant added to control microbes.
<b>TOC Removal</b>							<b>Likely source</b>
Total Organic Carbon (TT)	The Total Organic Carbon (TOC) 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 are no TOC removal requirements.						Naturally present in the environment
Turbidity	Sample Date	MCLG	MCL/TT	Highest Result	Range of all Results	Violation	Likely source
NTU Filtered Water	Daily	N/A	TT = 1 NTU	0.09	N/A	No	Soil run-off
% of samples Filtered Water	Daily	N/A	95% <0.3NTU	100%	N/A	No	Soil run-off
<b>ADDITIONAL MONITORING</b> – Required and non-required sampling for substances that do not have federally enforced regulations, these substances are not directly related to your health. They reflect aesthetic qualities such as taste, odor and appearance.							
Sampled at Plant Tap	Sample Date	MCLG	MCL	Average Result	Range of all Results	Violation	Likely source
Sodium (ppm)	2022	N/A	N/A	8.9	N/A	No	Erosion of natural deposits

Additional information about unregulated contaminants can be found here: [www.epa.gov/dwucmr](http://www.epa.gov/dwucmr)

City of Flint – Distribution System							
Copper & Lead January 1 - June 30, 2022	MCLG	AL	Number of samples above the AL	90 <sup>th</sup> Percentile	Range of all Results	Violation	Likely source
Copper (ppm)	1.3	1.3	1	0.1 ppm	0 - 2.1 ppm	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	0	15	4	10 ppb	0 - 795 ppb	No	Lead service lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits
Copper & Lead July 1 – December 31, 2022	MCLG	AL	Number of samples above the AL	90 <sup>th</sup> Percentile	Range of all Results	Violation	Likely source
Copper (ppm)	1.3	1.3	0	0.06 ppm	0 – 0.29 ppm	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	0	15	6	9 ppb	0 – 50 ppb	No	Lead service lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits
<p>Infants and children who drink water containing lead could experience delays in their physical or 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.</p>							
<p><b>*Important Information About Copper and Lead*</b></p>							
<p>Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson’s Disease should consult their personal doctor.</p> <p>If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Flint 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 your water for drinking or cooking. If you have a service line that is lead, or unknown but likely to be lead, or unknown or likely to be lead, it is recommended that you run water for at least 5 minutes to flush water from both your home plumbing and the service line. 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 (800-426-4791) or at <a href="http://www.epa.gov/safewater/lead">http://www.epa.gov/safewater/lead</a>.</p> <p>Officials recommend that all residents use water filters provided by the state in areas where construction activities are taking place to remove or replace service lines.</p>							
<p>The City of Flint has 29,250 active service lines. As of 04/28/2023, of these 29,250 service lines, 28,147 have been replaced or are known to be copper. There are 2,500-3,000 service lines that are of unknown composition.</p>							

City of Flint – Distribution System							
Disinfectant By- Products	Sample Date	MCLG	MCL	Running Annual Average	Range of all Results	Violation	Likely source
TTHMs (ppb)	Quarterly	N/A	80	33	16.7 - 47.9	No	Disinfection by-product

HAA5 (ppb)	Quarterly	N/A	60	18	9 - 25	No	Disinfection by-product
<b>Disinfectant Residual</b>	<b>Sample Date</b>	<b>MRDLG</b>	<b>MRDL</b>	<b>Running Annual Average</b>	<b>Range of all Results</b>	<b>Violation</b>	<b>Likely source</b>
Free Chlorine (ppm)	2022	4.0	4.0	1.3	1.30 - 1.80	No	Disinfectant added to control microbes.

#### Terms and abbreviations used above:

- **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 MCLGs as feasible using the best available treatment technology.
- **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Minimum Reporting Level (MRL):** The minimum concentration that can be reported by a laboratory as a quantitated value for a method analyte in a sample following analysis.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- **N/A:** Not applicable **ND:** not detectable at testing limit **ppb:** parts per billion or micrograms per liter **ppm:** parts per million or milligrams per liter **ng/L:** nanogram/liter **pCi/l:** picocuries per liter (a measure of radioactivity).
- **Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

### Significant Deficiency

During the last sanitary survey of our water system, the State of Michigan identified a significant deficiency related to the water system's technical, managerial, and financial (TMF) capacity. The City and the State entered into a Voluntary Agreement in 2017, and the City continues to take steps to improve its TMF capacity. On site, Dort Well and Pump Station #4 were refurbished and put back into service in early 2023, holding up to 19.8 million gallons of treated water and giving us the ability to help meet System water demands up to an additional 15 million gallons in a day.

### Per- and polyfluoroalkyl substances (PFAS)

The City of Flint is pleased to inform its water system customers that the water was tested for per- and polyfluoroalkyl substances (PFAS). Samples were collected from the Great Lakes Water Authority (GLWA) Lake Huron Water Treatment Plant in May of 2022. The results for PFAS showed **Not Detectable (ND)**.

#### What are PFAS and why are they harmful?

PFAS, sometimes called PFCs, are a group of chemicals that are resistant to heat, water, and oil. PFAS have been classified by the U.S. Environmental Protection Agency (EPA) as an emerging contaminant on the national landscape. For decades, they have been used in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery, food paper wrappings, fire-fighting foams, and metal plating. They are still used today. PFAS have been found at low levels both in the environment and in blood samples of the general U.S. population.

These chemicals are persistent, which means they do not break down in the environment. They also bioaccumulate, meaning the amount builds up over time in the blood and organs. Studies in people who

were exposed to PFAS found links between the chemicals and increased cholesterol, changes in the body's hormones and immune system, decreased fertility, and increased risk of certain cancers.

### **New Michigan PFAS Drinking Water Standards**

The EPA has not established enforceable drinking water standards, called maximum contaminant levels (MCLs), for these chemicals. However, Michigan amended current drinking water rules by establishing MCLs and sampling requirements for seven PFAS compounds, affecting approximately 2,700 water supplies. These new rules took effect on August 3, 2020.

The following table lists the seven regulated PFAS compounds in Michigan and their associated MCLs.

<b>CONTAMINANT</b>	<b>MCL (NG/L)</b>
PERFLUORONONANOIC ACID (PFNA)	6
PERFLUOROOCCTANOIC ACID (PFOA)	8
PERFLUOROOCCTANE SULFONIC ACID (PFOS)	16
PERFLUOROHEXANE SULFONIC ACID (PFHxS)	51
HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)	370
PERFLUOROBUTANE SULFONIC ACID (PFBS)	420
PERFLUOROHEXANOIC ACID (PFHxA)	400,000

For information on PFOA, PFOS and other PFAS, including possible health outcomes, you may visit these websites: <https://www.epa.gov/pfas>; [www.atsdr.cdc.gov/pfas](http://www.atsdr.cdc.gov/pfas); or [Michigan.gov/PFASResponse](http://Michigan.gov/PFASResponse).

### **How often does GLWA monitor for PFAS in its water?**

The standard monitoring schedule for community and nontransient noncommunity public water supplies is quarterly. A water supply must sample quarterly if a contaminant is detected above the reporting limit in any sample. A supply may be reduced to annual monitoring based on satisfactory results of prior sampling.

### **Who can I call if I have questions about PFAS in my drinking water?**

If any resident has additional questions regarding this issue, the State of Michigan Environmental Assistance Center can be contacted at 800-662-9278. Representatives may be reached to assist with your questions Monday – Friday, 8:00 AM to 4:30 PM. You may also contact the City of Flint Water Plant at (810) 787-6537.

### **Is it safe to eat fish in these areas?**

Wild fish samples are being collected from local lakes and rivers. These samples will be analyzed to determine the levels of PFAS in fish and make recommendations on how much is safe to eat. Some information is already available in the State of Michigan Eat Safe Fish guides, which are available at [Michigan.gov/EatSafeFish](http://Michigan.gov/EatSafeFish).

### **May I bathe or swim in water containing PFAS?**

Yes, PFAS does not easily absorb into the skin. It is safe to bathe, as well as do your laundry and household cleaning. It is also safe to swim in and use recreationally.

### **How can PFAS affect people's health?**

Some scientific studies suggest that certain PFAS may affect different systems in the body. The National



Center for Environmental Health (NCEH)/Agency for Toxic Substances and Disease Registry (ATSDR) is working with various partners to better understand how exposure to PFAS might affect people's health.

If you are concerned about exposure to PFAS in your drinking water, please contact the MDHHS Toxicology Hotline at 800-648-6942 or the CDC/ATSDR: <https://www.cdc.gov/cdc-info/> or 800-232-4636. Currently, scientists are still learning about the health effects of exposures to PFAS, including exposure to mixtures.

### **What other ways could I be exposed to PFOA, PFOS and other PFAS compounds?**

PFAS is used in many consumer products. They are used in food packaging, such as fast-food wrappers and microwave popcorn bags; waterproof and stain resistant fabrics, such as outdoor clothing, upholstery, and carpeting; nonstick coatings on cookware; and cleaning supplies, including some soaps and shampoos. People can be exposed to these chemicals in house dust, indoor and outdoor air, food, and drinking water. Usually, the amount of PFAS a person may be exposed to is quite small.

### **How can I stay updated on the situation?**

The state has created a website where you can find information about PFAS contamination and efforts to address it in Michigan. The site will be updated as more information becomes available. The website address is [Michigan.gov/PFASResponse](http://Michigan.gov/PFASResponse).

### **Public Participation**

We invite public participation in decisions that affect drinking water quality. City Council meetings will be held at 5pm at city hall council chambers every 1<sup>st</sup> & 3<sup>rd</sup> Wednesday of every month. The City of Flint has also formed a Community Water Advisory Council. All meetings conducted by the Water System Advisory Council are open to the public and held quarterly. For questions or for more information about the Water System Advisory Council, contact Lottie Ferguson at the Mayor's Office at (810) 766-7346. **The Water System Advisory Council can also be reached directly at [wsac@cityofflint.com](mailto:wsac@cityofflint.com).** For more information about your water, or the contents of this report, contact the Water Treatment Plant front office for General Information and Scott Dungee, Water Treatment Plant Supervisor, for any technical information (1-810-787-6537). For more information about safe drinking water, visit the U.S. EPA at <http://www.epa.gov/safewater>.



