

The City of Madison Heights

2020 Annual Consumers Report on Water Quality



The City of Madison Heights wants you to know that your tap water is safe to drink and that it meets or surpasses all federal and state standards for quality and safety.

SAFE DRINKING WATER IS A SHARED RESPONSIBILITY Drinking water quality is important to our community and the region. The City of Madison Heights 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, GLWA consistently delivers safe drinking water to our community. The City of Madison Heights 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 the City of Madison Heights 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.

ABOUT OUR SYSTEM The City of Madison Heights is proud of the fine drinking water it supplies and is honored to provide this report to you. The 2020 Annual Consumer Report on Water Quality shows the source of our water, lists the results of our tests and contains important information about water and health. The City of Madison Heights will notify you immediately if there is ever any reason for concern about our water. We are pleased to show you how we have surpassed water quality standards as mandated by the Environmental Protection Agency (EPA) and the State of Michigan Department of Environment, Great Lakes, and Energy (EGLE).



The City of Madison Heights and GLWA 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.



The City of Madison Heights receives its water from two feeds that branch from the 54" water main that runs along Dequindre Road from the City of Detroit. This 54" main is fed by water from the Northeast Treatment Plant located on Eight Mile Road near Hoover. Your source water comes from the Detroit River, situated within Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. EGLE in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department (DWSD), and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is on a seven-tiered scale from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. Our Detroit River source water intakes were determined to be highly susceptible to potential contamination. However, all four Detroit 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.

HOW DO WE KNOW THE WATER IS SAFE TO DRINK?

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in a National Pollutant Discharge Elimination System (NPDES) permit discharge program and has an emergency response management plan. In 2016, EGLE approved the GLWA Surface Water Intake Protections Program plan (SWIPP). The programs include seven elements that include the following: 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 protections, 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.



In order to ensure that the tap water is safe to drink, the 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.

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. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

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% of *Giardia* is removed or inactivated.

People with special health concerns: Some people may be more vulnerable to contaminants in drinking water than is 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 for infections. These people should seek advice about drinking water from their health care providers. EPA/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.

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

Contaminants that may be found in source water:

- 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, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organics, which are by-products 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 and mining activities.

Bacteriological Sampling

Water samples are taken monthly from 20 locations in Madison Heights by GLWA personnel. These samples are tested for coliform bacteria. Coliform bacteria are a group of bacteria found in the intestines of warm-blooded animals and human beings. The presence of these bacteria may indicate that a foreign, and possibly harmful, substance has been introduced to the water. All samples collected during 2020 were negative for coliform bacteria.



Unregulated Contaminant Monitoring (UCMR-4)

As part of an on-going evaluation program, the EPA has required us to monitor some additional contaminants/chemicals. Information collected through the monitoring of these contaminants/chemicals will help to ensure that future decisions on drinking water standards are based on sound science.

Contaminant (ppb)	Average	Range	
		Low	High
Manganese	<0.4	<0.4	3.77
HAA5 Group	20.150	12.2	28.5
HAA6Br Group	8.779	6.95	10.9
HAA9 Group	27.850	18.2	36.2
MonoChloroAcetic Acid	<2	<2	4.5
MonoBromoAcetic Acid	0.387	<0.3	0.497
DiChloroAcetic Acid	8.928	5.31	13.7
TriChloroAcetic Acid	9.585	5.91	13.1
BromoChloroAcetic Acid	3.300	2.32	5.17
DiBromoAcetic Acid	0.793	0.576	1.27
BromoDiChloroAcetic Acid	3.671	2.93	4.96
ChloroDiBromoAcetic Acid	0.724	0.55	0.862

2020 Special Monitoring

Contaminant	Test Date	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	3/10/2020	n/a	n/a	5.92	Erosion of natural deposits

These tables are based on tests conducted by GLWA in the year 2020 or the most recent testing done within the last five calendar years. GLWA conducts tests throughout the year only tests that show the presence of a substance or require special monitoring are presented in these tables. 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 the water quality, but some are more than one year old.

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 month and because the level was low, there is no requirement for TOC removal.	Erosion of natural deposits

2020 Regulated Detected Contaminants Tables

Northeast Water Treatment Plant

Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
2020 Inorganic Chemicals – Annual Monitoring at Plant Finished Water Tap								
Fluoride	3/10/2020	ppm	4	4	0.80	n/a	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	3/10/2020	ppm	10	10	0.36	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium	5/16/2017	ppm	2	2	0.01	n/a	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
2020 Disinfection By-Products – Monitoring in Distribution System Stage 2 Disinfection By-Products								
Total Trihalomethanes (TTHM)	2020	ppb	n/a	80	35	18-35	no	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2020	ppb	n/a	60	32	12-32	no	By-product of drinking water disinfection
2020 Disinfection Residual - Monitoring in Distribution System								
Total Chlorine Residual	2020	ppm	MRDGL 4	MRDL 4	Highest RAA 0.76	0.67-0.84	no	Water additive used to control microbes

2020 Turbidity – Monitored every 4 hours at Plant Finished Water Tap			
Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation yes/no	Major Sources in Drinking Water
0.14 NTU	100%	no	Soil Runoff
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.			

January - March 2019 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Contaminant	MCLG	MCL	Highest Number Detected	Violation Yes/no	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	in one month 0	no	Naturally present in the environment.
E. coli or Fecal Coliform Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or E.coli positive.	entire year 0	no	Human waste and animal fecal waste

These tables are based on tests conducted by the GLWA formerly known as Detroit Water and Sewerage Department and the City in 2019 or within the last 5 calendar years. Many tests are conducted each year, however, only tests that show the presence of a contaminant are shown.

2020 Key to Detected Contaminants Tables		
Symbol	Abbreviation	Definition/Explanation
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
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.
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.
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.
ppb	Parts per billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts per million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries Per Liter	A measure of radioactivity. Picocurie (pCi) means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
ND	Not Detected	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane, and bromoform. Compliance is based on the total.
n/a	not applicable	
>	Greater than	
LRAA	Locational Running Annual Average	The average of analytical results for samples at a particular monitoring location during the previous four quarters.
RAA	Running Annual Average	The average of analytical results for all samples during the previous four quarters.
µmhos	Micromhos	Measure of electrical conductance of water.
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
Level 1	Level 1 Assessment	A Level 1 assessment is 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 Level 2 assessment is 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.
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.

A Word About Lead

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 Madison Heights 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 from the Safe Drinking Water Hotline at (800) 426-4791 or at <http://water.epa.gov/drink/info/lead>.

In our pledge to provide high quality drinking water to our customers, the City of Madison Heights is proud to announce the use of NSF 61 lead free material for our water main projects. The lead free brass fittings and valves meet the EPA's requirements that commenced on January 4, 2014 enacted by Senate Bill 3874, Federal No Lead Law 11-380, Reduction of Lead in Drinking Water Act. Additional efforts the City makes to reduce the lead content

in our drinking water are; the use of lead free water meters in our system and replacing lead services when we discover them on our water main projects.

Since 1997, the City of Madison Heights has been testing homes with plumbing systems that may contribute lead to the household water supply. Our tests have not shown levels in excess of the action level for lead that could be harmful when ingested. If your home has a lead service line or piping that has lead soldered joints you can take the following precautions to minimize your exposure to lead:

- Run your water for 30 seconds to 2 minutes or until it feels cold. This practice should be followed anytime your water has not been used for more than 6 hours.
- Always use cold water for drinking, cooking or making baby formula.
- Use faucets and plumbing materials that are lead free.

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.

2020 Lead and Copper Monitoring at Customer's Tap										
Contaminant	Test Date	Units	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Range	# of Samples Collected	Number of Samples Over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2020	ppb	0	15	13.0 ppb	<0.20-21	30	2	No	Lead service lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits.
Copper	2020	ppm	1.3	1.3	0.1 ppm	<0.005-.2	30	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.

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

Estimated Number of Service Connections by Service Line Material						
A service line includes any section of pipe from the water main to the building plumbing at the first shut-off valve inside the building, or 18 inches inside the building, whichever is shorter						
Any Portion Contains Lead	Contain Galvanized Previously Connected to Lead*	Unknown			Contains neither Lead nor Galvanized Previously Connected to Lead	Total**
		Likely Contains Lead	Likely Does Not Contain Lead	Material(s) Unknown		
81	0	20	180	10	10,888	11,187

*If a galvanized line is still connected to lead, it is a lead service line and must be counted in the first column.

**The total number should equal the total number of potable water service lines in your water supply (residential, commercial, industrial, other).

Safe drinking water is a shared responsibility. The water that GLWA delivers to Madison Heights does not contain lead. Lead can leach into drinking water through home plumbing fixtures, and in some cases, customer service lines. Corrosion control reduces the risk of lead and copper from leaching into your water. Orthophosphates are added during the treatment process as a corrosion control method to create a protective coating in service pipes throughout the system, including your home or business. The City of Madison Heights performs required lead and copper sampling and testing in our community. Water consumers also have a responsibility to maintain the plumbing in their homes and businesses, and can take steps to limit their exposure to lead.

In the early 1940s, due to a nationwide copper shortage, many homes constructed in this time period had lead water service lines. Although the service line from the stop-box to the home has always been the homeowner's responsibility to maintain, the City of Madison Heights began a comprehensive lead service line replacement program in 2015. These lines are being replaced at no cost to the homeowner. If you believe your home has a lead water service and would like to have it inspected, please contact the Department of Public Services at (248) 589-2294.

The City of Madison Heights and GLWA are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health. You may contact the Water and Sewer Department with any questions or concerns at (248) 589-2294 Monday through Friday between the hours of 8:00 a.m. and 3:30 p.m.