

The City of Madison Heights

2019 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 2019 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.

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 2019 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.

| Name | Reported Level | Range | |
|------------------|----------------|------------|------|
| | | Low | High |
| HAA6Br (ug/L) | 8.78 | 6.95 | 10.9 |
| HAA9 (ug/L) | 27.85 | 18.2 | 36.2 |
| Manganese (ug/L) | 3.77 | Non-Detect | 3.77 |

2019 Special Monitoring

| Contaminant | MCLG | MCL | Level Detected | Source of Contamination |
|--------------|------|-----|----------------|---------------------------------------|
| Sodium (ppm) | n/a | n/a | 6.37 | Erosion of natural deposits; Leaching |

Collection and sampling result information and tables provided by Detroit Water and Sewerage Department (DWSD) Water Quality Division, ML Semegen.

| 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 |

Special Note

How to read your new meter:

- Step 1. Open the cover
- Step 2. Use a flashlight to illuminate the meter's solar panel and hold it in place until the display turns on. Once the display turns on, the meter's serial number will appear on the screen first. After a few seconds, your read will be displayed. Then the display will cycle between your current read and the current flow rate (in gallons per minute).



2019 Regulated Detected Contaminants Tables

Northeast Water Treatment Plant

| Contaminant | Test Date | Units | Health Goal MCLG | Allowed Level MCL | Level Detected | Range of Detection | Violation yes/no | Major Sources in Drinking Water |
|---|--------------|-------|------------------|-------------------|------------------|--------------------|------------------|---|
| 2019 Inorganic Chemicals – Annual Monitoring at Plant Finished Water Tap | | | | | | | | |
| Fluoride | 6/11/2019 | ppm | 4 | 4 | 0.72 | n/a | no | Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate | 6/11/2019 | ppm | 10 | 10 | 0.48 | 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. |
| 2019 Disinfection By-Products – Monitoring in Distribution System Stage 2 Disinfection By-Products | | | | | | | | |
| Total Trihalomethanes (TTHM) | 2019 | ppb | n/a | 80 | 46 | 12-46 | no | By-product of drinking water chlorination |
| Haloacetic Acids (HAA5) | 2019 | ppb | n/a | 60 | 20 | 13-20 | no | By-product of drinking water disinfection |
| 2019 Disinfection Residual - Monitoring in Distribution System | | | | | | | | |
| Total Chlorine Residual | Jan-Dec 2019 | ppm | MRDGL 4 | MRDL 4 | Highest RAA 0.74 | 0.45-0.83 | no | Water additive used to control microbes |

| 2019 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 | |
| 0.13 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.

| 2019 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.

| 2019 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 | 2019 | ppb | 0 | 15 | 14.0 ppb | <0.20-16.98 | 30 | 1 | No | Corrosion of household plumbing system; Erosion of natural deposits. |
| Copper | 2019 | ppm | 1.3 | 1.3 | 0.1 ppm | <0.005-.48426 | 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 | | |
| 89 | 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.

We welcome your questions and comments regarding this report and any other concerns you may have. You may contact the Water and Sewer Department at (248) 589-2294 Monday through Friday between the hours of 8:00 a.m. and 3:30 p.m.