

Water Quality Report

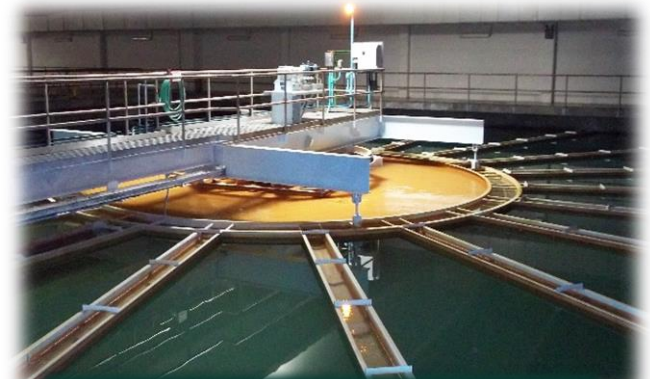


The City of Midland Water Treatment Plant is dedicated to providing you with the highest quality drinking water while meeting or exceeding all state and federal water quality standards. Midland's annual Water Quality Report is intended to provide you, our customer, with the most recent water quality testing data. Your concerns and opinions are important to us and we encourage you to contact us with any questions or comments. You can reach us by calling the Water Treatment Plant at **(989) 837-3515**, leaving a message on our 24-hour citizen comment line at **(989) 837-3400**, sending an email to water@midland-mi.org, or writing to 333 W. Ellsworth Street, Midland, MI 48640.

ABOUT DRINKING WATER CONTAMINANTS

Drinking Water

Between claims made by people selling water treatment devices and news reports about environmental issues, it is easy to forget that the water delivered by the Midland Water Treatment Plant undergoes a multi-stage treatment process and is rigorously tested to ensure it meets strict government standards. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. Additionally, 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 from the Environmental Protection Agency (EPA) Safe Drinking Water Hotline at **(800) 426-4791**.



Pretreatment Tanks condition the water for filtering

Source Water

The sources of drinking water (both tap 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. In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Contaminants that may be present in source water include: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; (C) Pesticides and herbicides, which may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses; (D) 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 storm water runoff, and septic systems; and (E) Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

What if I have Special Health Needs?

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 from infections. These individuals should seek advice about drinking water from their health care providers. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA Safe Drinking Water Hotline at **(800) 426-4791**.



PFAS

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) are a large group of manufactured compounds used in a variety of industries, such as aerospace, automotive, textiles, and electronics. As a result, PFAS have been found all over the world, including Michigan. The EPA has set a lifetime health advisory (LHA) of 70 parts per trillion (ppt) for two PFAS compounds: perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). The LHA is the amount below which no harm is expected.

The DEQ recently tested all of the public water supplies in Michigan. The Midland water system was tested in October 2018. All of our test results were below the Limit of Detection (LOD), which is the lowest quantity that can be reliably detected. If you have questions or need additional information, contact the Midland Water Treatment Plant at **(989) 837-3515**.

GLOSSARY OF TERMS

Tables on the following page contain scientific terms and measures, including:

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

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

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 Contaminant Level Goal (MCLG) - The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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 contamination.

Nephelometric Turbidity Units (ntu) - A measure of the clarity of water. The lower the numbers, the clearer the water.

Part per million (ppm) - These units describe the level of detected contaminants. One part per million is about 1/2 of an aspirin tablet (162.5 mg) in a full bathtub of water (about 50 gallons) or one second in 11 days.

Part per billion (ppb) - These units describe the level of detected contaminants. One part per billion is about one aspirin tablet (325 mg) in a 25-meter swimming pool (about 100,000 gallons) or one second in 31 years.

Part per trillion (ppt) - These units describe the level of detected contaminants. One part per trillion is the equivalent of about one second in 31,000 years.

Running Annual Average (RAA) – Running Annual Average.

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

2018 City of Midland Water Quality Data

REGULATED PARAMETERS AT CITY OF MIDLAND WATER TREATMENT PLANT

SUBSTANCE (unit of measure) Likely Source	MCL	MCLG	AMOUNT DETECTED		VIOLATION
			RANGE	AVERAGE	
Fluoride (ppm) Erosion of natural deposits; Water Treatment additive which promotes strong teeth	4	4	0.14-1.07	0.69	NO
Turbidity^a (ntu) Soil runoff; suspended matter in surface water	TT ^a	n/a	0.03-0.31	n/a	NO
Barium^b (ppm) Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	2	2	0.01	0.01	NO

REGULATED PARAMETERS IN THE DISTRIBUTION SYSTEM

SUBSTANCE (unit of measure) Likely Source	MRDL	MRDLG	AMOUNT DETECTED		VIOLATION
			RANGE	HIGHEST RAA	
Chlorine (ppm) Water treatment additive for control of microbial contaminants	4	4	0.01-1.12	0.75	NO
TTHMs Total Trihalomethanes (ppb) By-products of drinking water disinfection	LOCATION	MCL	RANGE	HIGHEST RAA	VIOLATION
	City of Midland	80	31-83	66	NO
	Homer Township	80	34-111	72	NO
	Larkin Township	80	37-72	55	NO
	Midland Township	80	34-91	58	NO
HAAs Total Haloacetic Acids (ppb) By-products of drinking water disinfection	City of Midland	60	12-27	24	NO
	Homer Township	60	13-39	24	NO
	Larkin Township	60	17-31	24	NO
	Midland Township	60	16-33	24	NO
	Mills Township	60	17-32	23	NO

REGULATED PARAMETERS AT THE CUSTOMER'S TAP (CITY OF MIDLAND)

SUBSTANCE (unit of measure) Likely Source	TT	MCLG	AMOUNT DETECTED	VIOLATION
			90TH PERCENTILE	
Copper^{c, e} (ppm) Corrosion of household plumbing systems	AL = 1.3	1.3	0.446	NO
Lead^{d, e} (ppb) Corrosion of household plumbing systems	AL = 15	0	5	NO

UNREGULATED PARAMETERS

SUBSTANCE (unit of measure) Likely Source	AMOUNT DETECTED	VIOLATION
Sodium (ppm) Erosion of natural deposits	7	NO

a. Turbidity is monitored as it is a good indicator of the effectiveness of the filtration system. The treatment technique for turbidity requires that all samples are not above 1 ntu, and at least 95% of the samples each month do not exceed 0.3 ntu. 100% of our samples were below 0.3 ntu.

b. Testing for this substance conducted every nine years. Test date 2013.

c. No testing sites exceeded the Copper Action Level of 1.300 ppm.

d. One testing site exceeded the Lead Action Level. On resampling, Lead Level on the same site was far below the Action Level.

e. Testing for this substance conducted every three years. Test date 2016.

f. Tests under LT2 round 2 for determining any requirements to provide any additional treatment for Cryptosporidium concerns were evaluated by MDEQ. Our system was placed at BIN 1, requiring no additional treatment.

g. Testing for SOCs (carbamates, pesticides & herbicides) were conducted in 2017. Results were within regulatory limits.

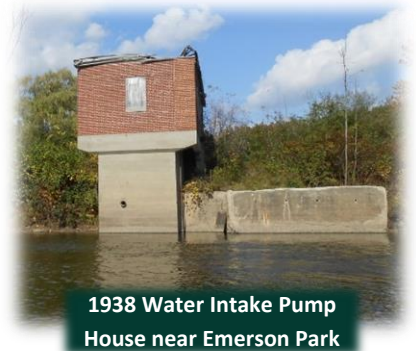
h. PFOS and PFAS were found non-detect in influent and effluent samples collected from the water plant on 10/16/2018. Currently there is no regulatory water standard for any of the PFAS chemicals. Non regulatory Lifetime Health Advisory (LHA) for these two chemicals is 70 ppt.

Note: Testing for Radionuclides (Gross Alpha, Radium 226, Radium 228) was conducted in 2016. Results were non-detect.

SOURCE WATER INFORMATION

Midland has received its source water from Lake Huron since 1948. The source water pumping system is jointly owned and operated by the cities of Midland and Saginaw and is called the Saginaw-Midland Municipal Water Supply Corporation. Water is drawn into the system through two intake structures located in Lake Huron off the shores of Whitestone Point. The water is chlorinated at the lake intake structures to kill harmful bacteria and zebra mussels and is then pumped through 65 miles of pipeline to Midland. The Midland Water Treatment Plant is able to provide 48 million gallons per day of treated Lake Huron water to our community. The Midland Water Treatment Plant is staffed by professional water treatment operators, water analysts, and maintenance personnel that monitor, test, maintain, and adjust the treatment process to provide high quality and reliable water service. Water distribution personnel are on duty to ensure water quality and safety as the water is delivered to the Midland area through approximately 405 miles of water main pipes.

In 2004, the Michigan Department of Environmental Quality (MDEQ) released a Source Water Assessment Report (SWAR) for our community's source of raw water. Included in the Source Water Assessment is a susceptibility analysis of our raw water. Susceptibility is a measure of the factors within the source water area that may pose a risk to the water supply. The Source Water Assessment Report concluded that potential contaminate sources present a negligible risk due to the physical location of the intakes. Based on our intake's infrequent experience with abnormal current flows, the Saginaw-Midland source water is defined as moderately low for susceptibility to potential contamination. Midland has effectively treated this source to meet drinking water standards.



1938 Water Intake Pump House near Emerson Park

Protecting the source of our drinking water is an investment in our community's future and one of our main priorities. A copy of the Source Water Assessment is available for review at the Water Office, located in City Hall. If you have questions or need additional information, contact the Midland Water Treatment Plant at **(989) 837-3515**.

LEAD AND COPPER

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. The City of Midland 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 EPA Safe Drinking Water Hotline at **(800) 426-4791**.



Northeast Pump Station

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 Wilsons Disease should contact their physician. If you are concerned about elevated copper levels in your water, you may wish to have the water tested and flush your tap for 30 seconds to 2 minutes before using the water. Contact the Midland Water Treatment Plant at **(989) 837-3515** for further information.

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Utilities Department Water Division | 333 W. Ellsworth Street, Midland, MI 48640
(989) 837-3515 | www.cityofmidlandmi.gov/water

Find this report in print at City Hall or the Grace A. Dow Memorial Library or online at cityofmidlandmi.gov/waterreport
For a copy, call (989) 837-3515. Midland City Council meetings are held twice a month on Monday evenings at 7 pm