



CITY OF MUSKEGON

ANNUAL WATER QUALITY REPORT

Water Quality Exceeds Mark!

System Overview

The Muskegon Water Filtration Plant is a conventional drinking water treatment plant with a capacity of 40 million gallons per day. Our customers include the City of Muskegon, Fruitport Township, Muskegon County Northside, Muskegon Township, the City of North Muskegon, the City of Norton Shores, and the City of Roosevelt Park.

Our water comes from Lake Michigan. The state performed an assessment of our source water in 2003 to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a six-tiered scale from very low to high based primarily on geologic sensitivity, water chemistry, and contaminant sources. The susceptibility of our source water is moderately high.

The Muskegon Water Filtration Plant treated over 4 billion gallons of water in 2020.

We are pleased to report that the water we treat has never had a violation of a contaminant level or of any other water quality standard.

This report contains a summary of the quality of the water provided to you during 2020 and details where our water comes from, what it contains, and the risks our water testing and treatment are designed to prevent. The personnel of the Muskegon Water Filtration Plant are committed to providing you with a safe and reliable water supply. Informed customers are our best allies in maintaining safe drinking water.

Our state-certified laboratory runs over 8,000 tests a year, including collecting water samples at various stages of the treatment process as well as throughout the distribution system. These samples are analyzed for many different chemical and microbiological parameters.

Our sophisticated laboratory equipment can detect substances at very minute levels. 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 our water poses a health risk. For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.



Get Involved!

CUSTOMER VIEWS WELCOME!

Meetings that deal with decisions about our source water are conducted through the Muskegon Conservation District at (231) 773-0008.

Consult our website at www.shorelinecity.com or contact the Water Filtration Plant at (231) 724-4106.

For further information, see U.S. Environmental Protection Agency (EPA) water information at www.epa.gov/safewater.

Vulnerability of Sub-populations

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 systems disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. EPA/Center for Disease Control 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).

DID YOU KNOW?

Four gallons of water cost about one penny, delivered to you 24 hours a day, seven days a week!

CITY OF MUSKEGON TREATED WATER QUALITY CHART

The table below lists all the drinking water contaminants that we detected in 2020. 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 through December 31, 2020. 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 the data is representative of the water quality, but some are more than one year old.

Regulated at the Treatment Plant

Substance	MCL	MCLG	Level Detected	Range	Year	Violation	Typical Source
Barium (ppm)	2	2	0.02	N/A	2017	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	4.0	4.0	0.72	0.65-0.79	2020	No	Water additive which promotes strong teeth
Nitrate (ppm)	10	10	0.9	0-0.9	2020	No	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
PFOs (ppt)	16	N/A	3	0-3	2019	No	Firefighting foam; discharge from electroplating facilities; discharge and waste from industrial waste
Total Organic Carbon	TT	N/A	22% removal (20% required)	17-33% removal	2020	No	Naturally present in the environment
Turbidity (ntu) ¹	1 (TT)	N/A	0.08	N/A	2020	No	Soil runoff

¹Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Turbidity must also be ≤0.3 ntu for ≥95% of measurements each month. 100% of the samples were ≤0.3 ntu each month.

Regulated in the Distribution System

Substance	MRDL or MCL	MRDLG or MCLG	Level Detected	Range	Year	Violation	Typical Source
Chlorine (ppm)	4.0	4	1.21	0.08-1.70	2020	No	Water additive used to control microbes
Trihalomethanes (ppb) ²	80	N/A	45.1	25.5-76.9	2020	No	Byproduct of drinking water disinfection
Haloacetic acids (ppb) ²	60	N/A	31	16-49	2020	No	Byproduct of drinking water disinfection
<i>E. coli</i>	See note ³	0	0 positive samples	N/A	2020	No	Human or animal fecal waste

²During the August 2020 monitoring period, we collected samples for trihalomethanes and haloacetic acids. The samples were received by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Drinking Water Laboratory within the monitoring period, but they were not analyzed. The laboratory's delay in notifying us of this situation prohibited us from recollecting the samples within the monitoring period, and we received a monitoring violation for not having sample results for August 2020. EGLE acknowledged that their laboratory was unable to maintain the level of service required for analyzing samples needed for compliance with drinking water regulations. As a result, we are now using the services of a different certified laboratory. This violation did not pose a threat to the quality of the drinking water. Samples collected on September 3, 2020 returned us to compliance and levels of trihalomethanes and haloacetic acids were below their MCLs.

³*E. coli* MCL violation occurs if: (1) routine and repeat samples are total coliform-positive and either is *E. coli*-positive, or (2) the supply fails to take all required repeat samples following *E. coli*-positive routine sample, or (3) the supply fails to analyze total coliform-positive repeat sample for *E. coli*.

Regulated at the Customer's Tap

Substance	AL	MCLG	Level Detected ⁴	Range	Year	Samples Above AL	Typical Source
Lead (ppb)	15	0	4	0-8	2020	0	Lead service lines, corrosion of household plumbing including fittings and fixtures; erosion of natural deposits
Copper (ppm)	1.3	1.3	0.1	0.0-0.3	2020	0	Corrosion of household plumbing systems; erosion of natural deposits

⁴Ninety (90) percent of the samples collected were at or below the level reported for our water. Our water supply has an estimated 11,529 lead service lines out of a total of 12,892 service lines.

Additional Monitoring

The following substances are unregulated contaminants for which the U.S. EPA has not established drinking water standards. Monitoring helps the U.S. EPA determine where certain contaminants occur and whether regulation of those contaminants is needed.

Substance	Average Level	Range	Year	Typical Source
Calcium (ppm)	36	34-39	2020	Naturally present in the environment
Magnesium (ppm)	12	12-13	2020	Naturally present in the environment
Hardness (ppm)	140	130-151	2020	Naturally present in the environment
Sodium (ppm)	12	10-13	2020	Naturally present in the environment
Sulfate (ppm)	31	23-37	2020	Naturally present in the environment
Brominated haloacetic acids (ppb)	11	9.6-13	2020	Byproduct of drinking water disinfection
Chlorate (ppb)	224	222-225	2015	Runoff from agricultural use
Chromium (ppb)	0.35	0.35-0.35	2015	Discharge of steel and pulp mills; erosion of natural deposits
Hexavalent chromium (ppb)	0.075	0-0.15	2015	Erosion of natural deposits; industrial contaminant
Total molybdenum (ppb)	1.1	1.0-1.1	2015	Erosion of natural deposits; industrial contaminant
Total strontium (ppb)	123	122-124	2015	Erosion of natural deposits; industrial contaminant
Total vanadium (ppb)	0.27	0.25-0.28	2015	Erosion of natural deposits; industrial contaminant

Sources of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from Lake Michigan. 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, 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 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. In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations that limit the levels of certain contaminants in water provided by public water systems. Federal Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.

Information 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 Muskegon 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 have a lead service line it is recommended that you run your water for at least 5 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. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Terms and Abbreviations

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirement that a water system must follow.

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.

Michigan Department of Environment, Great Lakes, and Energy (EGLE): The state agency that has the primary enforcement authority in Michigan for the Federal Safe Drinking Water Act.

N/A: Not applicable

ND: not detectable at testing limit

ppm: parts per million or milligrams per liter

ppb: parts per billion or micrograms per liter

ppt: parts per trillion or nanograms per liter

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

ntu: nephelometric turbidity units