



# CITY OF MUSKEGON

## ANNUAL WATER QUALITY REPORT

### Water Quality Exceeds Mark!

#### System Overview

The Muskegon Water Filtration Plant is a conventional water treatment plant with a capacity of 40 million gallons per day. Our customers include not only the City of Muskegon, but also North Muskegon, Muskegon Township, Roosevelt Park, County Northside, Fruitport and Norton Shores.

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.

#### DID YOU KNOW?

Four gallons of water costs less than one penny, delivered to you 24 hours a day, seven days a week!

Dear Customer,

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 2019 and details where our water comes from, what it contains, and the risks our water testing and treatment are designed to prevent. Muskegon Water Filtration Plant personnel are committed to providing you with the safest and most reliable water supply. Informed customers are our best allies in maintaining safe drinking water.

**Muskegon Water Plant treated over 3.9 billion gallons of water in 2019.**



**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 web site at [www.shorelinecity.com](http://www.shorelinecity.com) or contact the plant at (231) 724-4106.

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

Our state certified laboratory runs over 8,000 tests a year and include 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.

#### Cryptosporidium

Cryptosporidium is a microscopic organism that, when ingested, can result in diarrhea, fever and other gastrointestinal symptoms. The Muskegon Water Filtration Plant has tested for Cryptosporidium in both Lake Michigan and in the water we treat. We have never detected it in our treated water. The organism is present in Lake Michigan and comes from animal wastes in the watershed. Cryptosporidium is eliminated by an effective treatment combination including filtration, sedimentation and disinfection.

#### Water Quality Concerns

Some people may be more vulnerable to contaminants in the drinking water than the general population. Immunocompromised 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 persons and infants can be particularly at risk for infections. These people 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 are available from the EPA's safe drinking Water Hotline at (800) 426-4791.

# CITY OF MUSKEGON TREATED WATER QUALITY CHART

Listed below are the water quality parameters for the City of Muskegon drinking water during the reporting period of 2019. All parameters shown are BELOW allowed levels. Not listed are the hundreds of other contaminants for which we tested that were NOT detected.

Substance	Highest Level Allowed (EPA's MCLs)	Highest Level Detected	MCLG	Source of Contaminant	Violation Yes/No
<b>Regulated at the Treatment Plant</b>					
BARIUM	2.0 PPM	0.02 PPM	2.0 PPM	Discharge from Drilling Wastes	NO
TOC (Total Organic Carbon)	TT	1.94 PPM	N/A	Naturally Present	NO
TURBIDITY*	TT	0.07 NTU	N/A	Lake Sediment	NO
FLUORIDE	4.0 PPM	0.80 PPM	4.0 PPM	Additive	NO

\* Turbidity is a measure of the cloudiness of the water and is a good indicator of water quality. 100% of our samples are below 0.3 NTU

<b>Regulated in the Distribution System</b>					
MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL)	4 PPM	1.23 PPM, RAA	N/A	Disinfectant (Chlorine)	NO
TOTAL TRIHALOMETHANES	80 PPB (AVG)	39.70 PPB, LRAA	N/A	Disinfection byproduct	NO
HALOACETIC ACIDS	60 PPB	24.00 PPB, LRAA	N/A	Disinfection byproduct	NO

Detection range: MRDL 0.12 PPM to 1.71 PPM, Total Trihalomethanes 15.2 PPB to 47.0 PPB, and Haloacetic Acids 9 PPB to 35 PPB

<b>Unregulated Contaminants</b>					
SODIUM	Not Regulated	12 PPM	N/A	Naturally Occurring Mineral	
PFAS (PFOA + PFOS)**	Not Regulated	3 PPT	N/A	Chemical Used in Industrial Processes, Not naturally present in environment	

\*\* Five of the six samples collected in 2019 showed "No Detect" and only one sample showed 3 PPT. EPA's lifetime health advisory level is 70 PPT  
 Unregulated contaminants are those for which EPA has not established standards. The purpose of monitoring is to assist the EPA in determining occurrence and whether future regulation is warranted. Other unregulated trace contaminants measured in micrograms per Liter (PPB) in  
Tap Water: Chlorate=225, Total Strontium=122, Total Vanadium=0.25, Total Molybdenum=1.1, Chromium=0.35, Hexavalent Chromium=No Detect  
Distribution: Chlorate=222, Total Strontium=124, Total Vanadium=0.28, Total Molybdenum=1.0, Chromium=0.35, Hexavalent Chromium=0.15

<b>Regulated at Customer's Tap</b>					
Substance	Action Level	90th Percentile	Ideal Goal (EPA's MCLGs)	Typical Source	
LEAD***	15 PPB	3.0 PPB	0 PPB	Corrosion of household Plumbing systems, Erosion of Natural Deposits	
COPPER***	1.3 PPM	0.1 PPM	1.3 PPM	Corrosion of household Plumbing systems, Erosion of Natural Deposits	

\*\*\*Samples were collected in July 2017. Only 1 of the 65 sites tested exceeded the action level for lead. None of the 65 sites exceeded the action level for copper.

Total number of service lines are 13,001 and out of which 11,898 are estimated to be lead service lines.

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 Muskegon Water Filtration Plant 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 1-800-426-4791 or at <https://www.epa.gov/ground-water-and-drinking-water> Infants and children who drink water containing lead in excess of the action level 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.

<b>DEFINITIONS</b>	
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 a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. EPA and 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 contaminants.
PPM (mg/L)	= One part per million (milligram per Liter).
PPB (ug/L)	= One part per billion (microgram per Liter).
PPT (ng/L)	= One part per trillion (nanogram per Liter).
ACTION LEVEL (AL)	= The concentration of a contaminant that triggers treatment or other requirement that a water system must follow. Action Levels are reported at the 90th percentile for homes at greatest risk.
NTU	= Nephelometric Turbidity Units.
TT	= Treatment Technique- a required process intended to reduce the levels of a contaminant.
RAA	= Running Annual Average.
LRAA	= Locational Running Annual Average.
MRDL	= The highest level of a disinfectant allowed in drinking water.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, ponds, reservoirs, springs and wells. Our water comes from Lake Michigan. As water travels over the surface of the land and through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances from the presence of animals or from human activity.

Contaminants which 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 agricultural and residential usage.
- **Radioactive contaminants**, which are naturally occurring or the result of oil and gas production and mining activities.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals which are byproducts of industrial processes and petroleum production and can also come from gas stations, urban runoff and septic systems. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.