Village of Lake Orion
Public Notice
Annual Water Quality Report

Once again, the Village of Lake Orion is proud to present our annual water quality report. This report covers all testing performed between January 1 and October 31, 2017

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions, we are always available to assist you. Considering individual reports will not be mailed to water customers, you may request an individual, paper copy of the report, in person or in writing at Lake Orion Village Hall, 21 E. Church St., Lake Orion MI, 48362.

For more information regarding this report, or any questions relating to your drinking water please call Village of Lake Orion Director of Public Works Jeremy Richert at (248) 693-8391 or email RichertJ@akeorion.org.

Where does my drinking water come from?

The Village of Lake Orion Customers are fortunate because we enjoy an abundant water supply from the Detroit Water System. The Village of Lake Orion receives its water from the Detroit Water Treatment Plant north of Port Huron. The plant draws surface water from Lake Huron into the plant for treatment through a 16-foot diameter tunnel, which extends five miles out into Lake Huron. The average depth of the pipe is 190 feet, and at the intake it is 45 feet above the bottom of the lake. The water is then treated and pumped through the systems to the Village of Lake Orion and other communities. Tests are conducted by the City of Detroit on a regular basis to ensure the waters safety, as required by the State of Michigan and the U.S. EPA. Detroit also has four other surface water treatment plants that are interconnected and could provide water to the Village of Lake Orion should the need arise.

\Why are there contaminants in my drinking water?

“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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency’s Safe Drinking Water Hotline at (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 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 storm water 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 storm water 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 storm water runoff and septic systems.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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

Do I need to take special precautions?

"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 from 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)."

How does lead effect my drinking water?

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

Additional Information for 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 Village of Lake Orion 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 or at http://www.epa.gov/safewater/lead.

Safe drinking water is a shared responsibility. The water that GLWA delivers to our community 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 in your home or business. The Village of Lake Orion 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.

Violation Notice

The records of the Department of Environmental Quality (DEQ), Drinking Water and Municipal Assistance Division (DWMAD), show that the Village of Lake Orion was in violation of the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399); specifically, R 325.10410, Public education regarding lead, of the 1979 Administrative Code.

In accordance with the above rule, a supplier of water shall provide notice as soon as practical, but no later than 30 days after learning the individual tap results, to the consumers who sampled. A sample copy of the consumer notification must be sent to the DEQ no later than three months following the end of the monitoring period, along with certification the notices were distributed appropriately.

According to a copy of the Consumer Notice of Lead Result, which was received by the DEW on September 14, 2017, the consumer notice was not issued to the consumers within 30 days, resulting in this reporting violation.

The DEQ's investigation is considered complete. The violation began the day after the distribution deadline had passed, and continued until the Village of Lake Orion returned to compliance when the consumer notification was issued on September 12, 2017.

Source water assessment and its availability

Your source water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is a seven-tiered scale ranging from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards.

In 2015, GLWA received a grant from the Michigan Department of Environmental Quality to develop a source water protection program for the Lake Huron water treatment plant intake. The program includes seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection area, identification of potential of source water protection area, management approaches for protection, contingency plans, siting of new sources and public participation and education. If you would like to know more information about the Source Water Assessment report please, contact your water department (248)693-8391.

Lake Huron Water Treatment Plant
2017 Regulated Detected Contaminants Tables

2017 Inorganic Chemicals – Monitoring at Plant Finished Water Tap

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
Fluoride	**5-16-2017**	**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	**5-16-2017**	**ppm**	**10**	**10**	**0.34**	**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

2017 Disinfection By-Products – Monitoring in Distribution System Stage 2 Disinfection By-Products

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation Yes/no	Major Sources in Drinking Water
Total Trihalomethanes (TTHM)	**2017**	**ppb**	**n/a**	**80**	**58**	**54-58 ppb**	**No**	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	**2017**	**ppb**	**n/a**	**60**	**21**	**18-21 ppb**	**No**	By-product of drinking water disinfection

Regular Contaminant	Test Date	Unit	Health Goal MRDGL	Allowed Level MRDL	Highest RAA	Range of Detection	Violation	Major Sources in Drinking Water
Total Chlorine Residual	**Jan-Dec 2017**	**ppm**	**4**	**4**	**0.75**	**0.65-0.80**	**no**	Water additive used to control microbes

2017 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
0.29 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.

2017 Lead and Copper Monitoring at Customers' Tap

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90th Percentile Value*	Number of Samples Over AL	Violation Yes/no	Major Sources in Drinking Water
Lead	**2017**	**ppb**	**0**	**15**	<2	0	**No**	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	**2017**	**ppm**	**1.3**	**1.3**	..204	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.

Regulated Contaminant	Treatment Technique 2017	Typical Source of Contaminant
Total Organic Carbon (ppm)	The Total Organic Carbon (TOC) removal ratio is calculated as the ration between the actual TOC removal and the TOC removal requirements. The TOC was measured each quarter and because the level was low, there is no TOC removal requirement.	Erosion of natural deposits

2014 Radionuclides							
Regulated Contaminant	**Test Date**	**Units**	**Health Goal MCLG**	**Action Level MCL**	**Level Detected**	**Violation Yes/no**	**Major Sources in Drinking Water**
Combined Radium Radium 226 & 228	**5/13/14**	**pCi/L**	**0**	**5**	0.86 + or – 0.55	**No**	Erosion of natural deposits

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	**n/a**	**n/a**	**4.46**	Erosion of natural deposits

KEY TO THE DETECTED CONTAMINANTS TABLE

SYMBOL	ABBREVIATIONS	DEFINITION/EXPLANATION
>	Greater than	
***C**	Celcius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions
AL	Haloacetic Acids	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, dichoroacetic, and trichloroacetic acids. Compliance is based on the total.
LRRA	Location Running Annual Average	
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
MCLG	Maximum Contaminant Level Goal	The level of a contaminant in drinking water below which there is no known or expected risk to health.
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.
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.
n/a	Not Applicable	
ND	Not Detected	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water
pCi/L	Picocuries Per Liter	A measure of radioactivity.
ppb	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A milligram = 1/1000 gram
ppm	Parts per Million (one in one billion)	The ppm is equivalent to milligrams per liter A milligram + 1/1000 gram
RAA	Running Annual Average	The average of analytical results for all samples during the previous four quarters
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromoochloromethane and bromoform. Clompliances is based on total.
µmhos	Micromhos	Measure of electrical conductance of water

Publish: March 28, 2018