2020 Annual Drinking Water Quality Report

OVERVIEW

The City of Clio Department of Public Services (DPS) is dedicated to providing quality drinking water to the residents and businesses of the community. The City of Clio DPS routinely samples and tests the drinking water for a number of different contaminants, and continues to develop and institute an asset management plan for the water system. This asset management program includes but is not limited to, valve inspection and operation, hydrant flushing and inspection, and cross connection inspections. In conjunction with these programs, the City also continues working to update mapping to verify the location, size, and material of the City's water distribution system. The City of Clio DPS is committed to thorough notification to our customers if there is any reason for concern about the quality or safety of the drinking water.

WATER SOURCE AND TREATMENT

The City of Clio purchases water from the Genesee County Drain Commissioner – Division of Water and Waste Services via the Great Lakes Water Authority (GLWA). The GLWA's primary source of water is 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 Sewage 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 on a seven-tiered scale 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. If you would like to know more information about the Source Water Assessment report or a complete copy of this report, please contact your water department at (810) 686-5850.

ADDITIONAL INFORMATION

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. 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 Protections Agency's Safe Drinking Water Hotline (1-800-426-4791).

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 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 organic, 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.

In the following table you will find many terms and abbreviations to help you better understand the contaminant testing results on the following page.

Key to Detected Contaminants Tables		
Symbol	**Abbreviation for**	**Definition/Explanation**
>	Greater than	
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, dibromo acetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
LRAA	Locational Running Annual Average	The average of analytical results for samples at a particular monitoring location during the previous four quarters.
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 contaminant in drinking water below which there is no known or expected risk to health. MCLG's allows for a margin of safety.
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	Does not apply.
ND	Not Detected	Result is not detectable at or below the laboratory detection level.
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 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.
RAA	Running Annual Average	The average of analytical results for all samples during the previous twelve months.
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, dibromochloromethane, and bromoform. Compliance is based on the total.
ug/L	Micrograms per liter	A microgram = 1/1000 milligrams. 1 microgram per liter is equal to 1 part per billion (ppb)
˚C	Celsius	A scale of temperature in which water freezes at 0˚ and boils at 100˚ under standard conditions
>	Greater than	Mathematical symbol that denotes a value "greater than" another value.
	90th Percentile Value	The concentration of lead or copper in tap water exceeded by 10 percent of the sites sampled during a monitoring period.

Lake Huron Water Treatment Plant
2020 Regulated Detected Contaminants Tables

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
2019 Inorganic Chemicals – Monitoring at Plant Finished Water Tap								
Fluoride	daily	ppm	4	4	0.87	0.12 - 0.87	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories
Arsenic	4-22-20	ppb	10	10	0.46	n/a	no	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	4-22-20	ppm	2	2	.013	.n/a	no	Erosion of natural deposits; discharge of drilling wastes; discharge from metal refineries

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
2020 Disinfection By-Products –Monitoring in Distribution System, Stage 2 Disinfection By-Products								
Total Trihalomethanes (TTHM)	2020	ppb	n/a	80	39	26 - 58	no	By-product of drinking water chlorination
Haloacetic Acids Five (HAA5)	2020	ppb	n/a	60	24	12 - 34	no	By-product of drinking water disinfection
Disinfectant Residuals Monitoring in Distribution System by Treatment Plant								
Regulated Contaminant	Test Date	Unit	Health Goal MRDGL	Allowed Level MRDL	Highest RAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	Jan-Dec 2020	ppm	4	4	0.48	0.10 - 0.87	no	Water additive used to control microbes

2020 Turbidity – Monitored every 4 hours at Plant Finished Water			
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**
0.10 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.			

2020 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Regulated Contaminant	**MCLG**	**MCL**	**Highest Number Detected**	**Violation yes/no**	**Major Sources in Drinking Water**
Total Coliform Bacteria	0	> Positive monthly sample, or Presence of Coliform bacteria > 5% of monthly samples	**0**	no	Naturally present in the environment.
E.coli Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or *E.coli* positive.	**0**	**no**	Human waste and animal fecal waste.

2020 Lead and Copper Monitoring at Customer Tap								
Regulated Contaminant	**Unit**	**Health Goal MCLG**	**Action Level AL**	90th Percentile Value*	**Range**	**Number of Samples Over AL**	**Violation** yes/no	**Major Sources in Drinking Water**
Lead (Jan-June)	ppb	0	15	0	0-1	0	**no**	Corrosion of household plumbing system; Erosion of natural deposits.
Lead (July-Dec)	ppb	0	15	0	0-55	1	**no**	See above
Copper (Jan-June)	ppm	1.3	1.3	0.1	0.0-0.1	0	**no**	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.
Copper (July-Dec)	ppm	1.3	1.3	0.1	0.0-0.3	0	**no**	See above
*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	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 TOC removal requirement.	Erosion of natural deposits

Radionuclides 2019							
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Level Detected	Violation Yes/no	Major Sources in Drinking Water
Combined Radium Radium 226 and 228	2/13/19	pCi/L	0	5	1.0 +/- 0.50	no	Erosion of natural deposits
Gross Alpha	2/13/19	pCi/L	0	15	2.0 +/- 1.0	no	Erosion of natural deposits

2020 Unregulated Detected Contaminant

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	9.0	Erosion of natural deposits

IMPORTANT HEALTH INFORMATION -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. Genesee County Water and Waste Services 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. 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. 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 1-800-426-4791or at http://www.epa.gov/drink/info/lead.

LEAD SERVICE LINES

The most common locations for lead in water distribution systems include water service lines and home plumbing. The City of Clio currently has 889 service connections, none of which are suspected to be lead service lines. The City will continue working to verify service line materials, and upon request, the DPS will assist homeowners in verifying lead pipes in home plumbing.

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 who are 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 (1-800-426-4791).

CRYTOSPORIDIUM

Cryptosporidium is a disease-causing parasite that lives in the intestinal tract of many animals including dogs and cats. Symptoms of infection include diarrhea, abdominal cramps, headaches, nausea and vomiting. The disease is typically spread through contact with feces of an infected animal or person and consuming contaminated food or water. Cryptosporidium can be introduced into bodies of water by way of surface water run off containing animal waste and sewage discharge. The water supplied to the City of Clio has been tested for Cryptosporidium since 1994 and has never been detected in any water supply samples.

OPPORTUNITIES FOR PUBLIC PARTICIPATION

The City of Clio does not hold any water advisory board meetings; however you are welcome to attend GCWW's Regular Advisory Board Meetings on the third Wednesday of every month at G-4610 Beecher Road, Flint, Michigan 48532 at 9:00 a.m.

If you have questions concerning this Consumers Confidence Report, please call the City of Clio at 810-686-5850.

Please share this information with other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City Of Clio. Copies of this report are available on our website at www.clio.govoffice.com and at Clio City Hall, 505 W. Vienna St, Clio, MI 48420. Individual copies will not be mailed.