Lake Huron Primary Water Supply System – 2026 Second Quarter Water Quality Report

There were no adverse test results for the Lake Huron Primary Water Supply System during this quarter.

List of Acronyms:

MAC – Maximum Acceptable Concentration as identified in O. Reg. 169 (Ontario Drinking-Water Quality Standards)
IMAC - Interim Maximum Acceptable Concentration as identified in the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines
AO/OG – Aesthetic Objective/Operational Guideline as identified in the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines
NT – Not Tested
NR – Not Required
ND – Not Detected

Analytical Test Results: All values are reported in mg/L unless otherwise noted; All results are for treated water leaving the Water Treatment Plant unless otherwise noted.

Table 1. Microbiological Parameters (Required Testing Under O. Reg. 170/03), Lake Huron Water Treatment Plant:

Microbiological Parameter	MAC or IMAC	No. of Samples	No. of Detectable Results	No. of Adverse Results	Method	Sampling Date	Min. Result	Max. Result	Comments
Total Coliform (counts/100ml) [i]	Not Detectable	65	0	0	Membrane Filtration	Q2	0	0	Parameter sampled is used to test for the possible presence of fecal matter. Zero detectable test results indicates that Total Coliforms were not detected.
E. coli (counts/100ml) [i]	Not Detectable	65	0	0	Membrane Filtration	Q2	0	0	Parameter sampled is used to test for the possible presence of fecal matter. Zero detectable test results indicates that E.coli was not detected.
Heterotrophic Plate Count (counts/1ml)	N/A	65	3	n/a	Spread Plate Count	Q2	<10	10	Test parameter is used as an indicator of possible deterioration of water quality. Increases in HPC concentrations above baseline levels are considered undesirable.

Table 2. Microbiological Parameters (Required Testing Under O. Reg. 170/03), Distribution System:

Microbiological Parameter	MAC or IMAC	No. of Samples	No. of Detectable Results	No. of Adverse Results	Method	Sampling Date	Min. Result	Max. Result	Comments
Total Coliform (counts/100ml) [i]	Not Detectable	65	0	0	Membrane Filtration	Q2	0	0	Parameter sampled is used to test for the possible presence of fecal matter. Zero detectable test results indicates that Total Coliforms were not detected.
E. coli (counts/100ml) [i]	Not Detectable	65	0	0	Membrane Filtration	Q2	0	0	Parameter sampled is used to test for the possible presence of fecal matter. Zero detectable test results indicates that E.coli was not detected.
Heterotrophic Plate Count (counts/1ml)	N/A	65	4	n/a	Spread Plate Count	Q2	<10	170	Test parameter is used as an indicator of possible deterioration of water quality. Increases in HPC concentrations above baseline levels are considered undesirable.

Table 3. Operational Parameters:

Operational Parameter	MAC or IMAC	Objective AO/OG	No. of Samples	Sampling Date	Min. Result	Max. Result	Avg. Result	Comments
Chlorine Residual, Free (mg/L) [ii]			Continuous monitoring plus 6 grab samples per day	Q2	1.00	1.38	1.13	The maintenance of an adequate free chlorine residual is essential to the protection of public health. Values reported are based on the 6 daily grab samples. The regulated minimum for free chlorine residual concentration in a water distribution system is 0.05mg/L; however the contractual obligation of the water system is to achieve 0.5mg/L at the point of supply to the municipalities.
Chlorine Residual, Total (mg/L)			Continuous monitoring plus 6 grab samples per day	Q2	1.14	1.59	1.27	The maintenance of an adequate free chlorine residual in essential to the protection of public health. Values reported are based on the 6 daily grab samples.
Colour (TCU)		5	2 grab samples per day	Q2	<3	<3	<3	Values reported are based on the 2 daily grab samples.
Conductivity (µS/cm)			Continuous monitoring plus 2 grab samples per day	Q2	217	288	249	Values reported based on daily minimum, maximum and average that have been recorded electronically.
pH (no units)		6.5 – 8.5	Continuous monitoring plus 6 grab samples per day	Q2	7.14	8.64	8.08	Values reported are based on the 6 daily grab samples.
Turbidity (NTU) [iii] [iv]			Continuous monitoring plus 6 grab samples per day	Q2	0.00	0.14	0.06	Turbidity (cloudiness) of water is an indication of the presence of particles in the water. If excessive, it may interfere with proper disinfection. Values reported are based on the 6 daily grab samples.

Operational Parameter	MAC or IMAC	Objective AO/OG	No. of Samples	Sampling Date	Min. Result	Max. Result	Avg. Result	Comments
Aluminum (mg/L)		< 0.1	2 grab samples per day	Q2	0.008	0.068	0.028	Aluminum concentrations are monitored as a result of the use of alum to help in the removal of particulates.
Temperature (Celsius)		15	Continuous monitoring plus 6 grab samples per day	Q2	4.9	19.4	11.6	Raw Water Temperature. Values reported are based on the 6 daily grab samples.

Table 4. Inorganic Parameters (Required Testing Under O. Reg. 170/03 – Schedule 23):

Schedule 23 - Inorganic Parameter	MAC or IMAC (mg/L)	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Method Detection Limit (mg/L)	Comments
Antimony	0.006		12	NT	NT	ND	NT	0.0006	
Arsenic	0.010		12	NT	NT	0.0002	NT	0.0002	
Barium	1.0		12	NT	NT	0.0146	NT	0.00002	
Boron	5.0		12	NT	NT	0.015	NT	0.002	
Cadmium	0.005		12	NT	NT	0.000007	NT	0.000003	
Chromium	0.05		12	NT	NT	ND	NT	0.00008	
Mercury	0.001		12	NT	NT	ND	NT	0.00001	
Selenium	0.05		12	NT	NT	0.00014	NT	0.00004	
Uranium	0.02		12	NT	NT	0.000043	NT	0.000002	

Table 5. Organic Parameters (Required Testing Under O. Reg. 170/03 – Schedule 24):

Schedule 24 – Organic Parameters	MAC or IMAC (mg/L)	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Method Detection Limit (mg/L)	Comments
Alachlor	0.005		12	NT	NT	ND	NT	0.00002	Herbicide
Atrazine + N-dealkylated metabolites	0.005		12	NT	NT	0.00002	NT	0.00001	Herbicide
Azinphos-methyl	0.02		12	NT	NT	ND	NT	0.00005	Insecticide
Benzene	0.005		12	NT	NT	ND	NT	0.00032	An aromatic hydrocarbon present in gasoline
Benzo(a)pyrene	0.00001		12	NT	NT	ND	NT	0.000004	A polycyclic aromatic hydrocarbon (PAH) that forms during the combustion of organic matter (e.g. emissions from burning fossil fuels)
Bromoxynil	0.005		12	NT	NT	ND	NT	0.00033	Herbicide
Carbaryl	0.09		12	NT	NT	ND	NT	0.00005	Insecticide
Carbofuran	0.09		12	NT	NT	ND	NT	0.00001	Insecticide
Carbon Tetrachloride	0.005		12	NT	NT	ND	NT	0.00017	An organic liquid that is primarily released from man-made sources; used in industrial and agricultural process
Chlorpyrifos	0.09		12	NT	NT	ND	NT	0.00002	Pesticide
Diazinon	0.02		12	NT	NT	ND	NT	0.00002	Insecticide
Dicamba	0.12		12	NT	NT	ND	NT	0.0002	Herbicide
1,2-Dichlorobenzene	0.2	0.003	12	NT	NT	ND	NT	0.00041	An organic compound used in both industrial and commercial products (coolant, degreaser, solvent)
1,4-Dichlorobenzene	0.005	0.001	12	NT	NT	ND	NT	0.00036	An organic compound used in both industrial and commercial products (deodorizer, fungicide, lubricant)

Schedule 24 – Organic Parameters	MAC or IMAC (mg/L)	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Method Detection Limit (mg/L)	Comments
1,2-Dichloroethane	0.005		12	NT	NT	ND	NT	0.00035	An organic chemical with many industrial and commercial applications (solvent, fumigant, ingredient in plastics etc.)
1,1-Dichloroethylene (vinylidene chloride)	0.014		12	NT	NT	ND	NT	0.00033	Volatile organic compound; imported for use in the food packaging and textile industries
Dichloromethane (Methylene Chloride)	0.05		12	NT	NT	ND	NT	0.00035	Volatile organic compound used in a variety of industries (electronics, textiles, pharmaceuticals, plastics etc.)
2,4-Dichlorophenol	0.9	0.0003	12	NT	NT	ND	NT	0.00015	An organic compound used in industry and chemical manufacturing
2,4-Dichlorophenoxy acetic acid (2,4-D)	0.1		12	NT	NT	ND	NT	0.00019	Herbicide
Diclofop-methyl	0.009		12	NT	NT	ND	NT	0.0004	Herbicide
Dimethoate	0.02		12	NT	NT	ND	NT	0.00006	Insecticide
Diquat	0.07		12	NT	NT	ND	NT	0.001	Herbicide
Diuron	0.15		12	NT	NT	ND	NT	0.00003	Herbicide
Glyphosate	0.28		12	NT	NT	ND	NT	0.001	Herbicide
Malathion	0.19		12	NT	NT	ND	NT	0.00002	Insecticide
2 methyl-4-chlorophenoxyacetic acid (MCPA)	0.1		12	NT	NT	ND	NT	0.00012	Herbicide
Metolachlor	0.05		12	NT	NT	ND	NT	0.00001	Herbicide
Metribuzin	0.08		12	NT	NT	ND	NT	0.00002	Herbicide
Monochlorobenzene	0.08	0.03	12	NT	NT	ND	NT	0.0003	A man-made organic compound; primarily used as a solvent
Paraquat	0.01		12	NT	NT	ND	NT	0.001	Herbicide

Schedule 24 – Organic Parameters	MAC or IMAC (mg/L)	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Method Detection Limit (mg/L)	Comments
Pentachlorophenol	0.06		12	NT	NT	ND	NT	0.00015	An organic compound; used as a pesticide and wood preservative (manufacture and use banned since the 1980's)
Phorate	0.002		12	NT	NT	ND	NT	0.00001	Insecticide
Picloram	0.19		12	NT	NT	ND	NT	0.001	Herbicide
Polychlorinated Biphenyls (PCB)	0.003		12	NT	NT	ND	NT	0.00004	An organic compound; used in electrical equipment and as a fire retardant (use has been banned since the 1980's)
Prometryn	0.001		12	NT	NT	ND	NT	0.00003	Herbicide
Simazine	0.01		12	NT	NT	ND	NT	0.00001	Herbicide
Terbufos	0.001		12	NT	NT	ND	NT	0.00001	Insecticide
Tetrachloroethylene (perchloroethylene)	0.01		12	NT	NT	ND	NT	0.00035	An organic compound; used as a solvent in dry cleaning and metal cleaning industries
2,3,4,6-Tetrachlorophenol	0.10	0.001	12	NT	NT	ND	NT	0.0002	An organic compound; currently used mainly as a wood preservative
Triallate	0.23		12	NT	NT	ND	NT	0.00001	Herbicide
Trichloroethylene	0.05		12	NT	NT	ND	NT	0.00044	Volatile organic compound; used in metal degreasing operations and chemical manufacturing
2,4,6-Trichlorophenol	0.005	0.002	12	NT	NT	ND	NT	0.00025	Volatile organic compound; used in the manufacture of pesticides
Trifluralin	0.045		12	NT	NT	ND	NT	0.00002	Herbicide
Vinyl Chloride	0.002		12	NT	NT	ND	NT	0.00017	Volatile organic compound; Used in making PVC (polyvinyl chloride) plastic items

Table 6. Additional Organic Parameters (Removed from Schedule 24 as of January 1, 2016):

Organic Parameter	MAC or IMAC (mg/L)	Objective AO/OG	Required Frequency of Testing (months)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Method Detection Limit (mg/L)	Comments
Aldicarb			NR	NT	NT	ND	NT	0.00001	Insecticide
Aldrin + Dieldrin			NR	NT	NT	ND	NT	0.00001	Insecticide
Bendiocarb			NR	NT	NT	ND	NT	0.00001	Insecticide
Chlordane (total)			NR	NT	NT	ND	NT	0.00001	Pesticide
Cyanazine			NR	NT	NT	ND	NT	0.00003	Herbicide
Dichlorodiphenyltrichloroethane (DDT) + metabolites			NR	NT	NT	ND	NT	0.00001	Insecticide
Dinoseb			NR	NT	NT	ND	NT	0.00036	Insecticide, Herbicide
Heptachlor + Heptachlor Epoxide			NR	NT	NT	ND	NT	0.00001	Insecticide
Lindane (Total)			NR	NT	NT	ND	NT	0.00001	Pesticide
Methoxychlor			NR	NT	NT	ND	NT	0.00001	Insecticide
Parathion			NR	NT	NT	ND	NT	0.00002	Insecticide
Temephos			NR	NT	NT	ND	NT	0.00001	Insecticide
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)			NR	NT	NT	ND	NT	0.00022	Herbicide

Table 7. General Chemistry and Physical Parameters (Additional Regulatory and Contractual Testing):

General Chemistry or Physical Parameter	MAC or IMAC (mg/L)	Objective AO/OG (mg/L)	O. Reg. 170/03 Required Frequency of Testing (months)	Contractual Required Frequency of Testing (months)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Method Detection Limit (mg/L)	Comments
Alkalinity (Total as $CaCO_3$)		30 – 500	NR	6	NT	84	85	94	2	The Q2 value is the average of 4 test results.
Calcium			NR	12	NT	NT	29.3	NT	0.01	
Chloride		250	NR	12	NT	NT	11	NT	0.04	
Copper		1.0	NR	12	NT	NT	0.0006	NT	0.0002	
Dissolved Organic Carbon (mg/L as C)		5	NR	12	NT	1.4	1.5	1.4	1	The Q2 value is the average of 3 test results.
Dissolved Inorganic Carbon (mg/L as C)			NR	6	NT	NT	0.019	NT	1	
Ethylbenzene	0.14	0.0016	NR	12	NT	NT	ND	NT	0.00033	
Fluoride	1.5		60	NA	NT	NT	0.06	NT	0.06	
Geosmin (ng/L)		4	NR	Weekly as Required	5	ND	ND	ND	3 ng/L	Geosmin is tested weekly from July 1-Oct 31. Results are expressed as the average per quarter when testing is conducted..
Haloacetic Acids (Arva Terminal Reservoir)	0.08	0.060	3	3	0.0059	ND	ND	ND	0.0053	The standard is expressed as a running annual average (RAA) of quarterly samples measured at a point reflecting the highest concentrations in the distribution system. RAA: < 0.0053 mg/L
Haloacetic Acids (Exeter-Hensall)	0.08	0.060	3	3	0.0070	0.0071	0.0122	0.0120	0.0053	The standard is expressed as a running annual average (RAA) of quarterly samples measured at a point reflecting the highest concentrations in the distribution system. RAA: 0.0096 mg/L

General Chemistry or Physical Parameter	MAC or IMAC (mg/L)	Objective AO/OG (mg/L)	O. Reg. 170/03 Required Frequency of Testing (months)	Contractual Required Frequency of Testing (months)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Method Detection Limit (mg/L)	Comments
Haloacetic Acids (Komoka-Mt. Brydges)	0.08	0.060	3	3	0.0070	0.0054	0.0127	ND	0.0053	The standard is expressed as a running annual average (RAA) of quarterly samples measured at a point reflecting the highest concentrations in the distribution system. RAA: <0.0076 mg/L
Haloacetic Acids (Strathroy-Caradoc)	0.08	0.060	3	3	0.0064	ND	0.0146	ND	0.0053	The standard is expressed as a running annual average (RAA) of quarterly samples measured at a point reflecting the highest concentrations in the distribution system. RAA: < 0.0079 mg/L
Hardness (mg/L as $CaCO_3$)		80 – 100	NR	12	NT	NT	106	NT	0.05	
Iron		0.30	NR	12	NT	NT	ND	NT	0.007	
Lead	0.01		NR	6	NT	NT	0.00002	ND	0.00001	
Magnesium			NR	12	NT	NT	8.02	NT	0.001	
Manganese		0.05	NR	12	NT	NT	0.00024	NT	0.00001	
Methane (L/m^3)		$3L/m^3$	NR	12	NT	NT	ND	NT	0.02	
2-Methylisoborneol (MIB) (ng/L)		8.5	NR	Weekly as Required	ND	ND	ND	ND	3.0 ng/L	MIB is tested weekly from July 1-Oct 31. Results are expressed as the average per quarter when testing is required.
Nitrate	10.0		3	3	0.233	0.234	0.873	0.953	0.006	
Nitrite	1.0		3	3	ND	ND	ND	ND	0.003	
Organic Nitrogen		0.15	NR	12	NT	NT	0.00012	NT	0.05	Organic nitrogen is calculated by subtracting Total Ammonia from Total Kjeldahl Nitrogen.

General Chemistry or Physical Parameter	MAC or IMAC (mg/L)	Objective AO/OG (mg/L)	O. Reg. 170/03 Required Frequency of Testing (months)	Contractual Required Frequency of Testing (months)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Method Detection Limit (mg/L)	Comments
Sodium		200	60	12	NT	NT	12.1	NT	0.01	The local Medical Officer of Health must be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.
Sulphate		500	NR	12	NT	NT	30	NT	0.04	
Sulphide		0.05	NR	12	NT	NT	ND	NT	0.006	
Toluene	0.06		NR	12	NT	NT	ND	NT	0.00036	
Total Dissolved Solids		500	NR	12	NT	NT	149	NT	30	
Trihalomethanes (Arva Terminal Reservoir)	0.100		3	3	0.024	0.021	0.015	0.019	0.00037	The standard is expressed as a running annual average (RAA) of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. RAA: 0.020 mg/L
Trihalomethanes (Exeter-Hensall)	0.100		3	3	0.032	0.032	0.026	0.027	0.00037	The standard is expressed as a running annual average (RAA) of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. RAA: 0.029 mg/L
Trihalomethanes (Komoka-Mt. Brydges)	0.100		3	3	0.030	0.027	0.022	0.023	0.00037	The standard is expressed as a running annual average (RAA) of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. RAA: 0.026 mg/L

General Chemistry or Physical Parameter	MAC or IMAC (mg/L)	Objective AO/OG (mg/L)	O. Reg. 170/03 Required Frequency of Testing (months)	Contractual Required Frequency of Testing (months)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Method Detection Limit (mg/L)	Comments
Trihalomethanes (Strathroy-Caradoc)	0.100		3	3	0.027	0.025	0.025	0.020	0.00037	The standard is expressed as a running annual average (RAA) of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. RAA: 0.024 mg/L
Xylenes	0.09	0.02	NR	12	NT	NT	ND	NT	0.00043	
Zinc		5.0	NR	12	NT	NT	ND	NT	0.002	

[i] Indicator of adverse water quality

[ii] In addition to the analytical samples noted, free chlorine residual is measured on a continuous basis at the treatment facility using on-line instrumentation.

[iii] In addition to the analytical samples noted, turbidity is measured on a continuous basis at the treatment facility using on-line instrumentation.

[iv] Turbidity is both regulated by the Province of Ontario, and specified in accordance with the operating agreement with the Contracted Operating Authority. The turbidity reported (6 daily grab samples) is taken from the plant treated water discharge, which is not explicitly regulated in Provincial Regulations. Provincial Standards recommend an aesthetic objective of 5 NTU within a distribution system, and Provincial Regulation specifies a maximum of 1 NTU on individual filter effluent. The contract with the Operating Authority specifies a maximum turbidity of 0.2 NTU on treated water discharge from the water treatment plant and 0.1 NTU on individual filter effluent. There is currently no standard for combined filter effluent.