

Drinking-Water Systems Regulation O. Reg. 170/03

Drinking-Water System Number:	210000871
Drinking-Water System Name:	Elgin Area Primary Water Supply System
Drinking-Water System Owner:	Elgin Area Primary Water Supply System Joint Board of Management
Drinking-Water System Operating Authority:	Ontario Clean Water Agency (OCWA)
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2022 through December 31, 2022

<p>Complete if your Category is Large Municipal Residential or Small Municipal Residential</p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <p>Lake Huron and Elgin Area Water Supply Systems c/o Regional Water Supply Division 235 North Centre Road, Suite 200 London, ON N5X 4E7 https://huronelginwater.ca/</p> <p>Elgin Area Water Treatment Plant 43665 Dexter Line, Union, ON N0L 2L0</p>	<p>Complete for all other Categories.</p> <p>Number of Designated Facilities served: N/A</p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: N/A</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Systems that receive their drinking water directly from the EAPWSS:

Drinking Water System Name	Drinking Water System Number
City of London Distribution System	260004917
St. Thomas Area Secondary Water Supply System	260078897
Aylmer Area Secondary Water Supply System	260004722
Port Burwell Area Secondary Water Supply System	260004735
Central Elgin Distribution System	260004761
St. Thomas Distribution System	260002187

Systems that receive their drinking water indirectly from the EAPWSS:

Drinking Water System Name	Drinking Water System Number
Aylmer Distribution System	260002136
Malahide Distribution System	260004774
Dutton Dunwich Distribution System	220002967
Bayham Distribution System	260004748
Southwold Distribution System	210001362
Ontario Police College Distribution System	260002161

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes No

Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method _____

Drinking-Water Systems Regulation O. Reg. 170/03**Describe your Drinking-Water System**

The Elgin Area Primary Water Supply System employs pre-chlorination, screening, process pH adjustment (utilizing carbon dioxide), powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, UV disinfection, post-chlorination, final pH adjustment (utilizing sodium hydroxide) and fluoridation to treat raw water obtained from Lake Erie. The WTP has a rated capacity of 91 ML/day (MLD). Water is pumped from the plant through the primary transmission main (900mm diameter) to various communities enroute to the Elgin-Middlesex Terminal Reservoir located northeast of St. Thomas in the Municipality of Central Elgin. The drinking water system is monitored at various locations throughout the system via a Supervisory Control and Data Acquisition (SCADA) system.

A Residuals Management Facility (RMF) provides equalization, clarification, sediment thickening and dechlorination. Thickened sediment is dewatered by centrifuges and the thickened sediment is sent to the landfill for final disposal. Clarified and dechlorinated liquid streams are discharged back to Lake Erie through the plant drain.

List all water treatment chemicals used over this reporting period

Carbon Dioxide
Aluminum Sulphate
Cationic Polymer
Powder Activated Carbon
Chlorine Gas
Hydrofluosilicic Acid
Sodium Hydroxide
Dewatering Polymer (Residuals Management Facility)
Sodium Bisulphite (Residuals Management Facility)

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred:

Capital Projects:

- Replaced backwash pump #1 and #2 pressure relief blow off valve body
- Replaced aluminum sulphate chemical storage tanks
- Replaced plant lighting and breaker panels
- Replaced roof drains and exterior building sealants
- Installed North & South flocculation tank railing kick plates
- Installed low lift pump room stairs railings
- Installed railings at Elgin Middlesex Pumping Station (EMPS) valve house

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- Replaced 42” isolation valve on St. Thomas suction header at EMPS
- Replaced isolation valve on St. Thomas discharge header at EMPS
- Installed flocculation inlet channel baffle wall
- Rebuilt and repaired low lift pump #3 motor
- Replaced main incoming utility pole at EMPS
- Replaced Filter #2 & #3 drain valve actuators
- Replaced chlorine building roof
- Installed additional security cameras and swipe card access
- Replaced plant surge pressure transmitter
- Replaced low lift and treated water temperature transmitters

Maintenance Projects:

- Installed new Total Chlorine Residual (TCR) analyzer in RMF
- Rebuilt North pre-treatment sample pump
- Rebuilt caustic soda feed pump
- Replaced chlorinator #3 solenoid valve
- Replaced generator G1 charger

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Report Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
N/A	N/A	N/A	N/A	N/A	N/A

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Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

Location	Number of Samples	Range of E. coli Results (CFU/100 mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100 mL) (min #)-(max #)	Range of HPC Results (CFU/100 mL) (min #)-(max #)
Raw Water	103	(0)-(200)	(0)-(38,000)	(<10)-(>2,000)
Treated Water (WTP)	279	(0)-(0)	(0)-(0)	(0)-(30)
Distribution (EMPS Valve House)	107	(0)-(0)	(0)-(0)	(<10)-(690)
Distribution (Fruitridge Surge Facility)	54	(0)-(0)	(0)-(0)	(<10)-(10)

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

Parameter	Number of Grab Samples	Range of Results (min #)-(max #)
Treated Water Free Chlorine (mg/L)	Continuous Monitoring	(0.44)-(2.91)
Treated Water Free Chlorine (mg/L)	2108	(0.87)-(1.70)
Treated Water Turbidity (NTU)	Continuous Monitoring	(0.012)-(1.73)
Treated Water Turbidity (NTU)	2110	(0.021)-(0.246)
Treated Water Fluoride (mg/L)	Continuous Monitoring	(0.11)-(2.00)*
Treated Water Fluoride (mg/L)	729	(0.27)-(0.80)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.014)-(0.442)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.020)-(0.848)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.017)-(0.727)
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.017)-(0.320)
Combined Filtered Water Turbidity (NTU)	2107	(0.019)-(0.68)

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NOTE: *Fluoride spikes > 1.50 mg/L on treated water coincide with pump start-ups or pump changes. Fluoride residual spikes > 1.50 mg/L did not exceed 5 minutes at any time in 2022, therefore not reportable (not an adverse result).

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Summary of Inorganic parameters tested during this reporting period
*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	January 5, 2022	Not Detected	mg/L	NO
	August 3, 2022	Not Detected	mg/L	
Arsenic	January 5, 2022	0.0003	mg/L	NO
	August 3, 2022	0.0003	mg/L	
Barium	January 5, 2022	0.0235	mg/L	NO
	August 3, 2022	0.0253	mg/L	
Boron	January 5, 2022	0.018	mg/L	NO
	August 3, 2022	0.015	mg/L	
Cadmium	January 5, 2022	0.000010	mg/L	NO
	August 3, 2022	0.000008	mg/L	
Chromium	January 5, 2022	0.00015	mg/L	NO
	August 3, 2022	0.00020	mg/L	
Lead (EMPS Valve House)	January 5, 2022	0.00003	mg/L	NO
	July 5, 2022	0.00002	mg/L	
Mercury	January 5, 2022	Not Detected	mg/L	NO
	August 3, 2022	Not Detected	mg/L	
Selenium	January 5, 2022	0.00018	mg/L	NO
	August 3, 2022	0.00062	mg/L	
Uranium	January 5, 2022	0.000037	mg/L	NO
	August 3, 2022	0.000035	mg/L	
Sodium	January 5, 2022	17.1	mg/L	NO
Nitrite	January 5, 2022	Not Detected	mg/L	NO
	April 6, 2022	Not Detected	mg/L	
	July 5, 2022	Not Detected	mg/L	
	October 11, 2022	Not Detected	mg/L	
Nitrate	January 5, 2022	0.103	mg/L	NO
	April 6, 2022	0.168	mg/L	
	July 5, 2022	0.076	mg/L	
	October 11, 2022	0.036	mg/L	

Summary of Organic parameters sampled during this reporting period
*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	January 5, 2022	Not Detected	mg/L	NO
	August 3, 2022	Not Detected	mg/L	

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Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Atrazine + N-dealkylated metabolites	January 5, 2022 August 3, 2022	0.00008 0.00003	mg/L mg/L	NO
Azinphos-methyl	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Benzene	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Benzo(a)pyrene	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Bromoxynil	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Carbaryl	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Carbofuran	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Carbon Tetrachloride	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Chlorpyrifos	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Diazinon	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Dicamba	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichlorobenzene	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
1,4-Dichlorobenzene	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichloroethane	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Dichloromethane	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
2,4-Dichlorophenol	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	January 5, 2022 August 3, 2022	Not Detected	mg/L mg/L	NO

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Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
		Not Detected		
Diclofop-methyl	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Dimethoate	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Diquat	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Diuron	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Glyphosate	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Haloacetic Acids (HAA's) EMPS Valve House	January 5, 2022 April 6, 2022 July 5, 2022 October 11, 2022	Not Detected Not Detected 0.0059 0.0054	mg/L mg/L mg/L mg/L	NO
Haloacetic Acids (HAA's) EMPS Valve House = Running Annual Average	2022	0.005475	mg/L	NO
Malathion	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
2-Methyl-4-chlorophenoxyacetic acid	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Metolachlor	January 5, 2022 August 3, 2022	0.00002 Not Detected	mg/L mg/L	NO
Metribuzin	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Monochlorobenzene	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Paraquat	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Pentachlorophenol	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Phorate	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Picloram	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO

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Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Polychlorinated Biphenyls (PCB)	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Prometryne	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Simazine	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Total Trihalomethanes (THMs) EMPS Valve House	January 5, 2022 April 6, 2022 July 5, 2022 October 11, 2022	0.0089 0.0092 0.0145 0.0160	mg/L mg/L mg/L mg/L	NO
Total Trihalomethanes (THMs) EMPS Valve House = Running Annual Average	2022	0.01215	mg/L	NO
Terbufos	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Tetrachloroethylene	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
2,3,4,6-Tetrachlorophenol	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Triallate	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Trichloroethylene	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
2,4,6-Trichlorophenol	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Trifluralin	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO
Vinyl Chloride	January 5, 2022 August 3, 2022	Not Detected Not Detected	mg/L mg/L	NO

NOTE: During 2022, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.