

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, 2024 through December 31, 2024

<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 <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></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 Primary Water Supply System 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 <input type="checkbox"/> No <input type="checkbox"/></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 <input type="checkbox"/> No <input type="checkbox"/></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 _____

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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 Terminal Reservoir located in northeast St. Thomas. 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
Hydrofluorosilicic Acid
Sodium Hydroxide
Dewatering Polymer (Residuals Management Facility)
Thickening Polymer (Residuals Management Facility)
Sodium Bisulphite (Residuals Management Facility)

Were any significant expenses incurred to?

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

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

Capital and Maintenance Projects:

- Safety railing replacements (Surge Building and Polymer Room)
- Fluoride flow meter installation
- Fire hydrant replacement (Generator Building)
- Building exterior sealants repair and installation
- Roof drain replacements (Flocculation Room)
- Designated Substances removal
- Security Upgrades: Lighting upgrades, fencing and gate installations (Low Lift Building and Fruitridge Surge Facility)
- SCADA software upgrade project
- Technical Standards & Safety Authority (TSSA) generator fuel system upgrades
- Filter #3 rebuild
- Lowlift Pump #2 rebuild

Studies and Design:

- Water Quality Facility Plan Update
- Master Water Plan Update
- Sodium bisulphite room atmospheric condition assessment
- Ultraviolet (UV) Disinfection System & Backwash Pump upgrade project – design
- Sodium hydroxide system injection upgrade – design
- Low lift distribution well chlorine injection upgrade project - design

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	Corrective Action	Corrective Action Date
January 29, 2024	CT *	Adverse Water Quality Incident (AWQI) reported (ref# 164418) for CT failure alarm on January 27, 2024. Further investigation of the incident determined that CT was met. The alarm was generated due to conservative programming within the CT calculator, where an alarm is generated on filter effluent turbidity issues. Training was provided to staff on alarm response and CT data review.	February 2, 2024

*CT is a disinfection concept where CT is calculated by multiplying the chlorine residual concentration (in mg/L) by the chlorine contact time (in minutes).

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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	104	(0)-(100)	(0)-(50,000)	(<10)-(>2,000)
Treated Water (WTP)	210	(0)-(0)	(0)-(0)	(0)-(>2,000)
Distribution (Elgin Terminal Reservoir Valve House)	107	(0)-(0)	(0)-(0)	(<10)-(20)
Distribution (Fruitridge Surge Facility)	52	(0)-(0)	(0)-(0)	(<10)-(40)

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

Parameter	Number of Samples	Range of Results (min #)-(max #)
Treated Water Free Chlorine (mg/L)	Continuous Monitoring	(0.77)-(1.84)
Treated Water Fluoride (mg/L)	Continuous Monitoring	(0.07)-(0.94)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.024)-(0.256)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.022)-(0.213)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.015)-(1.108)*
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.013)-(0.788)
Raw Water Turbidity (NTU)	Continuous Monitoring	(0.032)-(1000)
Elgin Terminal Reservoir Inlet Free Chlorine (mg/L)	Continuous Monitoring	(0.56)-(2.92)

Monthly filter performance met for all four filters (<0.3NTU 95% of the readings).

*Turbidity spike above 1NTU for 6sec on Filter #3, no Adverse Water Quality Incident (AWQI) as a 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 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Arsenic	January 2, 2024 August 6, 2024	0.0003 0.0003	mg/L mg/L	NO
Barium	January 2, 2024 August 6, 2024	0.0204 0.0207	mg/L mg/L	NO
Boron	January 2, 2024 August 6, 2024	0.018 0.020	mg/L mg/L	NO
Cadmium	January 2, 2024 August 6, 2024	0.000007 0.000005	mg/L mg/L	NO
Chromium	January 2, 2024 August 6, 2024	0.00010 Not Detected	mg/L mg/L	NO
Lead (EMPS Valve House)	October 1, 2024	Not Detected	mg/L	NO
Mercury	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Selenium	January 2, 2024 August 6, 2024	0.00015 0.00012	mg/L mg/L	NO
Uranium	January 2, 2024 August 6, 2024	0.000048 0.000032	mg/L mg/L	NO
Sodium	January 2, 2024	16.8	mg/L	NO
Nitrite	January 2, 2024 April 2, 2024 July 2, 2024 October 1, 2024	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO
Nitrate	January 2, 2024 April 2, 2024 July 2, 2024 October 1, 2024	0.120 0.331 0.149 0.045	mg/L mg/L mg/L mg/L	NO

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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 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Atrazine + N-dealkylated metabolites	January 2, 2024 August 6, 2024	0.00005 0.00003	mg/L mg/L	NO
Azinphos-methyl	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Benzene	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Benzo(a)pyrene	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Bromoxynil	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Carbaryl	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Carbofuran	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Carbon Tetrachloride	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Chlorpyrifos	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Diazinon	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Dicamba	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichlorobenzene	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
1,4-Dichlorobenzene	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichloroethane	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO

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Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dichloromethane	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
2,4-Dichlorophenol	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Diclofop-methyl	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Dimethoate	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Diquat	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Diuron	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Glyphosate	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Haloacetic Acids (HAA's) EMPS Valve House	April 2, 2024 July 2, 2024 August 23, 2024 October 1, 2024	Not Detected Not Detected 0.0077 0.0063	mg/L mg/L mg/L mg/L	NO
Haloacetic Acids (HAA's) EMPS Valve House = Running Annual Average	2024	<0.0053	mg/L	NO
Malathion	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
2-Methyl-4-chlorophenoxyacetic acid	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Metolachlor	January 2, 2024 August 6, 2024	0.00001 Not Detected	mg/L mg/L	NO
Metribuzin	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Monochlorobenzene	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Paraquat	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO

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Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Pentachlorophenol	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Phorate	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Picloram	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Polychlorinated Biphenyls (PCB)	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Prometryne	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Simazine	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Total Trihalomethanes (THMs) EMPS Valve House	April 2, 2024 July 2, 2024 August 23, 2024 October 1, 2024	0.014 0.016 0.032 0.023	mg/L mg/L mg/L mg/L	NO
(THMs) EMPS Valve House = Running Annual Average	2024	0.021	mg/L	NO
Terbufos	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Tetrachloroethylene	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
2,3,4,6-Tetrachlorophenol	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Triallate	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Trichloroethylene	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
2,4,6-Trichlorophenol	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Trifluralin	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO
Vinyl Chloride	January 2, 2024 August 6, 2024	Not Detected Not Detected	mg/L mg/L	NO

NOTE: During 2024, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.