

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

<b>Drinking-Water System Number:</b>	210000871
<b>Drinking-Water System Name:</b>	<b>Elgin Area Primary Water Supply System</b>
<b>Drinking-Water System Owner:</b>	Elgin Area Primary Water Supply System Joint Board of Management
<b>Drinking-Water System Operating Authority:</b>	Ontario Clean Water Agency (OCWA)
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2019 through December 31, 2019

<p><b>Complete if your Category is Large Municipal Residential or Small Municipal Residential</b></p> <p><b>Does your Drinking-Water System serve more than 10,000 people?</b> Yes [X] No [ ]</p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet?</b> Yes [X] No [ ]</p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></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 <a href="https://huronelginwater.ca/">https://huronelginwater.ca/</a></p> <p>Elgin Area Water Treatment Plant 43665 Dexter Line, Union, ON N0L 2L0</p>	<p><b>Complete for all other Categories.</b></p> <p><b>Number of Designated Facilities served:</b> N/A</p> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve?</b> Yes [ ] No [ ]</p> <p><b>Number of Interested Authorities you report to:</b> N/A</p> <p><b>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?</b> 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 News Release

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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 water main (900mm diameter) to various communities enroute to the Elgin-Middlesex terminal reservoirs 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) providing equalization, clarification, sludge 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:**

- Instrumentation replacements
- High lift Motor Control Center (MCC) HVAC installation
- Filter area HVAC upgrades
- Treated water flow meter replacements
- Low lift drain well chlorine sample line installation
- Low Lift Pumps #1 and #3- Pump Rebuild
- Window replacements
- Operations & Maintenance Manual update
- Ultraviolet transmittance (UVT) analyzers installation

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- Residuals Management Facility (RMF) scraper system repairs
- RMF pump rebuilds
- RMF lighting motion sensors installation
- EMPS reservoir cell #2 repairs
- EMPS reservoir cell #2 valve seat replacement
- A-pipeline decommissioning
- High lift pump #1,2,3 & 4 discharge valve rebuilds
- Hand railing replacements
- Low lift sluice gate repairs
- High lift sluice gate repairs

**Maintenance Projects:**

- Chamber P030B actuator relocation
- Flash mixing tank drain valves replacements

**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**

<b>Incident Report Date</b>	<b>Parameter</b>	<b>Result</b>	<b>Unit of Measure</b>	<b>Corrective Action</b>	<b>Corrective Action Date</b>
January 6, 2019 AWQI #144453	E.coli and Total Coliforms	*NDOGT	CFU/ 100 mL	Resampled and tested. All resample results were clear.	January 6, 2019 January 7, 2019

\*NDOGT – No data: Overgrown with target bacteria

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

	<b>Number of Samples</b>	<b>Range of E.Coli Results (CFU/100 mL) (min #)-(max #)</b>	<b>Range of Total Coliform Results (CFU/100 mL) (min #)-(max #)</b>	<b>Range of HPC Results (CFU/1 mL) (min #)-(max #)</b>
Raw Water	105	(0)-(200)	(4)-(68,000)	(<10)-(>2,000)
Treated Water (WTP)	269	(0)-(NDOGT)	(0)-(NDOGT)	(0)-(1,090)
Distribution (EMPS Valve House)	110	(0)-(0)	(0)-(0)	(<10)-(40)
Distribution (Fruitridge Surge Facility)	55	(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.**

<b>Parameter</b>	<b>Number of Grab Samples</b>	<b>Range of Results (min #)-(max #)</b>
Treated Water Free Chlorine (mg/L)	Continuous Monitoring	(0.46)-(2.64)
Treated Water Free Chlorine (mg/L)	2101	(0.88)-(1.73)
Treated Water Turbidity (NTU)	Continuous Monitoring	(0.015)-(2.00)
Treated Water Turbidity (NTU)	2101	(0.022)-(0.490)
Treated Water Fluoride (mg/L)	Continuous Monitoring	(0.15)-(1.18)
Treated Water Fluoride (mg/L)	714	(0.08)-(0.90)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.016)-(0.168)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.010)-(0.320)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.012)-(0.236)
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.012)-(0.683)
Combined Filtered Water Turbidity (NTU)	2100	(0.008)-(0.100)

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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)*

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
Antimony	Jan.22, 2019	0.00017	mg/L	NO
	Aug. 7, 2019	0.00019	mg/L	
Arsenic	Jan.22, 2019	0.0003	mg/L	NO
	Aug. 7, 2019	0.0003	mg/L	
Barium	Jan.22, 2019	0.0215	mg/L	NO
	Aug. 7, 2019	0.0225	mg/L	
Boron	Jan.22, 2019	0.019	mg/L	NO
	Aug. 7, 2019	0.022	mg/L	
Cadmium	Jan.22, 2019	0.000012	mg/L	NO
	Aug. 7, 2019	0.000008	mg/L	
Chromium	Jan.22, 2019	0.00013	mg/L	NO
	Aug. 7, 2019	0.00019	mg/L	
Lead (EMPS Valve House)	Jan.22, 2019	Not Detected	mg/L	NO
	July 31, 2019	0.00005	mg/L	
Mercury	Jan.22, 2019	Not Detected	mg/L	NO
	Aug. 7, 2019	Not Detected	mg/L	
Selenium	Jan.22, 2019	0.00016	mg/L	NO
	Aug. 7, 2019	0.00015	mg/L	
Uranium	Jan.22, 2019	0.000036	mg/L	NO
	Aug. 7, 2019	0.001800	mg/L	
Sodium	Jan.22, 2019	18.4	mg/L	NO
Nitrite	Jan. 22, 2019	Not Detected	mg/L	NO
	Apr. 11, 2019	Not Detected	mg/L	
	Jul. 23, 2019	Not Detected	mg/L	
	Oct. 22, 2019	Not Detected	mg/L	
Nitrate	Jan. 22, 2019	0.208	mg/L	NO
	Apr. 11, 2019	0.207	mg/L	
	Jul. 23, 2019	0.128	mg/L	
	Oct. 22, 2019	0.144	mg/L	

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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)*

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
Alachlor	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Atrazine + N-dealkylated metabolites	Jan.22, 2019 Aug. 7, 2019	0.00008 0.00006	mg/L mg/L	NO
Azinphos-methyl	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Benzene	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Benzo(a)pyrene	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Bromoxynil	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Carbaryl	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Carbofuran	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Carbon Tetrachloride	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Chlorpyrifos	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Diazinon	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Dicamba	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichlorobenzene	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
1,4-Dichlorobenzene	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichloroethane	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO

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<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
Dichloromethane	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
2-4 Dichlorophenol	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Diclofop-methyl	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Dimethoate	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Diquat	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Diuron	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Glyphosate	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Haloacetic Acids (HAA's) (EMPS Valve House)	Jan. 22, 2019 Apr. 11, 2019 Jul. 23, 2019 Oct. 22, 2019	Not Detected Not Detected 0.0057 Not Detected	mg/L mg/L mg/L mg/L	NO
Haloacetic Acids (HAA's) (EMPS Valve House) Running Annual Average	2019	0.0014	mg/L	NO
Malathion	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
2-Methyl-4-chlorophenoxyacetic acid	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Metolachlor	Jan.22, 2019 Aug. 7, 2019	0.00002 0.00001	mg/L mg/L	NO
Metribuzin	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Monochlorobenzene	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO



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<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
Paraquat	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Pentachlorophenol	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Phorate	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Picloram	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Polychlorinated Biphenyls (PCB)	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Prometryne	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Simazine	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Total Trihalomethanes (THMs) (EMPS Valve House)	Jan. 22, 2019 Apr. 11, 2019 Jul. 23, 2019 Oct. 22, 2019	0.008 0.013 0.022 0.016	mg/L mg/L mg/L mg/L	NO
Total Trihalomethanes (THMs) (EMPS Valve House) Running Annual Average	2019	0.015	mg/L	NO
Terbufos	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Tetrachloroethylene	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
2,3,4,6-Tetrachlorophenol	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Triallate	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Trichloroethylene	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
2,4,6-Trichlorophenol	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO
Trifluralin	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO

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<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
Vinyl Chloride	Jan.22, 2019 Aug. 7, 2019	Not Detected Not Detected	mg/L mg/L	NO

**NOTE:** During 2019, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.