



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, 2017 through December 31, 2017

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></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> <div style="border: 1px solid black; padding: 5px;"> <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</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input type="text" value="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: <input type="text" value="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 Secondary Water Supply System	260004735
Municipality of Central Elgin	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
Municipality of Bayham	260004748
Southwold Distribution System	210001362
Ontario Police College Distribution System	260002161
St. Thomas Psychiatric Hospital Distribution Supply	260005255

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



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 two 750 mm and 900mm diameter water mains 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 is also located on the main complex where thickened sludge is dewatered by centrifuges and sludge cake is sent to the landfill for final disposal. Clarified and dechlorinated liquid streams are sent 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, turbidity analyzers
- Concrete crack injection
- Drain pipe replacements
- Installation of HVAC duct insulation in filter gallery
- Sluice gate shaft replacements
- Replaced backwash isolation valves
- Replaced discharge valves on low lift pumps #1 and #4
- Interior renovations and LED lighting upgrades
- Flow meter replacements



- Replaced 30” butterfly valve and 4” bypass valves at terminal reservoir inlet
- Implementation of online CT Calculator
- Clearwell and reservoir drainage improvements project
- Septic system replacement
- Low Lift 5 kV electrical upgrade project
- Removal of old communication antenna and wiring
- Installed storage and racking for spare pipe segments
- SCADA hardware and software upgrades
- Residuals Management Facility (RMF) scraper system repairs

Maintenance Projects:

- Cell 1 level sensor replacement at terminal reservoir
- Replaced the section of service water pipe in the low lift building
- Replaced the low lift service water pressure reducing valve (PRV)
- Rebuilt the high lift 5 kV breaker
- Annual major preventive maintenance for UV units
- Annual major preventive maintenance for generators
- Annual major preventive maintenance for chlorinators
- Replaced low lift pH meter
- Installed new heating coil in the dehumidifier unit
- Replaced air relief valves on low lift pumps #1 & #4
- Installed new motor on north flash mixer
- Rebuild flash mixer
- Replaced valve actuator at Fruitridge surge facility
- Replaced flex couplings on chlorine solution lines and control valves
- Replaced low lift pumps #1 & #2 packing with mechanical seals
- Installed Uninterruptible Power Supply (UPS) unit for station 6 fluoride analyzer
- Installed actuator on valve in chamber #P039A
- Painted plant transformer
- Installed fall restraint anchor points on plant roofs
- Replaced administrative building hot water tank
- Electric heater units replaced in the reservoir valve house and low lift chlorine building

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
NA	NA	NA	NA	NA	NA



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

	Number of Samples	Range of E.Coli Results (counts/100 mL) (min #)-(max #)	Range of Total Coliform Results (counts/100 mL) (min #)-(max #)	Range of HPC Results (counts/1 mL) (min #)-(max #)
Raw Water	104	(0)-(100)	(0)-(32,000)	(<10)-(>2,000)
Treated Water (WTP)	253	(0)-(0)	(0)-(0)	(0)-(30)
Distribution (EMPS Valve House & Fruitridge Surge Facility)	154	(0)-(0)	(0)-(0)	(<10)-(140)

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	(0.53)-(2.23)
	1769	(0.90)-(1.60)
Treated Water Turbidity (NTU)	Continuous Monitoring	(0.01)-(2.00)
	1768	(0.018)-(0.127)
Treated Water Fluoride (mg/L)	Continuous Monitoring	(0.14)-(2.00)
	616	(0.07)-(0.80)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.012)-(0.206)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.010)-(0.552)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.010)-(0.338)
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.012)-(0.374)
Combined Filtered Water Turbidity (NTU)	1769	(0.018)-(0.110)



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	Jan.10, 2017	0.00012	mg/L	NO
	Aug. 9, 2017	0.00016	mg/L	
Arsenic	Jan.10, 2017	0.0003	mg/L	NO
	Aug. 9, 2017	0.0004	mg/L	
Barium	Jan.10, 2017	0.022	mg/L	NO
	Aug. 9, 2017	0.021	mg/L	
Boron	Jan.10, 2017	0.020	mg/L	NO
	Aug. 9, 2017	0.018	mg/L	
Cadmium	Jan.10, 2017	0.000009	mg/L	NO
	Aug. 9, 2017	0.000010	mg/L	
Chromium	Jan.10, 2017	0.00055	mg/L	NO
	Aug. 9, 2017	0.00070	mg/L	
Lead <i>(EMPS Valve House)</i>	Jan. 10, 2017	Not Detected	mg/L	NO
	Jul. 4, 2017	0.00000002	mg/L	
Mercury	Jan.10, 2017	Not Detected	mg/L	NO
	Aug. 9, 2017	Not Detected	mg/L	
Selenium	Jan.10, 2017	0.00019	mg/L	NO
	Aug. 9, 2017	0.00017	mg/L	
Uranium	Jan.10, 2017	0.000047	mg/L	NO
	Aug. 9, 2017	0.000090	mg/L	
Sodium	Jan.10, 2017	16.9	mg/L	NO
Nitrite	Jan. 10, 2017	Not Detected	mg/L	NO
	Apr. 11, 2017	0.006	mg/L	
	Jul. 4, 2017	Not Detected	mg/L	
	Oct. 17, 2017	Not Detected	mg/L	
Nitrate	Jan. 10, 2017	0.155	mg/L	NO
	Apr. 11, 2017	0.505	mg/L	
	Jul. 4, 2017	0.134	mg/L	
	Oct. 17, 2017	0.181	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	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Atrazine + N-dealkylated metabolites	Jan.10, 2017 Aug.9, 2017	0.00005 0.00006	mg/L mg/L	NO
Azinphos-methyl	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Benzene	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Benzo(a)pyrene	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Bromoxynil	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Carbaryl	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Carbofuran	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Carbon Tetrachloride	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Chlorpyrifos	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Diazinon	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Dicamba	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichlorobenzene	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
1,4-Dichlorobenzene	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichloroethane	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Dichloromethane	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO



2-4 Dichlorophenol	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Diclofop-methyl	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Dimethoate	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Diquat	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Diuron	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Glyphosate	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Haloacetic Acids (HAA's) (EMPS Valve House)	Jan.10, 2017 Apr.11, 2017 Jul.4, 2017 Oct.17, 2017	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO
Haloacetic Acids (HAA's) (EMPS Valve House) Annual Running Average	2017	Not Detected	mg/L	NO
Malathion	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
2-Methyl-4-chlorophenoxyacetic acid	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Metolachlor	Jan.10, 2017 Aug.9, 2017	Not Detected 0.00001	mg/L mg/L	NO
Metribuzin	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Monochlorobenzene	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Paraquat	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Pentachlorophenol	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Phorate	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO



Picloram	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Polychlorinated Biphenyls (PCB)	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Prometryne	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Simazine	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Total Trihalomethanes (THMs) (EMPS Valve House)	Jan.10, 2017 Apr.11, 2017 Jul.4, 2017 Oct.17, 2017	0.0086 0.012 0.016 0.019	mg/L mg/L mg/L mg/L	NO
Total Trihalomethanes (THMs) (EMPS Valve House) Running Annual Average	2017	0.0139	mg/L	NO
Terbufos	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Tetrachloroethylene	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
2,3,4,6-Tetrachlorophenol	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Triallate	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Trichloroethylene	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
2,4,6-Trichlorophenol	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Trifluralin	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO
Vinyl Chloride	Jan.10, 2017 Aug.9, 2017	Not Detected Not Detected	mg/L mg/L	NO

NOTE: During 2017, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.