

<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 Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2013 through December 31, 2013

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p><b>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No [ ]</b></p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]</b></p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></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 <a href="http://www.watersupply.london.ca">http://www.watersupply.london.ca</a></p> <p>Elgin Area Water Treatment Plant 43665 Dexter Line, Union, ON</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b></p> <div style="border: 1px solid black; padding: 2px; width: 100px; margin: 5px auto;">N/A</div> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]</b></p> <p><b>Number of Interested Authorities you report to:</b></p> <div style="border: 1px solid black; padding: 2px; width: 100px; margin: 5px auto;">N/A</div> <p><b>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]</b></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:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
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:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
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 Water Treatment Plant (WTP) 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 en route 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.



**List all water treatment chemicals used over this reporting period**

Sodium Hypochlorite  
Carbon Dioxide  
Aluminum Sulphate  
Cationic Polymer  
Powder Activated Carbon  
Chlorine Gas  
Hydrofluosilicic Acid  
Sodium Hydroxide

**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**

**Major Capital Projects:**

- upgraded alum chemical metering pump system
- upgraded in-plant phone systems
- renovated and upgraded laboratory
- upgraded all access doors with automated key system
- installed blower for filter air scour system
- replaced backwash pump check valves
- filter trough extensions installed
- filter #4 media top-up
- installation of automated valve actuators at key chambers on A and B Pipeline

**Minor Capital Projects:**

- analytical equipment upgrades
- replacement of chemical tank level meters
- replaced hot water tanks in low lift, chlorine and sodium hydroxide areas
- upgraded chlorine building eyewash system
- installed pump well access hatch in old fluoride area
- provide uninterruptable power supply (UPS) power to UV system Programmable Logic Controller (PLC)
- replaced gate controller system
- new controls for high lift overhead hoist
- connected uninterruptable power supply (UPS) power to fluoride day tank scale
- replaced low lift butterfly valves on pump discharge
- replacement of various plant sump pumps
- replaced carbon dust collector header

**Major Maintenance:**

- high lift and low lift valve rebuilding
- corrections to 5KV neutral grounding resistor system and kirk key system



- repairs to cooling system of 2.5MW generator engine
- upgraded UV system programming and completed wiring corrections
- boiler system repairs
- inspections and cleaning of low lift wells
- inspections of clearwells and reservoirs
- rebuilt backwash header surge anticipator valve
- battery replacement in generator starting banks
- cleaned interior of carbon tanks
- replaced air valve at chamber P027A
- removed TSSA non-complaint air receiver tanks
- installed new electrical vault cover at low lift
- UV capacitor replacements
- corrected drainage and sealant at tunnel and high lift building
- replacement of gate valve at chamber P006B
- replaced backup power batteries in all Programmable Logic Controllers (PLCs)

**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>
Jan. 30, 2013	Fluoride	>1.50	mg/L	Fluoride system was turned off and WTP was offline for 4 hrs. Fluoride was at 0.24mg/L upon WTP start-up.	Jan. 30, 2013
Mar. 18, 2013	Fluoride	1.79	mg/L	Fluoride system was turned off and WTP was offline for 1 hrs. Fluoride was at 0.70mg/L upon WTP start-up.	Mar. 18, 2013
Mar. 21, 2013	Fluoride	>1.50	mg/L	Fluoride system was turned off and WTP was offline. Fluoride was at 0.80mg/L upon WTP start-up.	Mar. 21, 2013
June 19, 2013	Sodium	21.2	mg/L	Increased the frequency of sodium sampling and testing to four times per year (quarterly).	June 20, 2013



**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 #)
<b>Raw Water</b>	104	(<10)-(430)	(0)-(86,000)	(<10)-(>2160)
<b>Treated Water (WTP)</b>	254	(0)-(0)	(0)-(0)	(0)-(>2000)
<b>Distribution (EMPS Valve House &amp; Fruitridge Surge Facility)</b>	156	(0)-(0)	(0)-(0)	(0)-(>2000)

**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 #)
<b>Treated Water Free Chlorine (mg/L)</b>	Continuous Monitoring	(0.20)-(2.13)
	2095	(0.85)-(1.59)
<b>Treated Water Turbidity (NTU)</b>	Continuous Monitoring	(0.003)-(2.00)
	2096	(0.050)-(0.220)
<b>Treated Water Fluoride (mg/L)</b>	Continuous Monitoring	(0)-(2.00)
	694	(0.11)-(0.83)
<b>Filter #1 - Filtered Water Turbidity (NTU)</b>	Continuous Monitoring	(0.005)-(2.00)
<b>Filter #2 - Filtered Water Turbidity (NTU)</b>	Continuous Monitoring	(0.006)-(2.00)
<b>Filter #3 - Filtered Water Turbidity (NTU)</b>	Continuous Monitoring	(0.008)-(2.00)
<b>Filter #4 - Filtered Water Turbidity (NTU)</b>	Continuous Monitoring	(0.003)-(2.00)
<b>Combined Filtered Water Turbidity (NTU)</b>	2094	(0.051)-(0.114)

**NOTE:**

*Turbidity spikes above 1.00 NTU on filtered and treated water coincide with instrument calibrations, instrument flushing, pump start-ups, or maintenance. Filter effluent turbidity spikes did not exceed fifteen minutes on any of the filters.*

*Fluoride spikes above 1.50 mg/L coincide with reports to the Spills Action Centre as noted above.*



**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
<b>Antimony</b>	January 10, 2013	0.02	µg/L	NO
	August 6, 2013	0.13	µg/L	
<b>Arsenic</b>	January 10, 2013	0.4	µg/L	NO
	August 6, 2013	0.7	µg/L	
<b>Barium</b>	January 10, 2013	24	µg/L	NO
	August 6, 2013	22	µg/L	
<b>Boron</b>	January 10, 2013	23	µg/L	NO
	August 6, 2013	21	µg/L	
<b>Cadmium</b>	January 10, 2013	0.007	µg/L	NO
	August 6, 2013	0.009	µg/L	
<b>Chromium</b>	January 10, 2013	0.7	µg/L	NO
	August 6, 2013	Not Detected	µg/L	
<b>Lead</b> (EMPS Valve House)	January 10, 2013	0.03	µg/L	NO
	July 9, 2013	0.06	µg/L	
<b>Mercury</b>	January 10, 2013	Not Detected	µg/L	NO
	August 6, 2013	Not Detected	µg/L	
<b>Selenium</b>	January 10, 2013	Not Detected	µg/L	NO
	August 6, 2013	Not Detected	µg/L	
<b>Sodium</b>	February 19, 2013	19.5	mg/L	NO
	June 13, 2013	21.2	mg/L	
	July 16, 2013	20.1	mg/L	
	October 3, 2013	21.8	mg/L	
<b>Uranium</b>	January 10, 2013	0.064	µg/L	NO
	August 6, 2013	0.039	µg/L	
<b>Nitrite</b>	January 17, 2013	Not Detected	mg/L	NO
	April 15, 2013	Not Detected	mg/L	
	July 15, 2013	Not Detected	mg/L	
	October 12, 2013	Not Detected	mg/L	
<b>Nitrate</b>	January 17, 2013	0.144	mg/L	NO
	April 15, 2013	0.154	mg/L	
	July 15, 2013	0.132	mg/L	
	October 12, 2013	0.103	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
<b>Alachlor</b>	January 10, 2013	Not Detected	µg/L	<b>NO</b>
	August 6, 2013	Not Detected	µg/L	
<b>Aldicarb</b>	January 10, 2013	Not Detected	µg/L	<b>NO</b>
	August 6, 2013	Not Detected	µg/L	
<b>Aldrin + Dieldrin</b>	January 10, 2013	Not Detected	µg/L	<b>NO</b>
	August 6, 2013	Not Detected	µg/L	
<b>Atrazine + N-dealkylated metabolites</b>	January 10, 2013	0.08	µg/L	<b>NO</b>
	August 6, 2013	0.07	µg/L	
<b>Azinphos-methyl</b>	January 10, 2013	Not Detected	µg/L	<b>NO</b>
	August 6, 2013	Not Detected	µg/L	
<b>Bendiocarb</b>	January 10, 2013	Not Detected	µg/L	<b>NO</b>
	August 6, 2013	Not Detected	µg/L	



<b>Benzene</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Benzo(a)pyrene</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Bromoxynil</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Carbaryl</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Carbofuran</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Carbon Tetrachloride</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Chlordane (Total)</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Chlorpyrifos</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Cyanazine</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Diazinon</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Dicamba</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>1,2-Dichlorobenzene</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>1,4-Dichlorobenzene</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Dichlorodiphenyltrichloroethane (DDT) + metabolites</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>1,2-Dichloroethane</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>1,1-Dichloroethylene (vinylidene chloride)</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Dichloromethane</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>2,4 Dichlorophenol</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>2,4-Dichlorophenoxy acetic acid (2,4-D)</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Diclofop-methyl</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Dimethoate</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Dinoseb</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Diquat</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Diuron</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Glyphosate</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Heptachlor + Heptachlor Epoxide</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>



<b>Lindane (Total)</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Malathion</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Methoxychlor</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Metolachlor</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Metribuzin</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Monochlorobenzene</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Paraquat</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Parathion</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Pentachlorophenol</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Phorate</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Picloram</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Polychlorinated Biphenyls(PCB)</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Prometryne</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Simazine</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Total Trihalomethanes (EMPS Valve House)</b>	January 17, 2013 April 15, 2013 July 15, 2013 October 12, 2013	7.7 15 21 26	µg/L µg/L µg/L µg/L	<b>NO</b>
<b>Temephos</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Terbufos</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Tetrachloroethylene</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>2,3,4,6-Tetrachlorophenol</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Triallate</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Trichloroethylene</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>2,4,6-Trichlorophenol</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Trifluralin</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>
<b>Vinyl Chloride</b>	January 10, 2013 August 6, 2013	Not Detected Not Detected	µg/L µg/L	<b>NO</b>





***NOTE:*** During 2013, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.