



<b>Drinking-Water System Number:</b>	210000791
<b>Drinking-Water System Name:</b>	<b>Lake Huron Primary Water Supply System</b>
<b>Drinking-Water System Owner:</b>	Lake Huron 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, 2016 through December 31, 2016

<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>Lake Huron Water Treatment Plant 71155 Bluewater Hwy., Grand Bend, ON</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b> <input type="text" value="N/A"/></p> <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> <input type="text" value="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? 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 from the LHPWSS:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
City of London	260004917
Municipality of Bluewater	260006542
Municipality of Lambton Shores (East Lambton Shores Water Distribution System)	260006568
Township of Lucan-Biddulph	260003071



Municipality of Middlesex Centre (Middlesex Centre Distribution System)	260004202
Municipality of North Middlesex	260006529
Municipality of Strathroy-Caradoc (Strathroy- Caradoc Distribution System)	260080106
Municipality of South Huron (South Huron Water Distribution System)	220001520

**Systems that may receive their drinking water from the LHPWSS:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
Municipality of Lambton Shores (West Lambton Shores Distribution System) *Normally supplied by the Lambton Area Water Supply System (LAWSS) but a connection to the LHPWSS exists	260006581

**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 Lake Huron Water Treatment Plant (WTP) employs pre-chlorination, screening, powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, post-chlorination, and pH adjustment using sodium hydroxide to treat raw water obtained from Lake Huron. The WTP intake crib and raw water intake pipe have an estimated gross capacity of 454.6 Megalitres/day (MLD). The WTP rated capacity is 340.0 MLD.

A Residue Management Facility providing equalization, clarification, sludge thickening and dechlorination is also housed in 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 Huron through the plant drain via the Diversion Chamber.

The distribution system is comprised of the McGillivray Booster Pumping Station and Reservoir, the Exeter-Hensall Booster Pumping Station and Reservoir, the Arva Terminal Reservoir, the Komoka-Mt. Brydges Booster Pumping Station (PS#4) and the associated interconnecting transmission water mains, which includes the primary, Strathroy, Exeter-Hensall, and Komoka-Mt. Brydges transmission water mains.

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**

Filter Aid Polymer (on an as-required basis)  
Aluminum Sulphate  
Powder Activated Carbon  
Chlorine Gas  
Sodium Hydroxide  
Sodium Hypochlorite (Exeter Hensall Pumping Station)  
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
- Concrete crack injection
- Low lift surge valve replacement
- Clarifier instrument upgrades
- Grit pump replacement
- Meter replacement and upgrades
- Filter media rebuilds
- Vehicle security gate replacement
- SCADA security upgrades
- Residuals management facility HVAC
- Plant drain pipe replacement
- Site drainage improvements
- Easement maintenance
- Alum tempering/flushing system upgrade
- Pipeline chamber upgrades
- Chlorine injector replacement
- UPS battery replacement
- General control upgrades
- Pipeline marker signs installed
- Air compressor upgrades
- Pipeline CMMS project

**Maintenance Projects:**

- Residuals management facility - north equalization tank floc drain upgrade
- North B-Line chamber repair/rebuild
- Low lift #4 pump rebuild
- Filter backwash valve rebuild
- Plant security camera replacement

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 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 (CFU/100mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100mL) (min #)-(max #)	Range of HPC Results (CFU/1mL) (min #)-(max #)
Raw Water	102	(0)-(<100)	(0)-(18,600)	(<10)-(>2,000)
Treated Water (WTP)	257	(0)-(0)	(0)-(0)	(<10)-(>2,000)
Distribution (McGillivray PS)	51	(0)-(0)	(0)-(0)	(<10)-(30)
Distribution (North Exeter)	52	(0)-(0)	(0)-(0)	(<10)-(40)
Distribution (South Exeter)	52	(0)-(0)	(0)-(0)	(<10)-(60)
Distribution (Exeter-Hensall Reservoir)	52	(0)-(0)	(0)-(0)	(<10)-( 30)
Distribution (Komoka-Mt. Brydges PS)	52	(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	(0.61) – (1.75)
	2145	(0.87) - (1.76)
Treated Water Turbidity (NTU)	Continuous Monitoring	(0.021) – (2.00)
	2141	(0.030) - (0.099)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.020) - (0.349)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.013) - (0.681)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.022) - (0.400)
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.011) - (0.236)
Filter #5 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.017) - (0.357)
Filter #6 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.015) - (0.240)
Filter #7 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.022) - (0.147)
Filter #8 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.017) - (0.790)
Filter #9 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.020) - (0.166)
Filter #10 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.017) - (0.146)
Filter #11 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.015) - (0.538)
Filter #12 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.010) – (0.175)
Combined Filtered Water Turbidity (NTU)	2139	(0.006) - (0.120)

**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 8, 2016	0.00016	mg/L	NO
<b>Arsenic</b>	January 8, 2016	0.0002	mg/L	NO
<b>Barium</b>	January 8, 2016	0.0128	mg/L	NO
<b>Boron</b>	January 8, 2016	0.0128	mg/L	NO
<b>Cadmium</b>	January 8, 2016	Not Detected	mg/L	NO
<b>Chromium</b>	January 8, 2016	0.00009	mg/L	NO
<b>Lead</b> <i>(Komoka Mt-Brydges Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	Not Detected 0.00005 Not Detected 0.00002	mg/L mg/L mg/L mg/L	NO
<b>Mercury</b>	January 8, 2016	Not Detected	mg/L	NO
<b>Selenium</b>	January 8, 2016	0.00014	mg/L	NO
<b>Sodium</b>	January 8, 2016	10.5	mg/L	NO
<b>Uranium</b>	January 8, 2016	0.000061	mg/L	NO
<b>Fluoride</b>	NA	Not Tested	mg/L	--
<b>Nitrite</b>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO

<b>Nitrate</b>	January 8, 2016	0.452	mg/L	NO
	April 13, 2016	0.954	mg/L	
	July 15, 2016	0.339	mg/L	
	October 6, 2016	0.264	mg/L	

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

(\*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 8, 2016	Not Detected	µg/L	NO
<b>Atrazine + N-dealkylated metabolites</b>	January 8, 2016	0.03	µg/L	NO
<b>Azinphos-methyl</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Benzene</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Benzo(a)pyrene</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Bromoxynil</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Carbaryl</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Carbofuran</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Carbon Tetrachloride</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Chlorpyrifos</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Diazinon</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Dicamba</b>	January 8, 2016	Not Detected	µg/L	NO
<b>1,2-Dichlorobenzene</b>	January 8, 2016	Not Detected	µg/L	NO
<b>1,4-Dichlorobenzene</b>	January 8, 2016	Not Detected	µg/L	NO
<b>1,2-Dichloroethane</b>	January 8, 2016	Not Detected	µg/L	NO
<b>1,1-Dichloroethylene (vinylidene chloride)</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Dichloromethane</b>	January 8, 2016	Not Detected	µg/L	NO
<b>2-4 Dichlorophenol</b>	January 8, 2016	Not Detected	µg/L	NO
<b>2,4-Dichlorophenoxy acetic acid (2,4-D)</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Diclofop-methyl</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Dimethoate</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Diquat</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Diuron</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Glyphosate</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Haloacetic Acids (HAA's)</b> <i>(Arva Reservoir)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	Not Detected 15.0 9.0 Not Detected	µg/L µg/L µg/L µg/L	NO
<b>Haloacetic Acids (HAA's)</b> <i>(Exeter-Hensall Monitoring Station #3)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	9.4 22.0 14.0 9.1	µg/L µg/L µg/L µg/L	NO



<b>Haloacetic Acids (HAA's)</b> <i>(Komoka Mt-Brydges Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	6.5 17.0 9.6 Not Detected	µg/L µg/L µg/L µg/L	NO
<b>Haloacetic Acids (HAA's)</b> <i>(Strathroy-Caradoc Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	Not Detected 12.0 10.0 Not Detected	µg/L µg/L µg/L µg/L	NO
<b>Malathion</b>	January 8, 2016	Not Detected	µg/L	NO
<b>2-Methyl-4-chlorophenoxyacetic acid</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Metolachlor</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Metribuzin</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Monochlorobenzene</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Paraquat</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Pentachlorophenol</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Phorate</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Picloram</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Polychlorinated Biphenyls (PCB)</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Prometryne</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Simazine</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Total Trihalomethanes</b> <i>(Arva Reservoir)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	15.0 21.0 27.0 14.0	µg/L µg/L µg/L µg/L	NO
<b>Total Trihalomethanes (THMs)</b> <i>(Arva Reservoir)</i> <b>Running Annual Average</b>	2016	19.25	µg/L	NO
<b>Total Trihalomethanes</b> <i>(Exeter-Hensall Monitoring Station #3)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	30.0 29.0 41.0 33.0	µg/L µg/L µg/L µg/L	NO
<b>Total Trihalomethanes</b> <i>(Exeter-Hensall Monitoring Station #3)</i> <b>Running Annual Average</b>	2016	33.25	µg/L	NO
<b>Total Trihalomethanes</b> <i>(Komoka Mt-Brydges Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	22.0 26.0 34.0 23.0	µg/L µg/L µg/L µg/L	NO



<b>Total Trihalomethanes</b> <i>(Komoka Mt-Brydges Monitoring Station #2)</i> <b>Running Annual Average</b>	2016	26.25	µg/L	NO
<b>Total Trihalomethanes</b> <i>(Strathroy-Caradoc Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	18.0 21.0 29.0 18.0	µg/L µg/L µg/L µg/L	NO
<b>Total Trihalomethanes</b> <i>(Strathroy-Caradoc Monitoring Station #2)</i> <b>Running Annual Average</b>	2016	21.5	µg/L	NO
<b>Terbufos</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Tetrachloroethylene</b>	January 8, 2016	Not Detected	µg/L	NO
<b>2,3,4,6-Tetrachlorophenol</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Triallate</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Trichloroethylene</b>	January 8, 2016	Not Detected	µg/L	NO
<b>2,4,6-Trichlorophenol</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Trifluralin</b>	January 8, 2016	Not Detected	µg/L	NO
<b>Vinyl Chloride</b>	January 8, 2016	Not Detected	µg/L	NO

*NOTE: During 2016, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.*