

**Part III Form 2****Section 11. ANNUAL REPORT.****Drinking-Water System Number:**

210000906

**Drinking-Water System Name:**

Lambton Area Water Supply System Drinking Water

**Drinking-Water System Owner:**Lambton Area Water Supply System Advisory  
Committee**Drinking-Water System Category:**

Large municipal residential systems

**Period being reported:**

April 1, 2003 to December 31, 2003

<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 [<input checked="" type="checkbox"/>] No [ ]</b></p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet? Yes [<input checked="" type="checkbox"/>] No [ ]</b></p> <p><b>Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></p> <p><a href="http://www.rivernet.net/~lawss/">www.rivernet.net/~lawss/</a></p> <p>Lambton Area Water Supply System 1215 Fort St. Sarnia, On P.O. Box 790</p> <p>City of Sarnia Municipal Office 255 N Christina St. Sarnia</p> <p>Village of Pt. Edward Municipal Office 135 Kendall St. Pt. Edward</p> <p>St. Clair Township Municipal Office 1155 Emily St. Mooretown, ON</p> <p>Town of Plympton-Wyoming Municipal Office 546 Niagara St. Wyoming ON</p> <p>Township of Warwick Municipal Office 6332 Nauvoo Rd. RR#8 Watford</p> <p>Lambton Shores Munipal Office 19 Ann St. Forest ON</p>	<p><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b> <input style="width: 100px; height: 20px;" type="text"/></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 style="width: 100px; height: 20px;" type="text"/></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 Drinking-Water Systems, which receive all of their drinking water from your system:**

<p><b>Village of Pt. Edward, City of Sarnia, St. Clair Township, Plympton - Wyoming Township, Watford-Warwick Township, (Lambton Shores- receives SOME of their drinking water from this system</b></p>	
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**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 \_\_\_\_\_

**Describe your Drinking-Water System**

***Water Treatment Plant:*** Raw water is drawn from the head of the St. Clair River through a 66” diameter intake pipe which is located approximately 99 meters out in the river at a depth of approximately 15 meters. Raw water enters the plant at a low lift pumping station where it flows into a surge chamber through a series of screens which remove large debris, aquatic vegetation, etc... With this primary screening, the water is chlorinated and then directed to a flash mixing chamber where alum is added for coagulation (Powdered Activated Carbon is added in the summer to suppress taste and odour problems/concerns). Chlorination at the intake is used during zebra mussel season. The water then enters three parallel banks of flocculators which is a series of chambers designed to allow for the intermixing of chemicals and water. After flocculation, the water is sent to the filters. There are ten dual media filters composed of anthracite and sand, each having a filtration area of 66.9m<sup>2</sup> and a maximum capacity of 20,204 m<sup>3</sup>/day per filter. Each filter bed is equipped with a common underdrain system, backwash system and troughs. The filtered water is directed to two clearwells with a total capacity of 620m<sup>3</sup>. The filtered water is then post-chlorinated with a NaOCl solution (to initiate the secondary disinfection process). The water then flows to two underground reservoirs (equipped with baffled walls) that have a maximum storage capacity of 67 460m<sup>3</sup>. These baffled walls in the reservoirs help meet/exceed the CT values for disinfection and complete the secondary disinfection process. The water enters the north reservoir cell first and exits the south reservoir cell to the High Lift area. There are six high lift pumps to move the water from the storage reservoir(s) out into the distribution system. Flow meters measure the total plant output. . Should a power failure occur, four 1,500 hp diesel generators are started automatically, thus permitting the treatment plant to remain in full operation.

***West Lambton Pumping Station:*** A two level facility consisting of a valve chamber and housing, pumping station with upstream and down stream pump systems, chemical feed system for rechlorination (NaOCl solution), above ground storage and two 1800 KW diesel generator units.

***East Lambton Booster Station:*** consisting of two inground reservoirs; six pumps; one diesel generator and a rechlorination system.

Standpipes: Forest and Warwick/Watford

Water Transmission Mains: Varying in size from 8" to 24".

***St. Clair Township Water Distribution System:*** is comprised of water transmission mains ranging in size from 10" to 14" in diameter. The system also includes a standpipe (water storage tank) located in Port Lambton. Treated water originates from the Lambton Water Supply System.

***Elevated Towers / Tanks:*** Indian Road elevated tank.

***Transmission Mains:*** Large water transmission mains ranging in diameter sizes from 24" to 42".

*Emergency connections exist at the following locations:*

**A connection at Whitebread Line and Hwy 40 exists in the event that Chatham-Kent or Lambton needs an alternate water supply**

**A connection at Ploughing Match Rd. and Confederation Line in the event Petrolia or Lambton requires an alternate water supply. A connection also exists at Townsend and Lakeshore in the event Grand Bend (City of London)/Lambton requires an alternate supply**

**In Progress**

***Residual Management System:*** The capital project is in progress. The system when completed will provide treatment to backwash water and allow this clarified water to be discharged to the St. Clair River

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

Sodium Hypochlorite – disinfection  
 Hydrofluosilicic Acid- fluoridation  
 Clar+Ion A7 (Aluminum Sulphate)- coagulation  
 Polyactivated Carbon- taste and odour  
 Polymer 8103 + filter aid (when required)

**Were any significant expenses incurred to?**

- [✓] Install required equipment
- [✓] Repair required equipment
- [✓] Replace required equipment

### Describe

**Replacement of two continuous on-line chlorine analyzer(s) at the West Lambton Pump Station (WLPS). Replacement of a VFD with soft start at the WLPS.**  
**Two MCC pump starters and breakers (High Lift and Low lift) at WTP**  
**WD main line repairs and curbstop/valve repairs/replacements.**  
**Zebra mussel chlorine line repairs.**  
**Valve repairs (high lift Ross valve)**  
**PRV installations in distribution system**  
**Relocation of booster station pumps at ELBS**  
**SCADA upgrade (Reg 170/03)**

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

### Microbiological testing done under section 8 (2) during this reporting period

	Number of Samples	Range of E.Coli or Fecal Results (#-#)	Range of Total Coliform Results (#-#)	Number Of Background Samples	Range of Background Results (#-#)
Raw	33	0-17 cfu/100ml	0-190 cfu/100ml		
Treated	225	0-0 cfu/100ml	0-0 cfu/100ml	225	0-5 cfu/100ml
Distribution					

### Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (#-#)
Turbidity	8760	0.015-0.223 NTU
Chlorine (free)	8760	0.91-2.00mg/L

*NOTE: For continuous monitors use 8760 as the number of samples.*

Fluoride (If the DWS provides fluoridation)	8760	0.5-0.7mg/L
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**NOTE:** Record the unit of measure if it is **not** milligrams per litre.

Summary of additional testing and sampling carried out in accordance with the requirement of an approval or order. Not applicable

Date of order or C of A	Parameter	Date Sampled	Result	Unit of Measure

Summary of Inorganic parameters tested during this reporting period or most recent

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Nov. 4/03	<0.6	□L	No
Arsenic	Nov. 4/03	<2.0	□L	No
Barium	Nov. 4/03	12.0	□L	No
Boron	Nov. 4/03	15.0	□L	No
Cadmium	Nov. 4/03	<0.1	□L	No
Chromium	Nov. 4/03	<3.0	□L	No
Lead	Nov. 4/03	<0.6	□L	No
Mercury	Nov. 4/03	0.1	□L	No
Selenium	Nov. 4/03	<3.0	□L	No
Uranium	Nov. 4/03	<0.1	□L	No
Fluoride	<i>(continuous on-line monitoring)</i>	0.5-0.7	mg/L	No
Nitrite	Nov. 4/03	<0.011	mg/L	No
Nitrate	Nov. 4/03	0.276	mg/L	No

Summary of Organic parameters sampled during this reporting period or most recent

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Nov. 4/04	<0.11	□L	No
Aldicarb	Nov. 4/04	<0.30	□L	No
Aldrin + Dieldrin	Nov. 4/04	<0.067	□L	No
Atrazine + N-dealkylated metabolites	Nov. 4/04	<0.12	□L	No
Azinphos-methyl	Nov. 4/04	<0.11	□L	No
Bendiocarb	Nov. 4/04	<0.21	□L	No
Benzene	Nov. 4/04	<0.13	□L	No
Benzo(a)pyrene	Nov. 4/04	<0.14	□L	No
Bromoxynil	Nov. 4/04	<0.094	□L	No
Carbaryl	Nov. 4/04	<0.16	□L	No
Carbofuran	Nov. 4/04	<0.37	□L	No
Carbon Tetrachloride	Nov. 4/04	<0.34	□L	No
Chlordane (Total)	Nov. 4/04	<0.11	□L	No
Chlorpyrifos	Nov. 4/04	<0.18	□L	No
Cyanazine	Nov. 4/04	<0.18	□L	No

<b>Diazinon</b>	Nov. 4/04	<0.081	□L	No
<b>Dicamba</b>	Nov. 4/04	<0.17	□L	No
<b>1,2-Dichlorobenzene</b>	Nov. 4/04	<0.56	□L	No
<b>1,4-Dichlorobenzene</b>	Nov. 4/04	<0.25	□L	No
<b>Dichlorodiphenyltrichloroethane (DDT) + metabolites</b>	Nov. 4/04	<0.14	□L	No
<b>1,2-Dichloroethane</b>	Nov. 4/04	<0.32	□L	No
<b>1,1-Dichloroethylene (vinylidene chloride)</b>	Nov. 4/04	<0.52	□L	No
<b>Dichloromethane</b>	Nov. 4/04	<1.17	□L	No
<b>2-4 Dichlorophenol</b>	Nov. 4/04	<0.15	□L	No
<b>2,4-Dichlorophenoxy acetic acid (2,4-D)</b>	Nov. 4/04	<0.11	□L	No
<b>Diclofop-methyl</b>	Nov. 4/04	<0.13	□L	No
<b>Dimethoate</b>	Nov. 4/04	<0.12	□L	No
<b>Dinoseb</b>	Nov. 4/04	<0.084	□L	No
<b>Diquat</b>	Nov. 4/04	<1.0	□L	No
<b>Diuron</b>	Nov. 4/04	<0.871	□L	No
<b>Glyphosate</b>	Nov. 4/04	<6.01	□L	No
<b>Heptachlor + Heptachlor Epoxide</b>	Nov. 4/04	<0.11	□L	No
<b>Linadane (Total)</b>	Nov. 4/04	<0.056	□L	No
<b>Malathion</b>	Nov. 4/04	<0.91	□L	No
<b>Methoxychlor</b>	Nov. 4/04	<0.14	□L	No
<b>Metolachlor</b>	Nov. 4/04	<0.092	□L	No
<b>Metribuzin</b>	Nov. 4/04	<0.12	□L	No
<b>Monochlorobenzene</b>	Nov. 4/04	<0.46	□L	No
<b>Paraquat</b>	Nov. 4/04	<1.0	□L	No
<b>Parathion</b>	Nov. 4/04	<0.18	□L	No
<b>Pentachlorophenol</b>	Nov. 4/04	<0.15	□L	No
<b>Phorate</b>	Nov. 4/04	<0.11	□L	No
<b>Picloram</b>	Nov. 4/04	<0.2	□L	No
<b>Polychlorinated Biphenyls(PCB)</b>	Nov. 4/04	<0.04	□L	No
<b>Promethyne</b>	Nov. 4/04	<0.23	□L	No
<b>Simazine</b>	Nov. 4/04	<0.15	□L	No
<b>THM</b> (NOTE: show latest quarterly average)	Nov. 4/04	35.4	□L	No
<b>Temephos</b>	Nov. 4/04	<0.31	□L	No
<b>Terbufos</b>	Nov. 4/04	<0.12	□L	No
<b>Tetrachloroethylene</b>	Nov. 4/04	<0.48	□L	No
<b>2,3,4,6-Tetrachlorophenol</b>	Nov. 4/04	<0.14	□L	No
<b>Triallate</b>	Nov. 4/04	<0.1	□L	No
<b>Trichloroethylene</b>	Nov. 4/04	<0.54	□L	No
<b>2,4,6-Trichlorophenol</b>	Nov. 4/04	<0.25	□L	No
<b>2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)</b>	Nov. 4/04	<0.14	□L	No
<b>Trifluralin</b>	Nov. 4/04	<0.12	□L	No
<b>Vinyl Chloride</b>	Nov. 4/04	<0.08	□L	No

**List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.**

Parameter	Result Value	Unit of Measure	Date of Sample

**(Only if category is large municipal residential, small municipal residential, large municipal non residential, small municipal non residential, large non municipal non residential)**