

**Part III Form 2  
Section 11. ANNUAL REPORT.**

<b>Drinking-Water System Number:</b>	210000906
<b>Drinking-Water System Name:</b>	Lambton Area Water Supply System
<b>Drinking-Water System Owner:</b>	Lambton Area Water Supply System
<b>Drinking-Water System Category:</b>	Large municipal residential systems
<b>Period being reported:</b>	Jan 1, 2004 to December 31, 2004

**Complete if your Category is Large Municipal Residential or Small Municipal Residential**

**Does your Drinking-Water System serve more than 10,000 people? Yes [✓] No [ ]**

**Is your annual report available to the public at no charge on a web site on the Internet? Yes [✓] No [ ]**

**Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.**

[www.rivernet.net/~lawss/](http://www.rivernet.net/~lawss/)

Lambton Area Water Supply System  
1215 Fort St. Sarnia, On P.O. Box 790

City of Sarnia Municipal Office  
255 N Christina St. Sarnia

Village of Pt. Edward Municipal Office  
135 Kendall St. Pt. Edward

St. Clair Township Municipal Office  
1155 Emily St.  
Mooretown, ON

Town of Plympton-Wyoming Municipal Office  
546 Niagara St.  
Wyoming ON

Township of Warwick Municipal Office  
6332 Nauvoo Rd.  
RR#8 Watford

Lambton Shores Munipal Office  
19 Ann St.  
Forest ON

The Township of Brooke-Alvinston  
Municipal Office  
3236 River St.  
P.O. Box 28  
Alvinston Ontario

**Complete for all other Categories.**

**Number of Designated Facilities served:**

**Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]**

**Number of Interested Authorities you report to:**

**Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]**

**Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report**

**List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
<b>City of Sarnia Distribution System ( receives SOME of their drinking water also from Enniskillen System)</b>	<b>260003136</b>
<b>Village of Pt. Edward Distribution System</b>	<b>210000924</b>
<b>St. Clair Township Distribution System,</b>	<b>260006464</b>
<b>The Township of Plympton –Wyoming Distribution System</b>	<b>260006594</b>
<b>Warwick-Watford Distribution System</b>	<b>260001799</b>
<b>Township of Brooke-Alvinston Distribution System ( receives SOME of their drinking water also from Enniskillen System)</b>	<b>260040170</b>
<b>Lambton Shores Distribution System ( receives SOME of their drinking water from this system)</b>	<b>260006594</b>

**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 operation.

***West Lambton Pumping Station:*** A two level facility consisting of a valve chamber and housing, pumping station with upstream and downstream 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 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 tower

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

*Emergency water line 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 the North**

West corner of Ipperwash Rd. and Lakeshore Rd. (Ravenswood) 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. Projected time of commissioning is approximately mid April 2005

**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 (when required)  
 Polymer 8103 + filter aid (when required)

**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**

Construction/engineering (on-going 2000-2005) of Residual Management System (\$4,700,000 upon completion)  
 Water distribution line replacement (Campbell St.) /repairs also curbstop/valve/hydrant repairs/replacements. (\$650,000)  
 Restoration of Indian Rd. Tower (interior/exterior coating) (\$320,000)  
 SCADA upgrades (\$250,000)  
 Replacement of filter media (192 m<sup>3</sup> of anthracite) (\$200,000)  
 Diesel switch gear at W.L. Pumping Station (\$150,000)  
 Flag Pole sealant construction (ensure reservoir integrity) (\$75,000)  
 Two MCC pump starters and breakers (High Lift and Low lift) at WTP (\$40,000)  
 Reservoir access (engineering for stairs and gates) (\$25,000)  
 \*Note: all costs are approximate\*

**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
March 24/04	HPC	>1500	cfu/1ml	resample	March 25/04
April 9/04	Unstable pressure	20-30	psi	-Pressure re-stabilized -microbiological	April 9/04

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

				samples collected -chlorine residuals collected	
<b>Oct. 13/04</b>	<b>Low pressure</b>	<b>1-11</b>	<b>psi</b>	-pressure restored -chlorine residuals collected -microbiological samples collected, -mains/pipes flushed	<b>Oct. 13/04</b>

### 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 Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number Of Background Samples	Range of Background Results (#-#)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
<b>Raw</b>	51	0-60	0-200				
<b>Treated</b>	501	0-0	0-0	501	0-2	439	<10 - >1500
<b>Distribution</b>							

### Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)
<b>Turbidity</b>	<b>8760</b>	<b>0.025 - 0.572 NTU</b>
<b>Chlorine (free)</b>	<b>8760</b>	<b>0.86 - 1.88</b>
<b>Fluoride (If the DWS provides fluoridation)</b>	<b>8760</b>	<b>0.09 - 0.79</b>

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

*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, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure

**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**
*Note: ppb = parts per billion = micrograms per litre*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	2004/10/19	<0.6	ppb	No
Arsenic	2004/10/19	<2	ppb	No
Barium	2004/10/19	13	ppb	No
Boron	2004/10/19	13	ppb	No
Cadmium	2004/10/19	<0.1	ppb	No
Chromium	2004/10/19	<3	ppb	No
Lead	2004/10/18	0.5	ppb	No
Mercury	2004/10/19	<0.02	ppb	No
Selenium	2004/10/19	<3	ppb	No
Sodium	2004/01/21	6.4	mg/L	No
Uranium	2004/10/19	0.12	ppb	No
Fluoride	<i>(continuous on-line monitoring)</i>	0.09 - 0.79	mg/L	No
Nitrite	2004/10/19	< 0.005	mg/L	No
Nitrate	2004/10/19	0.285	mg/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	2004/10/19	< 0.11	ppb	No
Aldicarb	2004/10/19	< 0.30	ppb	No
Aldrin + Dieldrin	2004/10/19	< 0.07	ppb	No
Atrazine + N-dealkylated metabolites	2004/10/19	< 0.12	ppb	No
Azinphos-methyl	2004/10/19	< 0.12	ppb	No
Bendiocarb	2004/10/19	< 0.13	ppb	No
Benzene	2004/10/19	< 0.36	ppb	No
Benzo(a)pyrene	2004/10/19	< 0.004	ppb	No
Bromoxynil	2004/10/19	< 0.09	ppb	No
Carbaryl	2004/10/19	< 0.16	ppb	No
Carbofuran	2004/10/19	< 0.37	ppb	No
Carbon Tetrachloride	2004/10/19	< 0.34	ppb	No
Chlordane (Total)	2004/10/19	< 0.11	ppb	No
Chlorpyrifos	2004/10/19	< 0.18	ppb	No
Cyanazine	2004/10/19	< 0.18	ppb	No
Diazinon	2004/10/19	< 0.081	ppb	No
Dicamba	2004/10/19	< 0.17	ppb	No
1,2-Dichlorobenzene	2004/10/19	< 0.56	ppb	No
1,4-Dichlorobenzene	2004/10/19	< 0.25	ppb	No

Dichlorodiphenyltrichloroethane (DDT) + metabolites	2004/10/19	< 0.14	ppb	No
1,2-Dichloroethane	2004/10/19	< 0.32	ppb	No
1,1-Dichloroethylene (vinylidene chloride)	2004/10/19	< 0.52	ppb	No
Dichloromethane	2004/10/19	< 1.17	ppb	No
2-4 Dichlorophenol	2004/10/19	< 0.15	ppb	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2004/10/19	< 0.11	ppb	No
Diclofop-methyl	2004/10/19	< 0.13	ppb	No
Dimethoate	2004/10/19	< 0.12	ppb	No
Dinoseb	2004/10/19	< 0.084	ppb	No
Diquat	2004/10/19	< 1	ppb	No
Diuron	2004/10/19	< 0.871	ppb	No
Glyphosate	2004/10/19	< 6.01	ppb	No
Heptachlor + Heptachlor Epoxide	2004/10/19	< 0.11	ppb	No
Lindane (Total)	2004/10/19	< 0.056	ppb	No
Malathion	2004/10/19	< 0.91	ppb	No
Methoxychlor	2004/10/19	< 0.14	ppb	No
Metolachlor	2004/10/19	< 0.092	ppb	No
Metribuzin	2004/10/19	< 0.12	ppb	No
Monochlorobenzene	2004/10/19	< 0.46	ppb	No
Paraquat	2004/10/19	< 1	ppb	No
Parathion	2004/10/19	< 0.18	ppb	No
Pentachlorophenol	2004/10/19	< 0.15	ppb	No
Phorate	2004/10/19	< 0.11	ppb	No
Picloram	2004/10/19	< 0.2	ppb	No
Polychlorinated Biphenyls(PCB)	2004/10/19	< 0.04	ppb	No
Prometryne	2004/10/19	< 0.23	ppb	No
Simazine	2004/10/19	< 0.15	ppb	No
THM (NOTE: show latest annual average)	2004/01 - 2004/12	37	ppb	No
Temephos	2004/10/19	< 0.31	ppb	No
Terbufos	2004/10/19	< 0.12	ppb	No
Tetrachloroethylene	2004/10/19	< 0.48	ppb	No
2,3,4,6-Tetrachlorophenol	2004/10/19	< 0.14	ppb	No
Triallate	2004/10/19	< 0.1	ppb	No
Trichloroethylene	2004/10/19	< 0.54	ppb	No
2,4,6-Trichlorophenol	2004/10/19	< 0.25	ppb	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	2004/10/19	< 0.14	ppb	No
Trifluralin	2004/10/19	< 0.12	ppb	No
Vinyl Chloride	2004/10/19	< 0.08	ppb	No

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

<b>Parameter</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Date of Sample</b>

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