



**OPTIONAL ANNUAL REPORT TEMPLATE**

<b>Drinking-Water System Number:</b>	<b>210000130</b>
<b>Drinking-Water System Name:</b>	<b>Harrow-Colchester South Water Treatment Plant</b>
<b>Drinking-Water System Owner:</b>	<b>Corporation of the Town of Essex</b>
<b>Drinking-Water System Category:</b>	<b>Large Municipal Residential System</b>
<b>Period being reported:</b>	<b>January 1, 2015 to December 31, 2015</b>

<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 [ ] No [ x ]</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; margin-top: 10px;"> <p>Town of Essex Municipal Office 33 Talbot St. S. Essex, 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; width: 100px; height: 20px; margin: 5px 0;"></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> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div></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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**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>Harrow-Colchester South Distribution System</b>	<b>210000130</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 [ x ] 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 As when requested

**Describe your Drinking-Water System**

A surface water treatment plant, with a rated capacity of 10,228 m<sup>3</sup>/day consisting of:

1. An intake system is a rock-filled timber structure with a vertical steel bellmouth; an installed chlorination solution diffuser ring at bottom of the bellmouth for Zebra Mussel chemical control.
2. A low lift pumping station consisting of an inlet chamber, two screen chambers, two microstrainer chambers and one pump well.
3. A solids contact up-flow clarifier.
4. Two dual media type filters.
5. Chemical storage and feed equipment consisting of a storage tank and two chemical metering pumps.
6. Two clearwells following filters.
7. A two celled, in-ground treated water storage reservoir.
8. A high lift pumping station consisting of one, two-compartment, high lift pump well with three vertical turbine pumps.
9. The Harrow-Colchester South Distribution System supplies water to a population of approximately 8,900 persons. It consists of 145 km of water lines ranging in size from 2" to 14". Operation and maintenance of the system is performed by the Essex Water Department. All regulatory sampling for the Distribution System is conducted by the Ontario Clean Water Agency staff. All water for this system is supplied by the Harrow-Colchester South Water Treatment Plant.

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

1. Clarion A5
2. Polymer
3. Powered Activated Carbon
4. Chlorine Gas
5. Sodium Hypochlorite

Were any significant expenses incurred to?

- Install required equipment



- [ x] Repair required equipment
- [ x] Replace required equipment

**Please provide a brief description and a breakdown of monetary expenses incurred**

Magnetic starter	\$1,396.74
Filter 1 & 2 control valves	\$3,953.38
Low lift pump #4 starter	\$1,272.00
Filter #1 flow control valve. Replacement of butterfly valve	\$4,380.77
Filter #2 flow control valve. Replacement of butterfly valve	\$4,960.80
Roofing and flashing repairs. On high lift area	\$11,518.21
Harrow low lift - electro-pneumatic positioner	\$1,307.62
Exterior brick repair. Replace broken and cracked brick	\$9,412.80
Distribution System: Miscellaneous main line valve and hydrant repairs	\$18,000.00
<b>Total</b>	<b>56,202.32</b>

**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
June 25/15	Physical	No coagulant feed for 16 min.	n/a	Turned Alum Pump to auto. No filter breakthrough observed.	June 25/16

**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 HPC Samples	Range of HPC Results (min #)-(max #)



<b>Raw</b>	52	0 - 50	0 - 230	N/A	N/A
<b>Treated</b>	52	0 - 0	0 - 0	51	<10 - 30
<b>Distribution</b>	338	0 - 0	0 - 0	103	<10 - 30

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

	<b>Number of Grab Samples</b>	<b>Range of Results (min #)-(max #)</b>	<b>Unit of Measure</b>
<b>Turbidity (Plant Effluent)</b>	7440	0.02 – 0.75	NTU
<b>Chlorine (Plant Effluent)</b>	7440	0.84 – 1.59	mg/L
<b>Fluoride (If the DWS provides fluoridation)</b>	N / A		
<b>Chlorine Distribution</b>	309	0.47 - 1.21	<b>mg/L</b>

***NOTE:** For continuous monitors use 7440 as the number of samples.*

**Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.**

<b>Date of legal instrument issued</b>	<b>Parameter</b>	<b>Date Sampled</b>	<b>Result</b>	<b>Unit of Measure</b>
<b>MDWL 029-101 May 24, 2011</b>	<b>Backwash</b>	01/6/15	< 2	mg/L
	<b>Water Decant</b>	02/5/15	2	mg/L
	<b>Suspended Solids</b>	03/3/15	4	mg/L
	<b>Annual Average &lt;25 mg/L</b>	04/8/15	< 2	mg/L
		05/12/15	2	mg/L
		06/3/15	5	mg/L
		07/5/15	< 2	mg/L
		08/11/15	2	mg/L
		09/1/15	2	mg/L
		10/6/15	< 2	mg/L
		11/3/15	4	mg/L
		12/3/15	< 2	mg/L
		<b>Annual Average</b>		<b>2.583</b>

**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	01/14/2015	0.16	ug/L	No
Arsenic	01/14/2015	0.2	ug/L	No
Barium	01/14/2015	13.2	ug/L	No
Boron	01/14/2015	16.6	ug/L	No
Cadmium	01/14/2015	0.008	ug/L	No
Chromium	01/14/2015	0.1	ug/L	No
*Lead	01/14/2015	0.21	ug/L	No
Mercury	01/14/2015	<0.01	ug/L	No
Selenium	01/14/2015	<1.0	ug/L	No
Sodium	01/14/2015	5.190	mg/L	No
Uranium	01/14/2015	0.009	ug/L	No
Fluoride	01/14/2015	<0.06	mg/L	No
Nitrite	01/14/2015	<MDL0.003	mg/L	No
Nitrate	01/14/2015	0.346	mg/L	No
Nitrate+Nitrite (as N)	01/14/2015	0.346	mg/L	No

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

#### Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Unit of Measure	Number of Exceedances
Plumbing	0	0-0	ug/L	None
Distribution	9	0.11-0.54	ug/L	None

#### 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	01/14/2015	<0.02	ug/L	No
Aldicarb	01/14/2015	<0.01	ug/L	No
Aldrin + Dieldrin	01/14/2015	<0.01	ug/L	No
Atrazine + N-dealkylated metabolites	01/14/2015	<0.010	ug/L	No
Azinphos-methyl	01/14/2015	<0.02	ug/L	No
Bendiocarb	01/14/2015	<0.01	ug/L	No
Benzene	01/14/2015	<0.32	ug/L	No
Benzo(a)pyrene	01/14/2015	<0.004	ug/L	No
Bromoxynil	01/14/2015	<0.33	ug/L	No
Carbaryl	01/14/2015	<0.01	ug/L	No

Carbofuran	01/14/2015	<0.01	ug/L	No
Carbon Tetrachloride	01/14/2015	<0.16	ug/L	No
Chlordane (Total)	01/14/2015	<0.01	ug/L	No
Chlorpyrifos	01/14/2015	<0.02	ug/L	No
Cyanazine	01/14/2015	<0.03	ug/L	No
Diazinon	01/14/2015	<0.02	ug/L	No
Dicamba	01/14/2015	<0.2	ug/L	No
1,2-Dichlorobenzene	01/14/2015	<0.41	ug/L	No
1,4-Dichlorobenzene	01/14/2015	<0.36	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	01/14/2015	<0.01	ug/L	No
1,2-Dichloroethane	01/14/2015	<0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	01/14/2015	<0.33	ug/L	No
Dichloromethane	01/14/2015	<0.35	ug/L	No
2-4 Dichlorophenol	01/14/2015	<0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/14/2015	<0.19	ug/L	No
Diclofop-methyl	01/14/2015	<0.4	ug/L	No
Dimethoate	01/14/2015	<0.03	ug/L	No
Dinoseb	01/14/2015	<0.36	ug/L	No
Diquat	01/14/2015	<1.0	ug/L	No
Diuron	01/14/2015	<0.03	ug/L	No
Glyphosate	01/14/2015	<1.0	ug/L	No
Heptachlor + Heptachlor Epoxide	01/14/2015	<0.01	ug/L	No
Lindane (Total)	01/14/2015	<0.01	ug/L	No
Malathion	01/14/2015	<0.02	ug/L	No
Methoxychlor	01/14/2015	<0.01	ug/L	No
Metolachlor	01/14/2015	<0.01	ug/L	No
Metribuzin	01/14/2015	<0.02	ug/L	No
Monochlorobenzene	01/14/2015	<0.3	ug/L	No
Paraquat	01/14/2015	<1.0	ug/L	No
Parathion	01/14/2015	<0.02	ug/L	No
Pentachlorophenol	01/14/2015	<0.15	ug/L	No
Phorate	01/14/2015	<0.01	ug/L	No
Picloram	01/14/2015	<1.0	ug/L	No
Polychlorinated Biphenyls(PCB)	01/14/2015	<0.04	ug/L	No
Prometryne	01/14/2015	<0.03	ug/L	No
Simazine	01/14/2015	<0.01	ug/L	No
THM (NOTE: show latest annual average)	01/14/2015	13	ug/L	No
	04/08/2015	13	ug/L	No
	07/7/2015	21	ug/L	No
	10/07/2015	14	ug/L	No
	Average	15.25	ug/L	No
Temephos	01/14/2015	<0.01	ug/L	No
Terbufos	01/14/2015	<0.01	ug/L	No



<b>Tetrachloroethylene</b>	01/14/2015	<0.35	ug/L	No
<b>2,3,4,6-Tetrachlorophenol</b>	01/14/2015	<0.2	ug/L	No
<b>Triallate</b>	01/14/2015	<0.01	ug/L	No
<b>Trichloroethylene</b>	01/14/2015	<0.44	ug/L	No
<b>2,4,6-Trichlorophenol</b>	01/14/2015	<0.25	ug/L	No
<b>2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)</b>	01/14/2015	<0.22	ug/L	No
<b>Trifluralin</b>	01/14/2015	<0.02	ug/L	No
<b>Bromoform</b>	01/14/2015	0.39	ug/L	No
<b>Bromodichloromethane</b>	01/14/2015	4.8	ug/L	No
<b>Vinyl Chloride</b>	01/14/2015	<0.17	ug/L	No
<b>Chlorform</b>	01/14/2015	4.1	ug/L	No
<b>Dibromochloomethane</b>	01/14/2015	3.5	ug/L	No
<b>Desethyl atrazine</b>	01/14/2015	0.01	ug/L	No
<b>a-chlordane</b>	01/14/2015	0.01	ug/L	No
<b>g-chlorane</b>	01/14/2015	0.01	ug/L	No
<b>Oxychlordane</b>	01/14/2015	0.01	ug/L	No
<b>Op-DDT</b>	01/14/2015	0.01	ug/L	No
<b>pp-DDD</b>	01/14/2015	0.01	ug/L	No
<b>pp-DDE</b>	01/14/2015	0.01	ug/L	No
<b>pp-DDT</b>	01/14/2015	0.01	ug/L	No
<b>Heptachlor</b>	01/14/2015	0.01	ug/L	No
<b>Heptachlor epoxide</b>	01/14/2015	0.01	ug/L	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>
<b>None</b>			