



OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	220003332
Drinking-Water System Name:	Wheatley Drinking Water System
Drinking-Water System Owner:	Municipality of Chatham-Kent
Drinking-Water System Category:	Large Municipal
Period being reported:	January 1 – December 31, 2016

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Chatham-Kent P.U.C. 325 Grand Ave. East P.O. Box 1191 Chatham, ON N7M 5L8</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">N/A</div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">N/A</div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</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:

Drinking Water System Name	Drinking Water System Number
3 rd &4 th Concession Waterline Association	260086203
Richardson Sideroad Waterline Association	260086190
Cedar Inn Waterline Association	260086177
Tecumseh Road Waterline Association	260086151
Tilbury Townline Waterline Association	260086164
3 rd Concession Waterline Association	260086125
KOA Waterline Association	260086138
Leamington (Wheatley) Distribution System	260087048
D & O Waterline Association	260091793
Mint Waterline Distribution System	260091767



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

The Wheatley Water Treatment Plant draws raw water from Lake Erie. Large debris is screened out of the raw water as it is drawn into the treatment plant. Chlorine is added at the raw intake to control the growth of zebra mussels within the intake pipe. The raw water then passes through a 35 micron microstrainer to remove algae and other fine particles. Aluminum Sulphate and Polymer are added to achieve more effective settling in the clarifier. Activated carbon is added in the clarifier and is primarily used to remove dissolved organic matter that causes taste, odor and color in drinking water. The water then passes through the gravity filters into the clearwell, where it is disinfected with chlorine before being pumped into the distribution system. The distribution system pressure is regulated by an elevated storage tower in Wheatley, with a capacity of 1454 m³. The elevated storage tower in the community of Tilbury has a capacity of 6181 m³.

List all water treatment chemicals used over this reporting period

1. Chlorine Gas
2. Sodium Hypochlorite
3. Aluminum Sulphate
4. Activated Carbon
5. Betz Dearborn Klar-Aid IC1179 (Polymer).

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

Chlorine analyzer maintenance	\$1,031
Turbidity analyzer maintenance	\$2,357
Elevated tank safety upgrades	\$3,150
Chemical metering pump	\$4,478
Filter maintenance	\$7,450
On-line analyzers	\$8,200
Low lift & high lift pump maintenance	\$10,636
Clarifier maintenance	\$10,825
Elevated tank inspections, repairs and safety system change out	\$56,840
SCADA/PLC upgrade	\$420,000

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
May 31	Total Coliform in a Point of Entry sample	1	cfu/100 mL	Resample/re-test	May 31 & June 1
Aug 16	Leamington (Wheatley) DS SS3 Milo Road Total coliform	6	cfu/100	Resample/re-test	Aug 15
Sept 13	Leamington (Wheatley) DS SS1 Mersea Rd 1 Total coliform	>150	cfu/100	Resample/re-test	Sept 12
October 25	Total Coliforms in a Distribution Sample	10	cfu/100 mL	Resample/re-test	October 25
October 26	Total Coliform in a Distribution Sample	1	cfu/100 mL	Resample/re-test	October 26

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 #)
Raw	52	0 - NDOGN	0 - NDOGN	NA	
Treated	52	0 - 0	0 - 1	52	<10 - 10
Distribution	431	0 - 0	0 - 10	341	<10 - 150



*NDOGN – No Data Overgrown with Non Targeted Organisms

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 #)
Turbidity	8760	0.017 – 0.210
Chlorine	8760	1.22 – 2.23
Fluoride (If the DWS provides fluoridation)	N/A	N/A

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
MDWL 027-102: Pg. 12 Residue Management Table 3 Avg Annual Limit: 25 mg/L	Total Suspended Solids	Jan	10	
		Feb	2	
		Mar	5	
		Apr	18	
		May	6	
		Jun	2	
		Jul	9	
		Aug	10	
		Sept	5	
		Oct	2	
		Nov	10	
		Dec	3	
			Annual Avg Concentration	

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

*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

	Sample Date Feb 16/16	Sample Date May 9/16	Sample Date Aug 22/16	Sample Date Nov 14/16	Exceedance
Antimony – ug/L			ND		No
Arsenic – ug/L			ND		No
Barium – ug/L			18		No
Boron – ug/L			18		No
Cadmium – ug/L			ND		No
Chromium – ug/L			ND		No
Lead – ug/L	See Schedule 15.1 Summary				
Mercury – mg/L			ND		No
Selenium- ug/L			ND		No
Sodium – mg/L	8.6	8.5	8.7	9.2	No
Uranium – ug/L			ND		No
Fluoride – mg/L	ND	ND	ND	ND	No
Nitrate – mg/L	0.18	0.12	0.14	ND	No
Nitrite – mg/L	ND	ND	ND	ND	No

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 #)	Number of Exceedances
Residential	NA		
Non Residential	NA		
Distribution	NA		

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

Parameter	Sample Date	Results Value	Units in ug/L	Exceedance
Alachlor	Aug 22/16	ND	YES	NO
Atrazine + N-dealkylated metabolites	Aug 22/16	ND	YES	NO
Azinphos - methyl	Aug 22/16	ND	YES	NO
Benzene	Aug 22/16	ND	YES	NO
Benzo(a)pyrene	Aug 22/16	ND	YES	NO
Bromoxynil	Aug 22/16	ND	YES	NO
Carbaryl	Aug 22/16	ND	YES	NO
Carbofuran	Aug 22/16	ND	YES	NO
Carbon Tetrachloride	Aug 22/16	ND	YES	NO
Chloropyrifos	Aug 22/16	ND	YES	NO
Diazinon	Aug 22/16	ND	YES	NO
Dicamba	Aug 22/16	ND	YES	NO
1,2 - Dichlorobenzene	Aug 22/16	ND	YES	NO
1,4 - Dichlorobenzene	Aug 22/16	ND	YES	NO
1,2 - Dichloroethane	Aug 22/16	ND	YES	NO
1,1- Dichloroethylene (vinylidenechloride)	Aug 22/16	ND	YES	NO
Dichloromethane	Aug 22/16	ND	YES	NO
2,4 - Dichlorophenol	Aug 22/16	ND	YES	NO
2,4 - Dichlorophenoxy acetic acid (2,4 - D)	Aug 22/16	ND	YES	NO
Diclofop - methyl	Aug 22/16	ND	YES	NO
Dimethoate	Aug 22/16	ND	YES	NO
Diquat	Aug 22/16	ND	YES	NO
Diuran	Aug 22/16	ND	YES	NO
Glyphosate	Aug 22/16	ND	YES	NO
Malathion	Aug 22/16	ND	YES	NO
Metolachlor	Aug 22/16	ND	YES	NO
Metribuzin	Aug 22/16	ND	YES	NO
Monochlorobenzene (chlorobenzene)	Aug 22/16	ND	YES	NO
Paraquat	Aug 22/16	ND	YES	NO
Pentachlorophenol	Aug 22/16	ND	YES	NO
Phorate	Aug 22/16	ND	YES	NO
Picloram	Aug 22/16	ND	YES	NO
Polychlorinated Byphenyls (PCB)	Aug 22/16	ND	YES	NO
Prometryne	Aug 22/16	ND	YES	NO
Simazine	Aug 22/16	ND	YES	NO
Trihalomethanes – sampled quarterly	Feb 16/16	21.8	YES	NO



Running Annual Average	May 9/16 Aug 22/16 Nov 14/16	32.8 52.9 43.9 37.9		
Terbufos	Aug 22/16	ND	YES	NO
Tetrachloroethylene (perchloroethylene)	Aug 22/16	ND	YES	NO
2,3,4,6 - Tetrachlorophenol	Aug 22/16	ND	YES	NO
Triallate	Aug 22/16	ND	YES	NO
Trichloroethylene	Aug 22/16	ND	YES	NO
2,4,6 - Trichlorophenol	Aug 22/16	ND	YES	NO
Trifluralin	Aug 22/16	ND	YES	NO
Vinyl Chloride	Aug 22/16	ND	YES	NO
MPCA	Aug 22/16	ND	YES	NO

ADDITIONAL

Parameter- POINT OF ENTRY	Sample Date Feb 16/16	Sample Date May 9/16	Sample Date Aug 22/16	Sample Date Nov 14/16
pH	7.42	7.59	7.35	7.60
HARDNESS – mg/L	110	110	110	110
ALKALINITY – mg/L	76	76	82	75
COLOUR - TCU	ND	ND	ND	ND
FLUORIDE – mg/L	ND	ND	ND	ND
ALUMINUM –mg/L	0.008	0.018	0.018	0.021

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
None			

Summary of additional voluntary sampling and testing during this reporting period.

Parameter	Date Sampled	Results Value Raw	Results Value Point of Entry	Results Value Distribution	Units
Microcystin	June 6	<0.15	<0.15	<0.15	ug/L
Microcystin	June 13	0.30	0.22	<0.15	ug/L
Microcystin	June 20	<0.15	<0.15	<0.15	ug/L
Microcystin	June 27	<0.15	<0.15	<0.15	ug/L
Microcystin	July 4	<0.15	<0.15	<0.15	ug/L
Microcystin	July 11	<0.15	<0.15	<0.15	ug/L
Microcystin	July 18	<0.15	<0.15	<0.15	ug/L
Microcystin	July 25	<0.15	<0.15	<0.15	ug/L
Microcystin	Aug 2	<0.15	<0.15	<0.15	ug/L
Microcystin	Aug 8	<0.15	<0.15	<0.15	ug/L
Microcystin	Aug 15	<0.15	<0.15	<0.15	ug/L
Microcystin	Aug 22	<0.15	Broken Bottle	<0.15	ug/L
Microcystin	Aug 29	<0.15	<0.15	<0.15	ug/L
Microcystin	Sept 6	<0.15	<0.15	<0.15	ug/L
Microcystin	Sept 12	<0.15	<0.15	<0.15	ug/L
Microcystin	Sept 19	<0.15	<0.15	<0.15	ug/L
Microcystin	Sept 26	<0.15	<0.15	<0.15	ug/L
Microcystin	Oct 3	0.17	<0.15	0.16	ug/L
Microcystin	Oct 11	<0.15	<0.15	<0.15	ug/L
Microcystin	Oct 17	<0.15	<0.15	<0.15	ug/L
Microcystin	Oct 24	<0.15	<0.15	<0.15	ug/L
Microcystin	Oct 31	<0.15	<0.15	<0.15	ug/L
Microcystin	Nov 7	0.16	0.21	0.21	ug/L
Microcystin	Nov 14	<0.15	<0.15	<0.15	ug/L
Microcystin	Nov 21	<0.15	<0.15	<0.15	ug/L
Microcystin	Nov 28	<0.15	<0.15	<0.15	ug/L