



OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	260024999
Drinking-Water System Name:	South Chatham-Kent Drinking Water System
Drinking-Water System Owner:	Municipality of Chatham-Kent
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January - December 2017

<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 PUC Office 325 Grand Ave E 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; width: 100px; height: 20px; margin: 5px 0;"></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: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div></p> <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
None	

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

Surface water for the South Chatham-Kent Drinking Water System is obtained from Lake Erie via an intake pipe and a raw water pumping station. The Kent County Raw Water Pumping Station supplies both the South Chatham-Kent Water Treatment Plant and the Chatham Water Treatment Plant with raw water. Raw water from the pumping station is pumped to the South Chatham-Kent Water Treatment Plant and is passed through microstrainers for fine particulate removal. Filtration is then provided by a dual train membrane filtration system equipped with hollow fiber membrane modules for 0.2 micron removal. Filtered water from the membrane units is then passed through granular activated carbon filters for taste and odour control. Filtered water is then disinfected with chlorine gas. Hydrofluosilicic acid is also added as an aid in the prevention of tooth decay. Filtered water is then discharged to the contact chambers and subsequently to the high lift pump well. Treated water from the high lift pump well is discharged by the high lift pumps to the distribution system. The distribution system for the South Chatham-Kent Drinking Water System also includes a reservoir/booster station and an elevated tank, both located in Blenheim, for the storage and supply of water to the system.

List all water treatment chemicals used over this reporting period

1. Chlorine Gas
2. Hydrofluosilicic Acid



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

Raw Water Intake Inspection.....	\$4,000
Chlorine Analyser Probe Replacement.....	\$5,164
Variable Frequency Drive For Highlift Pump.....	\$20,574
Low Lift Pump Rebuild.....	\$81,255
PLC & Software Upgrades.....	\$101,535
Granular Activated Carbon Replacement.....	\$154,471
Travelling Screen Replacement.....	\$242,270

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
August 4, 2017	Loss of distribution system pressure	< 20	psi	Boil Water Advisory Issued, Mains/Pipes Flushed, Sampling/Testing	August 4 & 5, 2017
August 16, 2017	Low distribution system pressure	< 20	psi	Sampling/Testing	August 16 & 17, 2017
December 5, 2017	E. Coli, Total Coliforms in a Point of Entry sample	2 25	cfu/100mL	Flush, Re-sample	December 5 & 6, 2017

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 – 40	0 – 1500	NA	NA
Treated	53	0 – 2	0 – 25	53	<10 – 70
Distribution	468	0 – 0	0 – 0	468	<10 – 330

* NDOGN – No Data Overgrown With Non Target Organisms

** NDOGT – No Data Overgrown With Target 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	0.0002 – 0.429 NTU
Chlorine	8760	0.55 – 4.30 mg/L
Fluoride (If the DWS provides fluoridation)	8760	0.64 – 0.77 mg/L

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 2015	Result	Unit of Measure
Municipal Drinking Water Licence # 027-102 Table 3 and Table 7 Limit: 25 mg/L	Residue Management Suspended Solids	Jan 30, 2017	56	mg/L
		Feb 27, 2017	9	
		Mar 27, 2017	1	
		Apr 24, 2017	21	
		May 29, 2017	21	
		Jun 26, 2017	27	
		Jul 24, 2017	17	
		Aug 28, 2017	6	
		Sep 25, 2017	9	
		Oct 30, 2017	15	
		Nov 27, 2017	27	
		Dec 27, 2017	4	

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	Jan.16, 2017	ND	ug/L	No
Arsenic	Jan.16, 2017	ND	ug/L	No
Barium	Jan.16, 2017	12	ug/L	No
Boron	Jan.16, 2017	19	ug/L	No
Cadmium	Jan.16, 2017	ND	ug/L	No
Chromium	Jan.16, 2017	ND	ug/L	No
*Lead	See Schedule 15.1 Summary			
Mercury	Jan.16, 2017	ND	ug/L	No
Selenium	Jan.16, 2017	ND	ug/L	No
Sodium	Jan.16, 2017	8.1	mg/L	No
Uranium	Jan.16, 2017	0.36	ug/L	No
Fluoride	Continuous Monitoring Required: See Operational Section			
Nitrite	October 16, 2017	<0.010	mg/L	No
Nitrate	October 16, 2017	0.17	mg/L	No
Nitrite + Nitrate	October 16, 2017	0.17	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 ug/L (min#) – (max #)	Number of Exceedances / Adverses
Residential	NA	NA	0
Non-Residential	NA	NA	0
Distribution	8	0.50 – 0.62	0

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	Jan.16, 2017	ND	ug/L	No
Atrazine	Jan.16, 2017	ND	ug/L	No
Des-ethyl-atrazine	Jan.16, 2017	ND	ug/L	No
Atrazine + Des-ethyl-atrazine	Jan.16, 2017	ND	ug/L	No
Atrazine + N-dealkylated metabolites	Jan.16, 2017	ND	ug/L	No
Azinphos-methyl	Jan.16, 2017	ND	ug/L	No
Benzene	Jan.16, 2017	ND	ug/L	No
Benzo(a)pyrene	Jan.16, 2017	ND	ug/L	No
Bromoxynil	Jan.16, 2017	ND	ug/L	No
Carbaryl	Jan.16, 2017	ND	ug/L	No
Carbofuran	Jan.16, 2017	ND	ug/L	No
Carbon Tetrachloride	Jan.16, 2017	ND	ug/L	No
Chlorpyrifos (Dursban)	Jan.16, 2017	ND	ug/L	No
Diazinon	Jan.16, 2017	ND	ug/L	No
Dicamba	Jan.16, 2017	ND	ug/L	No
1,2-Dichlorobenzene	Jan.16, 2017	ND	ug/L	No
1,4-Dichlorobenzene	Jan.16, 2017	ND	ug/L	No
1,2-Dichloroethane	Jan.16, 2017	ND	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan.16, 2017	ND	ug/L	No
Dichloromethane	Jan.16, 2017	ND	ug/L	No
2-4-D	Jan.16, 2017	ND	ug/L	No
2-4 Dichlorophenol	Jan.16, 2017	ND	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan.16, 2017	ND	ug/L	No
Diclofop-methyl	Jan.16, 2017	ND	ug/L	No
Dimethoate	Jan.16, 2017	ND	ug/L	No
Diquat	Jan.16, 2017	ND	ug/L	No
Diuron	Jan.16, 2017	ND	ug/L	No
Glyphosate	Jan.16, 2017	ND	ug/L	No

Haloacetic Acids (NOTE: show latest annual average) 2017 - Distribution Sample Locations Middle Line and Ella – Jan. 16, 2017 Middle Line and Ella – Apr. 10, 2017 5379 Hoy Line – Jul. 10, 2017 401 Business Park - Oct. 10, 2017 2017 Avg	Jan 16, 2017 Apr 10, 2017 Jul 10, 2017 Oct 16, 2017 2017 Avg	11.0 5.0 29.0 20.0 16.3	ug/L	No
Malathion	Jan.16, 2017	ND	ug/L	No
2 Methal-4-chlorophenoxyacetic acid (MCPA)	Jan.16, 2017	ND	mg/L	No
Metolachlor	Jan.16, 2017	ND	ug/L	No
Metribuzin (Sencor)	Jan.16, 2017	ND	ug/L	No
Monochlorobenzene	Jan.16, 2017	ND	ug/L	No
Paraquat	Jan.16, 2017	ND	ug/L	No
Pentachlorophenol	Jan.16, 2017	ND	ug/L	No
Phorate	Jan.16, 2017	ND	ug/L	No
Picloram	Jan.16, 2017	ND	ug/L	No
Polychlorinated Biphenyls(PCB)	Jan.16, 2017	ND	ug/L	No
Prometryne	Jan.16, 2017	ND	ug/L	No
Simazine	Jan.16, 2017	ND	ug/L	No
Temephos	Jan.16, 2017	ND	ug/L	No
Tetrachloroethylene	Jan.16, 2017	ND	ug/L	No
Terbufos	Jan.16, 2017	ND	ug/L	No
Tetrachloroethylene	Jan.16, 2017	ND	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan.16, 2017	ND	ug/L	No
THM (NOTE: show latest annual average)	Jan 16, 2017 Apr 10, 2017 Jul 10, 2017 Oct 16, 2017 2017 Avg	22.5 1.71 39.0 28.9 23.0	ug/L	No
Toluene	Jan.16, 2017	ND	ug/L	No
Triallate	Jan.16, 2017	ND	ug/L	No
Trichloroethylene	Jan.16, 2017	ND	ug/L	No
2,4,6-Trichlorophenol	Jan.16, 2017	ND	ug/L	No
Trifluralin	Jan.16, 2017	ND	ug/L	No
Vinyl Chloride	Jan.16, 2017	ND	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.

Parameter	Result Value	Unit of Measure	Date of Sample
None			

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

Parameter	Sample Date	Result: Raw – Before Treatment	Result: Point of Entry	Result: Distribution	Unit of Measure
Microcystin	May 29, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	June 5, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	June 12, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	June 19, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	June 26, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	July 4, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	July 10, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	July 17, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	July 24, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	July 31, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	August 8, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	August 14, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	August 21, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	August 28, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	September 5, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	September 11, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	September 18, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	September 25, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	October 2, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	October 10, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	October 16, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	October 23, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	October 30, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	November 6, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	November 14, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	November 20, 2017	<0.150	<0.150	<0.150	ug/L
Microcystin	November 27, 2017	0.249	<0.150	<0.150	ug/L