



ANNUAL REPORT

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 1 – December 31, 2019

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.

Chatham-Kent PUC Office 325 Grand Ave E Box 1191 Chatham, ON N7M 5L8
--

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 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 passed through granular activated carbon filters for taste and odour control. Filtered water is disinfected with chlorine gas. Hydrofluosilicic acid is also added as an aid in the prevention of tooth decay. Filtered water is 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

Main Hydro Feed Upgrade	\$ 1,300,000
Membrane Modules Replacement	120,000
Low Lift #1 Full Pump Rebuild	100,000
SCADA Upgrades and Programing	100,000
Low Lift #5 Motor Rebuild	70,000
Reservoir Pump Replacement	30,000
Blenheim Reservoir MCC/Transformer	20,000
Air Compressor Service	10,000
Raw Water Chlorinator Replacement	10,000
Chlorine Probe Replacement	6,000

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
June 10	Total Coliform	18 & 29	cfu/100mL	Resample and test	June 12
July 16	Total Coliform	1	cfu/100mL	Resample and test	July 17
July 22	Total Coliform	9	cfu/100mL	Resample and test	July 25
July 22	Total Coliform	28	cfu/100mL	Resample and test	July 25
September 10	Total Coliform	1	cfu/100mL	Resample and test	September 11

Microbiological testing done under the Schedule 10 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	53	0 – NDOGT	0 – NDOGT	0	
Treated	53	0 – 0	0 – 0	53	<10 – 20
Distribution	477	0 – 0	0 – 29	477	<10 – 60

**** NDOGT – No Data Overgrown with Target Organisms**

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

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity Filters	8760	0.0002 – 0.864 NTU
Chlorine After Clearwell #2	8760	0.99 – 3.25 mg/L
Fluoride (Provided)	8760	0.08 – 1.02 mg/L

NOTE: For continuous monitors use 8760 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.

Date of legal instrument issued	Parameter	Jan 28 Result	Feb 4 Result	Mar 4 Result	Apr 1 Result	May Result	Jun Result	Jul Result	Aug Result	Sept Result	Oct Result	Nov Result	Dec Result
Municipal Drinking Water License # 027-102 Pages 12 & 15 Tables 3 & 7 Annual Average Concentration Limit: 25 mg/L	Residue Management: Total Suspended Solids (mg/L)	9	10	10	10	7	2	15	9	12	35	13	14
		Annual Average: 12.2											

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 14	<0.50	ug/L	No
Arsenic	Jan 14	<1.0	ug/L	No
Barium	Jan 14	18	ug/L	No
Boron	Jan 14	16	ug/L	No
Cadmium	Jan 14	<0.10	ug/L	No
Chromium	Jan 14	<5.0	ug/L	No
*Lead	See Schedule 15.1 Summary			
Mercury	Jan 14	<0.0001	ug/L	No
Selenium	Jan 14	<2.0	ug/L	No
Sodium	Jan 14	9.2	mg/L	No
Uranium	Jan 14	0.38	ug/L	No
Fluoride	Continuous Monitoring Required: See Operational Section			
Nitrite	Oct 21	<0.010	mg/L	No
Nitrate	Oct 21	<0.10	mg/L	No
Nitrite + Nitrate	Oct 21	<0.10	mg/L	No

Summary of lead testing under Schedule 15.1 during this reporting period

Location Type	Number of Samples	Range of Lead Results ug/L (min#) – (max #)	Number of Exceedances / Adverses
Residential	0		
Non-Residential	0		
Distribution	8	<0.50 – 3.1	0

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

Parameter	Sample Date	Result Value	MAC Limits	Unit of Measure	Exceedance
Alachlor	Jan 14	<0.50	5	ug/L	No
Atrazine + N-dealkylated metabolites	Jan 14	<1.0	5	ug/L	No
Azinphos-methyl	Jan 14	<2.0	20	ug/L	No
Benzene	Jan 14	<0.10	1	ug/L	No
Benzo(a)pyrene	Jan 14	<0.0090	0.01	ug/L	No
Bromoxynil	Jan 14	<0.50	5	ug/L	No
Carbaryl	Jan 14	<5.0	90	ug/L	No
Carbofuran	Jan 14	<5.0	90	ug/L	No
Carbon Tetrachloride	Jan 14	<0.10	2	ug/L	No
Chlorpyrifos (Dursban)	Jan 14	<1.0	90	ug/L	No
Diazinon	Jan 14	<1.0	20	ug/L	No
Dicamba	Jan 14	<1.0	120	ug/L	No
1,2-Dichlorobenzene	Jan 14	<0.20	200	ug/L	No
1,4-Dichlorobenzene	Jan 14	<0.20	5	ug/L	No
1,2-Dichloroethane	Jan 14	<0.20	5	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan 14	<0.10	14	ug/L	No
Dichloromethane	Jan 14	<0.50	50	ug/L	No
2-4 Dichlorophenol	Jan 14	<0.25	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 14	<1.0	100	ug/L	No
Diclofop-methyl	Jan 14	<0.90	9	ug/L	No
Dimethoate	Jan 14	<2.5	20	ug/L	No
Diquat	Jan 14	<7.0	70	ug/L	No
Diuron	Jan 14	<10	150	ug/L	No
Ethylbenzene	Jan 14	<0.10	140	ug/L	No
Glyphosate	Jan 14	<10	280	ug/L	No
Haloacetic Acids (HAA)	Jan 14 Apr 17 Jul 15 Oct 21	48 14 16 21	-	ug/L	No
Running Annual Average: 25.8	Oct 21 (lab dup)	29			
Malathion	Jan 14	<5.0	190	ug/L	No
2 Methyl-4-chlorophenoxyacetic acid (MCPA)	Jan 14	<10	100	ug/L	No



Metolachlor	Jan 14	<0.50	190	ug/L	No
Metribuzin (Sencor)	Jan 14	<5.0	80	ug/L	No
Monochlorobenzene	Jan 14	<0.10	80	ug/L	No
Paraquat	Jan 14	<1.0	10	ug/L	No
Pentachlorophenol	Jan 14	<0.50	60	ug/L	No
Phorate	Jan 14	<0.50	2	ug/L	No
Picloram	Jan 14	<5.0	190	ug/L	No
Polychlorinated Biphenyls(PCB)	Jan 14	<0.05	3	ug/L	No
Prometryne	Jan 14	<0.25	1	ug/L	No
Simazine	Jan 14	<1.0	10	ug/L	No
Terbufos	Jan 14	<0.50	1	ug/L	No
Tetrachloroethylene	Jan 14	<0.10	10	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan 14	<0.50	100	ug/L	No
Trihalomethanes (THM)	Jan 14	18.3	100	ug/L	No
	Apr 15	20.0			
	Jul 15	38.9			
	Oct 21	29.9			
Running Annual Average: 26.8					
Toluene	Jan 14	<0.20	60	ug/L	No
Triallate	Jan 14	<1.0	230	ug/L	No
Trichloroethylene	Jan 14	<0.10	5	ug/L	No
2,4,6-Trichlorophenol	Jan 14	<0.50	5	ug/L	No
Trifluralin	Jan 14	<1.0	45	ug/L	No
Vinyl Chloride	Jan 14	<0.20	1	ug/L	No
Xylenes	Jan 14	<0.10	90	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	Unit of Measure
Microcystin	May 27	<0.150	<0.150	ug/L
	Jun 3	<0.150	<0.150	
	Jun 10	<0.150	<0.150	
	Jun 17	<0.150	<0.150	
	Jun 24	<0.150	<0.150	
	Jul 2	<0.150	<0.150	
	Jul 8	<0.150	<0.150	
	Jul 15	<0.150	<0.150	
	Jul 22	<0.150	<0.150	
	Jul 29	<0.150	<0.150	
	Aug 6	<0.150	<0.150	
	Aug 12	<0.150	<0.150	
	Aug 19	<0.150	<0.150	
	Aug 26	<0.150	<0.150	
	Sept 3	<0.150	<0.150	
	Sept 9	<0.150	<0.150	
	Sept 16	<0.150	<0.150	
	Sept 23	<0.150	<0.150	
	Sept 30	<0.150	<0.150	
	Oct 7	<0.150	<0.150	
Oct 15	<0.150	<0.150		
Oct 21	<0.150	<0.150		
Oct 28	<0.150	<0.150		