



ANNUAL REPORT

Drinking-Water System Number:	220003369
Drinking-Water System Name:	Ridgetown Drinking Water System
Drinking-Water System Owner:	Municipality of Chatham-Kent
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January - December 2019

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

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

Ground water for the Ridgetown Drinking Water System is obtained through seven deep wells. The drinking water system is comprised of two treatment facilities, one located on Erie Street South and the other located on Scane Road.

The three wells, Well #1- Colby, Well #2 - Hitch, and Well #3A- Harris, supply raw water from submersible well pumps through a common pipe to the treatment system at the Erie Street site. Water from these wells is disinfected with sodium hypochlorite and then passed through a cascade aerator for methane gas reduction before being discharged into reservoirs on site. Treated water from the North and South reservoirs is subsequently discharged to the distribution system by high lift pumps.

The four Scane Wells, S1, S4, S5, and S7, supply raw water from submersible well pumps through a common pipe to the treatment system at the Scane Road site. Water from these wells is disinfected with sodium hypochlorite and then passed through a cascade aerator for methane gas reduction before being discharged into the reservoir on site. Treated water from the reservoir is subsequently discharged to the distribution system by high lift pumps.

The distribution system for the Ridgetown Drinking Water System also includes an elevated tank for the storage and supply of water to the system.

Fluoride is naturally occurring in the source water in concentrations greater than the 1.5 mg/L Ontario Drinking Water Quality Standard. Sodium is also naturally occurring in the source water in concentrations greater than the 20 mg/L aesthetic objective.

List all water treatment chemicals used over this reporting period

1. Sodium Hypochlorite

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

PLC Upgrade	\$ 7,000
Meter Replacement (Scane Treated)	6,100
Chemical Feed Pump Replacement	5,800
Meter Replacement (Scane Well 7)	3,900
Meter Replacement (Scane Well 5)	3,800
Flowmeter Verifications	3,500
HIRBPS Remote Camera Inspection	2,400
Analyzer Verifications	1,600
Chemical Feed Pump Kits	1,400
Lab Supplies	1,390
Lock Replacements	1,340
Singer Valve Kits	630
Hydrant Pump Replacement	500

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
January 18	Point of Entry Erie - Fluoride	1.9	mg/L	Resample, Retest	Jan 21
January 18	Point of Entry Scane - Fluoride	1.9	mg/L	Resample, Retest	Jan 21
March 31	Distribution System Pressure	<20	PSI	Self Corrected (once grid power returned), Addition of 30hp Emerg. Pump, Replacement of 15hp pump with 30hp pump, Addition of 4 th pump	Mar 31 Sep 05 Nov 12 Dec 02
July 29	Point of Entry Erie - Total Coliform	1	cfu/100 mL	Flush, Resample, Retest	Jul 31
September 23	Point of Entry Erie - Total Coliform	1	cfu/100 mL	Flush, Resample, Retest	Sep 25
December 19	Distribution System - Sodium	71	mg/L	Resample, Retest	Dec 20
December 19	Distribution System - Sodium	72	mg/L	Resample, Retest	Dec 20
December 19	Distribution System - Sodium	71	mg/L	Resample, Retest	Dec 20
December 19	Distribution System - Sodium	72	mg/L	Resample, Retest	Dec 20

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 Each Well	359	0 – 0	0 – 6	0	
Treated POE (Scane & Erie)	106	0 – 0	0 – 1	106	<10 - 30
Distribution	319	0 – 0	0 – 0	319	<10 - 2000

**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 Raw (Each Well)	288	0.140 – 0.920 NTU
Chlorine POE (Scane & Erie)	8760	0.37 – 2.50 mg/L
Fluoride	Fluoride Naturally Occurring	

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	Date Sampled 2019	Result Erie	Result Scane	Unit of Measure
June 26, 2003 letter from C-K Health Unit	Point of Entry - Fluoride H.U. Frequency: Annually	Jan 14, 2019	1.9	1.9	mg/L

Summary of Inorganic parameters tested during this reporting period or the most recent sample results. Sampled every 3 years under Schedule 13-2(1)(b).

Parameter	Sample Date	Result Value Erie	Result Value Scane	Unit of Measure	Exceedance
Antimony	Jan 14, 2019	<0.50	<0.50	ug/L	No
Arsenic	Jan 14, 2019	<1.0	<1.0	ug/L	No
Barium	Jan 14, 2019	115	180	ug/L	No
Boron	Jan 14, 2019	960	960	ug/L	No
Cadmium	Jan 14, 2019	<0.10	<0.10	ug/L	No
Chromium	Jan 14, 2019	<5.0	<5.0	ug/L	No
*Lead	See Schedule 15.1 Summary				
Mercury	Jan 14, 2019	<0.1	<0.1	ug/L	No
Selenium	Jan 14, 2019	<2.0	<2.0	ug/L	No
Sodium	Jan 14, 2019	66	67	mg/L	Yes - Reported Dec 19, 2019 AWQI # 149305, 149306, 149307 & 149308
Uranium	Jan 14, 2019	<0.10	<0.10	ug/L	No
Fluoride	Jan 21, 2019	1.8	1.8	mg/L	Yes - Reported Jan 18, 2019 AWQI # 144561 & 144562
Nitrite	Jul 15, 2019	<0.010	<0.010	mg/L	No
Nitrate	Jul 15, 2019	<0.10	<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	9	<0.50 – 1.3	0

Summary of Organic parameters sampled during this reporting period or the most recent sample results. Sampled every 3 years under Schedule 13-4(1)(b).

Parameter	Sample Date	Result Value Erie	Result Value Scane	MAC Limits	Unit of Measure	Exceedance
Alachlor	Jan 14, 2019	<0.5	<0.5	5	ug/L	No
Atrazine + N-dealkylated metabolites	Jan 14, 2019	<1.0	<1.0	5	ug/L	No
Azinphos-methyl	Jan 14, 2019	<2.0	<2.0	20	ug/L	No
Benzene	Jan 14, 2019	<0.10	<0.10	1	ug/L	No



Benzo(a)pyrene	Jan 14, 2019	<0.0090	<0.0090	0.01	ug/L	No
Bromoxynil	Jan 14, 2019	<0.5	<0.5	5	ug/L	No
Carbaryl	Jan 14, 2019	<5.0	<5.0	90	ug/L	No
Carbofuran	Jan 14, 2019	<5.0	<5.0	90	ug/L	No
Carbon Tetrachloride	Jan 14, 2019	<0.10	<0.10	2	ug/L	No
Chlorpyrifos (Dursban)	Jan 14, 2019	<1.0	<1.0	90	ug/L	No
Diazinon	Jan 14, 2019	<1.0	<1.0	20	ug/L	No
Dicamba	Jan 14, 2019	<1.0	<1.0	120	ug/L	No
1,2-Dichlorobenzene	Jan 14, 2019	<0.20	<0.20	200	ug/L	No
1,4-Dichlorobenzene	Jan 14, 2019	<0.20	<0.20	5	ug/L	No
1,2-Dichloroethane	Jan 14, 2019	<0.20	<0.20	5	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan 14, 2019	<0.10	<0.10	14	ug/L	No
Dichloromethane	Jan 14, 2019	<0.50	<0.50	50	ug/L	No
2,4 Dichlorophenol	Jan 14, 2019	<0.25	<0.25	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 14, 2019	<1.0	<1.0	100	ug/L	No
Diclofop-methyl	Jan 14, 2019	<0.90	<0.90	9	ug/L	No
Dimethoate	Jan 14, 2019	<2.5	<2.5	20	ug/L	No
Diquat	Jan 14, 2019	<7.0	<7.0	70	ug/L	No
Diuron	Jan 14, 2019	<10	<10	150	ug/L	No
Ethylbenzene	Jan 14, 2019	<0.10	<0.10	140	ug/L	No
Glyphosate	Jan 14, 2019	<10	<10	280	ug/L	No
Haloacetic Acids (HAA) (Distribution) Running Annual Average: 5.3	Jan 14, 2019 Apr 15, 2019 Jul 15, 2019 Oct 21, 2019	<5.0 <5.0 5.1 6.2		-	ug/L	No
Malathion	Jan.14, 2019	<5.0	<5.0	190	ug/L	No
2 Methal-4-chlorophenoxyacetic acid (MCPA)	Jan.14, 2019	<10	<10	100	ug/L	No
Metolachlor	Jan 14, 2019	<0.05	<0.05	190	ug/L	No
Metribuzin (Sencor)	Jan 14, 2019	<5.0	<5.0	80	ug/L	No
Monochlorobenzene	Jan 14, 2019	<0.10	<0.10	80	ug/L	No
Paraquat	Jan 14, 2019	<1.0	<1.0	10	ug/L	No
Pentachlorophenol	Jan 14, 2019	<0.50	<0.50	60	ug/L	No
Phorate	Jan 14, 2019	<0.50	<0.50	2	ug/L	No
Picloram	Jan 14, 2019	<5.0	<5.0	190	ug/L	No
Polychlorinated Biphenyls (PCB)	Jan 14, 2019	<0.05	<0.05	3	ug/L	No
Prometryne	Jan 14, 2019	<0.25	<0.25	1	ug/L	No
Simazine	Jan 14, 2019	<1.0	<1.0	10	ug/L	No
Terbufos	Jan 14, 2019	<0.50	<0.50	1	ug/L	No
Tetrachloroethylene	Jan 14, 2019	<0.10	<0.10	10	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan 14, 2019	<0.50	<0.50	100	ug/L	No
Trihalomethanes (THM) (Distribution) Running Annual Average: 52.3	Jan 14, 2019 Apr 15, 2019 Jul 15, 2019 Oct 21, 2019	41.0 46.2 68.3 53.8		100	ug/L	No
Toluene	Jan 14, 2019	<0.20	<0.20	60	ug/L	No

Triallate	Jan 14, 2019	<1.0	<1.0	230	ug/L	No
Trichloroethylene	Jan 14, 2019	<0.10	<0.10	5	ug/L	No
2,4,6-Trichlorophenol	Jan 14, 2019	<0.50	<0.50	5	ug/L	No
Trifluralin	Jan 14, 2019	<1.0	<1.0	45	ug/L	No
Vinyl Chloride	Jan 14, 2019	<0.20	<0.20	1	ug/L	No
Xylenes	Jan 14, 2019	<0.10	<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 Erie	Result Value Scane	Unit of Measure	Date of Sample
Fluoride (naturally occurring)	1.9	1.9	mg/L	Jan 14, 2019
Trihalomethanes (THM)	52.3 (Running Annual Average)		µg/L	Jan 14, Apr 15, Jul 15 & Oct 21 of 2019

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

Date of Sample	Parameter	Result Value							Unit of Measure
		Colby Well # 1	Hitch Well # 2	Harris Well # 3A	Scane Well # 4	Scane Well #5	Scane Well # 7	Scane Well #1	
Jan 14, 2019	Nitrite - Raw	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	mg/L
	Nitrate - Raw	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Apr 15, 2019	Nitrite - Raw	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
	Nitrate - Raw	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Jul 15, 2019	Nitrite - Raw	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
	Nitrate - Raw	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Oct. 21, 2019	Nitrite - Raw	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
	Nitrate - Raw	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	