



ANNUAL REPORT

Drinking-Water System Number:	260003378
Drinking-Water System Name:	Chatham 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 [X] No []

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

The Kent County Raw Pumping Station serves the Chatham Water Treatment Plant, as well as the South Chatham-Kent Water Treatment Plant. Raw water from Lake Erie is pumped to the stand pipe at Cedar Springs, and then flows by gravity to the Surge Tower in Chatham.

The treatment process at the Chatham WTP involves Actiflow micro-sand ballasted clarifiers, which include coagulation, injection of microsand and clarification, as well as settling and filtration. In addition, for colour events involving manganese, sodium permanganate and powdered activated carbon filtration may be used.

The Distribution System includes 4 elevated tanks, located in Chatham, Paincourt, Mitchell's Bay and Dresden as well as 2 standpipes located in Eberts and Thamesville.

Fluoride is also added to the water to prevent tooth decay.

The residue management process includes equalization, flocculation, clarification, thickening and dewatering. Supernatant from these clarifiers is discharged into the Thames River after dechlorination. Remaining solids residuals are treated at the Chatham Water Pollution Control Plant.

List all water treatment chemicals used over this reporting period

1. Chlorine Gas
2. Fluoride
3. Polyaluminum Chloride
4. Sodium Bisulphite
5. Sodium Permanganate
6. PAC
7. 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

Filter Media Cleaning (3)	\$ 59,000
EQ Tank Mixer	21,200
Replacement Chlorine Scales	15,000
Cyclone Parts	7,700
Butterfly Valve for High Lift #3	6,700
Jar Stirrer/Tester	4,800
Singer Valve Replacement (Surge Tower)	4,000
Pain Court Tower Cleaning	3,000
Mitchell's Bay Tower Cleaning	3,000
Replacement Chlorine Tubing	2,500
Seal for Actiflo Recirculating Pump	2,500
Steel Hopper Repair (PAC Building)	2,000
Motor Repair (Dover Booster Pump Station)	1,300

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
July 8	Total Coliform	3	cfu/100mL	Flush & Resample	July 9
July 11	Boil Water Advisory due to Main Repair			Flush and Resample (2 consecutive sets)	July 11 & 12
September 4	Total Coliform	2	cfu/100mL	Flush & Resample	September 5
December 10	Total Coliform	4	cfu/100mL	Flush & Resample	December 10
December 13	Free Chlorine	<0.2	mg/L	Flush & Retest	December 13

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 – 40	0 – 790	0	
Treated	53	0 – 0	0 – 0	53	<10 – 20
Distribution	1141	0 – 0	0 – 3	1141	<10 – 220

**** 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 – 0.783 NTU
Chlorine Reservoir 1 Outlet	8760	0.19 – 2.61 mg/L
Fluoride (Provided)	8760	0.10 – 0.77 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 7 Result	Feb 4 Result	Mar 6 Result	Apr 3 Result	May 14 Result	Jun 18 Result	Jul 3 Result	Aug 7 Result	Sep 4 Result	Oct 8 Result	Nov 6 Result	Dec 3 Result
Municipal Drinking Water License # 027-102 Pages 12 & 15 Tables 3 & 7 Monthly No Limit	Residue Management: Total Aluminum (ug/L)	723.3	1158	646.7	2067	663.3	5240	3643	650	787	487	710	467
Municipal Drinking Water License # 027-102 Pages 12 & 15 Tables 3 & 7 Monthly No Limit	Residue Management: Free Chlorine (mg/L)	0.02	0.01	0.01	0.02	0.03	0.05	0.03	0.03	0.04	0.03	0.02	0.01
Municipal Drinking Water License # 027-102 Pages 12 & 15 Tables 3 & 7 Monthly No Limit	Residue Management: Total Phosphorus (mg/L)	0.025	0.024	<0.02	<0.02	0.023	0.035	0.021	<0.02	<0.02	<0.02	<0.02	0.02
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)	24	12	6.3	16	7.3	38	23	5	6	4	18	8
		Annual Average: 14											

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	Aug 19	<0.50	ug/L	No
Arsenic	Aug 19	<1.0	ug/L	No
Barium	Aug 19	17	ug/L	No
Boron	Aug 19	20	ug/L	No
Cadmium	Aug 19	<0.10	ug/L	No
Chromium	Aug 19	<5.0	ug/L	No
*Lead	See Schedule 15.1 Summary			
Mercury	Aug 19	<0.0001	ug/L	No
Selenium	Aug 19	<2.0	ug/L	No
Sodium	Aug 19	9000	mg/L	No
Uranium	Aug 19	0.17	ug/L	No
Fluoride	Continuous Monitoring Required: See Operational Section			
Nitrite	Nov 18	<0.010	mg/L	No
Nitrate	Nov 18	<0.10	mg/L	No
Nitrite + Nitrate	Nov 18	<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 – <0.50	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	Aug 19	<0.50	5	ug/L	No
Atrazine + N-dealkylated metabolites	Aug 19	<1.0	5	ug/L	No
Azinphos-methyl	Aug 19	<2.0	20	ug/L	No
Benzene	Aug 19	<0.10	1	ug/L	No
Benzo(a)pyrene	Aug 19	<0.0050	0.01	ug/L	No
Bromoxynil	Aug 19	<0.50	5	ug/L	No
Carbaryl	Aug 19	<5.0	90	ug/L	No
Carbofuran	Aug 19	<5.0	90	ug/L	No
Carbon Tetrachloride	Aug 19	<0.10	2	ug/L	No
Chlorpyrifos (Dursban)	Aug 19	<1.0	90	ug/L	No
Diazinon	Aug 19	<1.0	20	ug/L	No
Dicamba	Aug 19	<1.0	120	ug/L	No

1,2-Dichlorobenzene	Aug 19	<0.20	200	ug/L	No
1,4-Dichlorobenzene	Aug 19	<0.20	5	ug/L	No
1,2-Dichloroethane	Aug 19	<0.20	5	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Aug 19	<0.10	14	ug/L	No
Dichloromethane	Aug 19	<0.50	50	ug/L	No
2-4 Dichlorophenol	Aug 19	<0.25	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug 19	<1.0	100	ug/L	No
Diclofop-methyl	Aug 19	<0.90	9	ug/L	No
Dimethoate	Aug 19	<2.5	20	ug/L	No
Diquat	Aug 19	<7.0	70	ug/L	No
Diuron	Aug 19	<10	150	ug/L	No
Ethylbenzene	Aug 19	<0.10	140	ug/L	No
Glyphosate	Aug 19	<10	280	ug/L	No
Haloacetic Acids (HAA)	Jan 14	15	-	ug/L	No
	Jan 14	38			
	Feb 11	17			
	Apr 15	22			
	Apr 15	16			
	May 6	13			
	Jul 15	29			
	Jul 15	19			
	Aug 19	18			
	Oct 21	28			
	Oct 21	25			
	Nov 18	18			
Running Annual Average: 21.1	Nov 18 (lab dup)	18			
Malathion	Aug 19	<5.0	190	ug/L	No
2 Methyl-4-chlorophenoxyacetic acid (MCPA)	Aug 19	<10	100	ug/L	No
Metolachlor	Aug 19	<0.50	190	ug/L	No
Metribuzin (Sencor)	Aug 19	<5.0	80	ug/L	No
Monochlorobenzene	Aug 19	<0.10	80	ug/L	No
Paraquat	Aug 19	<1.0	10	ug/L	No
Pentachlorophenol	Aug 19	<0.50	60	ug/L	No
Phorate	Aug 19	<0.50	2	ug/L	No
Picloram	Aug 19	<5.0	190	ug/L	No
Polychlorinated Biphenyls(PCB)	Aug 19	<0.05	3	ug/L	No
Prometryne	Aug 19	<0.25	1	ug/L	No
Simazine	Aug 19	<1.0	10	ug/L	No
Terbufos	Aug 19	<0.50	1	ug/L	No
Tetrachloroethylene	Aug 19	<0.10	10	ug/L	No
2,3,4,6-Tetrachlorophenol	Aug 19	<0.50	100	ug/L	No



Trihalomethanes (THM) Running Annual Average: 39.9	Jan 14	38.7	100	ug/L	No
	Jan 14	38.1			
	Feb 11	28.1			
	Feb 11 (lab dup)	27.5			
	Apr 15	32.0			
	Apr 15	28.7			
	May 6	31.7			
	Jul 15	50.1			
	Jul 15	43.0			
	Aug 19	46.6			
	Aug 19 (lab dup)	47.1			
	Oct 21	54.9			
	Oct 21	54.8			
	Nov 18	36.9			
Toluene	Aug 19	<0.20	60	ug/L	No
Triallate	Aug 19	<1.0	230	ug/L	No
Trichloroethylene	Aug 19	<0.10	5	ug/L	No
2,4,6-Trichlorophenol	Aug 19	<0.50	5	ug/L	No
Trifluralin	Aug 19	<1.0	45	ug/L	No
Vinyl Chloride	Aug 19	<0.20	1	ug/L	No
Xylenes	Aug 19	<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 or the most recent sample results.

Parameter	Sample Date	Result: Point of Entry	Unit of Measure
Alkalinity	Nov 18	88	mg/L
Aluminum	Nov 18	66	ug/L
Colour	Nov 18	<2	TCU
Fluoride	Continuous Monitoring Required: See Operational Section		
Hardness	Nov 18	120	mg/L
pH	Nov 18	7.87	

Parameter	Sample Date	Result: Point of Entry	Unit of Measure
Microcystin	May 27	<0.150	ug/L
	Jun 3	<0.150	
	Jun 10	<0.150	
	Jun 17	<0.150	
	Jun 24	<0.150	
	Jul 2	<0.150	
	Jul 8	<0.150	
	Jul 15	<0.150	
	Jul 22	<0.150	
	Jul 29	<0.150	
	Aug 6	<0.150	
	Aug 12	<0.150	
	Aug 19	<0.150	
	Aug 26	<0.150	
	Sept 3	<0.150	
	Sept 9	<0.150	
	Sept 16	<0.150	
	Sept 23	<0.150	
	Sept 30	<0.150	
	Oct 7	<0.150	
	Oct 15	<0.150	
	Oct 21	<0.150	
	Oct 28	<0.150	