



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, 2023

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 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 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 (WTP), as well as the South Chatham-Kent Water Treatment Plant. Raw water from Lake Erie is pumped to the standpipe 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. Powdered Activated Carbon
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.

Electric Fork Lift	\$ 56,250
Eberts Bulk Water Relocation	32,500
Grande Pointe Valve Chamber Isolation Valve	15,000
Actiflo Monorail replacement	12,000
Actiflo Area Heater	10,000
Boiler Repair	7,000
Diaphragm Replacement Surge Tower	6,000
UPS Replacements	5,000
Gas Relief Valve	3,500
Sump Pump	1,700
Actiflo Cyclone Parts	1,300
Actiflo Cyclone Screens	1,250

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 & AWQI No.	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
June 19 162254	Total Coliforms	1	cfu/100mL	Flush, resample and test	June 21
July 06 162446	Total Coliforms	NDOGN	cfu/100mL	Flush, resample and test	July 6
Aug 30 163263	Total Coliforms	NDOGN	cfu/100mL	Flush, resample and test	Aug 30
Sep 18 163525	Total Coliforms	9	cfu/100mL	Flush, sample and test	Sep 20

** NDOGN – No Data Overgrown with Non-Target Organisms

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	52	<2 – 20	<10 – 1480	0	
Treated	52	0 – 0	0 – 0	52	<10 – 20
Distribution	1617	0 – 0	0 – 9	1609	<10 – 140

** NDOGN – No Data Overgrown with Non-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	0.0003 – 0.585 NTU
Chlorine Reservoir 1 Outlet	8760	0.398 – 3.51 mg/L
Fluoride (Provided)	8760	0.541 – 0.82 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 Result	Feb Result	Mar Result	Apr 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 Monthly No Limit	Residue Management: Total Aluminum (ug/L)	516.6	813.3	273.3	536.6	866.6	436.7	783.3	720	510	332.6	120	180
Municipal Drinking Water License # 027-102 Pages 12 & 15 Tables 3 & 7 Monthly No Limit	Residue Management: Free Chlorine (mg/L)	0.02	0.07	0.025	0.046	0.04	0.07	0.10	0.09	0.06	0.08	0.06	0.05
Municipal Drinking Water License # 027-102 Pages 12 & 15 Tables 3 & 7 Monthly No Limit	Residue Management: Total Phosphorus (mg/L)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.02	<0.02	0.03
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)	6.0	5.6	2.33	3.33	5.33	3.33	7.00	5.00	3.00	3.66	2.33	2.67
		Annual Average:											

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

Parameter	Sample Date	Result Value	MAC Limit	Unit of Measure	Exceedance
Antimony	August 14	<0.050	6	ug/L	No
Arsenic	August 14	<1.0	10	ug/L	No
Barium	August 14	21	1000	ug/L	No
Boron	August 14	17	5000	ug/L	No
Cadmium	August 14	<0.090	5	ug/L	No
Chromium	August 14	<5.0	50	ug/L	No
*Lead	See Schedule 15.1 Summary				
Mercury	August 14	<0.00010	0.001	mg/L	No
Selenium	August 14	<2.0	50	ug/L	No
Sodium	August 14	8.6	20	mg/L	No
Uranium	August 14	<0.10	20	ug/L	No
Fluoride	Continuous Monitoring Required: See Operational Section				
Nitrite	November 14	<0.010	1	mg/L	No
Nitrate	November 14	<0.10	10	mg/L	No
Nitrite + Nitrate	November 14	<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 #)	MAC Limit ug/L	Number of Exceedances / Adverses
Residential	0			
Non-Residential	0			
Distribution	8	<0.50 – <0.50	10	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	August 14	<0.50	5	ug/L	No
Atrazine + N-dealkylated metabolites	August 14	<0.50	5	ug/L	No
Azinphos-methyl	August 14	<2.0	20	ug/L	No
Benzene	August 14	<0.10	1	ug/L	No
Benzo(a)pyrene	August 14	<0.0050	0.01	ug/L	No
Bromoxynil	August 14	<0.50	5	ug/L	No
Carbaryl	August 14	<5.0	90	ug/L	No
Carbofuran	August 14	<5.0	90	ug/L	No
Carbon Tetrachloride	August 14	<0.10	2	ug/L	No
Chlorpyrifos (Dursban)	August 14	<1.0	90	ug/L	No
Diazinon	August 14	<1.0	20	ug/L	No
Dicamba	August 14	<1.0	120	ug/L	No
1,2-Dichlorobenzene	August 14	<0.20	200	ug/L	No
1,4-Dichlorobenzene	August 14	<0.20	5	ug/L	No

1,2-Dichloroethane	August 14	<0.20	5	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	August 14	<0.10	14	ug/L	No
Dichloromethane	August 14	<0.50	50	ug/L	No
2-4 Dichlorophenol	August 14	<0.25	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	August 14	<1.0	100	ug/L	No
Diclofop-methyl	August 14	<0.90	9	ug/L	No
Dimethoate	August 14	<2.5	20	ug/L	No
Diquat	August 14	<7.0	70	ug/L	No
Diuron	August 14	<10	150	ug/L	No
Ethylbenzene	August 14	<0.10	140	ug/L	No
Glyphosate	August 14	<10	280	ug/L	No
Haloacetic Acids (HAA)	Feb 13 May 15 Aug 14 Nov14	<5.0 <5.0 5.6 17.0	80	ug/L	No
Running Annual Average		8.15			
Malathion	August 14	<5.0	190	ug/L	No
2 Methyl-4-chlorophenoxyacetic acid (MCPA)	August 14	<10	100	ug/L	No
Metolachlor	August 14	<0.50	190	ug/L	No
Metribuzin (Sencor)	August 14	<5.0	80	ug/L	No
Monochlorobenzene	August 14	<0.10	80	ug/L	No
Paraquat	August 14	<1.0	10	ug/L	No
Pentachlorophenol	August 14	<0.50	60	ug/L	No
Phorate	August 14	<0.50	2	ug/L	No
Picloram	August 14	<5.0	190	ug/L	No
Polychlorinated Biphenyls(PCB)	August 14	<0.05	3	ug/L	No
Prometryne	August 14	<0.25	1	ug/L	No
Simazine	August 14	<1.0	10	ug/L	No
Terbufos	August 14	<0.50	1	ug/L	No
Tetrachloroethylene	August 14	<0.10	10	ug/L	No
2,3,4,6-Tetrachlorophenol	August 14	<0.50	100	ug/L	No
Trihalomethanes (THM)	Feb 13 May 15 Aug 14 Nov 14	16.6 22.0 33.8 32.2	100	ug/L	No
Running Annual Average:		26.15			
Toluene	August 14	<0.20	60	ug/L	No
Triallate	August 14	<1.0	230	ug/L	No
Trichloroethylene	August 14	<0.10	5	ug/L	No
2,4,6-Trichlorophenol	August 14	<0.50	5	ug/L	No
Trifluralin	August 14	<1.0	45	ug/L	No
Vinyl Chloride	August 14	<0.20	1	ug/L	No
Xylenes	August 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 or the most recent sample results.

Parameter	Sample Date	Result: Point of Entry	Unit of Measure
Alkalinity	November 14	92	mg/L
Aluminum	November 14	18	ug/L
Colour	November 14	<2	TCU
Fluoride	Continuous Monitoring Required: See Operational Section		
Hardness	November 14	110	mg/L
pH	November 14	7.79	

Parameter	Sample Date	Result: Point of Entry	Unit of Measure
Microcystin	May 29	<0.150	ug/L
	Jun 05	<0.150	
	Jun 12	<0.150	
	Jun 19	<0.150	
	Jun 26	<0.150	
	Jul 04	<0.150	
	Jul 10	<0.150	
	Jul 17	<0.150	
	Jul 24	<0.150	
	Jul 31	<0.150	
	Aug 08	<0.150	
	Aug 14	<0.150	
	Aug 21	<0.150	
	Aug 28	<0.150	
	Sept 05	<0.150	
	Sept 11	<0.150	
	Sept 18	<0.150	
	Sept 25	<0.150	
	Oct 02	<0.150	
	Oct 10	<0.150	
	Oct 16	<0.150	
	Oct 23	<0.150	
	Oct 30	<0.150	