Drinking Water Systems Regulation O. Reg. 170/03 Section 11 Annual Report

Drinking-Water System Number:	210000149
Drinking-Water System Name:	Amherstburg Water Treatment Plant
Drinking-Water System Owner:	Corporation of the Town of Amherstburg
Drinking-Water System Operating Authority	Ontario Clean Water Agency
Drinking-Water System Category:	Large municipal residential system
Period being reported:	January 1, 2024 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

Amherstburg Area Water Treatment Plant
415 Front Road North
Amherstburg, Ontario, N9V 2V5

Complete for all other Categories

Number of Designated Facilities served:

N/A

Did you provide a copy of your annual report to all Designated Facilities you serve?

N/A

Number of Interested Authorities you report to:

N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?

N/A

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
N/A	N/A

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 [x] No [ ]

Indicate how you notified system users that your annual report is available, and is free of charge.

[x] 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

A surface water treatment plant, rated capacity of 18,184 m^3/day, consisting of:
An intake crib 155 meters into the Detroit River and connected through a 900mm pipe to the Low Lift Pumping Station.
A low lift pumping station equipped with wet well, three vertical turbine pumps, a coarse bar screen, an automatic traveling screen and two 50mm chlorine solution feed lines and a chlorine diffuser.
A solids-contact upflow clarifier with overflow chamber, chemical feed line, sludge blow off line, sludge scraper and recirculation system.
Four rapid sand filters with dual media of anthracite and silica sand including a backwash system.
A filter effluent clearwell with transfer conduit to the reservoir.
A 14,900m3 underground storage reservoir.
A high lift pumping station equipped with three vertical turbine pumps, a chlorine solution feed line/diffuser and a filter backwash pump.

List all water treatment chemicals used over this reporting period

Aluminum Sulphate	CAT-FLOC 8103 Plus
Powdered Activated Carbon	Chlorine Gas
NORFLOC 122	Sodium Bisulphate
Sodium Hypochlorite	

Were any significant expenses incurred to?

[x] Install required equipment
[x] Repair required equipment
[x] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

Installations	Expense
Emergency Chlorine Shutoff System	$39,487.97
Low Lift Pump	$30,171.84
Security System	$5,149.01
Air Relief Valves	$1,385.97

Inspection, Audits and Calibrations	Expense
Intake Inspection	$7,123.20
Water Tower Inspection	$3,561.60
Drinking Water Quality Management Audits	$3,358.08
Lifting Devices Inspection	$1,738.26
Compressor Inspection	$1,560.33
Electrical Safety Inspection	$1,471.96
Instrumentation Calibration	$1,438.89
Heater Inspection	$1,117.32
Emergency Power Inspection	$1,004.41
Repairs	**Expense**
Chlorine Gas Feed System	$5,509.77
Powdered Activated Carbon Feed System	$2,798.40
Roof Drain	$2,394.79
Polymer System	$1,802.54
Air Relief Valve	$1,191.61
Monorail Hoist	$1,141.52
Replacements	**Expense**
Travelling Screen	$474,696.71
Filter Media	$16,174.75
Emergency Power Breaker	$14,737.65
Backflow Preventers and associated valves	$14,081.80
Heater Motors	$2,781.10
Filter Drain Valve Limit Switches	$2,768.20
Process Water Valve	$1,975.16
Hot Water Tank	$1,521.31

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	Location	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
January 16, 2024	Distribution	Total Coliform	53	cfu 100/mL	Resample	January 19, 2024
October 3, 2024	Treated Water	Clostridium	1	cfu/L	Resample	October 7, 2024

Microbiological testing done under Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period

	No. of Samples Collected for period being reported	Range of E.Coli Or Fecal Results		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Results	
		Minimum #	Maximum #	Minimum #	Maximum #		Minimum #	Maximum #
Raw Water	53	20	2000	100	54000	0		
Treated Water	53	0	0	0	0	53	10	10
Distribution Water	478	0	0	0	53	220	10	40

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report

Parameter & Location	No. of Samples Collected for period being reported	Range of Results	
		Minimum	Maximum
Turbidity, In-House (NTU) - RW	366	2.4	113.4
Turbidity, In-House (NTU) - TW	366	0.01	0.51
Turbidity, On-Line (NTU) - Filt1	8760	0.01	1.55
Turbidity, On-Line (NTU) - Filt2	8760	0.017	1.849
Turbidity, On-Line (NTU) - Filt3	8760	0.002	2.005
Turbidity, On-Line (NTU) - Filt4	8760	0.001	2.006
Free Chlorine Residual, On-Line (mg/L) - TW	8760	0.76	1.7
Free Chlorine Residual, On-Line (mg/L) - Pre	8760	0.76	3.26

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	Location & Parameter	Date Sampled	Result	Unit of Measure
License Number 026-101	**Filter Backwash**	Jan-02-2024		mg/L
	Suspended Solids		132	
	Free Chlorine		0.03	
	Clarifier Discharge	Jan-02-2024		mg/L
	Suspended Solids		2160	
	Free Chlorine		0.01	
	Filter Backwash	Feb-05-2024		mg/L
	Suspended Solids		1890	
	Free Chlorine		0.16	
	Clarifier Discharge	Feb-05-2024		mg/L
	Suspended Solids		7730	
	Free Chlorine		0.05	

Issued on 2023/09/07 Environmental Discharge	**Filter Backwash** Suspended Solids Free Chlorine	Mar-12-2024	180 0.32	mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	Mar-12-2024	6860 0.01	mg/L
	Filter Backwash Suspended Solids Free Chlorine	Apr-02-2024	2030 0.09	mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	Apr-02-2024	4030 0.01	mg/L
	Filter Backwash Suspended Solids Free Chlorine	May-07-2024	715 0.14	mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	May-07-2024	5680 0.03	mg/L
	Filter Backwash Suspended Solids Free Chlorine	June-03-2024	1880 0.03	mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	June-03-2024	3490 0.03	mg/L
	Filter Backwash Suspended Solids Free Chlorine	July-03-2024	4810 0.10	mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	July-03-2024	1920 0.03	mg/L
	Filter Backwash Suspended Solids Free Chlorine	Aug-05-2024	746 0.05	mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	Aug-05-2024	3780 0.01	mg/L
	Filter Backwash Suspended Solids Free Chlorine	Sept-02-2024	177 0.05	mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	Sept-02-2024	4160 0.04	mg/L
	Filter Backwash Suspended Solids Free Chlorine	Oct-07-2024	2130 0.05	mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	Oct-07-2024	3890 0.03	mg/L

	Filter Backwash Suspended Solids Free Chlorine	Nov-04-2024	 3640 0.03	 mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	Nov-04-2024	 2240 0.03	 mg/L
	Filter Backwash Suspended Solids Free Chlorine	Dec-02-2024	 1670 0.50	 mg/L
	Clarifier Discharge Suspended Solids Free Chlorine	Dec-02-2024	 2180 0.08	 mg/L

Date of legal instrument issued	Location	Date Sampled	Result	Unit of Measure
License Number 026-101 Issued on 2023/09/07 Microcystin	Raw Water	June-01-24	<0.15	µg/l
		June-08-24	<0.15	
		June-15-24	<0.15	
		June-22-24	<0.15	
		June-29-24	<0.15	
		July-06-24	<0.15	
		July-14-24	<0.15	
		July-20-24	<0.15	
		July-27-24	0.16	
		August-03-24	0.36	
		August-10-24	4.88	
		August-17-24	0.56	
		August-24-24	2.18	
		September-01-24	0.32	
		September-07-24	0.55	
		September-14-24	<0.15	
		September-21-24	<0.15	
		September-29-24	<0.15	
		October-05-24	0.22	
		October-13-24	<0.15	
		October-19-24	<0.15	
		October-26-24	<0.15	
	Treated Water	June-03-24	<0.15	µg/l
		June-10-24	<0.15	
		June-17-24	<0.15	
		June-24-24	<0.15	
		July-02-24	<0.15	
		July-08-24	<0.15	
		July-15-24	<0.15	
		July-22-24	<0.15	
		July-29-24	<0.15	

		August-05-24	<0.15
		August-12-24	<0.15
		August-19-24	<0.15
		August-26-24	<0.15
		September-03-24	<0.15
		September-09-24	<0.15
		September-16-24	<0.15
		September-23-24	<0.15
		October-01-24	<0.15
		October-07-24	<0.15
		October-21-24	<0.15
		October-28-24	<0.15

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

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2024/08/14	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L) - TW	2024/08/14	0.4	10.0	No	No
Barium: Ba (ug/L) - TW	2024/08/14	16.5	1000.0	No	No
Boron: B (ug/L) - TW	2024/08/14	19.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2024/08/14	0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2024/08/14	0.25	50.0	No	No
Mercury: Hg (ug/L) - TW	2024/08/14	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2024/08/14	0.1	50.0	No	No
Uranium: U (ug/L) - TW	2024/08/14	0.034	20.0	No	No

Additional Inorganics	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Fluoride (mg/L) - TW	2024/08/14	0.09	1.5	No	No
Nitrite (mg/L) - TW	2024/01/08	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2024/04/09	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2024/07/09	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2024/10/15	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2024/01/08	0.585	10.0	No	No
Nitrate (mg/L) - TW	2024/04/09	0.661	10.0	No	No
Nitrate (mg/L) - TW	2024/07/09	0.232	10.0	No	No
Nitrate (mg/L) - TW	2024/10/15	0.207	10.0	No	No
Sodium: Na (mg/L) - TW	2024/08/14	7.5	20*	No	No

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

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 Results		MAC	No. Exceeded
		Minimum	Maximum		
Distribution Water - Lead Results (ug/L)	9	0.17	0.83	10	0
Distribution Water - Alkalinity (mg/L)	8	66	80	n/a	n/a
Distribution Water – pH Field	8	6.98	7.27	n/a	n/a

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

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2024/08/14	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2024/08/14	0.08	5.0	No	No
Azinphos-methyl (ug/L) - TW	2024/08/14	<MDL 0.05	20.0	No	No
Benzene (ug/L) - TW	2024/08/14	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L) - TW	2024/08/14	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2024/08/14	<MDL 0.33	5.0	No	No
Carbaryl (ug/L) - TW	2024/08/14	<MDL 0.05	90.0	No	No
Carbofuran (ug/L) - TW	2024/08/14	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L) - TW	2024/08/14	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L) - TW	2024/08/14	<MDL 0.02	90.0	No	No
Diazinon (ug/L) - TW	2024/08/14	<MDL 0.02	20.0	No	No
Dicamba (ug/L) - TW	2024/08/14	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L) - TW	2024/08/14	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L) - TW	2024/08/14	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L) - TW	2024/08/14	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L) - TW	2024/08/14	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2024/08/14	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L) - TW	2024/08/14	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2024/08/14	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L) - TW	2024/08/14	<MDL 0.4	9.0	No	No
Dimethoate (ug/L) - TW	2024/08/14	<MDL 0.06	20.0	No	No
Diquat (ug/L) - TW	2024/08/14	<MDL 1.0	70.0	No	No
Diuron (ug/L) - TW	2024/08/14	<MDL 0.03	150.0	No	No
Glyphosate (ug/L) - TW	2024/08/14	<MDL 1.0	280.0	No	No
Malathion (ug/L) - TW	2024/08/14	<MDL 0.02	190.0	No	No
Metolachlor (ug/L) - TW	2024/08/14	0.06	50.0	No	No
Metribuzin (ug/L) - TW	2024/08/14	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2024/08/14	<MDL 0.3	80.0	No	No
Paraquat (ug/L) - TW	2024/08/14	<MDL 1.0	10.0	No	No
PCB (ug/L) - TW	2024/08/14	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L) - TW	2024/08/14	<MDL 0.15	60.0	No	No
Phorate (ug/L) - TW	2024/08/14	<MDL 0.01	2.0	No	No
Picloram (ug/L) - TW	2024/08/14	<MDL 1.0	190.0	No	No
Prometryne (ug/L) - TW	2024/08/14	<MDL 0.03	1.0	No	No
Simazine (ug/L) - TW	2024/08/14	<MDL 0.01	10.0	No	No

Terbufos (ug/L) - TW	2024/08/14	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L) - TW	2024/08/14	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2024/08/14	<MDL 0.2	100.0	No	No
Triallate (ug/L) - TW	2024/08/14	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L) - TW	2024/08/14	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2024/08/14	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)	2024/08/14	<MDL 0.12	100.0	No	No
Trifluralin (ug/L) - TW	2024/08/14	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L) - TW	2024/08/14	<MDL 0.17	1.0	No	No

Distribution Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Trihalomethane: Total (ug/L) Annual Average - DW	2024/01/01	28.75	100.0	No	No
HAA Total (ug/L) Annual Average - DW	2024/01/01	10.45	80.0	No	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			