Ontario

Drinking-Water Systems Regulation O. Reg. 170/03

Drinking-Water System Number:	**210000130**
Drinking-Water System Name:	**Harrow-Colchester South Water Treatment Plant**
Drinking-Water System Owner:	**Corporation of the Town of Essex**
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.

Town of Essex Municipal Office
33 Talbot St. S.
Essex, ON

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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
Harrow-Colchester South Distribution System	210000130

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
[x] Public access/notice via Public Request
[ ] Public access/notice via a Public Library
[x] Public access/notice via other method <u>As when requested</u>

Describe your Drinking-Water System

A surface water treatment plant, with a rated capacity of 10,228 m^3/day consisting of:

1. An intake system is a rock-filled timber structure with a vertical steel bellmouth; an installed chlorination solution diffuser ring at bottom of the bellmouth for Zebra Mussel chemical control.
2. A low lift pumping station consisting of an inlet chamber, two screen chambers, two micro strainer chambers and one pump well.
3. A solids contact up-flow clarifier.
4. Two dual media type filters.
5. Chemical storage and feed equipment consisting of a storage tank and two chemical metering pumps.
6. Two clearwells following filters.
7. A two celled, in-ground treated water storage reservoir.
8. A high lift pumping station consisting of one, two-compartment, high lift pump well with three vertical turbine pumps.
9. The Harrow-Colchester South Distribution System supplies water to a population of approximately 10,400 persons. It consists of approximately 145 km of water lines ranging in size from 2" to 16". Operation and maintenance of the system is performed by the Essex Water Department. All regulatory sampling for the Distribution System is conducted by the Ontario Clean Water Agency staff. All water for this system is supplied by the Harrow-Colchester South Water Treatment Plant.

List all water treatment chemicals used over this reporting period

1. Clarion A5
2. Polymer Norfloc 122
3. Powdered Activated Carbon (PAC)
4. Chlorine Gas
5. Sodium Hypochlorite
6. Cat-Floc 8103 PLUS

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

Harrow-Colchester South WTP	
UPS replacement	$4,498.65
Pneumatic Hoist - Carbon System	$15,658.06
Diesel Fuel for Generators	$946.61
Low Lift Pump #2 VFD replacement	$5,468.08
Filter Inlet Valve Replacement	$47,188.59
Desiccant Cartridges & Seals	$1,407.23
East Hub Fence Repair	$419.76
Universal Level Controller & Transducer	$4,875.12
Reservoir/Clearwell Repairs	$46,862.00
Backwash Pump Replacement	$69,200.60
Total	$116,062.60

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*	*Date of Resolution*
06/25/2024	Total Coliform	4	CFU/100 ml	Re-Samples were collected upstream (Water Dept.), At the Site (Walnut), and downstream (Walker Rd). June 25, 2024 and June 26, 2024. All resample results were negative.	06/28/2024
08/20/2024	Total Coliform	1	CFU/100 ml	Samples were collected upstream (Water Dept.), At the Site (Walker Rd), and downstream (Cargill). October 4 @ 1555 and October 5 @ 1130. All resample results were negative.	08/24/2024

Microbiological testing done under the Schedule 10, 11 or 12 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	50	10 - 100	10 -6000	N/A	N/A
Treated	50	0 - 0	0 – 0	46	10 - 20
Distribution	264	0 - 0	0 – 4	104	10 - 30

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

	No. of Samples Collected for period being reported	Range of Results	
		Minimum	Maximum
Turbidity, On-Line (NTU) - Filt1	8760	0	0.38
Turbidity, On-Line (NTU) - Filt2	8760	0	0.26
Free Chlorine Residual, On-Line (mg/L) - TW	8760	0	2.00
Total Chlorine Residual, In-House (mg/L) - TW	333	0.155	1.76
Free Chlorine Residual, In-House (mg/L) - DW1	103	0.51	1.41
Free Chlorine Residual, In-House (mg/L) - DW2	103	0.52	1.40
Free Chlorine Residual, In-House (mg/L) - DW3	103	0.53	1.59
Free Chlorine Residual, In-House (mg/L) - DW4	50	0.44	1.08

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	Result	Unit of Measure
MDWL 029-101 Dated: April 3, 2021	Backwash Water Decant Suspended Solids Annual Average <25 mg/L	01/10/24 02/13/24 03/06/24 04/03/24 05/01/24 06/03/24 07/01/24 08/06/24 09/03/24 10/02/24 11/05/24 12/18/24 Annual Average	7.0 3.0 3.0 2.0 2.0 4.0 5.0 2.0 3.0 <2.0 2.0 <2.0 3.1	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L

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	2024/04/03	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L) - TW	2024/04/03	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2024/04/03	16.1	1000.0	No	No
Boron: B (ug/L) - TW	2024/04/03	16.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2024/04/03	0.008	5.0	No	No
Chromium: Cr (ug/L) - TW	2024/04/03	0.16	50.0	No	No
Mercury: Hg (ug/L) - TW	2024/04/03	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2024/04/03	0.16	50.0	No	No
Uranium: U (ug/L) - TW	2024/04/03	0.029	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2024/04/03	< MDL 0.06	1.5	No	No
Nitrate : (mg/L) - TW	2024/01/08	<MDL 0.003	1.0	No	No
Nitrate : (mg/L) - TW	2024/04/03	<MDL 0.003	1.0	No	No

Nitrate : (mg/L) - TW	2024/07/03	<MDL 0.003	1.0	No	No
Nitrate : (mg/L) - TW	2024/10/07	<MDL 0.003	1.0	No	No
Nitrite : (mg/L) - TW	2024/01/08	0.435	10	No	No
Nitrite : (mg/L) - TW	2024/04/03	0.775	10	No	No
Nitrite : (mg/L) - TW	2024/07/03	0.344	10	No	No
Nitrite : (mg/L) - TW	2024/10/07	0.229	10	No	No
Sodium / Na (mg/L) - TW	2024/04/03	8.48	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 (µg/L)	Number of Exceedances
		Minimum	Maximum		
Distribution - Lead - Pb: (µg/l)	13	0.06	0.33	10	0
Distribution - AlkalinityCaCO3: (mg/L)	13	58	78	n/a	n/a
Distribution - pH Lab	13	7.3	7.85	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	2024/04/03	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2024/04/03	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L) - TW	2024/04/03	<MDL 0.05	20.0	No	No
Benzene (ug/L) - TW	2024/04/03	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L) - TW	2024/04/03	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2024/04/03	<MDL 0.33	5.0	No	No
Carbaryl (ug/L) - TW	2024/04/03	<MDL 0.05	90.0	No	No
Carbofuran (ug/L) - TW	2024/04/03	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L) - TW	2024/04/03	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L) - TW	2024/04/03	<MDL 0.02	90.0	No	No
Diazinon (ug/L) - TW	2024/04/03	<MDL 0.02	20.0	No	No
Dicamba (ug/L) - TW	2024/04/03	<MDL 0.2	120.0	No	No

1,2-Dichlorobenzene (ug/L) - TW	2024/04/03	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L) - TW	2024/04/03	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L) - TW	2024/04/03	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L) - TW	2024/04/03	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2024/04/03	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L) - TW	2024/04/03	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2024/04/03	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L) - TW	2024/04/03	<MDL 0.4	9.0	No	No
Dimethoate (ug/L) - TW	2024/04/03	<MDL 0.06	20.0	No	No
Diquat (ug/L) - TW	2024/04/03	<MDL 1.0	70.0	No	No
Diuron (ug/L) - TW	2024/04/03	<MDL 0.03	150.0	No	No
Glyphosate (ug/L) - TW	2024/04/03	<MDL 1.0	280.0	No	No
Malathion (ug/L) - TW	2024/04/03	<MDL 0.02	190.0	No	No
Metolachlor (ug/L) - TW	2024/04/03	<MDL 0.01	50.0	No	No
Metribuzin (ug/L) - TW	2024/04/03	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2024/04/03	<MDL 0.3	80.0	No	No
Paraquat (ug/L) - TW	2024/04/03	<MDL 1.0	10.0	No	No
PCB (ug/L) - TW	2024/04/03	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L) - TW	2024/04/03	<MDL 0.15	60.0	No	No
Phorate (ug/L) - TW	2024/04/03	<MDL 0.01	2.0	No	No
Picloram (ug/L) - TW	2024/04/03	<MDL 1.0	190.0	No	No
Prometryne (ug/L) - TW	2024/04/03	<MDL 0.03	1.0	No	No
Simazine (ug/L) - TW	2024/04/03	<MDL 0.01	10.0	No	No
Terbufos (ug/L) - TW	2024/04/03	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L) - TW	2024/04/03	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2024/04/03	<MDL 0.2	100.0	No	No
Triallate (ug/L) - TW	2024/04/03	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L) - TW	2024/04/03	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2024/04/03	<MDL 0.25	5.0	No	No
Trifluralin (ug/L) - TW	2024/04/03	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L) - TW	2024/04/03	<MDL 0.17	1.0	No	No
DISTRIBUTION WATER					
HAA Total (ug/L) Annual Average-DW	2024/01/01	5.65	80	No	No
Trihalomethane: Total (ug/L) Annual Average-DW	2024/01/01	22.0	100	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	N/A	N/A	N/A