



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Annual Performance Report
Union Water Supply System
Drinking Water System #210000853
2025

Prepared for Union Water Supply System Inc.

By the Ontario Clean Water Agency

ANNUAL REPORT

Drinking Water System Number:	210000853
Drinking Water System Name:	Union Water Supply System
Drinking Water System Owner:	Union Water Supply System Inc.
Drinking Water System Category:	Large Municipal Residential
Reporting Period:	01-January-2025 to 31-December-2025

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:</p> <div style="border: 1px solid black; padding: 5px;"> <p>Union Water Supply System P.O. Box 340, 1615 Union Ave., Ruthven, Ont. N0P 2G0</p> </div>	<p><u>Complete for all Other Categories</u></p> <p>Number of Designated Facilities served: <input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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List all Drinking Water Systems (if any), which receive all their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Municipality of Leamington	220004992
Town of Kingsville	220003403
Town of Essex	220003680
Municipality of Lakeshore	260004995
Union Water Supply System	210000853

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 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
- Public access/notice via other method

Describe your Drinking Water System

The Union Water Supply System (UWSS) includes one water treatment plant, the Ruthven Water Treatment Plant (RWTP) that is located in the hamlet of Ruthven in the Town of Kingsville, Ontario. The RWTP is a chemically assisted conventional filtration plant that draws water from Lake Erie.

The UWSS supplies potable water to the end users of the Town of Kingsville, Municipality of Leamington, a portion of the Town of Essex and a portion of the Municipality of Lakeshore with an estimated service population of 66, 944.

The treatment process includes raw water pH control, chemically assisted up-flow clarification, chemically assisted Dissolved Air Floatation system, filtration with dual media filters, primary disinfection using Chlorine gas and secondary disinfection using Chlorine gas and Sodium Hypochlorite.

Seasonally, the RWTP uses sodium hypochlorite at its intakes to control Zebra Mussel formation.

There are also four water towers and a booster/storage station located on the Union Water Supply System.

List all water treatment chemicals used over this reporting period

Zebra Mussel Control:

- Sodium Hypochlorite (Seasonal)

Clarification Chemicals:

- SternPac 70 – Coagulant
- NorFloc 122 (polymer) – Coagulant Aid
- Powdered Activated Carbon – Taste and Odour Control
- CO₂ – pH Adjustment

Filtration:

- Cat-Floc 8103 Plus – Filter Aid (Seasonal)

Dechlorination:

- Calcium Thiosulfate

Disinfection:

- Primary: Chlorine Gas
- Secondary: Chlorine Gas and Sodium Hypochlorite

Were any significant expenses incurred?

- Install required equipment
- Repair required equipment
- Replace required equipment

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

	Item Description	Expenditures to 2025 Year End
	Capital Works and Major Maintenance	
	New Reservoir #3	\$19,418,734
	DAF #2	\$11,733,177
	Backup Power System Upgrades	\$1,188,407
	Dechlorination	\$488,415
	Residual Pond Maintenance	\$222,873
	Machinery & Equipment	\$179,557
	SCADA System/Communication/Security	\$162,341
	Water Quality Instrumentation	\$149,002
	Kingsville Utility Building	\$122,953
	General Building Maintenance	\$95,483
	Low Lift Station	\$64,022
	High Lift Pumps	\$51,436
	Chemical System	\$42,980
	Wastewater Pumps	\$41,902
	Filtration	\$16,830
	Cottam Upgrades	\$13,376
	Other Non-Identified Capital Projects	\$11,315
	Flow Chamber	\$3,906
	OCWA Capital Expenditures	\$202,328.46
	Total	\$34,237,065.46

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
None	N/A	N/A	N/A	N/A	N/A

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

Parameter	Number of Samples	Range of E. coli Results (Min – Max)	Range of Total Coliform Results (Min – Max)	Number of HPC Samples	Range of HPC Results (Min – Max)
Raw	52	<10 - 100	<10 - 2280	0	N/A
Treated	52	0 - 0	0 - 0	52	<10 - 20
Distribution	56	0 - 0	0 - 0	29	<10 - 20

Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).

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

Parameter	Number of Samples	Range of Results (Min – Max)	Unit of Measure
Turbidity (Treated)	8760	0.01 – 1.263	NTU
Chlorine (Treated)	8760	1.03 – 2.00	mg/L
Chlorine (Distribution)	193	0.70 – 1.77	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	Date Sampled	Result	Unit
July 9, 2024	Suspended Solids	Jan 6, 2025	<3	mg/L
	Suspended Solids	Feb 3, 2025	<3	mg/L
	Suspended Solids	Mar 3, 2025	<3	mg/L
	Suspended Solids	Apr 1, 2025	<3	mg/L
	Suspended Solids	May 5, 2025	<3	mg/L
	Suspended Solids	Jun 2, 2025	<3	mg/L
	Suspended Solids	Jul 7, 2025	<3	mg/L
	Suspended Solids	Aug 5, 2025	3	mg/L
	Suspended Solids	Sep 2, 2025	<3	mg/L
	Suspended Solids	Oct 6, 2025	<3	mg/L
	Suspended Solids	Nov 3, 2025	<3	mg/L
	Suspended Solids	Dec 1, 2025	<3	mg/L
	Annual Average		3	mg/L
Date of Legal Instrument Issued	Parameter	Date Sampled	Result	Unit
July 9, 2024	Total Chlorine Residuals	Jan 28, 2025	0.36	mg/L
	Total Chlorine Residuals	Feb 25, 2025	0.20	mg/L
	Total Chlorine Residuals	Mar 28, 2025	0.43	mg/L
	Total Chlorine Residuals	Apr 28, 2025	0.15	mg/L
	Total Chlorine Residuals	May 29, 2025	0.20	mg/L
	Total Chlorine Residuals	Jun 24, 2025	0.15	mg/L
	Total Chlorine Residuals	Jul 29, 2025	0.18	mg/L
	Total Chlorine Residuals	Aug 28, 2025	0.22	mg/L
	Total Chlorine Residuals	Sep 25, 2025	0.10	mg/L
	Total Chlorine Residuals	Oct 28, 2025	0.22	mg/L
	Total Chlorine Residuals	Nov 27, 2025	0.00	mg/L
	Total Chlorine Residuals	Dec 31, 2025	0.09	mg/L
	Annual Average		0.19	mg/L

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

Treated Water	Date Sampled	Result	MAC	Exceedances (MAC / ½ MAC)
Antimony: Sb (ug/L)	Jan 7, 2025	<0.1	6.0	No / No
Arsenic: As (ug/L)	Jan 7, 2025	0.2	10.0	No / No
Barium: Ba (ug/L)	Jan 7, 2025	17.0	1000.0	No / No

Boron: B (ug/L)	Jan 7, 2025	15.0	5000.0	No / No
Cadmium: Cd (ug/L)	Jan 7, 2025	<0.015	5.0	No / No
Chromium: Cr (ug/L)	Jan 7, 2025	<1.0	50.0	No / No
Mercury: Hg (ug/L)	Jan 7, 2025	<0.02	1.0	No / No
Selenium: Se (ug/L)	Jan 7, 2025	<1.0	50.0	No / No
Uranium: U (ug/L)	Jan 7, 2025	<0.05	20.0	No / No
Fluoride (mg/L)	Jan 7, 2025	<0.1	1.5	No / No
Sodium: Na (mg/L)	Jan 7, 2025	7.1	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.**

Treated Water	Date Sampled	Result	Unit	Exceedances
Nitrite (N)	Jan 6, 2025	<0.05	mg/L	No
Nitrate (N)		0.38	mg/L	No
Ammonia N-Total		<0.05	mg/L	No
Nitrite (N)	Apr 1, 2025	<0.05	mg/L	No
Nitrate (N)		0.56	mg/L	No
Ammonia N-Total		0.25	mg/L	No
Nitrite (N)	Jul 7, 2025	>0.05	mg/L	No
Nitrate (N)		0.26	mg/L	No
Ammonia N-Total		0.05	mg/L	No
Nitrite (N)	Oct 6, 2025	<0.05	mg/L	No
Nitrate (N)		0.10	mg/L	No
Ammonia N-Total		<0.05	mg/L	No

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	Number of Samples	Range of Lead Results (Max – Min)	Unit	Exceedances
Plumbing	N/A	N/A	N/A	N/A
Distribution - Lead	N/A	N/A	N/A	N/A
Distribution - Alkalinity	4	79 - 80	mg/L	N/A
Distribution - pH	4	7.25 – 7.45	N/A	N/A

Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).

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

Treated Water	Sample Date	Result	Unit	MAC	Exceedances (MAC / ½ MAC)
Alachlor	Jan 7, 2025	< 0.3	ug/L	5.0	No / No
Atrazine + N-dealkylated metabolites	Jan 7, 2025	< 0.5	ug/L	5.0	No / No
Azinphos-methyl	Jan 7, 2025	< 1.0	ug/L	20.0	No / No
Benzene	Jan 7, 2025	< 0.5	ug/L	1.0	No / No

Benzo(a)pyrene	Jan 7, 2025	< 0.006	ug/L	0.01	No / No
Bromoxynil	Jan 7, 2025	< 0.5	ug/L	5.0	No / No
Carbaryl	Jan 7, 2025	< 3.0	ug/L	90.0	No / No
Carbofuran	Jan 7, 2025	< 1.0	ug/L	90.0	No / No
Carbon Tetrachloride	Jan 7, 2025	< 0.2	ug/L	2.0	No / No
Chlorpyrifos	Jan 7, 2025	< 0.5	ug/L	90.0	No / No
Diazinon	Jan 7, 2025	< 1.0	ug/L	20.0	No / No
Dicamba	Jan 7, 2025	< 1.0	ug/L	120.0	No / No
1,2-Dichlorobenzene	Jan 7, 2025	< 0.5	ug/L	200.0	No / No
1,4-Dichlorobenzene	Jan 7, 2025	< 0.5	ug/L	5.0	No / No
1,2-Dichloroethane	Jan 7, 2025	< 0.5	ug/L	5.0	No / No
1,1-Dichloroethylene	Jan 7, 2025	< 0.5	ug/L	14.0	No / No
Dichloromethane (Methylene Chloride)	Jan 7, 2025	< 5.0	ug/L	50.0	No / No
2,4-Dichlorophenol	Jan 7, 2025	< 0.2	ug/L	900.0	No / No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 7, 2025	< 1.0	ug/L	100.0	No / No
Diclofop-methyl	Jan 7, 2025	< 0.9	ug/L	9.0	No / No
Dimethoate	Jan 7, 2025	< 1.0	ug/L	20.0	No / No
Diquat	Jan 7, 2025	< 5.0	ug/L	70.0	No / No
Diuron	Jan 7, 2025	< 5.0	ug/L	150.0	No / No
Glyphosate	Jan 7, 2025	< 25.0	ug/L	280.0	No / No
Malathion	Jan 7, 2025	< 5.0	ug/L	190.0	No / No
Metolachlor	Jan 7, 2025	< 3.0	ug/L	50.0	No / No
Metribuzin	Jan 7, 2025	< 3.0	ug/L	80.0	No / No
Monochlorobenzene (Chlorobenzene)	Jan 7, 2025	< 0.5	ug/L	80.0	No / No
Paraquat	Jan 7, 2025	< 1.0	ug/L	10.0	No / No
PCB	Jan 7, 2025	< 0.05	ug/L	3.0	No / No
Pentachlorophenol	Jan 7, 2025	< 0.2	ug/L	60.0	No / No
Phorate	Jan 7, 2025	< 0.3	ug/L	2.0	No / No
Picloram	Jan 7, 2025	< 5.0	ug/L	190.0	No / No
Prometryne	Jan 7, 2025	< 0.1	ug/L	1.0	No / No
Simazine	Jan 7, 2025	< 0.5	ug/L	10.0	No / No
Terbufos	Jan 7, 2025	< 0.5	ug/L	1.0	No / No
Tetrachloroethylene	Jan 7, 2025	< 0.5	ug/L	10.0	No / No
2,3,4,6-Tetrachlorophenol	Jan 7, 2025	< 0.2	ug/L	100.0	No / No
Triallate	Jan 7, 2025	< 10.0	ug/L	230.0	No / No
Trichloroethylene	Jan 7, 2025	< 0.5	ug/L	5.0	No / No
2,4,6-Trichlorophenol	Jan 7, 2025	< 0.2	ug/L	5.0	No / No
Trifluralin	Jan 7, 2025	< 0.5	ug/L	45.0	No / No
Vinyl Chloride	Jan 7, 2025	< 0.2	ug/L	1.0	No / No

Parameter	Sample Date	Result	Unit	Exceedance
THM	Annual Average	19.5	ug/L	No
HAA	Annual Average	8.6	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	Unit	Sample Date
N/A	N/A	N/A	N/A

