

## **OPTIONAL ANNUAL REPORT TEMPLATE**

Drinking Water System Number:	220003421
Drinking Water System Name:	City of Windsor Drinking Water System
Drinking Water System Owner:	The Windsor Utilities Commission
Drinking Water System Category:	Large Municipal Residential
Period being reported:	Calendar Year 2024

<u>Complete if your Category is Large</u> Municipal Residential or Small Municipal	Complete for all other Categories
Residential	
Does your Drinking Water System serve more than 10,000 people? Yes [ X ] No [ ]	Number of Designated Facilities served:         Did you provide a copy of your annual
Is your annual report available to the public at no charge on a web site on the Internet? Yes [ X ] No [ ]	report to all Designated Facilities you serve? Yes [ ] No [ ]
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	Number of Interested Authorities you         report to:         Did you provide a copy of your annual
The Windsor Utilities Commission 4545 Rhodes Dr. Windsor ON N8W 5T1	report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]

List all Drinking Water Systems (if any), which receive all their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Town of Lasalle, ON	220004402
Town of Tecumseh, ON	260004969

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
- [X] 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



### **Description of the Drinking Water System**

The City of Windsor Drinking Water System is owned by The Windsor Utilities Commission (WUC). It is maintained and operated by ENWIN Utilities Ltd. (ENWIN) as Operating Authority.

The City of Windsor Drinking Water System consists of the A.H. Weeks Water Treatment Plant (WTP), which is a Class IV water treatment subsystem and a Class III distribution system under Ontario Regulation 128/04 of the Safe Drinking Water Act, 2002. In addition, WUC operates the A.J. Brian Pumping Station, George Avenue Pumping Station, J.F. Cooke Reservoir, Pumping and Re-chlorination Station and one (1) water tower.

To treat the raw water, which is sourced from the Detroit River, the WTP employs screening, prechlorination (on an as needed basis), pH adjustment (utilizing CO2), disinfection (utilizing ozone), coagulation, flocculation, sedimentation, dual-media filtration with post chlorination, fluoridation (utilizing fluorosilicic acid) and corrosion control adjustment (utilizing phosphoric acid). The WTP pumps sedimentation sludge and backwash water to the sanitary sewer.

Treated water from the WTP is routed to an on-site reservoir and another reservoir located near the WTP. The treated water is then pumped into the distribution system from two (2) pumping stations, which are located near the WTP. Water from the pumping stations satisfies demand for the greater Windsor area including the Towns of Tecumseh and LaSalle. A reservoir, pumping and re-chlorination station located further from the WTP provides system pressure and flow to the southwest portion of the system, while a centrally located water tower provides pressure and flow control to the downtown core.

The drinking water system is monitored continuously at various locations, both at the WTP and pumping stations as well as throughout the distribution system via a Supervisory Control and Data Acquisition (SCADA) system.

#### List all water treatment chemicals used over this reporting period

Chlorine gas, Sodium Hypochlorite, Carbon Dioxide (CO2), Ozone (generated on-site using liquid oxygen), Calcium Thiosulfate (ozone quench agent), Polyaluminum Chloride (PaCl) (coagulant), Filter Aid Polymer, Phosphoric Acid (corrosion control agent) and Fluorosilisic Acid.

#### 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:



### Capital Projects in the Distribution System,

WUC, with a capital expenditure of approximately \$38 million, in 2024 has:

- Installed 14.13 km of Watermain (<400 mm)</p>
- Installed 2.52 km of Feedermain (>400 mm)
- Installed 1,037 New Water Services in the public Right the Way (ROW)
- Installed 304 New Valves in the public Right the Way (ROW)
- Installed 93 New Fire Hydrants in the public Right the Way (ROW)
- Removed 87 Old Fire Hydrants in the public Right the Way (ROW)
- Removed 449 Old Lead Water Services in the public Right the Way (ROW)

#### Capital Projects in the Treatment System encompasses:

#### West Settler Rehabilitation

This project consisted of the rehabilitation of the various components that are part of the west settler system including the lower sludge rack and flumes as well as re-coating of all coated surfaces in the settler. Stantec Consulting assisted with detailed design and contract administration for the rehabilitation work. Approximate cost for the project was \$950,000.

### **Chlorine Emergency Valve Closure System**

This project was for the installation a new automatic isolation system for the gaseous chlorine storage cylinders used in the chlorine system for disinfection of drinking water. The system is composed of electric actuators connected to a series of controls panels. In the event of a chlorine leak, a gas detector located in the area signals all the electric actuators to close valves on the chlorine storage cylinders isolating the system. Dillon Consulting assisted with detailed design and equipment procurement assistance for the project. Approximate cost for the project was \$410,000.

#### Old Treatment Plant Demolition

This project was for the decommissioning and demolition of the Old Treatment Plant Facility located adjacent to the A.H. Weeks Water Treatment Plant (A.H. Weeks WTP). The facility will be demolished with the exception of the raw water intake and low lift pumping station located on the northwest side of the facility. Following demolition, the low lift pump station will be reconnected by a new pipeline to supply water to the A.H. Weeks WTP. The project is expected to take until Summer 2025 with an approximate cost of \$6.2 million.

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.

See Table 1 – Adverse Water Quality Incidents (AWQI's)



## Table 1 – Adverse Water Quality Incidents (AWQI's)

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2024-04-19	Total Coliform (TC) – Treated Water	TC = 1	CFU/100 mL	Flush and Re-sample at location, upstream and downstream for 2 consecutive days. Results of the re-sampling are free of bacterial content.	2024-04-19
2024-10-14	Coagulant	Improper disinfection of the water	N/A	Restore coagulant feed. Improperly disinfected water flushed to waste. Developed sampling and monitoring plan.	2024-10-14

Note: – CFU – Colony Forming Units

Please refer to the colour chart below when reviewing the data summarized herein:

Green	Indicates results are in compliance
Yellow	Indicates results are in compliance however above the half Maximum Acceptable Concentration (MAC) or IMAC level.
Red	Indicates results are not in compliance or not within the operational guideline

## 1.1 Microbiological testing

Microbiological testing done under the Schedule 10 of Regulation 170/03, during the period covered by this Annual Report.

	Number of Samples	Range of E.Coli Results (min#)-(max#) CFU/100 mL	Range of Total Coliform Results (min#)-(max#) CFU/100 mL	Number of HPC Samples	Range of HPC Results (min#)-(max#) CFU/1 mL Spread Plate
Raw	255	<b>0 – 1200</b> <sup>(1)</sup>	<b>14 - 12200</b> <sup>(1)</sup>	255	<b>20 - 2500</b> <sup>(1)</sup>
Treated	1579	<b>0</b> – <b>0</b> <sup>(2)</sup>	<b>0 - 1</b> <sup>(2)</sup>	1281	<10 – 310 <sup>(3)</sup>
Distribution	1950	<b>0 - 0</b> <sup>(2)</sup>	<b>0 - 0</b> <sup>(2)</sup>	1021	<10 - >2000 <sup>(3)</sup>

(1) No standard available – Results indicate the overall Raw Water Quality

(2) Not Detectable – Standard expressed as maximum

(3) < 500 – Internal Target as Best Management Practice

Note – CFU – Colony Forming Units, HPC – Heterotrophic Plate Counts

## 1.2 Operational Testing

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



	Number of Sample	es Range of Res (min#)-(max	sults Average x#)	s Average Results		
Turbidity	365	0.03 - 0.09	9 0.0	94	NTU	
Chlorine	365	1.47 - 1.6	5 1.5	3	mg/L	
Parameter	MAC OR IMAC	Range of Results (min#)-(max#)	Average Results	Unit Measu	of In ure Compliance	
Fluoride - Treated	1.5	0.44 - 0.87	0.57	mg/	L Yes	
Fluoride - Distribu	tion 1.5	0.44 -0.85	0.57	mg/	L Yes	

## 1.3 Additional Testing Required

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument, during the period covered by this Annual Report.

Parameter	Date Sampled	Running Annual Average	Unit of Measure	In compliance
Bromate - Treated	1-Jan-24 to 31-Dec-24	0.006	mg/L	Yes
Bromate - AJ Brian Pumping Station	1-Jan-24 to 31-Dec-24	0.006	mg/L	Yes
Bromate - George Ave Pumping Station	1-Jan-24 to 31-Dec-24	0.006	mg/L	Yes
Bromate - JF Cook Pumping Station	1-Jan-24 to 31-Dec-24	0.007	mg/L	Yes

## 1.4 Inorganic Parameters

Summary of Inorganic parameters tested during the period covered by this Annual Report. or the most recent sample results.

Parameter	MAC OR IMAC	Sample Date	Result Value Unit of Meas		In Compliance
Antimony	0.006	October 9, 2024	<0.0006	mg/L	Yes
Arsenic	0.01	October 9, 2024	0.0003	mg/L	Yes
Barium	1	October 9, 2024	0.0151	mg/L	Yes
Boron	5	October 9, 2024	0.014	mg/L	Yes
Cadmium	0.005	October 9, 2024	0.00003	mg/L	Yes
Chromium	0.05	October 9, 2024	<0.0008	mg/L	Yes
Lead <sup>(4)</sup>	0.01	October 9, 2024	0.00001	mg/L	Yes
Mercury	0.001	October 9, 2024	<0.00001	mg/L	Yes
Selenium	0.05	October 9, 2024	0.0008	mg/L	Yes
Sodium	20	January 10, 2024	5.42	mg/L	Yes
Uranium	0.02	October 9, 2024	0.000047	mg/L	Yes
Fluoride	1.5	October 9, 2024	0.52	mg/L	Yes
Nitrite <sup>(4)</sup>	1	October 9, 2024	<0.003	mg/L	Yes
Nitrate <sup>(4)</sup>	10	October 9, 2024	0.202	mg/L	Yes

(4) Lead, Nitrite, Nitrate results are from Maximum resolution in the Distribution system

## **Drinking Water Systems Regulations**



## 1.5 Organic Parameters

Summary of Organic parameters sampled during the period covered by this Annual Report or the most recent sample results.

Parameter	MAC OR	Sample Date	Result Value	Unit of	In Compliance
	IMAC			Measure	
Alachlor	0.005	October 9, 2024	<0.00002	mg/L	Yes
Atrazine + N-dealkylated	0.005	October 9, 2024	0.00001	ma/l	Yes
Azinghos mothyl	0.02	October 9, 2024		mg/L	Ves
Renzene	0.02	October 9, 2024		mg/L	Ves
Benzo(a)pyrana	0.001	October 9, 2024		mg/L	Ves
Bromovynil	0.0001	October 9, 2024		mg/L	Ves
Carband	0.005	October 9, 2024		mg/L	Ves
Carbofuran	0.09	October 9, 2024	<0.00003	mg/L	Yes
Carbon Tetrachloride	0.002	October 9, 2024		mg/L	Yes
Chlorpyrifos	0.09	October 9, 2024	<0.00017	mg/L	Yes
Diazinon	0.02	October 9, 2024	<0.00002	mg/L	Yes
Dicamba	0.02	October 9, 2024	<0.00002	mg/L	Yes
1 2-Dichlorobenzene	0.2	October 9, 2024	<0.00020	mg/L	Yes
1 4-Dichlorobenzene	0.005	October 9, 2024	<0.00036	mg/l	Yes
1 2-Dichloroethane	0.005	October 9, 2024	<0.00035	mg/l	Yes
1.1-Dichloroethylene (vinylidene	0.000	0000001 3, 2024		1116/ E	
chloride)	0.014	October 9, 2024	<0.00033	mg/L	Yes
Dichloromethane	0.05	October 9, 2024	<0.00035	mg/L	Yes
2,4-Dichlorophenol	0.9	October 9, 2024	<0.00015	mg/L	Yes
2,4-Dichlorophenoxy acetic acid	0.1				Ves
(2,4-D)	0.1	October 9, 2024	<0.00019	mg/L	105
Diclofop-methyl	0.009	October 9, 2024	<0.00040	mg/L	Yes
Dimethoate	0.02	October 9, 2024	<0.00006	mg/L	Yes
Diquat	0.07	October 9, 2024	<0.001	mg/L	Yes
Diuron	0.15	October 9, 2024	<0.00003	mg/L	Yes
Glyphosate	0.28	October 9, 2024	<0.001	mg/L	Yes
Haloacetic Acids (HAA5) <sup>(5)</sup>					
(Max Resolution)					
(Note: show latest running					
annual average)		Running Annual		-	
Q4 = <0.0053 mg/L	0.080	Average =	<0.0053	mg/L	Yes
Q3 = <0.0053 mg/L		0 -			
Q2 = <0.0050 mg/L					
Q1 = <0.0050 mg/L					



	MAC OR	Sample Date	Result Value	Unit of	In Compliance
Malathian		October 0, 2024	<0.00002	wea/l	Voc
	0.19	October 9, 2024	<0.00002	mg/L	Yes
MCPA	0.1	October 9, 2024	<0.0000012	mg/L	Yes
Metolachior	0.05	October 9, 2024	<0.00001	mg/L	Yes
Metribuzin	0.08	October 9, 2024	<0.00002	mg/L	Yes
Monochlorobenzene	0.08	October 9, 2024	<0.0003	mg/L	Yes
Paraquat	0.01	October 9, 2024	<0.001	mg/L	Yes
Pentachlorophenol	0.06	October 9, 2024	<0.00015	mg/L	Yes
Phorate	0.002	October 9, 2024	<0.00001	mg/L	Yes
Picloram	0.19	October 9, 2024	<0.001	mg/L	Yes
Polychlorinated Biphenyls (PCB)	0.003	October 9, 2024	<0.00004	mg/L	Yes
Prometryne	0.001	October 9, 2024	<0.0003	mg/L	Yes
Simazine	0.01	October 9, 2024	<0.00001	mg/L	Yes
THM's (Max. Resolution) <sup>(5)</sup> (Note: show latest running         annual average)         Q4 2024 = 0.00925 mg/L         Q3 2024 = 0.010475 mg/L         Q2 2024 = 0.010325 mg/L         Q1 2024 = 0.0102375 mg/L	0.100	Running Annual Average =	0.0093	mg/L	0.00037
T. J. C.	0.001				Vee
	0.001	October 9, 2024	<0.00001	mg/L	Yes
letrachloroethylene	0.01	October 9, 2024	<0.00035	mg/l	Yes
2,3,4,6-Tetrachlorophenol	0.1	October 9, 2024	<0.00020	mg/L	Yes
Triallate	0.23	October 9, 2024	<0.00001	mg/L	Yes
Trichloroethylene	0.005	October 9, 2024	<0.00044	mg/L	Yes
2,4,6-Trichlorophenol	0.005	October 9, 2024	<0.00025	mg/L	Yes
Trifluralin	0.045	October 9, 2024	<0.00002	mg/L	Yes
Vinyl Chloride	0.001	October 9, 2024	<0.00017	mg/L	Yes

(5) – THM's and HAA5 results are from Max resolution in the Distribution system

# List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

No Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.