

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 2021

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></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; width: fit-content;"> <p>The Windsor Utilities Commission 4545 Rhodes Dr. Windsor ON N9A 5T7</p> </div>	<p><b><u>Complete for all other Categories</u></b></p> <p>Number of Designated Facilities served: <input style="width: 100px; height: 20px;" type="text"/></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 style="width: 100px; height: 20px;" type="text"/></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
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.

- 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 \_\_\_\_\_

**Description of the Drinking Water System**

The Windsor Utilities Commission water treatment facility employs screening, pre-chlorination (on an as needed basis), pH adjustment (utilizing CO<sub>2</sub>), disinfection (utilizing ozone), coagulation, flocculation, sedimentation, dual-media filtration (3 filters) and multi-media filtration (5 filters) with post chlorination, fluoridation and corrosion control adjustment (utilizing phosphoric acid) to treat raw water obtained from the Detroit River.

The water treatment plant pumps sedimentation sludge and backwash water to the sanitary sewer. Treated water from the plant is routed to an on-site reservoir and other reservoir co-located nearby the water treatment facility. Subsequently the treated water is pumped into the distribution system from two pumping stations co-located nearby the water treatment facilities as well. Water from the pumping stations satisfies demand for the greater Windsor area including the communities of Tecumseh and LaSalle. A remote reservoir and pumping station provides a re-chlorination facility (using sodium hypochlorite) to provide 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 at various locations, both at the water treatment and pumping stations as well as throughout the transmission 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 (CO<sub>2</sub>), Ozone (generated on-site using liquid oxygen), Calcium Thiosulfate (ozone quench agent), Polyaluminum chloride (PaCl), Filter aid cationic polymer and phosphoric acid (corrosion control agent).

**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**

Installed 108 new public-use fire hydrants through capital projects.

Installed 373 new water main valves through capital projects.

Installed 16.3 km of watermain <400 mm through capital projects.

**Reservoir “D” Rehabilitation**

Rehabilitation Engineering work was completed, and the project was tendered and awarded. Construction began midyear and was nearing completion at the end of 2021 with anticipated completion early in 2022. The rehabilitation work generally included concrete repairs on the interior and exterior, waterproofing and insulating of the roof, miscellaneous repairs and installation of interior baffles. Approximate capital expenditure \$3,800,000.

#### **Filter Bed Rehabilitation – Filters #7 and Filter #8**

ENWIN completed rehabilitation of Filter #7 in January 2021 and Filter #8 in April 2021 at the A.H. Weeks WTP including removal of the existing plastic underdrain system, waterproof coating of the filter beds and walls, installation of new stainless-steel underdrains and installation of new anthracite and sand filter media. The new underdrain system and media will increase the overall filter performance. Approximate capital expenditure for the project was \$971,000.

#### **Fluoride Implementation**

As part of the overall fluoride implementation project, ENWIN continued the fluoride pipe loop study utilizing the existing pipe loop at A H Weeks WTP with the goal of studying possible interference, if any, with the effectiveness of the existing corrosion control plan. The study will continue after fluoride is introduced into the distribution system for approximately 10 months for monitoring purposes. In early 2021, ENWIN contracted Jacobs Engineering for the detailed design of the permanent fluoride dosing system which is still underway. ENWIN also opted to construct a temporary dosing system to begin the dosing of fluoride into the distribution system ahead of completion of the permanent dosing system. The temporary dosing system is scheduled for commissioning in January 2022. Approximate cost to date \$459,000.

#### **A.J Brian and J.F. Cook Fuel System Upgrades**

ENWIN removed the existing below grade diesel fuel tanks at both the A.J. Brian and J.F. Cook facilities and installed a new fuel system at J. F. Cook. The new system, replacing the existing outdated fuel system, and its safety measures provides compliance with the current TSSA regulation and MECP recommendations. Construction was completed in early 2021. Approximate cost \$11,000.

#### **SCADA Network Upgrade**

ENWIN engaged the service of Rockwell for the design and implementation of an upgraded SCADA Network at the A.H. Weeks WTP. The project will update and improve the current SCADA network infrastructure adding increased security measures in line with current industry best practice. Installation of the new network was scheduled for 2021 but has been delayed due to supply chain shortages and is scheduled to be completed in summer 2022. Approximate capital expenditure \$473,000.

#### **Ozone Power Supply Unit (PSU) Upgrade**

ENWIN procured the services of Suez Water Technologies to begin the refurbishment of two of the Ozone Generator Power Supply Units (PSU). The current PSU components for Ozone Gen. #1 and #2 are at end of life and in need of replacement. Suez began design and procurement of the relevant components with expected delivery in early 2022. The refurbishment will take place once design is completed, and all components have been delivery in early 2022. Approximate capital expenditure of \$5,000 in 2021.

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
2021/05/14	Total Coliform	1	CFU/100m L	Flush and Re-sample	2021/05/17

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 (min#)-(max#)	Range of Total Coliform (min#)-(max#)	Number of HPC Samples	Range of HPC (min#)-(max#)
Raw	254	0 - 600	0 - 12400	254	5 - > 2000
Treated	1755	0 - 0	0 - 0	1644	<10 - 580
Distribution	1868	0 - 0	0 - 0	920	<10 - 20

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

	Number of Samples	Range of Results (min#)-(max#)	Unit of Measure
Turbidity	365	0.02 – 0.13	NTU
Chlorine	365	1.47 – 1.58	mg/L

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	Running Annual Average Result	Unit of Measure
MDWL 025-101	Bromate - Treated	1-Jan-21 to 31-Dec-21	0.006	mg/L
MDWL 025-101	Bromate - Distribution	1-Jan-21 to 31-Dec-21	0.005	mg/L

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedence
Antimony	October 13, 2021	0.00050 <MDL	mg/L	NO
Arsenic	October 13, 2021	0.0010 <MDL	mg/L	NO
Barium	October 13, 2021	0.019	mg/L	NO
Boron	October 13, 2021	0.013	mg/L	NO
Cadmium	October 13, 2021	0.000090 <MDL	mg/L	NO
Chromium	October 13, 2021	0.0050 <MDL	mg/L	NO
*Lead	October 13, 2021	0.0005 <MDL	mg/L	NO
Mercury	October 13, 2021	0.00010 <MDL	mg/L	NO
Selenium	October 13, 2021	0.0020 <MDL	mg/L	NO
Sodium	January 6, 2021	8.12	mg/L	NO
Uranium	October 13, 2021	0.00010 <MDL	mg/L	NO
Fluoride	January 6, 2021	0.07	mg/L	NO
Nitrite	October 13, 2021	0.010 <MDL	mg/L	NO
Nitrate	October 13, 2021	0.69	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)

<u>Location Type</u>	<u>Number of Samples</u>	<u>Range of Lead Results (min#)-(max#)</u>	<u>Unit of Measure</u>	<u>Number of Exceedences</u>
Plumbing	<u>148</u>	<u>&lt;0.05 - 1590</u>	<u>ug/L</u>	<u>14</u>
Distribution	<u>53</u>	<u>&lt;0.05 - 7.37</u>	<u>ug/L</u>	<u>0</u>

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedence
Alachlor	October 13, 2021	0.00050 <MDL	mg/L	NO
Atrazine + N-dealkylated metabolites	October 13, 2021	0.001 <MDL	mg/L	NO
Azinphos-methyl	October 13, 2021	0.0020 <MDL	mg/L	NO
Benzene	October 13, 2021	0.0001 <MDL	mg/L	NO
Benzo(a)pyrene	October 13, 2021	0.0000050 <MDL	mg/L	NO
Bromoxynil	October 13, 2021	0.00050 <MDL	mg/L	NO
Carbaryl	October 13, 2021	0.005 <MDL	mg/L	NO
Carbofuran	October 13, 2021	0.005 <MDL	mg/L	NO
Carbon Tetrachloride	October 13, 2021	0.00010 <MDL	mg/L	NO
Chlorpyrifos	October 13, 2021	0.001 <MDL	mg/L	NO

Diazinon	October 13, 2021	0.001 <MDL	mg/L	NO
Dicamba	October 13, 2021	0.001 <MDL	mg/L	NO
1,2-Dichlorobenzene	October 13, 2021	0.00020 <MDL	mg/L	NO
1,4Dichlorobenzene	October 13, 2021	0.00020 <MDL	mg/L	NO
1,2-Dichloroethane	October 13, 2021	0.00020 <MDL	mg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	October 13, 2021	0.00010 <MDL	mg/L	NO
Dichloromethane	October 13, 2021	0.00050 <MDL	mg/L	NO
2,4-Dichlorophenol	October 13, 2021	0.00025 <MDL	mg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	October 13, 2021	0.001 <MDL	mg/L	NO
Diclofop-methyl	October 13, 2021	0.00090 <MDL	mg/L	NO
Dimethoate	October 13, 2021	0.0025 <MDL	mg/L	NO
Diquat	October 13, 2021	0.007 <MDL	mg/L	NO
Diuron	October 13, 2021	0.010 <MDL	mg/L	NO
Glyphosate	October 13, 2021	0.010 <MDL	mg/L	NO
Haloacetic Acids (HAA5) (Note: show latest running annual average)	October 13, 2021	Avg.	mg/L	NO
Q1 2021 = <0.0053 mg/L	January 6, 2021	<0.0050		
Q2 2021 = <0.0050 mg/L	April 7, 2021			
Q3 2021 = <0.0050 mg/L	July 8, 2021			
Q4 2021 = <0.0050 mg/L	October 13, 2021			
Malathion	October 13, 2021	0.0050 <MDL	mg/L	NO
MCPA	October 13, 2021	0.010 <MDL	mg/L	NO
Metolachlor	October 13, 2021	0.00050 <MDL	mg/L	NO
Metribuzin	October 13, 2021	0.0050 <MDL	mg/L	NO
Monochlorobenzene	October 13, 2021	0.00010 <MDL	mg/L	NO
Paraquat	October 13, 2021	0.001 <MDL	mg/L	NO
Pentachlorophenol	October 13, 2021	0.00050 <MDL	mg/L	NO
Phorate	October 13, 2021	0.00050 <MDL	mg/L	NO
Picloram	October 13, 2021	0.0050 <MDL	mg/L	NO
Polychlorinated Biphenyls (PCB)	October 13, 2021	0.00005 <MDL	mg/L	NO
Prometryne	October 13, 2021	0.00025 <MDL	mg/L	NO
Simazine	October 13, 2021	0.0010 <MDL	mg/L	NO
THM (Note: show latest running annual average)		Avg.	mg/L	NO
Q1 2021 = 0.0052 mg/L	January 6, 2021	0.0095		
Q2 2021 = 0.00835 mg/L	April 7, 2021			
Q3 2021 = 0.0105 mg/L	July 8, 2021			
Q4 2021 = 0.0138 mg/L	October 13, 2021			

Terbofos	October 13, 2021	0.00050 <MDL	mg/L	NO
Tetrachlorethylene	October 13, 2021	0.00010 <MDL	mg/L	NO
2,3,4,6-Tetrachlorophenol	October 13, 2021	0.00050 <MDL	mg/L	NO
Triallate	October 13, 2021	0.0010 <MDL	mg/L	NO
Trichloroethylene	October 13, 2021	0.00010 <MDL	mg/L	NO
2,4,6-Trichlorophenol	October 13, 2021	0.00050 <MDL	mg/L	NO
Trifluralin	October 13, 2021	0.0010 <MDL	mg/L	NO
Vinyl Chloride	October 13, 2021	0.00020 <MDL	mg/L	NO

**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 Standard.