Ontario

# Annual Drinking Water Report

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

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|---|---|
| **Drinking-Water System Number:** | 210000871 |
| **Drinking-Water System Name:** | **Elgin Area Primary Water Supply System (EAPWSS)** |
| **Drinking-Water System Owner:** | Elgin Area Primary Water Supply System Joint Board of Management |
| **Drinking-Water System Operating Authority:** | Ontario Clean Water Agency (OCWA) |
| **Drinking-Water System Category:** | Large Municipal Residential |
| **Period being reported:** | January 1, 2025 through December 31, 2025 |

| **Complete if your Category is Large Municipal Residential or Small Municipal Residential** | **Complete for all other Categories.** |
|---|---|
| **Does your Drinking-Water System serve more than 10,000 people?**<br>**Yes [X] No [ ]**<br><br>**Is your annual report available to the public at no charge on a web site on the Internet?**<br>**Yes [X] No [ ]**<br><br>**Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.**<br><br>Lake Huron and Elgin Area Water Supply Systems<br>c/o Regional Water Supply Division<br>235 North Centre Road, Suite 200<br>London, ON N5X 4E7<br>https://huronelginwater.ca/<br><br>Elgin Area Primary Water Supply System<br>43665 Dexter Line, Union, ON<br>N0L 2L0 | **Number of Designated Facilities served:** N/A<br><br>**Did you provide a copy of your annual report to all Designated Facilities you serve?**<br>**Yes [ ] No [ ]**<br><br>**Number of Interested Authorities you report to:** N/A<br><br>**Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?**<br>**Yes [ ] No [ ]** |

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

**Systems that receive their drinking water directly from the EAPWSS:**

| Drinking Water System Name | Drinking Water System Number |
|---|---|
| City of London Distribution System | 260004917 |
| St. Thomas Area Secondary Water Supply System | 260078897 |
| Aylmer Area Secondary Water Supply System | 260004722 |
| Port Burwell Area Secondary Water Supply System | 260004735 |
| Central Elgin Distribution System | 260004761 |
| St. Thomas Distribution System | 260002187 |

**Systems that receive their drinking water indirectly from the EAPWSS:**

| Drinking Water System Name | Drinking Water System Number |
|---|---|
| Aylmer Distribution System | 260002136 |
| Malahide Distribution System | 260004774 |
| Dutton Dunwich Distribution System | 220002967 |
| Bayham Distribution System | 260004748 |
| Southwold Distribution System | 210001362 |

**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**
**[X] 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**

The Elgin Area Primary Water Supply System employs pre-chlorination, screening, process pH adjustment (utilizing carbon dioxide), powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, UV disinfection, post-chlorination, final pH adjustment (utilizing sodium hydroxide) and fluoridation to treat raw water obtained from Lake Erie. The Water Treatment Plant (WTP) has a rated capacity of 91 ML/day (MLD). Water is pumped from the plant through the primary transmission main (900mm diameter) to various communities enroute to the Elgin Terminal Reservoir located in northeast St. Thomas. The drinking water system is monitored at various locations throughout the system via a Supervisory Control and Data Acquisition (SCADA) system.

A Residuals Management Facility (RMF) provides equalization, clarification, sediment thickening and dechlorination. Thickened sediment is dewatered by centrifuges and the thickened sediment is sent to the landfill for final disposal. Clarified and dechlorinated liquid streams are discharged back to Lake Erie through the plant drain.

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

Carbon Dioxide
Aluminum Sulphate
Cationic Polymer
Powder Activated Carbon (PAC)
Chlorine Gas
Hydrofluorosilicic Acid
Sodium Hydroxide
Dewatering Polymer (Residuals Management Facility)
Thickening Polymer (Residuals Management Facility)
Sodium Bisulphite (Residuals Management Facility)
Calcium Thiosulfate (Residuals Management Facility)

**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 and Maintenance Projects:**

- Overhead Door replacement (High Lift Garage)
- Low Lift Instrumentation Panel replacement
- Roof drain replacements (Chlorine and Flocculation Buildings)
- Treated Water sample line replacement
- Low Lift Pump Discharge Valve replacements
- Low Lift Distribution Well chlorine injection upgrades
- Fruitridge Surge Facility safety upgrades (ladder, roof vent, fall arrest system)
- Technical Standards & Safety Authority (TSSA) generator fuel system upgrades
- Backwash Pump #1 and #2 Discharge Valve Body replacements
- Elgin Terminal Reservoir Cell #1 Access Ladder replacement
- Lab Equipment installation (Benchtop Zeta Potential analyzer)
- Forklift Load Scale installation
- Programmable Logic Controller (PLC) replacements project – including SCADA Control Panel upgrade (High Lift SCP09)
- Particle Counter replacements (Treated and Filtered water)
- RMF Total Chlorine analyzer installation
- Ultraviolet (UV) Disinfection System & Backwash Pump replacement project
- Server room fire suppression system installation
- Security upgrades (WTP fencing, remote station gate automation, intercom, card access and cameras)
- Sodium hydroxide system upgrades (new injection quills)
- IT Asset Replacement Program
- Low Lift Sluice Gate #1 upgrades

**Studies and Design:**

- Biofilter Research Project electrical upgrades
- Elgin Terminal Reservoir Expansion – Preliminary engineering
- Elgin Terminal Reservoir Cell #1 & #2 Condition Assessment
- Elgin-Middlesex Pump Station (EMPS) Asset Management Plan Update
- Master Water Plan Update
- PAC Dosing Strategy Optimization
- RMF Tank Mixing Study

**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 Report Date | Parameter | Corrective Action | Corrective Action Date |
|---|---|---|---|
| October 27, 2025 | Chemical - Fluoride | Adverse Water Quality Incident (AWQI) reported (ref# 170559) for a treated water fluoride grab sample result over 1.50 mg/L on October 27, 2025. During a routine high lift pump change, there was an initial fluoride spike over 1.50 mg/L interlocking the high lift pumps. When the high lift pumps were restarted, a second fluoride spike occurred. The EAPWSS has regulatory relief under the Municipal Drinking Water Licence 048-101 for continuous monitoring of fluoride and reporting adverse condition in which, the continuous monitoring met compliance. However, in response to the spike the operator obtained a grab sample result of 1.88 mg/L fluoride residual. This was reported as the AWQI. The system was flushed, preventing the elevated residual from entering the distribution system and the water treatment plant was returned to normal service. | November 4, 2025 |

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

| Location | Number of Samples | Range of E. coli Results (CFU/100 mL) (min #)-(max #) | Range of Total Coliform Results (CFU/100 mL) (min #)-(max #) | Range of HPC Results (CFU/100 mL) (min #)-(max #) |
|---|---|---|---|---|
| Raw Water | 104 | (0)-(300) | (0)-(12,900) | (<10)-(>2,000) |
| Treated Water (WTP) | 216 | (0)-(0) | (0)-(0) | (0)-(1,810) |
| Distribution (Elgin Terminal Reservoir Valve House) | 104 | (0)-(0) | (0)-(0) | (<10)-(350) |
| Distribution (Fruitridge Surge Facility) | 53 | (0)-(0) | (0)-(0) | (<10)-(550) |

**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 #) |
|---|---|---|
| Treated Water Free Chlorine (mg/L) | Continuous Monitoring | (0.09)-(2.23)* |
| Treated Water Fluoride (mg/L) | Continuous Monitoring | (0.08)-(1.95)** |
| Filter #1 - Filtered Water Turbidity (NTU) | Continuous Monitoring | (0.022)-(0.418) |
| Filter #2 - Filtered Water Turbidity (NTU) | Continuous Monitoring | (0.024)-(0.422) |
| Filter #3 - Filtered Water Turbidity (NTU) | Continuous Monitoring | (0.016)-(0.396) |
| Filter #4 - Filtered Water Turbidity (NTU) | Continuous Monitoring | (0.012)-(0.357) |
| Raw Water Turbidity (NTU) | Continuous Monitoring | (0)-(1,000) |
| Elgin Terminal Reservoir Inlet Free Chlorine (mg/L) | Continuous Monitoring | (0.60)-(1.48) |

Monthly filter performance met for all four filters (<0.3NTU 95% of the readings).
*Treated water free chlorine residual met requirements for primary disinfection.
**There was no Adverse Water Quality Incident (AWQI) reported for continuous monitoring due to regulatory relief in the Municipal Drinking Water Licence 048-101. However, AWQI #170559 was reported on October 27, 2025 for a fluoride grab sample over 1.50 mg/L. Details provided above.

**Summary of Inorganic parameters tested during this reporting period**
*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Antimony | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Arsenic | January 7, 2025<br>August 5, 2025 | 0.0003<br>0.0004 | mg/L | NO |
| Barium | January 7, 2025<br>August 5, 2025 | 0.0216<br>0.0193 | mg/L | NO |
| Boron | January 7, 2025<br>August 5, 2025 | 0.017<br>0.020 | mg/L | NO |
| Cadmium | January 7, 2025<br>August 5, 2025 | 0.000006<br>0.000003 | mg/L | NO |
| Chromium | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Lead (Elgin Terminal Reservoir Valve House) | January 7, 2025<br>July 2, 2025<br>October 7, 2025 | 0.00002<br>Not Detected<br>Not Detected | mg/L | NO |
| Mercury | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Selenium | January 7, 2025<br>August 5, 2025 | 0.00015<br>0.00020 | mg/L | NO |
| Uranium | January 7, 2025<br>August 5, 2025 | 0.000074<br>0.000056 | mg/L | NO |
| Sodium | January 7, 2025 | 8.53 | mg/L | NO |
| Nitrite | January 7, 2025<br>April 1, 2025<br>July 2, 2025<br>October 7, 2025 | Not Detected<br>Not Detected<br>Not Detected<br>Not Detected | mg/L | NO |
| Nitrate | January 7, 2025<br>April 1, 2025<br>July 2, 2025<br>October 7, 2025 | 0.180<br>0.162<br>0.029<br>0.031 | mg/L | NO |

**Summary of Organic parameters sampled during this reporting period**
*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Alachlor | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Atrazine + N-dealkylated metabolites | January 7, 2025<br>August 5, 2025 | 0.00005<br>0.00002 | mg/L | NO |
| Azinphos-methyl | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Benzene | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Benzo(a)pyrene | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Bromoxynil | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Carbaryl | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Carbofuran | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Carbon Tetrachloride | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Chlorpyrifos | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Diazinon | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Dicamba | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| 1,2-Dichlorobenzene | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| 1,4-Dichlorobenzene | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| 1,2-Dichloroethane | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| 1,1-Dichloroethylene (vinylidene chloride) | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Dichloromethane | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| 2,4-Dichlorophenol | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Diclofop-methyl | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Dimethoate | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Diquat | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Diuron | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Glyphosate | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Haloacetic Acids (HAA's) Elgin Terminal Reservoir Valve House | January 7, 2025<br>April 1, 2025<br>July 2, 2025<br>October 7, 2025 | Not Detected<br>Not Detected<br>Not Detected<br>0.0059 | mg/L | NO |
| Haloacetic Acids (HAA's) Elgin Terminal Reservoir Valve House = Running Annual Average | 2025 | <0.0053 | mg/L | NO |
| Malathion | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| 2-Methyl-4-chlorophenoxyacetic acid | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Metolachlor | January 7, 2025<br>August 5, 2025 | 0.00001<br>Not Detected | mg/L | NO |
| Metribuzin | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Monochlorobenzene | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Paraquat | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Pentachlorophenol | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Phorate | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Picloram | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Polychlorinated Biphenyls (PCB) | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Prometryne | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Simazine | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Total Trihalomethanes (THMs) Elgin Terminal Reservoir Valve House | January 7, 2025<br>April 1, 2025<br>July 2, 2025<br>October 7, 2025 | 0.012<br>0.010<br>0.016<br>0.020 | mg/L | NO |
| (THMs) Elgin Terminal Reservoir = Running Annual Average | 2025 | 0.015 | mg/L | NO |
| Terbufos | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Tetrachloroethylene | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| 2,3,4,6-Tetrachlorophenol | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Triallate | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Trichloroethylene | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| 2,4,6-Trichlorophenol | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Trifluralin | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |
| Vinyl Chloride | January 7, 2025<br>August 5, 2025 | Not Detected<br>Not Detected | mg/L | NO |

**NOTE:** During 2025, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

**Summary of Additional Legislative Sampling during this reporting period**

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Microcystin (Raw Water) | May 27, 2025 to December 3, 2025 | <0.1 to 0.1* | ug/L | No |
| Microcystin (Treated Water) | May 27, 2025 to December 3, 2025 | All results <0.1 | ug/L | No |
| RMF Total Suspended Solids (Effluent Discharge) | January 1, 2025 to December 31, 2025 (Monthly Average) | 4.00 to 7.23 | mg/L | No |
| RMF Total Chlorine Residual (Effluent Discharge) | January 1, 2025 to December 31, 2025 (Monthly Average) | 0.00 | mg/L | No |
| UV #1 Dose | January 1, 2025 to December 31, 2025 | 0.0** to 653.7 | mJ/cm² | No |
| UV #2 Dose | January 1, 2025 to December 31, 2025 | 0.0** to 654.3 | mJ/cm² | No |
| UV #3 Dose | January 1, 2025 to December 31, 2025 | 0.0** to 654.0 | mJ/cm² | No |
| UV #4 Dose | January 1, 2025 to December 31, 2025 | 0.0** to 653.4 | mJ/cm² | No |

*Detectable result of microcystin in raw water reported to Ministry of the Environment, Conservation and Parks (MECP) in accordance with Harmful Algal Bloom Plan. Microcystin was non-detectable in the treated water.

** Primary disinfection was achieved for all instances where UV dose dropped below 40 mJ/cm². Refer to 2025 Annual Compliance Report (Schedule 22).