



OPTIONAL ANNUAL REPORT TEMPLATE

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|--|--|
| Drinking-Water System Number: | 260002187 |
| Drinking-Water System Name: | St Thomas Water Distribution System |
| Drinking-Water System Owner: | Corporation of the City of St Thomas |
| Drinking-Water System Category: | WD Large Municipal Residential |
| Period being reported: | January 01 2016 through December 31 2016 |

| | |
|---|---|
| <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>City of St. Thomas, City Hall Environmental Services 545 Talbot Street St Thomas, Ontario N5P 3V7</p> </div> | <p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">N/A</div> <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:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">N/A</div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p> |
|---|---|

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 |
|--|------------------------------|
| St. Thomas Psychiatric Hospital Water Supply | 260005255 |
| Municipality of Central Elgin | 260004761 |
| Township of Southwold (Lynhurst Subdivision) | 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.

Public access/notice via the web

City of St. Thomas Website – www.city.st-thomas.on.ca

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 St. Thomas Water Distribution System services over 14,500 customers including 831 customers within the Municipality of Central Elgin and 53 customers within the Township of Southwold (Lynhurst Subdivision). The system purchases its water from the Elgin Area Primary Water Supply System, which extends from Lake Erie to the City of London. The St. Thomas Distribution System consists of approximately 226,000 metres of water main ranging in size from 50 mm to 450 mm in diameter with the oldest installation in 1909. Material types include Asbestos Cement, Cast Iron, Concrete Ductile, Iron Polyethylene, and PVC.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite 12% (Disinfection/repairs)

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

Capital Improvements

Edward and Burwell Watermain Replacement - \$350,000

Talbot Street Watermain Replacement - \$200,000

Alexandria Avenue Watermain Replacement - \$160,000

Caso Crossing New Watermain installation-\$110,000

Watermain Relining for Water Quality Concerns - \$375,000

Ada Street Service Replacement-10,000



System Operations Maintenance Highlights

27 Valve Box Replacements, 5 Valve Replacements, 13 Services Replaced, 47 Service Box Replacements, 34 Main Breaks

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 |
|------------------|----------------|--------|-----------------|------------------------|------------------------|
| February 23 2016 | Total Coliform | 87 | cfu/100mL | Flushed and re-sampled | February 26 2016 |
| December 29 2016 | Total Coliform | 1 | cfu/100ml | Flushed and re-sampled | January 05 2017 |

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 | | | | | |
| Treated | | | | | |
| Distribution | 704 | (0)-(0) | (0)-(87) | 648 | (<10)-(>2000) |
| St. Thomas | 626 | (0)-(0) | (0)-(87) | 570 | (<10)-(>2000) |
| Central Elgin | 65 | (0)-(0) | (0)-(0) | 65 | (<10)-(>2000) |
| Southwold | 13 | (0)-(0) | (0)-(0) | 13 | (<10)-(30) |

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

| | Number of Grab Samples | Range of Results (min #)-(max #) |
|--|------------------------|----------------------------------|
| Turbidity | | |
| Chlorine on-line | 8760 | (0.0)-(2.00) |
| Sample Collection | 709 | (0.18)-(1.87) |
| Grab Cl2 | 1729 | (0.19)-(1.98) |
| Fluoride (If the DWS provides fluoridation) | | |

NOTE: For continuous monitors use 8760 as the number of samples.

*NOTE: Record the unit of measure if it is **not** milligrams per litre. The value of 0.0 was recorded in the continuous chlorine sampler as a result of equipment abnormality/SCADA issue/maintenance work or calibration.*



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 |
|---------------------------------|-----------|--------------|--------|-----------------|
| | | | | |
| | | | | |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|-----------|------------------|--------------|-----------------|------------|
| Antimony | December 08 2016 | 0.25 | ug/l | No |
| Arsenic | December 08 2016 | 0.2 | ug/l | No |
| Barium | December 08 2016 | 22.6 | ug/l | No |
| Boron | December 08 2016 | 16 | ug/l | No |
| Cadmium | December 08 2016 | 0.005 | ug/l | No |
| Chromium | December 08 2016 | 0.47 | ug/l | No |
| *Lead | December 08 2016 | 0.43 | ug/l | No |
| Mercury | December 08 2016 | 0.01 <MDL | ug/l | No |
| Selenium | December 08 2016 | 0.17 | ug/l | No |
| Sodium | December 08 2016 | 16.1 | mg/l | No |
| Uranium | December 08 2016 | .028 | ug/l | No |
| Fluoride | | | | |
| Nitrite | | | | |
| Nitrate | | | | |

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential system.

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 Lead Results (min#) – (max #) | Number of Exceedances |
|---------------|-------------------|--|-----------------------|
| Plumbing | | | |
| Distribution | 1 | 0.43 | 0 |

**The City is on the reduced sampling program.*



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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|-----------------|---------------|-----------------|------------|
| Alachlor | Dec. 08 2016 | <0.02 MDL | ug/l | No |
| Atrazine + N-dealkylated metabolites | Dec. 08 2016 | 0.05 | ug/l | No |
| Azinphos-methyl | Dec. 08 2016 | <0.05 MDL | ug/l | No |
| Benzene | Dec. 08 2016 | <0.32 MDL | ug/l | No |
| Benzo(a)pyrene | Dec. 08 2016 | <0.004 MDL | ug/l | No |
| Bromoxynil | Dec. 08 2016 | <0.33 MDL | ug/l | No |
| Carbaryl | Dec. 08 2016 | <0.05 MDL | ug/l | No |
| Carbofuran | Dec. 08 2016 | <0.01 MDL | ug/l | No |
| Carbon Tetrachloride | Dec. 08 2016 | <0.16 MDL | ug/l | No |
| Chlorpyrifos | Dec. 08 2016 | <0.02 MDL | ug/l | No |
| Diazinon | Dec. 08 2016 | <0.02 MDL | ug/l | No |
| Dicamba | Dec. 08 2016 | <0.20 MDL | ug/l | No |
| 1,2-Dichlorobenzene | Dec. 08 2016 | <0.41 MDL | ug/l | No |
| 1,4-Dichlorobenzene | Dec. 08 2016 | <0.36 MDL | ug/l | No |
| 1,2-Dichloroethane | Dec. 08 2016 | <0.35 MDL | ug/l | No |
| 1,1-Dichloroethylene (vinylidene chloride) | Dec. 08 2016 | <0.33 MDL | ug/l | No |
| Dichloromethane | Dec. 08 2016 | <0.35 MDL | ug/l | No |
| 2-4 Dichlorophenol | Dec. 08 2016 | <0.15 MDL | ug/l | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | Dec. 08 2016 | <0.19 MDL | ug/l | No |
| Diclofop-methyl | Dec. 08 2016 | <0.40 MDL | ug/l | No |
| Dimethoate | Dec. 08 2016 | <0.03 MDL | ug/l | No |
| Diquat | Dec. 08 2016 | <1 MDL | ug/l | No |

| | | | | |
|---|-----------------|-----------------|------|----|
| Diuron | Dec. 08 2016 | <0.03 MDL | ug/l | No |
| Glyphosate | Dec. 08 2016 | <1 MDL | ug/l | No |
| Malathion | Dec. 08 2016 | <0.02 MDL | ug/l | No |
| MCPA | Dec. 08 2016 | <0.00012 MDL | Mg/l | No |
| Metolachlor | Dec. 08 2016 | <0.01 MDL | ug/l | No |
| Metribuzin | Dec. 08 2016 | <0.02 MDL | ug/l | No |
| Monochlorobenzene | Dec. 08 2016 | <0.30 MDL | ug/l | No |
| Paraquat | Dec. 08 2016 | <1 MDL | ug/l | No |
| Pentachlorophenol | Dec. 08 2016 | <0.15 MDL | ug/l | No |
| Phorate | Dec. 08 2016 | <0.01 MDL | ug/l | No |
| Picloram | Dec. 08 2016 | <1 MDL | ug/l | No |
| Polychlorinated Biphenyls(PCB) | Dec. 08 2016 | <0.04 MDL | ug/l | No |
| Prometryne | Dec. 08 2016 | <0.03 MDL | ug/l | No |
| Simazine | Dec. 08 2016 | <0.01 MDL | ug/l | No |
| THM (NOTE: show latest annual average) | 2016 | 17.5 | ug/l | No |
| Terbufos | Dec. 08 2016 | <0.01 MDL | ug/l | No |
| Tetrachloroethylene | Dec. 08 2016 | <0.35 MDL | ug/l | No |
| 2,3,4,6-Tetrachlorophenol | Dec. 08 2016 | <0.20 MDL | ug/l | No |
| Triallate | Dec. 08 2016 | <0.01 MDL | ug/l | No |
| Trichloroethylene | Dec. 08 2016 | <0.44 MDL | ug/l | No |
| 2,4,6-Trichlorophenol | Dec. 08 2016 | <0.25 MDL | ug/l | No |
| Trifluralin | Dec. 08 2016 | <0.02 MDL | ug/l | No |
| Vinyl Chloride | Dec. 08 2016 | <0.17 MDL | 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 Value | Unit of Measure | Date of Sample |
|------------------|---------------------|------------------------|-----------------------|
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