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

**Part III Form 2**
**Section 11. ANNUAL REPORT.**

| | |
|---|---|
| **Drinking-Water System Number:** | 220000442 |
| **Drinking-Water System Name:** | Sturgeon Falls Water Treatment Plant |
| **Drinking-Water System Owner:** | The Corporation of the Municipality of West Nipissing |
| **Drinking-Water System Category:** | Large Municipal Residential |
| **Period being reported:** | January 1, 2016 to December 31, 2016 |

***Complete if your Category is Large Municipal Residential or Small Municipal Residential***

**Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [x]**

**Is your annual report available to the public at no charge on a web site on the Internet? Yes [x] No [ ]**

**Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.**

Sturgeon Falls Water Treatment Plant
11 Nipissing Street, Sturgeon Falls, ON

***Complete for all other Categories.***

**Number of Designated Facilities served:**

0

**Did you provide a copy of your annual report to all Designated Facilities you serve?**
**Yes [ ] No [ ] Not Applicable [x]**

**Number of Interested Authorities you report to:** 0

**Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?**
**Yes [ ] No [ ] Not Applicable [x]**

**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 |
|---|---|
| N/A | |

**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 [ ] No [ ] Not Applicable [x]**

**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**
**[ ] 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 Sturgeon Falls WTP commissioned in 1991, consists of a full surface water treatment facility, with a design capacity of 14 200 $m^3$/day, drawing water from the Sturgeon River. The process consists of:

- Intake from the Sturgeon River, equipped with manually removable screens
- Four vertical turbine raw water pumps
- Two up-flow pre-treatment tanks for flash mixing for chemical assisted flocculation and sedimentation
- Four sets of three-cells-in-series flocculation tanks
- Two rectangular settling tanks, each with an inclined plate settling system
- Three dual media (anthracite/sand) gravity filters
- Continuous filtered turbidity monitoring for each filter
- Filtered water is directed through a chlorine contact tank, with filter-to-waste capability returning unchlorinated water to the Sturgeon River
- Chlorine gas addition points for primary disinfection located before filters (not used) and after filter-to-waste valve (normal addition point)
- One chlorine contact tank equipped with baffle walls, and discharge line to the underground reservoir
- Continuous Giardia log removal calculations to monitor adequacy of disinfection
- Hydrated lime (calcium hydroxide) addition after the chlorine contact chamber for pH and alkalinity control
- Two cell in-ground treated water storage reservoir, equipped with valves to enhance flow through circulation
- A two-chamber high lift pump well located below the high lift pumping station
- Five vertical turbine type high lift pumps
- Post-chlorine gas addition to Distribution with continuous feed-back monitoring
- Hydrofluosilicic acid (fluoride) addition to Distribution with continuous feed-back monitoring
- Filter backwash system consisting of two filter backwash pumps, serving all filters
- Backwash wastewater discharge to the backwash settling tanks
- Three backwash settling tanks; supernatant return to Sturgeon River; settled sludge to sludge thickening tanks
- Two square sludge thickening tanks; sludge discharge to municipal sewage collection system; supernatant return to the Sturgeon River
- Back-up diesel powered generator capable of servicing essential plant operations

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

- Polyaluminum chloride
- Specialty polymer
- Limestone
- Chlorine (gas)
- Hydrated lime (calcium hydroxide)
- Hydrofluosilicic acid (fluoride)
- ENV 24P10 – distribution pipe corrosion control
- ENV PYRO 50 - manganese dispersive sequestrant

**Were any significant expenses incurred to?**

**[ ]** Install required equipment
**[ ]** Repair required equipment
**[ ]** Replace required equipment
**[**x**]** Not Applicable

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

| | |
|---|---|
| Water Plant Material/Supplies/Rentals/Maintenance | $59,644 |
| Water Plant Process Chemicals | $143,843 |
| Water Quality Lab Testing | $18,900 |
| Consulting/Operator Training | $8,727 |
| Water Plant Utilities | $224,672 |
| Insurance | $30,485 |
| Labour | $215,021 |
| Electrical/Instrumentation | $23,873 |

**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 | Units | Corrective Action | Corrective Action Date |
|---|---|---|---|---|---|
| | Nil | | | | |

**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 Results CFU/100mL (min #)-(max #) | Range of Total Coliform Results CFU/100mL (min #)-(max #) |
|---|---|---|---|
| **Raw** | 52 | <5 – 40 | 40 – 410 |
| **Treated** | 52 | 0 – 0 | 0 – 0 |
| **Distribution** | 260 | 0 – 0 | 0 – 0 |

## 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** | 8760 | Daily Average: 0.042 - 0.060 NTU |
| **Chlorine** | 8760 | Daily Average: 1.146 – 1.742 mg/L |
| **Fluoride** | 8760 | Daily Average: 0.58 - 0.66 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 of Measure |
|---|---|---|---|---|
| 7618-6QXP8Z (July 7/06) | Backwash SS | 48 samples | 21.3 | mg/L (annual average) |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Fluoride | 2016-11-02 | 0.5 | mg/L | No |
| Nitrite (N) | 2016-03-01 | < 0.1 | mg/L | No |
| | 2016-06-20 | < 0.1 | | No |
| | 2016-09-15 | < 0.1 | | No |
| | 2016-11-02 | < 0.1 | | No |
| Nitrate (N) | 2016-03-01 | 0.2 | mg/L | No |
| | 2016-06-20 | 0.3 | | No |
| | 2016-09-15 | 0.1 | | No |
| | 2016-11-02 | 0.1 | | No |
| Nitrate + Nitrite (N) | 2016-03-01 | 0.2 | mg/L | No |
| | 2016-06-20 | 0.3 | | No |
| | 2016-09-15 | 0.1 | | No |
| | 2016-11-02 | 0.1 | | No |
| Antimony | 2016-11-02 | < 0.0001 | mg/L | No |
| Arsenic | 2016-11-02 | 0.0004 | mg/L | No |
| Barium | 2016-11-02 | 0.012 | mg/L | No |
| Boron | 2016-11-02 | < 0.005 | mg/L | No |
| Cadmium | 2016-11-02 | < 0.00002 | mg/L | No |
| Chromium | 2016-11-02 | < 0.002 | mg/L | No |
| Lead | 2016-11-02 | 0.00026 | mg/L | No |
| Mercury | 2016-11-02 | < 0.00002 | mg/L | No |
| Selenium | 2016-11-02 | < 0.001 | mg/L | No |
| Sodium | 2016-11-02 | 1.2 | mg/L | No |
| Uranium | 2016-11-02 | < 0.00005 | mg/L | No |
| Benzene | 2016-11-02 | < 0.5 | µg/L | No |
| Carbon Tetrachloride | 2016-11-02 | < 0.2 | µg/L | No |
| Dichlorobenzene,1,2- | 2016-11-02 | < 0.1 | µg/L | No |

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Dichlorobenzene,1,4- | 2016-11-02 | < 0.2 | µg/L | No |
| Dichloroethane,1,2- | 2016-11-02 | < 0.1 | µg/L | No |
| Dichloroethene, 1,1- | 2016-11-02 | < 0.1 | µg/L | No |
| Dichloromethane (Methylene Chloride) | 2016-11-02 | < 0.3 | µg/L | No |
| Monochlorobenzene (Chlorobenzene) | 2016-11-02 | < 0.2 | µg/L | No |
| Tetrachloroethylene | 2016-11-02 | < 0.2 | µg/L | No |
| Trichloroethylene | 2016-11-02 | < 0.1 | µg/L | No |
| Vinyl Chloride | 2016-11-02 | < 0.2 | µg/L | No |
| Chloroform | 2016-03-01 | 46.4 | µg/L | No |
| | 2016-06-20 | 64.7 | | No |
| | 2016-09-15 | 43.4 | | No |
| | 2016-11-02 | 40.7 | | No |
| Bromodichloromethane | 2016-03-01 | 2.1 | µg/L | No |
| | 2016-06-20 | 1.8 | | No |
| | 2016-09-15 | 1.8 | | No |
| | 2016-11-02 | 1.4 | | No |
| Dibromochloromethane | 2016-03-01 | < 0.1 | µg/L | No |
| | 2016-06-20 | < 0.1 | | No |
| | 2016-09-15 | < 0.1 | | No |
| | 2016-11-02 | < 0.1 | | No |
| Bromoform | 2016-03-01 | < 0.1 | µg/L | No |
| | 2016-06-20 | < 0.1 | | No |
| | 2016-09-15 | < 0.1 | | No |
| | 2016-11-02 | < 0.1 | | No |
| Total Trihalomethanes | 2016-03-01 | 48.5 | µg/L | No |
| | 2016-06-20 | 66.5 | | No |
| | 2016-09-15 | 45.2 | | No |
| | 2016-11-02 | 42.2 | | No |
| Alachlor | 2016-11-02 | < 0.3 | µg/L | No |
| Atrazine + Metabolites | 2016-11-02 | < 0.5 | µg/L | No |
| Azinphos-methyl | 2016-11-02 | < 1 | µg/L | No |
| Benzo(a)pyrene | 2016-11-02 | < 0.005 | µg/L | No |
| Bromoxynil | 2016-11-02 | < 0.3 | µg/L | No |
| Carbaryl | 2016-11-02 | < 3 | µg/L | No |
| Carbofuran | 2016-11-02 | < 1 | µg/L | No |
| Chlorpyrifos | 2016-11-02 | < 0.5 | µg/L | No |
| Diazinon | 2016-11-02 | < 1 | µg/L | No |
| Dicamba | 2016-11-02 | < 5 | µg/L | No |
| Dichlorophenol, 2,4- | 2016-11-02 | < 0.1 | µg/L | No |
| Dichlorophenoxy acetic acid, 2,4- (2,4-D) | 2016-11-02 | < 5 | µg/L | No |
| Diclofop-methyl | 2016-11-02 | < 0.5 | µg/L | No |
| Dimethoate | 2016-11-02 | < 1 | µg/L | No |
| Diquat | 2016-11-02 | < 5 | µg/L | No |
| Diuron | 2016-11-02 | < 5 | µg/L | No |
| Glyphosate | 2016-11-02 | < 1 | µg/L | No |
| Malathion | 2016-11-02 | < 5 | µg/L | No |
| 2 methyl-4-chlorophenoxyacetic acid (MCPA) | 2016-11-02 | < 0.00012 | mg/L | No |
| Metolachlor | 2016-11-02 | < 3 | µg/L | No |
| Metribuzin | 2016-11-02 | < 3 | µg/L | No |
| Paraquat | 2016-11-02 | < 1 | µg/L | No |
| Pentachlorophenol | 2016-11-02 | < 0.1 | µg/L | No |
| Phorate | 2016-11-02 | < 0.3 | µg/L | No |

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Picloram | 2016-11-02 | < 5 | µg/L | No |
| Poly-Chlorinated Biphenyls (PCB's) | 2016-11-02 | < 0.05 | µg/L | No |
| Prometryne | 2016-11-02 | < 0.1 | µg/L | No |
| Simazine | 2016-11-02 | < 0.5 | µg/L | No |
| Terbufos | 2016-11-02 | < 0.3 | µg/L | No |
| Tetrachlorophenol, 2,3,4,6- | 2016-11-02 | < 0.1 | µg/L | No |
| Triallate | 2016-11-02 | < 10 | µg/L | No |
| Trichlorophenol 2,4,6- | 2016-11-02 | < 0.1 | µg/L | No |
| Trifluralin | 2016-11-02 | < 0.5 | µg/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 |
|---|---|---|---|
| **Nil** | | | |

**(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)**