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, 2010 to December 31, 2010

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 P2B 1J4

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 [ ]

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 [ ]

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
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 [ ]

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
[x] Public access/notice via a Public Library
[x] Public access/notice via other method: notice mailed with quarterly invoice

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; flocculating chemicals consist of powdered limestone and aluminum sulphate, and activated silica as a coagulant aid
- 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 effluent discharge to the post-filtration chlorine contact tanks with optional filter-to-waste capability return to the Sturgeon River (unchlorinated)
- Chlorine gas addition points located before filters and after filter-to-waste valve
- One chlorine contact tank equipped with baffle walls, with an overflow pipe 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 servicing entire plant

List all water treatment chemicals used over this reporting period

- Alum (aluminum sulphate)
- Activated silica (sodium silicate and alum)
- Chlorine (gas)
- Limestone
- Hydrated lime (calcium hydroxide)
- Hydrofluosilicic acid (fluoride)

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

Water Plant Material/Supplies/Rentals	$ 10 000
Water Plant Equipment Maintenance/Repairs	$ 55 000
Water Plant Process Chemicals	$ 74 000
Water Quality Lab Testing	$ 20 000
Consulting/Operator Training	$ 6 000
Water Plant Utilities	$ 105 000
Water Distribution Materials/Supplies/Repairs	$ 121 000

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
10-05-26	Possible inadequate disinfection at treatment plant	<0.5		• Giardia log dropped below 0.5 due to failure of the pre-chlorination system before the contact chamber. • Chlorination was lost due to low pressure. Operator restored pressure which restored the chlorine feed system. • Duration of exceedance was 10 minutes. • AWQI 94904	10-05-26
10-07-28	Possible inadequate disinfection at treatment plant	<0.5		• Giardia log dropped below 0.5 due to failure of the pre-chlorination system before the contact chamber. • SCADA called the operator in who manually switched to the standby chlorination feed system • Duration of exceedance was 64 minutes • Post chlorinator maintained an FAC between 1.51mg/L and 1.41mg/L to the Distribution during the exceedance • AWQI 96602	10-07-28
10-11-12	Possible inadequate	<0.5		• Giardia log dropped below 0.5 due to failure of the pre-chlorination system before the contact chamber.	10-11-12

Incident Date	Parameter	Result	Units	Corrective Action	Corrective Action Date
	disinfection at treatment plant			• A blown fuse stopped the pre-chlorinating feed system • Duration of exceedance was 16 minutes • Post chlorinator maintained an FAC of 1.75mg/L to the Distribution during the exceedance • AWQI 99123	
10-11-29	Filter turbidity was not less than 0.3NTU, 95% of the time for the month			• Poor floc formation in pre-treatment, resulting with poor filter runs • Finished water storage in the reservoirs was low; necessary to increase process flow to restore storage level, filtered water turbidity had to exceeded 0.3NTU, but less than 1.0NTU in order to restore storage levels • MOE and Health Unit were notified this had to be done • When storage levels were restored, operations slowed the process operation to maintain <0.3NTU out of the filters • AWQI 99250	10-12-01

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 CFU/100mL (min #)-(max #)	Range of Total Coliform Results CFU/100mL (min #)-(max #)	Number of HPC Samples	Range of HPC Results CFU/1mL (min #)-(max #)
Raw	52	2 - 20	<10 - 340	0	n/a
Treated	52	0 – 0	0 – 0	52	0 – 106
Distribution	214	0 – 0	0 – 0	52	0 – 6

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: 0.028 - 0.277 NTU Instantaneous Max: 1.57 NTU
Chlorine	8760	Daily Average: 0.72 – 1.65 mg/L Instantaneous: 0.00 – 4.80 mg/L
Fluoride (If the DWS provides fluoridation)	8760	Daily Average: 0.00 - 0.69 mg/L Instantaneous: 0.00 – 1.69 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	39 samples	11.5	mg/L (annual average)

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	2010-06-15	< 0.0001	mg/L	No
Arsenic	2010-06-15	0.0004	mg/L	No
Barium	2010-06-15	0.017	mg/L	No
Boron	2010-06-15	<0.005	mg/L	No
Cadmium	2010-06-15	< 0.00002	mg/L	No
Chromium	2010-06-15	< 0.002	mg/L	No
Lead	2010-06-15	0.00059	mg/L	No
Mercury	2010-06-15	< 0.00002	mg/L	No
Selenium	2010-06-15	<0.001	mg/L	No
Sodium	2010-06-15	1.5	mg/L	No
Uranium	2010-06-15	< 0.00005	mg/L	No
Fluoride	2010-06-15	0.6	mg/L	No
Nitrite	2010-03-10 2010-06-15 2010-09-07 2010-12-14	< 0.1 < 0.1 < 0.1 < 0.1	mg/L	No
Nitrate	2010-03-10 2010-06-15 2010-09-07 2010-12-14	0.1 0.1 0.1 0.1	mg/L	No

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	2010-06-15	< 0.3	µg/L	No
Aldicarb	2010-06-15	< 3	µg/L	No
Aldrin + Dieldrin	2010-06-15	< 0.02	µg/L	No
Atrazine + N-dealkylated metobolites	2010-06-15	< 0.5	µg/L	No
Azinphos-methyl	2010-06-15	< 1	µg/L	No
Bendiocarb	2010-06-15	< 3	µg/L	No
Benzene	2010-06-15	< 0.5	µg/L	No
Benzo(a)pyrene	2010-06-15	< 0.005	µg/L	No
Bromoxynil	2010-06-15	< 0.3	µg/L	No
Carbaryl	2010-06-15	< 3	µg/L	No
Carbofuran	2010-06-15	< 1	µg/L	No
Carbon Tetrachloride	2010-06-15	< 0.2	µg/L	No
Chlordane (Total)	2010-06-15	< 0.04	µg/L	No
Chlorpyrifos	2010-06-15	< 0.5	µg/L	No
Cyanazine	2010-06-15	< 0.5	µg/L	No
Diazinon	2010-06-15	< 1	µg/L	No
Dicamba	2010-06-15	< 5	µg/L	No
1,2-Dichlorobenzene	2010-06-15	< 0.1	µg/L	No
1,4-Dichlorobenzene	2010-06-15	< 0.2	µg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	2010-06-15	< 0.1	µg/L	No
1,2-Dichloroethane	2010-06-15	< 0.1	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,1-Dichloroethylene (vinylidene chloride)	2010-06-15	< 0.1	µg/L	No
Dichloromethane	2010-06-15	< 0.3	µg/L	No
2-4 Dichlorophenol	2010-06-15	< 0.1	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2010-06-15	< 5	µg/L	No
Diclofop-methyl	2010-06-15	< 0.5	µg/L	No
Dimethoate	2010-06-15	< 1	µg/L	No
Dinoseb	2010-06-15	< 0.5	µg/L	No
Diquat	2010-06-15	< 5	µg/L	No
Diuron	2010-06-15	< 5	µg/L	No
Glyphosate	2010-06-15	< 25	µg/L	No
Heptachlor + Heptachlor Epoxide	2010-06-15	< 0.1	µg/L	No
Lindane (Total)	2010-06-15	< 0.1	µg/L	No
Malathion	2010-06-15	< 5	µg/L	No
Methoxychlor	2010-06-15	< 0.1	µg/L	No
Metolachlor	2010-06-15	< 3	µg/L	No
Metribuzin	2010-06-15	< 3	µg/L	No
Monochlorobenzene	2010-06-15	< 0.2	µg/L	No
Paraquat	2010-06-15	< 1	µg/L	No
Parathion	2010-06-15	< 3	µg/L	No
Pentachlorophenol	2010-06-15	< 0.1	µg/L	No
Phorate	2010-06-15	< 0.3	µg/L	No
Picloram	2010-06-15	< 5	µg/L	No
Polychlorinated Biphenyls(PCB)	2010-06-15	< 0.05	µg/L	No
Prometryne	2010-06-15	< 0.1	µg/L	No
Simazine	2010-06-15	< 0.5	µg/L	No
THM (NOTE: show latest annual average)	2010-03-10 2010-06-15 2010-09-07 2010-12-14	26.9 37.0 34.9 28.0	µg/L	No
Temephos	2010-06-15	< 10	µg/L	No
Terbufos	2010-06-15	< 0.3	µg/L	No
Tetrachloroethylene	2010-06-15	< 0.2	µg/L	No
2,3,4,6-Tetrachlorophenol	2010-06-15	< 0.1	µg/L	No
Triallate	2010-06-15	< 10	µg/L	No
Trichloroethylene	2010-06-15	< 0.1	µg/L	No
2,4,6-Trichlorophenol	2010-06-15	< 0.1	µg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	2010-06-15	< 10	µg/L	No
Trifluralin	2010-06-15	< 0.5	µg/L	No
Vinyl Chloride	2010-06-15	< 0.2	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)