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, 2005 to December 31, 2005

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:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

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
[x] Public access/notice via a newspaper
[ ] Public access/notice via Public Request
[x] 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; 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	$28 000
Water Plant Equipment Maintenance/Repairs	$27 000
Water Plant Process Chemicals	$66 000
Water Quality Lab Testing	$12 000
Consulting/Operator Training	$34 000
Water Plant Utilities	$95 000
Water Distribution Materials/Supplies/Repairs	$62 000

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	Unit of Measure	Corrective Action	Corrective Action Date
05-01-01	High Turbidity on Filter Effluent	>1.0	NTU	• High turbidity after the filters due to lack of alum addition in the pre-filtering chemical treatment process • Restarted alum feed pump • Filtered-to-waste until process returned to normal • Approximately 2.5 minutes of process water that exceeded 1.0 NTU did not get filtered to waste • AWQI 51526	05-01-01
05-02-01	Low chlorine residual to Distribution (false readings)	0.11	mg/L	• Operator reported false low chlorine residual reading to Spills Action Centre as a precaution • Grab samples ranged from 1.09 to 1.56 mg/L during the time the analyzer was recording false readings • AWQI 52292	05-02-01
05-06-08	Low chlorine residual in Distribution	0.03	mg/L	• Residence was connected to temporary feed line which was connected to a section of the watermain that was isolated for replacement. • Correct temporary connections were made	05-06-13

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
				to an active main, and residence flushed until residual restored to 0.61 mg/L • AWQI 55322	
05-09-01	Low chlorine residual in Distribution	0.03	mg/L	• Flushed fire hydrant, restored Free Cl_2 residual to 0.81mg/L at hydrant • Reopened water main valve that was closed • AWQI 58754	05-09-06
05-10-31	Lead measured in Distribution (non-representative readings)	0.012	mg/L	• Lead was detected in Distribution when a first draw water sample was collected. Note: first draw sampling is not proper protocol for drinking water testing. This sampling method was made at the request of a consulting firm conducting a private study. • Note, sealants on the hydrant joints are made of lead • Re-sampled according to protocol by collecting running water • Re-sampled results were non-detect (<0.001mg/L) • AWQI 60646	05-11-08
05-10-31	Low chlorine residual in Distribution	0.00	mg/L	• Water valve was closed on October 28, 2005 to repair an emergency watermain break • Valves were reopened October 31, 2005, and fire hydrant flushed restoring Free Cl_2 residual to 0.91mg/L • AWQI 60651	05-11-07
05-11-15	Low chlorine residual in Distribution	0.00	mg/L	• Flushed hydrant until Free Cl_2 residual restored to 0.51mg/L at residence • AWQI 61021	05-11-18
05-11-18	Low chlorine residual in Distribution	0.00	mg/L	• Flushed hydrant until Free Cl_2 residual restored to 0.67mg/L at residence • AWQI 61121	05-11-21

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	54	10 - 1320	1 - 640	54	>200 - >2000
Treated	54	0	0 - 0	54	0 - 0
Distribution	269	0	0 - 0	269	0 - 67

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 0.02 - 0.29 NTU Instantaneous 0.02 – 2.95 NTU
Chlorine	8760	Daily Average 1.10 - 1.46 mg/L Instantaneous 0.34 - 4.17 mg/L
Fluoride (If the DWS provides fluoridation)	8760	Daily Average 0.42 - 0.84 mg/L Instantaneous 0.00 - 1.20 mg/L

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

***NOTE**: Record the unit of measure if it is **not** milligrams per litre.*

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
0814-5MKGWZ (May 23/03)	Backwash SS	monthly	19	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	2005-11-21	< 0.001	mg/L	no
Arsenic	2005-11-21	0.001	mg/L	no
Barium	2005-11-21	0.01	mg/L	no
Boron	2005-11-21	< 0.005	mg/L	no
Cadmium	2005-11-21	< 0.0001	mg/L	no
Chromium	2005-11-21	< 0.002	mg/L	no
Lead	2005-11-21	< 0.0002	mg/L	no
Mercury	2005-11-21	< 0.00006	mg/L	no
Selenium	2005-11-21	0.001	mg/L	no
Sodium	2005-11-21	2.4	mg/L	no
Uranium	2005-11-21	< 0.0001	mg/L	no
Fluoride	2005-11-21	0.6	mg/L	no
Nitrite	2005-03-22 2005-06-14 2005-09-30 2005-11-21	< 0.1 < 0.1 < 0.1 < 0.1	mg/L	no
Nitrate	2005-03-22 2005-06-14 2005-09-30 2005-11-21	0.2 0.1 0.2 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	2005-11-21	< 0.3	µg/L	no
Aldicarb	2005-11-21	< 3	µg/L	no
Aldrin + Dieldrin	2005-11-21	< 0.02	µg/L	no
Atrazine + N-dealkylated metobolites	2005-11-21	< 0.5	µg/L	no
Azinphos-methyl	2005-11-21	< 1	µg/L	no
Bendiocarb	2005-11-21	< 3	µg/L	no
Benzene	2005-11-21	< 0.5	µg/L	no
Benzo(a)pyrene	2005-11-21	< 0.005	µg/L	no
Bromoxynil	2005-11-21	< 0.3	µg/L	no
Carbaryl	2005-11-21	< 3	µg/L	no
Carbofuran	2005-11-21	< 1	µg/L	no
Carbon Tetrachloride	2005-11-21	< 0.2	µg/L	no
Chlordane (Total)	2005-11-21	< 0.04	µg/L	no
Chlorpyrifos	2005-11-21	< 0.5	µg/L	no
Cyanazine	2005-11-21	< 0.5	µg/L	no
Diazinon	2005-11-21	< 1	µg/L	no
Dicamba	2005-11-21	< 5	µg/L	no
1,2-Dichlorobenzene	2005-11-21	< 0.1	µg/L	no
1,4-Dichlorobenzene	2005-11-21	< 0.2	µg/L	no
Dichlorodiphenyltrichloroethane (DDT) + metabolites	2005-11-21	< 0.1	µg/L	no
1,2-Dichloroethane	2005-11-21	< 0.1	µg/L	no
1,1-Dichloroethylene (vinylidene chloride)	2005-11-21	< 0.1	µg/L	no
Dichloromethane	2005-11-21	< 0.3	µg/L	no
2-4 Dichlorophenol	2005-11-21	< 0.1	µg/L	no
2,4-Dichlorophenoxy acetic acid (2,4-D)	2005-11-21	< 5	µg/L	no
Diclofop-methyl	2005-11-21	< 0.4	µg/L	no
Dimethoate	2005-11-21	< 1	µg/L	no
Dinoseb	2005-11-21	< 0.5	µg/L	no
Diquat	2005-11-21	< 5	µg/L	no
Diuron	2005-11-21	< 5	µg/L	no
Glyphosate	2005-11-21	< 25	µg/L	no
Heptachlor + Heptachlor Epoxide	2005-11-21	< 0.1	µg/L	no
Lindane (Total)	2005-11-21	< 0.1	µg/L	no
Malathion	2005-11-21	< 5	µg/L	no
Methoxychlor	2005-11-21	< 0.1	µg/L	no
Metolachlor	2005-11-21	< 3	µg/L	no
Metribuzin	2005-11-21	< 3	µg/L	no
Monochlorobenzene	2005-11-21	< 0.2	µg/L	no
Paraquat	2005-11-21	< 1	µg/L	no
Parathion	2005-11-21	< 3	µg/L	no
Pentachlorophenol	2005-11-21	< 0.1	µg/L	no
Phorate	2005-11-21	< 0.3	µg/L	no
Picloram	2005-11-21	< 5	µg/L	no
Polychlorinated Biphenyls(PCB)	2005-11-21	< 0.05	µg/L	no
Prometryne	2005-11-21	< 0.1	µg/L	no
Simazine	2005-11-21	< 0.5	µg/L	no

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
THM (NOTE**:** show latest annual average**)**	Average 2005-03-22 2005-06-14 2005-09-30 2005-11-21	67.7 30.7 80.8 76.5 81.3	µg/L	no
Temephos	2005-11-21	< 10	µg/L	no
Terbufos	2005-11-21	< 0.3	µg/L	no
Tetrachloroethylene	2005-11-21	< 0.2	µg/L	no
2,3,4,6-Tetrachlorophenol	2005-11-21	< 0.1	µg/L	no
Triallate	2005-11-21	< 10	µg/L	no
Trichloroethylene	2005-11-21	< 0.1	µg/L	no
2,4,6-Trichlorophenol	2005-11-21	< 0.1	µg/L	no
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	2005-11-21	< 10	µg/L	no
Trifluralin	2005-11-21	< 0.5	µg/L	no
Vinyl Chloride	2005-11-21	< 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
THM	**67.7**	µg/L	**2005 annual average**

(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)