


Long Sault-Ingleside Regional Water Treatment Plant

Certificate of Approval No. 3103-6SVP2M (Aug. 2006)
Works No. 260066417

- 2008 Summary Report -
(revised March 2010)

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LONG SAULT-INGLESIDE REGIONAL WATER TREATMENT PLANT

2008 SUMMARY REPORT

Facility description:	Ultrafiltration (Zenon membrane filtration), booster station, elevated tank
Capacity:	9,500 m ³ /day
Service area:	Villages of Long Sault and Ingleside
Service population:	3500
In-service date:	2006
Raw water source:	St. Lawrence River
Disinfection method:	Sodium Hypochlorite
Operations manager:	Chris Eamon (613)-551-2720

The Long Sault Regional Water Treatment Plant is located on Moulinette Island, south of the town of Long Sault. The water treatment plant is a membrane filtration plant that began producing water in June 2005. The treatment process includes ultrafiltration (ZeeWeed membrane system manufactured by Zenon Environmental Inc) through one of three membrane cassettes which are housed in large concrete tanks, taste and odour removal through granular activated carbon (GAC) contactors, and primary disinfection provided by sodium hypochlorite, which is injected downstream of the GAC tanks. The water then passes through the chlorine contact chamber and a baffled clearwell into a high lift pumping well, all of which are located beneath the water treatment plant. A 10 km transmission main joins the distribution systems in Long Sault and Ingleside. The original Ingleside Water Treatment Plant was converted into a booster station. The rated capacity is 9,500m³/day. The distribution system now services a combined population in Long Sault and Ingleside of approximately 3500.

Compliance with Terms and Conditions of the Certificate of Approval (No. 3103-6SVP2M dated August 22, 2006)

The Long Sault Water Treatment Plant and distribution system was operated and maintained in accordance with O. Reg. 170/03 dated June 1, 2003 and Certificate of Approval (No. 3103-6SVP2M dated August 22, 2006).

The water treatment plant is operated to treat water at a rate not exceeding the maximum flow rate of 148 L/s. (See Appendix I for total flow, average daily flow and maximum daily flow.) The flows into the water treatment plant did not exceed the maximum flow rate of 148L/s at any time.

The Long Sault Water Treatment Plant has a valid Permit to Take Water, Number 7485-6E2NCT, (issued July 7, 2005 and expiring July 6, 2015), authorizing the taking of no more than 9,500m³/day. The average water taking for the year was 4,024 m³/day, 42% of the authorized water taking.

The works and related equipment and appurtenances used to achieve compliance are properly operated and maintained, including effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of the Certificate of Approval and the Act and regulations, adequate laboratory facilities, process controls and

alarms, and the use of the process chemical that comes in contact with the water being treated is suitable for the process and appropriate for drinking water.

A flow meter measures the flow rate and daily quantity of water being taken from the source (intake) and conveyed to, and through, the water treatment plant. The flow rate of treated water supplied to the distribution system is recorded as total daily flow. (See Appendix I). The flow meters were calibrated June 9, 2008 by Ken Harris Instrumentation.

Free chlorine residual and turbidity in treated water is continuously monitored at the point of entrance to the distribution system. The Prominent chlorine analyzer is accurate to $\pm 2\%$ of the measured value. A low chlorine alarm calls out at 0.40 mg/L, and the high lift pumps will shut down if the chlorine falls to 0.20 mg/L to prevent non-chlorinated water from being produced. A high chlorine alarm calls out at 2.50 mg/L and the high lift pumps will shut down if the chlorine reaches 3.50 mg/L to prevent super-chlorinated water from being produced. Operators try to keep the chlorine residual at an average of 0.60mg/L. The on-line chlorine analyzer is checked with the hand-held chlorine analyzer and adjusted as required. Calibration of the on-line chlorine and turbidity analyzers was done June 9, 2008 by Ken Harris Instrumentation. The Hach 1720C turbidimeter is accurate to ± 0.1 NTU (Nephelometric Turbidity Unit). The turbidimeter is checked monthly using a hand-held turbidity analyzer and adjusted accordingly. If the turbidity reaches 1.00 NTU (Nephelometric Turbidity Units) for a period of 14 minutes, 50 seconds, the affected Zenon train will shut down and alarm out to prevent turbid water from entering the contact chamber. (See Appendix I for monthly average and maximum turbidity, and minimum, maximum and average chlorine residual.)

Operators keep a daily log book recording raw and treated flow meter readings, free and total chlorine residual (both continuous and grab samples), raw and treated turbidity, pH and temperature.

Samples are collected throughout the year from the treated water to determine whether or not the water is safe for human consumption (in accordance with Regulation 170/03, Schedule 10 and 13, Microbiological and Chemical Sampling and Testing). Bacteriological analysis is performed weekly - 1 sample each per week from the raw and treated water, 13 samples per month from the distribution system (from locations representing the water stream from which they are taken), chemical analysis is performed once a year (treated - Schedule 23 and 24) and 4 times a year in the distribution system (nitrates and THMs). Sodium and fluoride (treated water) are tested once every 60 months. Lead is required to be sampled from private plumbing (80 samples), non-residential (8 samples) and in the distribution system (16 samples). (See Appendix II for chemical parameters.) All samples are analyzed at Caduceon Environmental Labs in Nepean, Ontario. Caduceon and its subcontracted labs are accredited by the Standards Council of Canada. Written procedures have been established for the notification of the Medical Officer of Health and the Ministry of the Environment Spills Action Centre should a sample result indicate an exceedance has occurred. (See Appendix III for Procedures for Indicators of Adverse Water Quality).

Free chlorine residual in the distribution system is monitored by 2 alarmed online analyzers with datalogging. The analyzers are checked, at minimum, every 72 hours. These analyzers will alarm out when the chlorine goes below 0.15 mg/L for a period greater than 15 minutes. The chlorine analyzers in the distribution system were calibrated on June 9, 2008 by Ken Harris Instrumentation.

All records and information relating to, or resulting from the monitoring, sampling and analyzing activities required by the Certificate of Approval are retained for a minimum of 5 years.

The Long Sault Water Treatment Plant is classified Water Treatment 2 and Water Distribution 2 (Certificate Number 2232 and 2233). Operators hold valid licences applicable to this type of water treatment plant.

Following all maintenance or repairs to the water treatment facility, all affected areas are disinfected in accordance with the MOE's "Procedure for Disinfection of Drinking Water in Ontario" dated March 17, 2003. All chemicals used in the treatment process and all materials contacting the water meet both the American Water Works Association (AWWA) quality criteria and the American National Standards Institute (ANSI) safety criteria. All chemicals have been registered by a testing institution accredited under the Standards Council of Canada Act or by ANSI.

A contingency plan and procedures have been established and implemented and adequate equipment and material are available for dealing with emergencies, upset conditions and equipment breakdowns in the works.

An operating manual has been prepared and is kept up to date, incorporating the requirements of the Certificate of Approval, and any adopted operation and maintenance recommendations of the Engineer's Report (May, 2001) based on which this certificate has been issued. The manual includes monitoring and reporting of the necessary and in-process parameters essential for control of the treatment process and for the assessment of the performance of the works. It also contains procedures that are required for adequate operation and maintenance of the monitoring equipment.

Drawings are prepared and kept up-to-date showing the new works as constructed (record drawings), including timely incorporation of all modifications made to the works throughout its operational life.

A Process and Instrumentation Diagram (PID) for the entire water treatment plant has been prepared and is kept up-to-date, including timely incorporation of all modifications that are made to the works.

All record drawings and diagrams and all existing record drawings which are currently in retention throughout the operational life of the water works are readily available for inspection by Ministry staff.

Procedures have been established and are followed for receiving, responding to, and recording complaints about any aspect of the works, including recording the steps that were taken to determine the cause of complaint and the corrective measures taken to alleviate the cause and prevent its reoccurrence. (See Appendix IV for complaint form.)

Non-Compliance with Regulatory Requirements and Actions Required

The Ministry of the Environment conducted an announced inspection of the Long Sault-Ingleside Water Treatment Plant and distribution system on January 22, 2008. This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues.

1. The owner did not ensure that equipment was installed in accordance with the Certificate of Approval.

The C of A indicates that there is to be one continuous chlorine analyzer located on the high lift pump discharge manifold prior to the chlorine injection for secondary disinfection. As noted above, the chlorine analyzer is not installed at this location but is installed after the chlorine injection point for secondary disinfection.

Action(s) Required:

Based on discussions with the Review Engineer at the Approvals and Licencing section of the MOE Safe Drinking Water Branch, the configuration of the secondary disinfection injection point and the treated water chlorine analyzer installed after the clearwell needs to be changed such that the treated water chlorine analyzer is located prior to the secondary disinfection injection point, as outlined in the C of A.

By no later than May 1, 2008, provide to the undersigned Provincial Officer an action plan, complete with implementation dates, which identifies how the configuration of the secondary disinfection injection point and the treated water chlorine analyzer installed after the clearwell will be changed such that the treated water chlorine analyzer is located prior to the secondary disinfection injection point, as outlined in the C of A.

The secondary chlorine injection point has been moved downstream of the treated water chlorine analyzer as per the Drinking Water Inspectors request. Status Complete

2. The operations and maintenance manuals did not meet the requirements of the Certificate of Approval.

Action(s) Required:

The procedures in the Operations Manual and Operations Binder need to be updated as noted in the "Operations Manuals" section and "Contingency / Emergency Planning" section of this report. By no later than May 1, 2008, provide to the undersigned Provincial Officer an action plan, complete with implementation dates, to update the Operations Manual and Operations Binder as noted in the "Operations Manuals" section and "Contingency / Emergency Planning" section of this report.

The operation and contingency manuals are being reviewed under the new Q.M.S. requirements. The Quality Management System implementation process has already begun and is in the gap analysis/emergency plan step. Status Ongoing

MAINTENANCE

Feb 5/08 --installed new strainer indicator light at low lift station (Marleau Mechanical)
Feb 8/08 - installed new service bar at low lift strainer (Marleau Mechanical)
Feb 21/08 - Marleau Mechanical on site to check blower problems - worn check valve
Feb 25/08 - replaced check valve on blower (Marleau Mechanical)
Apr. 2/08 - annual inspection of generators (GAL Power)
Apr. 21/08 - ran wires for PLC start up of highlift pump #4 in case of power failure (Tim Stewart)
Apr. 22/08 - logic and done on high lift pump #4 (Capital Controls)
Apr. 22/08 - replaced coolant and hoses on generator (GAL Power)
Apr. 24/08 - tested highlift code change for highlift #4 (Capital Controls)
Apr. 29/08 - Chlorine distribution line relocated as per MOE request.
April - hydrant flushing completed throughout the month

May 28/08 – completed installation of emergency system on high lift pump #4 in case of complete PLC failure (Capital Controls)
June 9, 10 & 18/08 – annual calibration of instruments (Ken Harris Instrumentation)
June 16 & 17/08 – repaired fountain pump
July 9/08 – inspected heaters and exhaust fans (Marleau Mechanical)
July 17/08 – repaired backflow preventer (Marleau Mechanical)
July 17/08 - troubleshoot SCADA system (Capital Controls)
July 24/08 – troubleshoot UPS (Marleau Mechanical)
Aug. 1/08 – troubleshoot fire alarm panel (GE Security Canada)
Aug. 11/08 – troubleshoot SCADA system (Capital Controls)
Aug. 14/08 – prepared for installation of overhead beam for strainers in low lift building (Eastern Welding)
Aug. 27/08 – annual inspection of fire alarm panel (GE Security Canada)
October – hydrant flushing
Oct. 6-9/08 – installed monorails for strainers at low lift (Eastern Welding)
Oct. 21/08 – cleaned out zebra mussel chlorine line (Capital Steam Clean)
Oct. 29/08 – troubleshoot electrical – phase/Hydro issue (Marleau Mechanical)

**APPENDIX I
FLOW DATA**

LONG SAULT WATER TREATMENT SYSTEM SUMMARY REPORT

Municipality: Township of South Stormont
Year: 2008
Source: St. Lawrence River
Capacity: 148 l/s

Description: Membrane Filtration, GAC, Chlorination

Month	Raw Flow		Treated Flow			Treated Water Physical/Chemical Parameters						Bacteria (Number of Samples)			
	Total Flow m ³		Total Flow m ³	Avg. Day m ³ /day	Max. Day m ³ /day	Free Chlorine Residual	Turbidity	NO ₂	NO ₃	THM	Raw Water	Plant	Safe Distribution	Unsafe or Poor Plant Distribution	
						Avg. mg/L	Max. mg/L	Max. NTU	mg/L	mg/L					
January	141,061		120,936	3,901	4,489	0.95	1.32	1.00			5	5	14		
February	124,682		107,976	3,723	4,364	0.75	1.27	1.00	0.40	0.031	4	4	13		
March	132,349		114,894	3,706	5,000	0.78	1.00	1.00			5	5	13		
April	134,138		116,016	3,867	4,659	0.68	0.89	0.35			4	4	13		
May	154,482		133,853	4,318	5,073	0.67	1.02	0.05			4	4	13		
June	145,375		126,398	4,213	4,685	0.87	1.17	1.00			4	4	13		
July	158,791		137,535	4,437	5,034	0.92	1.48	0.16	0.30	0.071	5	7	20	1	
August	157,478		136,104	4,390	4,807	1.09	1.34	0.08			4	4	13		
September	148,987		128,374	4,279	5,293	1.01	1.53	0.13	0.30	0.062	5	5	13		
October	146,964		127,951	4,127	4,718	0.92	1.27	0.25			4	4	13		
November	125,940		110,293	3,676	4,407	0.89	1.19	0.08	0.30	0.046	4	4	13		
December	130,345		113,310	3,655	4,118	0.91	1.29	0.32			5	5	13		
Total	1,700,592		1,473,640								53	55	164	1	
Average				4,024		0.87			<0.1	0.33					
Minimum															
Maximum					5,293		1.53	1.00							
ODWS									1	10	52	52	120		

APPENDIX II
LABORATORY ANALYSIS
RESULTS

Long Sault-Ingleside Regional Water Treatment Plant (raw water) - water entering the plant before treatment

Microbiological Parameters	MAC	Number of Samples	Range CFU/100 mL	No. of samples with counts	Typical Source of Contamination
Total Coliform (CFU/100 mL)	0	53	<1-13	18	Indicates possible presence of fecal matter
E. Coli (CFU/100 mL)	0	53	<1-1	3	Definite indicator of fecal matter

Long Sault-Ingleside Regional Water Treatment Plant and Distribution System

Microbiological Parameters	MAC	Number of Samples	Range CFU/100 mL	Adverse Water Incidences	Typical Source of Contamination
Total Coliform (CFU/100 mL)	0	218	<1-73	1	Indicates possible presence of fecal matter
E. Coli (CFU/100 mL)	0	218	<1	0	Definite indicator of fecal matter
HPC (CFU/1 mL)*	N/A	113	<2-220	0	Cannot distinguish harmful forms of bacteria from harmless forms.

Water Treatment Plant

Physical Parameters	MAC	Number of Samples	Annual Average (range)	Adverse Water Incidences	Typical Source of Contamination
Turbidity (NTU)	1	8760	0.02 (0.01-1.00)	0	Indicates presence of particles in water due to treatment difficulties/lack of filtration.
Free Chlorine Continuous (mg/L)	-	8760	0.87 (0.38-1.53)	0	Based on MOE Procedure B13-3, achieve, through a combination of filtration and disinfection, a minimum 3-log removal/inactivation of giardia cysts and a 4-log removal/inactivation of viruses at all times.

Distribution System

Physical Parameters	MAC	Number of Samples	Annual Average (range)	Adverse Water Incidences	Typical Source of Contamination
THM's (mg/L)	0.100	4	0.063 (0.031-0.071)	0	Chlorine reacting with naturally occurring organics (precursors) left in the water after filtration
Free Chlorine (mg/L)	-	8760	0.73 (0.17-1.44)	0	Based on MOE Procedure B13-3, a minimum free residual of 0.2 mg/L and a maximum free residual of 4 mg/L should be maintained at all times in order to control microbiological quality in the system.
Lead (mg/L)	0.01	1	0.00043	0	Only present as a result of corrosion of lead solder, brass fittings containing lead or lead pipes. Lead ingestion should be avoided.

MAC - Maximum Acceptable Concentration
 mg/L - milligrams per litre
 NA - Not Applicable

Long Sault - Ingleside Regional Water Treatment Plant - Inorganic Parameters (Schedule 23 - O. Reg. 170/03) Treated Water

	MAC (mg/L)	Number of Samples	Annual Average (mg/L)	Adverse Water Incidences	Typical Source of Contamination
Nitrite	1.0	19-Feb-08 04-Jul-08 02-Sep-08 10-Nov-08 Average	<0.1 <0.1 <0.1 <0.1 <0.1	0 0 0 0 0	Natural component of water at this level.
Nitrate	10.0	19-Feb-08 07-Jul-08 02-Sep-08 10-Nov-08 Average	0.40 0.30 0.30 0.30 0.33	0 0 0 0 0	Decay from plant or animal material, fertilizers, sewage, natural formation.
Antimony	0.006 (IMAC)	1	0.0002	0	Rarely detected in Ontario drinking water.
Arsenic	0.025(IMAC)	1	0.0011	0	Naturally occurring in minerals, minning operations.
Barium	1.0	1	0.019	0	Naturally occurring in formations such as limestone and dolomite.
Boron	5.0 (IMAC)	1	0.02	0	Antiseptic agent.
Cadmium	0.005	1	< 0.00002	0	A rare element in th environment, it is found in cigarettes, food, electroplated material and electroplating wastes.
Chromium	0.05	1	<0.002	0	Older yellow paints, residues from plating operations, and old recirculating water cooling systems.
Fluoride	1.5	1	0.2	0	Added to prevent tooth decay.
Mercury	0.001	1	< 0.00002	0	Air pollution from coal combustion, incineration, metal refining, and natural mineral deposits.
Selenium	0.01	1	0.0022	0	Food, naturally occurring with the weathering of rocks.
Sodium	20	1	13.4	0	The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L.
Uranium	0.02	1	0.00027	0	Naturally occurring in the environment.

MAC - Maximum Acceptable Concentration

IMAC - Interim Maximum Acceptable Concentration

mg/L - milligrams per litre

Sodium and fluoride are sampled every 60 months -most recent results are reported (June 4, 2007).

Long Sault - Ingleside Regional Water Treatment Plant - Organic Parameters (Schedule 24 - O. Reg. 170/03) Treated Water

Parameter	MAC (mg/L)	IMAC (mg/L)	Number of Samples	Annual Average (mg/L)	Adverse Water Incidences	Typical Source of Contamination
Alchlor		0.005	1	< 0.0003	0	Herbicide used mainly on soybeans, and corn to control weeds.
Aldicarb	0.009		1	< 0.003	0	Insecticide used on potatoes, sugar beets, greenhouse ornamentals.
Aldrin + Dieldrin	0.0007		1	< 0.00002	0	Pesticides used to control soil insects.
Atrazine		0.005	1	< 0.0005	0	Pesticide used on corn for grass control.
Azinphos-methyl	0.02		1	< 0.001	0	Broad-spectrum insecticide used to combat foliage-feeding insects.
Bendiocarb	0.04		1	< 0.003	0	Insecticide used to control insects in buildings and greenhouses.
Benzene	0.005		1	< 0.0005	0	Gasoline and other petroleum products
Benzo(a)pyrene	0.00001		1	< 0.000005	0	Formed during the incomplete burning of organic matter and found in poorly adjusted diesel exhaust and in coal/cooking tar.
Bromoxynil		0.005	1	< 0.0003	0	Herbicide used for specific control of weed seedlings in grain crops.
Carbaryl	0.09		1	< 0.003	0	Broad spectrum insecticide used in the agricultural and forestry industry. Garden use and pest control on animals.
Carbofuran	0.09		1	< 0.001	0	Broad insecticide to control pests.
Carbon Tetrachloride	0.005		1	< 0.0002	0	Associated with chlorinated solvents.
Total Chlordane	0.007		1	< 0.00004	0	Banned in 1994-It was used to control cockroaches, ants, and termites.
Chlorpyrifos	0.09		1	< 0.0005	0	Commonly used to control insects, fleas, and ticks.
Cyanazine		0.01	1	< 0.0005	0	Herbicide to control weeds.
Diazinon	0.02		1	< 0.001	0	Insecticide used to control flies, ants, cockroaches, and pests.
Dicamba	0.12		1	< 0.005	0	Herbicide to control weeds in grains, corn, flax, sorghum, pastures. Used as a weed control for lawns as well.
1,2-Dichlorobenzene	0.2		1	< 0.0001	0	Used in a variety of specialty chemical blends (degreasing agents, imported dye carriers).
1,4-Dichlorobenzene	0.005		1	< 0.0002	0	Widely used in toilet pucks and mothballs.
DDT	0.03		1	< 0.0001	0	Restricted in the 1960's and banned in ON. in 1988.
1,2-Dichloroethane		0.005	1	< 0.0001	0	Starting material in the production of vinyl chloride, as a solvent and a fumigant.
1,1-Dichloroethylene	0.014		1	< 0.0001	0	Used in the food packaging industry and the textile industry for furniture and automotive upholstery, drapery fabric and outdoor furniture.
Dichloromethane	0.05		1	< 0.0003	0	Used as an industrial solvent for paint-stripping and as a degreasing agent.
2,4-Dichlorophenol	0.9		1	< 0.0001	0	Synthetic material, Industrial contamination
2,4-D		0.1	1	< 0.005	0	Herbicide used on cereal crops and lawns
Diclofop-methyl	0.009		1	< 0.0005	0	Controls annual grasses in grain and vegetable crops.
Dimethoate		0.02	1	< 0.001	0	Insecticide used to control mites, and fly control.
Dinoseb	0.01		1	< 0.0005	0	Herbicide that is no longer used in ON.
Diquat	0.07		1	< 0.005	0	Herbicide used primarily on seed crops and as an aquatic herbicide.
Diuron	0.15		1	< 0.005	0	Herbicide used to control vegetation in crop and non-crop areas including industrial sites.
Glyphosate		0.28	1	< 0.025	0	Herbicide used by the forestry industry and as a domestic control.
Heptachlor + heptachlor epoxide	0.003		1	< 0.0001	0	Insecticide used in agriculture for control of soil insects. Heptachlor has been banned in Canada since 1969.
Total Lindane	0.004		1	< 0.0001	0	Insecticide used by the pharmaceutical industry to control head lice, and used in mite shampoos.
Malathion	0.19		1	< 0.005	0	Insecticide to control mosquitoes, flies, fleas, and ticks.
Methoxychlor	0.9		1	< 0.0001	0	Insecticide on products nearing harvest, larvicide, fly control adulticide against black flies and mosquitoes.
Metolachlor		0.05	1	< 0.003	0	Selective herbicide for weed control in corn, sunflowers soybeans, peanuts, grain sorghum, pod crops.
Metribuzin	0.08		1	< 0.003	0	Herbicide used on soybeans, tomatoes, potatoes, and other crops which are highly sensitive to other herbicides.
Monochlorobenzene	0.08		1	< 0.0002	0	Used as a solvent in adhesives, paints, waxes, polishes and inert solvents. Also used in metal cleaning.
Paraquat		0.01	1	< 0.001	0	Highly toxic herbicide used for non-crop and industrial weed control. It is also used to control aquatic vegetation.
Parathion	0.05		1	< 0.003	0	Extremely toxic insecticide used in agriculture to control foliar pests and root maggots.
Pentachlorophenol	0.06		1	< 0.0001	0	Rarely found in commercial use today but was used mainly as a pesticide and wood preservative.
Phorate		0.002	1	< 0.0003	0	Insecticide effective against sucking insects, larvae of the rootworm, and leaf-eating beetles.
Picloram		0.19	1	< 0.006	0	Herbicide used on right-of-ways and roadsides and it can persist in the soil for up to a year after application.
PCB		0.003	1	< 0.00005	0	Polychlorinated Biphenyls are no longer in use today although they once had a variety of uses.
Prometryne		0.001	1	< 0.0001	0	Herbicide for the control of selective grasses and weeds in crops and non-crops

Long Sault - Inglaside Regional Water Treatment Plant - Organic Parameters (Schedule 24 - O. Reg. 170/03) Treated Water

Parameter	MAC (mg/L)	IMAC (mg/L)	Number of Samples	Annual Average (mg/L)	Adverse Water Incidences	Typical Source of Contamination
Simazine		0.01	1	< 0.0005	0	Herbicide which is easily leached to ground water where it may persist for years.
Temephos		0.28	1	< 0.010	0	Used to Control blackfly larvae and mosquitoes.
Terbufos		0.001	1	< 0.0003	0	Insecticide used for insect control in corn.
Tetrachloroethylene	0.03		1	< 0.0002	0	Used as a solvent for dry cleaning and metal cleaning.
2, 3, 4, 6,-Tetrachlorophenol	0.1		1	< 0.0001	0	Organic and used to preserve wood, it can cause an unpleasant taste in water.
Triallate	0.23		1	< 0.010	0	Herbicide used to control wild oats in grain crops, mustard and sugar beets.
Trichloroethylene	0.05		1	< 0.0001	0	Used in dry cleaning and metal degreasing.
2, 4, 6,-Trichlorophenol	0.005		1	< 0.0001	0	Used in the manufacture of pesticides. It is an animal carcinogen.
2,4,5-Trichlorophenoxy acetic acid (2,4,6-T)	0.28		1	< 0.010	0	Herbicide used for stem/foliage treatment for deciduous brush control on roadsides and power lines. No longer used in Ontario.
Trifluralin		0.045	1	< 0.0005	0	Controls annual grasses in wheat, barley, and canola.
Vinyl Chloride	0.002		1	< 0.0002	0	Used to PVC plastic items such as water main pipe, siding and many other common plastic items. No longer used to make these items.

MAC - Maximum Acceptable Concentration
 IMAC - Interim Maximum Acceptable Concentration
 mg/L - milligrams per litre
 Samples collected July 7, 2008

APPENDIX III
LEAD RESULTS SUMMARY

Long Sault-Ingleside Regional Water Treatment Plant and Distribution System Lead Sampling

Location Type	Number of Samples	Range of Results (mg/L)	Exceedances	MAC mg/L
Plumbing	80	<0.00002-0.0124	1	0.010
Distribution	16	<0.00002-0.109	1	0.010
Non-Residential	8	<0.00002-0.0137	1	0.010

MAC - maximum acceptable concentration

APPENDIX IV
DISCHARGE RESULTS

Long Sault-Ingleside Regional Water Treatment Plant (discharge water)

Parameters	Criteria	Number of Samples	Range
Suspended Solids (mg/L)	25	12	0-12
Total Chlorine Residual (ug/L)	0.2	12	0.00
pH (units)	6.5-8.5	12	7.31-7.92