

Long Sault-Ingleside Regional Water Treatment Plant

Drinking Water Works Permit 186-202
Municipal Drinking Water Licence 186-102

Works No. 260066417

- 2023 Summary Report -

Prepared by:

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BILL BRYCE, PRESIDENT

LONG SAULT-INGLESIDE REGIONAL WATER TREATMENT PLANT

2023 SUMMARY REPORT

| | |
|--------------------------------------|--|
| Facility description: | Ultrafiltration (Zenon membrane filtration), booster station, elevated tank |
| Capacity: | 9,500 m³/day¹ |
| 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 |
| Overall Responsible Operator: | Chris Eamon (613) 551-2720 |

This report is a summary of water quality information for the Long Sault-Ingleside Regional Water Treatment Plant, published in accordance with Schedule 22 of Ontario's Drinking Water Systems Regulation for the reporting period of January 1 to December 31, 2023. The Long Sault-Ingleside Regional Water Treatment Plant is categorized as a Large Municipal Residential Drinking Water System.

This report is prepared by Caneau Water and Sewage Operations Inc. on behalf of the Corporation of the Township of South Stormont. A copy of the Summary report is to be provided to the members of the municipal council no later than March 31, 2024.

"The report must list the requirements of the Act, the regulations, the system's approval and any order that the system failed to meet at any time during the period covered by the report and specify the duration of the failure; and for each failure referred to, describe the measures that were taken to correct the failure." – O. Reg. 170/03 s. 22(2)

"The report must also include the following information for the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and planned uses of the system:

1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows and daily instantaneous peak flow rates.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval."

O. Reg. 170/03 s. 22 (3)

¹ The rated capacity is 9,500m³/day per Municipal Drinking Water Licence No. 186-102 (Issue 3) dated December 4, 2020. However, since the issuance of the licence, it has been indicated to the Township that the true nameplate plant capacity may be 8,575 m³/day. The issue of plant capacity is under review.

System Description

The Long Sault-Ingleside Regional Water Treatment Plant is located on Moulinette Island, south of the town of Long Sault and has a rated capacity of 9,500 m³/day². 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 distribution system now services a combined population in Long Sault and Ingleside of approximately 3,500.

Compliance with Terms and Conditions of the Municipal Drinking Water Licence

The Long Sault-Ingleside Regional Water Treatment Plant and distribution system was operated and maintained in accordance with O. Reg. 170/03 dated June 1, 2003 (last amendment – O. Reg. 269/22) and the Municipal Drinking Water Licence.

In accordance with Drinking Water Works Permit No. 186-202, condition 1.1, the drinking water system shall not be operated to exceed the rated capacity for the maximum flow rate into the treatment system of 9,500 m³/day³. (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 at any time.

The Long Sault-Ingleside Regional Water Treatment Plant has a valid Permit to Take Water; number 4278-9XSHHK (issued June 24, 2015, and expiring June 30, 2025), authorizing the taking of no more than 9,500m³/day. The average water taking for the year was 5,342 m³/day, 56% of the authorized water taking. The maximum daily flow into the treatment system for the year was 7,311 m³/day (raw water) on August 13, 2023.

The Long Sault-Ingleside Regional Water Treatment Plant chlorinates at the raw water intake when the water temperature is above 10 degrees Celsius in order to control zebra mussel populations in the intake pipes.

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 raw and treated flows

² See footnote on page 2 relating to plant capacity

³ See footnote on page 2 relating to plant capacity

are recorded in Appendix I. The flow meters were calibrated August 16, 2023, by Endress & Hauser.

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 a value that is above the required CT, and the high lift pumps will shut down if the chlorine reaches a level lower than the required CT, or the lowest free chlorine level of 0.20 mg/L, to prevent water below the required CT from being distributed. A high chlorine alarm calls out at 3.50 mg/L. Operators try to keep the chlorine residual at an average of 1.00mg/L. The on-line chlorine analyzer is checked with the hand-held chlorine analyzer and adjusted as required. Calibration of the on-line chlorine analyzers was performed by Endress & Hauser on August 16, 2023. The Hach turbidimeters are accurate to ± 0.1 NTU (Nephelometric Turbidity Unit). The turbidimeters are checked monthly using a hand-held turbidity analyzer and adjusted accordingly. The turbidity analyzers were calibrated on August 8, 2023, by Hach Canada. 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 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, 12 samples per month from the distribution system. Nitrates, THMs and HAAs are analyzed 4 times a year in the distribution system. Schedule 23 and 24 (treated water) are analyzed annually. Sodium and fluoride (treated water) are analyzed once every 60 months. (See Appendix II.) 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.

In the reporting year, there were no adverse water quality incidents.

Under Ontario Regulation 170/03, Schedule 15, Section 15.1-5 (lead sampling), Long Sault-Ingleside Regional WTP and distribution system is eligible for reduced sampling and reduced frequency (every 3 years). Lead samples were last collected in 2022 and will be collected again in 2025. Alkalinity and pH are required to be collected twice per year.

Effluent discharged from the backwash wastewater facility is analyzed monthly for Total Suspended Solids (annualized average), Total Chlorine Residual, and pH. The results are summarized in Appendix II – 2023 Annual Report for the Ministry of the Environment, Conservation and Parks.

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 or above 3.50 mg/L for a period greater than 15 minutes. The chlorine analyzers in the distribution system were calibrated on August 15, 2023, by Endress & Hauser.

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-Ingleside Regional 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 June 2006. 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 has been implemented to ensure adequate equipment and material are available for dealing with emergencies, upset conditions, equipment breakdowns in the works and spill scenarios.

An operating manual incorporates the requirements of the Drinking Water Works Permit. 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.

Compliance with Regulatory Requirements and Actions Required

The 2022-2023 Compliance Inspection was conducted on between December 2, 2022, and February 10, 2023, by the Ministry of the Environment, Conservation and Parks. The Compliance Inspection Report was received on February 24, 2023, with a final inspection rating of 95.7%.

The following section is quoted directly from the February 24, 2023, MECP Compliance Inspection Report.

"All parts of the drinking water system were not disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit.

As per Schedule B, Condition 2.3 of the facility's DWWP,

"All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with the applicable provisions of the following documents:

- a) Until June 6, 2021, the ministry's Watermain Disinfection Procedure, dated November 2015. As of June 7, 2021, the ministry's Watermain Disinfection Procedure, dated August 1, 2020.
- b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;
- c) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
- d) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
- e) AWWA C654 – Standard for Disinfection of Wells."

A review of records and documents provided by the owner confirms the "QMS Water Main Break Report Form," used by township operators to capture the details of each watermain break, does not include all information required by section 3.2 "Documentation for Watermain Maintenance and Repair" of the 2020 Watermain Disinfection Procedure (WDP). Furthermore, the additional information required by the procedure was not recorded elsewhere.

An updated "QMS Water Main Break Report" form was provided to the undersigned drinking water inspector following the inspection. The form has been revised to include most of the information required by section 3.2 of the 2020 WDP, including the category of the break and the name of the OIC responsible for categorizing the break.

The owner is reminded that operators are responsible for maintaining, as a minimum, records of all information required by section 3.2 of the 2020 WDP. It should be noted that there is no requirement for all information to be recorded on a single form.

For reference, the requirements outlined in section 3.2 of the procedure can be found at:
<https://www.ontario.ca/page/water-main-disinfection-procedure#section-4>

ACTIONS REQUIRED: By no later than April 30, 2023, the owner SHALL review the 2020 Watermain Disinfection Procedure and all associated requirements with distribution system operators.

Records of this review shall be provided to the undersigned water inspector upon its completion.

The following instance(s) of non-compliance were also noted during the inspection:

A review of records provided by the operating authority confirms one Form 2 was prepared during the inspection period, for the addition of an isolation valve on the permeate pipe.

Although Part 2 and Part 3 of the form were both filled in correctly, it should be noted that Part 1, the Drinking Water Works Permit Number for the Long Sault/Ingleside Regional Drinking Water System, was not included on the form. The operating authority is reminded of the requirement to complete these forms in their entirety.

ACTION REQUIRED: By no later than April 30, 2023, the operating authority SHALL review the Form 2 requirements with all operations and maintenance personnel to ensure that moving forward the forms are completed as required.

Records of this review shall be provided to the undersigned water inspector upon its completion.

The following instance(s) of non-compliance were also noted during the inspection:

The owner did not have a harmful algal bloom monitoring plan in place.

As per Schedule C, Condition 6.0 of the facility's MDWL, the owner was required to have a Harmful Algal Bloom Monitoring Plan in place on or before June 7, 2021.

Additionally, as per Schedule C, Conditions 6.1.3 and 6.3.6 of the MDWL, "the owner must train all relevant drinking water system staff on the Plan prior to the beginning of each warm season" and must maintain "up-to-date records that document staff training on the harmful algal bloom monitoring, reporting and sampling procedures."

A review of section 5.7 of the operating authority's QMS Sampling, Testing and Monitoring Procedure, entitled "Algal Bloom Monitoring" confirms there is a plan in place that meets the requirements in Condition 6.3. Log book entries and discussions with the operating authority at the time of the inspection also confirm operators are following their plan and are conducting visual monitoring as required.

That being said, the operating authority was not able to provide, as required by Condition 6.3.6, up-to-date records that document staff were trained on the harmful algal bloom monitoring, reporting and sampling procedures prior to the beginning of the 2022 warm season.

After discussing this requirement with the operating authority during the onsite inspection of the DWS, the operating authority later provided the undersigned water inspector with an updated copy of their "QMS Sampling, Testing and Monitoring Procedure" that includes:

"Each calendar year, prior to the beginning of the algal bloom monitoring period, every operator will receive training on the following procedure and the QMS Representative shall ensure that a record of the training is retained per the QMS Records Control Procedure (QMS SYS-P2)."

Furthermore, the operating authority has prepared a "QMS General Communications Record" for the upcoming 2023 Harmful Algal Bloom plan training that is schedule to take place May 17, 2023.

No further actions required."

A copy of the report is available at the Township office.

MAINTENANCE

January 4 – Ranguard on site at Ingleside booster to troubleshoot alarm communications failure.
January 4 – Bell on site to resolve phone line issue relating to alarm communications failure.
January 24 – Brenntag on site to deliver sodium hypochlorite.
January 30 – DBC on site to vacuum Ingleside booster sump and valve chamber.
January 30 – Devine and Associates on site to troubleshoot PSV at Ingleside booster.
January 31 – Devine and Associates on site to repair PSV at Ingleside booster.
February 13 – Capital Controls on site to wire new Q-DOS chlorine pump.
February 15 – Quarterly samples collected at WTP and distribution points.
February 24 – Brenntag on site to deliver sodium hypochlorite.
February 28 – Latreille Electric and Capital Controls on site at Ingleside booster to integrate new chlorine panel.
March 17 – Brenntag on site to deliver sodium hypochlorite.
March 27 – Marleau on site to change pressure switch for compressor 91-B.
March 27 – Capital Controls on site to replace fuse for HLP pressure sensor.
March 30 – Pyro Pro on site to perform fire extinguisher inspections.
April 3 – Capital Controls on site to investigate issues with low lift communications alarm.
April 12 – Samples for lead testing (pH, alkalinity) collected in the distribution system.
April 14 – Brenntag on site to deliver sodium hypochlorite.
May 8 – Quarterly samples collected at WTP and distribution points.
May 8 – Annual samples collected at WTP.
May 10 – Marleau on site to replace valve positioner on train #2 backpulse actuator.
May 15 – Genrep on site to replace blown fuse on generator panel.
May 17 – Brenntag on site to deliver sodium hypochlorite.
June 8 – Marleau Mechanical on site to troubleshoot vacuum motor 92PA.
June 13 – Marleau Mechanical on site to install a new vacuum motor.
June 14 – Capital Controls on site to work on low lift PIP setpoints.
July 2 – Bell on site to troubleshoot internet and communication issues between Ingleside booster and LS WTP.
July 3 – Bell on site to repair internet line at Ingleside booster.
July 4 – Genrep on site to conduct semi-annual inspection and load test at Ingleside booster.
July 5 – Genrep on site to conduct semi-annual inspection and load test at WTP.
July 6 – Brenntag on site to deliver sodium hypochlorite.
July 10 – Devine and Associates on site to check PRV and Ingleside booster supply valve.
August 2 – Brenntag on site to deliver sodium hypochlorite.
August 8 – Quarterly samples collected at WTP and distribution points.
August 8 – Hach on site to conduct annual calibrations.
August 13 – Capital Controls on site at Ingleside Booster to troubleshoot tower level sensor issue.

August 15 – Endress & Hauser on site to conduct annual calibrations.
August 16 – Endress & Hauser on site to conduct annual calibrations.
September 6 – Brenntag on site to deliver sodium hypochlorite.
September 27 – Brenntag on site to deliver sodium hypochlorite.
September 29 – Eastern Welding on site to verify back pulse tank dimensions and volume.
October 11 – Samples for lead testing (pH, alkalinity) collected in the distribution system.
October 16 – Sodrox on site to deliver sodium hypochlorite.
October 20 – Leroux Pressure Washing on site pressure washing exterior of plant.
November 7 – Genrep on site to conduct annual generator inspection and maintenance.
November 9 – Marleau Mechanical on site to conduct air dryer yearly check.
November 13 – Quarterly samples collected at WTP and distribution points.
November 15 – Capital Controls on site to replace fibre switch box and communication line between low lift and WTP.
November 22 – Bergeron Electric on site to conduct fire system inspection.
November 29 – Marleau Mechanical on site to service heaters.
December 28 – Marleau on site to replace flame rod and igniter on heater in generator room.

APPENDIX I Flow Data

LONG SAULT-INGLESIDE WATER TREATMENT SYSTEM SUMMARY REPORT

Municipality: Township of South Stormont

Year: 2023

Source: St. Lawrence River

Capacity: 9,500m³/day*

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 Max. NTU | NO ₂ mg/L | NO ₃ mg/L | THM ug/l | HAA ug/L | Total | | Unsafe or Poor | | |
| | | | | | Avg. mg/L | Min. mg/L | Max. mg/L | | | | | | Raw Water | Plant | Distribution | Plant | Distribution |
| January | 149,937 | 126,348 | 4,076 | 4,900 | 1.16 | 0.98 | 1.38 | 0.05 | | | | | 5 | 5 | 12 | | |
| February | 129,155 | 109,411 | 3,908 | 4,536 | 1.19 | 1.04 | 2.01 | 0.07 | 0.07 | 0.31 | 44.0 | 12.7 | 4 | 4 | 12 | | |
| March | 160,356 | 135,799 | 4,381 | 4,881 | 1.08 | 0.98 | 1.21 | 0.16 | | | | | 4 | 4 | 12 | | |
| April | 158,153 | 126,575 | 4,219 | 5,210 | 1.15 | 0.98 | 1.29 | 0.14 | | | | | 4 | 4 | 12 | | |
| May | 175,782 | 140,718 | 4,539 | 6,464 | 1.15 | 0.82 | 1.62 | 0.05 | <0.05*** | 0.32 | 47.0 | 20.6 | 5 | 5 | 13 | | |
| June | 186,028 | 156,908 | 5,230 | 6,369 | 1.30 | 1.05 | 1.53 | 0.10 | | | | | 4 | 4 | 12 | | |
| July | 191,405 | 161,257 | 5,202 | 5,848 | 1.19 | 0.62 | 1.96 | 0.10 | | | | | 5 | 5 | 13 | | |
| August | 185,137 | 157,291 | 5,074 | 6,223 | 1.26 | 0.88 | 1.71 | 0.31 | 0.19 | 0.16 | <6** | 15.9 | 4 | 4 | 12 | | |
| September | 161,733 | 135,550 | 4,518 | 5,866 | 1.25 | 1.07 | 1.48 | 0.08 | | | | | 4 | 4 | 12 | | |
| October | 157,136 | 131,958 | 4,257 | 5,013 | 1.25 | 1.09 | 1.43 | 0.08 | | | | | 5 | 5 | 12 | | |
| November | 145,927 | 120,591 | 4,020 | 4,677 | 1.23 | 1.15 | 1.42 | 0.09 | <0.05*** | 0.22 | 55.0 | 14.2 | 4 | 4 | 12 | | |
| December | 149,309 | 127,244 | 4,105 | 5,068 | 1.20 | 1.08 | 1.31 | 0.07 | | | | | 4 | 4 | 12 | | |
| Total | 1,950,058 | 1,629,650 | | | | | | | | | | | 52 | 52 | 146 | 0 | 0 |
| Average | | | 4,465 | | 1.20 | | | | <0.09 | 0.25 | 38.0 | 15.9 | | | | | |
| Minimum | | | | | | 0.62 | | | | | | | | | | | |
| Maximum | | | | 6,464 | | | 2.01 | 0.31 | | | | | | | | | |
| ODWS | | | | | | | | | 1 | 10 | 100.0 | 80.0 | 52 | 52 | 144 | | |

*Municipal Drinking Water Licence No. 186-102 (Issue 3) dated December 4, 2020 specifies plant capacity of 9,500 m³/day. However, it has since been indicated to the Township that the true capacity may be 8,575 m³/day. The issue is under review.

**Total THMs for August 8, 2023, sample were <6 ug/L, but 6 ug/L was used in order to report the annual average.

***Nitrites for May 8, 2023, and November 13, 2023, were <0.05 mg/L, but 0.05 mg/L was used to calculate annual average.

APPENDIX II
2023 Annual Report
Ministry of the Environment, Conservation and Parks



Section 11: ANNUAL REPORT

| | |
|--|---|
| Drinking-Water System Number: | 260066417 |
| Drinking-Water System Name: | Long Sault-Ingleside Regional Water Treatment Plant |
| Drinking-Water System Owner: | Township of South Stormont |
| Drinking-Water System Category: | Large Municipal Residential |
| Period being reported: | January 1 – December 31, 2023 |

| | |
|---|---|
| <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 [] No [x]</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>Township of South Stormont 2 Milles Roches Road Long Sault, ON K0C 1P0 Website: southstormont.ca</p> </div> | <p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input type="text"/></p> <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: <input type="text"/></p> <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 |
|----------------------------|------------------------------|
| | |

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.

- 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 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 per Municipal Drinking Water Licence No. 186-102 (Issue 3) dated December 4, 2020. However, since the issuance of the licence, it has been indicated to the Township that the true nameplate plant capacity may be 8,575 m³/day. The issue of plant capacity is under review. The distribution system now services a combined population in Long Sault and Ingleside of approximately 3500.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite, sodium bisulfite, citric acid and sodium hydroxide

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

Veolia monitoring system (24/7/365) - \$16,285
Install radio communication - \$13,070
Conduct annual calibrations - \$7,170
Install QDOS pumps \$5,015
Repair booster pumps - \$4,309
Install valve positioner - \$3,501
Repair PRV - \$3,357



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

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 | 52 | 0-0 | 0-20 | | |
| Treated | 52 | 0-0 | 0-0 | 52 | <2-4 |
| Distribution | 146 | 0-0 | 0-0 | 52 | <2-2 |
| Free chlorine residuals tested at the same time as microbiological sample collection: 0.83-1.55 mg/L (Treated samples) and 0.64-1.48 mg/L (Distribution samples) | | | | | |

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 #) |
|---|------------------------|----------------------------------|
| Raw Turbidity | 8760 | 0.00-10.00 NTU |
| Permeate Turbidity | | |
| Train #1 | 8760 | 0.00-0.30 NTU |
| Train #2 | 8760 | 0.02-0.31 NTU |
| Train #3 | 8760 | 0.02-0.13 NTU |
| Chlorine | 8760 | 0.62-2.01 mg/L |
| 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.



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: Municipal Drinking Water Licence | Parameter | Date Sampled | Result | Unit of Measure |
|---|---|---|---------------|------------------------|
| December 4, 2020 | Total Suspended Solids (composite) MDWL criteria: 25mg/L (annual average concentration) | January | 1.9 | mg/L |
| | | February | 2.1 | |
| | | March | 1.9 | |
| | | April | 2.1 | |
| | | May | 2.7 | |
| | | June | 1.7 | |
| | | July | 3.8 | |
| | | August | 4.1 | |
| | | September | 2.2 | |
| | | October | 3.6 | |
| | | November | 4.9 | |
| | | December | 3.6 | |
| | | Total Annualized Average = | | |
| | | pH MDWL criteria: 6.5-8.5 (maximum concentration) | January | 8.35 |
| February | | | 8.24 | |
| March | | | 8.30 | |
| April | | | 8.28 | |
| May | | | 8.02 | |
| June | | | 8.33 | |
| July | | | 7.97 | |
| August | | | 8.13 | |
| September | | | 8.22 | |
| October | | | 8.34 | |
| November | | | 8.25 | |
| December | | | 8.10 | |
| Total Chlorine Residual MDWL criteria: 0.02mg/L (maximum concentration) | | | January | 0.02 |
| | | February | 0.01 | |
| | | March | 0.01 | |
| | | April | 0.01 | |
| | | May | 0.02 | |
| | | June | 0.02 | |
| | | July | 0.02 | |
| | | August | 0.02 | |
| | | September | 0.01 | |
| | | October | 0.01 | |
| | | November | 0.02 | |
| December | | 0.01 | | |



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 | May 8, 2023 | 0.0001 | mg/L | |
| Arsenic | May 8, 2023 | 0.0007 | mg/L | |
| Barium | May 8, 2023 | 0.022 | mg/L | |
| Boron | May 8, 2023 | 0.016 | mg/L | |
| Cadmium | May 8, 2023 | <0.000015 | mg/L | |
| Chromium | May 8, 2023 | <0.001 | mg/L | |
| *Lead | | | | |
| Mercury | May 8, 2023 | <0.00002 | mg/L | |
| Selenium | May 8, 2023 | <0.001 | mg/L | |
| Sodium | Nov 24, 2022 | 15.2 | mg/L | |
| Uranium | May 8, 2023 | 0.00029 | mg/L | |
| Fluoride | May 9, 2022 | <0.1 | mg/L | |
| Nitrite | February 15, 2023 | 0.07 | mg/L | |
| | May 8, 2023 | <0.05 | mg/L | |
| | August 8, 2023 | 0.19 | mg/L | |
| | November 13, 2023 | <0.05 | mg/L | |
| Nitrate | February 15, 2023 | 0.31 | mg/L | |
| | May 8, 2023 | 0.32 | mg/L | |
| | August 8, 2023 | 0.16 | mg/L | |
| | November 13, 2023 | 0.22 | mg/L | |

*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 systems

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 | Exempt* | | |
| Distribution | | | |

*Due to historically low concentrations of lead in its drinking water, the Township of South Stormont is exempt from plumbing sampling for lead and is required to sample for lead in the distribution system every three years in both “winter” (Dec-Apr) and “summer” periods (Jun-Oct). The next distribution lead samples will be collected between Dec 15, 2024 and Apr 15, 2025 and between Jun 15, 2025 and Oct 15, 2025.

| Non-Lead Parameter | Winter Period (Dec-Apr) | Summer Period (Jun-Oct) |
|--------------------|--|---|
| pH | 7.60-7.68 (3 samples on Apr 12, 2023) | 8.11-8.14 (3 samples on Oct 11, 2023) |
| Alkalinity | 96-103 mg/L (3 samples on Apr 12, 2023) | 101-103 mg/L (3 samples on Oct 11, 2023) |

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 | May 8, 2023 | <0.3 | µg/L | |
| Atrazine + N-dealkylated metabolites | May 8, 2023 | <0.5 | µg/L | |
| Azinphos-methyl | May 8, 2023 | <1 | µg/L | |
| Benzene | May 8, 2023 | <0.5 | µg/L | |
| Benzo(a)pyrene | May 8, 2023 | <0.006 | µg/L | |
| Bromoxynil | May 8, 2023 | <0.5 | µg/L | |
| Carbaryl | May 8, 2023 | <3 | µg/L | |
| Carbofuran | May 8, 2023 | <1 | µg/L | |
| Carbon Tetrachloride | May 8, 2023 | <0.2 | µg/L | |
| Chlorpyrifos | May 8, 2023 | <0.5 | µg/L | |
| Diazinon | May 8, 2023 | <1 | µg/L | |
| Dicamba | May 8, 2023 | <1 | µg/L | |
| 1,2-Dichlorobenzene | May 8, 2023 | <0.5 | µg/L | |
| 1,4-Dichlorobenzene | May 8, 2023 | <0.5 | µg/L | |
| 1,2-Dichloroethane | May 8, 2023 | <0.5 | µg/L | |
| 1,1-Dichloroethylene | May 8, 2023 | <0.5 | µg/L | |
| Dichloromethane (methylene chloride) | May 8, 2023 | <5 | µg/L | |
| 2-4 Dichlorophenol | May 8, 2023 | <0.2 | µg/L | |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | May 8, 2023 | <1 | µg/L | |
| Diclofop-methyl | May 8, 2023 | <0.9 | µg/L | |
| Dimethoate | May 8, 2023 | <1 | µg/L | |
| Diquat | May 8, 2023 | <5 | µg/L | |
| Diuron | May 8, 2023 | <5 | µg/L | |
| Glyphosate | May 8, 2023 | <25 | µg/L | |
| Malathion | May 8, 2023 | <5 | µg/L | |
| MCPA | May 8, 2023 | <10 | µg/L | |
| Metolachlor | May 8, 2023 | <3 | µg/L | |
| Metribuzin | May 8, 2023 | <3 | µg/L | |
| Monochlorobenzene | May 8, 2023 | <0.5 | µg/L | |
| Paraquat | May 8, 2023 | <1 | µg/L | |
| Pentachlorophenol | May 8, 2023 | <0.2 | µg/L | |
| Phorate | May 8, 2023 | <0.3 | µg/L | |
| Picloram | May 8, 2023 | <5 | µg/L | |
| Polychlorinated Biphenyls (PCB) | May 8, 2023 | <0.05 | µg/L | |
| Prometryne | May 8, 2023 | <0.1 | µg/L | |



| | | | | |
|--|-------------|------|------|--|
| Simazine | May 8, 2023 | <0.5 | µg/L | |
| THM (NOTE: show latest annual average) | | 38.0 | µg/L | |
| Haloacetic Acid (HAA) (NOTE: show latest annual average) | | 15.9 | µg/L | |
| Terbufos | May 8, 2023 | <0.5 | µg/L | |
| Tetrachloroethylene | May 8, 2023 | <0.5 | µg/L | |
| 2,3,4,6-Tetrachlorophenol | May 8, 2023 | <0.2 | µg/L | |
| Triallate | May 8, 2023 | <10 | µg/L | |
| Trichloroethylene | May 8, 2023 | <0.5 | µg/L | |
| 2,4,6-Trichlorophenol | May 8, 2023 | <0.2 | µg/L | |
| Trifluralin | May 8, 2023 | <0.5 | µg/L | |
| Vinyl Chloride | May 8, 2023 | <0.2 | µg/L | |

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 | 55 | µg/L | Nov 13, 2023 |
| Sodium | 15.2 | mg/L | Nov 24, 2022 |