

Town of Parry Sound Tony Agnello Water Treatment Plant

Large Municipal Residential Drinking Water System Summary Report (2019)

This Summary Report is prepared in accordance with the requirements of the Safe Drinking Water Act (SDWA) and Ontario Regulation 170/03 (as amended) Schedule 22 - "Summary Reports for Municipalities". This Report covers the period from January 1, 2019 to December 31, 2019.

System Description

The Town of Parry Sound's Water Treatment System which is classified under the Safe Drinking Water Act (SDWA) and Ontario Reg. 170/03 – Drinking Water Systems Regulation, is categorized as a "Large Municipal Residential" Drinking Water System. The detailed description of the system is provided in Ministry of Environment, Conservation and Parks "Municipal Drinking Water Licence No 144-101" issued on August 2, 2016. In general the Parry Sound System can be described as follows:

- Gravity fed 0.76 meter diameter polyethylene water intake approximately 175 meters out in the Big Sound of Georgian Bay at the foot of Waubeek Street. It includes an intake structure which restricts velocities and discourages fish etc. from entering the intake and is approximately 16 meters below the water surface.

The treatment plant is a submerged vacuum driven hollow tube ultrafiltration membrane system which consists of the following major components:

- a low lift pumping system
- twin raw water feed tanks containing 240 membrane elements packaged into 12 cassettes, (6 in each of two trains)

- ultrafiltration membrane facilities consisting of the membranes themselves as well as vacuum permeate pumps, backpulse tanks with associated valves and controls
- a membrane integrity testing system (MIT)
- a membrane cleaning system
- chemical feed systems including; Sodium Hypochlorite (chlorination), Sodium Bisulphite and Sodium Thiosulphate (de-chlorination), Polyaluminium Chloride (coagulant), Polymer (related to the waste stream side rather than drinking water)
- Chlorine contact tank
- Clearwater reservoir
- High lift pumps
- Generator room (providing backup power in the event of a hydro outage)
- Distribution system serving the Town of Parry Sound
- Storage tower facilities at Bowes Street and North Sector Parry Sound Drive (Municipality of McDougall)
- Booster pumping facilities in one location (Church Street) within the distribution facility

The process at the treatment plant employs membrane ultrafiltration, augmented by colour removal capabilities for periods when the raw water demonstrates a colour removal requirement (usually in conjunction with spring runoff from the Seguin River and/or Georgian Bay thermal flips), followed by chlorine disinfection prior to delivery to the municipal distribution system.

List of Requirements-Failed to Meet in 2019

This section is provided to meet the requirements of Ontario Regulation 170/03 (as amended) under the SDWA Schedule 22-Summary Reports for Municipalities 22-(2).

The following summarizes all the known requirements of the Act, the regulations, systems approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the 2019 year.

1. Section 6-5(1)(1)(i) of Schedule 6 of O. Reg. 170/03 requires that, if a drinking water system uses continuous turbidity monitoring equipment for required turbidity sampling and testing, the owner and operating authority for the system shall ensure that, except when no water is being directed to users of water sampled by the equipment, test for filter effluent turbidity at least every 15 minutes.

On July 9, 2019 at 09:15 am until July 10, 2019 at 07:40 am (22 hours) Filter #1 continuous monitoring trending had flatlined during plant production. This was due to equipment being placed in "hold" mode while conducting maintenance and then not being released.

Corrective actions to be completed and provided to the MOECP by March 31, 2020 include: training operators on the Hach TU5300 turbidimeter and update written procedures.

2. Section 3.5 of Schedule B of Drinking Water Works Permit #144-201 requires that the document(s) or file(s) listed in Column 1 of Table 1 of Schedule A of the Drinking Water Works Permit be updated within 12 months of the replacement.

Distribution infrastructure changes were not made to the GIS mapping within 12 months of being completed.

Corrective actions to be completed and provided to the MOECP by April 30, 2020 include: watermains that have been added, modified, replaced or extended are sufficiently indicated in a document(s) or a file(s) referenced in Column 1 of Table 1 of Schedule A of the Drinking Water Works Permit.

3. Section 27(5) of O.Reg. 128/04 requires that an operator-in-charge, or a person authorized by an operator-in charge, records certain information in the logs, including, but not limited to: any departures from normal operating procedures that occurred during the shift and the time they occurred, any unusual or abnormal conditions that were observed in the subsystem during the shift, any action that was taken and any conclusions drawn from the observations, and any equipment that was taken out of service or ceased to operate during the shift and any action taken to maintain or repair equipment during the shift.

On July 9 and 10, 2019, logbooks at the water treatment plant did not indicate any information pertaining to maintenance of the turbidity analyzer on July 9, 2019, observations that the continuous turbidity trends contained a 22-hour flat-line (following the review of continuous monitoring data), or observations that the turbidity analyzer was found to be in 'hold' mode on July 10, 2019.

Corrective actions to be completed and provided to the MOECP by March 31, 2020 include: provide a plan to ensure operator(s) receive training/course on record-keeping requirements for drinking water operators.

4. Section 26(2)(c) and (d) of O. Reg. 128/04 (Duties of Operator-in-Charge) requires that an operator-in-charge make a record of; all adjustments made to the processes within his or her responsibility; and equipment operating status at the end of every operating shift.

On July 9 and 10, 2019, an operator-in-charge did not ensure important records were made, such as; information pertaining to maintenance of the turbidity analyzer on July 9, 2019, observations that the continuous turbidity trends contained a 22-hour flat-line (following the review of continuous monitoring data), or observations that the turbidity analyzer was found to be in 'hold' mode on July 10, 2019.

Corrective actions to be completed and provided to the MOECP by March 31, 2020 include: provide a plan to ensure operator(s) receive training/course on record-keeping requirements for drinking water operators.

5. Section 10.1 (3) of O. Reg. 170/03 requires that, if there is any change to the system information previously provided to the Ministry on the Drinking Water System Profile Information form, the owner of the drinking water system shall give the Director written notice of the change within 10 days of the change.

All changes to the system registration information were not provided within ten (10) days of the change; primary contact owner, primary contact operating authority, operational contact.

Corrective actions to be completed and provided to the MOECP by March 21, 2020 include: ensure the drinking water system profile for the Parry Sound DWS is up-to-date by completing and submitting a Drinking Water System Profile Information Form (Form 2149E) to the Ministry as per the instructions on page 1 of the form.

Annual Water Production/Delivery Information

This section is prepared to satisfy the requirements of Ontario Regulation 170/03 (as amended) under the SDWA Schedule 22-Summary Reports for Municipalities 22-2(3).

The Town of Parry Sound water operators record daily flow rates and associated recording times to be able to determine average daily flows, monthly average flows, maximum daily flows, daily instantaneous peak flow rate and water taking quantities. These are also continuously recorded by an advanced SCADA system. The SCADA system is backed up by the continued manual flow recording by operators.

The 2019 values for the Parry Sound Water Treatment System are as follows:

Average Daily Flow = 2,754 m³/day

Monthly Average Daily Flows

| | | |
|----------------|---|---------------------------|
| January 2019 | = | 2,599 m ³ /day |
| February 2019 | = | 2,746 m ³ /day |
| March 2019 | = | 2,613 m ³ /day |
| April 2019 | = | 2,471 m ³ /day |
| May 2019 | = | 2,635 m ³ /day |
| June 2019 | = | 2,855 m ³ /day |
| July 2019 | = | 3,671 m ³ /day |
| August 2019 | = | 3,354 m ³ /day |
| September 2019 | = | 2,776 m ³ /day |
| October 2019 | = | 2,508 m ³ /day |

| | | |
|--------------------------------------|---|--|
| November 2019 | = | 2,418 m ³ /day |
| December 2019 | = | 2,407 m ³ /day |
| Maximum Daily Flow | = | 4,779 m ³ /day (July 5, 2019) |
| Daily Instantaneous Peak Flow | = | 100.3 L/sec (May 27, 2019) |

Municipal Drinking Water Licence No 144-101 issued on August 2, 2016 established the maximum rated capacity of the Parry Sound Water Treatment Plant as 10,000 m³/day. It can be seen from above that the maximum daily flow experienced at the Parry Sound Treatment Plant for the year 2019 was 4,779 m³/day. This means in 2019 the Parry Sound Water Treatment Plant operated at 47.8% capacity on the maximum daily flow day.