

This report is a summary of water quality information for the Sturgeon Falls Water Treatment Plant, in accordance with the Safe Drinking Water Act, 2002, Ontario Regulation 170/03, Schedule 22, for the reporting period of January 1, 2020 to December 31, 2020.

Schedule 22 of the Regulation states:

- (2) *The report must,*
- (a) *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*
 - (b) *for each failure referred to in clause (a), describe the measures that were taken to correct the failure.*

The Ministry of the Environment, Conservation and Parks (MECP) conducted an annual inspection of the Sturgeon Falls Drinking Water System in February 2021, covering the period of October 30, 2019 to January 15, 2021. There were six items linked to incidents of non-compliance with regulatory requirements within an Act, Regulation or site specific approvals, licences, permits, orders or instructions.

1. The secondary disinfectant residual was not measured as required for the distribution system.

During the inspection period, the above noted requirements were not met on 12 occasions between January 8 and December 23, 2020 when the second set of samples collected during the week were not a minimum of 48 hours after the first set.

Additionally, records did not include free chlorine residual results for samples collected on August 19, 2020. Although there is a notation in the WTP log indicating that the operator went to complete the sampling at 9:35 am, there is no record of the exact time each sample was collected, the results or the locations sampled.

Failure to ensure that secondary disinfection is monitored in accordance with the requirements of subsection 7-2(3) and (4) is a violation of Schedule 7 to O. Reg. 170/03.

Action(s) Required:

By no later than March 19, 2021, the municipality shall provide written documentation to Provincial Officer/Water Inspector Lori Duquette of the North Bay Office outlining the steps that will be taken to ensure that secondary disinfection monitoring requirements identified in subsection 7-2(3) of Schedule 7 to O. Reg. 170/03 are met going forward.

- On February 18, 2021, a standard operating procedure was created that a sampling schedule be prepared for the complete year. The operators must initial when sampling tasks are completed, and the Chief Operator signs off at the end of the week ensuring all sampling for the week were conducted. This was communicated to the Inspector by email on February 19, 2021.
- On March 16, 2021, a continuous chlorine analyser was ordered to be installed at the Sturgeon Falls Wastewater Treatment Plant to continuously monitor the distribution water. This is an additional monitoring program to further safeguard the drinking water system. This was communicate to the Inspector by email on March 16, 2021.

2. All continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were not equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.

The filter effluent turbidity analyzer for filter 4100 malfunctioned at 5:28 am on October 28, 2020 causing the trend to flat line at 0.002 NTU without triggering an alarm. The facility is equipped with a low level alarm that was added

in 2013 to try and capture instances where the analyzers malfunction causing a low reading. However, this event did not generate an alarm as the analyzer flat lined at 0.002 NTU. The low alarm set point is set at 0.002 NTU to capture false readings and would only be triggered if below that value. The flatline lasted for a period of six (6) hours and 22 minutes until discovered by the operator.

Failure of an alarm being triggered when the continuous analyzer malfunctioned is a violation of subsection 6-5(1)(5) of Schedule 6 to O. Reg. 170/03.

Action(s) Required:

No further action is required for this item as the municipality had their SCADA technician on-site on October 28, 2020, the same day as the incident to adjust the filter effluent low level alarm set point to 0.005 NTU. The higher set point was chosen to minimize the risk of a similar type of situation from occurring again in the future.

3. Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was not performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and/or was not recording data with the prescribed format.

As previously noted, there was one occurrence where the filter effluent turbidity analyzer for filter 4100 was not monitoring the filter effluent turbidity for a period of six (6) hour and 22 minutes while the filter was in operation. The ORO for the WTP did review the data confirmed that the filter effluent turbidity values were very low before and after to the incident (i.e. >0.1 NTU).

Failing to ensure that filter effluent turbidity is tested at a minimum of every 15 minutes while the filter is in operation is a violation of subsection 6-5(1)1 of schedule 6 to O. Reg. 170/03.

Action(s) Required:

No further action is required for this item as the municipality had their SCADA technician adjust the filter effluent low level turbidity alarm set point to 0.005 NTU to ensure that if the analyzer malfunctions and causes a similar flatline in the future an alarm will be generated.

4. All haloacetic acid water quality monitoring requirements prescribed by legislation are not being conducted within the required frequency and at the required location.

Section 13-6.1 of Schedule 13 to O. Reg. 170/03 requires the owner and operating authority for the system to ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of haloacetic acids (HAA), and have them tested for HAA.

A sample was not collected in the first quarter of 2020 due to an error with the magnetic annual sampling calendar. The ORO for the Sturgeon Falls WTP notified the ministry on May 19, 2020 of the error when the missed sample was discovered.

Failure to ensure that a sample is collected in every calendar quarter and tested for haloacetic acid is a violation of section 13-6.1 of Schedule 13 to O. Reg. 170/03.

Action(s) Required:

No further action is required for this incident as on May 28, 2020 the following action was taken:

- A new standard operating procedure (SOP) relating to sampling and the annual calendar was created. This SOP specifies that only the Chief WTP operator or the Manager (i.e. WTP ORO) may alter the annual calendar. The

SOP also requires that the operators complete the "Annual Tasks Whiteboard" log sheet to note the task completed, date and initial. Tasks include sampling, equipment maintenance, and verification of receipt of quarterly results.

- The WTP operators were trained on the new SOP and required to sign a log sheet confirming completion of the training.

At the time of the inspection, a review of the new "Annual Tasks Whiteboard" log sheet was completed to confirm that information is being recorded regarding quarterly sampling.

5. All trihalomethane water quality monitoring requirements prescribed by legislation were not conducted within the required frequency and at the required location.

Section 13-6 of Schedule 13 to O. Reg. 170/03 requires the owner and operating authority for the system to ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of trihalomethanes (THM), and have them tested for THM.

A THM sample was not collected in the first quarter of 2020 due to an error with the magnetic annual sampling calendar. The ORO for the Sturgeon Falls WTP notified the ministry on May 19, 2020 of the error when the missed sample was discovered.

Failure to ensure that a sample is collected in every calendar quarter and tested for THM is a violation of section 13-6 of Schedule 13 to O. Reg. 170/03.

Action(s) Required:

No further action is required for this incident. Please refer to the information included in the Action(s) Required section for HAA for further details.

6. All nitrate/nitrite water quality monitoring requirements prescribed by legislation were not conducted within the required frequency for the DWS.

During this inspection period, nitrate and nitrite samples were not collected for a six (6) month period between November 20, 2019 and May 20, 2020.

Failure to ensure that a sample is collected in every three months and tested for nitrate and nitrite is a violation of section 13-7 of Schedule 13 to O. Reg. 170/03.

Action(s) Required:

No further action is required for this incident. Please refer to the information included in the Action(s) Required section for HAA for further details.

- (3) *The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the 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.*

2020 Water Taking and Treating for the Sturgeon Falls Water Treatment Plant

Month	Intake Daily Average m ³ /d	Highest Daily Intake m ³ /d	Highest Instantaneous Intake m ³ /d	Treated Daily Average m ³ /d	Highest Daily Treated m ³ /d	Highest Daily to Distribution m ³ /d
January	3926	4892	6203	3418	4379	3703
February	3948	4364	5892	3439	3840	3658
March	3820	4133	5690	3317	3637	3463
April	3749	4126	8109	3195	3616	3548
May	4425	6653	7951	3899	6097	5770
June	5308	7426	8712	4772	6885	6720
July	6035	7834	8730	5467	7281	7525
August	5231	6139	6836	4682	5584	5788
September	4205	4662	5774	3674	4125	3878
October	3759	4346	7719	3238	3797	3569
November	3712	4747	5086	3195	4230	3808
December	3848	4655	8530	3329	4146	3985

Municipal Drinking Water Licence Number 202-102, Schedule C: System-Specific Conditions, for Sturgeon Falls Water Treatment Plant

- *Rated Capacity*
 - *1.1 ... the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed ... 14 208 m³/day.*

Permit to Take Water No. 6281-6CVL9P

- *The maximum rate of withdrawal authorized under this Permit is 13 200 litres per minute (19.008 x 1000 m³/d) or 14 300 000 litres per day (14.3 x 1000 m³/d).*

The Sturgeon Falls Water Treatment Plant complied with Drinking Water Licence Rated Capacity limits, and the limits set out in the Permit to Take Water. There were no issues meeting consumer demand and no issues meeting regulatory limits.

- The highest daily volume of treated water that flowed from the treatment subsystem to the distribution subsystem was 7525 m³ on July 9, 2020.
- The maximum instantaneous withdrawal rate for the year was 6062 litres per minute (8730 m³ per day) on July 8, 2020. The maximum daily withdrawal was 7 834 000 litres (7834 m³) on July 1, 2020.