



2021 Summary Report

(Prepared under Ontario Regulation 170/03)

Niagara Falls Water Treatment Plant

The Regional Municipality of Niagara

January 1 to December 31, 2021

Ministry of the Environment, Conservation and Parks

Municipal Drinking Water License # 007-102

Drinking Water Works Permit # 007-202

Niagara Falls Water Treatment Plant - 2021 Summary Report

This report summarizes the water flows for the Niagara Falls Water Treatment Plant, drinking water system number 220002084, from January 1 to December 31, 2021.

This report satisfies the requirements of Ontario Regulation 170/03 – Drinking Water Systems.

Summary of Non-Compliance

The Niagara Falls Water Treatment Plant was found to be in non-compliance with regulations and/or system Licence, as follows:

Inspection Rating

With consideration for the non-compliance noted below, the Niagara Falls Water Treatment Plant was granted a 99.34% inspection rating during the 2021-2022 Ministry of Environment, Conservation and Parks annual drinking water system inspection.

Non-Compliance

Niagara Region was found to be in non-compliance with section 15.2, Schedule B, of the water treatment plant's Municipal Drinking Water Licence which requires any alteration to any treatment subsystem to be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the alteration being completed or placed into service.

Event Details

It was observed that the Region did not incorporate modifications, completed more than one year prior to the inspection date, into process flow diagrams, process and instrumentation diagrams, record drawings and diagrams for several projects.

Corrective Actions

Staff have reviewed the requirements of section 15.2, Schedule B, of the Municipal Drinking Water Licence and have followed up with the local Ministry of Environment, Conservation and Parks inspector to seek clarification on requirements.

An internal procedure has been drafted which outlines the process for internal staff to ensure drawings, and other project deliverables, are completed within regulated timelines for projects originating from current and capital budgets. The procedure will be finalized once clarification from the inspector is received. To ensure awareness and prevent reoccurrence, training on the procedure will be conducted for relevant staff throughout the water and wastewater services division.

As a proactive approach, staff have reviewed modification records for the last five years for all water treatment plants and are in the process of drafting a plan to address

deficiencies for all plants. This plan, the procedure, and associated training records will be provided to the inspector for review and acceptance once completed.

With consideration for required clarification, the original deadlines of January 31, 2022 (procedure and plan development) and February 28, 2022 (training) for this work have been lifted by the inspector. Staff will keep senior leadership and the inspector informed of progress.

Summary of Water Treatment Plant Flows

The flow rates captured below are moments in time, and can be affected by various circumstances, such as pump changes or valve position. It is not unusual to have higher or lower than normal flows for this reason.

Date	Total Flow Raw (ML)	Total Flow Treated (ML)	Average Day Raw (ML)	Average Day Treated (ML)	Minimum Day Treated (ML)	Maximum Day Treated (ML)	Minimum Flow Rate Treated (ML/d)	Maximum Flow Rate Treated (ML/d)	Total Waste Sludge (ML)
Jan	1182.971	1072.557	38.160	34.599	31.344	38.863	0.062	61.614	1.404
Feb	1058.268	969.115	37.795	34.611	28.330	40.405	13.327	58.600	3.179
Mar	1169.748	1099.411	37.734	35.465	31.912	38.999	0.062	56.818	0.683
Apr	1076.665	1020.415	35.889	34.014	31.152	37.689	7.541	54.000	0.760
May	1344.491	1265.264	43.371	40.815	32.862	54.760	0.067	77.705	0.760
Jun	1479.025	1386.422	49.301	46.214	34.121	56.645	21.109	73.722	0.760
Jul	1512.332	1336.091	48.724	46.072	38.850	55.285	0.072	91.153	0.733
Aug	1757.208	1663.522	56.684	53.662	43.486	63.597	0.067	84.234	0.760
Sep	1386.313	1298.075	46.210	43.269	35.881	55.170	0.057	69.636	0.565
Oct	1283.295	1196.934	41.397	38.611	34.645	43.483	0.061	69.880	0.496
Nov	1186.444	1105.778	39.548	36.859	33.442	40.364	0.050	57.007	0.548
Dec	1219.742	1140.602	39.347	36.794	32.699	42.262	0.045	53.162	0.590

Stat	Total Flow Raw (ML)	Total Flow Treated (ML)	Average Day Raw (ML)	Average Day Treated (ML)	Minimum Day Treated (ML)	Maximum Day Treated (ML)	Minimum Flow Rate Treated (ML/d)	Maximum Flow Rate Treated (ML/d)	Total Waste Sludge (ML)
Total	15656.502	14554.186							11.238
Min					28.330		0.045		0.496
Max						63.597		91.153	3.179
Avg		1212.849	42.847	40.082					0.937

Comparison of Actual to System Approved Flow

Flow rates are required by Municipal Drinking Water Licence number 007-102.

- Maximum daily flow: 145.500 ML
- Maximum flow rate: 145.500 ML/day

Date	Average Day Treated (ML)	% of Rated Capacity	Maximum Day Treated (ML)	% of Rated Capacity	Maximum Flow Rate Treated (ML/d)	% of Rated Capacity
Jan	34.599	23.8%	38.863	26.7%	61.614	42.3%
Feb	34.611	23.8%	40.405	27.8%	58.600	40.3%
Mar	35.465	24.4%	38.999	26.8%	56.818	39.1%
Apr	34.014	23.4%	37.689	25.9%	54.000	37.1%
May	40.815	28.1%	54.760	37.6%	77.705	53.4%
Jun	46.214	31.8%	56.645	38.9%	73.722	50.7%
Jul	46.072	31.7%	55.285	38.0%	91.153	62.6%
Aug	53.662	36.9%	63.597	43.7%	84.234	57.9%
Sep	43.269	29.7%	55.170	37.9%	69.636	47.9%
Oct	38.611	26.5%	43.483	29.9%	69.880	48.0%
Nov	36.859	25.3%	40.364	27.7%	57.007	39.2%
Dec	36.794	25.3%	32.699	22.5%	53.162	36.5%