

February 16, 2022

MUNICIPALITY OF LAKESHORE
STONEY POINT WATER TREATMENT PLANT AND WATER SERVICE AREA
2021 ANNUAL & SUMMARY REPORT
MADE UNDER O.REG. 170/03

The Municipality of Lakeshore is required to provide an *Annual Report* for each of its Ministry of the Environment Conservation and Parks (MECP) drinking water systems under Drinking Water Systems Regulation *O.Reg. 170/03* in accordance with the *Safe Drinking Water Act* (as amended). This *Annual Report* is due to be posted for public viewing by the end of February of the following year.

Under *Schedule 22 of Ontario Regulation 170/03*, a regulation made under the *Safe Drinking Water Act 2002*, requires that a large municipal residential drinking-water system must provide to its members of municipal council a Summary Report on various aspects of the system before March 31 of the following year. The Stoney Point Water Service Area is classed as a large municipal residential drinking-water system and is therefore subject to Schedule 22. The purpose of this letter and its attachments is to satisfy this requirement and report on dates from January 1, 2021, until December 31, 2021.

The Municipality of Lakeshore owns and operates the four (4) separate drinking water systems under MECP jurisdiction. This letter focusses of the *Stoney Point Water Treatment Plant (WTP) and Water Service Area (WSA)* which is registered having *Drinking Water System #260003396* under *Municipal Drinking Water Licence #031-101*. This drinking water system is deemed to be *Large Municipal Residential* having a mathematically assumed population of 6,728 having 2,403 service connections at the end of 2021.

The *Stoney Point WTP*, located in Stoney Point, services the Stoney Point Water Service Area (WSA). This geographically serves the Municipality of Lakeshore from Lake St. Clair south to County Rd 8 and Rochester Townline Rd east to Big Creek. The plant process includes coagulation, flocculation, sedimentation, chlorination, filtration, taste and odour control systems. In these processes the following chemicals are utilized; Aluminum Sulphate, Activated Carbon, Chlorine Gas. The SPWSA includes approximately 208km of distribution piping ranging in sizes 25 to 300 mm in diameter. The distribution system includes secondary disinfection provided by free chlorine. The SPWSA also includes two (2) pressure boosting station located in Haycroft and Comber. Both of these facilities include reservoirs and each have the ability to add chlorine gas to ensure free chlorine residual is safe and consistent throughout those portions of the distribution system.

The Stoney Point WTP is an automated facility that is controlled via a Supervisory Control and Data Acquisition (SCADA) system. *O.Reg.170/03* also specifies the data that is downloaded, stored and at what interval by utilizing the online continuous monitors that allow the plant to be automated and comply with all associated regulations. The results of these online instruments as required in this report are listed below in Table I.

TABLE I
2021 OPERATIONAL TESTING
REGULATION 170/03 DURING 2021

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity Filter AVG	8760	0.02 – 0.05	NTU
Chlorine	8760	0 – 2.82	Free CL mg/l
Distribution Additional Residuals	582	0.22 – 1.88	Free CL mg/l

NTU – Nephelometric Turbidity Units
8760 – Indicates continuous monitoring equipment used
CL – Chlorine
mg/l – milligram per litre

Under *Schedule 10* of *O.Reg. 170/03* the Municipality of Lakeshore is required to complete microbiological testing of its raw intake water, treated water and distribution water. Treated water is sampled immediately prior to the high lift pump reservoir, any sample taken after the high lift pumps is considered distribution. All these samples are required to be tested by a certified laboratory accredited for drinking water samples. Table II outlines these analytical results.

TABLE II
2021 MICROBIOLOGICAL TESTING DONE UNDER
SCHEDULE 10 OF REGULATION 170/03

	NUMBER OF SAMPLES	RANGE OF E.COLI OR FECAL RESULTS (MIN #)-(MAX #) cfu's	RANGE OF TOTAL COLIFORM RESULTS (MIN #)-(MAX #) cfu's	NUMBER OF HPC SAMPLES	RANGE OF HPC RESULTS (MIN #)-(MAX #) cfu's
Raw	52	2 – 100	2 – 1020	0	NA
Treated	104	0 – 0	0 – 0	104	<10 – 30
Distribution	260	0 – 0	0 – 0	104	0 - 0

cfu – colony forming units
HPC – heterotrophic plate count

The Municipality of Lakeshore is also required to take treated and distribution samples for various organic and inorganic parameters under *O.Reg. 170/03 Schedule 23 & 24*. In Table III and Table IV, the treated water sample results from this regulatory sampling requirement. No organic or inorganic sample exceeded any regulatory requirement as sampled for 2021.

TABLE III
2021 INORGANIC PARAMETERS TESTED
TREATED WATER
REGULATION 170/03

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Nov 29th, 2021	0.0001	mg/l	NO
Arsenic	Nov 29th, 2021	0.0002	mg/l	NO
Barium	Nov 29th, 2021	0.018	mg/l	NO
Boron	Nov 29th, 2021	0.020	mg/l	NO
Cadmium	Nov 29th, 2021	<0.000015	mg/l	NO
Chromium	Nov 29th, 2021	<0.002	mg/l	NO
Sodium	Nov 29th, 2021	8.2	mg/l	NO
Mercury	Nov 29th, 2021	<0.00002	mg/l	NO
Selenium	Nov 29th, 2021	<0.001	mg/l	NO
Uranium	Nov 29th, 2021	0.00016	mg/l	NO
Fluoride	Nov 29th, 2021	<0.1	mg/l	NO
Nitrite	Nov 29th, 2021	<0.1	mg/l	NO
Nitrate	Nov 29th, 2021	1.8	mg/l	NO

mg/l – milligram per litre

TABLE IV
2021 ORGANIC PARAMETERS
ANNUAL TREATED WATER REQUIREMENT
REGULATION 170/03

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Nov. 29th, 2021	<0.3	ug/l	NO
Atrazine + N-dealkylated metabolites	Nov. 29th, 2021	<0.5	ug/l	NO
Azinphos-methyl	Nov. 29th, 2021	<1.0	ug/l	NO
Benzene	Nov. 29th, 2021	<0.5	ug/l	NO
Benzo(a)pyrene	Nov. 29th, 2021	<0.006	ug/l	NO
Bromoxynil	Nov. 29th, 2021	<0.5	ug/l	NO
Carbaryl	Nov. 29th, 2021	<3.0	ug/l	NO
Carbofuran	Nov. 29th, 2021	<1.0	ug/l	NO
Carbon Tetrachloride	Nov. 29th, 2021	<0.2	ug/l	NO
Chlorpyrifos	Nov. 29th, 2021	<0.5	ug/l	NO
Diazinon	Nov. 29th, 2021	<1.0	ug/l	NO
1,2-Dichlorobenzene	Nov. 29th, 2021	<0.5	ug/l	NO

1,4-Dichlorobenzene	Nov. 29th, 2021	<0.5	ug/l	NO
1,2-Dichloroethane	Nov. 29th, 2021	<0.5	ug/l	NO
1,1-Dichloroethylene (vinylidene chloride)	Nov. 29th, 2021	<0.5	ug/l	NO
2-4 Dichlorophenol	Nov. 29th, 2021	<0.2	ug/l	NO
Diclofop-methyl	Nov. 29th, 2021	<0.9	ug/l	NO
Dimethoate	Nov. 29th, 2021	<1.0	ug/l	NO
Diquat	Nov. 29th, 2021	<5.0	ug/l	NO
Diuron	Nov. 29th, 2021	<5.0	ug/l	NO
Glyphosate	Nov. 29th, 2021	<25	ug/l	NO
Malathion	Nov. 29th, 2021	14.38	mg/l	NO
Metolachlor	Nov. 29th, 2021	<5.0	ug/l	NO
Metribuzin	Nov. 29th, 2021	<3.0	ug/l	NO
Monochlorobenzene	Nov. 29th, 2021	<3.0	ug/l	NO
Paraquat	Nov. 29th, 2021	<0.5	ug/l	NO
Pentachlorophenol	Nov. 29th, 2021	<1.0	ug/l	NO
Phorate	Nov. 29th, 2021	<0.2	ug/l	NO
Polychlorinated Biphenyls(PCB)	Nov. 29th, 2021	<0.3	ug/l	NO
Prometryne	Nov. 29th, 2021	<0.05	ug/l	NO
Simazine	Nov. 29th, 2021	<0.1	ug/l	NO
Terbufos	Nov. 29th, 2021	<0.5	ug/l	NO
Tetrachloroethylene	Nov. 29th, 2021	17.5	mg/l	NO
2,3,4,6-Tetrachlorophenol	Nov. 29th, 2021	32.25	mg/l	NO
Triallate	Nov. 29th, 2021	<0.5	ug/l	NO
Trichloroethylene	Nov. 29th, 2021	<0.5	ug/l	NO
2,4,6-Trichlorophenol	Nov. 29th, 2021	<0.2	ug/l	NO
Trifluralin	Nov. 29th, 2021	<10.0	ug/l	NO
Vinyl Chloride	Nov. 29th, 2021	<0.5	ug/l	NO
MCPA	Nov. 29th, 2021	<0.2	ug/l	NO
2,4-(2,4-D) Dichlorophenoxy acetic acid,	Nov. 29th, 2021	<0.5	ug/l	NO
Dicamba	Nov. 29th, 2021	<0.2	ug/l	NO
Picloram	Nov. 29th, 2021	<10	ug/l	NO

ug/l – microgram per litre

Treated and Distribution water samples are taken for selected organic and inorganic parameter; Trihalomethanes, Haloacetic Acids and Nitrite and Nitrate are sampled quarterly. Lead and alkalinity samples are taken in the distribution system bi-annually. The requirement to take and the amount of samples taken for these parameters falls under O.Reg. 170/03 and is based on population served. In Tables V, VI and VII shows the results satisfying the regulation.

TABLE V 2021 NITRATE AND NITRITE RESULTS

**QUARTERLY TREATED WATER REQUIREMENT
REGULATION 170/03**

Parameter	Date	Result	Unit	Exceedance
Nitrate	March 3, 2021	2.2	mg/L	NO
Nitrate	June 15, 2021	0.4	mg/L	NO
Nitrate	August 31, 2021	<0.1	mg/L	NO
Nitrate	November 30, 2021	2.1	mg/L	NO
Nitrite	March 3, 2021	<0.1	mg/L	NO
Nitrite	June 15, 2021	<0.1	mg/L	NO
Nitrite	August 31, 2021	<0.1	mg/L	NO
Nitrite	November 30, 2021	<0.1	mg/L	NO
THM's	March 2, 2021	19	ug/L	NO
THM's	June 15, 2021	8	ug/L	NO
THM's	August 31, 2021	23	ug/L	NO
THM's	November 30, 2021	20	ug/L	NO
THM's	RAA	17.5	ug/L	NO

ug/l – microgram per litre

RAA – Running Annual Average

**TABLE VI
2021 TRIHALOMETHANES & HALOACETIC ACIDS RESULTS
QUARTERLY DISTRIBUTION WATER REQUIREMENT
REGULATION 170/03**

Parameter	Sample Schedule	Result	Unit of Measure	Exceedance
THM (Treated Water RAA)	Quarterly	17.5	mg/l	NO
THM (Distribution RAA)	Quarterly	32.25	mg/l	NO
HAA (Distribution RAA)	Quarterly	14.38	mg/l	NO

mg/l – milligram per litre

RAA – Running Annual Average

**TABLE VII
2021 LEAD & ALKALINITY RESULTS
DISTRIBUTION WATER
REGULATION 170/03**

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Unit of Measure	Number of Exceedances
Distribution (Lead)	8	0.00003 – 0.00024	mg/l	NONE
Distribution (Alkalinity)	8	67 – 89	mg/l	NA

mg/l – milligram per litre

**TABLE VIII
2021 RESIDUAL MANAGEMENT**

**TOTAL SUSPENDED SOLIDS
REQUIRED UNDER MUNICIPAL DRINKING WATER LICENCE**

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
May 21, 2021 MDWL 031-101 #4	Total Suspended Solids	RAA	4.59	mg/l

RAA – Running Annual Average (monthly sample averaged)

The water treatment system and service area require extensive maintenance annually. These costs are required to install new equipment and maintain the current assets. A brief description of capital items is required to be listed as part of this letter. Below is Table IX which lists the large expenditures for 2021 within the Stoney Point Water Treatment Plant and Water Service Area.

**TABLE IX
2021 PROJECT COSTS**

Project	Cost Incurred
FlowVal Filter Control Valve	\$9,012.00
Chlorine Continuous Analyzers	\$21,830.00

Under *O.Reg.170/03* the Municipality is required to report notices submitted in accordance with the *Safe Drinking Water Act*, system approvals, Drinking Water Works Permit, Municipal Drinking Water License. There were no notices filed or reported to the *Spills Action Centre* by the Stoney Point WTP and WSA in 2021.

A summary of the quantities and flow rates of water supplied during the period covered by the report, including monthly average flows, maximum daily flows and daily maximum flow rates taken per minute is required and reported in the Summary Report.

The Stoney Point Water Service Area operated under the following listed Permits to Take Water and did exceed its limits for Peak Flow in 2021.

(PTTW) Number 0452-BM6M4M issued on April 17, 2020 has the following flow conditions:

- Maximum Allowable Amount Taken per Minute (Litres/Min) **3,180**
- Maximum Allowable Amount Taken Per Day (Litres/Day) **4,600,000**

The maximum amounts of raw water taken during 2021 are as follows:

- Maximum Amount Taken per Minute in 2021 (Litres/Min) **6,138 (June 19, 2021)**
- Maximum Amount Taken Per Day in 2021 (Litres/Day) **2,949.23 (September 5, 2021)**

The Stoney Point Water Service Area operated under Drinking Water Works Permit #301-201 and Municipal Drinking Water Licence #031-101 during 2021:

The Municipal Drinking Water Licence has the following flow conditions:

- The maximum daily volume of treated water that flows from the treatment subsystem to the distribution subsystem shall not exceed **4,545 m³/day**.
- The maximum daily volume of water pumped into the distribution system in 2021 was **2,999.75 m³/day (July 30, 2021)**.

The following Table XII & XIII give the monthly average and maximum flows for the Stoney Point Water Service Area.

Table XII
2021 Raw Water Flow Data
Lake Water Used

Month	Maximum Allowed Flow Rate (m ³ /Day)	Average Flow (m ³ /Day)	Maximum Flow (m ³ /Day)	Maximum Allowed Flow Rate (Litres/Minute)	Maximum Flow Rate (Litres/Minute)
January	4,600	1,387	1,592	3,180	4,446
February	4,600	1,422	1,518	3,180	1,236
March	4,600	1,475	1,602	3,180	1,332
April	4,600	1,577	1,719	3,180	1,392
May	4,600	2,010	1,748	3,180	1,878
June	4,600	2,018	2,714	3,180	6,138
July	4,600	1,871	2,336	3,180	4,662
August	4,600	2,317	2,874	3,180	2,682
September	4,600	2,621	2,949	3,180	2,142
October	4,600	1,999	2,851	3,180	1,974
November	4,600	1,881	2,207	3,180	1,638
December	4,600	1,728	1,985	3,180	1,410

– Raw Peak Flow Exceedance

Table XIII
2021 Treated Water Flow Data
Water Sent to Distribution System

Month	Maximum Allowed Flow Rate (m ³ /Day)	Average Daily Flow (m ³ /Day)	Maximum Daily Flow (m ³ /Day)	Maximum Flow Rate (Litres/Minute)
January	4,545	1,307	1,431	2,100
February	4,545	1,365	1,601	2,118
March	4,545	1,379	1,553	2,124
April	4,545	1,479	1,652	3,942
May	4,545	1,907	2,618	3,420
June	4,545	1,914	2,426	3,294
July	4,545	1,812	2,999	15,360
August	4,545	2,199	2,800	3,600
September	4,545	2,480	2,830	3,792
October	4,545	1,893	2,568	3,786
November	4,545	1,776	2,166	15,720
December	4,545	1,628	1,808	3,060

■ - Flow Metre Calibration, not actual effluent max flow

■ - Water Main Break Peak due to Highlift pump Start

This report is made available to the public for viewing on the Municipalities website at <https://www.lakeshore.ca/en/municipal-services/plans-publications-and-reports.aspx#Drinking-Water-Annual-Reports> . The report is printed and available for viewing at 419 Notre Dame Street (Town Hall) & 492 Lakeview Dr, Belle River, Ontario. Both versions are available after February 28th 2022.