January 31st, 2023

Mr. Jean-François Durocher
Water Inspector
Drinking Water and Environmental Compliance Division
Ministry of the Environment, Conservation and Parks

Subject:

2022 - Annual Report for the Limoges Drinking Water System

Dear Mr Durocher:

Please see attached, the summary report for the Limoges Drinking Water System that covers the period from January 1st, 2022 to December 31, 2022.

This summary report has been completed in accordance with O. Reg. 170/03 Schedule 22 under the Safe Drinking Water Act. The target due date for this report is March 31st, 2023.

This summary report includes quantities and flow rates of the water supplied to consumers serviced by the Limoges Drinking Water System, including monthly averages; and a comparison to the rated water supply capacity of the system.

This report is also distributed to the Members of the Municipal Council.

Sincerely,

Sebastien Mainville
Water and Wastewater O.I.C.

Doug Renaud
Director of Water & Wastewater, ORO

Nicholas Pigeon, CET
Water & Wastewater Manager, ORO

In the preparation of this summary Report, we have complied with the following requirements:

- List the requirements of the Act, the Regulations, the Systems Approval, Drinking Water Works Permit, Municipal Drinking Water License, and any orders applicable to the system that were not met at any time during the period covered by the report;
- For each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measurements that were taken to correct the failure;
- 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;
- A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system approval, drinking water works permit, or municipal drinking water license, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement.

Comparison:

During the period of January 1, 2022 to December 31, 2022:

- ***The maximum daily flow to the distribution*** system was 1813 m^3/day. This occurred in May. 1452 m^3 from the wells and 350 m^3 from Cheney (Clarence-Rockland).
  The 1452 m^3 represented 70% of the rated capacity of 2080 m^3/day, from our PTTW.

- ***The maximum daily flow from the wells*** was 1915 m^3/day. This occurred in April, and it represented 92% of the rated capacity. In accordance with our PTTW # 1106-968LAR, the maximum rated flow from the wells is 24.1 L/sec or 2080 m^3/day.

- ***The average daily distribution flow*** was 1099 m^3/day.

- ***The Total water taking from the City of Clarence-Rockland*** was 102 906 m^3, from April 19th to Dec 31st, 2022. Averaging 402 $m^{3/}$day.

Drinking - Water Systems Regulation O. Reg.170/03

System Information

Drinking Water System Name:	Limoges Water Treatment Plant
Drinking Water System Number:	260006841
Drinking Water System Owner:	The Corporation of the Nation Municipality
Operathing Authority:	The Nation Municipality
Drinking Water System Category:	Large Municipal Residential
Period being reported:	Jan. 1 to Dec. 31, 2022

Does your Drinking-Water System serve more than 10 000 people?
Yes ( ) No (X)

Is your annual report available to the public at no charge on a web site on the internet?
Yes (X) No ( )

Summary Report (170/03 Schedule 22) will be available for inspection at:

The Nation municipality website

List all Drinking-Water System, which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Le Baron Estate	N/A

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 (X) No ( )

Indicate how you notified system users that your annual report is available, and is free of charge.

(X) 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 another method_____

Describe your Drinking Water System

The Limoges water treatment plant was designed as a GUDI Treatment System. It is operated as a GUDI System; treating groundwater that has the potential of being influenced by surface water. The treatment uses a conventional process; chemically assisted filtration followed by disinfection. The plant has a rated capacity of 2080 m3/day; services the Village of Limoges, the Community of Forest Park, Le Baron Estate, and the Ben Tardif Trailer Park. Raw water is supplied from two production wells; delivered via a five km watermain into an aeration basin at the water treatment plant. Further treatment is achieved in sequence by chemical oxidation and a dual train chemically assisted filtration process. Primary disinfection is achieved by chlorination followed by chloramination for secondary disinfection. Treated water is stored in two onsite water storage towers and then pumped into the distribution system. The Limoges drinking water system is also being supplied with chloraminated water from the Rockland WTP in Clarence-Rockland Township. A ten km transmission watermain supplies water from Cheney to LWTP. The water first reaches the Re-chlorination building north of Limoges which consists of : a chemical feed system designed to boost the chloramine level, one flow meter, two CL2 analyzers (before and after chemical injection) and one standby power generator. Water is then directed to LWTP and into the two water storage towers. All processes are fully automated and monitored using a SCADA System. Operators perform routine monitoring, and maintain operation and production records of the groundwater supply wells, the plant and treatment processes, and the distribution systems. The Operators also conduct water quality sampling and testing, and system maintenance.

The Chemical feed systems consist of chemical pumps, storage tanks, piping and associated appurtances to deliver treatment chemicals inluding potassium permanganate, Alum, Polyelectrolyte, Sodium Hypochlorite and Ammonium Sulphate.

List all water treatment chemicals used over this reporting period

Chemical Name	Supplier
Potassium Permanganate	Brenntag
PAX-XL6	Kemira
Polyelectrolyte	Northland Chemicals Inc.
Sodium Hypochlorite	Brenntag
Ammonium Sulfate	Brenntag

Were any significant expenses incurred to?
( ) Install required equipment
(X) Repair required equipment
( ) Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

Calibration of Flow meter	**$**	**2,500.00**
Hydrant inspection & Flushing	**$**	**3,500.00**
Replaced both VFD at Forest Park booster station	**$**	**10,000.00**
Calibration of analysers and instruments	**$**	**2,500.00**
Replaced polymer pump #2 at LWTP	**$**	**4,000.00**
Replaced blower #2 in Low lift building	**$**	**13,500.00**

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 Spill Action Centre.

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2022-10-19	other observations : UPS failure, loss of trending on SCADA for 17 hours.			Changed UPS, called Scada service provider, restarted computer.	**2022-10-20**

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	Range of Total Coliform Results	Number of HPC samples	Range of HPC Results
		(min#)-(max#)	(min#)-(max#)		(min#)-(max#)
Raw Well # 1	51	0 - 0	0 - 0	N/A	N/A
Raw Well # 2	51	0 - 0	0 - 0	N/A	N/A
Treated	51	0 - 0	0 - 0	51	0 - 2
Distribution	237	0 - 0	0 - 0	81	0 - 12

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#)	*For continuous monitors use 8760 as the number of samples.*
Turbidity (Raw W1)	24	(8.17) - (18.08)	
Turbidity (Raw W2)	24	(0,04) - (1.68)	
Chlorine Combined Dist. Syst,	8760	(1.45) - (2,60)	
Turbidity (Treated water)	8760	(0,04) - (1.45)	

Note: Record the unit of measure if it is not milligrams per liter. *Average per day of combine chlorine in distribution system

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	Parameter	Date Sampled	Result	Unit of Measure
N/A				

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample date	Result value (mg/L)	Limit (mg/L)	Exceedance
Antimony	***14-Apr-22***	*<0.0001*	0.006	***No***
Arsenic	***14-Apr-22***	<0.0001	0.01	***No***
Barium	***2022 RAA***	0.540	1	***HalfMac***
Boron	***14-Apr-22***	0.057	5	***No***
Cadmium	***14-Apr-22***	< 0.000015	0.005	***No***
Chromium	***14-Apr-22***	< 0.002	0.05	***No***
Fluoride	to be sampled in 2024		1.5	
Mercury	***14-Apr-22***	<0.00002	0.001	***No***
Selenium	***14-Apr-22***	< 0.001	0.05	***No***
Sodium	to be sampled in 2024		Health >20 reportable (Limit: 200)	
Uranium	***14-Apr-22***	< 0.00005	0.02	***No***
Nitrite	**2022 RAA**	<0.1	1	***No***
Nitrate	**2022 RAA**	0.3	10	***No***

Summary of Lead testing under Schedule 15.1 during this reporting period

Location Type	Number of samples	Limit	Range of Lead Results (mg/L) (min #) - (max #)		Number of Exceedance
Plumbing	N/A				N/A
Distribution	6	0.1 mg/L	< 0.00002	0.00006	No
Alkalinity	6		166	241	N/A
pH	6		(7.98 - 8.16)		No

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample date	Result value (µg/L)	Conversion in mg/L	Limit (mg/L)	Exceedance
Alachlor	2022-04-14	0.3	0.0003	0.005 mg/L	no
Atrazine + N-dealkylated metobolites	2022-04-14	0.5	0.0005	0.005 mg/L	no
Azinphos-methyl	2022-04-14	1	0.0010	0.02 mg/L	no
Benzene	2022-04-14	0.5	0.0005	0.001 mg/L	no
Benzo(a)pyrene	2022-04-14	0.006	0.0000	0.00001 mg/L	no
Bromoxynil	2022-04-14	0.5	0.0005	0.005 mg/L	no
Carbaryl	2022-04-14	3	0.0030	0.09 mg/L	no
Carbofuran	2022-04-14	1	0.0010	0.09 mg/L	no
Carbon Tetrachloride	2022-04-14	0.2	0.0002	0.002 mg/L	no
Chlorpyfiros	2022-04-14	0.5	0.0005	0.09 mg/L	no
Diazinon	2022-04-14	1	0.0010	0.02 mg/L	no
Dicamba	2022-04-14	1	0.0010	0.12 mg/L	no
1,2-Dichlorobenzene	2022-04-14	0.5	0.0005	0.2 mg/L	no
1,4-Dichlorobenzene	2022-04-14	0.5	0.0005	0.005 mg/L	no
1,2-Dichloroethane	2022-04-14	0.5	0.0005	0.005 mg/L	no
1,1-Dichloroethylene (vinyldene chloride)	2022-04-14	0.5	0.0005	0.014 mg/L	no
Dichloromethane	2022-04-14	5	0.0050	0.05 mg/L	no
2-4 Dichlorophenol	2022-04-14	0.2	0.0002	0.9 mgL	no
2,4-Dichlorophenoxy acetic acid (2,4-D)	2022-04-14	1	0.0010	0.1 mg/L	no
Diclofop-methyl	2022-04-14	0.9	0.0009	0.009 mg/L	no
Dimethoate	2022-04-14	1	0.0010	0.02 mg/L	no
Diquat	2022-04-14	5	0.0050	0.07 mg/L	no
Diuron	2022-04-14	5	0.0050	0.15 mg/L	no
Glyphosate	2022-04-14	25	0.0250	0.28 mg/L	no
Malathion	2022-04-14	5	0.0050	0.19 mg/L	no
2-Methyl-4-chlorophenoxyacetic acid (MCP	2022-04-14	10	0.0100	0.1 mg/L	no
Metholachlor	2022-04-14	3	0.0030	0.05 mg/L	no
Metribuzin	2022-04-14	3	0.0030	0.08 mg/L	no
Monochlorobenzene	2022-04-14	0.5	0.0005	0.08 mg/L	no
Paraquat	2022-04-14	1	0.0010	0.01 mg/L	no
Pentachlorophenol	2022-04-14	0.2	0.0002	0.06 mg/L	no
Phorate	2022-04-14	0.3	0.0003	0.002 mg/L	no
Picloram	2022-04-14	5	0.0050	0.19 mg/L	no

Parameter	Sample date	Result value (µg/L)	Conversion in (mg/L)	Limit (mg/L)	Exceedance
Polychlorinated Biphenyls (PCB)	2022-04-14	0.05	0.0001	0.003 mg/L	no
Prometryne	2022-04-14	0.1	0.0001	0.001 mg/L	no
Simazine	2022-04-14	0.5	0.0005	0.01 mg/L	no
Terbufos	2022-04-14	0.5	0.0005	0.001 mg/L	no
Tetrachloroethylene	2022-04-14	0.5	0.0005	0.01 mg/L	no
2,3,4,6- Tetrachlorophenol	2022-04-14	0.2	0.0002	0.1 mg/L	no
Triallate	2022-04-14	10	0.0100	0.23 mg/L	no
Trichloroethylene	2022-04-14	0.5	0.0005	0.005 mg/L	no
2,4,6- Trichlorophenol	2022-04-14	0.2	0.0002	0.005 mg/L	no
Trifluralin	2022-04-14	0.5	0.0005	0.045 mg/L	no
Vinyl Chloride	2022-04-14	0.2	0.0002	0.001 mg/L	no
Trihalomethanes (THM)	2022 RAA	35.25	0.035	0.1 mg/L	no
Haloacetic acids (HAA)	2022 RAA	27.68	0.028	0.08 mg/L	no

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
Barium	***0.624***	mg/L	2021-01-12
Barium	***0.639***	mg/L	2021-04-21
Barium	***0.489***	mg/L	2021-07-07
Barium	***0.408***	mg/L	2021-10-13