



February 28, 2014

Ms. Mary McCuaig, CAO/Clerk
The Corporation of the Nation Municipality
958 Hwy # 500 West, R.R. # 3
Casselman, ON
K0A 1M0

Subject: Summary and Annual Report for the Limoges Drinking Water System.

Dear Ms. McCuaig:

The following document includes the Summary Report for the Limoges Drinking Water System, covering the period from January 1st to December 31st 2013. The Summary Report is completed in accordance with O.Reg 170/03 Schedule 22 under the Safe Drinking Water Act, which requires for it to be completed by February 28 of the following year.

The Summary Report includes a summary of the quantities and flow rates of the water supplied during the period covered including monthly average and maximum daily flow and a comparison of the summary to the rated capacity of the system.

It is to be distributed among the members of the municipal council and the board of directors of the Nation Corporation.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Luc Airoidi'.

Luc Airoidi

Project Manager

cc: Desmond Verasammy, Team Aquatic
Marc Legault, Director of Public Works, The Nation Municipality



The Nation Municipality

Report for Limoges Drinking Water System

2013 Summary and Annual report

Date : February 2014
N/Réf. : 058-P-0001826-027-EX-R-2013-00





Summary Report for the Limoges Drinking Water System

Background

O. Reg. 170/03 Schedule 22 Summary Reports for Municipalities applies for small and large municipal residential systems. The Limoges Drinking Water System is considered to be a large municipal residential system as it is a “municipal drinking water system that serves a major residential development and serves more than 100 private residences” as defined in Section 1 of O.Reg.170/03.

The summary report must be prepared by February 28 of the following year and must be given to:

- in the case of a drinking water system owned by a municipality, the members of the municipal council;
- in the case of a drinking water system owned by a municipal service board established under section 195 of the *Municipal Act, 2001*, the members of the municipal service board; or
- in the case of a drinking water system owned by a corporation, the board of directors of the corporation.

The Summary Report must:

- list the requirements of the Act, the regulations, the system’s 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 period covered by the report; and
- for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures 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’s approval, drinking water works permit or municipal drinking water licence, 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.



Content

The following table lists the requirements that the system failed to meet and the measures taken to correct the failures.

Drinking Water Legislation and	Requirements the system failed to meet	Duration of the failure	Corrective measures taken	Status
Safe Drinking Water Act, 2002	None	N/A	N/A	N/A
Ontario Regulations: O.Reg. 128/04 O.Reg. 169/03 O.Reg. 170/03	Low pressure	27-02-2014	Resample and test chlorine, turbidity 0 cfu/100ml	Complete
Systems approval: Certificate of Approval	None	N/A	N/A	N/A
Drinking Water Works Permit under O.Reg 188/03	None	N/A	N/A	N/A
Municipal Drinking Water Licence under O.Reg 188/03	None	N/A	N/A	N/A
Provincial Officer's Order	None	N/A	N/A	N/A



Comparison:

During 2013 year, the maximum daily flow of 1 432.9 m³/d occurred during the month of July and represented 68.8 % of the rated capacity of the Limoges Water Treatment Plant which is 2080 m³/d.

The maximum daily flow from wells of 1444 L/Min (24.1 L/sec or 2080 m³/d) as per the Permit to Take Water number 1106-968LAR dated April 12th 2013. The maximum daily flow of 1791 m³/d, which occurred in June, represented 86.1% of the rated capacity of the Limoges Water Treatment plant wells.

The average daily distribution flow during the 2013 year was 863 m³/d in which represents a reduction of 0.1% consumption compared to the Year 2012 where the daily distribution average was 864 m³/d.



2013 Summary Report Limoges Water Taking

Municipality: Village of Limoges and Forest Park in the Nation

Facility: Limoges Water Treatment Plant and Distribution

Works: 260006841 - Limoges Water Treatment Plant and Water Distribution System

Classification: Class 2 Water Distribution

Water Source: Ground Water

Permit Number: 1106-968LAR

Total Designed Capacity (m3/day): 2080

Rated Capacity (L/s) & (L/min) : 24,1 1444,0

Period: 2013-01-01 to 2013-12-31

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum
Well # 1													
Total Hours of Taking	373,39	248,57	277,21	280,48	262,76	291,43	481,19	485,43	248,19	402,47	327,30	342,88	4 021,30
Total Amount of Taking (m ³)	30 013	19 968	28 742	23 187	22 034	23 683	38 228	38 146	19 125	32 486	26 488	28 102	330 202
Average Daily Taking (m3)	968	713	927	773	710	789	1 233	1 230	638	1 083	883	907	904
% Rated Capacity (ave daily taking)	46,55	34,28	44,58	37,16	34,13	37,93	59,28	59,13	30,65	52,08	42,46	43,58	43,48
Max Daily Flow (m3)	1 232	1 162	1 198	1 131	1 456	1 791	1 757	1 470	1 213	1 440	1 062	1 061	1 791
% Rated Capacity (max daily flow)	59,23	55,87	57,60	54,37	70,00	86,11	84,48	70,66	58,33	69,25	51,07	50,99	86,11
Min Daily Flow (m3)	341	2	790	0	0	0	924	973	0	681	737	675	0
% Rated Capacity (max daily flow)	16,37	0,10	37,98	0,00	0,00	0,00	44,42	46,76	0,00	32,72	35,44	32,44	46,76
Average Daily Rate of Taking (L/s)	21,70	21,85	21,91	22,49	22,68	22,58	22,33	22,06	21,93	22,06	22,07	22,07	22,14
**Peak Daily Rate of Taking (L/s)	24,09	23,76	23,19	22,64	23,44	24,56	23,59	23,17	23,44	24,20	24,65	23,48	24,65
% Peak Daily Rate of Taking (L/s)	99,96	98,59	96,22	93,94	97,26	101,91	97,88	96,14	97,26	100,41	102,28	97,43	102,28
Peak Daily Rate of Taking (L/min)	1 445	1 426	1 391	1 358	1 406	1 474	1 415	1 390	1 406	1 452	1 479	1 409	1 421,05
% Peak Daily Rate of Taking (L/min)	100,10	98,73	96,36	94,07	97,40	102,05	98,02	96,27	97,40	100,55	102,42	97,56	102,42
Well # 2													
Total Hours of Taking	16,68	8,88	0,04	110,31	191,99	143,65	0,03	0,31	143,03	0,03	0,06	0,06	615,07
Total Amount of Taking (m ³)	1 264	9 547	7	6 351	13 154	11 329	6	39	10 621	6	4	4	52 331
Average Daily Taking (m3)	41	341	0	218	424	378	0,03	1	354	1	1	2	147
% Rated Capacity (ave daily taking)	1,96	16,39	0,01	10,47	20,40	18,16	0,00	0,06	17,02	0,03	0,03	0,10	7,05
Max Daily Flow (m3)	701,42	1 327,61	2,39	1 174,78	1 428,82	1 421,12	1,84	31,74	1 179,53	1,74	1,11	2,98	1 428,82
% Rated Capacity (max daily flow)	33,72	63,83	0,11	56,48	68,69	68,32	0,09	1,53	56,71	0,08	0,05	0,14	68,69
Min Daily Flow (m3)	0	0	0	0	0	0	0	0	0	0	0	1	0,00
% Rated Capacity (max daily flow)	0,02	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,05	0,05
Average Daily Rate of Taking (L/s)	8,19	17,62	12,33	20,41	18,21	17,96	7,26	14,89	17,46	9,00	18,49	19,24	15,09
Peak Daily Rate of Taking (L/s)	20,60	21,11	20,12	21,49	22,08	22,09	20,92	20,51	21,35	20,70	19,93	20,62	22,09
% Peak Daily Rate of Taking (L/s)	85,48	87,59	83,49	89,17	91,62	91,66	86,80	85,10	88,59	85,89	82,70	85,56	91,66
Peak Daily Rate of Taking (L/min)	1 236	1 267	1 207	1 289	1 325	1 325	1 255	1 231	1 281	1 242	1 196	1 237	1 258
% Peak Daily Rate of Taking (L/min)	85,60	87,71	83,60	89,29	91,75	91,79	86,93	85,22	88,71	86,01	82,81	85,68	91,79
Total Amount of Taking (m3)													
Total Amount of Taking (m ³)	31 277	29 514	28 749	29 538	35 188	35 012	38 234	38 185	29 746	32 492	26 492	28 106	382 533
Average Daily Taking (m3)	1 009	1 054	927	985	1 135	1 167	1 233	1 232	992	1 048	883	907	1 048

** Well 1. Pump, can not pump more than 23 l/s, it's only a spike when the pump starts.

058-P-0001826-027-EX-R-2013-00

LIMOGES DRINKING WATER SYSTEM SUMMARY REPORT 2013



2013 Summary Report Limoges Water Distribution System

Municipality: Village of Limoges and Forest Park in the Nation Township

Facility: Limoges Water Treatment Plant and Distribution System

Works: 260006841 - Limoges Water Treatment Plant and Water Distribution System

Classification: Class 2 Water Distribution

Water Source: Ground Water

Period: 2013-01-01 to 2013-12-31

Total Designed Capacity (m3/day): 2080

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum
DistributionSystem \ Flows													
POE - Flows (m3/day)													
Avg.	840	833	784	804	942	969	1072	1028	826	779	724	748	863
Max	933	947	871	915	1191	1212	1432	1173	1067	772	872	882	1432
Min	739	763	690	705	732	674	821	780	695	692	653	647	647
Total	26042	24162	24318	24133	29200	29061	33235	31878	24768	24161	21726	23178	315862
Distribution System \ Health - Chlorine Residuals POE													
Minimum Total Cl ₂ (mg/L)													
Avg.	1,85	1,81	1,84	1,90	1,82	1,83	1,62	1,68	1,85	1,55	1,63	2,02	1,55
Min	1,25	1,24	1,29	1,33	1,23	1,33	1,11	1,12	1,23	0,89	1,19	1,55	0,89
Maximum Total Cl ₂ (mg/L)													
Avg.	2,17	2,21	2,04	2,00	2,19	2,29	1,85	2,29	2,23	2,19	1,95	2,08	2,29
Max	2,51	2,54	2,29	2,39	2,46	2,55	2,34	2,79	2,60	2,62	3,01	2,34	3,01
Minimum Free Cl ₂ (mg/L)													
Avg.	0,02	0,04	0,04	0,04	0,04	0,04	0,04	0,07	0,09	0,06	0,05	0,03	0,02
Min	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,04	0,03	0,04	0,00	0,00	0,00
Maximum Free Cl ₂ (mg/L)													
Avg.	0,05	0,04	0,04	0,05	0,06	0,06	0,10	0,09	0,12	0,11	0,07	0,04	0,12
Max	0,28	0,32	0,05	0,21	0,07	0,09	0,14	0,12	0,18	0,28	0,09	0,06	0,32
Minimum Combined Cl ₂ (mg/L)													
Avg.	1,86	1,78	1,81	1,86	1,79	1,79	1,54	1,60	1,44	1,47	1,57	1,98	1,44
Min	1,22	1,20	1,25	1,29	1,19	1,27	1,00	1,05	1,15	0,79	1,12	1,51	0,79
Maximum Combined Cl ₂ (mg/L)													
Avg.	2,16	2,22	2,00	1,96	2,14	2,22	1,81	2,18	2,14	2,09	1,90	2,04	2,22
Max	2,48	2,51	2,26	2,35	2,41	2,50	2,29	2,70	2,51	2,54	2,95	2,30	2,95
Mean Combined Cl ₂ (mg/L)													
Avg.	2,01	2,00	1,89	1,91	1,98	1,98	1,69	1,87	1,84	1,74	1,72	2,01	1,89



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OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	260006841
Drinking-Water System Name:	Limoges Water Treatment Plant
Drinking-Water System Owner:	The Corporation of the Nation Municipality
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 st to December 31 st 2013

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Municipal Office The Corporation of the Nation Municipality 958 Hwy 500 W, RR # 3 Cassleman, ON, K0A1M0</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

List all Drinking-Water Systems (if any), 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.

- 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 other method _____

Describe your Drinking-Water System

The Limoges water treatment plant is a ground water facility, service the Village of Limoges, the Community of Forest Park, Le Baron Estate and the Ben Tardiff Trailer Park. The facility is rated at 2,080 m3/day and includes; two raw water production wells, two low lift pumps, two detention tanks, two clarifier/green sand filters, one clearwell (160 m3 capacity), one elevated water reservoir (1734 m3 capacity) and chemical feed systems.

The Chemical feed systems consist of chemical pumps, storage tanks, piping and associated appurtenances to dose potassium permanganate (primary and secondary doses), Alum, Polyelectrolyte, Sodium Hypochlorite and Ammonium Sulphate.

This facility operates under the Certificate of Approval number 7364 – 6SYKG8 and Permit to Take Water number 03-P-4045.

List all water treatment chemicals used over this reporting period

Potassium Permanganate, PAX-XL6, Polyelectrolyte, Sodium Hypochlorite, Ammonium Sulphate

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment

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

- Replacement turbidimeter	4 000\$
- Manual operational option on filter trains	2 000\$
- Inspect and Repair of fire hydrants	2 000\$
- Repair air control (deshumifier)	3 500\$
- Calibration of flow meter by Ken Harris	2 000\$
- Replacement total chlorine analyser	4 700\$
- Replacement free chlorine analyser	4 700\$



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 Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
27-02-2013	Low pressure	0	Cfu/100ml	Resample and test chlorine, turbidity	28-02-2013

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 (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw Well # 1	52	0 - 0	0-<2	N/A	N/A
Raw Well # 2	52	0 - 0	0 - < 2	N/A	N/A
Treated	52	0 - 0	0 - 0	0	0
Distribution	156	0 - 0	0 - 0	56	<2 - 70

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 #)
Turbidity (Raw W1)	26	0.416 – 5.72
Turbidity (Raw W2)	26	0.344 – 4.62
Chlorine Combined Treated Water	8760	0.31 – 3.81 *
Chlorine Combined Dist. Syst.	8760	0.79 – 2.95 *

NOTE: For continuous monitors use 8760 as the number of samples.

*NOTE: Record the unit of measure if it is not milligrams per liter.
 * Average per day of combine chlorine in treated water : 1.05 – 2.56 mg/l
 Average per day of combine chlorine in distribution syst. : 1.71 – 2.07 mg/l

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
C of A 13/09/06	NDMA	Quarterly average	0.0009	µg/L

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	23/04/2013	<0.0001	mg/l	No
Arsenic	23/04/2013	0.0005	mg/l	No
Barium	09/10/2013	0.584	Mg/l	Half Mac
Boron	23/04/2013	0.058	mg/l	No
Cadmium	23/04/2013	<0.00002	mg/l	No
Chromium	23/04/2013	<0.002	mg/l	No
Iron	23/04/2013	<0.005	mg/l	No
Manganese	23/04/2013	0.009	mg/l	No
Mercury	23/04/2013	<0.00002	mg/l	No
Selenium	23/04/2013	<0.001	mg/l	No
Uranium	23/04/2013	<0.00005	mg/l	No
Nitrite	10/07/2013	<0.1	mg/l	No
Nitrate	10/07/2013	0.2	mg/l	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing			N/A
Distribution			N/A

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	13/04/10	<0.00003	mg/L	No
Aldicarb	13/04/10	<0.0003	mg/L	No
Aldrin + Dieldrin	13/04/10	<0.00002	mg/L	No
Atrazine + N-dealkylated metabolites	13/04/10	<0.0005	mg/L	No
Azinphos-methyl	13/04/10	<0.001	mg/L	No
Bendiocarb	13/04/10	0.003	mg/L	No
Benzene	13/04/10	0.0005	µg/L	No
Benzo(a)pyrene	13/04/10	<0.005	µg/L	No
Bromoxynil	13/04/10	<0.0003	mg/L	No
Carbaryl	13/04/10	<0.003	mg/L	No



Carbofuran	13/04/10	<0.001	mg/L	No
Carbon Tetrachloride	13/04/10	<0.0002	mg/L	No
Chlordane (Total)	13/04/10	<0.00004	mg/L	No
Chlorpyrifos	13/04/10	<0.0005	mg/L	No
Cyanazine	13/04/10	<0.0005	mg/L	No
Diazinon	13/04/10	<0.001	mg/L	No
Dicamba	13/04/10	<0.005	mg/L	No
1,2-Dichlorobenzene	13/04/10	<0.0001	mg/L	No
1,4-Dichlorobenzene	13/04/10	<0.0002	mg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	13/04/10	<0.0001	mg/L	No
1,2-Dichloroethane	13/04/10	<0.0001	mg/L	No
1,1-Dichloroethylene (vinylidene chloride)	13/04/10	<0.0001	mg/L	No
Dichloromethane	13/04/10	<0.0003	mg/L	No
2-4 Dichlorophenol	13/04/10	<0.0001	mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	13/04/10	<0.0005	mg/L	No
Diclofop-methyl	13/04/10	<0.0005	mg/L	No
Dimethoate	13/04/10	<0.001	mg/L	No
Dinoseb	13/04/10	<0.0005	mg/L	No
Diquat	13/04/10	<0.005	mg/L	No
Diuron	13/04/10	<0.005	mg/L	No
Glyphosate	13/04/10	<0.025	mg/L	No
Heptachlor + Heptachlor Epoxide	13/04/10	<0.0001	mg/L	No
Lindane (Total)	13/04/10	<0.0001	mg/L	No
Malathion	13/04/10	<0.005	mg/L	No
Methoxychlor	13/04/10	<0.0001	mg/L	No
Metolachlor	13/04/10	<0.003	mg/L	No
Metribuzin	13/04/10	<0.003	mg/L	No
Monochlorobenzene	13/04/10	<0.0002	mg/L	No
Paraquat	13/04/10	<0.001	mg/L	No
Parathion	13/04/10	<0.003	mg/L	No
Pentachlorophenol	13/04/10	<0.0001	mg/L	No
Phorate	13/04/10	<0.0003	mg/L	No
Picloram	13/04/10	<0.005	mg/L	No
Polychlorinated Biphenyls(PCB)	13/04/10	<0.05	µg/L	No
Prometryne	13/04/10	<0.0001	mg/L	No
Simazine	13/04/10	<0.0005	mg/L	No
THM (NOTE: show latest annual average)	quarterly y 2013	44.03	µg/L	No
Temephos	13/04/10	<0.01	mg/L	No
Terbufos	13/04/10	<0.0003	mg/L	No
Tetrachloroethylene	13/04/10	<0.0002	mg/L	No
2,3,4,6-Tetrachlorophenol	13/04/10	<0.0001	mg/L	No
Triallate	13/04/10	<0.01	mg/L	No



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

Trichloroethylene	13/04/10	<0.0001	mg/L	No
2,4,6-Trichlorophenol	13/04/10	<0.0001	mg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	13/04/10	<0.01	mg/L	No
Trifluralin	13/04/10	<0.0005	mg/L	No
Vinyl Chloride	13/04/10	<0.0002	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	0.584	Mg/l	09/10/2013