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

Part III Form 2
Section 11. ANNUAL REPORT.

Drinking-Water System Number:	**220002100**
Drinking-Water System Name:	Muskoka Beach Water Treatment Plant
Drinking-Water System Owner:	District Municipality of Muskoka
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 01 to December 31, 2023

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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 [ ]

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

District Municipality of Muskoka
70 Pine Street
Bracebridge, Ontario
P1l 1N3
(705) 645-6764
www.muskoka.on.ca

Complete for all other Categories.

Number of Designated Facilities served:

N/A

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [x]

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [x]

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

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 [ ] No [x]

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

[X] Public access/notice via the web
[X] Public access/notice via Government Office
[ ] Public access/notice via a newspaper
[X] 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 water treatment plant in Gravenhurst was originally constructed in 1983. Significant improvements to process monitoring, control, and chemical feed systems were completed in 2004. In 2022 the treatment process, consisting of chemically assisted coagulation-flocculation, was upgraded to include settling tanks changing the process from a direct filtration plant to a conventional treatment plant. The 4 filters are dual media filters with a combination of sand and anthracite coal. Disinfection in a chlorine contact chamber followed by final pH adjustment in the clearwells, and fluoride addition at the highlift header completes the treatment process. The water system currently serves a population of approximately 7,800 people. The rated water production of the plant is 9,996 cubic meters per day. The raw water source is Lake Muskoka, with the intake structure located approx. 11.5 meters deep, approximately 1,000 meters from shore.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite, Sodium hydroxide, Polyaluminum Chloride, Carbon Dioxide, Hydrated Lime, Sodium Permanganate, Fluoride, Cationic Polymer

Were any significant expenses incurred to?

[ ] Install required equipment
[ ] Repair required equipment
[ ] Replace required equipment

Describe

N/A

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
07-22-2024	EC/TC	0/1	Cfu/100mL	Resample	07/24/2024

Microbiological testing done under section 8-2 during this reporting period

	Number of Samples	Range of E.Coli Or Fecal Results (#-#)	Range of Total Coliform Results (#-#)	Number of HPC Samples Or Background Colony Counts	Range of HPC Results (#-#) Or Background Colony Counts
Raw	53	0 - 2	0 - 12	0	N/A
Treated	53	0 - 0	0 - 1	53	0-2
Distribution	318	0 - 0	0 - 0	273	0-20

Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	**Range of Results (min # - max #)**	**Geometric Mean**
Turbidity	**8760**	0.02-0.06 NTU	0.03 NTU
Chlorine	**8760**	1.36-2.22	1.74
Chlorine Residual Distribution System	**8760**	0.59-1.39	0.96
Fluoride (If the DWS provides fluoridation)	**8760**	0.41-0.89	0.63

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

***NOTE**: Record the unit of measure if it is **not** milligrams per litre.*

Summary of additional testing and sampling carried out in accordance with the requirement of an approval or order.

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

Parameter	**Sample Date**	**Result Value**	**Unit of Measure**	**Exceedance**
Antimony	May 29/24	0.6<MDL	µg/L	No
Arsenic	May 29/24	0.2<MDL	µg/L	No
Barium	May 29/24	10.9	µg/L	No
Boron	May 29/24	4	µg/L	No
Cadmium	May 29/24	0.011	µg/L	No
Chromium	May 29/24	0.26	µg/L	No
Lead*	May 29/24		µg/L	No
Mercury	May 29/24	0.01<MDL	µg/L	No
Selenium	May 29/24	0.04	µg/L	No
Sodium	May 29/24	17.3	mg/L	No
Uranium	May 29/24	0.003	µg/L	No
Fluoride	May 29/24	0.66	mg/L	No
Nitrite	Feb 07/24	0.003<MDL	mg/L	No
Nitrate	Feb 07/24	0.193	mg/L	No
Nitrite	May 29/24	0.003<MDL	mg/L	No

Nitrate	May 29/24	0.186	mg/L	No
Nitrite	Aug 27/24	0.003<MDL	mg/L	No
Nitrate	Aug 27/24	0.229	mg/L	No
Nitrite	Nov 13/24	0.003<MDL	mg/L	No
Nitrate	Nov 13/24	0.141	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 small non-municipal non-residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) -(max#)	Geometric Mean Average	Unit of Measure	Number of Exceedances
Plumbing	N/A	N.A.	N.A.	N.A.	N.A.
Distribution	6	0.01 – 0.13	0.03	µg/L	0

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	May 29/24	0.02<MDL	µg/L	No
Atrazine + N-dealkylated metabolites	May 29/24	0.01<MDL	µg/L	No
Azinphos-methyl	May 29/24	0.05<MDL	µg/L	No
Benzene	May 29/24	0.32<MDL	µg/L	No
Benzo(a)pyrene	May 29/24	0.004<MDL	µg/L	No
Bromoxynil	May 29/24	0.33<MDL	µg/L	No
Carbaryl	May 29/24	0.05<MDL	µg/L	No
Carbofuran	May 29/24	0.01<MDL	µg/L	No
Carbon Tetrachloride	May 29/24	0.17<MDL	µg/L	No
Chlorpyrifos	May 29/24	0.02<MDL	µg/L	No
Diazinon	May 29/24	0.02<MDL	µg/L	No
Dicamba	May 29/24	0.20<MDL	µg/L	No
1,2-Dichlorobenzene	May 29/24	0.41<MDL	µg/L	No
1,4-Dichlorobenzene	May 29/24	0.36<MDL	µg/L	No
1,2-Dichloroethane	May 29/24	0.35<MDL	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	May 29/24	0.33<MDL	µg/L	No
Dichloromethane	May 29/24	0.35<MDL	µg/L	No
2-4 Dichlorophenol	May 29/24	0.15<MDL	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	May 29/24	0.19<MDL	µg/L	No
Diclofop-methyl	May 29/24	0.40<MDL	µg/L	No
Dimethoate	May 29/24	0.06<MDL	µg/L	No
Diquat	May 29/24	1<MDL	µg/L	No
Diuron	May 29/24	0.03<MDL	µg/L	No

Glyphosate	May 29/24	1<MDL	µg/L	No
Malathion	May 29/24	0.02<MDL	µg/L	No
MCPA	May 29/24	0.00012<MDL	µg/L	No
Metolachlor	May 29/24	0.01<MDL	µg/L	No
Metribuzin	May 29/24	0.02<MDL	µg/L	No
Monochlorobenzene	May 29/24	0.30<MDL	µg/L	No
Paraquat	May 29/24	1<MDL	µg/L	No
Pentachlorophenol	May 29/24	0.15<MDL	µg/L	No
Phorate	May 29/24	0.01<MDL	µg/L	No
Picloram	May 29/24	1<MDL	µg/L	No
Polychlorinated Biphenyls(PCB)	May 29/24	0.04<MDL	µg/L	No
Prometryne	May 29/24	0.03<MDL	µg/L	No
Simazine	May 29/24	0.01<MDL	µg/L	No
THM (NOTE: annual average from Distribution monthly samples – 36 samples)	Monthly sampling	69	µg/L	No
Terbufos	May 29/24	0.01<MDL	µg/L	No
Tetrachloroethylene	May 29/24	0.35<MDL	µg/L	No
2,3,4,6-Tetrachlorophenol	May 29/24	0.20<MDL	µg/L	No
Triallate	May 29/24	0.01<MDL	µg/L	No
Trichloroethylene	May 29/24	0.44<MDL	µg/L	No
2,4,6-Trichlorophenol	May 29/24	0.25<MDL	µg/L	No
Trifluralin	May 29/24	0.02<MDL	µg/L	No
Vinyl Chloride	May 29/24	0.17<MDL	µg/L	No
HAA5 (NOTE: annual average from Distribution monthly samples – 36 samples)	Monthly Sampling	55.7	µg/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
THM (NOTE: annual average from Distribution – 12 samples)	69	ug/L	Monthly Sampling
HAA5 (NOTE: annual average from Distribution – 12 samples)	58.8	ug/L	Monthly Sampling