



OPTIONAL ANNUAL REPORT TEMPLATE

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

<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>District Municipality of Muskoka 70 Pine Street Bracebridge, Ontario P1L 1N3 (705) 645-6764 www.muskoka.on.ca</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;">N/A</div> <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:</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;">N/A</div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No [x]</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
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 []



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 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

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

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
01-03-2023	EC/TC	1/5	Cfu/100mL	Resample (x2)	Jan 5&6 2023



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	52	0 - 6	0 - 41	0	N/A
Treated	52	0 - 1	0 - 5	52	0-6
Distribution	313	0 - 0	0 - 0	241	0-77

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	<i>NOTE: For continuous monitors use 8760 as the number of samples.</i>
Turbidity	8760	0.02-0.08 NTU	0.04 NTU	
Chlorine	8760	1.47-2.38	1.83	
Chlorine Residual Distribution System	8760	0.56-1.47	0.97	

*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.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure

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	May 10/23	0.6<MDL	µg/L	No
Arsenic	May 10/23	0.2<MDL	µg/L	No
Barium	May 10/23	11.6	µg/L	No
Boron	May 10/23	7	µg/L	No
Cadmium	May 10/23	0.008	µg/L	No
Chromium	May 10/23	0.14	µg/L	No
Lead*	May 10/23		µg/L	No
Mercury	May 10/23	0.01<MDL	µg/L	No
Selenium	May 10/23	0.05	µg/L	No
Sodium	May 10/23	18.4	mg/L	No
Uranium	May 10/23	0.009	µg/L	No
Fluoride	May 10/23	0.68	mg/L	No
Nitrite	Feb 15/23	0.003<MDL	mg/L	No

Nitrate	Feb 15/23	0.207	mg/L	No
Nitrite	May 10/23	0.003<MDL	mg/L	No
Nitrate	May 10/22	0.205	mg/L	No
Nitrite	Aug 29/22	0.003<MDL	mg/L	No
Nitrate	Aug 29/22	0.234	mg/L	No
Nitrite	Nov 21/22	0.003<MDL	mg/L	No
Nitrate	Nov 21/22	0.184	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#)	Geometric Mean Average	Unit of Measure	Number of Exceedances
Plumbing	0	N.A.	N.A.	N.A.	N.A.
Distribution	6	0.01 – 0.43	0.04	µg/L	0

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	May 10/23	0.02<MDL	µg/L	No
Atrazine + N-dealkylated metabolites	May 10/23	0.01<MDL	µg/L	No
Azinphos-methyl	May 10/23	0.05<MDL	µg/L	No
Benzene	May 10/23	0.32<MDL	µg/L	No
Benzo(a)pyrene	May 10/23	0.004<MDL	µg/L	No
Bromoxynil	May 10/23	0.33<MDL	µg/L	No
Carbaryl	May 10/23	0.05<MDL	µg/L	No
Carbofuran	May 10/23	0.01<MDL	µg/L	No
Carbon Tetrachloride	May 10/23	0.17<MDL	µg/L	No
Chlorpyrifos	May 10/23	0.02<MDL	µg/L	No
Diazinon	May 10/23	0.02<MDL	µg/L	No
Dicamba	May 10/23	0.20<MDL	µg/L	No
1,2-Dichlorobenzene	May 10/23	0.41<MDL	µg/L	No
1,4-Dichlorobenzene	May 10/23	0.36<MDL	µg/L	No
1,2-Dichloroethane	May 10/23	0.35<MDL	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	May 10/23	0.33<MDL	µg/L	No
Dichloromethane	May 10/23	0.35<MDL	µg/L	No
2-4 Dichlorophenol	May 10/23	0.15<MDL	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	May 10/23	0.19<MDL	µg/L	No
Diclofop-methyl	May 10/23	0.40<MDL	µg/L	No
Dimethoate	May 10/23	0.06<MDL	µg/L	No
Diquat	May 10/23	1<MDL	µg/L	No
Diuron	May 10/23	0.03<MDL	µg/L	No

Glyphosate	May 10/23	1<MDL	µg/L	No
Malathion	May 10/23	0.02<MDL	µg/L	No
MCPA	May 10/23	0.00012<MDL	µg/L	No
Metolachlor	May 10/23	0.01<MDL	µg/L	No
Metribuzin	May 10/23	0.02<MDL	µg/L	No
Monochlorobenzene	May 10/23	0.30<MDL	µg/L	No
Paraquat	May 10/23	1<MDL	µg/L	No
Pentachlorophenol	May 10/23	0.15<MDL	µg/L	No
Phorate	May 10/23	0.01<MDL	µg/L	No
Picloram	May 10/23	1<MDL	µg/L	No
Polychlorinated Biphenyls(PCB)	May 10/23	0.04<MDL	µg/L	No
Prometryne	May 10/23	0.03<MDL	µg/L	No
Simazine	May 10/23	0.01<MDL	µg/L	No
THM (NOTE: annual average from Distribution monthly samples – 36 samples)	Monthly sampling	67	µg/L	No
Terbufos	May 10/23	0.01<MDL	µg/L	No
Tetrachloroethylene	May 10/23	0.35<MDL	µg/L	No
2,3,4,6-Tetrachlorophenol	May 10/23	0.20<MDL	µg/L	No
Triallate	May 10/23	0.01<MDL	µg/L	No
Trichloroethylene	May 10/23	0.44<MDL	µg/L	No
2,4,6-Trichlorophenol	May 10/23	0.25<MDL	µg/L	No
Trifluralin	May 10/23	0.02<MDL	µg/L	No
Vinyl Chloride	May 10/23	0.17<MDL	µg/L	No
HAA5 (NOTE: annual average from Distribution monthly samples – 36 samples)	Monthly Sampling	68.1	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)	67	ug/L	Monthly Sampling
HAA5 (NOTE: annual average from Distribution – 12 samples)	68.1	ug/L	Monthly Sampling