

2019 Annual Drinking Water System Quality Report for Ballantrae/Musselman's Lake DWS

Prepared by The Regional Municipality of York pursuant to Section 11 of O.Reg. 170/03

Drinking Water System Number: 220008658
Drinking Water System Name: Ballantrae/Musselman's Lake DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2019 - Dec 31, 2019

The Ballantrae/Musselman's Lake DWS serves approximately 5,038 people

(Population is a year-end forecasted estimate based on Statistics Canada census data, and building permits)

List all Drinking Water Systems which receive their drinking water from the Ballantrae/Musselman's Lake DWS:

Ballantrae-Musselman's Lake Distribution System (260006737)

This annual report is available to the public at no charge on the Region's website (york.ca/drinkingwater) and upon request. Accessible formats or communication supports are also available upon request. Please contact AccessYork@york.ca or call 1-877-464-9675.

A copy of York Region's annual report was provided to all Drinking Water System owners that are connected to and receive drinking water from York Region.

System users were notified that York Region's annual report is available free of charge by public access and notice through:

- Media (internet, social media)
- Public requests at any time

Summary report required under O.Reg. 170/03 Schedule 22 will be available for inspection at:

The Regional Municipality of York
Administrative Centre
Environmental Services Department
17250 Yonge Street, Newmarket ON

Description of the Ballantrae/Musselman's Lake DWS

Introduction

The communities of Ballantrae and Musselman's Lake are centered on Aurora Road and Highway 48 in Whitchurch-Stouffville. Local groundwater is naturally high in minerals. York Region operates the water supply, while the Town of Whitchurch-Stouffville maintains water quality and distributes it to users. The Province governs the Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source

Groundwater

Profile of water in distribution system

Groundwater

Water treatment description

Ballantrae-Musselman's Lake system includes three wells and one storage facility. Chlorine provides disinfection and maintains a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. The storage facility holds treated water and maintains pressure. Tests confirm good ground water quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When a significant process or water quality issue is detected, the system automatically pauses operation until an operator takes action.

List of water treatment chemicals used in this system

Chlorine (Gas, Sodium Hypochlorite); Sodium Silicate

Brief description and breakdown of monetary expenses incurred

\$48,464 for well rehabilitation and pump maintenance, general maintenance and repairs.

Notices submitted under Section 18(1) of the Safe Drinking Water Act or Section 16-4 of O.Reg. 170/03 and reported to MECP Spills Action Centre

Not Applicable

There were no reported adverse water quality incidents or observations of improper disinfection that occurred in the Ballantrae/Musselman's Lake DWS during 2019

Microbiological testing completed under Schedule 10 of O.Reg. 170/03

*For additional distribution samples collected under Schedule 10, refer to the local municipality

Test Parameter	Sample Source	Count Of Samples	Count Of Presence
E. coli	Raw	145	0
	Treated	96	0
Heterotrophic Plate Count	Treated	96	19
Total Coliforms	Raw	145	2
	Treated	96	0

Operational testing completed under Schedule 7 of Regulation 170/03 during this reporting period

*8,760 is used as the number of samples for continuous analyzers

Test Parameter (group)	Test Units	No. of Samples	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.33	0.00	3.62
Turbidity (Treated)	NTU	8,760	0.13	0.00	10.00

Summary of testing pursuant to Schedule 13 of O. Reg. 170/03 and sampling carried out in accordance with the requirement of an approval, order or other legal instrument

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Test Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	12	0.077	0.05	0.12
Haloacetic Acids	mg/L	4	0.017	0.012	0.021
Nitrate	mg/L	12	0.500	<0.5	<0.5
Nitrite	mg/L	12	0.050	<0.05	<0.05
Sodium	mg/L	3	11.375	11.4	13.2
Trihalomethanes	mg/L	6	0.015	0.0048	0.0298

*Lead testing under Schedule 15.1 is conducted by the Local Municipality - refer to Local Municipality reports for results. York Region occasionally collects samples tested for lead for non-regulatory research purposes

Organic and inorganic parameter(s) that exceeded half the standard prescribed in Schedule 2 of O.Reg. 169/03 Ontario Drinking Water Quality Standards

Not Applicable

There were no parameters that exceeded half the standard indicated above for the Ballantrae/Musselman's Lake DWS during 2019

Summary of inorganic parameters tested pursuant to Schedule 23 of O.Reg. 170/03

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to five decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	No. of Samples	Test Units	Average	Minimum	Maximum	ODWS Limit
Antimony	3	mg/L	0.00050	<0.0005	<0.0005	0.006
Arsenic	3	mg/L	0.00053	<0.0005	0.0006	0.01
Barium	3	mg/L	0.07700	0.0571	0.0924	1
Boron	3	mg/L	0.01277	0.0059	0.023	5
Cadmium	3	mg/L	0.00050	<0.0005	<0.0005	0.005
Chromium	3	mg/L	0.00050	<0.0005	<0.0005	0.05
Mercury	3	mg/L	0.00005	<0.00005	<0.00005	0.001
Selenium	3	mg/L	0.00050	<0.0005	<0.0005	0.05
Uranium	3	mg/L	0.00050	<0.0005	<0.0005	0.02

Summary of organic parameters tested pursuant to Schedule 24 of O.Reg. 170/03

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	No. of Samples	Test Units	Average	Minimum	Maximum
1,1-dichloroethylene (vinylidene chloride)	2	mg/L	0.0003	<0.0003	<0.0003
1,2-(o-dcb) Dichlorobenzene	2	mg/L	0.0001	<0.0001	<0.0001
1,2-Dichloroethane	2	mg/L	0.0001	<0.0001	<0.0001
1,4-(p-dcb) Dichlorobenzene	2	mg/L	0.0001	<0.0001	<0.0001
2-methyl-4-chlorophenoxyacetic acid	2	mg/L	0.0050	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	2	mg/L	0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	2	mg/L	0.0007	<0.0007	<0.0007
2,4-dichlorophenoxyacetic acid (2,4-D)	2	mg/L	0.0008	<0.0008	<0.0008
2,4,6-Trichlorophenol	2	mg/L	0.0005	<0.0005	<0.0005
Alachlor	2	mg/L	0.0004	<0.0004	<0.0004
Atrazine + N-dealkylated metabolites	2	mg/L	0.0002	<0.0002	<0.0002
Azinphos-methyl	2	mg/L	0.0003	<0.0003	<0.0003
Benzene	2	mg/L	0.0001	<0.0001	<0.0001
Benzo(a)pyrene	2	mg/L	0.0000	<0.00001	<0.00001
Bromoxynil	2	mg/L	0.0004	<0.0004	<0.0004
Carbaryl	2	mg/L	0.0030	<0.003	<0.003
Carbofuran	2	mg/L	0.0030	<0.003	<0.003
Carbon Tetrachloride	2	mg/L	0.0002	<0.0002	<0.0002
Chlorpyrifos	2	mg/L	0.0002	<0.0002	<0.0002
Diazinon	2	mg/L	0.0002	<0.0002	<0.0002
Dicamba	2	mg/L	0.0004	<0.0004	<0.0004
Dichloromethane	2	mg/L	0.0020	<0.002	<0.002
Diclofop-methyl	2	mg/L	0.0004	<0.0004	<0.0004
Dimethoate	2	mg/L	0.0003	<0.0003	<0.0003
Diquat	2	mg/L	0.0010	<0.001	<0.001
Diuron	2	mg/L	0.0030	<0.003	<0.003
Glyphosate	2	mg/L	0.0250	<0.025	<0.025
Malathion	2	mg/L	0.0002	<0.0002	<0.0002
Metolachlor	2	mg/L	0.0002	<0.0002	<0.0002
Metribuzin	2	mg/L	0.0003	<0.0003	<0.0003
Monochlorobenzene	2	mg/L	0.0001	<0.0001	<0.0001
Paraquat	2	mg/L	0.0010	<0.001	<0.001
Pentachlorophenol	2	mg/L	0.0004	<0.0004	<0.0004
Phorate	2	mg/L	0.0002	<0.0002	<0.0002
Picloram	2	mg/L	0.0007	<0.0007	<0.0007
Polychlorinated Biphenyls (PCBs)	2	mg/L	0.0000	<0.00002	<0.00002
Prometryne	2	mg/L	0.0002	<0.00019	<0.00019
Simazine	2	mg/L	0.0002	<0.0002	<0.0002
Terbufos	2	mg/L	0.0002	<0.0002	<0.0002
Tetrachloroethylene (perchloroethylene)	2	mg/L	0.0003	<0.0003	<0.0003
Triallate	2	mg/L	0.0040	<0.004	<0.004
Trichloroethylene	2	mg/L	0.0001	<0.0001	<0.0001
Trifluralin	2	mg/L	0.0000	<0.000006	<0.000006
Vinyl Chloride	2	mg/L	0.0002	<0.0002	<0.0002