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

Optional Annual Report Template

Drinking-Water System(DWS) Number:	210000684
Drinking-Water System Name:	Bradford / Bondhead Drinking Water System
Drinking-Water System Owner:	The Corporation of the Town of Bradford West Gwillimbury
Drinking-Water System Category:	Water Distribution and Supply Subsystem Class 3, Large Municipal Residential System
Period being reported:	January 1 to December 31, 2023
Does your DWS Serve more than 10,000 people?	Yes
Is your annual report available to the public at no charge on a web site?	Yes www.townofbwg.com
Location where report will be available for inspection:	Town of Bradford West Gwillimbury Water Division 3541 Line 11 Bradford, ON L3Z 2A8
Number of Designated facilities served:	0
Number of interested authorities you report to:	0

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	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 [ ] NA [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
[ ] Public access/notice via Government Office
[X] 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 Bradford/Bondhead drinking water system is categorized as a large municipal residential system. The system is classified as a Water Distribution and Supply Subsystem Class 3 and is operated under Drinking Water Works Permit No. 116-201 issued June 13, 2021, Municipal Drinking Water License No. 116-101 issued June 13, 2021, and a Permit to Take Water No. 2672-9G3PFY issued April 1, 2014. Additionally, the Drinking Water System conforms to and is accredited by the Drinking Water Quality Management Standard (DWQMS).

The Town's drinking water supply is provided by two (2) municipal wells, Church Well No.1 and Church Well No.2, and treated surface water provided by the Innisfil Lake Simcoe Water Filtration Plant (ILS WFP) located in the Town of Innisfil.

The distribution system is approximately 180.9 Kilometers (km) in length. This number is slightly lower than that reported in 2022 due to data consolidation of the GIS layer. There are two (2) Standpipes positioned within the footprint of the Town. Each Standpipe has a booster pumping station and re-chlorination system. In addition to the standpipes, there is one (1) monitoring station located at the furthest point within the distribution system, one (1) Water Tower also equipped with a re-chlorination system and one (1) grade level reservoir that receives treated surface water from the ILS WFP. The Town is split up into four (4) different pressure zones which are supplied by either well water or surface water. Zone No.1a and 1b are comprised of groundwater, Zone No. 2a and 2b are surface water supplied by the ILS WFP.

The Town's Supervisor Control and Data Acquisition (SCADA) system allows for remote access to the water facilities located across the Town. This provides operations personnel with the opportunity to monitor, control, historically trend, report, log totals and archive all available field parameters within the system.

The 2023 annual water consumption totaled 3,646,266 m^3. The groundwater supply provided 1,449,179 m^3, 39.7% of the total water usage; and the surface water supply accounted for the remaining 60.3%, totaling 2,197,087 m^3. There were zero (0) reported water interference complaints registered with the Town during the reporting period.

The reported year-end serviced population for the drinking water system totaled approximately 36,378 which includes both residential, industrial, commercial, and institutional consumers.

List all water treatment chemicals used over this reporting period

Station	Sodium hypochlorite Usage
Church Well No. 1	15,642 L
Church Well No. 2	67,138 L
Standpipe No. 1	1,857 L
Standpipe No. 2	2,649 kg
John Fennell Reservoir	14 kg
Bond Head Water Tower	504 L

Were any significant expenses incurred to?

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

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

Cathodic Protection on ductile iron watermain	$188.977
Transmission watermain pipe diver	$1,500,000
Church Well Roof and Hatch Replacement	$39,500
Reservoir cells ROV inspection	$ 13,509
Acetemium SCADA Maintenance Contact	$ 16,500
Leak detection, Holland, Drury, Mary St.	$ 2,700

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	AWQI No.	Location	Adverse Indicator	Corrective Action	Corrective Action Date	Cause of Adverse
June 28, 2023	162338	70 Aishford Rd.	Microbiological Total Coliform 3mg/L E.Coli 1 mg/L	-flushed, resampled upstream and downstream two sets of samples taken 48-72hrs apart. -Notified SAC and MOH.	July 3, 2023	Microbiological

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

Water Type	Number of Samples	Range of E.Coli or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #) as cfu/100 ml	Number of HPC Samples (Background) as cfu/ml	Range of HPC Results (Background) (min #)-(max #)
Raw	104	0 to 0	0 to 0	Not applicable.	Not applicable.
Treated	104	0 to 0	0 to 0	104	0 to 80
Distribution	675	0 to 1	0 to 3	312	0 to 40

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 (NTU) Church Well 1 and Church Well 2	24	0.25 – 0.72
Chlorine residual in the Distribution System (mg/L)	8760	0.05 – 4.00
Fluoride (If the DWS provides fluoridation)	n/a	n/a

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

Regulation 170/03 Schedule 15.1-5 reduced lead sampling program. Lead sampling to be completed every 36 months over two consecutive semi-annual periods. The system is exempt from lead sampling in plumbing. Below are the most recent results.

Parameter	Sample Date (dd-mm-yyyy)	Location	Result	MAC	Unit of Measure	Exceedance
Lead	2009	Commercial (12 samples)	<0.0006-0.0019	0.010	mg/L	No
Lead	2009	Residential (64 samples)	<0.0005-0.007	0.010	mg/L	No
Lead	2021	Distribution (8 samples)	0-0.00072	0.010	mg/L	No

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

Parameter	Sample Date (dd-mm-yyyy)	Result Church Well No. 1	Result Church Well No 2	MAC	Unit of Measure	Exceedance
ND-non detectable MAC-maximum allowable concentration						
Antimony	04-11-2021	ND	ND	0.006	mg/L	No
Arsenic	04-11-2021	ND	ND	0.01	mg/L	No
Barium	04-11-2021	0.11	0.13	1.00	mg/L	No
Boron	04-11-2021	0.15	0.17	5.00	mg/L	No
Cadmium	04-11-2021	ND	ND	0.005	mg/L	No

Chromium	04-11-2021	ND	ND	0.05	mg/L	No
Mercury	04-11-2021	ND	ND	0.001	mg/L	No
Selenium	04-11-2021	ND	ND	0.05	mg/L	No
Sodium	04-11-2021	45	59	20 AO200	mg/L	No*
Uranium	04-11-2021	ND	ND	0.02	mg/L	No
Fluoride	01-06-2023	0.28	0.31	1.5	mg/L	No
Nitrate	15-11-2023	ND	ND	10	mg/L	No
Nitrite	15-11-2023	ND	ND	1	mg/L	No

*****Sodium results that exceed the standard are reportable every sixty (60) months. Sodium was reported in 2020 for this reporting period.

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

Parameter	Sample Date (dd-mm-yyyy)	Result Church Well No. 1	Result Church Well No 2	MAC	Unit of Measure	Exceedance
ND-non detectable MAC-maximum allowable concentration						
Alachlor	04-11-2021	ND	ND	5	ug/L	No
Atrazine	04-11-2021	ND	ND	-	ug/L	No
Azinphos-methyl	04-11-2021	ND	ND	20	ug/L	No
Benzene	04-11-2021	ND	ND	1	ug/L	No
Benzo(a)pyrene	04-11-2021	ND	ND	0.01	ug/L	No
Bromoxynil	04-11-2021	ND	ND	5	ug/L	No
Carbaryl	04-11-2021	ND	ND	90	ug/L	No
Carbofuran	04-11-2021	ND	ND	90	ug/L	No
Carbon Tetrachloride	04-11-2021	ND	ND	2	ug/L	No
Chlorpyrifos	04-11-2021	ND	ND	90	ug/L	No
Diazinon	04-11-2021	ND	ND	20	ug/L	No
Dicamba	04-11-2021	ND	ND	120	ug/L	No
1,2-Dichlorobenzene	04-11-2021	ND	ND	200	ug/L	No
1,4-Dichlorobenzene	04-11-2021	ND	ND	5	ug/L	No
1,2-Dichloroethane	04-11-2021	ND	ND	5	ug/L	No
1,1-Dichloroethylene	04-11-2021	ND	ND	14	ug/L	No
Dichloromethane	04-11-2021	ND	ND	50	ug/L	No
2-4 Dichloropheol	04-11-2021	ND	ND	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2-4-D)	04-11-2021	ND	ND	100	ug/L	No
Diclofop-methyl	04-11-2021	ND	ND	9	ug/L	No
Dimethoate	04-11-2021	ND	ND	20	ug/L	No

Diquat	04-11-2021	ND	ND	70	ug/L	No
Diuron	04-11-2021	ND	ND	150	ug/L	No
Glyphosate	04-11-2021	ND	ND	280	ug/L	No
MCPA	04-11-2021	ND	ND	100	ug/L	No
Malathion	04-11-2021	ND	ND	190	ug/L	No
Metolachlor	04-11-2021	ND	ND	50	ug/L	No
Metribuzin	04-11-2021	ND	ND	80	ug/L	No
Monochlorobenzene	04-11-2021	ND	ND	80	ug/L	No
Paraquat	04-11-2021	ND	ND	10	ug/L	No
Pentachlorophenol	04-11-2021	ND	ND	60	ug/L	No
Phorate	04-11-2021	ND	ND	2	ug/L	No
Picloram	04-11-2021	ND	ND	190	ug/L	No
Polychlorinated Biphenyls(PCB)	04-11-2021	ND	ND	3	ug/L	No
Prometryne	04-11-2021	ND	ND	1	ug/L	No
Simazine	04-11-2021	ND	ND	10	ug/L	No
Terbufos	04-11-2021	ND	ND	1	ug/L	No
Tetrachloroethylene	04-11-2021	ND	ND	10	ug/L	No
2,3,4,6-Tetrachlorophol	04-11-2021	ND	ND	100	ug/L	No
Triallate	04-11-2021	ND	ND	230	ug/L	No
Trichlorothylene	04-11-2021	ND	ND	5	ug/L	No
2,4,6-Trichlorophenol	04-11-2021	ND	ND	5	ug/L	No
Trifluralin	04-11-2021	ND	ND	45	ug/L	No
Vinyl chloride	04-11-2021	ND	ND	1	ug/L	No

Parameter	**Sample Date (dd-mm-yyyy)**	**Distribution Result**	**MAC**	**Unit of Measure**	**Exceedance**
HAA*	15-11-2023	39.5	80	ug/L	No
THM*	15-11-2023	66.9	100	ug/L	No
Alkalinity	15-02-2023	110 – 140	AO 30-500	mg/L	No
Alkalinity	16-08-2023	110 - 140	AO 30-500	mg/L	No
pH	15-02-2023	7.24 - 7.58	6.5-8.5	N/A	No
pH	16-08-2023	7.35 - 7.95	6.5-8.5	N/A	No

Alkalinity and pH every “winter” and “summer” period (December 15 to April 15 and June 15 to October 15)
*Reported as a running annual average.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	**Sample Date (dd-mm-yyyy)**	**Distribution Result**	**MAC**	**Unit of Measure**	**Exceedance**
THM	15-11-2023	66.9	100	ug/L	No