

2019 Section 11 Annual Report

Barwick Drinking Water System

February 2020

Prepared by the



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Section 11 ANNUAL REPORT

Drinking-Water System Number:	220008140
Drinking-Water System Name:	Barwick Well Supply
Drinking-Water System Owner:	The Corporation of the Township of Chapple
Drinking-Water System Category:	Small Municipal Residential System
Period being reported:	January 1 – December 31, 2019

<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; margin-top: 10px;"> <p>Chapple Municipal Office Chapple Water Treatment Plant</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; display: inline-block;">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; display: inline-block;">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>
--	---

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	N/A



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

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 (Municipal)

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 _____ Newsletter _____

Describe your Drinking-Water System

- Ground water treatment plant with softening, coagulation, flocculation, sedimentation, filtration, chlorination and pH adjustment

The Barwick Drinking Water System is comprised of four (4) non-GUDI groundwater wells, one (1) drinking water treatment plant and approximately 3 kilometers of watermains.

Well 1 is located approximately 275m north of Highway 11, adjacent to the Chapple Township Administration building.

Well 2 is located approximately 315m north of Highway 11.

Well 4 is located approximately 167m north of Highway 11.

Well 5 is located approximately 190m north of Highway 11.

All wells are drilled groundwater wells with 150mm diameter casing.

The Barwick pumphouse consists of the following:

- One (1) lime chemical feed system for water softening, one (1) lime slurry chemical feed pump with feed point at the clarifier tank, one (1) lime chemical solution tank and one (1) mixer
- One (1) solids contact unit 2.45m diameter x 2.6m high clarifier tank, which discharges sludge to domestic sewer
- re-carbonation via carbon dioxide gas for pH control with a 100mm inlet/outlet piping re-carbonation tank 1.22m diameter x 2.2m high and a 19mm diameter gas inlet piping with diffuser
- two (2) cell gravity sand filters (each 1.22m x 1.22m x 2.9m)
- a filter backwash pump to backwash wastewater to domestic sewer
- one (1) sodium hypochlorite chemical feed pump with the feed line discharging to finished water line prior to discharge into the reservoir
- Two cell storage reservoir which provides chlorine contact time with a combined storage capacity of 259.1m³. Each cell is approximately 7.5m x 5.5m by 3.5m and equipped with a level sensor and alarm



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

- Two (2) pump wells with a storage capacity of 27.6m³ (Reservoir Pump Well East) and 25.2m³ (Reservoir Pump West Well) providing chlorine contact time.
- Two (2) vertical high lift turbine pumps, each rated at 193L/min at 42.2m TDH, one (1) fire high flow pump rated at 2085L/min at 40.2m TDH and one (1) high lift discharge line equipped with a sample tap and magnetic flow meter
- One (1) 4045L hydropneumatic tank
- One (1) 80kW emergency standby diesel generator
- One (1) turbidity meter to measure turbidity in the treated water flowing to the reservoir, complete with alarm system

List all water treatment chemicals used over this reporting period

- Lime
- Carbon dioxide gas
- Sodium hypochlorite

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

Install	Repair	Replace	Description	Expense
X		X	Distribution chlorine analyzer	\$6000
	X		Well pump #4	\$1500
	X		In plant piping for process and treated water	\$4700
		X	Filter control valves	\$950



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

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
N/A	N/A	N/A	N/A	N/A	N/A

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	43	Absent	Absent	N/A	N/A
Treated	N/A	N/A	N/A	N/A	N/A
Distribution	27	Absent	Absent	27	0-93

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* Treated	8760	0-0.82 NTU
Chlorine* Distribution	8760	0-4.87 mg/L
Fluoride (If the DWS provides fluoridation)	N/A	N/A

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

** Turbidity & chlorine Min/Max (lows/highs) are due to planned maintenance and not plant upset.*

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, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
N/A	N/A	N/A	N/A	N/A

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	16-Nov-2015	<0.6	µg/L	No
Arsenic	16-Nov-2015	<1.0	µg/L	No
Barium	16-Nov-2015	<10	µg/L	No
Boron	16-Nov-2015	108	µg/L	No
Cadmium	16-Nov-2015	<0.1	µg/L	No
Chromium	16-Nov-2015	<1.0	µg/L	No
*Lead	Refer to Summary Table Below			
Mercury	16-Nov-2015	<0.1	µg/L	No
Selenium	16-Nov-2015	<1.0	µg/L	No
Sodium	21-Sep-2016	49.6	mg/L	Yes
Uranium	16-Nov-2015	<2.0	µg/L	No
Fluoride	09-Mar-2015	0.053	mg/L	No
Nitrite	07-Jan-19	< 0.01	mg/L	No
	01-Apr-19	< 0.01	mg/L	No
	23-Jul-19	0.02	mg/L	No
	16-Oct-19	< 0.01	mg/L	No
Nitrate	07-Jan-19	0.065	mg/L	No
	01-Apr-19	0.085	mg/L	No
	23-Jul-19	0.099	mg/L	No
	16-Oct-19	0.030	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



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

(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	N/A	N/A
Distribution	2	<1	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	07-Mar-2016	<0.1	µg/L	No
Atrazine + N-dealkylated metabolites	07-Mar-2016	<0.2	µg/L	No
Azinphos-methyl	07-Mar-2016	<0.1	µg/L	No
Benzene	07-Mar-2016	<0.5	µg/L	No
Benzo(a)pyrene	07-Mar-2016	<0.01	µg/L	No
Bromoxynil	07-Mar-2016	<0.2	µg/L	No
Carbaryl	07-Mar-2016	<0.2	µg/L	No
Carbofuran	07-Mar-2016	<0.2	µg/L	No
Carbon Tetrachloride	07-Mar-2016	<0.50	µg/L	No
Chlorpyrifos	07-Mar-2016	<0.1	µg/L	No
Diazinon	07-Mar-2016	<0.1	µg/L	No
Dicamba	07-Mar-2016	< 0.2	µg/L	No
1,2-Dichlorobenzene	07-Mar-2016	<0.5	µg/L	No
1,4-Dichlorobenzene	07-Mar-2016	<0.5	µg/L	No
1,2-Dichloroethane	07-Mar-2016	<0.5	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	07-Mar-2016	<0.5	µg/L	No
Dichloromethane (Methylene Chloride)	07-Mar-2016	<5.0	µg/L	No
2-4 Dichlorophenol	07-Mar-2016	<0.3	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	07-Mar-2016	<0.2	µg/L	No
Diclofop-methyl	07-Mar-2016	<0.2	µg/L	No
Dimethoate	07-Mar-2016	<0.1	µg/L	No
Diquat	07-Mar-2016	<1.0	µg/L	No
Diuron	07-Mar-2016	<1.0	µg/L	No
Glyphosate	07-Mar-2016	<5.0	µg/L	No



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

Haloacetic acids (HAA)* (NOTE: show latest annual average)	16-Oct-2019 2019 Average	18.0 18.65	µg/L µg/L	No
Malathion	07-Mar-2016	<0.1	µg/L	No
Metolachlor	07-Mar-2016	<0.1	µg/L	No
Metribuzin	07-Mar-2016	<0.1	µg/L	No
Monochlorobenzene (Chlorobenzene)	07-Mar-2016	<0.5	µg/L	No
Paraquat	07-Mar-2016	<1.0	µg/L	No
Pentachlorophenol	07-Mar-2016	<0.5	µg/L	No
Phorate	07-Mar-2016	<0.1	µg/L	No
Picloram	07-Mar-2016	<0.2	µg/L	No
Polychlorinated Biphenyls(PCB)	07-Mar-2016	<0.035	µg/L	No
Prometryne	07-Mar-2016	<0.1	µg/L	No
Simazine	07-Mar-2016	<0.1	µg/L	No
THM (NOTE: show latest annual average)	16-Oct-2019 2019 Average	79.2 97.38	µg/L µg/L	No No
Terbufos	07-Mar-2016	<0.2	µg/L	No
Tetrachloroethylene	07-Mar-2016	<0.5	µg/L	No
2,3,4,6-Tetrachlorophenol	07-Mar-2016	<0.5	µg/L	No
Triallate	07-Mar-2016	<0.1	µg/L	No
Trichloroethylene	07-Mar-2016	<0.5	µg/L	No
2,4,6-Trichlorophenol	07-Mar-2016	<0.5	µg/L	No
Trifluralin	07-Mar-2016	<0.1	µg/L	No
Vinyl Chloride	07-Mar-2016	<0.2	µg/L	No
MCPA	07-Mar-2016	<0.2	µg/L	No

*Parameter exceedance not reportable until 2020

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
Sodium	49.6	mg/L	21-Sept-2016
THM	97.38	mg/L	2019 Annual Running Average