2024 SECTION 11 ANNUAL REPORT

BAXTER DISTRIBUTION SYSTEM

For the period of
January 1st, 2024 to December 31st, 2024

Prepared for the Corporation of the Township of Essa by the Ontario Clean Water Agency

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Drinking Water System Regulation: O. Reg 170/03
Section 11 Annual Report: January 1, 2024 to December 31, 2024
The Corporation of the Township of Essa: Baxter Drinking Water System

This report was prepared in accordance with the requirements of *O.Reg 170/03, Section 11, Annual reports* for the following system and reporting period:

Drinking Water System Number:	260086866
Drinking Water System Name:	Baxter Drinking Water Distribution System
Drinking Water System Owner:	The Corporation of the Township of Essa
Drinking Water System Category:	Small Municipal Residential
Reporting Period:	January 1, 2024 to December 31, 2024

Does your Drinking Water System serve more than 10,000 people?

No

Is your Annual Report available to the public at no charge on a website on the Internet?

Yes

Note: If a large municipal residential system serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet. O. Reg. 170/03, Section 11. (10)

Location where Summary Report required under O. Reg 170/03, Schedule 22 will be available for inspection. *(O. Reg 170/03, Section 11.(6)(5))*:

- Hard copy available for public viewing at the Township of Essa Municipal Office at 5786 Simcoe County Road 21, Utopia, Essa Township, ON, L0M1T0
- https://www.essatownship.on.ca/council-administration/plans-reports-and-studies/

Note: this is required for large municipal residential systems or small municipal residential systems.

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?

N/A

How system users are notified that the 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:

Note: The owner of a drinking water system shall ensure that a copy of an annual report for the system is given, without charge, to every person who requests a copy. ((O.Reg 170/03, Section 11.(7))

Description of Drinking Water System *(O.Reg 170/03, Section 11.(6)(a)):*

The Baxter Distribution System is classified as a stand-alone Small Municipal Residential Drinking Water System servicing an approximately population of 340 persons in the Hamlet of Baxter, Township of Essa.

On November 21, 2017 the drinking water system became a stand-alone distribution system, receiving treated water from the Raymond A. Barker Ultrafiltration Plant owned by the Town of Collingwood via a water transmission main (pipeline) that stretches from the Town of Collingwood to Alliston, in the Township of New Tecumseth. The Township of Essa has an agreement with the Town of New Tecumseth to receive 100 m^3/day from the pipeline. The water from the pipeline is initially sent to fill the Baxter storage tank(s), and the balance of the 100m^3 is sent to the Mill Street reservoir in Angus, Ontario.

On December 6, 2023 the old pumphouse on Marshall Avenue was decommissioned and the treated water started entering the newly commissioned Baxter Booster Station on Murphy Road in Baxter. Online equipment continuously monitors and records free chlorine residual and flowrates. To ensure continued secondary disinfection, a re-chlorination system is maintained prior to two (2) on-site grade level water storage tanks. High-lift pumps maintain the distribution system pressure. The Booster Station is equipped with a stand-by diesel generator to provide backup power in the event of a power failure.

List of water treatment chemicals used by the system during the reporting period *(O.Reg 170/03, Section 11.(6)(a)):*

- Sodium Hypochlorite 12% Solution

Significant expenses incurred to:

	Install required equipment
X	Repair required equipment
	Replace required equipment
	No significant expenses were incurred

Description of major expenses during the reporting period to install, repair or replace required equipment *(O.Reg 170/03, Section 11.(6)(e))*:

- Diesel Generator Repairs/Load Testing
- Chlorine Analyzer Probes and Membrane Caps
- Chemical pump rebuild Kits

Summary of any reports/notices submitted to the Ministry and/or Spills Action Centre in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 during the reporting period, including a description of any corrective actions taken under Schedule 17 or 18 *(O. Reg 170/03, Section 11.(6)(b),(d):*

Incident Date (yyyy/mm/dd)	**Parameter/ Notice of**	**Result & Unit**	**Summary of Reporting, Corrective Actions & Resolution**
N/A	N/A	N/A	N/A

Table 1. Microbiological testing done under the Schedule 11 of Regulation 170/03 during this reporting period *(O.Reg 170/03, Section 11.(6)(c)).*

Location	**Number of Samples**	**Range of E. Coli or Fecal Results**		**Range of Total Coliform Results**		**Number of HPC Samples**	**Range of HPC Samples**	
		Min.	Max.	Min.	Max.		Min.	Max.
Distribution – DW	53[1A]	0	0	0	0	53[1B]	<10	10

Note: HPC = Heterotrophic Plate Count

Note: E.Coli or Fecal Results are in cfu/100 mL, Total Coliform Results are in cfu/100 mL, HPC results are in cfu/1mL

[1A]As per O.Reg 170/03 Schedule 11-2(1)(b), the number of distribution samples for a small municipal residential system that receives all of its water from another Large Municipal System is one per week.

[1B]In addition as per O.Reg 170/03, Schedule 11-2(2)(a)(b)(c), the owner of the drinking water system and the operating authority for the system must ensure that each of the samples taken under subsection (1) Is tested for (a) E.Coli; (b) total coliforms; and (c) general bacteria population expressed as colony counts on a heterotrophic plate counts.

Table 2. Operational testing done under Schedule 7 of Regulation 170/03 during the period covered by this Annual Report *(O. Reg 170/03, Section 11.(6)(c)).*

Parameter & Location	Number of Samples	Range of Results	
		Min.	Max.
Free Chlorine Residual, Distribution (Continuous) [mg/L]-DW[2A]	8760	0.00[2C]	5.00[2D]
Free Chlorine Residual, Distribution (Grab) [mg/L]-DW[2B]	102	0.36	1.87

Note: The number of samples used for continuous monitoring units is 8760.

[2A]Distribution free chlorine is continuously monitored at Baxter DS as it leaves the storage tanks and enters the distribution system.

[2B]O.Reg 170/03 Schedule 7-2.(5) requires a small municipal residential system that provides secondary disinfection to take at least two distribution samples each week and immediately tested for free chlorine residual, if the system provides chlorination and does not provide chloramination.

[2C]February 9, 2024- a momentary low chlorine residual was recorded when replacing the free chlorine analyzer electrolyte, which caused the analyzer to read zero. Chlorination was still being provided; no adverse water was sent to the distribution system.

[2D]February 27, 2024- High chlorine readings were the result of a monthly generator run.

Table 3. Summary of additional testing and sampling results carried out in accordance with the requirement of an approval, municipal drinking water licence or order (including OWRA) or other legal instrument. *(O. Reg 170/03, Section 11.(6)(c))*

Legal Instrument & Issue Date (yyyy/mm/dd)	Parameter	Date Sampled (yyyy/mm/dd)	Result	Unit of Measure
N/A	N/A	N/A	N/A	N/A

Table 4. Summary of Inorganic parameters tested during this reporting period or the most recent sample results *(O.Reg 170/03, Section 11.(6)(c))*

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Inorganic Parameters – TW[4A]	N/A	N/A	N/A	N/A

[4A]Treated water inorganic testing is not applicable for Baxter Distribution System. The treated water is from the Collingwood DWS via the Alliston to Collingwood Pipeline. Please refer to the Collingwood Drinking Water System Annual Compliance Report for 2024 located at the following website: https://www.collingwood.ca

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Aesthetic Objective (AO)	Exceedance	
				AO	> 20 mg/L
Sodium: Na (mg/L) – TW	N/A	N/A	200[4B]	N/A	N/A

Note: MDL = Minimum Detection Limit

Note: Treated water sodium testing is not applicable for Baxter Distribution System. The treated water is from the Collingwood DWS via the Alliston to Collingwood Pipeline. Please refer to the Collingwood Drinking Water System Annual Compliance Report for 2024 located at the following website: https://www.collingwood.ca

[4B]There is no regulatory Maximum Allowable Concentration (MAC) Sodium. The aesthetic objective (AO) for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for patients on sodium restricted diets.

Table 5: Summary of lead testing under Schedule 15.1 during this reporting period *(O.Reg 170/03, Section 11.(6)(g))*

Location/Type & Parameter	Number of Samples[5A]	Range of Results		Number of Lead Exceedances (MAC = 10 µ/L)
		Min.	Max.	
Period: January 1 to April 15				
Plumbing – Lead (µg/L)[5B]	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L)[5C]	1	0.08	0.08	0
Distribution – Alkalinity (mg/L as $CaCO_3$)	1	70	70	N/A
Distribution – pH	1	7.06	7.06	N/A
Period: June 15 to October 15				
Plumbing – Lead (µg/L)[5B]	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L)[5C]	1	0.09	0.09	0
Distribution – Alkalinity (mg/L as $CaCO_3$)	1	76	76	N/A
Distribution – pH	1	7.1	7.1	N/A
Period: December 15 to 31				
Plumbing – Lead (µg/L)[5B]	N/A	N/A	N/A	0
Distribution – Lead (µg/L)[5C]	N/A	N/A	N/A	0
Distribution – Alkalinity (mg/L as $CaCO_3$)	N/A	N/A	N/A	N/A
Distribution - pH	N/A	N/A	N/A	N/A

Note: this is required for large municipal residential systems, small municipal residential systems or non-municipal year-round residential system. (O.Reg 170/03, Section 11.(6)(g))

[5A]This system follows a reduced sampling schedule (O.Reg 170/03, Section 15.1.5). The number of sampling points for the system is based on the population served by the system. The number of people served by the system is 340 persons (as confirmed with the Owner on in December, 2023) and therefore requires one distribution sampling points per sampling period.

[5B]Plumbing samples are not applicable as this system qualifies for the plumbing exemption per O. Reg 170/03 Schedule 15.1-5 (9) (10).

[5C]This system follows a reduced sampling schedule (O.Reg 170/03, Section 15.1.5). Distribution lead samples are collected every 36 months. The most recent set of distribution lead samples were collected within the winter period of December 15, 2023 to April 15, 2024 and summer period of June 15, 2024 to October 15, 2024. The next set of distribution lead samples is scheduled to be collected within the winter period of December 15, 2026 to April 15, 2027 and summer period of June 15, 2027 to October 15, 2027.

Table 6: Summary of Organic parameters sampled during this reporting period or the most recent sample results *(O.Reg 170/03, Section 11.(6)(c)).*

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Organic Parameters – TW[6A]	N/A	N/A	N/A	N/A
Trihalomethane: Total Annual Average (µg/L) - DW	4 Quarters of 2024	56.0	100.00	No
Haloacetic Acid: Total Annual Average (µg/L) - DW	4 Quarters of 2024	34.775	80.00	No

Note: MDL = Minimum Detection Limit, MAC = Maximum Allowable Concentration

[6A]Treated water Organic parameters testing is not applicable for Baxter Distribution System. The treated water is from the Collingwood DWS via the Alliston to Collingwood Pipeline. Please refer to the Collingwood Drinking Water System Annual Compliance Report for 2024 located at the following website: https://www.collingwood.ca

Table 7: List of Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards for the reporting period.

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result
Trihalomethane: Total Annual Average (µg/L) - DW	4 Quarters of 2024	56.00