



**ONTARIO CLEAN WATER AGENCY**  
**AGENCE ONTARIENNE DES EAUX**

**FOREMAN**  
**DRINKING WATER SYSTEM**

Small Municipal Residential

**SCHEDULE 22**  
**SUMMARY REPORT**

**For the period of**  
**JANUARY 1, 2022 TO DECEMBER 31, 2022**

Prepared by the Ontario Clean Water Agency  
For The Corporation of the Town of South Bruce Peninsula

This report was prepared in accordance with the requirements of [O.Reg 170/03, Schedule 22, Summary Reports for Municipalities](#) for the following system and reporting period:

<b>Drinking-Water System Number:</b>	220007711
<b>Drinking-Water System Name:</b>	Foreman Drinking Water System
<b>Drinking-Water System Owner:</b>	Town of South Bruce Peninsula
<b>Drinking-Water System Category:</b>	Small Municipal Residential
<b>Period being reported:</b>	January 1, 2022 – December 31, 2022

## 1. Issue(s) of Non-Compliance

A Ministry of Environment, Conservation and Parks (MECP) Drinking Water System Inspection was conducted on September 21, 2022 for the period covering September 14, 2021 to September 21, 2022. On December 30, 2022 the Inspection Report was issued. As of the issue date of this report, an Inspection Summary Rating Record (IRR) has not yet been received.

The following is a summary of non-compliances noted in the MECP Inspection Report, as well as the duration and the measures that were taken to correct the non-compliance. If any self-reported non-compliances were included in the inspection report, they will be noted in Table 1.

**Table 1. Non-Compliances and Corrective Actions noted in the 2021/2022 MECP Inspection Report**

Non-Compliance(s)	Duration	Required Actions & Corrective Actions
On January 4 and 16, 2022 water taking exceeded the maximum flow rate of 114 litres/minute for 45 minutes and 150 minutes, respectively. This incident was self-reported.	45 minutes & 150 minutes	No further actions required by MECP.

The following table (Table 2) is a summary of any incidents that the Operating Authority interpreted as instances where any requirements of the Act, the regulations, the system's approval, drinking water works permit (DWWP), municipal drinking water licence (MDWL), and any orders applicable were not met. The Operating Authority reported the following incidents to the MECP and confirmation of whether the incidents are considered non-compliances are noted in the MECP Inspection Report and included in Table 1.

**Table 2. Self-Reported Incidents and Corrective Actions for the Reporting Period**

Incident	Duration	Corrective Actions
N/A	N/A	N/A

For information on any Adverse Water Quality Incident(s) that may have occurred during the reporting period, please refer to the Foreman Drinking Water System Annual Report (Section 11).

## 2. Assessment of Flowrates and Quantity of Water Supplied

The following tables summarize the quantities and flow rates of water supplied during the reporting period, including monthly averages and maximum daily flows as well as a comparison to the rated capacity and flow rates approved in the system’s approval, DWWP or MDWL.

### 2.1 Treated Water

<b>Municipal Drinking Water License (MDWL):</b>	094-104 (Issue Number: 4)
<b>Allowable Rated Capacity:</b>	165 m <sup>3</sup> /day
<b>Allowable Flowrate into Treatment System:</b>	N/A

As per the MDWL, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the listed rated capacity. However, the MDWL allows a system to be operated temporarily at a maximum daily volume and/or a maximum flowrate above the values set out in the MDWL for the purposes of fighting a large fire or for the maintenance of the drinking water system.

**Table 3. Treated Water Annual and Monthly Average and Maximum Flows with Comparison to Rated Capacity and Total Volume for 2022**

Timeframe	Treated Water Flow				
	Average Flow (m <sup>3</sup> /day)	Percent of Rated Capacity	Maximum Flow (m <sup>3</sup> /day)	Percent of Rated Capacity	Total Volume (m <sup>3</sup> )
January	1.8	1.1%	4.2	2.5%	57
February	2.0	1.2%	5.2	3.2%	55
March	1.8	1.1%	5.0	3.0%	55
April	1.7	1.0%	3.7	2.2%	52
May	3.0	1.8%	8.9	5.4%	94
June	2.8	1.7%	7.8	4.7%	85
July	5.7	3.5%	11.3	6.8%	177
August	4.5	2.7%	7.8	4.7%	139
September	3.4	2.1%	9.4	5.7%	102
October	2.6	1.6%	10.6	6.4%	81
November	2.1	1.3%	4.4	2.7%	62
December	2.3	1.4%	10.3	6.2%	71
<b>2022</b>	<b>2.8</b>	<b>1.7%</b>	<b>11.3</b>	<b>6.8%</b>	<b>1,031</b>

A review of flow information for the reporting period indicates that the drinking water system operated within the rated capacity specified in the MDWL, for the maximum treated volume of treated water that flows from the treatment subsystem to the distribution system.

**Table 4. Treated Water Annual and Monthly Average and Maximum Flowrates for 2022**

Timeframe	Treated Water Flowrate	
	Average Flowrate (L/sec)	Maximum Flowrate (L/sec)
January	0.00	3.60
February	0.00	3.40
March	0.02	3.63
April	0.02	1.95
May	0.04	2.05
June	0.03	1.91
July	0.06	2.40
August	0.04	2.10
September	0.04	2.80
October	0.03	2.70
November	0.02	2.30
December	0.03	2.00
<b>2022</b>	<b>0.03</b>	<b>3.63</b>

The applicable MDWL for the reporting period did not list a maximum allowable limit for the flowrate of water that flows into a treatment subsystem. A summary of flowrates of water that flows into the treatment system can be found in Table 6.

## 2.2 Raw Water

<b>Permit to Take Water Number:</b>	0725-BTFKTF
<b>Allowable Maximum Raw Water Volume – Foreman Well:</b>	163.44 m <sup>3</sup> /day
<b>Allowable Maximum Raw Water Flowrate – Foreman Well:</b>	114 L/min

As per the PTTW, water shall only be taken from the specified source(s) and at the rates and amounts taken as specified in the permit.

**Table 5. Raw Water (Foreman Well) Monthly Average, Maximum Flow and Total Volume for 2022**

Timeframe	Raw Water Flow – Foreman Well				
	Average Flow (m <sup>3</sup> /day)	Percent of Allowable Volume	Maximum Flow (m <sup>3</sup> /day)	Percent of Allowable Volume	Total Volume (m <sup>3</sup> )
January	15.4	9.4%	19.8	12.1%	123
February	12.5	7.6%	21.1	12.9%	88
March	11.2	6.8%	20.3	12.4%	112
April	12.0	7.3%	20.4	12.5%	108
May	15.1	9.2%	21.8	13.3%	151
June	14.1	8.6%	20.5	12.5%	127
July	13.3	8.1%	22.5	13.8%	252
August	14.6	8.9%	21.3	13.0%	189
September	15.9	9.7%	23.2	14.2%	159
October	14.6	9.0%	27.0	16.5%	132
November	15.2	9.3%	20.1	12.3%	122
December	14.6	8.9%	23.3	14.3%	117
<b>2022</b>	<b>14.0</b>	<b>8.6%</b>	<b>145.0</b>	<b>21.1%</b>	<b>1,678</b>

A review of flow information for the reporting period indicates that the system operated within the PTTW's maximum allowable daily raw water volume for the Foreman Well.

**Table 6. Raw Water (Foreman Well) Annual and Monthly Average and Maximum Flowrates for 2022**

Timeframe	Raw Water Flowrate – Foreman Well	
	Average Flowrate (L/sec)	Maximum Flowrate (L/sec)
January	1.86	2.40 <sup>6a</sup>
February	1.73	1.95 <sup>6b</sup>
March	1.75	1.91 <sup>6c</sup>
April	1.74	1.94 <sup>6c</sup>
May	1.69	1.86
June	1.61	1.95 <sup>6c</sup>
July	1.64	1.96 <sup>6c</sup>
August	1.70	1.90
September	1.74	1.90
October	1.69	1.80
November	1.69	1.80
December	1.48	1.90
<b>2022</b>	<b>1.69</b>	<b>2.40<sup>6a</sup></b>

A review of flow information for the reporting period indicates there were instances where the system operated outside of the PTTW allowable raw water flowrate:

- <sup>6a</sup>See Table 1 for the following days:
  - January 4
  - January 16
- <sup>6b</sup>February 6 (6 minutes)
- <sup>6c</sup>Filter backwash caused a spike for less than 1 minute on the following days:
  - March 16
  - April 13
  - June 24
  - July 5
  - July 19



**ONTARIO CLEAN WATER AGENCY**  
**AGENCE ONTARIENNE DES EAUX**

**FOREMAN**  
**DRINKING WATER SYSTEM**

Small Municipal Residential

**SECTION 11**  
**ANNUAL REPORT**

**For the period of**  
**JANUARY 1, 2022 TO DECEMBER 31, 2022**

Prepared by the Ontario Clean Water Agency  
For the Town of South Bruce Peninsula

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:

<b>Drinking Water System Number:</b>	220007711
<b>Drinking Water System Name:</b>	Foreman Drinking Water System
<b>Drinking Water System Owner:</b>	Town of South Bruce Peninsula
<b>Drinking Water System Category:</b>	Small Municipal Residential
<b>Reporting Period:</b>	January 1, 2022 – December 31, 2022

**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)):**

- Town of South Bruce Peninsula, 315 George Street, Wiarton ON, N0H 2T0
- <https://www.southbrucepeninsula.com/en/town-hall/water-and-sewer-reports.aspx#2021>

**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:**

- |                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Public access/notice via the web           |
| <input checked="" type="checkbox"/> | Public access/notice via Government Office |
| <input type="checkbox"/>            | Public access/notice via a newspaper       |
| <input checked="" type="checkbox"/> | Public access/notice via Public Request    |



- Public access/notice via a Public Library  
 Public access/notice via other method: \_\_\_\_\_

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

The Foreman Drinking Water System is a Class II Water Treatment and Class I Water Distribution System.

The Foreman Water Works Drinking-Water System is supplied by a deep drilled GUDI well. The well pumphouse houses the treatment and control facilities which include:

- Iron/Manganese Removal (potassium permanganate system/greensand filters)
- Cartridge Filter System (to assist with UV disinfection)
- Ultraviolet Disinfection System
- Chlorination System (sodium hypochlorite, pre-chlorination and post chlorination)
- Clearwell/Storage Tank (for achieving CT, the water is also used to backwash the greensand filters)
- Filter Backwash Tank (clarified supernatant discharged by gravity to an existing ditch)
- Hydro pneumatic Tanks (to maintain pressure for highlift discharge and for the greensand filters)
- Diesel generator set
- Programmable logic controller and associated SCADA system (for control of the water treatment plant)

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

- Sodium Hypochlorite 12%
- Potassium Permanganate

**Significant expenses were incurred to:**

- Install required equipment  
 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)):**

- Replacement chlorine analyzer

**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.
Raw – Well WLP8	12	0	0	0	63	N/A	N/A	N/A
Distribution	52	0	0	0	0	52	0	8

**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.
Turbidity, Filter (NTU)	8760	0.00	0.31
Free Chlorine Residual, Treated (mg/L)	8760	0.20*	2.00
Free Chlorine Residual, Distribution (mg/L)	105	1.06	2.11

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

\*Low chlorine event on October 2 and November 30, 2022. CT met on both occasions, no adverse conditions.

**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	Number of Samples	Annual Average	Allowable Annual Average
March 6, 2020 094-102 (Issue 4)	Total Suspended Solids (Filter backwash)	2022 (Monthly)	12	4.58	25 mg/L
March 6, 2020 094-102 (Issue 4)	Total Chlorine Residual (Filter backwash)	2022 (Monthly)	12	0.01	0.02 mg/L

**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
Antimony: Sb (ug/L) - TW	2021/01/05	<MDL 0.9	6.0	No
Arsenic: As (ug/L) - TW	2021/01/05	<MDL 0.2	10.0	No
Barium: Ba (ug/L) - TW	2021/01/05	16.7	1000.0	No
Boron: B (ug/L) - TW	2021/01/05	79.0	5000.0	No
Cadmium: Cd (ug/L) - TW	2021/01/05	<MDL 0.003	5.0	No
Chromium: Cr (ug/L) - TW	2021/01/05	0.38	50.0	No
Mercury: Hg (ug/L) - TW	2021/01/05	<MDL 0.01	1.0	No
Selenium: Se (ug/L) - TW	2021/01/05	<MDL 0.04	50.0	No
Uranium: U (ug/L) - TW	2021/01/05	0.064	20.0	No
Fluoride (mg/L) - TW	2022/01/04	1.21	1.5	No
Nitrite (mg/L) - TW	2022/01/04	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2022/04/04	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2022/07/04	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2022/10/03	<MDL 0.003	1.0	No
Nitrate (mg/L) - TW	2022/01/04	0.008	10.0	No
Nitrate (mg/L) - TW	2022/04/04	0.008	10.0	No
Nitrate (mg/L) - TW	2022/07/04	0.007	10.0	No
Nitrate (mg/L) - TW	2022/10/03	0.008	10.0	No

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Aesthetic Objective (AO)	Exceedance	
				AO	> 20 mg/L
Sodium: Na (mg/L) - TW	2022/01/04 <sup>c</sup>	16.5	200 <sup>d</sup>	No	No

Note: MDL = Minimum Detection Limit

<sup>c</sup>Sodium is reportable every 60 months. Next set of sodium samples is scheduled to be sampled in 2027.

<sup>d</sup>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 their use with 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	Range of Results		Number of Lead Exceedances (MAC = 10 µ/L)
		Min.	Max.	
<b>Period: January 1 to April 15</b>				
Plumbing – Lead (µg/L) <sup>a</sup>	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) <sup>b</sup>	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO <sub>3</sub> )	1	233	233	N/A
Distribution – pH	1	8.40	8.40	N/A
<b>Period: June 15 to October 15</b>				
Plumbing – Lead (µg/L) <sup>a</sup>	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) <sup>b</sup>	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO <sub>3</sub> )	1	215	215	N/A
Distribution – pH	1	8.18	8.18	N/A
<b>Period: December 15 to 31</b>				
Plumbing – Lead (µg/L) <sup>a</sup>	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) <sup>b</sup>	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO <sub>3</sub> )	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.*

<sup>a</sup>*Plumbing samples are not applicable as this system qualifies for the plumbing exemption per O. Reg 170/03 Schedule 15.1-5 (9) (10).*

<sup>b</sup>*Distribution lead samples are taken every 36 months. The next set of distribution lead samples is scheduled to be sampled during the winter period of December 15, 2023 to April 15, 2024 and summer period of June 15, 2024 to October 15, 2024.*

**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
Alachlor (ug/L) - TW	2021/01/05	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2021/01/05	<MDL 0.01	5.0	No
Azinphos-methyl (ug/L) - TW	2021/01/05	<MDL 0.05	20.0	No
Benzene (ug/L) - TW	2021/01/05	<MDL 0.32	1.0	No
Benzo(a)pyrene (ug/L) - TW	2021/01/05	<MDL 0.004	0.01	No
Bromoxynil (ug/L) - TW	2021/01/05	<MDL 0.33	5.0	No
Carbaryl (ug/L) - TW	2021/01/05	<MDL 0.05	90.0	No

Drinking Water System Regulation: O. Reg 170/03  
 Section 11 Annual Report: January 1, 2022 to December 31, 2022  
 Town of South Bruce Peninsula: Foreman Drinking Water System

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Carbofuran (ug/L) - TW	2021/01/05	<MDL 0.01	90.0	No
Carbon Tetrachloride (ug/L) - TW	2021/01/05	<MDL 0.17	2.0	No
Chlorpyrifos (ug/L) - TW	2021/01/05	<MDL 0.02	90.0	No
Diazinon (ug/L) - TW	2021/01/05	<MDL 0.02	20.0	No
Dicamba (ug/L) - TW	2021/01/05	<MDL 0.2	120.0	No
1,2-Dichlorobenzene (ug/L) - TW	2021/01/05	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (ug/L) - TW	2021/01/05	<MDL 0.36	5.0	No
1,2-Dichloroethane (ug/L) - TW	2021/01/05	<MDL 0.35	5.0	No
1,1-Dichloroethylene (ug/L) - TW	2021/01/05	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2021/01/05	<MDL 0.35	50.0	No
2,4-Dichlorophenol (ug/L) - TW	2021/01/05	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2021/01/05	<MDL 0.19	100.0	No
Diclofop-methyl (ug/L) - TW	2021/01/05	<MDL 0.4	9.0	No
Dimethoate (ug/L) - TW	2021/01/05	<MDL 0.06	20.0	No
Diquat (ug/L) - TW	2021/01/05	<MDL 1.0	70.0	No
Diuron (ug/L) - TW	2021/01/05	<MDL 0.03	150.0	No
Glyphosate (ug/L) - TW	2021/01/05	<MDL 1.0	280.0	No
Malathion (ug/L) - TW	2021/01/05	<MDL 0.02	190.0	No
Metolachlor (ug/L) - TW	2021/01/05	<MDL 0.01	50.0	No
Metribuzin (ug/L) - TW	2021/01/05	<MDL 0.02	80.0	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2021/01/05	<MDL 0.3	80.0	No
Paraquat (ug/L) - TW	2021/01/05	<MDL 1.0	10.0	No
PCB (ug/L) - TW	2021/01/05	<MDL 0.04	3.0	No
Pentachlorophenol (ug/L) - TW	2021/01/05	<MDL 0.15	60.0	No
Phorate (ug/L) - TW	2021/01/05	<MDL 0.01	2.0	No
Picloram (ug/L) - TW	2021/01/05	<MDL 1.0	190.0	No
Prometryne (ug/L) - TW	2021/01/05	<MDL 0.03	1.0	No
Simazine (ug/L) - TW	2021/01/05	<MDL 0.01	10.0	No

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Terbufos (ug/L) - TW	2021/01/05	<MDL 0.01	1.0	No
Tetrachloroethylene (ug/L) - TW	2021/01/05	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2021/01/05	<MDL 0.2	100.0	No
Triallate (ug/L) - TW	2021/01/05	<MDL 0.01	230.0	No
Trichloroethylene (ug/L) - TW	2021/01/05	<MDL 0.44	5.0	No
2,4,6-Trichlorophenol (ug/L) - TW	2021/01/05	<MDL 0.25	5.0	No
Trifluralin (ug/L) - TW	2021/01/05	<MDL 0.02	45.0	No
Vinyl Chloride (ug/L) - TW	2021/01/05	<MDL 0.17	1.0	No
Trihalomethane: Total (ug/L) Annual Average - DW	2022 (Quarterly)	7.35	100.0	No
HAA Total (ug/L) Annual Average - DW	2022 (Quarterly)	5.30	80.0	No

*Note: DW = Distribution Water, TW = Treated Water, MDL = Minimum Detection Limit, MAC = Maximum Allowable Concentration*

**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
Fluoride (mg/L) - TW	2022/01/04	1.21