



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, 2018 TO DECEMBER 31, 2018

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

Summary

This report is a summary of water quality and quantity information submitted in accordance with Schedule 22 of Ontario's Drinking Water System Regulation for the reporting period of January 1, 2018 to December 31, 2018 for the Foreman Drinking Water System located in the Town of South Bruce Peninsula. The summary includes the following information:

- Any requirements of the Act and Regulation, Orders or System Approval(s) that the system failed to meet during the reporting period and the measures taken to correct each failure.
- A summary of the quantities and flow rates of water supplied during the reporting period, including monthly averages and maximum daily flows.
- A comparison of the average and monthly maximum daily flows to the approved capacity specified in the System Approval.

Issues of Non-Compliance

An MECP Drinking Water System Inspection was performed on July 17, 2018. On August 16, 2018 the report for this inspection was issued, the Foreman Drinking Water System received an inspection rating of 100%.

The following is a summary of the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license, and any orders applicable to the system that were not met at any time during the period covered by the report; as well as the duration of the failure and the measures that were taken to correct the failure:

- * There were no non-compliances during the reporting period.

Refer to the Section 11 Annual Report for a summary of any Adverse Water Quality Incident(s) which occurred during the reporting period.

Assessment of Flowrates and Quantity of Water Supplied

The following tables summarize the quantities (Table 1) and flow rates (Table 2) of the water supplied during the period covered by the report, including monthly average and maximum daily flows as well as a comparison of the summary to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water license.

As per Municipal Drinking Water License (MDWL) 094-104 (Issue Number: 3, expires March 17, 2020), the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed a rated capacity of 165 m³/day. There is no maximum allowable limit listed in the MDWL for the flowrate of water that flows into a treatment subsystem, however, raw water flowrate has been included in this report (Table 3).

Table 1. Treated Water Monthly Average and Maximum Daily Flows and Comparison to Rated Capacity for 2018

2018	Treated Water Flow			
	Average Flow (m ³ /day)	Percent of Rated Capacity	Maximum Flow (m ³ /day)	Percent of Rated Capacity
January	2.39	1.4%	3.50	2.1%
February	2.79	1.7%	4.82	2.9%
March	2.90	1.8%	5.60	3.4%
April	3.17	1.9%	4.98	3.0%
May	3.25	2.0%	8.30	5.0%
June	5.04	3.1%	16.90	10.2%
July	6.24	3.8%	17.38	10.5%
August	5.10	3.1%	12.90	7.8%
September	2.35	1.4%	10.40	6.3%
October	1.85	1.1%	5.10	3.1%
November	2.18	1.3%	4.10	2.5%
December	2.16	1.3%	4.40	2.7%

Table 2. Treated Water Monthly Average and Maximum Flowrates for 2018

2018	Treated Water	
	Average Flowrate (l/s)	Maximum Flowrate (l/s)
January	0.028	2.700
February	0.032	2.806
March	0.028	2.700
April	0.035	2.785
May	0.031	2.800
June	0.047	2.000
July	0.071	2.200
August	0.048	3.300
September	0.028	2.200
October	0.017	2.000
November	0.024	2.600
December	0.024	3.600

Table 3. Raw Water Monthly Average and Maximum Flowrates for 2018

2018	Raw Water	
	Average Flowrate (l/s)	Maximum Flowrate (l/s)
January	1.70	1.90
February	1.68	1.86
March	1.68	1.86
April	1.62	1.80
May	1.58	1.80
June	1.59	1.80
July	1.54	1.70
August	1.38	1.80
September	1.64	1.80
October	1.69	1.80
November	1.65	1.80
December	1.67	1.80



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, 2018 TO DECEMBER 31, 2018

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

Drinking Water System Number:	220007711
Drinking Water System Name:	Foreman Drinking Water System
Drinking Water System Owner:	Town of South Bruce Peninsula
Drinking Water System Category:	Small Municipal Residential
Reporting Period:	January 1, 2018 to December 31, 2018

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

No.

Is your annual report available to the public at no charge on a web site on the Internet?

Yes.

Location where the Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:

Town of South Bruce Peninsula
 315 George Street
 Wiarton, Ontario
 N0H 2T0
 519-534-1400

Drinking-Water Systems (if any), which receive all of their drinking water from your system:

n/a.

Did you provide a copy of the 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 type="checkbox"/> | Public access/notice via Public Request |
| <input type="checkbox"/> | Public access/notice via a Public Library |
| <input type="checkbox"/> | Public access/notice via other method: _____ |

Description of Drinking Water System:

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 during the reporting period:

- | |
|---|
| <ul style="list-style-type: none"> • Sodium Hypochlorite 12% • Potassium Permanganate |
|---|

Significant expenses were incurred to:

- | | |
|-------------------------------------|---------------------------------------|
| <input checked="" type="checkbox"/> | Install required equipment |
| <input type="checkbox"/> | Repair required equipment |
| <input checked="" type="checkbox"/> | Replace required equipment |
| <input type="checkbox"/> | No significant expenses were incurred |

Description of expenses:

- | |
|---|
| <ul style="list-style-type: none"> • Replaced failed output card for UV #1. • Installed new turbidity analyzer on filter. • Installed 1.5 hp high lift pump and controller • Installed cellular internet service, remote access to plant and data logger. |
|---|

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:

Date of Incident	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
n/a	n/a	n/a	n/a	n/a	n/a

Table 1. Microbiological testing done under Schedule 10, 11 or 12 of Regulation 170/03 during this reporting Period

Location	Number of Samples	Range of E.coli Results		Range of Total Coliforms Results		Number of HPC Samples	Range of HPC Samples	
		Minimum	Maximum	Minimum	Maximum		Minimum	Maximum
Well WLP8 (RW)	12	0	0	0	5	n/a	n/a	n/a
Distribution (DW)	52	0	0	0	0	52	0	3

Table 2. Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results	
		Minimum	Maximum
Turbidity, On-Line (NTU) - Filter	8760	0	0.417
Free Chlorine Residual, On-Line (mg/L) - TW	8760	0.46	2.00
Free Chlorine Residual, In-House (mg/L) - DW	105	0.85	1.98

NOTE: Record the unit of measure if it is not milligrams per litre.

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

Table 3. Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of Order of MDWL	Parameter	Date Sampled	Result	MDWL Allowable Annual Average Concentration
March 19, 2015 094-104 (Issue 2)	Total Suspended Solids (Filter backwash)	2018 (Quarterly)	2.25 mg/L	25 mg/L

Table 4. Summary of Inorganic parameters tested during this reporting period or most recent sample results

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Exceedance
Antimony: Sb (µg/L) - TW	2016/01/10	<MDL 0.02	No
Arsenic: As (µg/L) - TW	2016/01/10	<MDL 0.2	No
Barium: Ba (µg/L) - TW	2016/01/10	14.2	No
Boron: B (µg/L) - TW	2016/01/10	89.3	No
Cadmium: Cd (µg/L) - TW	2016/01/10	<MDL 0.003	No
Chromium: Cr (µg/L) - TW	2016/01/10	0.38	No
Mercury: Hg (µg/L) - TW	2016/01/10	<MDL 0.01	No
Selenium: Se (µg/L) - TW	2016/01/10	<MDL 0.04	No
Uranium: U (µg/L) - TW	2016/01/10	0.093	No
Fluoride (mg/L) - TW	2017/01/09	1.3	No
Nitrite (mg/L) - TW	2018/01/08	<MDL 0.003	No
Nitrite (mg/L) - TW	2018/04/09	<MDL 0.003	No
Nitrite (mg/L) - TW	2018/07/09	<MDL 0.003	No
Nitrite (mg/L) - TW	2018/10/01	<MDL 0.003	No
Nitrate (mg/L) - TW	2018/01/08	0.006	No
Nitrate (mg/L) - TW	2018/04/09	0.007	No
Nitrate (mg/L) - TW	2018/07/09	<MDL 0.006	No
Nitrate (mg/L) - TW	2018/10/01	0.008	No
Sodium: Na (mg/L) - TW	2017/01/09	16.2	No

NOTE: There is no "MAC" for Sodium. The aesthetic objective 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.

NOTE: Schedule 23, Schedule 24, Sodium and Fluoride are scheduled to be taken every 60 months. The most recent Schedule 23 was sampled in January 2016, the next Schedule 23 is scheduled for January 2021. The most recent Sodium was sampled in January 2017, the next scheduled Sodium will be in January 2022. The most current reportable sample for Fluoride was sampled January 2017, the next Fluoride is scheduled to be sampled in January 2022.

Table 5. Summary of lead testing under Schedule 15.1 during this reporting period.

Location Type	Number of Samples	Range of Lead Results		Number of Exceedances
		Minimum	Maximum	
Plumbing	n/a	n/a	n/a	n/a
Distribution (µg/L)	2	0.18	0.24	0

NOTE: The Foreman Drinking Water System qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). Distribution sampling for lead occurs every 36 months. One (1) distribution lead sample is taken during each sampling period (i.e. 2 samples for the sampling year). The most recent distribution lead sampling occurred in 2018. The next round of lead sampling is scheduled for 2021.

Table 6. Summary of Organic parameters sampled during this reporting period or most recent sample results.

Parameter	Sample Date	Result Value	Exceedance
Alachlor (µg/L) - TW	2016/01/10	<MDL 0.02	No
Atrazine + N-dealkylated metabolites (µg/L) - TW	2016/01/10	<MDL 0.01	No
Azinphos-methyl (µg/L) - TW	2016/01/10	<MDL 0.05	No
Benzene (µg/L) - TW	2016/01/10	<MDL 0.32	No
Benzo(a)pyrene (µg/L) - TW	2016/01/10	<MDL 0.004	No
Bromoxynil (µg/L) - TW	2016/01/10	<MDL 0.33	No
Carbaryl (µg/L) - TW	2016/01/10	<MDL 0.05	No
Carbofuran (µg/L) - TW	2016/01/10	<MDL 0.01	No
Carbon Tetrachloride (µg/L) - TW	2016/01/10	<MDL 0.16	No
Chlorpyrifos (µg/L) - TW	2016/01/10	<MDL 0.02	No
Diazinon (µg/L) - TW	2016/01/10	<MDL 0.02	No
Dicamba (µg/L) - TW	2016/01/10	<MDL 0.2	No
1,2-Dichlorobenzene (µg/L) - TW	2016/01/10	<MDL 0.41	No
1,4-Dichlorobenzene (µg/L) - TW	2016/01/10	<MDL 0.36	No
1,2-Dichloroethane (µg/L) - TW	2016/01/10	<MDL 0.35	No
1,1-Dichloroethylene (µg/L) - TW	2016/01/10	<MDL 0.33	No
Dichloromethane (Methylene Chloride) (µg/L) - TW	2016/01/10	<MDL 0.35	No
2,4-Dichlorophenol (µg/L) - TW	2016/01/10	<MDL 0.15	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW	2016/01/10	<MDL 0.19	No
Diclofop-methyl (µg/L) - TW	2016/01/10	<MDL 0.4	No
Dimethoate (µg/L) - TW	2016/01/10	<MDL 0.03	No
Diquat (µg/L) - TW	2016/01/10	<MDL 1.0	No
Diuron (µg/L) - TW	2016/01/10	<MDL 0.03	No
Glyphosate (µg/L) - TW	2016/01/10	<MDL 1.0	No
Malathion (µg/L) - TW	2016/01/10	<MDL 0.02	No
Metolachlor (µg/L) - TW	2016/01/10	<MDL 0.01	No
Metribuzin (µg/L) - TW	2016/01/10	<MDL 0.02	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW	2016/01/10	<MDL 0.3	No
Paraquat (µg/L) - TW	2016/01/10	<MDL 1.0	No
PCB (µg/L) - TW	2016/01/10	<MDL 0.04	No
Pentachlorophenol (µg/L) - TW	2016/01/10	<MDL 0.15	No
Phorate (µg/L) - TW	2016/01/10	<MDL 0.01	No
Picloram (µg/L) - TW	2016/01/10	<MDL 1.0	No
Prometryne (µg/L) - TW	2016/01/10	<MDL 0.03	No
Simazine (µg/L) - TW	2016/01/10	<MDL 0.01	No
Terbufos (µg/L) - TW	2016/01/10	<MDL 0.01	No
Tetrachloroethylene (µg/L) - TW	2016/01/10	<MDL 0.35	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW	2016/01/10	<MDL 0.2	No
Triallate (µg/L) - TW	2016/01/10	<MDL 0.01	No
Trichloroethylene (µg/L) - TW	2016/01/10	<MDL 0.44	No
2,4,6-Trichlorophenol (µg/L) - TW	2016/01/10	<MDL 0.25	No
Trifluralin (µg/L) - TW	2016/01/10	<MDL 0.02	No
Vinyl Chloride (µg/L) - TW	2016/01/10	<MDL 0.17	No
Trihalomethane: Total (µg/L) Annual Average - DW	2018 (Quarterly)	6.675	No
HAA Total (µg/L) Annual Average - DW	2018 (Quarterly)	5.3	n/a

NOTE: Schedule 23, Schedule 24, Sodium and Fluoride are scheduled to be taken every 60 months. The most recent Schedule 24 was sampled in January 2016, the next Schedule 24 is scheduled for January 2021.

Table 7. 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
Fluoride	1.3	mg/L	2017/01/09

NOTE: This is required only if DWS category is large municipal residential, small municipal residential, large municipal non-residential, small municipal non-residential, large non municipal non-residential)