



ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

WIARTON
DRINKING WATER SYSTEM

Large 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:

Drinking-Water System Number:	220002681
Drinking-Water System Name:	Warton Drinking Water System
Drinking-Water System Owner:	The Town of South Bruce Peninsula
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	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 January 6, 2022 for the period covering December 23, 2020 to January 6, 2022. On February 10, 2022 the Inspection Report was issued and an Inspection Summary Rating Record (IRR) of 100% was 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
N/A	N/A	N/A

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 Wiarton 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.

As required by the MDWL, regulatory flow measuring devices are checked/verified and where necessary, calibrated. These checks/verifications/calibrations are performed annually by a third party to ensure the flow measuring devices are within acceptable deviation limits.

2.1 Treated Water

Municipal Drinking Water License (MDWL):	094-102 (Issue Number: 4)
Allowable Rated Capacity:	5,400 m ³ /day
Allowable Flowrate into Treatment System:	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 ³ /day)	Percent of Rated Capacity	Maximum Flow (m ³ /day)	Percent of Rated Capacity	Total Volume (m ³)
January	908.7	16.8%	1,384	25.7%	28,171
February	862.6	16.0%	1,169	21.7%	24,152
March	862.7	16.0%	1,011	18.7%	26,743
April	832.8	15.4%	1,040	19.3%	24,984
May	916.1	17.0%	1,194	22.1%	28,398
June	950.7	17.6%	1,301	24.1%	28,521
July	1,077.5	20.0%	1,462	27.1%	33,402
August	1,038.6	19.3%	1,428	26.5%	32,197
September	871.3	16.2%	1,793	33.2%	26,140
October	809.6	15.0%	1,161	21.5%	25,098
November	802.7	14.9%	1,066	19.8%	24,081
December	792.6	14.7%	1,131	21.0%	24,570
2022	893.8	16.6%	1,793	33.2%	326,457

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	66.80	76.55
February	66.78	76.47
March	67.19	76.07
April	67.60	76.27
May	67.07	76.44
June	67.07	77.42
July	67.44	76.66
August	67.16	75.93
September	66.65	75.80
October	67.19	75.93
November	67.12	75.54
December	66.85	75.63
2022	67.08	77.42

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

Permit to Take Water Number:	5181-9DFR4C
Allowable Maximum Raw Water Volume – Georgian Bay:	5,394.1 m ³ /day
Allowable Maximum Raw Water Flowrate – Georgian Bay:	3,746 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 Monthly Average, Maximum Flow and Total Volume for 2022

Timeframe	Raw Water Flow – Georgian Bay				
	Average Flow (m ³ /day)	Percent of Allowable Volume	Maximum Flow (m ³ /day)	Percent of Allowable Volume	Total Volume (m ³)
January	986	18.3%	1479	27.4%	30,561
February	935	17.3%	1282	23.8%	26,173
March	948	17.6%	1155	21.4%	29,391
April	909	16.8%	1212	22.5%	27,261
May	984	18.2%	1232	22.8%	30,494
June	1031	19.1%	1343	24.9%	30,930
July	1160	21.5%	1615	29.9%	35,960
August	1120	20.8%	1517	28.1%	34,721
September	940	17.4%	1965	36.4%	28,209
October	885	16.4%	1201	22.3%	27,427
November	873	16.2%	1130	21.0%	26,201
December	862	16.0%	1265	23.4%	26,720
2022	969	18.0%	1,965	36.4%	354,048

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

Table 6. Raw Water Annual and Monthly Average and Maximum Flowrates for 2022

Timeframe	Raw Water Flowrate	
	Average Flowrate (L/sec)	Maximum Flowrate (L/sec)
January	48.91	53.62
February	48.63	52.79
March	49.19	52.82
April	49.51	53.14
May	50.04	53.67
June	50.27	54.43
July	50.47	53.96
August	50.10	53.85
September	49.71	53.57
October	49.49	52.97
November	41.45	53.77
December	40.59	52.86
2022	48.20	54.43

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



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Large 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:

Drinking Water System Number:	220002681
Drinking Water System Name:	Warton Drinking Water System
Drinking Water System Owner:	Town of South Bruce Peninsula
Drinking Water System Category:	Large Municipal Residential
Reporting Period:	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
Oliphant Drinking Water System	220007695
Oxenden Distribution System	260004215

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

How system users are notified that the annual report is available, and is free of charge:

- Public access/notice via the web
 Public access/notice via Government Office
 Public access/notice via a newspaper

<input checked="" 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 (O.Reg 170/03, Section 11.(6)(a)):

The Wiarton Drinking Water System (DWS) is a Class III Treatment and Class II Distribution System.

The Wiarton Water Treatment Plant is supplied by Colpoy's Bay (Georgian Bay). The treatment system consists of the following:

- A bar screen and standby travelling screen (low lift station section)
- Sodium hypochlorite (pre-chlorination for zebra mussel control and chlorination after filtration)
- Coagulation and Flocculation
- Filtration (dual media gravity filters)
- Waste Residual Management (filter backwash wastewater sedimentation tank with sludge withdrawal. Sludge is discharged to the sanitary sewer and the supernatant is dechlorinated and then discharged to Colpoy's Bay)
- Polymer system (for enhancing settling in the wastewater sedimentation tank)
- Sodium Bisulphate feed system (prior to flocculation or to raw water well for dechlorination/pH correction and to the wastewater residual management system for dechlorination)
- UV Disinfection System
- Activated carbon feed system for taste and odour control (currently is not being used)
- Clearwell (for storage and to achieve required contact time)
- SCADA System (for monitoring and control)
- Diesel generator set (for emergency back-up power)

The distribution system consists of the following:

- Wiarton Standpipe and Booster Station.
- Approximately 23.5 kilometers of distribution water mains

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

- Sodium Hypochlorite 12%
- PAX-XL1900 Coagulation
- LIPQIPAM A-307PG Flocculation
- Sodium Metabisulfite

Significant expenses were incurred to:

- | | |
|-------------------------------------|---------------------------------------|
| <input checked="" type="checkbox"/> | Install required equipment |
| <input checked="" type="checkbox"/> | Repair required equipment |
| <input checked="" type="checkbox"/> | Replace required equipment |
| <input type="checkbox"/> | 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)):

- | |
|---|
| <ul style="list-style-type: none"> • Replacement UV quartz sleeves • Chlorine analyzer repair kit • Replacement chlorine dosing pump • Replacement high lift pump and drive • Replacement booster pump motor • Distribution system repair parts |
|---|

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	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
N/A	N/A	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	52	0	NDOGT*	0	NDOGT*	N/A	N/A	N/A
Treated	52	0	0	0	0	52	0	2
Distribution	156	0	0	0	0	52	0	5

*NDOGT – No Data: Overgrown with Target Bacteria

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, Raw Water (NTU)	8760	0.02	10.00
Turbidity, Filter A (NTU)	8760	0.02	0.25
Turbidity, Filter B (NTU)	8760	0.02	0.43*
Free Chlorine Residual, Treated Water (mg/L)	8760	0.48**	3.17
Free Chlorine Residual, Distribution Water (mg/L)	730	0.45	1.38

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

*Spike caused by backwash cycle on July 4, 2022. Over 0.3 NTU for 5 minutes. Monthly filter efficiency met.

**Chlorine leak on pump on February 2, 2022. CT met.

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	7.4	25 mg/L
March 6, 2020 094-102 (Issue 4)	Total Chlorine Residual (Filter backwash)	2022 (Monthly)	12	0.00	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	2022/01/04	<MDL 0.6	6.0	No
Arsenic: As (ug/L) - TW	2022/01/04	0.3	10.0	No
Barium: Ba (ug/L) - TW	2022/01/04	13.9	1000.0	No
Boron: B (ug/L) - TW	2022/01/04	10.0	5000.0	No
Cadmium: Cd (ug/L) - TW	2022/01/04	0.005	5.0	No
Chromium: Cr (ug/L) - TW	2022/01/04	0.23	50.0	No
Mercury: Hg (ug/L) - TW	2022/01/04	<MDL 0.01	1.0	No
Selenium: Se (ug/L) - TW	2022/01/04	0.12	50.0	No
Uranium: U (ug/L) - TW	2022/01/04	0.061	20.0	No
Fluoride (mg/L) - TW	2018/01/08	0.07	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	2022/07/05	<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	0.259	10.0	No
Nitrate (mg/L) - TW	2022/04/04	0.261	10.0	No
Nitrate (mg/L) - TW	2022/07/05	0.233	10.0	No
Nitrate (mg/L) - TW	2022/10/03	0.229	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	2018/01/08 ^c	7.41	200 ^d	No	No

Note: MDL = Minimum Detection Limit

^cSodium is reportable every 60 months. Next set of sodium samples is scheduled to be sampled in 2023.

^dThere 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.	
Period: January 1 to April 15				
Plumbing – Lead (µg/L) ^a	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) ^b	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO ₃)	2	78	79	N/A
Distribution – pH	2	8.46	8.60	N/A
Period: June 15 to October 15				
Plumbing – Lead (µg/L) ^a	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) ^b	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO ₃)	2	71	73	N/A
Distribution – pH	2	8.27	8.33	N/A
Period: December 15 to 31				
Plumbing – Lead (µg/L) ^a	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) ^b	N/A	N/A	N/A	N/A
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.

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

^b 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	2022/01/04	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2022/01/04	<MDL 0.01	5.0	No
Azinphos-methyl (ug/L) - TW	2022/01/04	<MDL 0.05	20.0	No
Benzene (ug/L) - TW	2022/01/04	<MDL 0.32	1.0	No
Benzo(a)pyrene (ug/L) - TW	2022/01/04	<MDL 0.004	0.01	No
Bromoxynil (ug/L) - TW	2022/01/04	<MDL 0.33	5.0	No
Carbaryl (ug/L) - TW	2022/01/04	<MDL 0.05	90.0	No
Carbofuran (ug/L) - TW	2022/01/04	<MDL 0.01	90.0	No
Carbon Tetrachloride (ug/L) - TW	2022/01/04	<MDL 0.17	2.0	No
Chlorpyrifos (ug/L) - TW	2022/01/04	<MDL 0.02	90.0	No
Diazinon (ug/L) - TW	2022/01/04	<MDL 0.02	20.0	No
Dicamba (ug/L) - TW	2022/01/04	<MDL 0.2	120.0	No
1,2-Dichlorobenzene (ug/L) - TW	2022/01/04	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (ug/L) - TW	2022/01/04	<MDL 0.36	5.0	No
1,2-Dichloroethane (ug/L) - TW	2022/01/04	<MDL 0.35	5.0	No
1,1-Dichloroethylene (ug/L) - TW	2022/01/04	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2022/01/04	<MDL 0.35	50.0	No
2,4-Dichlorophenol (ug/L) - TW	2022/01/04	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2022/01/04	<MDL 0.19	100.0	No
Diclofop-methyl (ug/L) - TW	2022/01/04	<MDL 0.4	9.0	No
Dimethoate (ug/L) - TW	2022/01/04	<MDL 0.06	20.0	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: Wiarton Drinking Water System

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Diquat (ug/L) - TW	2022/01/04	<MDL 1.0	70.0	No
Diuron (ug/L) - TW	2022/01/04	<MDL 0.03	150.0	No
Glyphosate (ug/L) - TW	2022/01/04	<MDL 1.0	280.0	No
Malathion (ug/L) - TW	2022/01/04	<MDL 0.02	190.0	No
Metolachlor (ug/L) - TW	2022/01/04	<MDL 0.01	50.0	No
Metribuzin (ug/L) - TW	2022/01/04	<MDL 0.02	80.0	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2022/01/04	<MDL 0.3	80.0	No
Paraquat (ug/L) - TW	2022/01/04	<MDL 1.0	10.0	No
PCB (ug/L) - TW	2022/01/04	<MDL 0.04	3.0	No
Pentachlorophenol (ug/L) - TW	2022/01/04	<MDL 0.15	60.0	No
Phorate (ug/L) - TW	2022/01/04	<MDL 0.01	2.0	No
Picloram (ug/L) - TW	2022/01/04	<MDL 1.0	190.0	No
Prometryne (ug/L) - TW	2022/01/04	<MDL 0.03	1.0	No
Simazine (ug/L) - TW	2022/01/04	<MDL 0.01	10.0	No
Terbufos (ug/L) - TW	2022/01/04	<MDL 0.01	1.0	No
Tetrachloroethylene (ug/L) - TW	2022/01/04	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2022/01/04	<MDL 0.2	100.0	No
Triallate (ug/L) - TW	2022/01/04	<MDL 0.01	230.0	No
Trichloroethylene (ug/L) - TW	2022/01/04	<MDL 0.44	5.0	No
2,4,6-Trichlorophenol (ug/L) - TW	2022/01/04	<MDL 0.25	5.0	No
Trifluralin (ug/L) - TW	2022/01/04	<MDL 0.02	45.0	No
Vinyl Chloride (ug/L) - TW	2022/01/04	<MDL 0.17	1.0	No
Trihalomethane: Total (ug/L) Annual Average - DW	2022 (Quarterly)	32.75	100.0	No
HAA Total (ug/L) Annual Average - DW	2022 (Quarterly)	16.88	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
N/A	N/A	N/A