



# Ontario Clean Water Agency Agence Ontarienne Des Eaux

February 27, 2021

Steven Dollmaier, Director of Operations  
Township of Georgian Bluffs  
R.R.#3  
Owen Sound, Ontario  
N4K 5N5

## **Re: Requirement under O. Reg. 170/03 Annual Report**

Attached are the 2020 Annual Reports for the following systems (which are owned by the Township of Georgian Bluffs):

- Shallow Lake Drinking Water System
- East Linton Drinking Water System
- Pottawatomi Drinking Water System
- Oxenden Distribution System.

These reports were completed in accordance with Section 11 of O. Reg. 170/03, which requires an Annual Report to be prepared no later than February 28th of each year for the preceding calendar year.

Section 11 of O. Reg. 170/03, requires that if a drinking water system is connected to and receives all of its drinking water from another drinking water system, the owner of the system from which the water is obtained shall ensure that, when the annual report for the system is prepared, a copy of the report is given to the owner of the system that obtains the water. As such, please also find attached a copy of the 2020 Annual Report for:

- The Wiarton Drinking Water System (owned by the Town of South Bruce Peninsula)

Section 12 of O. Reg. 170/03 requires that the reports should be made available for inspection by any member of the public during normal business hours, without charge. The report should be made available at the office of the Township, or at a location that is reasonably convenient to the users of the water system.

Please acknowledge receipt of this document. Should you have any questions or comments regarding these reports, feel free to contact me at any time.

Sincerely,

A handwritten signature in black ink, appearing to read 'Leo-Paul Frigault'.

Leo-Paul Frigault  
Senior Operations Manager  
Ontario Clean Water Agency, Georgian Highlands Region



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

**SHALLOW LAKE**  
**DRINKING WATER SYSTEM**

Large Municipal Residential

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

For the period of  
**JANUARY 1, 2020 TO DECEMBER 31, 2020**

Prepared by the Ontario Clean Water Agency  
For The Township of Georgian Bluffs

<b>Drinking Water System Number:</b>	2220009096
<b>Drinking Water System Name:</b>	Shallow Lake Drinking Water System
<b>Drinking Water System Owner:</b>	Township of Georgian Bluffs
<b>Drinking Water System Category:</b>	Large Municipal Residential
<b>Reporting Period:</b>	January 1, 2020 to December 31, 2020

**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:**

Georgian Bluffs Municipal Office  
 177964 Grey Road #18  
 R.R. #3 Owen Sound, ON N4K 5N5

**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:**

- Public access/notice via the web
- Public access/notice via Government Office
- 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: \_\_\_\_\_

**Description of Drinking Water System:**

The Shallow Lake Drinking Water System (DWS) is Class III Treatment and Class I Distribution System. The treatment plant is supplied by 2 deep drilled GUDI wells and consists of the following:

- Potassium permanganate dosing system (upstream of green sand filtration to assist with iron and manganese removal)
- Greensand filtration (for iron and manganese removal)
- Coagulation, flocculation and settling
- Dual media filtration (sand/anthracite)
- Anion resin exchange system (to remove inorganics)
- Waste Residual Management System (waste from filter backwash and ion exchange is stored in a holding/disposal tank)
- Sodium hypochlorite addition (for primary and secondary disinfection/ trim chlorination)
- UV Disinfection System - Two (2) UV reactor units (one duty and one standby)
- Reservoir/contact tank (for onsite storage to help achieve the required contact time)
- Integrated process and instrumentation control system (for system control and data acquisition)
- Standby diesel engine generator set (back-up power supply)

**List of water treatment chemicals used during the reporting period:**

- Sodium Hypochlorite, 12%
- Polyaluminum Chloride (PACl)
- Potassium Permanganate

**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 expenses:**

- Float Switch
- LED lamps for MCC panels
- Replacement Chemline PVC ball valves for chemical dosing system
- Multiple distribution system parts
- Replacement APC Pro Battery back up
- Replacement batteries for PLC
- Multiple schedule 80 parts for plant plumbing
- Multiple parts for UV system installation
- Third party annual maintenance on diesel generator
- Replacement batteries for Diesel genset
- New mag flow meter to monitor flow through UV system
- Replacement pressure transducer for Brine Tank
- Chemical dosing pumps rebuild kits

**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 2 (PW3)	52	0	140	10	NDOGT*	n/a	n/a	n/a
Well 1 (PW2, Standby)	52	0	250	10	2300	n/a	n/a	n/a
Treated (TW)	52	0	0	0	0	52	0	50
Distribution (DW)	104	0	0	0	0	52	0	180

\*No Data: Overgrown with Target Bacteria

**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
<b>Turbidity, On-Line (NTU) – Filter 1</b>	8760	0.02	0.44
<b>Turbidity, On-Line (NTU) – Filter 2</b>	8760	0	1.32*
<b>Free Chlorine Residual, On-Line (mg/L) - TW</b>	8760	1.05	2.52
<b>Free Chlorine Residual, In-House (mg/L) - DW</b>	366	0.63	2.15

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

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

\*Turbidity spiked on January 14 for less than 3 minutes. No adverse.

**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
n/a	n/a	n/a	n/a	n/a

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

Parameter	Sample Date (mm/dd/yyyy)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance
Antimony: Sb (ug/L) - TW	2020/01/13	<MDL 0.09	6.0	No
Arsenic: As (ug/L) - TW	2020/01/13	<MDL 0.2	10.0	No
Barium: Ba (ug/L) - TW	2020/01/13	4.06	1000.0	No
Boron: B (ug/L) - TW	2020/01/13	10.0	5000.0	No
Cadmium: Cd (ug/L) - TW	2020/01/13	0.005	5.0	No
Chromium: Cr (ug/L) - TW	2020/01/13	0.12	50.0	No
Mercury: Hg (ug/L) - TW	2020/01/13	<MDL 0.01	1.0	No
Selenium: Se (ug/L) - TW	2020/01/13	<MDL 0.04	50.0	No
Uranium: U (ug/L) - TW	2020/01/13	0.008	20.0	No
Fluoride (mg/L) - TW	2016/07/04	0.09	1.5	No
Nitrite (mg/L) - TW	2020/01/07	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/04/06	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/07/06	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/10/05	<MDL 0.003	1.0	No
Nitrate (mg/L) - TW	2020/01/07	0.393	10.0	No
Nitrate (mg/L) - TW	2020/04/06	0.748	10.0	No
Nitrate (mg/L) - TW	2020/07/06	0.196	10.0	No
Nitrate (mg/L) - TW	2020/10/05	0.145	10.0	No
Sodium: Na (mg/L) - TW	2016/07/04	11.3	20*	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: Fluoride and Sodium are to be sampled every 60 months. The most current samples for Fluoride and Sodium were taken on July 4, 2016. The next set of Sodium samples are to be taken in April 2021

**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
Lead (µg/L) - DW	2	0.10	0.11	0
Alkalinity (mg/L) - DW	2	179	228	0

NOTE: This system qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). Two (2) distribution lead samples are each year. (i.e. 1 sample per period).

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

Parameter	Sample Date	Result Value	MAC	Exceedance
Alachlor (µg/L) - TW	2020/01/13	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (µg/L) - TW	2020/01/13	<MDL 0.01	5.0	No
Azinphos-methyl (µg/L) - TW	2020/01/13	<MDL 0.05	20.0	No
Benzene (µg/L) - TW	2020/01/13	<MDL 0.32	1.0	No
Benzo(a)pyrene (µg/L) - TW	2020/01/13	<MDL 0.004	0.01	No
Bromoxynil (µg/L) - TW	2020/01/13	<MDL 0.33	5.0	No
Carbaryl (µg/L) - TW	2020/01/13	<MDL 0.05	90.0	No
Carbofuran (µg/L) - TW	2020/01/13	<MDL 0.01	90.0	No
Carbon Tetrachloride (µg/L) - TW	2020/01/13	<MDL 0.17	2.0	No
Chlorpyrifos (µg/L) - TW	2020/01/13	<MDL 0.02	90.0	No
Diazinon (µg/L) - TW	2020/01/13	<MDL 0.02	20.0	No
Dicamba (µg/L) - TW	2020/01/13	<MDL 0.2	120.0	No
1,2-Dichlorobenzene (µg/L) - TW	2020/01/13	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (µg/L) - TW	2020/01/13	<MDL 0.36	5.0	No
1,2-Dichloroethane (µg/L) - TW	2020/01/13	<MDL 0.35	5.0	No
1,1-Dichloroethylene (µg/L) - TW	2020/01/13	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (µg/L) - TW	2020/01/13	<MDL 0.35	50.0	No
2,4-Dichlorophenol (µg/L) - TW	2020/01/13	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW	2020/01/13	<MDL 0.19	100.0	No
Diclofop-methyl (µg/L) - TW	2020/01/13	<MDL 0.4	9.0	No
Dimethoate (µg/L) - TW	2020/01/13	<MDL 0.06	20.0	No
Diquat (µg/L) - TW	2020/01/13	<MDL 1.0	70.0	No
Diuron (µg/L) - TW	2020/01/13	<MDL 0.03	150.0	No
Glyphosate (µg/L) - TW	2020/01/13	<MDL 1.0	280.0	No
Malathion (µg/L) - TW	2020/01/13	<MDL 0.02	190.0	No
Metolachlor (µg/L) - TW	2020/01/13	<MDL 0.01	50.0	No
Metribuzin (µg/L) - TW	2020/01/13	<MDL 0.02	80.0	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW	2020/01/13	<MDL 0.3	80.0	No
Paraquat (µg/L) - TW	2020/01/13	<MDL 1.0	10.0	No
PCB (µg/L) - TW	2020/01/13	<MDL 0.04	3.0	No
Pentachlorophenol (µg/L) - TW	2020/01/13	<MDL 0.15	60.0	No
Phorate (µg/L) - TW	2020/01/13	<MDL 0.01	2.0	No
Picloram (µg/L) - TW	2020/01/13	<MDL 1.0	190.0	No
Prometryne (µg/L) - TW	2020/01/13	<MDL 0.03	1.0	No
Simazine (µg/L) - TW	2020/01/13	<MDL 0.01	10.0	No
Terbufos (µg/L) - TW	2020/01/13	<MDL 0.01	1.0	No
Tetrachloroethylene (µg/L) - TW	2020/01/13	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW	2020/01/13	<MDL 0.2	100.0	No
Triallate (µg/L) - TW	2020/01/13	<MDL 0.01	230.0	No
Trichloroethylene (µg/L) - TW	2020/01/13	<MDL 0.44	5.0	No
2,4,6-Trichlorophenol (µg/L) - TW	2020/01/13	<MDL 0.25	5.0	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (µg/L) - TW	2020/01/13	<MDL 0.12	100	No
Trifluralin (µg/L) - TW	2020/01/13	<MDL 0.02	45.0	No
Vinyl Chloride (µg/L) - TW	2020/01/13	<MDL 0.17	1.0	No
Trihalomethane: Total (µg/L) Running Annual Average - DW	Quarterly (2020)	31.25	100.0	No
Haloacetic Acids: Total (µg/L) Running Annual Average - DW	Quarterly (2020)	17.9	80.0	No

**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
n/a	n/a	n/a	n/a

*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*



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

**EAST LINTON**  
**DRINKING WATER SYSTEM**

Large Municipal Residential

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

For the period of  
**JANUARY 1, 2020 TO DECEMBER 31, 2020**

Prepared by the Ontario Clean Water Agency  
For The Township of Georgian Bluffs

<b>Drinking Water System Number:</b>	220007659
<b>Drinking Water System Name:</b>	East Linton Drinking Water System
<b>Drinking Water System Owner:</b>	Township of Georgian Bluffs
<b>Drinking Water System Category:</b>	Large Municipal Residential
<b>Reporting Period:</b>	January 1, 2020 to December 31, 2020

**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:**

Georgian Bluffs Municipal Office  
177964 Grey Road #18  
R.R. #3 Owen Sound, ON  
N4K 5N5

**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 East Linton Drinking Water System is supplied by Georgian Bay (surface water) via a low lift pumping station which provides pre-chlorination on an as needed basis for zebra mussel control. The water treatment facility consists of the following:

- Chlorination system (hypochlorite injected upstream of membrane filtration system)
- Membrane filtration system (2 units in parallel)
- UV disinfection system (3 reactors)
- Facility wide integrated process control system
- Waste residual management system (storage, re-treatment, disposal)
- Standby power generator set

A back-up power connection is installed at the low-lift building to bring in a portable generator (if required).

A water tower is located in the distribution system and used to provide storage and pressure to the system.



**List of water treatment chemicals used during the reporting period:**

- Sodium Hypochlorite, 12%
- Sodium Hydroxide
- Citric Acid

**Significant expenses were incurred to:**

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

**Description of expenses:**

- Solenoid valve installation
- Replacement personal gas detector
- Chemical dosing system replacement parts
- New ICE PIC for Turbidimeter verification
- New timers for UV Systems
- Multiple distribution system parts
- Multiple schedule 80 parts for plant plumbing
- Repair parts for online transmittance monitoring unit
- Replacement online turbidity analyzer and parts
- Third party annual maintenance on diesel generator
- Replacement dehumidifier for WTP
- Chemical dosing system rebuild kits
- Replacement Pall Filtration System filtration system module (cartridge)
- Multiple repairs to Pall skid air header
- Pall skid T1 tank replacement

**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
June 17, 2020	Total Coliform/Escherichia coli (E.coli)	1 TC/ 1 EC	cfu/100 mL	1. June 17 – Operations staff resampled at site of adverse and upstream and downstream of sites 2. June 17 – Operations staff established that chlorine residuals were above 0.2 mg/L 3. June 17 – Operations staff flushed lines 4. June 17 – No boil water advisory issued after discussions with MECP and GBHU 5. June 19 – Laboratory results received from June 17 resample showing 0 cfu/100mL E. coli and 0 cfu/100mL Total Coliforms 6. June 19 – Resampling of adverse site, upstream and downstream location, 24-48 hours after June 17 resample 7. June 22 – Laboratory results received from June 19 resample showing 0 cfu/100mL E. coli and 0 cfu/100mL Total Coliforms. <b>Resolved.</b>	June 17, 2020 (AWQI# 150277)

**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
Raw Water (RW)	53	0	1	0	440	n/a	n/a	n/a
Treated (TW)	53	0	0	0	0	53	0	10
Distribution (DW)	124	0	1	0	1*	54	0	20

\*See "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" for further details.

**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) - FiltA	8760	0	0.35
Turbidity, On-Line (NTU) - FiltB	8760	0	0.21
Free Chlorine Residual, On-Line (mg/L) - TW	8760	0.95	3.33
Free Chlorine Residual, In-House (mg/L) - DW	366	0.65	2.03

NOTE: For continuous monitors 8760 is used 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
n/a	n/a	n/a	n/a	n/a

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

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance
Antimony: Sb (µg/L) - TW	2020/01/13	0.13	6.0	No
Arsenic: As (µg/L) - TW	2020/01/13	0.4	10.0	No
Barium: Ba (µg/L) - TW	2020/01/13	13.5	1000.0	No
Boron: B (µg/L) - TW	2020/01/13	13.0	5000.0	No
Cadmium: Cd (µg/L) - TW	2020/01/13	0.004	5.0	No
Chromium: Cr (µg/L) - TW	2020/01/13	0.16	50.0	No
Mercury: Hg (µg/L) - TW	2020/01/13	<MDL 0.01	1.0	No
Selenium: Se (µg/L) - TW	2020/01/13	0.1	50.0	No
Uranium: U (µg/L) - TW	2020/01/13	0.19	20.0	No
Fluoride (mg/L) - TW	2016/07/04	0.11	1.5	No
Nitrite (mg/L) - TW	2020/01/07	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/04/06	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/07/06	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/10/05	<MDL 0.003	1.0	No
Nitrate (mg/L) - TW	2020/01/07	0.266	10.0	No
Nitrate (mg/L) - TW	2020/04/06	0.275	10.0	No
Nitrate (mg/L) - TW	2020/07/06	0.254	10.0	No
Nitrate (mg/L) - TW	2020/10/05	0.219	10.0	No
Sodium: Na (mg/L) - TW	2016/07/04	6.92	20*	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: Fluoride and Sodium are to be sampled every 60 months. The most recent samples for Fluoride and Sodium were taken on July 4, 2016. The next set of Fluoride and Sodium samples are to be taken in 2021.

**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
Lead (µg/L) - DW	4	0.05	0.15	0
Alkalinity (mg/L) as CaCO <sub>3</sub> - DW	4	71	76	0

*NOTE: This system now qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). Four (4) distribution lead samples are only taken every 12 months. (i.e. 2 samples per period).*

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

Parameter	Sample Date (yyyy/mm/dd)	Result Value	MAC	Exceedance
Alachlor (µg/L) - TW	2020/01/13	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (µg/L) - TW	2020/01/13	<MDL 0.01	5.0	No
Azinphos-methyl (µg/L) - TW	2020/01/13	<MDL 0.05	20.0	No
Benzene (µg/L) - TW	2020/01/13	<MDL 0.32	1.0	No
Benzo(a)pyrene (µg/L) - TW	2020/01/13	<MDL 0.004	0.01	No
Bromoxynil (µg/L) - TW	2020/01/13	<MDL 0.33	5.0	No
Carbaryl (µg/L) - TW	2020/01/13	<MDL 0.05	90.0	No
Carbofuran (µg/L) - TW	2020/01/13	<MDL 0.01	90.0	No
Carbon Tetrachloride (µg/L) - TW	2020/01/13	<MDL 0.17	2.0	No
Chlorpyrifos (µg/L) - TW	2020/01/13	<MDL 0.02	90.0	No
Diazinon (µg/L) - TW	2020/01/13	<MDL 0.02	20.0	No
Dicamba (µg/L) - TW	2020/01/13	<MDL 0.2	120.0	No
1,2-Dichlorobenzene (µg/L) - TW	2020/01/13	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (µg/L) - TW	2020/01/13	<MDL 0.36	5.0	No
1,2-Dichloroethane (µg/L) - TW	2020/01/13	<MDL 0.35	5.0	No
1,1-Dichloroethylene (µg/L) - TW	2020/01/13	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (µg/L) - TW	2020/01/13	<MDL 0.35	50.0	No
2,4-Dichlorophenol (µg/L) - TW	2020/01/13	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW	2020/01/13	<MDL 0.19	100.0	No
Diclofop-methyl (µg/L) - TW	2020/01/13	<MDL 0.4	9.0	No
Dimethoate (µg/L) - TW	2020/01/13	<MDL 0.06	20.0	No
Diquat (µg/L) - TW	2020/01/13	<MDL 1.0	70.0	No
Diuron (µg/L) - TW	2020/01/13	<MDL 0.03	150.0	No
Glyphosate (µg/L) - TW	2020/01/13	<MDL 1.0	280.0	No
Malathion (µg/L) - TW	2020/01/13	<MDL 0.02	190.0	No
Metolachlor (µg/L) - TW	2020/01/13	<MDL 0.01	50.0	No
Metribuzin (µg/L) - TW	2020/01/13	<MDL 0.02	80.0	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW	2020/01/13	<MDL 0.3	80.0	No
Paraquat (µg/L) - TW	2020/01/13	<MDL 1.0	10.0	No
PCB (µg/L) - TW	2020/01/13	<MDL 0.04	3.0	No
Pentachlorophenol (µg/L) - TW	2020/01/13	<MDL 0.15	60.0	No
Phorate (µg/L) - TW	2020/01/13	<MDL 0.01	2.0	No
Picloram (µg/L) - TW	2020/01/13	<MDL 1.0	190.0	No
Prometryne (µg/L) - TW	2020/01/13	<MDL 0.03	1.0	No
Simazine (µg/L) - TW	2020/01/13	<MDL 0.01	10.0	No
Terbufos (µg/L) - TW	2020/01/13	<MDL 0.01	1.0	No
Tetrachloroethylene (µg/L) - TW	2020/01/13	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW	2020/01/13	<MDL 0.2	100.0	No
Triallate (µg/L) - TW	2020/01/13	<MDL 0.01	230.0	No
Trichloroethylene (µg/L) - TW	2020/01/13	<MDL 0.44	5.0	No
2,4,6-Trichlorophenol (µg/L) - TW	2020/01/13	<MDL 0.25	5.0	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (µg/L) - TW	2020/01/13	<MDL 0.12	100	No
Trifluralin (µg/L) - TW	2020/01/13	<MDL 0.02	45.0	No
Vinyl Chloride (µg/L) - TW	2020/01/13	<MDL 0.17	1.0	No
Trihalomethane: Total (µg/L), Running Annual Average - DW	Quarterly (2020)	54.0	100.0	No
Haloacetic Acids: Total (µg/L), Running Annual Average - DW	Quarterly (2020)	28.1	80.0	No

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

<b>Parameter</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Date of Sample</b>
Trihalomethane: Total Running Annual Average - DW	54.0 (RAA)	µg/L	January 7, 2020; April 6, 2020; July 6, 2020; October 5, 2020

*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*



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

**OXENDEN**  
**DISTRIBUTION SYSTEM**

Large Municipal Residential

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

For the period of  
**JANUARY 1, 2020 TO DECEMBER 31, 2020**

Prepared by the Ontario Clean Water Agency  
For The Township of Georgian Bluffs

<b>Drinking Water System Number:</b>	220004215
<b>Drinking Water System Name:</b>	Oxenden Distribution System
<b>Drinking Water System Owner:</b>	Township of Georgian Bluffs
<b>Drinking Water System Category:</b>	Large Municipal Residential
<b>Reporting Period:</b>	January 1, 2020 to December 31, 2020

**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:**

Georgian Bluffs Municipal Office  
177964 Grey Road #18  
R.R. #3 Owen Sound, ON  
N4K 5N5

**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:**

- Public access/notice via the web
- Public access/notice via Government Office
- 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: \_\_\_\_\_

**Description of Drinking Water System:**

Oxenden Distribution System is supplied by water from the Wiarton Water Treatment Plant which is owned by the Town of South Bruce Peninsula.

**List of water treatment chemicals used during the reporting period:**

n/a.

**Significant expenses were incurred to:**

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

**Description of expenses:**

- Multiple distribution system parts

**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
July 8, 2020	Total Coliform	1	cfu/100 mL	1. July 8 – Operations staff resampled at site of adverse upstream and downstream sites 2. July 8 – Operations staff established that chlorine residuals were above 0.2 mg/L 3. July 8 – Operations staff flushed lines 4. July 8 – No boil water advisory issued after discussions with GBHU 5. July 10 – Resampling at adverse site, upstream and downstream locations, 24-48 hours after July 8 resample 6. July 10 – Laboratory results received from July 8 resample showing 0 cfu/100mL E. coli and 0 cfu/100mL Total Coliforms 7. July 14 – Laboratory results received from July 10 resample showing 0 cfu/100mL E. coli and 0 cfu/100mL Total Coliforms. <b>Resolved.</b>	July 8, 2020 AWQI# 150569

**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
Raw Water (RW)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Treated (TW)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Distribution (DW)	116	0	0	0	1*	53	0	10

\*See “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” for additional details.

**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
Free Chlorine Residual, In-House (mg/L) - DW	419	0.35	1.21

NOTE: For continuous monitors 8760 is used 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
n/a	n/a	n/a	n/a	n/a

**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
n/a	n/a	n/a	n/a

**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	0.04	0.05	0
Alkalinity (mg/L as CaCO <sub>3</sub> )	2	74	77	0

*NOTE: This system now qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). Two (2) distribution lead samples are only taken every 12 months. (i.e. 1 sample per period).*

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

Parameter	Sample Date (yyyy/mm/dd)	Result Value	MAC*	Exceedance
Trihalomethane: Total (µg/L) Running Annual Average - DW	2020 (Quarterly)	41.00	100	No
HAA Total (µg/L) Running Annual Average - DW	2020 (Quarterly)	17.45	80	No

\*MAC: Maximum Acceptable Concentration

**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
n/a	n/a	n/a	n/a

*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)*





**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

**POTTAWATOMI**  
**DRINKING WATER SYSTEM**

Small Municipal Residential

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

For the period of  
**JANUARY 1, 2020 TO DECEMBER 31, 2020**

Prepared by the Ontario Clean Water Agency  
For The Township of Georgian Bluffs

<b>Drinking Water System Number:</b>	220008319
<b>Drinking Water System Name:</b>	Pottawatomi Drinking Water System
<b>Drinking Water System Owner:</b>	Township of Georgian Bluffs
<b>Drinking Water System Category:</b>	Small Municipal Residential
<b>Reporting Period:</b>	January 1, 2020 to December 31, 2020

**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:**

Georgian Bluffs Municipal Office  
 177964 Grey Road #18  
 R.R. #3 Owen Sound, ON  
 N4K 5N5

**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:**

- Public access/notice via the web
- Public access/notice via Government Office
- 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: \_\_\_\_\_

**Description of Drinking Water System:**

The Pottawatomi Drinking Water System is supplied by a deep drilled (GUDI) groundwater well (PW 2). The water treatment facility is equipped with the following:

- a cartridge filtration system (used as pretreatment for the UV disinfection system),
- a two stage disinfection system consisting of:
  - UV Disinfection System (3 UV reactors in parallel)
  - Chlorination System (Sodium Hypochlorite)
- A sodium silicates injection system (downstream of the UV units) for iron sequestration
- Facility-wide integrated process and instrumentation control system and;
- A stand-by generator set

**List of water treatment chemicals used during the reporting period:**

- Sodium Hypochlorite, 6%
- Sodium Silicate

**Significant expenses were incurred to:**

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

**Description of expenses:**

- Ballast replacement for UV Systems
- Quartz sleeve replacement kit for UV Systems
- Replacement reflectors for UV systems
- Replacement filter cartridges
- Multiple schedule 80 parts for plant plumbing
- Raw water line and well pipe repair
- Replacement UV sensor

**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
July 8, 2020	Total Coliform	22	cfu/mL	1. July 8 – Operations staff resampled at site of adverse and 2 upstream sites, as the adverse was the furthest downstream site and it was not “reasonably possible” to sample downstream 2. July 8 – Operations staff established that chlorine residuals were above 0.2 mg/L 3. July 8 – Operations staff flushed lines 4. July 8 – No boil water advisory issued after discussions with GBHU 5. July 10 – Resampling of adverse site and 2 upstream locations, 24-48 hours after July 8 resample 6. July 10 – Laboratory results received from July 8 resample showing 0 cfu/100mL E. coli and 0 cfu/100mL Total Coliforms 7. July 14 – Laboratory results received from July 10 resample showing 0 cfu/100mL E. coli and 0 cfu/100mL Total Coliforms. <b>Resolved.</b>	July 8, 2020 AWQI #150560

**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 2 (RW)	12	0	0	0	0	n/a	n/a	n/a
Distribution (DW)	59	0	0	0	22	55	0	120

*\*See “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” for additional details.*

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

	Number of Samples	Range of Results	
		Minimum	Maximum
<b>Turbidity (NTU) - TW</b>	366	0.02	0.76
<b>Free Chlorine Residual (mg/L) - TW</b>	366	1.22	2.78
<b>Free Chlorine Residual, In-House (mg/L) - DW</b>	164	0.95	2.20
<b>Free Chlorine Residual, Field (mg/L) - DW</b>	68	0.95	2.15

NOTE: For continuous monitors 8760 is used 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
n/a	n/a	n/a	n/a	n/a

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

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance
Antimony: Sb (µg/L) - TW	2017/01/09	<MDL 0.02	6.0	No
Arsenic: As (µg/L) - TW	2017/01/09	3.0	10.0	No
Barium: Ba (µg/L) - TW	2017/01/09	73.5	1000.0	No
Boron: B (µg/L) - TW	2017/01/09	216.0	5000.0	No
Cadmium: Cd (µg/L) - TW	2017/01/09	0.003	5.0	No
Chromium: Cr (µg/L) - TW	2017/01/09	0.55	50.0	No
Mercury: Hg (µg/L) - TW	2017/01/09	<MDL 0.01	1.0	No
Selenium: Se (µg/L) - TW	2017/01/09	0.09	50.0	No
Uranium: U (µg/L) - TW	2017/01/09	0.078	20.0	No
Fluoride (mg/L) - TW	2016/07/04	0.15	1.5	No
Nitrite (mg/L) - TW	2020/01/07	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/04/06	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/07/06	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/10/05	<MDL 0.003	1.0	No
Nitrate (mg/L) - TW	2020/01/07	0.014	10.0	No
Nitrate (mg/L) - TW	2020/04/06	0.009	10.0	No
Nitrate (mg/L) - TW	2020/07/06	0.008	10.0	No
Nitrate (mg/L) - TW	2020/10/05	<MDL 0.006	10.0	No
Sodium: Na (mg/L) - TW	2016/07/04	15.9	20*	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: Fluoride and Sodium are to be sampled every 60 months. The most current samples for Fluoride and Sodium were taken on July 4, 2016. The next set of Fluoride and Sodium samples are to be taken in 2021.

NOTE: For small municipal residential systems, Schedule 23 & 24 samples are to be taken every 60 months. The most current Schedule 23 & 24 samples were taken in January 2017 the next set of samples 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)	4	0.28	1.68	0
Alkalinity (mg/L)	4	207	235	0

NOTE: This system now qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). Four (4) distribution lead samples are only taken every 12 months. (i.e. 2 samples per period).

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

Parameter	Sample Date (yyyy/mm/dd)	Result Value	MAC	Exceedance
Alachlor (µg/L) - TW	2017/01/09	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (µg/L) - TW	2017/01/09	<MDL 0.01	5.0	No
Azinphos-methyl (µg/L) - TW	2017/01/09	<MDL 0.05	20.0	No
Benzene (µg/L) - TW	2017/01/09	<MDL 0.32	1.0	No
Benzo(a)pyrene (µg/L) - TW	2017/01/09	<MDL 0.004	0.01	No
Bromoxynil (µg/L) - TW	2017/01/09	<MDL 0.33	5.0	No
Carbaryl (µg/L) - TW	2017/01/09	<MDL 0.05	90.0	No
Carbofuran (µg/L) - TW	2017/01/09	<MDL 0.01	90.0	No
Carbon Tetrachloride (µg/L) - TW	2017/01/09	<MDL 0.16	2.0	No
Chlorpyrifos (µg/L) - TW	2017/01/09	<MDL 0.02	90.0	No
Diazinon (µg/L) - TW	2017/01/09	<MDL 0.02	20.0	No
Dicamba (µg/L) - TW	2017/01/09	<MDL 0.2	120.0	No
1,2-Dichlorobenzene (µg/L) - TW	2017/01/09	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (µg/L) - TW	2017/01/09	<MDL 0.36	5.0	No
1,2-Dichloroethane (µg/L) - TW	2017/01/09	<MDL 0.35	5.0	No
1,1-Dichloroethylene (µg/L) - TW	2017/01/09	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (µg/L) - TW	2017/01/09	<MDL 0.35	50.0	No
2,4-Dichlorophenol (µg/L) - TW	2017/01/09	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW	2017/01/09	<MDL 0.19	100.0	No
Diclofop-methyl (µg/L) - TW	2017/01/09	<MDL 0.4	9.0	No
Dimethoate (µg/L) - TW	2017/01/09	<MDL 0.03	20.0	No
Diquat (µg/L) - TW	2017/01/09	<MDL 1.0	70.0	No
Diuron (µg/L) - TW	2017/01/09	<MDL 0.03	150.0	No
Glyphosate (µg/L) - TW	2017/01/09	<MDL 1.0	280.0	No
Malathion (µg/L) - TW	2017/01/09	<MDL 0.02	190.0	No
Metolachlor (µg/L) - TW	2017/01/09	<MDL 0.01	50.0	No
Metribuzin (µg/L) - TW	2017/01/09	<MDL 0.02	80.0	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW	2017/01/09	<MDL 0.3	80.0	No
Paraquat (µg/L) - TW	2017/01/09	<MDL 1.0	10.0	No
PCB (µg/L) - TW	2017/01/09	<MDL 0.04	3.0	No
Pentachlorophenol (µg/L) - TW	2017/01/09	<MDL 0.15	60.0	No
Phorate (µg/L) - TW	2017/01/09	<MDL 0.01	2.0	No
Picloram (µg/L) - TW	2017/01/09	<MDL 1.0	190.0	No
Prometryne (µg/L) - TW	2017/01/09	<MDL 0.03	1.0	No
Simazine (µg/L) - TW	2017/01/09	<MDL 0.01	10.0	No
Terbufos (µg/L) - TW	2017/01/09	<MDL 0.01	1.0	No
Tetrachloroethylene (µg/L) - TW	2017/01/09	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW	2017/01/09	<MDL 0.2	100.0	No
Triallate (µg/L) - TW	2017/01/09	<MDL 0.01	230.0	No
Trichloroethylene (µg/L) - TW	2017/01/09	<MDL 0.44	5.0	No
2,4,6-Trichlorophenol (µg/L) - TW	2017/01/09	<MDL 0.25	5.0	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (µg/L) - TW	2017/01/09	<MDL 0.12	100	No
Trifluralin (µg/L) - TW	2017/01/09	<MDL 0.02	45.0	No
Vinyl Chloride (µg/L) - TW	2017/01/09	<MDL 0.17	1.0	No
Trihalomethane: Total (µg/L) Running Annual Average - DW	Quarterly (2020)	5.15	100.0	No
Haloacetic Acids: Total (µg/L) Running Annual Average - DW	Quarterly (2020)	5.3	80.0	No

NOTE: For small municipal residential systems, Schedule 23 & 24 samples are to be taken every 60 months. The most current Schedule 23 & 24 samples were taken in January 2017 the next set of samples is scheduled to be sampled in January 2022.

**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
n/a	n/a	n/a	n/a

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



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

**WIARTON**  
**DRINKING WATER SYSTEM**

Large Municipal Residential

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

**For the period of**  
**JANUARY 1, 2020 TO DECEMBER 31, 2020**

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

<b>Drinking Water System Number:</b>	220002681
<b>Drinking Water System Name:</b>	Warton Drinking Water System
<b>Drinking Water System Owner:</b>	Town of South Bruce Peninsula
<b>Drinking Water System Category:</b>	Large Municipal Residential
<b>Reporting Period:</b>	January 1, 2020 to December 31, 2020

**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  
Warton, Ontario  
N0H 2T0

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

- Oxenden Distribution System (260004215)
- Oliphant Drinking Water System (220007695)

**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?**

Yes

**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 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 during the reporting period:**

- 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 expenses:**

- Replacement battery back-up units
- Schedule 80 repair parts
- Distribution system repair parts
- Replacement UV system sensor
- Replacement Conventional Filtration System level transmitter
- Chemical dosing system repair parts
- Wiarton WTP replacement alarm dialer

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
Raw (RW)	53	0	62	0	117	n/a	n/a	n/a
Treated (TW)	53	0	0	0	0	523	0	NDOGHPC*
Distribution (DW)	167	0	0	0	0	52	0	10

\*No Data: Overgrown with HPC

**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) - Filt1	8760	0.00	0.82
Turbidity, On-Line (NTU) - Filt2	8760	0.00	0.43
Free Chlorine Residual, On-Line (mg/L) - TW	8760	0.69	1.99
Free Chlorine Residual, In-House (mg/L) - DW	731	0.30	1.58

**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
January 12, 2018 094-102 (Issue 3)/ March 6, 2020 094-102 (Issue 4)	Total Suspended Solids (Filter backwash)	2020 (Monthly)	9.2 mg/L	25 mg/L
March 6, 2020 094-102 (Issue 4)	Total Chlorine Residual (Filter backwash)	2020 (Monthly)	0.00 mg/L	0.02 mg/L

NOTE: MDWL 094-102, Issue 3 required Quarterly samples of TSS; MDWL 094-102, Issue 4 requires Monthly samples of TSS, TCR (Monthly sampling initiated upon issuance of Issue 4 on March 6, 2020.)

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

	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance
Antimony: Sb (µg/L) - TW	2020/01/07	0.11	6.0	No
Arsenic: As (µg/L) - TW	2020/01/07	0.3	10.0	No
Barium: Ba (µg/L) - TW	2020/01/07	14.1	1000.0	No
Boron: B (µg/L) - TW	2020/01/07	12.0	5000.0	No
Cadmium: Cd (µg/L) - TW	2020/01/07	<MDL 0.003	5.0	No
Chromium: Cr (µg/L) - TW	2020/01/07	0.16	50.0	No
Mercury: Hg (µg/L) - TW	2020/01/07	<MDL 0.01	1.0	No
Selenium: Se (µg/L) - TW	2020/01/07	0.1	50.0	No
Uranium: U (µg/L) - TW	2020/01/07	0.066	20.0	No
Fluoride (mg/L) - TW	2018/01/08	0.07	1.5	No
Nitrite (mg/L) - TW	2020/01/07	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/04/06	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/07/06	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2020/10/05	<MDL 0.003	1.0	No
Nitrate (mg/L) - TW	2020/01/07	0.259	10.0	No
Nitrate (mg/L) - TW	2020/04/06	0.274	10.0	No
Nitrate (mg/L) - TW	2020/07/06	0.235	10.0	No
Nitrate (mg/L) - TW	2020/10/05	0.219	10.0	No
Sodium: Na (mg/L) - TW	2018/01/08	7.41	20*	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: Fluoride and Sodium are to be sampled every 60 months. The most recent samples for Fluoride and Sodium were taken on January 8, 2018. The next set of Fluoride and Sodium samples are to be taken in January 2023.*

**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)	n/a	n/a	n/a	n/a
Alkalinity (mg/L as CaCO <sub>3</sub> )	4	73	77	0

*NOTE: This system now qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). Four (4) distribution lead samples are only taken every 36 months (i.e. 2 samples per period). The most recent set of samples was taken in 2018. The next set of lead samples will be taken in 2021.*

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

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance
Alachlor (µg/L) - TW	2020/01/07	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (µg/L) - TW	2020/01/07	<MDL 0.01	5.0	No
Azinphos-methyl (µg/L) - TW	2020/01/07	<MDL 0.05	20.0	No
Benzene (µg/L) - TW	2020/01/07	<MDL 0.32	1.0	No
Benzo(a)pyrene (µg/L) - TW	2020/01/07	<MDL 0.004	0.01	No
Bromoxynil (µg/L) - TW	2020/01/07	<MDL 0.33	5.0	No
Carbaryl (µg/L) - TW	2020/01/07	<MDL 0.05	90.0	No
Carbofuran (µg/L) - TW	2020/01/07	<MDL 0.01	90.0	No
Carbon Tetrachloride (µg/L) - TW	2020/01/07	<MDL 0.17	2.0	No
Chlorpyrifos (µg/L) - TW	2020/01/07	<MDL 0.02	90.0	No
Diazinon (µg/L) - TW	2020/01/07	<MDL 0.02	20.0	No
Dicamba (µg/L) - TW	2020/01/07	<MDL 0.2	120.0	No
1,2-Dichlorobenzene (µg/L) - TW	2020/01/07	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (µg/L) - TW	2020/01/07	<MDL 0.36	5.0	No
1,2-Dichloroethane (µg/L) - TW	2020/01/07	<MDL 0.35	5.0	No
1,1-Dichloroethylene (µg/L) - TW	2020/01/07	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (µg/L) - TW	2020/01/07	<MDL 0.35	50.0	No
2,4-Dichlorophenol (µg/L) - TW	2020/01/07	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW	2020/01/07	<MDL 0.19	100.0	No
Diclofop-methyl (µg/L) - TW	2020/01/07	<MDL 0.4	9.0	No
Dimethoate (µg/L) - TW	2020/01/07	<MDL 0.06	20.0	No
Diquat (µg/L) - TW	2020/01/07	<MDL 1.0	70.0	No
Diuron (µg/L) - TW	2020/01/07	<MDL 0.03	150.0	No
Glyphosate (µg/L) - TW	2020/01/07	<MDL 1.0	280.0	No
Malathion (µg/L) - TW	2020/01/07	<MDL 0.02	190.0	No
Metolachlor (µg/L) - TW	2020/01/07	<MDL 0.01	50.0	No
Metribuzin (µg/L) - TW	2020/01/07	<MDL 0.02	80.0	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW	2020/01/07	<MDL 0.3	80.0	No
Paraquat (µg/L) - TW	2020/01/07	<MDL 1.0	10.0	No
PCB (µg/L) - TW	2020/01/07	<MDL 0.04	3.0	No
Pentachlorophenol (µg/L) - TW	2020/01/07	<MDL 0.15	60.0	No
Phorate (µg/L) - TW	2020/01/07	<MDL 0.01	2.0	No
Picloram (µg/L) - TW	2020/01/07	<MDL 1.0	190.0	No
Prometryne (µg/L) - TW	2020/01/07	<MDL 0.03	1.0	No
Simazine (µg/L) - TW	2020/01/07	<MDL 0.01	10.0	No
Terbufos (µg/L) - TW	2020/01/07	<MDL 0.01	1.0	No
Tetrachloroethylene (µg/L) - TW	2020/01/07	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW	2020/01/07	<MDL 0.2	100.0	No
Triallate (µg/L) - TW	2020/01/07	<MDL 0.01	230.0	No
Trichloroethylene (µg/L) - TW	2020/01/07	<MDL 0.44	5.0	No
2,4,6-Trichlorophenol (µg/L) - TW	2020/01/07	<MDL 0.25	5.0	No
Trifluralin (µg/L) - TW	2020/01/07	<MDL 0.02	45.0	No
Vinyl Chloride (µg/L) - TW	2020/01/07	<MDL 0.17	1.0	No
Trihalomethane: Total (µg/L) Running Annual Average - DW	2020 (Quarterly)	37.0	100.0	No
HAA Total (ug/L) Running Annual Average - DW	2020 (Quarterly)	17.98	80.0	No

**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
n/a	n/a	n/a	n/a

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