

ANNUAL REPORT

ONTARIO REGULATION 170/03
SECTION 11

ANGUS DRINKING WATER SYSTEM



**FOR THE PERIOD:
JANUARY 1, 2018 – DECEMBER 31, 2018**

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



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

Drinking-Water System Number:	260001026
Drinking-Water System Name:	Angus Drinking Water System
Drinking-Water System Owner:	The Corporation of the Township of Essa
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2018 to December 31, 2018

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

Yes

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

Yes

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

Summary Report is available for inspection at the Township of Essa Municipal Office at 5786 Simcoe County Road 21, Utopia, Essa Township, ON, L0M 1T0 or on the following website: <http://www.essatownship.on.ca>

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
Not applicable	Not applicable

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?

Not Applicable

Indicate how you notified system users that your 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 Angus Drinking Water System, Pumphouses and Storage Works serving the Town of Angus include the Mill Street Pumphouse, McGeorge Pumphouse and Brownley Pumphouse. These facilities supply water through a common distribution system.

McGeorge (Centre Street) Pumphouse

The McGeorge Pumphouse is located on Side Road 3 in Angus. Raw Water is supplied from two 203 mm diameter drilled groundwater wells (Well 2 and Well 3) capable of providing up to 2627 m³/day potable water. As groundwater flows out of the (artesian) wells, pumps are automatically activated to add sodium silicate (for iron sequestering) and sodium hypochlorite (for primary disinfection). Treated water is stored in two underground reservoirs with capacities of 95 m³ and 157 m³ respectively. Online monitoring equipment continuously monitors chlorine residual, turbidity, and flow rates. Flow and process data is recorded on a data logger. The recorded data is downloaded periodically and stored on the main server at the Ontario Clean Water Agency office in Wasaga Beach. The system is alarmed for numerous parameters and monitored by Huronia Alarms in Midland, Ontario. This pumphouse is equipped with a 64 kW diesel generator and auto switch over to provide stand by power in the event of a power failure.

Mill Street Pumphouse

The Mill Street Pumphouse is located at 28 Mill Street in Angus. Raw Water is supplied from one 610 mm diameter drilled groundwater well (Well 1) that can provide up to 3927 m³/day of potable water. As groundwater is pumped from the well; chemical feed pumps are automatically activated to add sodium silicate (for iron sequestering) and sodium hypochlorite (for primary disinfection). Treated water is stored in two underground reservoirs, with a capacity of 2500 m³ and 902 m³ respectively. Flow is measured before entering the reservoir and as the treated water enters the distribution system. On-line monitoring equipment continuously monitors chlorine residual, turbidity, and flow rates, which are recorded on a datalogger. The datalogger is downloaded periodically and also stored on the main server. The system is alarmed for numerous parameters and monitored by Huronia Alarms in Midland, Ontario. This pumphouse is equipped with a 400 kW diesel generator and auto switch over to provide stand by power in the event of a power failure. *Note: The Mill Street Water Treatment Plant has received the daily difference of 100 m³ minus Baxter Water System daily water taking from the New Tecumseth Pipeline as of 2015. The Raymond A. Barker Ultrafiltration Plant in Collingwood supplies safe drinking water through the Pipeline to the Baxter and Mill Street facilities. Collingwood water sample results can be found in the Annual Compliance Reports located on the following website: <http://www.watercollingwood.ca>*

Brownley Pumphouse

The Brownley Pumphouse is located on 5th Line just north of Willoughby Road. Raw Water is supplied from two 200 mm and one 150 mm diameter drilled groundwater wells (Well 4, Well 5 and Well 6) capable of providing up to 4251 m³/day potable water. As groundwater is pumped from the wells; chemical feed pumps are automatically activated to add sodium silicate (for iron sequestering) and sodium hypochlorite (for primary disinfection). Treated water is stored in one (1) underground reservoir, two interconnected cells with a total capacity of 2500 m³. Flow is measured before entering the reservoir and as the treated water enters the distribution system. Online monitoring equipment continuously monitors chlorine residual, turbidity and flow rates, which are recorded on a datalogger. The datalogger is downloaded periodically and also stored on the main server. The system is alarmed for numerous parameters and monitored by Huronia Alarms in Midland, Ontario. This pumphouse is equipped with a 400 kW diesel generator and auto switch over to provide stand by power in the event of a power failure.

List of water treatment chemicals used during the reporting period:

- | |
|---|
| <ul style="list-style-type: none"> • Sodium Hypochlorite 12% Solution NSF, Primary Disinfection • Sodium Silicate, NSF, Iron Sequestering |
|---|

Significant expenses incurred to:

- Install required equipment
- Purchase required equipment
- Repair required equipment
- Replace required equipment

Description of significant expenses incurred:

- | |
|--|
| <ol style="list-style-type: none"> 1. Drinking Water Quality Management Standard third-party certified audit of OCWA Quality & Environmental Management System. 2. Annual calibrations of handheld meters, backflow preventers, flow meters, etc. 3. Laboratory sample bottles and analysis. 4. Completed distribution system swabbing. 5. Upgraded diesel fuel systems as per TSSA at all Pumphouses. 6. Rebuilt fire pump pressure regulating valve at Mill Street. 7. Replaced chlorine dosing equipment at Mill Street. 8. Replaced treated water valves at Mill Street. 9. Installed air relief valve on treated water pipework at Mill Street. 10. Replaced well level probe at McGeorge. 11. Replaced chlorine dosing equipment at Brownley. 12. Replaced data logger Red Lion screen and Uninterrupted Power Supply (UPS) unit at Brownley. 13. Repaired fire hydrants within distribution system. 14. Repaired water service pipework at private residences. 15. Repaired distribution system valve boxes. |
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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:

Incident Date (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
Not Applicable.					

Table 1: Microbiological testing done under the Schedule 11 of Regulation 170/03 during this reporting period.

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 - RW1	54	0	0	0	7	N/A	N/A	N/A
Raw - RW2	54	0	0	0	0	N/A	N/A	N/A
Raw - RW3	54	0	0	0	0	N/A	N/A	N/A
Raw - RW4	40^	0	0	0	0	N/A	N/A	N/A
Raw - RW5	54	0	0	0	0	N/A	N/A	N/A
Raw - RW6	52+	0	0	0	0	N/A	N/A	N/A

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
Treated - TW1	54	0	0	0	0	53	0	140
Treated - TW2	54	0	0	0	0	53	0	440
Treated - TW3	54	0	0	0	0	53	0	10
Distribution - DW	245	0	0	0	0	100	0	580

Note:

- RW1 – Raw Water Well #2 at McGeorge*
- RW2 – Raw Water Well #3 at McGeorge*
- RW3 – Raw Water Well #1 at Mill*
- RW4 – Raw Water Well #4 at Brownley
- RW5 – Raw Water Well #5 at Brownley
- RW6 – Raw Water Well #6 at Brownley
- TW1 – Treated Water McGeorge Pumphouse
- TW2 – Treated Water Mill Pumphouse
- TW3 – Treated Water Brownley Pumphouse

*Well numbering for Centre Street (i.e. McGeorge) and Mill Street wells altered in PTTW # 0411-93LSQW issued 24-Jan-13

^Well #4 was offline for 14 weeks due to VFD repair work, so raw water samples could not be taken.

+Well #6 was offline for 2 weeks due to VFD repair work, so raw water samples could not be taken.

Table 2: Operational testing done under Schedule 7 of Regulation 170/03 during the period covered by this Annual Report.

Location & Test	Number of Samples	Range of Results	
		Minimum	Maximum
Turbidity, Raw RW1 (Grab) [NTU]	12	0.11	0.87
Turbidity, Raw RW2 (Grab) [NTU]	12	0.12	1.02
Turbidity, Raw RW3 (Grab) [NTU]	12	0.19	1.21
Turbidity, Raw RW4 (Grab) [NTU]	10*	0.22	3.23
Turbidity, Raw RW5 (Grab) [NTU]	12	0.26	5.70
Turbidity, Raw RW6 (Grab) [NTU]	12	0.23	1.04
Turbidity, Treated TW1 (Continuous) [NTU]	8760	0.00	1.00
Turbidity, Treated TW2 (Continuous) [NTU]	8760	0.00	2.00
Turbidity, Treated TW3 (Continuous) [NTU]^	8760	0.00	2.00
Free Chlorine Residual, Treated TW1 (Continuous) [mg/L]	8760	0.22	2.24
Free Chlorine Residual, Treated TW2 (Continuous) [mg/L]	8760	0.86	2.62
Free Chlorine Residual, Treated TW3 (Continuous) [mg/L]	8760	0.56	4.99
Free Chlorine Residual, Treated TW1 (Grab) [mg/L]	169	0.76	2.08
Free Chlorine Residual, Treated TW2 (Grab) [mg/L]	169	0.96	1.82
Free Chlorine Residual, Treated TW3 (Grab) [mg/L]	169	0.60	2.70
Total Chlorine Residual, Treated TW1 (Grab) [mg/L]	168	0.91	2.20
Total Chlorine Residual, Treated TW2 (Grab) [mg/L]	168	1.16	2.00
Total Chlorine Residual, Treated TW3 (Grab) [mg/L]	168	0.76	2.80
Free Chlorine Residual, Distribution (Continuous) [mg/L]	8760	0.34	2.76

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

*Well #4 was offline for 14 weeks due to VFD repair work, so raw water turbidity could not be measured for two months of the “every month” requirement.

^The treated water turbidity analyzer at Brownley (TW3) was removed from service as of June 1, 2018. It is non-regulatory related monitoring equipment so its removal was captured with a Form 2.

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 Legal Instrument Issued	Parameter	Date Sampled	Result	Unit of Measure
Not Applicable				

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

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Antimony: Sb (µg/L) - TW1	2018/01/03	<MDL 0.02	6.0	No	No
Antimony: Sb (µg/L) - TW2	2018/01/03	<MDL 0.02	6.0	No	No
Antimony: Sb (µg/L) - TW3	2018/01/03	<MDL 0.02	6.0	No	No
Arsenic: As (µg/L) - TW1	2018/01/03	0.3	10.0	No	No
Arsenic: As (µg/L) - TW2	2018/01/03	0.6	10.0	No	No
Arsenic: As (µg/L) - TW3	2018/01/03	<MDL 0.2	10.0	No	No
Barium: Ba (µg/L) - TW1	2018/01/03	92.4	1000.0	No	No
Barium: Ba (µg/L) - TW2	2018/01/03	125.0	1000.0	No	No
Barium: Ba (µg/L) - TW3	2018/01/03	58.5	1000.0	No	No
Boron: B (µg/L) - TW1	2018/01/03	27.0	5000.0	No	No
Boron: B (µg/L) - TW2	2018/01/03	29.0	5000.0	No	No
Boron: B (µg/L) - TW3	2018/01/03	29.0	5000.0	No	No
Cadmium: Cd (µg/L) - TW1	2018/01/03	<MDL 0.003	5.0	No	No
Cadmium: Cd (µg/L) - TW2	2018/01/03	<MDL 0.003	5.0	No	No
Cadmium: Cd (µg/L) - TW3	2018/01/03	<MDL 0.003	5.0	No	No
Chromium: Cr (µg/L) - TW1	2018/01/03	0.11	50.0	No	No
Chromium: Cr (µg/L) - TW2	2018/01/03	0.09	50.0	No	No
Chromium: Cr (µg/L) - TW3	2018/01/03	0.23	50.0	No	No
Mercury: Hg (µg/L) - TW1	2018/01/03	<MDL 0.01	1.0	No	No
Mercury: Hg (µg/L) - TW2	2018/01/03	<MDL 0.01	1.0	No	No
Mercury: Hg (µg/L) - TW3	2018/01/03	<MDL 0.01	1.0	No	No
Selenium: Se (µg/L) - TW1	2018/01/03	<MDL 0.04	50.0	No	No
Selenium: Se (µg/L) - TW2	2018/01/03	<MDL 0.04	50.0	No	No
Selenium: Se (µg/L) - TW3	2018/01/03	0.18	50.0	No	No
Uranium: U (µg/L) - TW1	2018/01/03	0.015	20.0	No	No
Uranium: U (µg/L) - TW2	2018/01/03	0.108	20.0	No	No
Uranium: U (µg/L) - TW3	2018/01/03	2.3	20.0	No	No
Fluoride (mg/L) - TW1	2018/07/17	0.21	1.5	No	No
Fluoride (mg/L) - TW2	2018/07/17	0.17	1.5	No	No

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Fluoride (mg/L) - TW3	2018/07/17	0.19	1.5	No	No
Nitrite (mg/L) - TW1	2018/01/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW1	2018/04/09	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW1	2018/07/17	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW1	2018/10/01	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW2	2018/01/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW2	2018/04/09	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW2	2018/07/17	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW2	2018/10/01	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW3	2018/01/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW3	2018/04/09	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW3	2018/07/17	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW3	2018/10/01	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW1	2018/01/03	0.018	10.0	No	No
Nitrate (mg/L) - TW1	2018/04/09	0.018	10.0	No	No
Nitrate (mg/L) - TW1	2018/07/17	0.013	10.0	No	No
Nitrate (mg/L) - TW1	2018/10/01	0.018	10.0	No	No
Nitrate (mg/L) - TW2	2018/01/03	0.041	10.0	No	No
Nitrate (mg/L) - TW2	2018/04/09	0.02	10.0	No	No
Nitrate (mg/L) - TW2	2018/07/17	0.008	10.0	No	No
Nitrate (mg/L) - TW2	2018/10/01	0.017	10.0	No	No
Nitrate (mg/L) - TW3	2018/01/03	1.6	10.0	No	No
Nitrate (mg/L) - TW3	2018/04/09	1.49	10.0	No	No
Nitrate (mg/L) - TW3	2018/07/17	1.26	10.0	No	No
Nitrate (mg/L) - TW3	2018/10/01	1.47	10.0	No	No
Sodium: Na (mg/L) - TW1	2018/07/17	13.9	20*	No	Yes
Sodium: Na (mg/L) - TW2	2018/07/17	17.5	20*	No	Yes
Sodium: Na (mg/L) - TW3	2018/07/17	15.6	20*	No	Yes

Note: MDL = Minimum Detection Limit

*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.

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

Location Type	Number of Samples	Range of Lead Results		MAC	Number of Exceedances
		Minimum	Maximum		
Lead – Plumbing (µg/L)	Not Applicable - Relief from all Plumbing Requirements*				
Lead – Distribution** (µg/L)	8	0.02	0.49	10.0	No

Note: The Alkalinity results for 2018 were 163, 166, 171, 171, 172, 183, 217 and 221 mg/L as CaCO₃.

*This system qualifies for the plumbing exemption as per O. Regulation 170/03 Schedule 15.1-5 (9) (10).

***Distribution lead samples are taken every 36 months. The next set of distribution lead samples is scheduled for 20121.*

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

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Alachlor (µg/L) - TW1	2018/01/03	<MDL 0.02	5.00	No	No
Alachlor (µg/L) - TW2	2018/01/03	<MDL 0.02	5.00	No	No
Alachlor (µg/L) - TW3	2018/01/03	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (µg/L) - TW1	2018/01/03	<MDL 0.01	5.00	No	No
Atrazine + N-dealkylated metabolites (µg/L) - TW2	2018/01/03	<MDL 0.01	5.00	No	No
Atrazine + N-dealkylated metabolites (µg/L) - TW3	2018/01/03	<MDL 0.01	5.00	No	No
Azinphos-methyl (µg/L) - TW1	2018/01/03	<MDL 0.05	20.00	No	No
Azinphos-methyl (µg/L) - TW2	2018/01/03	<MDL 0.05	20.00	No	No
Azinphos-methyl (µg/L) - TW3	2018/01/03	<MDL 0.05	20.00	No	No
Benzene (µg/L) - TW1	2018/01/03	<MDL 0.32	1.00	No	No
Benzene (µg/L) - TW2	2018/01/03	<MDL 0.32	1.00	No	No
Benzene (µg/L) - TW3	2018/01/03	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (µg/L) - TW1	2018/01/03	<MDL 0.004	0.01	No	No
Benzo(a)pyrene (µg/L) - TW2	2018/01/03	<MDL 0.004	0.01	No	No
Benzo(a)pyrene (µg/L) - TW3	2018/01/03	<MDL 0.004	0.01	No	No
Bromoxynil (µg/L) - TW1	2018/01/03	<MDL 0.33	5.00	No	No
Bromoxynil (µg/L) - TW2	2018/01/03	<MDL 0.33	5.00	No	No
Bromoxynil (µg/L) - TW3	2018/01/03	<MDL 0.33	5.00	No	No
Carbaryl (µg/L) - TW1	2018/01/03	<MDL 0.05	90.00	No	No
Carbaryl (µg/L) - TW2	2018/01/03	<MDL 0.05	90.00	No	No
Carbaryl (µg/L) - TW3	2018/01/03	<MDL 0.05	90.00	No	No
Carbofuran (µg/L) - TW1	2018/01/03	<MDL 0.01	90.00	No	No
Carbofuran (µg/L) - TW2	2018/01/03	<MDL 0.01	90.00	No	No
Carbofuran (µg/L) - TW3	2018/01/03	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (µg/L) - TW1	2018/01/03	<MDL 0.16	2.00	No	No
Carbon Tetrachloride (µg/L) - TW2	2018/01/03	<MDL 0.16	2.00	No	No
Carbon Tetrachloride (µg/L) - TW3	2018/01/03	<MDL 0.16	2.00	No	No
Chlorpyrifos (µg/L) - TW1	2018/01/03	<MDL 0.02	90.00	No	No
Chlorpyrifos (µg/L) - TW2	2018/01/03	<MDL 0.02	90.00	No	No
Chlorpyrifos (µg/L) - TW3	2018/01/03	<MDL 0.02	90.00	No	No
Diazinon (µg/L) - TW1	2018/01/03	<MDL 0.02	20.00	No	No
Diazinon (µg/L) - TW2	2018/01/03	<MDL 0.02	20.00	No	No
Diazinon (µg/L) - TW3	2018/01/03	<MDL 0.02	20.00	No	No
Dicamba (µg/L) - TW1	2018/01/03	<MDL 0.2	120.00	No	No

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Dicamba (µg/L) - TW2	2018/01/03	<MDL 0.2	120.00	No	No
Dicamba (µg/L) - TW3	2018/01/03	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (µg/L) - TW1	2018/01/03	<MDL 0.41	200.00	No	No
1,2-Dichlorobenzene (µg/L) - TW2	2018/01/03	<MDL 0.41	200.00	No	No
1,2-Dichlorobenzene (µg/L) - TW3	2018/01/03	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (µg/L) - TW1	2018/01/03	<MDL 0.36	5.00	No	No
1,4-Dichlorobenzene (µg/L) - TW2	2018/01/03	<MDL 0.36	5.00	No	No
1,4-Dichlorobenzene (µg/L) - TW3	2018/01/03	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (µg/L) - TW1	2018/01/03	<MDL 0.35	5.00	No	No
1,2-Dichloroethane (µg/L) - TW2	2018/01/03	<MDL 0.35	5.00	No	No
1,2-Dichloroethane (µg/L) - TW3	2018/01/03	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (µg/L) - TW1	2018/01/03	<MDL 0.33	14.00	No	No
1,1-Dichloroethylene (µg/L) - TW2	2018/01/03	<MDL 0.33	14.00	No	No
1,1-Dichloroethylene (µg/L) - TW3	2018/01/03	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (µg/L) - TW1	2018/01/03	<MDL 0.35	50.00	No	No
Dichloromethane (Methylene Chloride) (µg/L) - TW2	2018/01/03	<MDL 0.35	50.00	No	No
Dichloromethane (Methylene Chloride) (µg/L) - TW3	2018/01/03	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (µg/L) - TW1	2018/01/03	<MDL 0.15	900.00	No	No
2,4-Dichlorophenol (µg/L) - TW2	2018/01/03	<MDL 0.15	900.00	No	No
2,4-Dichlorophenol (µg/L) - TW3	2018/01/03	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4- D) (µg/L) - TW1	2018/01/03	<MDL 0.19	100.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4- D) (µg/L) - TW2	2018/01/03	<MDL 0.19	100.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4- D) (µg/L) - TW3	2018/01/03	<MDL 0.19	100.00	No	No
Diclofop-methyl (µg/L) - TW1	2018/01/03	<MDL 0.4	9.00	No	No
Diclofop-methyl (µg/L) - TW2	2018/01/03	<MDL 0.4	9.00	No	No
Diclofop-methyl (µg/L) - TW3	2018/01/03	<MDL 0.4	9.00	No	No
Dimethoate (µg/L) - TW1	2018/01/03	<MDL 0.03	20.00	No	No
Dimethoate (µg/L) - TW2	2018/01/03	<MDL 0.03	20.00	No	No
Dimethoate (µg/L) - TW3	2018/01/03	<MDL 0.03	20.00	No	No
Diquat (µg/L) - TW1	2018/01/03	<MDL 1.0	70.00	No	No
Diquat (µg/L) - TW2	2018/01/03	<MDL 1.0	70.00	No	No
Diquat (µg/L) - TW3	2018/01/03	<MDL 1.0	70.00	No	No
Diuron (µg/L) - TW1	2018/01/03	<MDL 0.03	150.00	No	No
Diuron (µg/L) - TW2	2018/01/03	<MDL 0.03	150.00	No	No
Diuron (µg/L) - TW3	2018/01/03	<MDL 0.03	150.00	No	No
Glyphosate (µg/L) - TW1	2018/01/03	<MDL 1.0	280.00	No	No
Glyphosate (µg/L) - TW2	2018/01/03	<MDL 1.0	280.00	No	No

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Glyphosate (µg/L) - TW3	2018/01/03	<MDL 1.0	280.00	No	No
Malathion (µg/L) - TW1	2018/01/03	<MDL 0.02	190.00	No	No
Malathion (µg/L) - TW2	2018/01/03	<MDL 0.02	190.00	No	No
Malathion (µg/L) - TW3	2018/01/03	<MDL 0.02	190.00	No	No
Metolachlor (µg/L) - TW1	2018/01/03	<MDL 0.01	50.00	No	No
Metolachlor (µg/L) - TW2	2018/01/03	<MDL 0.01	50.00	No	No
Metolachlor (µg/L) - TW3	2018/01/03	<MDL 0.01	50.00	No	No
Metribuzin (µg/L) - TW1	2018/01/03	<MDL 0.02	80.00	No	No
Metribuzin (µg/L) - TW2	2018/01/03	<MDL 0.02	80.00	No	No
Metribuzin (µg/L) - TW3	2018/01/03	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW1	2018/01/03	<MDL 0.3	80.00	No	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW2	2018/01/03	<MDL 0.3	80.00	No	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW3	2018/01/03	<MDL 0.3	80.00	No	No
Paraquat (µg/L) - TW1	2018/01/03	<MDL 1.0	10.00	No	No
Paraquat (µg/L) - TW2	2018/01/03	<MDL 1.0	10.00	No	No
Paraquat (µg/L) - TW3	2018/01/03	<MDL 1.0	10.00	No	No
PCB (µg/L) - TW1	2018/01/03	<MDL 0.04	3.00	No	No
PCB (µg/L) - TW2	2018/01/03	<MDL 0.04	3.00	No	No
PCB (µg/L) - TW3	2018/01/03	<MDL 0.04	3.00	No	No
Pentachlorophenol (µg/L) - TW1	2018/01/03	<MDL 0.15	60.00	No	No
Pentachlorophenol (µg/L) - TW2	2018/01/03	<MDL 0.15	60.00	No	No
Pentachlorophenol (µg/L) - TW3	2018/01/03	<MDL 0.15	60.00	No	No
Phorate (µg/L) - TW1	2018/01/03	<MDL 0.01	2.00	No	No
Phorate (µg/L) - TW2	2018/01/03	<MDL 0.01	2.00	No	No
Phorate (µg/L) - TW3	2018/01/03	<MDL 0.01	2.00	No	No
Picloram (µg/L) - TW1	2018/01/03	<MDL 1.0	190.00	No	No
Picloram (µg/L) - TW2	2018/01/03	<MDL 1.0	190.00	No	No
Picloram (µg/L) - TW3	2018/01/03	<MDL 1.0	190.00	No	No
Prometryne (µg/L) - TW1	2018/01/03	<MDL 0.03	1.00	No	No
Prometryne (µg/L) - TW2	2018/01/03	<MDL 0.03	1.00	No	No
Prometryne (µg/L) - TW3	2018/01/03	<MDL 0.03	1.00	No	No
Simazine (µg/L) - TW1	2018/01/03	<MDL 0.01	10.00	No	No
Simazine (µg/L) - TW2	2018/01/03	<MDL 0.01	10.00	No	No
Simazine (µg/L) - TW3	2018/01/03	<MDL 0.01	10.00	No	No
Terbufos (µg/L) - TW1	2018/01/03	<MDL 0.01	1.00	No	No
Terbufos (µg/L) - TW2	2018/01/03	<MDL 0.01	1.00	No	No
Terbufos (µg/L) - TW3	2018/01/03	<MDL 0.01	1.00	No	No
Tetrachloroethylene (µg/L) - TW1	2018/01/03	<MDL 0.35	10.00	No	No

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Tetrachloroethylene (µg/L) - TW2	2018/01/03	<MDL 0.35	10.00	No	No
Tetrachloroethylene (µg/L) - TW3	2018/01/03	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW1	2018/01/03	<MDL 0.2	100.00	No	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW2	2018/01/03	<MDL 0.2	100.00	No	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW3	2018/01/03	<MDL 0.2	100.00	No	No
Triallate (µg/L) - TW1	2018/01/03	<MDL 0.01	230.00	No	No
Triallate (µg/L) - TW2	2018/01/03	<MDL 0.01	230.00	No	No
Triallate (µg/L) - TW3	2018/01/03	<MDL 0.01	230.00	No	No
Trichloroethylene (µg/L) - TW1	2018/01/03	<MDL 0.44	5.00	No	No
Trichloroethylene (µg/L) - TW2	2018/01/03	<MDL 0.44	5.00	No	No
Trichloroethylene (µg/L) - TW3	2018/01/03	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (µg/L) - TW1	2018/01/03	<MDL 0.25	5.00	No	No
2,4,6-Trichlorophenol (µg/L) - TW2	2018/01/03	<MDL 0.25	5.00	No	No
2,4,6-Trichlorophenol (µg/L) - TW3	2018/01/03	<MDL 0.25	5	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (µg/L) - TW1	2018/01/03	<MDL 0.12	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (µg/L) - TW2	2018/01/03	<MDL 0.12	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (µg/L) - TW3	2018/01/03	<MDL 0.12	100	No	No
Trifluralin (µg/L) - TW1	2018/01/03	<MDL 0.02	45	No	No
Trifluralin (µg/L) - TW2	2018/01/03	<MDL 0.02	45	No	No
Trifluralin (µg/L) - TW3	2018/01/03	<MDL 0.02	45	No	No
Vinyl Chloride (µg/L) - TW1	2018/01/03	<MDL 0.17	1	No	No
Vinyl Chloride (µg/L) - TW2	2018/01/03	<MDL 0.17	1	No	No
Vinyl Chloride (µg/L) - TW3	2018/01/03	<MDL 0.17	1	No	No
Trihalomethane: Total Annual Average (µg/L) - DW	4 Quarters of 2018	26.75	100.00	No	No
Haloacetic Acid: Total Annual Average (µg/L) - DW	4 Quarters of 2018	5.3	80.00	N/A*	N/A*

Note: MDL = Minimum Detection Limit

*The MAC for Haloacetic Acid does not come into effect until 2020.

Table 7: List of 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
Sodium: Na - TW1	13.9	mg/L	2018/07/17
Sodium: Na - TW2	17.5	mg/L	2018/07/17
Sodium: Na - TW3	15.6	mg/L	2018/07/17

Note: This table highlights parameters with a "Yes" in the ½ MAC columns of Table 4 and Table 6.