

Sonya Drinking Water System

Waterworks # 2600056516
System Category – Small Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2021

Issued: February 4, 2022

Operating Authorities:



This report has been prepared to satisfy the annual reporting requirements in
O. Reg. 170/03 Section 11 and Schedule 22.

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Report Availability

This system does not serve more than 10,000 residences. The annual reports are available to residents free of charge at the City of Kawartha Lakes – Public Works Administration Office located at 322 Kent Street West in Lindsay, Ontario. The reports are also available online at the [Water and Wastewater pages of the City of Kawartha Lakes website](#).

Compliance Report Card

Drinking Water System Number: 260006516

Drinking Water System Name: Sonya DWS

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Small Municipal Residential

Period Being Reported: January 1, 2021 - December 31, 2021

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	July 19, 2021	Unannounced - Focused Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	1	May 28, 2021	CT Analyzer Alarms
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The water supply for the DWS comes from two (2) groundwater wells that are designated as non-GUDI (groundwater under direct influence).

Treatment

The treatment system consists of the following:

- Two (2) cartridge filtration systems,
- Four (4) UV disinfection systems,
- Secondary disinfection from the sodium hypochlorite system,
- Hydropneumatic tanks,
- Clearwell,

- High lift pump system,
- Sodium silicate injection system for iron removal,
- Stand-by diesel generator on-site.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	LAVO
Sodium Silicate	Iron Removal	Brenntag

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
05/28/2021	154158	Sonya Water Treatment	CT Chlorine Analyzer malfunction	Air bubbles in new CT analyzer caused readings of 0.00 mg/L	O. Reg. 170/03	Repaired chlorine probe

Non-Compliance

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

Non-Compliance Identified in a Ministry Inspection:

There were no non-compliances identified in a Ministry Inspection during this period.

Flows

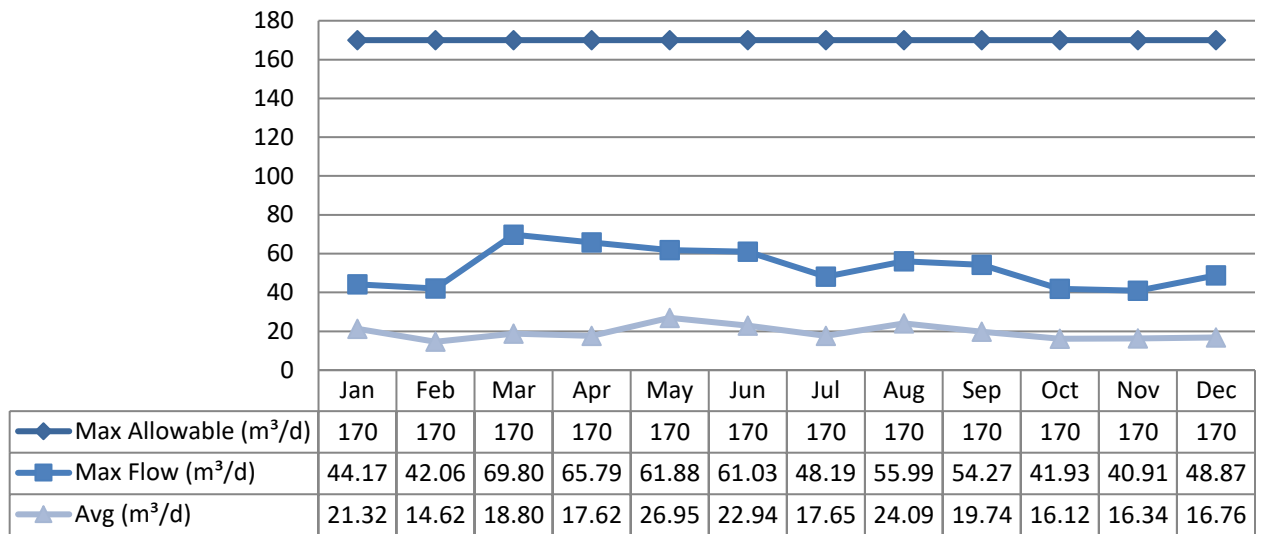
The Sonya Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2021 Raw Flow Data was submitted to the Ministry electronically under permit #1246-AWTJXZ. The confirmation of the data that was submitted are attached in Appendix A.

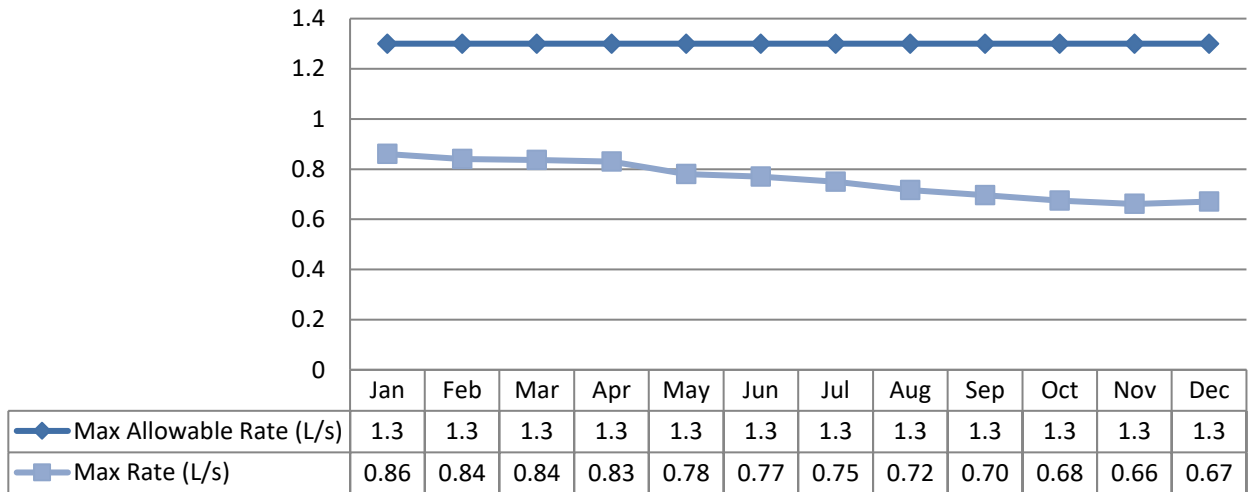
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #1



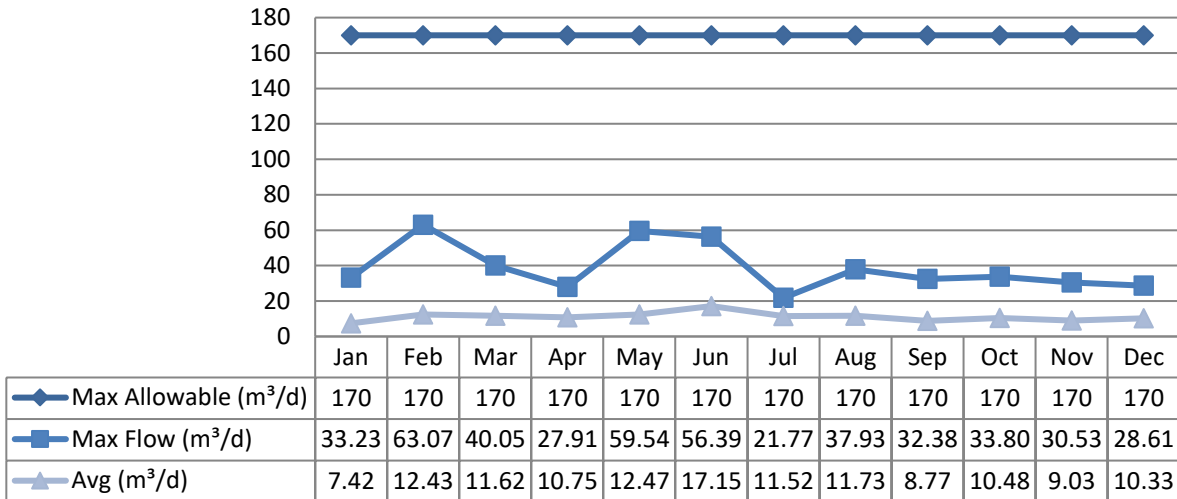
Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #1



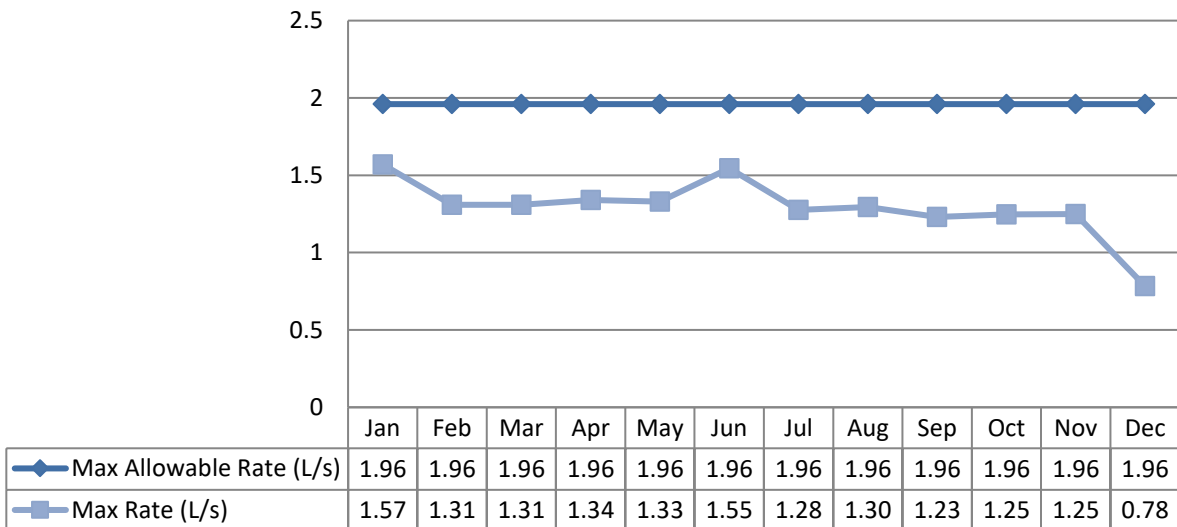
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #3



Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #3

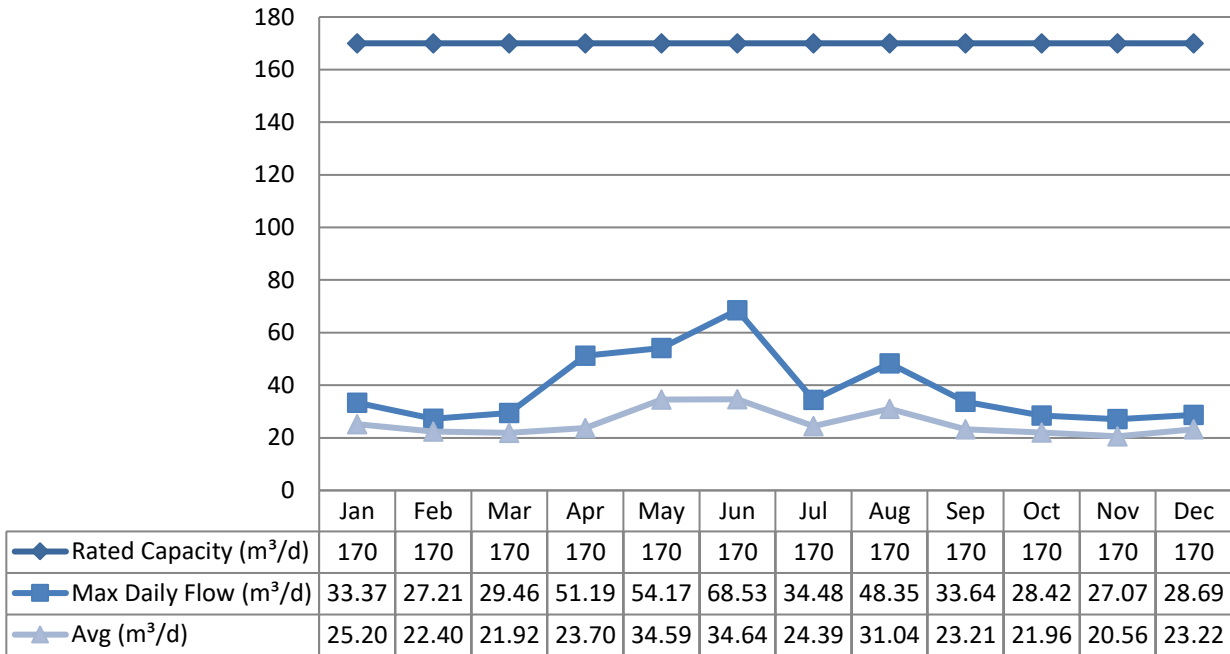


Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

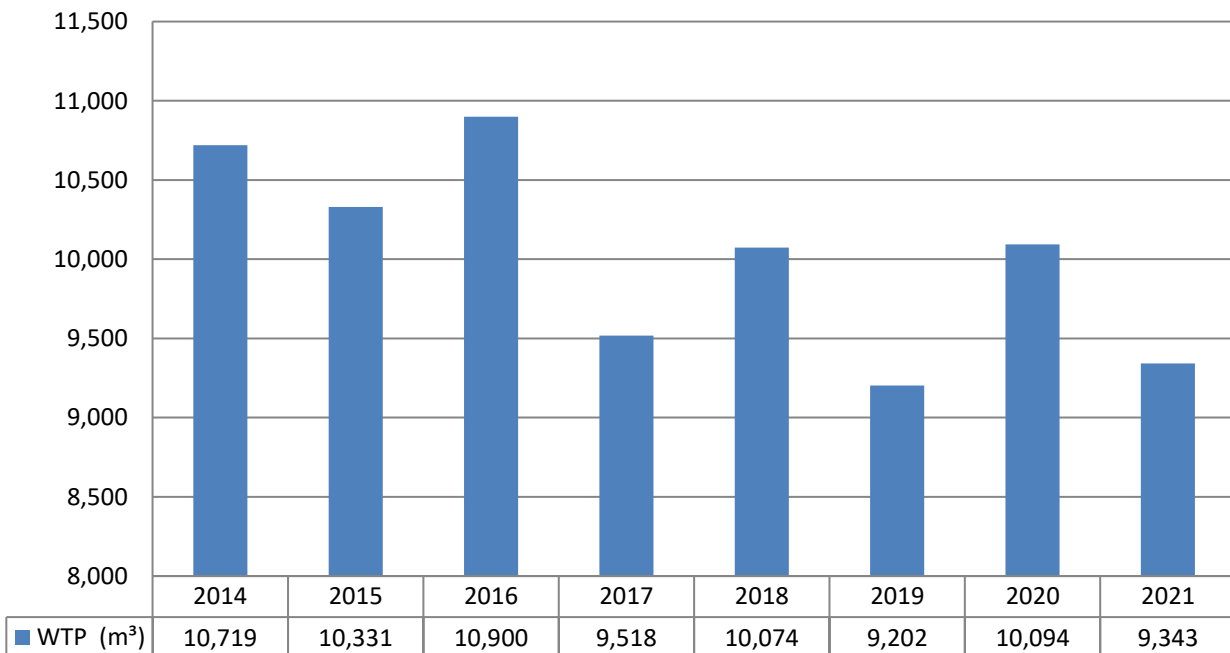
Monthly Rated Flows

Rated Capacity – MDWL



Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

		Range of E. coli Results		Range of Total Coliform Results		Range of HPC Results	
Source	# of Samples	Min	Max	Min	Max	Min	Max
Raw Well 1	28	0	OG	0	OG		
Raw Well 3	30	0	0	0	0		
Treated	44	0	0	0	0		
Distribution	52	0	0	0	0	0	15

*OG – Overgrown with target bacteria.

Operational Testing

Parameter	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Well 1 (NTU)	12 (OCWA took 2)	0.37	2.16
Turbidity Well 3 (NTU)	12 (OCWA took 2)	0.37	3.11
Chlorine	8760	0	4.99
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

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

Note: For continuous monitors 8760 is used as the number of samples. Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O. Reg. 170/03.

Inorganic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. Sodium and Fluoride are required to be tested every five years. Nitrate and Nitrite are tested quarterly and the metals are tested every three years as required under O. Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- MDL = Method Detection Limit

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances MAC	Exceedances 1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2020 08 04	0.1	6.0	No	No
Arsenic: As (ug/L) - TW	2020 08 04	0.4	10.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	Exceedances
				MAC	1/2 MAC
Barium: Ba (ug/L) - TW	2020 08 04	159.0	1000.0	No	No
Boron: B (ug/L) - TW	2020 08 04	20.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2020 08 04	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2020 08 04	0.12	50.0	No	No
Mercury: Hg (ug/L) - TW	2020 08 04	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2020 08 04	<MDL 0.04	50.0	No	No
Uranium: U (ug/L) - TW	2020 08 04	0.55	20.0	No	No
Additional Organics					
Fluoride (mg/L) - TW	2018 01 08	0.08	1.5	No	No
Nitrite (mg/L) - TW	2021 01 04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2021 04 05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2021 07 05	0.005	1.0	No	No
Nitrite (mg/L) - TW	2021 10 12	0.005	1.0	No	No
Nitrate (mg/L) - TW	2021 01 04	0.050	10.0	No	No
Nitrate (mg/L) - TW	2021 04 05	0.026	10.0	No	No
Nitrate (mg/L) - TW	2021 07 05	0.080	10.0	No	No
Nitrate (mg/L) - TW	2021 10 12	0.057	10.0	No	No
Sodium: Na (mg/L) - TW	2018 12 07	11.9	20*	No	Yes

*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.

Schedule 15 Sampling:

The Schedule 15 Sampling is required under O. Reg. 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results Minimum	Range of Results Maximum	MAC (µg/L)	Number of Exceedances
Alkalinity (mg/L)	2	2	241	252	N/A	N/A
pH	2	2	7.89	8.57	N/A	N/A
Lead (µg/l)	N/A	N/A				

Organic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	Exceedances
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2020/08/04	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2020/08/04	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2020/08/04	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2020/08/04	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2020/08/04	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2020/08/04	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2020/08/04	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2020/08/04	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2020/08/04	<MDL 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2020/08/04	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2020/08/04	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2020/08/04	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2020/08/04	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2020/08/04	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2020/08/04	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2020/08/04	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2020/08/04	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2020/08/04	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2020/08/04	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2020/08/04	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2020/08/04	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2020/08/04	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2020/08/04	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2020/08/04	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2020/08/04	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2020/08/04	<MDL 0.12	100.00	No	No
Metolachlor (ug/L) - TW	2020/08/04	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2020/08/04	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) – TW	2020/08/04	<MDL 0.3	80.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	Exceedances
				MAC	1/2 MAC
Paraquat (ug/L) - TW	2020/08/04	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2020/08/04	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2020/08/04	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2020/08/04	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2020/08/04	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2020/08/04	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2020/08/04	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2020/08/04	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2020/08/04	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2020/08/04	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2020/08/04	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2020/08/04	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2020/08/04	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2020/08/04	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2020/08/04	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2021	16	100	No	No
HAA Total (ug/L) Annual Average - DW	2021	5.3	80	No	No

MAC = Maximum Allowable Concentration as per O. Reg. 169/03
 MDL = Method Detection Limit

Additional Legislated Samples

There were no additional legislated samples required to report during this reporting period.



Major Maintenance Summary incurred to install, repair or replace required equipment



WO #	Description
41510	Replace CT Analyzer
42044	Replace Filter Effluent Turbidimeter

Appendix A

WTRS Submission Confirmation

ww.lrcsde.lrc.gov.on.ca/wtrs/external/permits/permitSubmit.do

terTrax  PTTW  Google Maps  Flowpoint Bulk Water



Ministry of the Environment,
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Water Taking Data submitted successfully.

Confirmation:


Thank you for submitting your water taking data online.

Permit Number: 1246-AWTJXZ
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Jan 19, 2022 10:11 AM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

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