

Lindsay Drinking Water System

Waterworks # 220000175

System Category – Large Municipal Residential

Annual Water Report

Reporting Period of January 1st – December 31st 2021

Issued: February 10, 2022

Operating Authority:



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

Table of Contents

Annual Water Report..... 1

Report Availability 2

Compliance Report Card 2

System Process Description..... 3

 Raw Source 3

 Treatment 3

 Treatment Chemicals used during the reporting year: 3

Summary of Non-Compliance..... 3

 Adverse Water Quality Incidents..... 3

 Non-Compliance 4

 Non-Compliance Identified in a Ministry Inspection:..... 4

 Flows..... 5

 Raw Water Flows 5

 Total Monthly Flows (m³/d) 5

 Treated Water Flows 6

 Monthly Rated Flows 6

 Annual Total Flow Comparison 6

Regulatory Sample Results Summary 6

 Microbiological Testing..... 6

 Operational Testing 6

 Additional Legislated Sampling..... 7

 Inorganic Parameters 8

 Schedule 15 Sampling: 9

 Organic Parameters 9

Major Maintenance Summary..... 11

WTRS Data and Submission Confirmation A

Report Availability

This system serves more than 10,000 residents. 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 W., in Lindsay, Ontario. The reports are also available on the [Water and Wastewater pages](#) of the City of Kawartha Lakes Website.

Compliance Report Card

Drinking Water System Number: 220000175

Drinking Water System Name: Lindsay DWS

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Large Municipal Residential

Reporting Period: January 1, 2021 - December 31, 2021

	# of Events	Date	Details
Drinking Water			
MECP Inspections	1	2022 01 01	Announced Inspection – Final Rating of 100%
AWQI's	9	2021 01 12	HAA Running Annual Average of 117.60 µg/L
		2021 01 12	THM Running Annual Average of 102.00 µg/L
		2021 04 26	HAA Running Annual Average of 120.46 µg/L
		2021 04 26	THM Running Annual Average of 103.25 µg/L
		2021 07 12	Sodium sample result of 46.8 mg/L
		2021 07 19	41 St. Patrick Street 1 TC
		2021 10 18	12 Ferguson Drive NDOG T Sample Compromised
		2021 10 21	THM Running Annual Average of 104.75 µg/L
		2021 10 21	HAA Running Annual Average of 85.5 µg/L
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Lindsay Water Treatment Plant receives raw water from the Scugog River, which is a surface water source.

Treatment

The treatment system consists of the following:

- Two screened intake pipes
- Three low lift pumps
- CO₂ pH correction
- Coagulant and polymer addition
- Two ballasted floc/clarification units each with coagulation, flocculation, up-flow settling tank with inclined tube settlers and “micro-sand” recirculation pumps
- Five GAC/sand filters
- Chlorination
- Two clearwells, East & West Cells
- Four high lift pumps
- On-site wastewater equalization and sludge thickening
- Standby power
- SCADA system
- Thornhill Reservoir and pumping station
- Verulam elevated storage tank
- Oakwood Reservoir and pumping station

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Lavo
Sodium Hydroxide	pH Correction	UBA
Aluminum Sulphate (Alum)	Coagulation	Chemtrade
Carbon Dioxide	pH Correction	Linde
Polyaluminumchloride (PAC)	Coagulation	Kemira
Magna Floc Polymer	Coagulation	Northland Chemical

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
2021 01 12	N/A	Lindsay Distribution	HAA Running Annual Average	117.60	O. Reg. 170/03	N/A
2021 01 12	N/A	Lindsay Distribution	THM Running Annual Average	102.00	O. Reg. 170/03	N/A
2021 04 26	N/A	Lindsay Distribution	HAA Running Annual Average	120.46	O. Reg. 170/03	N/A
2021 04 26	N/A	Lindsay Distribution	THM Running Annual Average	103.25	O. Reg. 170/03	N/A
2021 07 12	154611	Lindsay Treatment	Sodium	46.8	O. Reg. 170/03	Re-sample and test
2021 07 19	154772	Lindsay Distribution	Operator Error	1 TC	O. Reg. 170/03	Flushed & Resample
2021 10 18	156086	Lindsay Distribution	Sample Compromised	NDOGT	O. Reg. 170/03	Flushed & Resample
2021 10 21	N/A	Lindsay Distribution	THM Running Annual Average	104.75	O. Reg. 170/03	N/A
2021 10 21	N/A	Lindsay Distribution	HAA Running Annual Average	85.5	O. Reg. 170/03	N/A

Non-Compliance

Legislation requirement(s) system failed to meet during the reporting period and the Corrective Action taken to resolve the issue.

- None to Report

Non-Compliance Identified in a Ministry Inspection:

- There were no non-compliances identified during this period 2021/2022

Flows

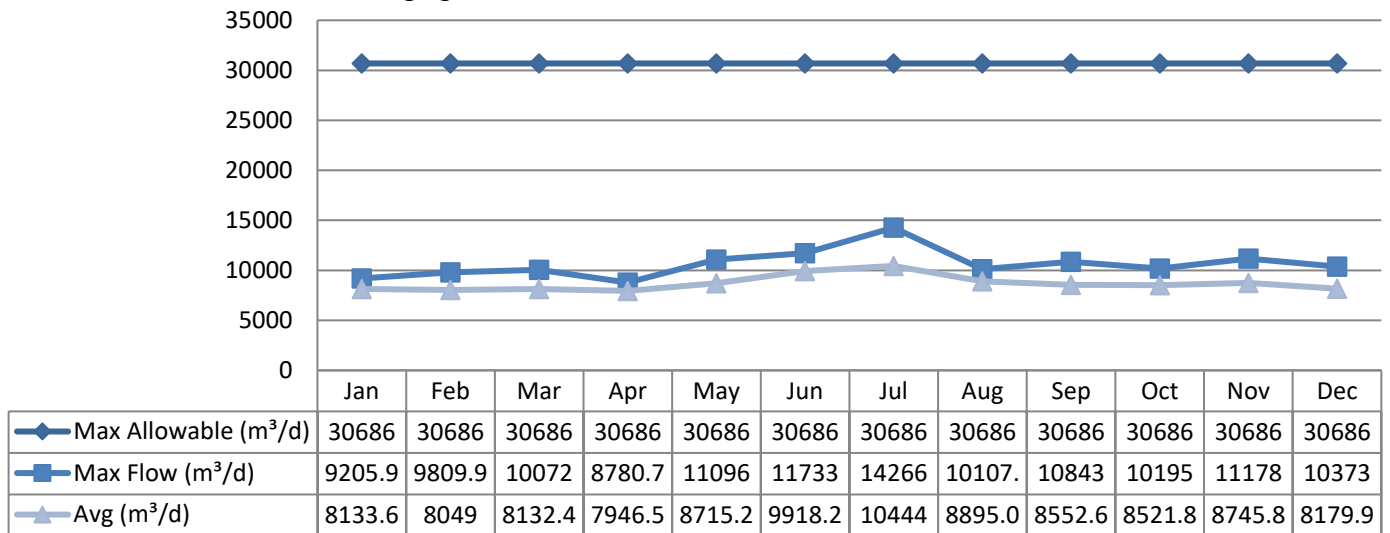
The Lindsay Drinking Water System maximum allowable water taking is 30,685.5 m³/day, and on average the plant is operating at under half this capacity.

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 #8160-B3MP6L. The confirmation and a copy of the data that was submitted are attached in Appendix A.

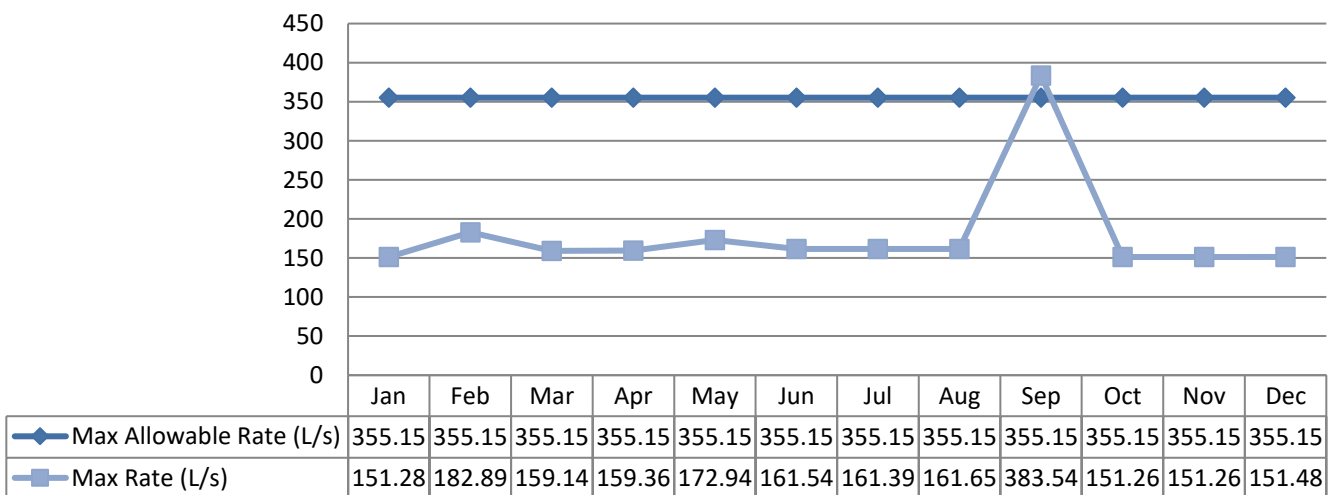
Total Monthly Flows (m³/d)

Max Allowable PTTW- Scugog River



Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Scugog River



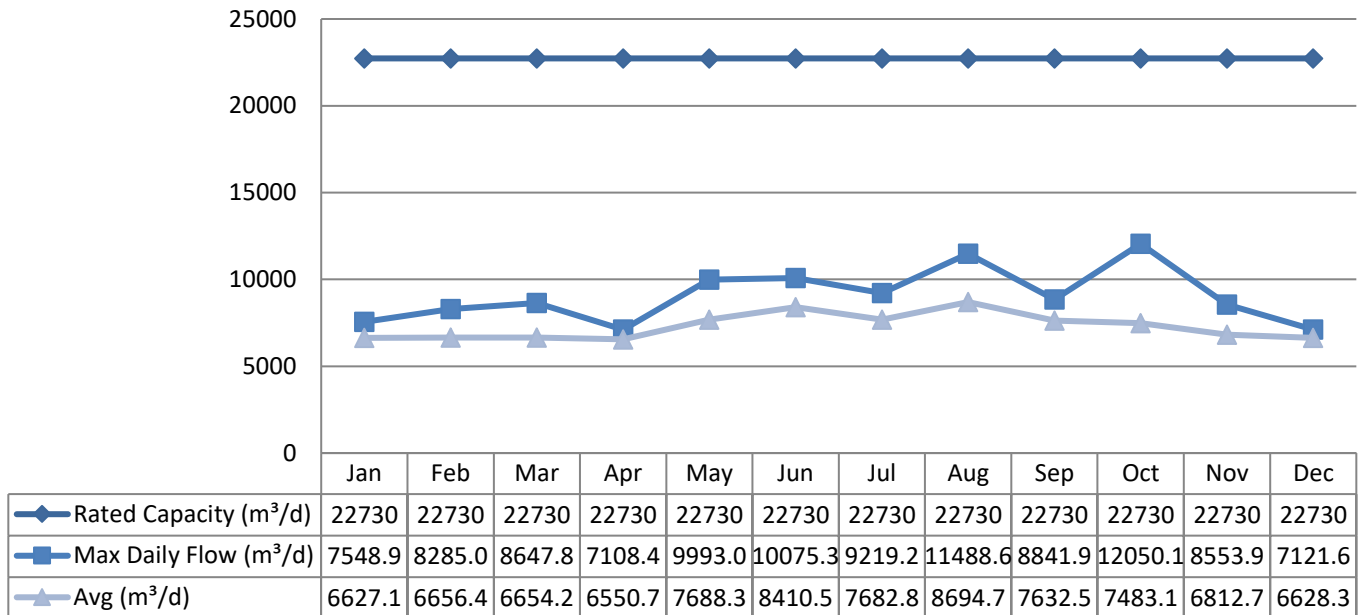
**Maximum flow rate exceeded September 28, 2021 for 3.5 seconds. The equipment was in Calibration during this time. An alarm is only received if the exceedance lasts for more than 2 minutes.

Treated Water Flows

The Treated Water flow is regulated under the Municipal Drinking Water Licence.

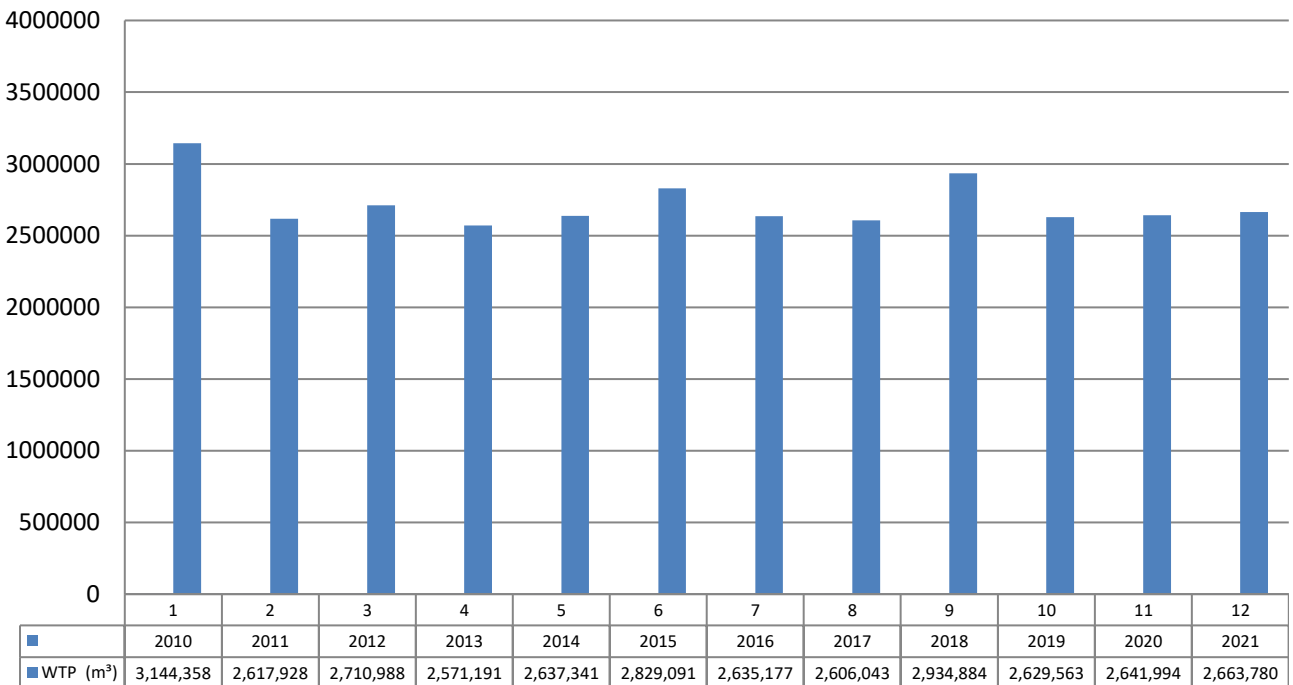
Monthly Rated Flows

Rated Capacity - MDWL



Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

The City of Kawartha Lakes adheres to operational and compliance limits however, during certain operational circumstances some results may be temporarily outside of limits but not limited to pump start-ups, power outages/generator tests, alarm verification, maintenance, etc. These are normal occurrences and are listed within the report; however, it is not indicative of a true exceedance.

Microbiological Testing

	No. of Samples Collected	Range of E.coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw	52	4	560	49	54000		
Treated	52	0	0	0	0	0	2
Distribution	624	0	0	0	0	0	19

Operational Testing

	No. of Samples Collected	Range of Results	Range of Results
		Minimum	Maximum
Raw Turbidity (NTU)	8760	0	25.5
Turbidity Filter 1 (NTU)	8760	0	0.609
Turbidity Filter 2 (NTU)	8760	0	2.039
Turbidity Filter 3 (NTU)	8760	0	2.038
Turbidity Filter 4 (NTU)	8760	0	0.908
Turbidity Filter 5 (NTU)	8760	0	1.957
Chlorine (CT Analyzer)	8760	0	5.15
Fluoride (If the DWS provides fluoridation)	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.

Additional Legislated Sampling

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
July 26, 2016	TSS	2021 01 04	3	mg/L
July 26, 2016	TSS	2021 02 01	5	mg/L
July 26, 2016	TSS	2021 03 01	2	mg/L
July 26, 2016	TSS	2021 04 05	3	mg/L
July 26, 2016	TSS	2021 05 03	<2	mg/L
July 26, 2016	TSS	2021 06 07	14	mg/L
July 26, 2016	TSS	2021 07 05	5	mg/L
July 26, 2016	TSS	2021 08 03	6	mg/L
July 26, 2016	TSS	2021 09 07	15	mg/L
July 26, 2016	TSS	2021 10 04	10	mg/L
July 26, 2016	TSS	2021 11 01	3	mg/L
November 10, 2021	TSS	2021 12 06	4	mg/L
Summary	TSS	2021	Min: <2 Max: 15 AVG: 6 based on 12 numerical results	mg/L

Inorganic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. Sodium and Fluoride are required to be tested every 5 years. Nitrate and Nitrite are tested quarterly and the metals are tested annually 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
- BDL = Below the laboratory detection level

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	Exceedances
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2021 01 04	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L) - TW	2021 01 04	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2021 01 04	28.3	1000.0	No	No
Boron: B (ug/L) - TW	2021 01 04	10	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2021 01 04	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2021 01 04	0.57	50.0	No	No
Mercury: Hg (ug/L) - TW	2021 01 04	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2021 01 04	0.08	50.0	No	No
Uranium: U (ug/L) - TW	2021 01 04	0.018	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018 12 07	0.06	1.5	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	Exceedances
				MAC	1/2 MAC
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	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2021 10 12	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2021 01 04	1.94	10.0	No	No
Nitrate (mg/L) - TW	2021 04 05	2.13	10.0	No	No
Nitrate (mg/L) - TW	2021 07 05	0.773	10.0	No	No
Nitrate (mg/L) - TW	2021 10 12	0.122	10.0	No	No
Sodium: Na (mg/L) - TW	2021 07 05	46.8	20*	No	No

*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 mg/L 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	Range of Results	MAC (µg/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	4	8	144	178	N/A	N/A
pH	4	8	7.47	8.22	N/A	N/A
Lead (µg/l)	N/A	N/A				

Organic Parameters

These parameters are tested annually 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	Exceedance	Exceedance
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2021 01 04	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2021 01 04	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2021 01 04	<MDL 0.05	20.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance	Exceedance
				MAC	1/2 MAC
Benzene (ug/L) - TW	2021 01 04	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2021 01 04	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2021 01 04	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2021 01 04	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2021 01 04	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2021 01 04	<MDL 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2021 01 04	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2021 01 04	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2021 01 04	<MDL 0.20	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2021 01 04	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2021 01 04	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2021 01 04	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2021 01 04	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2021 01 04	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2021 01 04	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2021 01 04	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2021 01 04	<MDL 0.40	9.00	No	No
Dimethoate (ug/L) - TW	2021 01 04	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2021 01 04	<MDL 1	70.00	No	No
Diuron (ug/L) - TW	2021 01 04	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2021 01 04	<MDL 1	280.00	No	No
Malathion (ug/L) - TW	2021 01 04	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2021 01 04	<MDL 0.00012	0.01	No	No
Metolachlor (ug/L) - TW	2021 01 04	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2021 01 04	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2021 01 04	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2021 01 04	<MDL 0.01	10.00	No	No
PCB (ug/L) - TW	2021 01 04	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2021 01 04	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2021 01 04	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2021 01 04	<MDL 1	190.00	No	No
Prometryne (ug/L) - TW	2021 01 04	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2021 01 04	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2021 01 04	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2021 01 04	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2021 01 04	<MDL 0.20	100.00	No	No
Triallate (ug/L) - TW	2021 01 04	<MDL 0.01	230.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance	Exceedance
				MAC	1/2 MAC
Trichloroethylene (ug/L) - TW	2021 01 04	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2021 01 04	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2021 01 04	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2021 01 04	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2021	104.75	100	Yes	Yes
HAA Total (ug/L) Annual Average - DW	2021	85.50	80	Yes	Yes

MAC = Maximum Allowable Concentration as per O. Reg. 169/03



BDL = Below the laboratory detection level

Major Maintenance Summary

<u>WO #</u>	<u>Description</u>
35759	Replaced Sodium Hydroxide Metering Pump #1
40017	Replaced Chlorine Dosing Pump #2 - Verulam
40305/40306	Replaced Coagulant Transfer Pumps
43090	Replaced Two Actiflo Pumps
43088/43092	Replaced Three Actiflo Pumps
45210	Replaced Failed Chlorine Metering Pump - Thornhill
47838	Install VFD on Equalization Waste Pump #2

Appendix A

WTRS Data and Submission Confirmation



Ministry of the Environment,
Conservation and Parks

| [WT DATA](#) | [USER PROFILE](#) | [CONTACT US](#) | [HELP](#) | [HOME](#) | [LOGOUT](#) |

Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#) WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:


Thank you for submitting your water taking data online.

Permit Number: 8160-B3MP6L
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Jan 12, 2022 12:27 PM

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.

[Print Confirmation](#) [Return to Main Page](#)

CITY OF KAWARTHA LAKES | 2022/01/12
version: v4.5.0.21 (build#: 29)
Last modified: 2021/11/09

 This site maintained by
the Government of Ontario ©2022 [Queen's Printer for Ontario](#)