King's Bay Drinking Water System

Waterworks # 260002954
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2020

Issued: February 12, 2021

Revision: 0

Operating Authorities:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Kawartha Lakes

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: 260002954
Drinking Water System Name: King's Bay DWS
Drinking Water System Owner: City of Kawartha Lakes
Drinking Water System Category: Large Municipal Residential
Period Being Reported: January 1, 2020 - December 31, 2020

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	Nov. 19, 2020	Announced - Focused Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	0		
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The water supply for the DWS comes from three (3) groundwater wells that are considered to be non-GUDI (groundwater under direct influence).

Treatment

The treatment system consists of the following:

- a sodium hypochlorite disinfection system
- reservoir
- high lift pumping station
- Stand-by diesel generator on-site

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag

Summary of Non-Compliance

Adverse Water Quality Incidents
There were no Adverse Water Quality Incidents reported during the reporting period.

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.

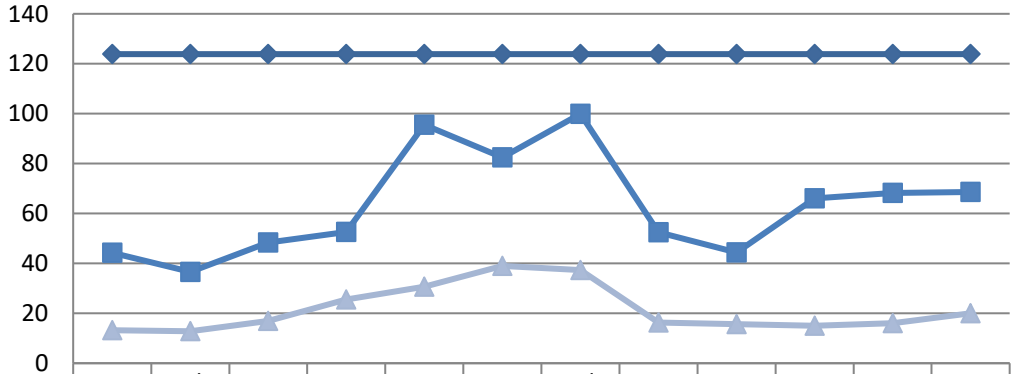
Flows

The King's Bay 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. 2020 Raw Flow Data was submitted to the Ministry electronically under permits #1087-AYSGRN. The confirmation that the data was submitted is attached in Appendix A.

Total Monthly Flows (m^3/d)

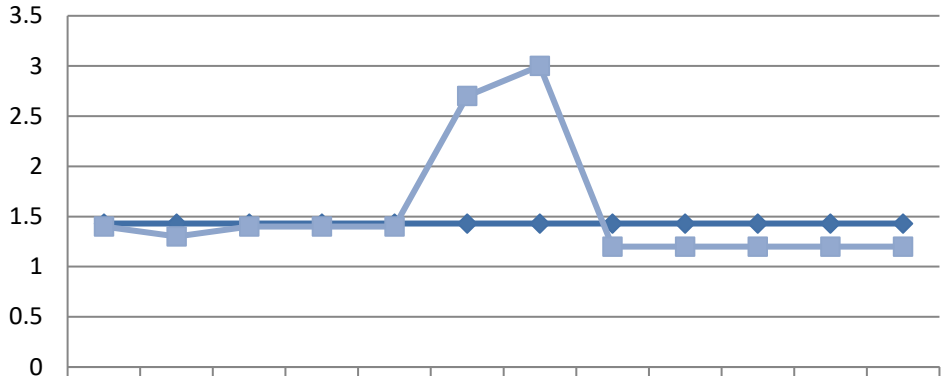
Max Allowable PTTW − Well #2



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m^3/d)	123.84	123.84	123.84	123.84	123.84	123.84	123.84	123.84	123.84	123.84	123.84	123.84
Max Flow (m^3/d)	44	37	48	53	96	82	100	53	44	66	68	69
Avg (m^3/d)	13	13	17	25	31	39	37	16	16	15	16	20

Monthly Rated Flows (L/s)

Max allowable rate – PTTW − Well #2

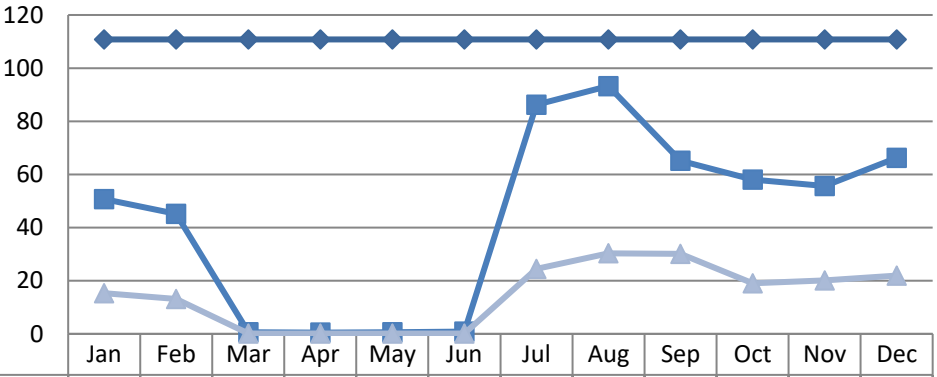


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Max Rate (L/s)	1.40	1.30	1.40	1.40	1.40	2.70	3.00	1.20	1.20	1.20	1.20	1.20

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spikes are instantaneous and are due to pump start-up.

Total Monthly Flows (m^3/d)

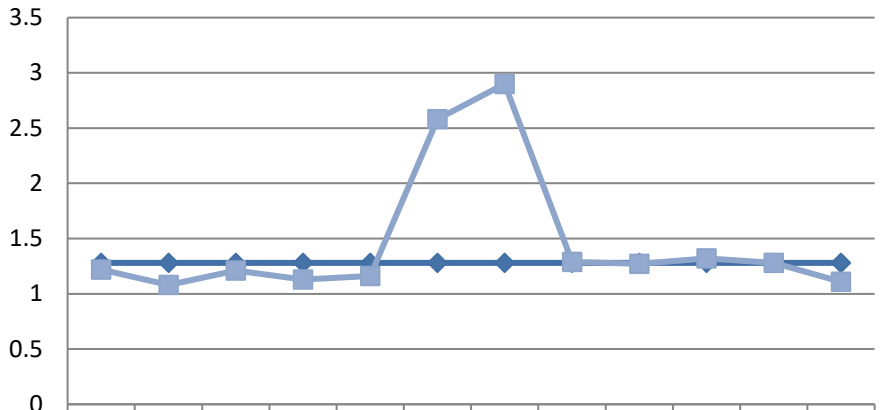
Max Allowable PTTW − Well #3



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m^3/d)	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8
Max Flow (m^3/d)	50.7	45.2	0.7	0.5	0.6	0.8	86.2	93.3	65.2	58.1	55.6	66.3
Avg (m^3/d)	15.3	13.1	0.2	0.1	0.1	0.1	24.5	30.3	30.2	19.0	20.1	21.9

Monthly Rated Flows (L/s)

Max allowable rate – PTTW − Well #3

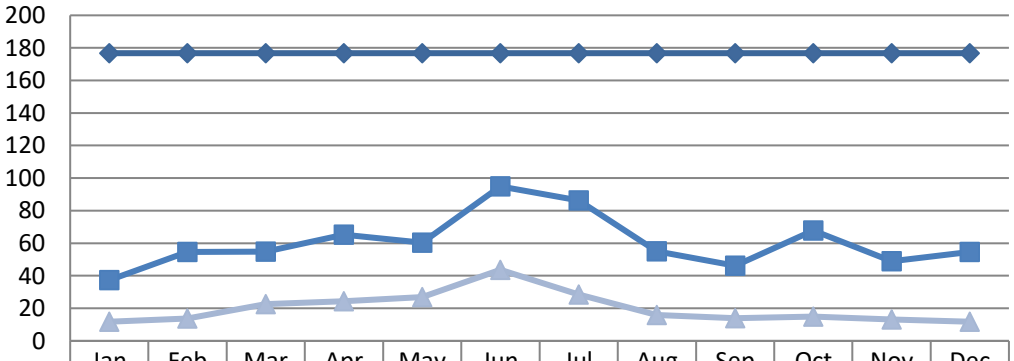


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Max Rate (L/s)	1.22	1.08	1.21	1.13	1.16	2.58	2.90	1.29	1.27	1.32	1.28	1.11

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spikes are instantaneous and are due to pump start-up.

Total Monthly Flows (m^3/d)

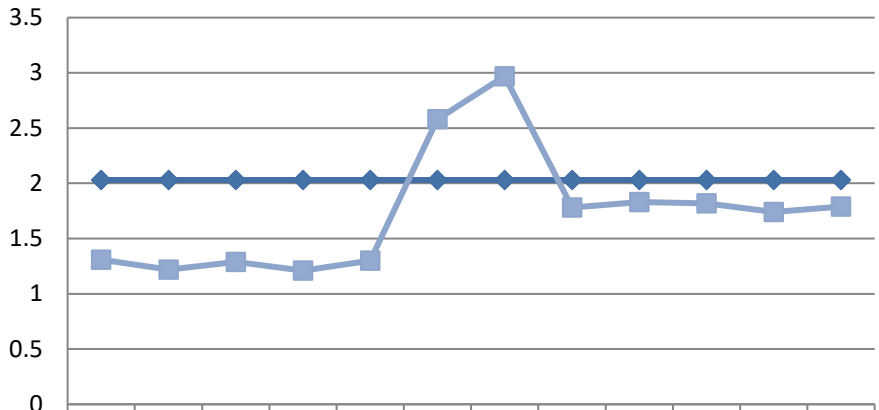
Max Allowable PTTW − Well #4



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m^3/d)	176.75	176.75	176.75	176.75	176.75	176.75	176.75	176.75	176.75	176.75	176.75	176.75
Max Flow (m^3/d)	37.29	54.69	54.83	65.27	60.41	94.88	86.27	55.03	46.23	67.88	48.96	54.55
Avg (m^3/d)	11.78	13.78	22.49	24.28	26.9	43.67	28.53	15.87	13.96	14.88	13.15	11.83

Monthly Rated Flows (L/s)

Max allowable rate – PTTW − Well #4



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03
Max Rate (L/s)	1.31	1.22	1.29	1.21	1.30	2.58	2.97	1.78	1.83	1.82	1.74	1.79

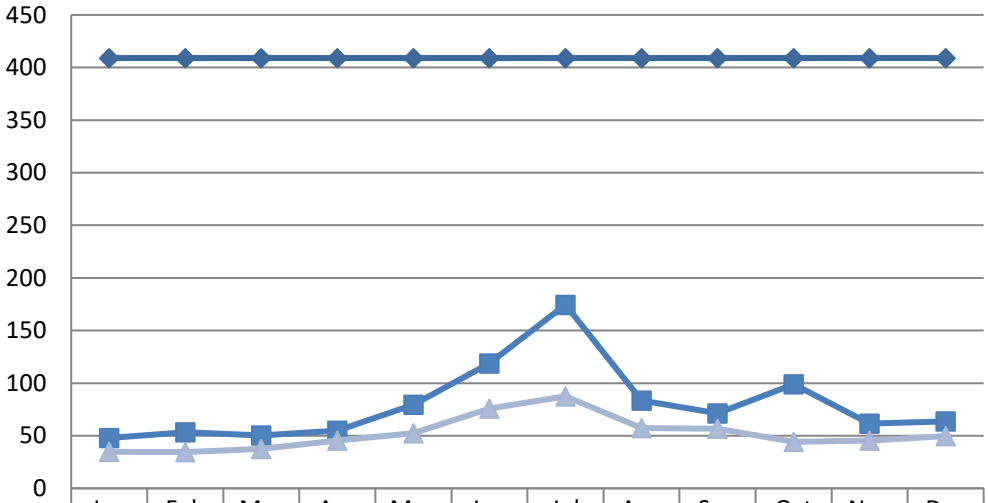
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spikes are instantaneous and are due to pump start-up.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

Monthly Rated Flows

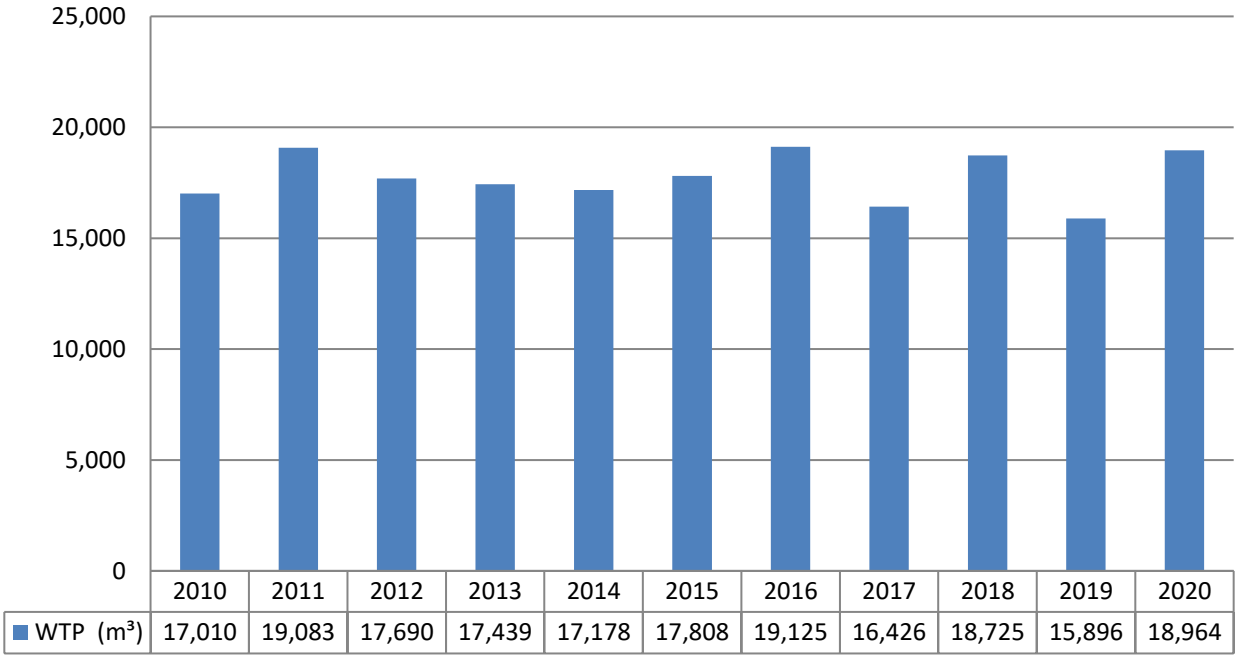
Rated Capacity – MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m^3/d)	409	409	409	409	409	409	409	409	409	409	409	409
Max Daily Flow (m^3/d)	48	53	50	55	80	119	175	83	71	99	62	64
Avg (m^3/d)	35	34	37	45	52	76	87	57	57	44	45	50

Annual Total Flow Comparison

Total Annual m^3



Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E. coli Results	Range of E.coli Results	Range of Total Coliform Results	Range of Total Coliform Results	Range of HPC Results	Range of HPC Results
		Min	Max	Min	Max	Min	Max
Raw Well 2	54	0	2	0	2		
Raw Well 3	53	0	0	0	2		
Raw Well 4	52	0	0	0	41		
Treated	52	0	0	0	0	0	4
Distribution	156	0	0	0	0	0	8

Operational Testing

	No. of Samples Collected	Range of Results	Range of Results
		Minimum	Maximum
Turbidity Well 2 (NTU)	12	0.17	0.81
Turbidity Well 3 (NTU)	12	0.29	3.64
Turbidity Well 4 (NTU)	12	0.17	0.59
Turbidity - TW (NTU)	8760	0	2
Chlorine	8760	0.24	2.60
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 was tested monthly, while Nitrite was 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	2019/01/07	<MDL 0.02	6.0	No	No
Arsenic: As (ug/L) - TW	2019/01/07	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2019/01/07	74.6	1000.0	No	No
Boron: B (ug/L) - TW	2019/01/07	9.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2019/01/07	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2019/01/07	0.37	50.0	No	No
Mercury: Hg (ug/L) - TW	2019/01/07	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2019/01/07	0.1	50.0	No	No
Uranium: U (ug/L) - TW	2019/01/07	0.856	20.0	No	No
Distribution Water					
Fluoride (mg/L) - TW	2020/01/06	0.09	1.5	No	No
Nitrite (mg/L) - TW	2020/03/02	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/06/01	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/09/08	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/12/07	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2020/03/02	3.42	10.0	No	No
Nitrate (mg/L) - TW	2020/06/01	3.09	10.0	No	No
Nitrate (mg/L) - TW	2020/09/08	2.2	10.0	No	No
Nitrate (mg/L) - TW	2020/12/07	2.87	10.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances MAC	Exceedances 1/2 MAC
Sodium: Na (mg/L) - TW	2020/01/06	7.06	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 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	MAC	MAC (µg/L)	Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	296	307	N/A	N/A
pH	2	2	7.41	7.42	N/A	N/A
Lead (µg/l)	2	2	0.10	0.28	10	No

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 MAC	Exceedances 1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2020/01/06	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2020/01/06	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2020/01/06	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2020/01/06	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2020/01/06	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2020/01/06	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2020/01/06	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2020/01/06	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2020/01/06	<MDL 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2020/01/06	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2020/01/06	<MDL 0.02	20.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances MAC	Exceedances 1/2 MAC
Dicamba (ug/L) - TW	2020/01/06	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2020/01/06	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2020/01/06	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2020/01/06	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2020/01/06	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2020/01/06	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2020/01/06	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2020/01/06	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2020/01/06	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2020/01/06	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2020/01/06	<MDL 0.12	100.00	No	No
Metolachlor (ug/L) - TW	2020/01/06	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2020/01/06	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2020/01/06	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2020/01/06	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2020/01/06	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2020/01/06	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2020/01/06	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2020/01/06	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2020/01/06	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2020/01/06	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2020/01/06	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2020/01/06	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2020/01/06	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2020/01/06	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2020	7.68	100	No	No
HAA Total (ug/L) Annual Average - DW	2020	5.3	80	No	No

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

Additional Legislated Samples

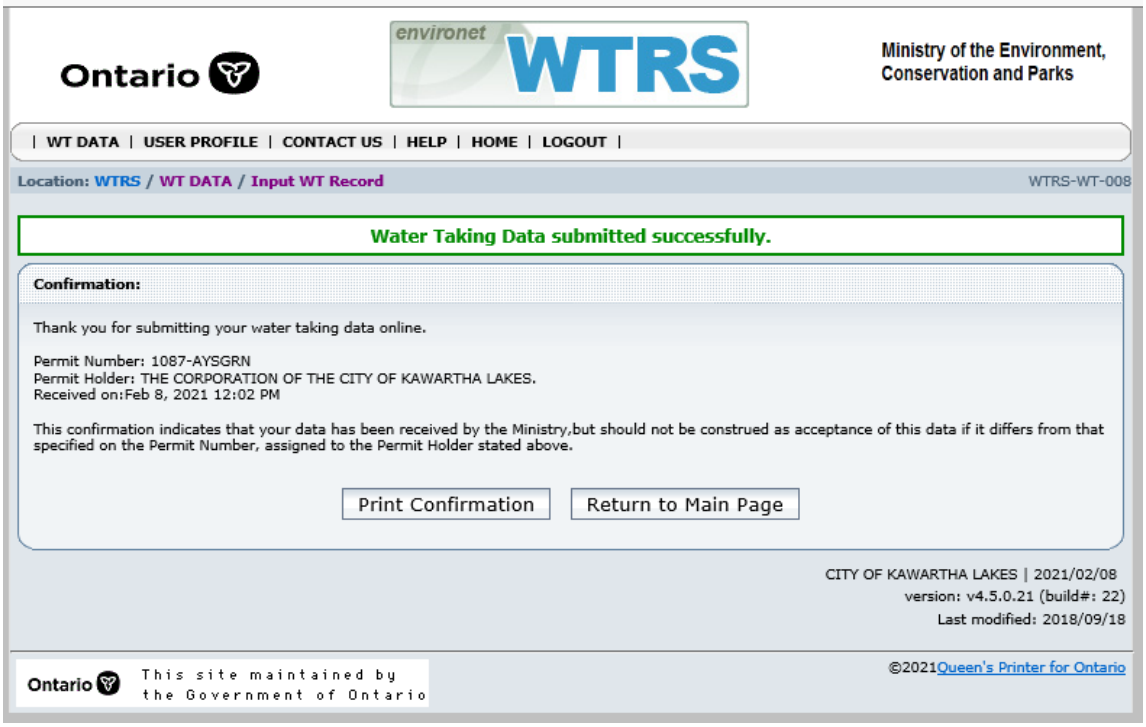
Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
MDWL 141-119 (July 26, 2016)	Nitrate	Jan. 6, 2020	1.97	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Feb. 3, 2020	3.32	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Mar. 2, 2020	3.42	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Apr. 6, 2020	3.44	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	May 4, 2020	3.51	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Jun. 1, 2020	3.09	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Jul. 6, 2020	2.82	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Aug. 4, 2020	2.57	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Sep. 8, 2020	2.20	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Oct. 5, 2020	2.89	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Nov. 2, 2020	2.64	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Dec. 7, 2020	2.87	mg/L

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

WO #	Description
1624431	Replace/Repair Well 3 Sample Tap

Appendix A

WTRS Submission Confirmation



Ontario

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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: 1087-AYSGRN
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on:Feb 8, 2021 12:02 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 | 2021/02/08
version: v4.5.0.21 (build#: 22)
Last modified: 2018/09/18

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