

# King's Bay Drinking Water System

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Waterworks # 260002954  
System Category – Large Municipal Residential

## Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1<sup>st</sup> – December 31<sup>st</sup>, 2018

Issued: February 15, 2019

Revision: 0

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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WTRS Submission Confirmation

## Report Availability

This system does not serve more than 10,000 residences. The annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office and on the City's website at [www.kawarthalakes.ca](http://www.kawarthalakes.ca). Notification that reports are available free of charge will be made on the City of Kawartha Lakes website. The City of Kawartha Lakes Public Works Administration Office is located at 12 Peel Street in Lindsay, Ontario.

## 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, 2018 - December 31, 2018

	# of Events	Date	Details
<b>Health &amp; Safety</b>			
Number of Incidents	0		
<b>Drinking Water</b>			
MECP Inspections	1	Nov. 20, 2018	Announced - Detailed Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	2	Sep. 9, 2018	4 Total Coliforms Distribution
		Nov. 21, 2018	8 Total Coliforms Distribution
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**

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
Sep. 9, 2018	142580	Distribution	Total Coliforms	4	O. Reg. 170/03	Flush, resample and test.
Nov. 21, 2018	144143	Distribution	Total Coliforms	8	O. Reg. 170/03	Flush, resample and test.

**Non-Compliance**

Legislation Requirement(s) system failed to meet	Duration of the failure	(i.e. date(s))	Corrective Action	Status
There were no non-compliance issues reported during the reporting period.				

**Non-Compliance Identified in a Ministry Inspection:**

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliances identified in a Ministry Inspection during this period.				

**Flows**

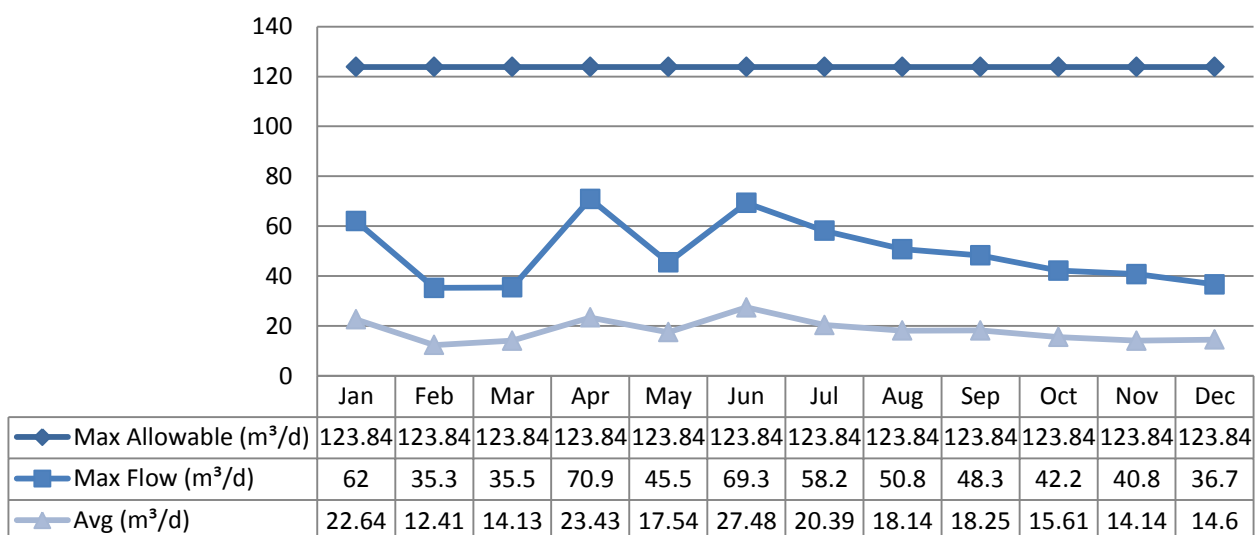
The King's Bay Drinking Water System is operating on average under half the rated capacity.

**Raw Water Flows**

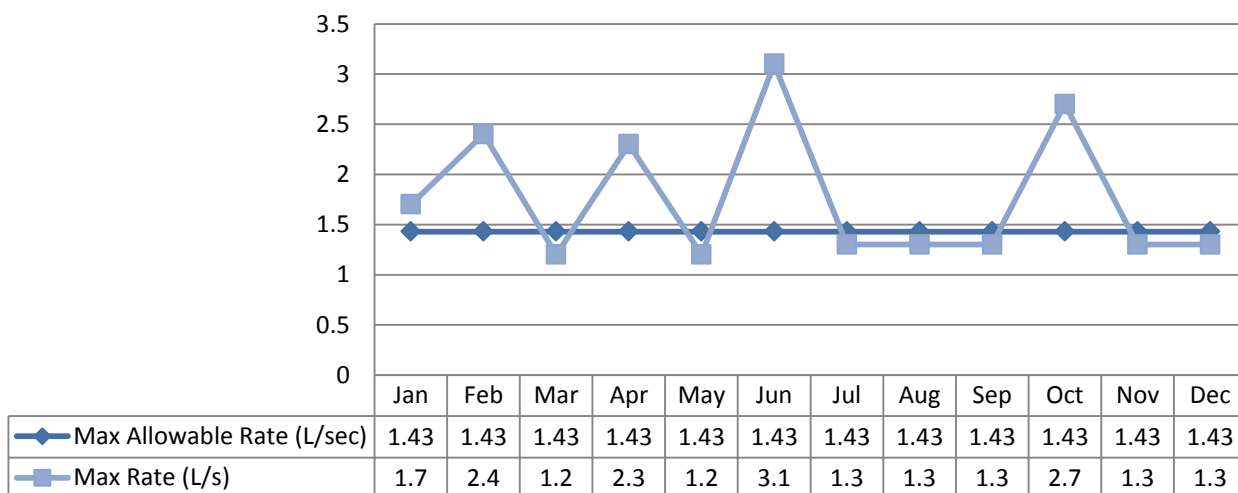
The Raw Water flows are regulated under the Permit to Take Water. 2018 Raw Flow Data was submitted to the Ministry electronically under permits #2842-8B8M9T and #1087-AYSGRN. The confirmation that the data was submitted is attached in Appendix A.

**Total Monthly Flows (m<sup>3</sup>/d)**

Max Allowable PTTW – Well #2

**Monthly Rated Flows (L/s)**

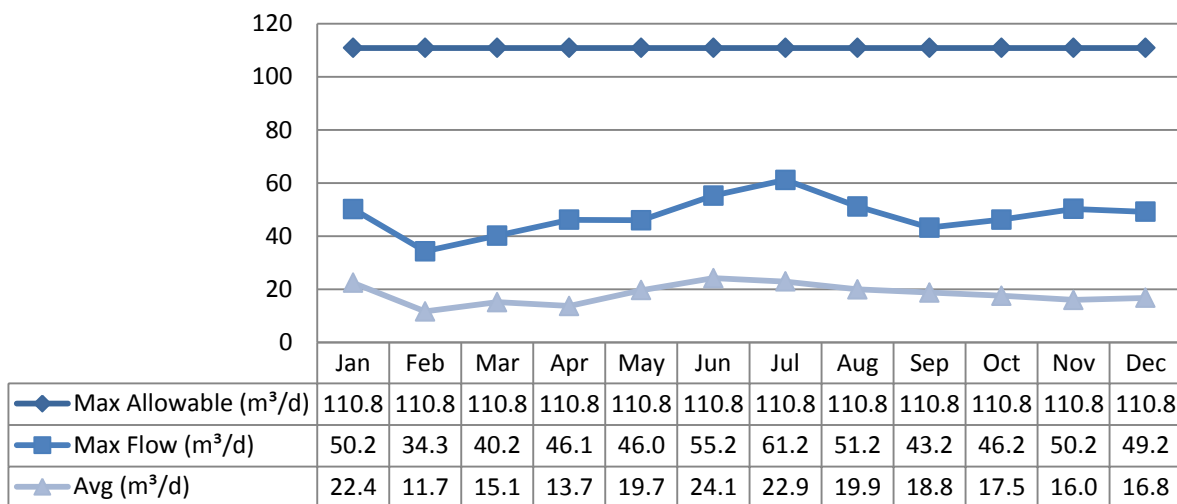
Max allowable rate – PTTW – Well #2



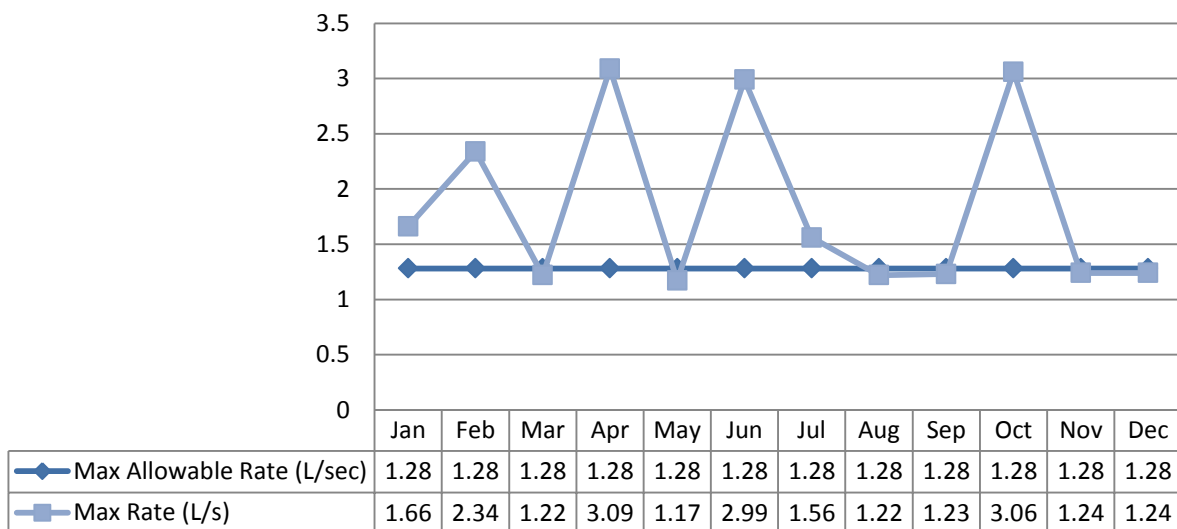
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spikes are instantaneous and are due to pump start-up.

Total Monthly Flows (m<sup>3</sup>/d)

Max Allowable PTTW – Well #3

Monthly Rated Flows (L/s)

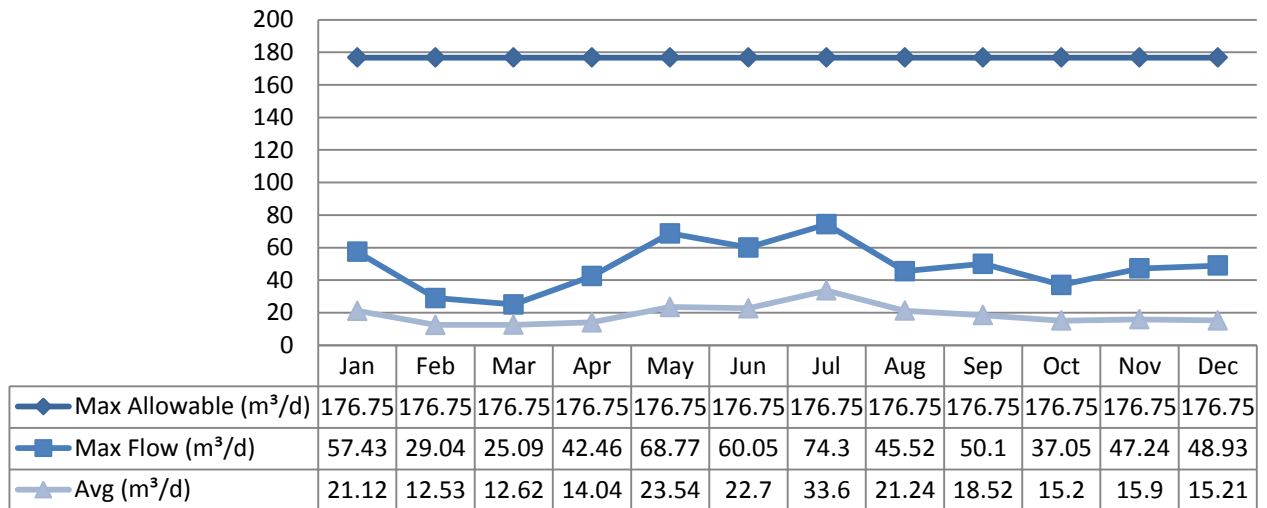
Max allowable rate – PTTW – Well #3



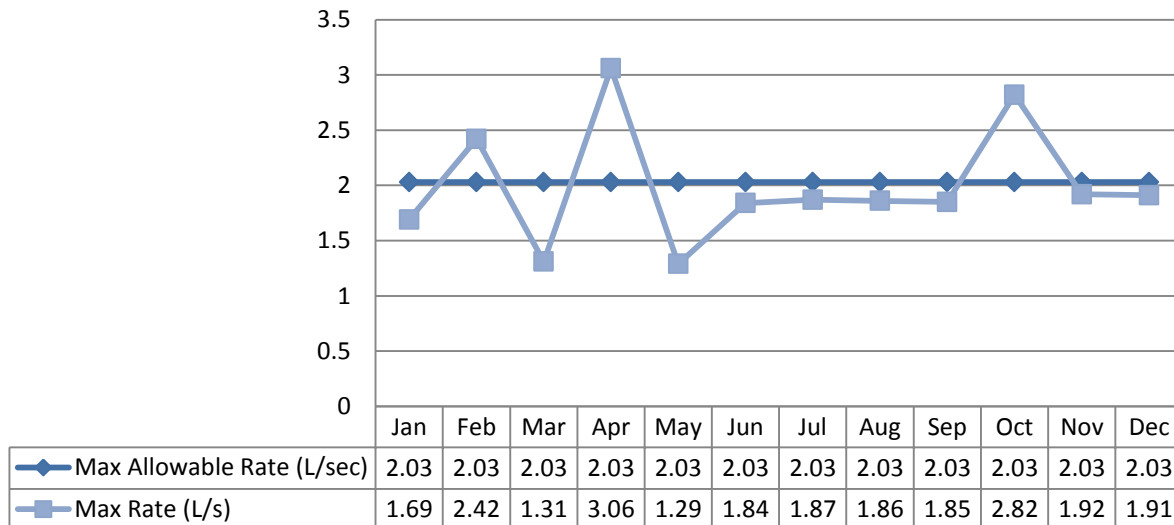
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spikes are instantaneous and are due to pump start-up.

Total Monthly Flows (m<sup>3</sup>/d)

Max Allowable PTTW – Well #4

Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #4



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.

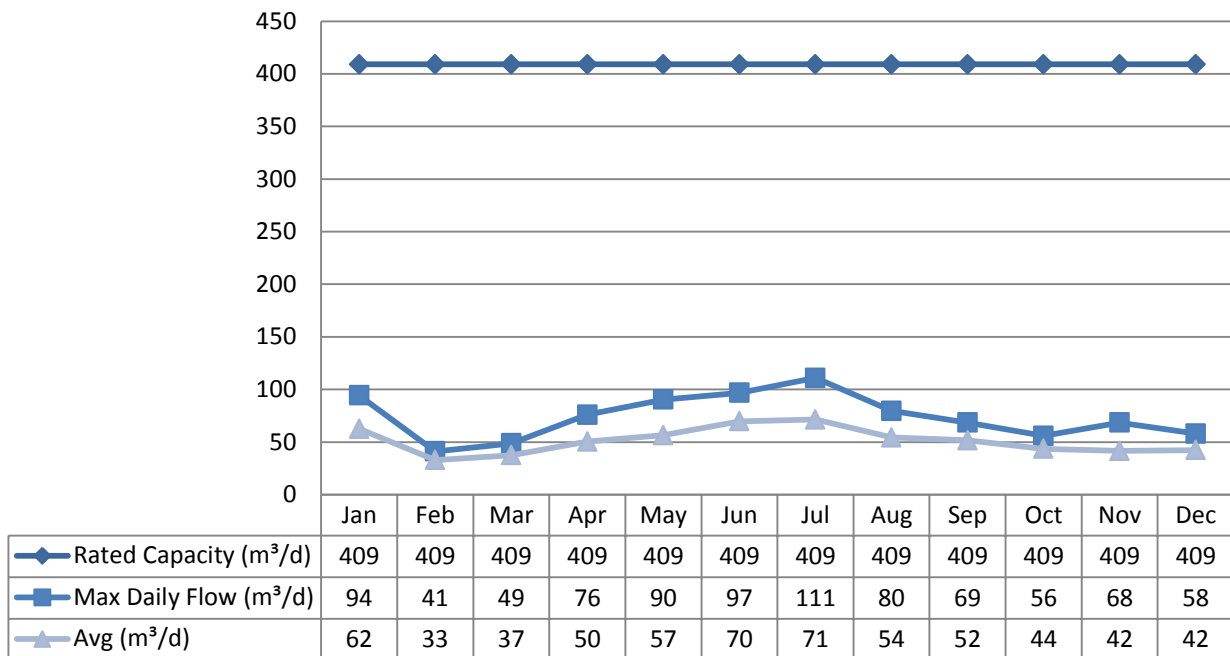


**Treated Water Flows**

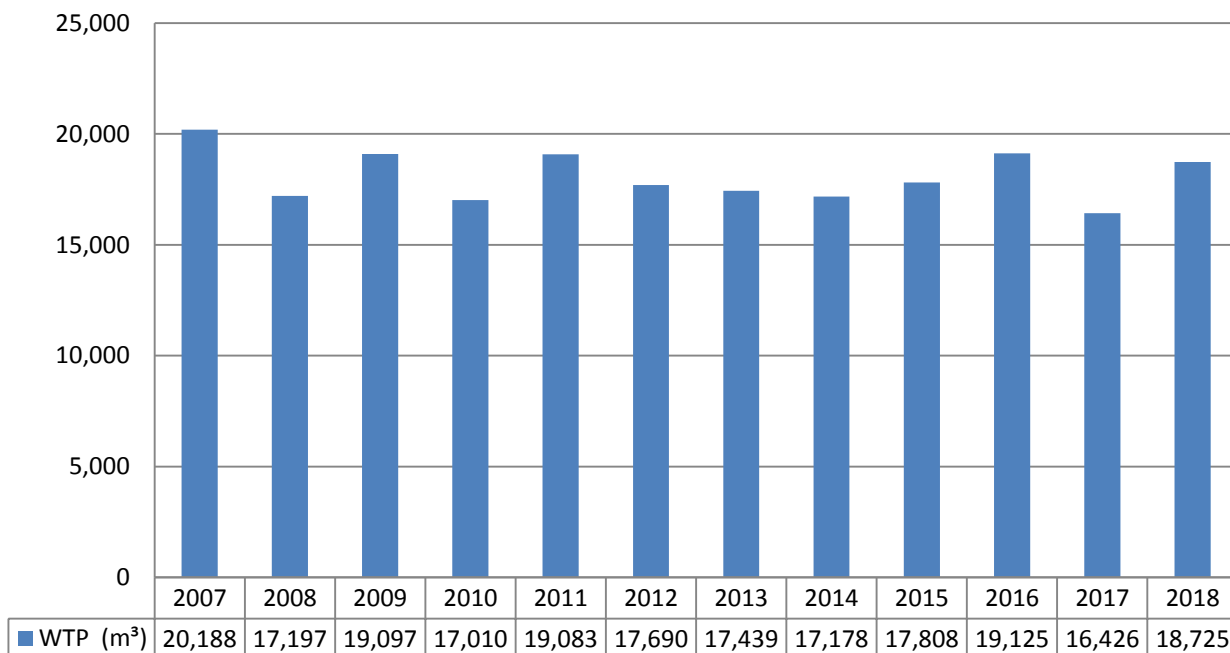
The Treated Water flows are regulated under the Municipal Licence.

**Monthly Rated Flows**

Rated Capacity – MDWL

**Annual Total Flow Comparison**

Total Annual m³



## Regulatory Sample Results Summary

### 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 Well 2	57	0	0	0	1		
Raw Well 3	54	0	0	0	0		
Raw Well 4	53	0	0	0	1		
Treated	53	0	0	0	0	0	38
Distribution	165	0	0	0	8	0	37

### Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity Well 2 (NTU)	12	0.18	1.58
Turbidity Well 3 (NTU)	12	0.22	0.63
Turbidity Well 4 (NTU)	13	0.14	0.7
Turbidity - TW (NTU)	8760	0	1.99
Chlorine	8760	0.04	2.16
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	1/2 MAC
<b>Treated Water</b>					
Antimony: Sb (ug/L) - TW	2018/01/02	<MDL 0.02	6.0	No	No
Arsenic: As (ug/L) - TW	2018/01/02	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2018/01/02	78.4	1000.0	No	No
Boron: B (ug/L) - TW	2018/01/02	9.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2018/01/02	0.005	5.0	No	No
Chromium: Cr (ug/L) - TW	2018/01/02	0.38	50.0	No	No
Mercury: Hg (ug/L) - TW	2018/01/02	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2018/01/02	0.11	50.0	No	No
Uranium: U (ug/L) - TW	2018/01/02	0.867	20.0	No	No
<b>Additional Inorganics</b>					
Fluoride (mg/L) - TW	2015/01/06	0.1	1.5	No	No
Nitrite (mg/L) - TW	2018/03/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/06/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/09/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/12/03	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2018/03/05	2.37	10.0	No	No
Nitrate (mg/L) - TW	2018/06/04	3.2	10.0	No	No
Nitrate (mg/L) - TW	2018/09/04	1.99	10.0	No	No
Nitrate (mg/L) - TW	2018/12/03	2.67	10.0	No	No
Sodium: Na (mg/L) - TW	2015/01/06	6.72	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 (ug/L)	Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	186	297	N/A	N/A
pH	2	2	7.81	7.85	N/A	N/A
Lead (ug/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	
				MAC	1/2 MAC
<b>Treated Water</b>					
Alachlor (ug/L) - TW	2018/01/02	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2018/01/02	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2018/01/02	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2018/01/02	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2018/01/02	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2018/01/02	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2018/01/02	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2018/01/02	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2018/01/02	<MDL 0.16	2.00	No	No
Chlorpyrifos (ug/L) - TW	2018/01/02	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2018/01/02	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2018/01/02	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2018/01/02	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2018/01/02	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2018/01/02	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2018/01/02	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2018/01/02	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2018/01/02	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2018/01/02	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2018/01/02	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2018/01/02	<MDL 0.03	20.00	No	No
Diquat (ug/L) - TW	2018/01/02	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2018/01/02	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2018/01/02	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2018/01/02	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2018/01/02	<MDL 0.12	100.00	No	No
Metolachlor (ug/L) - TW	2018/01/02	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2018/01/02	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2018/01/02	<MDL 0.3	80.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Paraquat (ug/L) - TW	2018/01/02	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2018/01/02	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2018/01/02	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2018/01/02	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2018/01/02	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2018/01/02	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2018/01/02	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2018/01/02	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2018/01/02	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2018/01/02	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2018/01/02	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2018/01/02	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2018/01/02	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2018/01/02	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2018/01/02	<MDL 0.17	1.00	No	No
<b>Distribution Water</b>					
Trihalomethane: Total (ug/L) Annual Average - DW	2018	6.8	100	No	No
HAA Total (ug/L) Annual Average - DW	2018	5.3	N/A	N/A	N/A

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. 2, 2018	2.25	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Feb. 5, 2018	2.47	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Mar. 5, 2018	2.37	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Apr. 3, 2018	3.05	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	May 7, 2018	2.25	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Jun. 4, 2018	3.2	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Jul. 3, 2018	1.63	mg/L

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
MDWL 141-119 (July 26, 2016)	Nitrate	Aug. 7, 2018	2.29	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Sep. 4, 2018	1.99	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Oct. 1, 2018	3.18	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Nov. 5, 2018	2.12	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Dec. 3, 2018	2.67	mg/L

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

WO #	Description
	Equipment was maintained in a fit state of repair as per legislation.

# Appendix A

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## WTRS Submission Confirmation

<b>Water Taking Data submitted successfully.</b>
<b>Confirmation:</b>
Thank you for submitting your water taking data online.
Permit Number: 2842-8B8M9T Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES. Received on: Feb 21, 2019 3:09 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.
<a href="#">Print Confirmation</a> <a href="#">Return to Main Page</a>

<b>Water Taking Data submitted successfully.</b>
<b>Confirmation:</b>
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 22, 2019 7:29 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.