

Canadiana Shores Drinking Water System

Waterworks # 220006491
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2018

Issued: February 22, 2019

Revision: 0

Operating Authorities:



OCWA



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 ConfirmationA

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. 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: 220006491

Drinking Water System Name: Canadiana Shores 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
Health & Safety			
Number of Incidents			
Drinking Water			
MECP Inspections	1	September 20, 2018	Announced - Detailed Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	1	May 5, 2018	Free chlorine monitoring and system pressure.
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 GUDI (Groundwater Under the Direct Influence of Surface Water).

Treatment

The treatment system consists of the following:

- sodium hypochlorite disinfection system
- two (2) package treatment units with backwash equipment and backwash waste storage/decant tank system
- two (2) cartridge filtration systems

- two (2) booster pumps and equalization tank system
- hydropneumatic tanks
- a high lift pumping system
- 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
May 5, 2018	139246	Distribution	No monitoring of free chlorine and low pressure in system	Loss of free chlorine and system pressure monitoring during PLC fault.	O. Reg. 170/03	Replaced fuse - restoring PLC, facility placed back into operation, flushed distribution system, took samples on May 5 and 6, samples were clear.

Non-Compliance

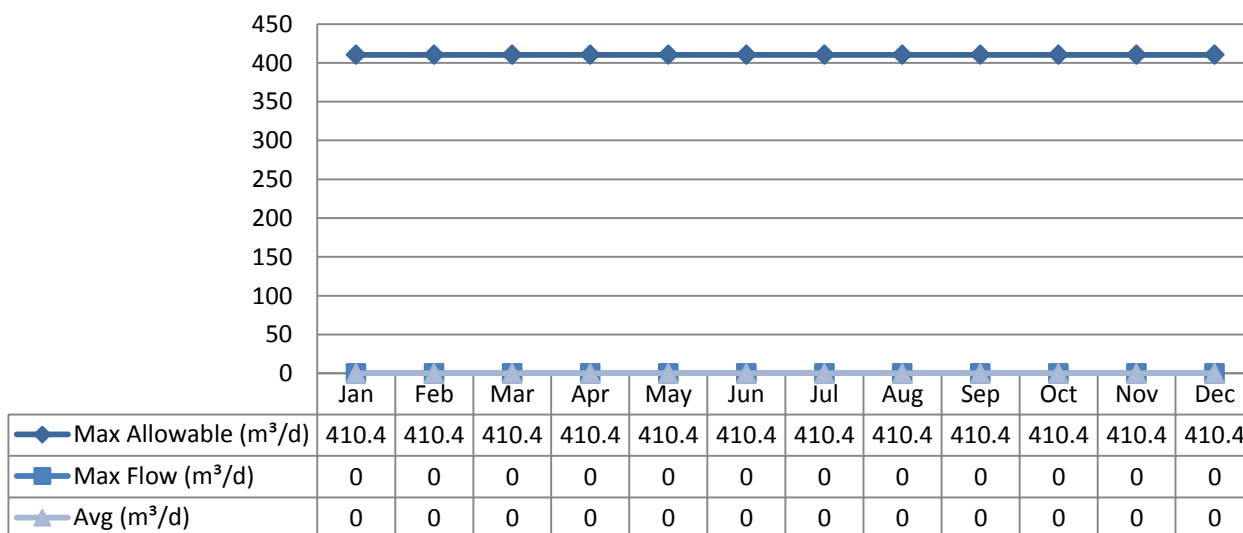
Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliance issues reported during the reporting period.				

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.				

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

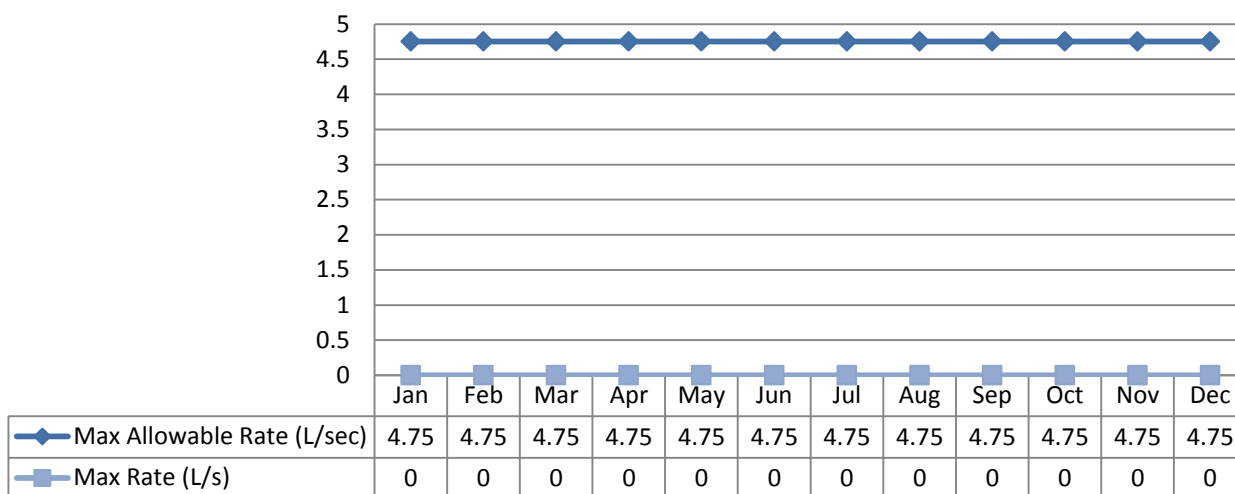
The Raw Water flows are regulated under the Permit to Take Water. 2018 Raw Flow Data was submitted to the Ministry electronically under permit #1452-AWDLEX. The confirmation and a copy of the data that was submitted are attached in Appendix A.

Max Allowable PTTW – Well #1



Monthly Rated Flows (L/s)

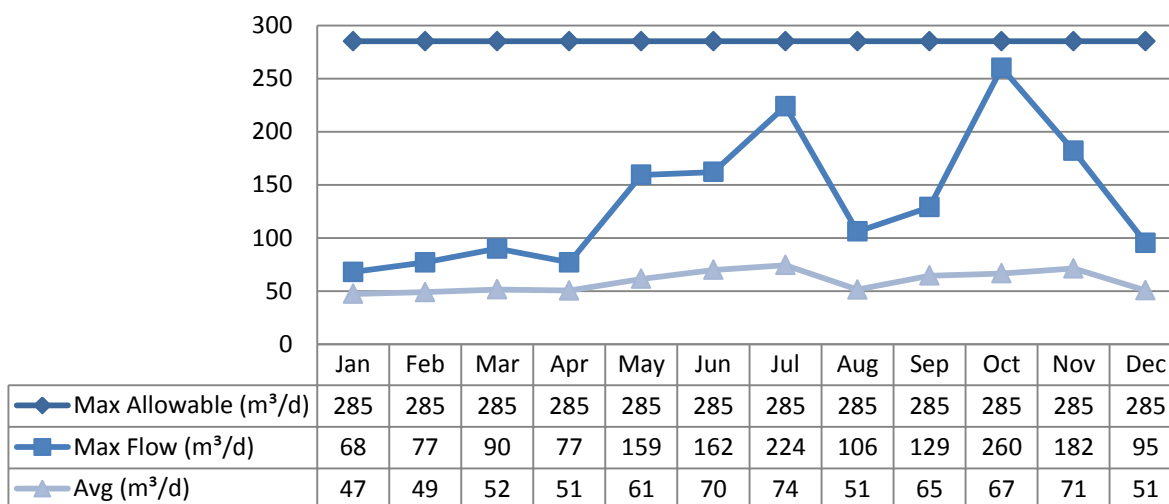
Max allowable rate – PTTW – Well #1



Note: Well 1 was not in production during the reporting period.

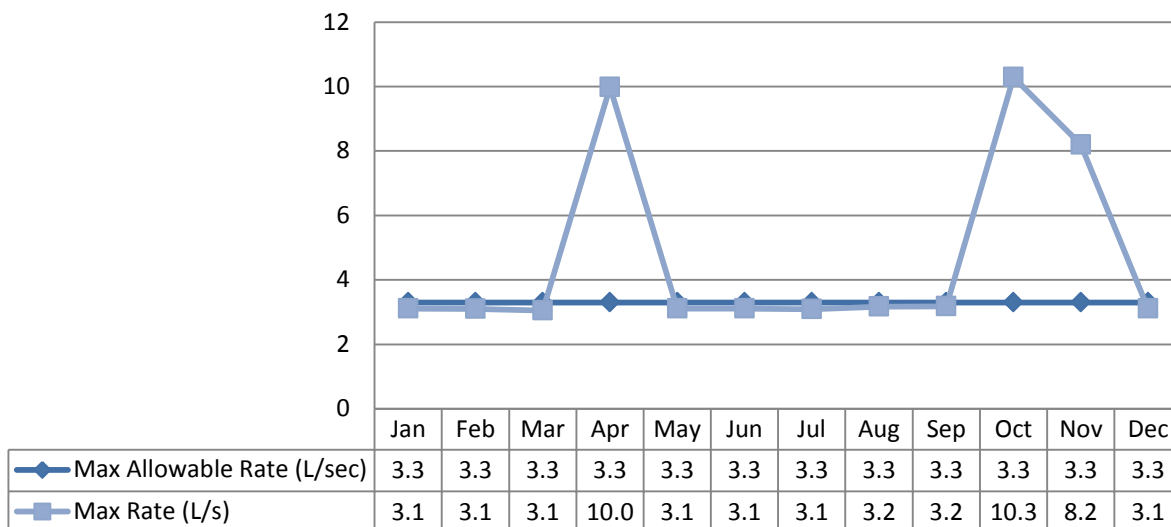
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #2



Monthly Rated Flows (L/s)

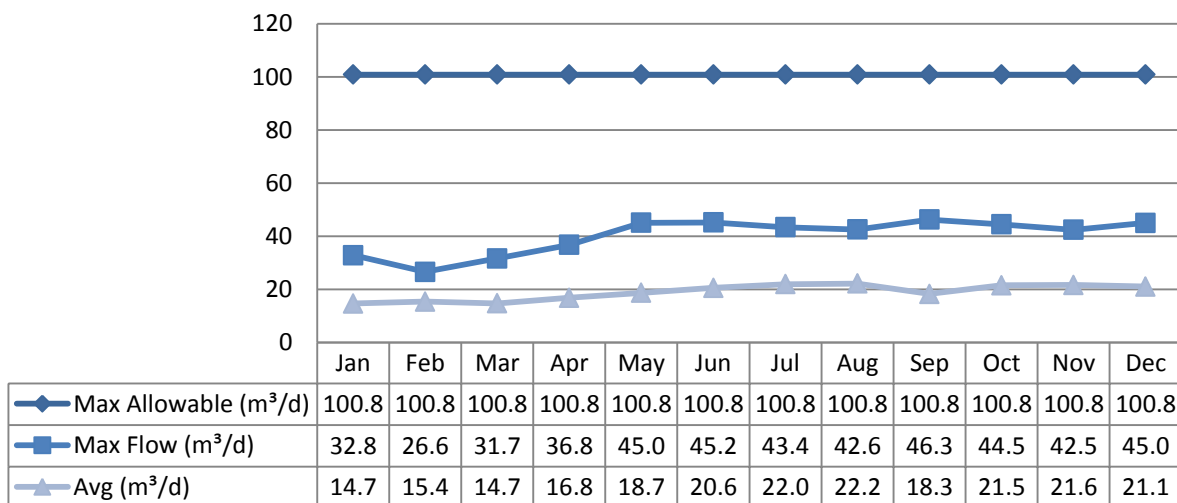
Max allowable rate – PTTW – Well #2



Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The significant spike in April was due to scheduled Flow Meter calibration. The significant spike in October was due to power transfer. The significant spike in November was due to power transfer.

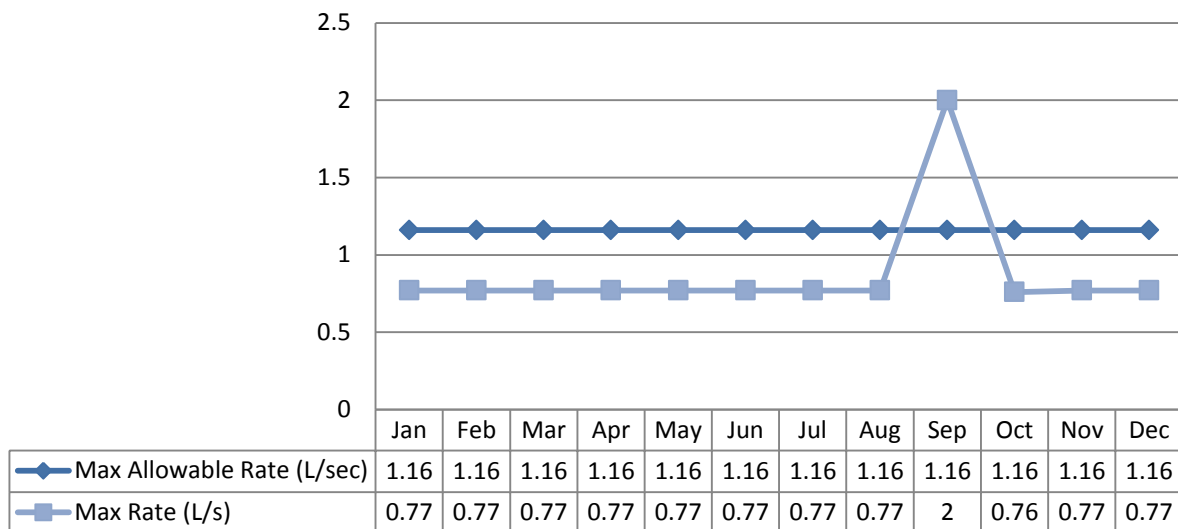
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #3



Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #3



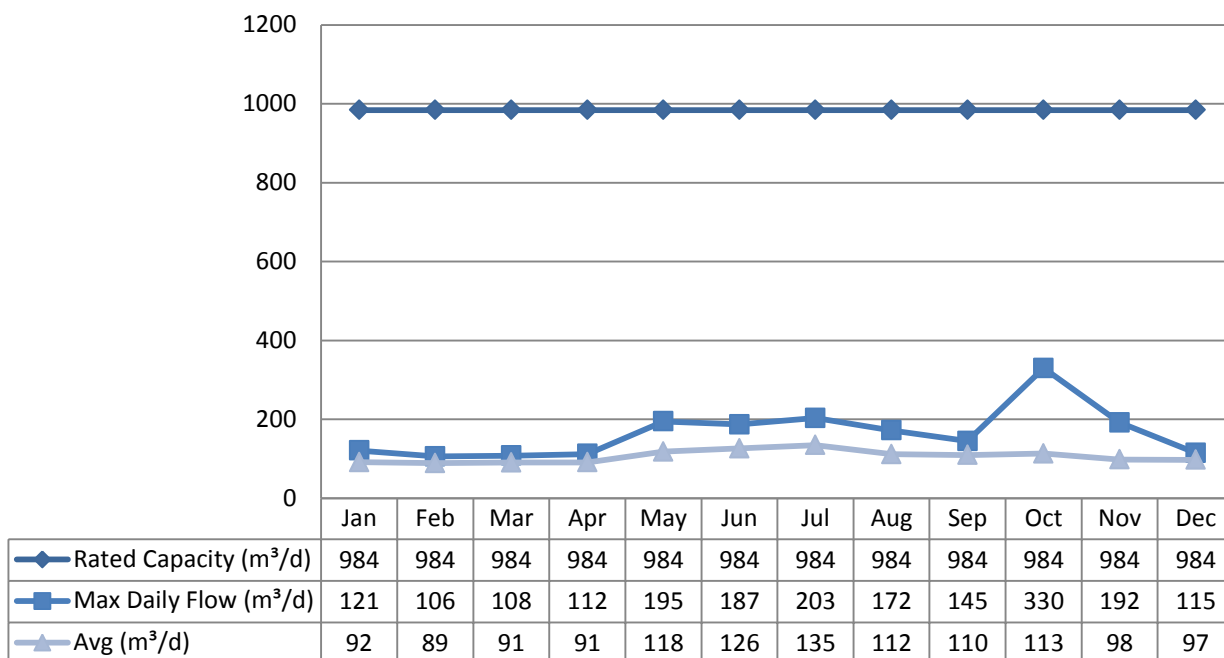
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The significant spike in September was due to scheduled Flow Meter calibration.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

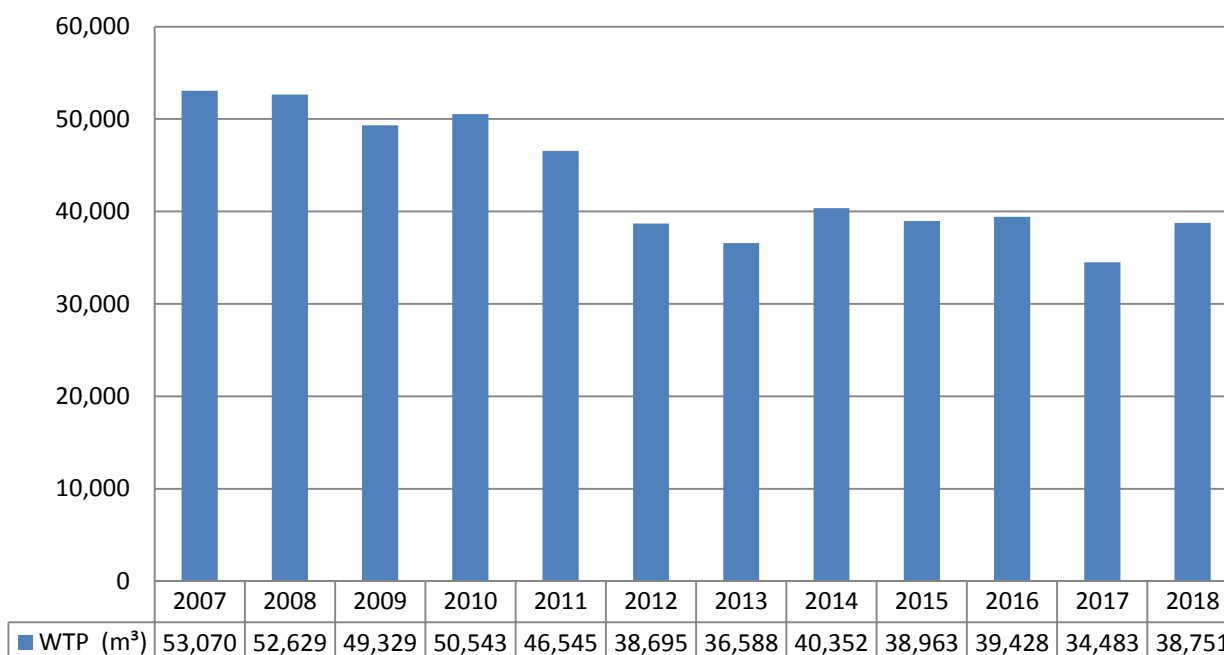
Monthly Rated Flows

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 1	2	0	0	0	0		
Raw Well 2	55	0	0	0	1		
Raw Well 3	57	0	0	0	1		
Treated	55	0	0	0	0	0	2
Distribution	163	0	0	0	0	0	2000

Note: Well 1 was not in production during this reporting period.

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity Well 1 (NTU)	0	N/A	N/A
Turbidity Well 2 (NTU)	12	0.36	0.58
Turbidity Well 3 (NTU)	12	0.28	0.82
Turbidity – Filter Line 1 (NTU)	8760	0.00	0.42
Turbidity – Filter Line 2 (NTU)	8760	0.00	1.98
Chlorine	8760	0	3.63
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Well 1 was not in production during this reporting period.

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 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
- MDL = Method Detection Limit

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2018/01/08	<MDL 0.02	6.0	No	No
Arsenic: As (ug/L) - TW	2018/01/08	0.4	10.0	No	No
Barium: Ba (ug/L) - TW	2018/01/08	116.0	1000.0	No	No
Boron: B (ug/L) - TW	2018/01/08	8.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2018/01/08	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2018/01/08	0.08	50.0	No	No
Mercury: Hg (ug/L) - TW	2018/01/08	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2018/01/08	0.17	50.0	No	No
Uranium: U (ug/L) - TW	2018/01/08	3.23	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018/01/08	0.09	1.5	No	No
Nitrite (mg/L) - TW	2018/01/08	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/04/17	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/07/16	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/10/09	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2018/01/08	0.745	10.0	No	No
Nitrate (mg/L) - TW	2018/04/17	1.16	10.0	No	No
Nitrate (mg/L) - TW	2018/07/16	1.32	10.0	No	No
Nitrate (mg/L) - TW	2018/10/09	1.37	10.0	No	No
Sodium: Na (mg/L) - TW	2018/01/08	17.0	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	Range of Results	MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	272	283	N/A	N/A
pH	2	2	7.70	8.05	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	Number of Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2018/01/08	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2018/01/08	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2018/01/08	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2018/01/08	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2018/01/08	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2018/01/08	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2018/01/08	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2018/01/08	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2018/01/08	<MDL 0.16	2.00	No	No
Chlorpyrifos (ug/L) - TW	2018/01/08	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2018/01/08	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2018/01/08	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2018/01/08	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2018/01/08	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2018/01/08	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2018/01/08	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2018/01/08	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2018/01/08	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2018/01/08	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2018/01/08	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2018/01/08	<MDL 0.03	20.00	No	No
Diquat (ug/L) - TW	2018/01/08	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2018/01/08	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2018/01/08	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2018/01/08	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA) (ug/L)	2018/01/08	<MDL 0.12	100.00	No	No
Metolachlor (ug/L) - TW	2018/01/08	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2018/01/08	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2018/01/08	<MDL 0.3	80.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Paraquat (ug/L) - TW	2018/01/08	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2018/01/08	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2018/01/08	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2018/01/08	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2018/01/08	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2018/01/08	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2018/01/08	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2018/01/08	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2018/01/08	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2018/01/08	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2018/01/08	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2018/01/08	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2018/01/08	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2018/01/08	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2018/01/08	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2018	13.15	100	No	No
HAA Total (ug/L) Annual Average - DW	2018	5.4	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
July 26, 2016	Suspended Solids (Composite)	Jan. 29, 2018	< 2	mg/L
July 26, 2016	Suspended Solids (Composite)	Feb. 27, 2018	< 2	mg/L
July 26, 2016	Suspended Solids (Composite)	Mar. 26, 2018	< 2	mg/L
July 26, 2016	Suspended Solids (Composite)	Apr. 30, 2018	< 2	mg/L
July 26, 2016	Suspended Solids (Composite)	May 28, 2018	2	mg/L

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
July 26, 2016	Suspended Solids (Composite)	Jun. 25, 2018	< 2	mg/L
July 26, 2016	Suspended Solids (Composite)	Jul. 30, 2018	2	mg/L
July 26, 2016	Suspended Solids (Composite)	Aug. 27, 2018	4	mg/L
July 26, 2016	Suspended Solids (Composite)	Sep. 24, 2018	3	mg/L
July 26, 2016	Suspended Solids (Composite)	Oct. 29, 2018	3	mg/L
July 26, 2016	Suspended Solids (Composite)	Nov. 26, 2018	< 2	mg/L
July 26, 2016	Suspended Solids (Composite)	Dec. 24, 2018	3	mg/L

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

WO #	Description
626783	Roof repair
782352	Installation of heater in generator room
980545	Repair of lighting system

Appendix A

WTRS Submission Confirmation

Water Taking Data submitted successfully.
Confirmation:
Thank you for submitting your water taking data online.
Permit Number: 8687-7JDRV6 Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES. Received on:Feb 22, 2019 7:47 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.

Water Taking Data submitted successfully.
Confirmation:
Thank you for submitting your water taking data online.
Permit Number: 1452-AWDLEX Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES. Received on:Feb 22, 2019 7:52 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.