

Western Trent/Palmina Drinking Water System

Waterworks # 220008131
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 8, 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

Table of Contents

Annual Water Report	1
Report Availability	3
Compliance Report Card	3
System Process Description	3
Raw Source	3
Treatment	4
Treatment Chemicals used during the reporting year	4
Summary of Non-Compliance.....	4
Adverse Water Quality Incidents.....	4
Non-Compliance	5
Non-Compliance Identified in a Ministry Inspection	4
Flows	4
Raw Water Flows.....	5
Total Monthly Flows (m ³ /d)-Well #1	6
Monthly Rate Flows (L/s)-Well #1	6
Total Monthly Flows (m ³ /d)-Well #2	7
Monthly Rate Flows (L/s)-Well #2.....	7
Treated Water Flows	8
Monthly Rated Flows	8
Annual Total Flow Comparison.....	8
Regulatory Sample Results Summary	9
Microbiological Testing	9
Operational Testing	9
Inorganic Parameters	10
Schedule 15 Sampling.....	10
Organic Parameters.....	11
Additional Legislated Samples.....	12
Major Maintenance Summary	12
WTRS Submission Confirmation	A

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: 220008131
Drinking Water System Name: Western Trent/Palmina 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	0		
Drinking Water			
MECP Inspections	1	May 10, 2018	Announced - Detailed Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	3	July 4, 2018	Low system pressure
		July 5, 2018	NSF 53 filters were not used as required by the MDWL
		December 7, 2018	Treated water sodium exceedance
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 GUDI (groundwater under direct influence).

Treatment

The treatment system consists of the following:

- Two drilled groundwater production wells deemed GUDI
- Raw and treated water flow meters
- Cartridge filtration system
- Chlorine contact chamber
- Treated water storage reservoir
- Two vertical turbine high lift pumps
- Chemical feed system consisting of four metering pumps for pre and post chlorination and two sodium hypochlorite storage tanks with spill containment
- Standby power 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
July 4, 2018	140216	Distribution	Low pressure	Pressure loss in distribution	O. Reg. 170/03	Reset high lift pump, restored pressure, restored chlorine residual, flushed system, sampled
July 5, 2018	140270	Treated water	1 micron absolute cartridge filters not NSF 53 or equivalent	Notified by MECP that previously approved cartridge filters were not NSF 53 or equivalent	Municipal Drinking Water License	Replacement canisters and cartridge filters installed November 2018
Decemb	144270	Treated	Sodium	The	O. Reg.	Re-sample

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
er 7, 2018		Water	Exceedance	sodium in the treated water exceeded 20 mg/L	170/03	of the treated water, result below the limit.

Non-Compliance(s)

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

Non-Compliance(s) Identified in a Ministry Inspection:

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

Flows

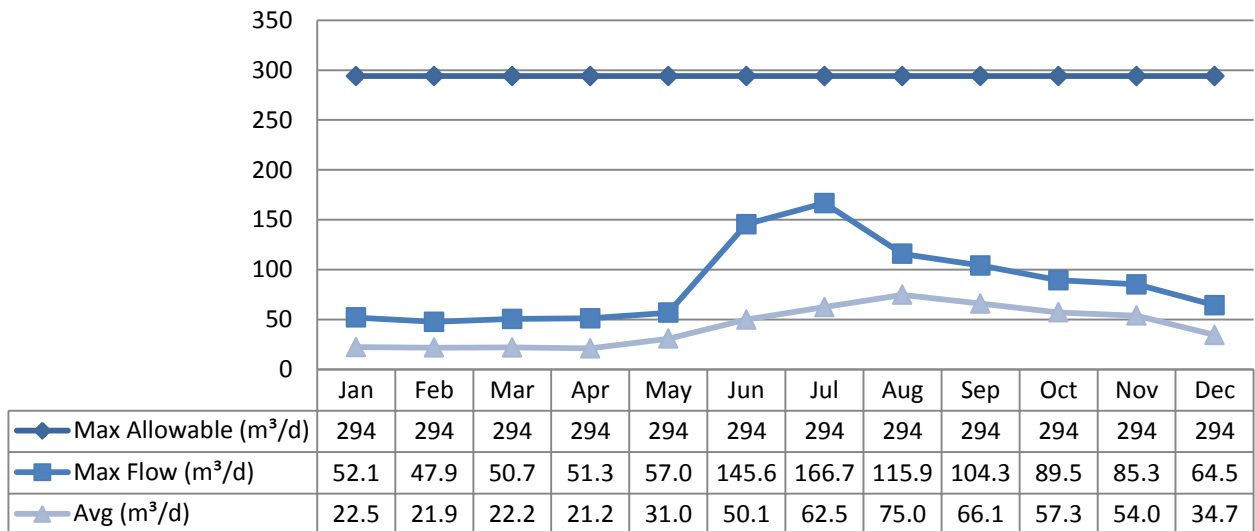
The Western Trent/Palmina Drinking Water System is operating on average under half the rated capacity.

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 permit #6784-7JDRFS and #7211-7JCMRV and the consolidated PTTW#2180-B4CKK3. The confirmation of the data that was submitted is attached in Appendix A.

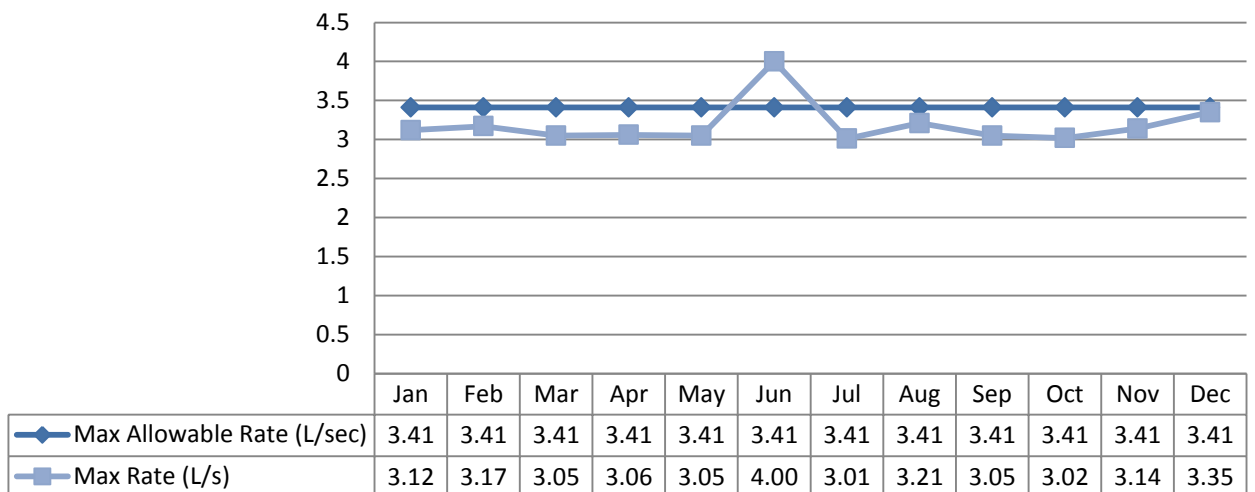
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #1



Monthly Rated Flows (L/s)

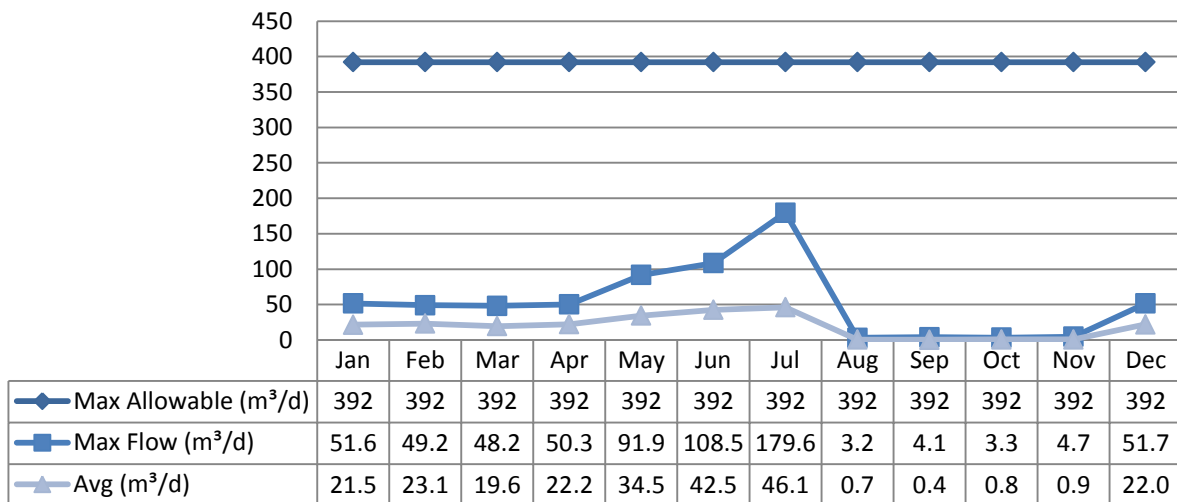
Max allowable rate – PTTW – Well #1



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

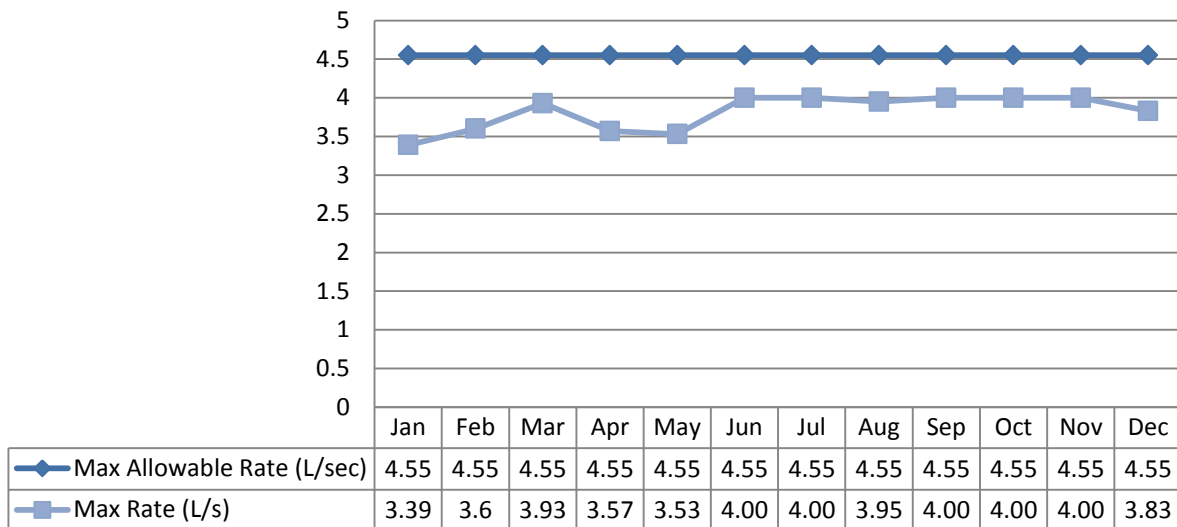
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #2



Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #2

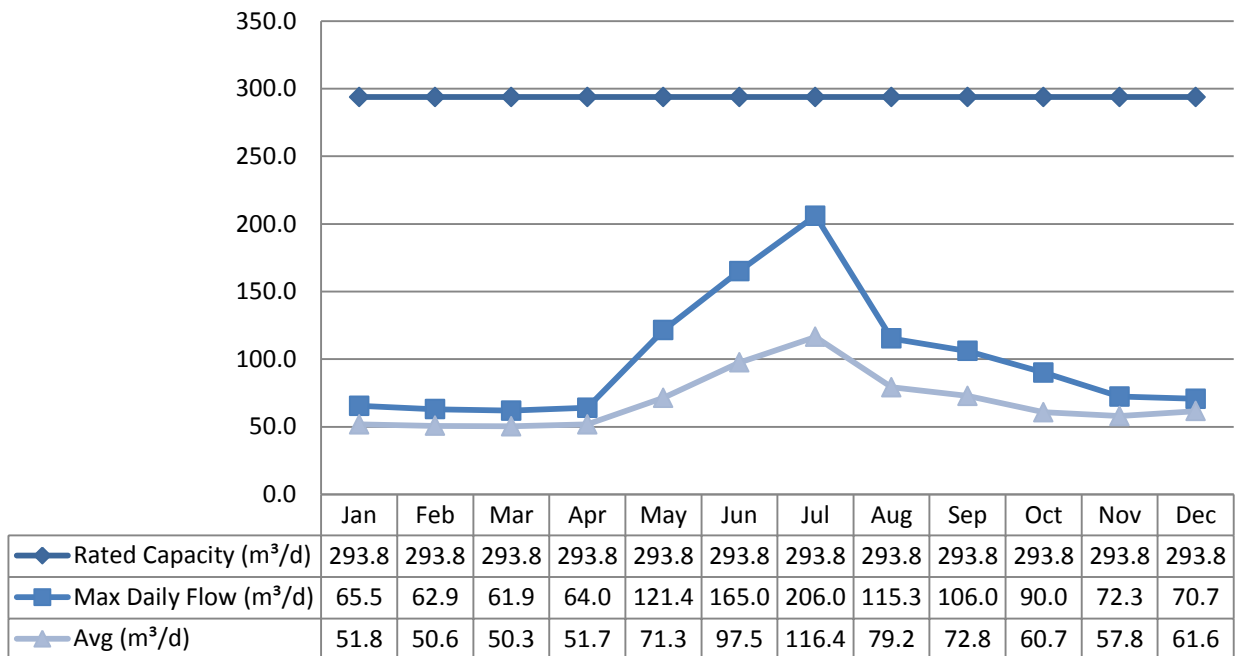


Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

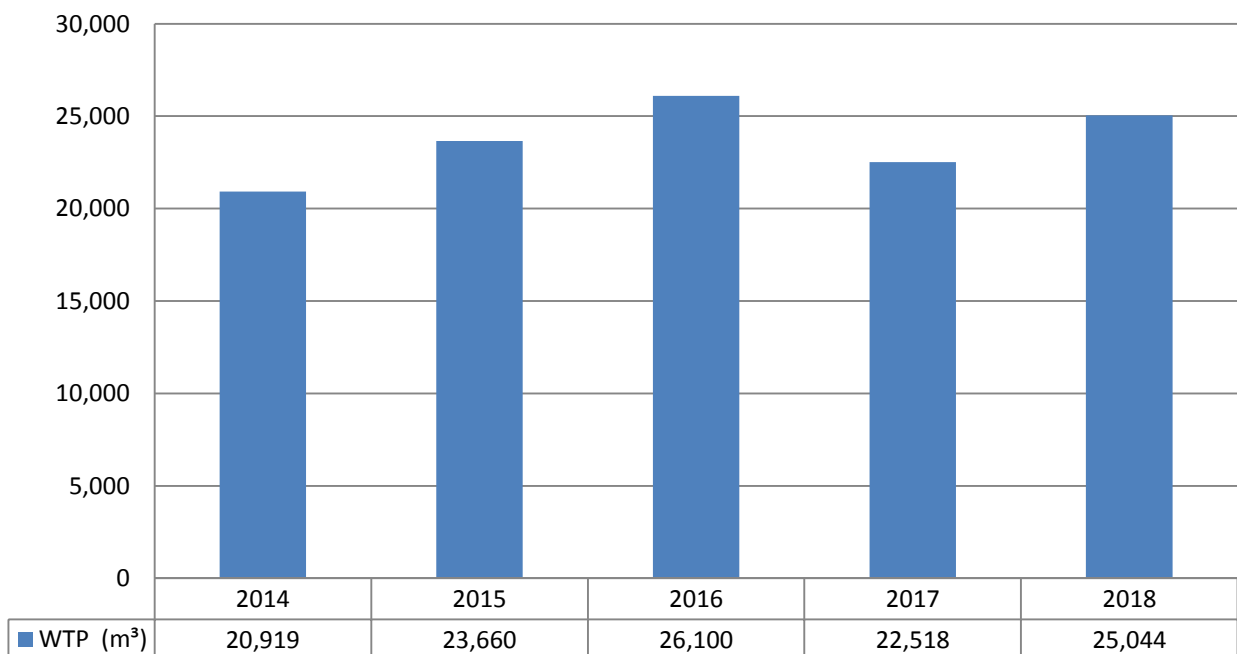
Monthly Rated Flows

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	52	0	0	0	1		
Raw Well 2	52	0	1	0	17		
Treated	52	0	0	0	0	0	1
Distribution	160	0	0	0	0	0	101

Operational Testing

Parameter No. of Samples	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Filter 1 (NTU)	8760	0.00	1.50
Turbidity Filter 2 (NTU)	8760	0.00	1.50
Chlorine	8760	0.64	4.78
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	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2018/09/04	0.11	6.0	No	No
Arsenic: As (ug/L) - TW	2018/09/04	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2018/09/04	91.0	1000.0	No	No
Boron: B (ug/L) - TW	2018/09/04	101.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2018/09/04	0.004	5.0	No	No
Chromium: Cr (ug/L) - TW	2018/09/04	1.71	50.0	No	No
Mercury: Hg (ug/L) - TW	2018/09/04	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2018/09/04	0.06	50.0	No	No
Uranium: U (ug/L) - TW	2018/09/04	0.321	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018/12/03	0.21	1.5	No	No
Nitrite (mg/L) - TW	2018/01/22	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/04/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/07/09	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/10/01	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2018/01/22	0.139	10.0	No	No
Nitrate (mg/L) - TW	2018/04/03	0.089	10.0	No	No
Nitrate (mg/L) - TW	2018/07/09	0.198	10.0	No	No
Nitrate (mg/L) - TW	2018/10/01	0.066	10.0	No	No
Sodium: Na (mg/L) - TW	2018/12/03	22.0	20*	Yes	Yes
Sodium: Na (mg/L) – TW	2018/12/07	18.1	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		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	198	209	N/A	N/A
pH	2	2	7.74	7.24	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	2018/09/04	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2018/09/04	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2018/09/04	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2018/09/04	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2018/09/04	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2018/09/04	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2018/09/04	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2018/09/04	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2018/09/04	<MDL 0.16	2.00	No	No
Chlorpyrifos (ug/L) - TW	2018/09/04	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2018/09/04	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2018/09/04	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2018/09/04	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2018/09/04	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2018/09/04	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2018/09/04	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2018/09/04	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2018/09/04	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2018/09/04	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2018/09/04	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2018/09/04	<MDL 0.03	20.00	No	No
Diquat (ug/L) - TW	2018/09/04	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2018/09/04	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2018/09/04	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2018/09/04	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2018/09/04	<MDL 0.012	100.00	No	No
Metolachlor (ug/L) - TW	2018/09/04	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2018/09/04	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2018/09/04	<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	2018/09/04	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2018/09/04	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2018/09/04	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2018/09/04	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2018/09/04	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2018/09/04	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2018/09/04	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2018/09/04	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2018/09/04	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2018/09/04	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2018/09/04	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2018/09/04	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2018/09/04	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2018/09/04	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2018/09/04	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2018	43.0	100	No	No
HAA Total (ug/L) Annual Average - DW	2018	12	N/A	N/A	N/A

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
628014	Replacement of disinfection chlorination pumps
860931	Installation of NSF 53 1 micron absolute cartridge filters and housings
897789	Replacement of high lift pump
567605	Replacement of filter train 1 effluent turbidity analyzer
701863	Replacement of filter train 2 effluent turbidity analyzer
1053991	Replacement of sample pump

WO #	Description
863526	Repair of treated water flow meter
1054333	Reprogram filter effluent turbidity

Appendix A

WTRS 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: 6784-7JDRFS
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Feb 6, 2019 11:27 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.

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

CITY OF KAWARTHA LAKES | 2019/02/06
version: v4.5.0.21 (build#: 22)
Last modified: 2018/09/18

 This site maintained by
the Government of Ontario ©2019 [Queen's Printer for Ontario](#)



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: 7211-7JCMRV
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Feb 4, 2019 1:18 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 | 2019/02/04
version: v4.5.0.21 (build#: 22)
Last modified: 2018/09/18

 This site maintained by
the Government of Ontario ©2019 [Queen's Printer for Ontario](#)

Water Taking Data submitted successfully.**Confirmation:**

Thank you for submitting your water taking data online.

Permit Number: 2180-B4CKK3

Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.

Received on: Feb 6, 2019 9:10 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.