Woodville Drinking Water System

Waterworks # 210001077
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2023

Issued: February 21, 2024

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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Report Availability

This system does not serve more than 10,000 residence and the annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office and 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 322 Kent Street West in Lindsay, Ontario.

Compliance Report Card

Drinking Water System Number: 210001077
Drinking Water System Name: Woodville DWS
Drinking Water System Owner: City of Kawartha Lakes
Drinking Water System Category: Large Municipal Residential
Period Being Reported: January 1, 2023 - December 31, 2023

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	0		MECP Inspection for 2023/2024 inspection period began on February 15, 2024.
AWQI's	0		
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Woodville Water Treatment Plant is supplied with two GUDI wells (Wells 1 and 2). Well 3 is a pond makeup well.

Treatment

The treatment system consists of the following:

- Two parallel treatment trains, each containing two sets of cartridge filters
- Sodium hypochlorite feed system with two metering pumps
- Two turbidity analyzers: one analyzer per filtration train

- Two chlorine residuals analyzers: immediately following the injection point and treated water
- Two flow meters: raw and treated
- Chlorine contact pipe
- SCADA system
- Water storage standpipe with a capacity of 1160 m³
- Standby generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi

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-compliance issues reported during the reporting period.

Non-Compliance Identified in a Ministry Inspection:

There were no Ministry Inspection reports received during this period.

Flows

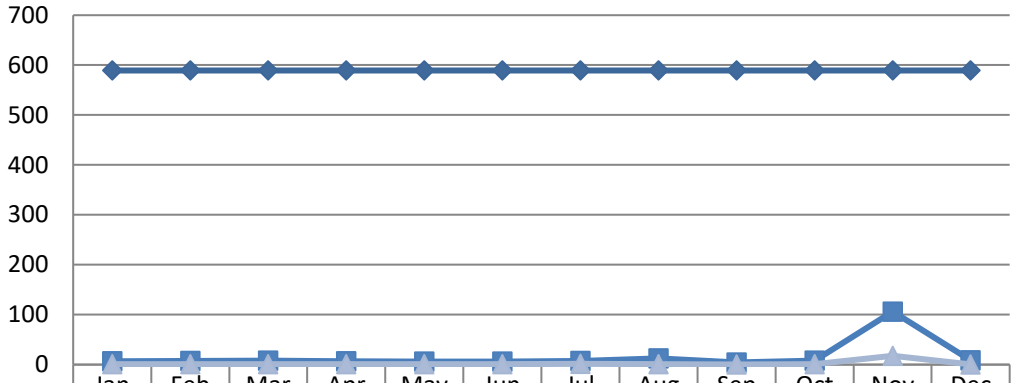
The Woodville Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2023 Raw Flow Data was submitted to the Ministry electronically under permit #1207-AHKRXV. The confirmation and a copy of the data that was submitted are attached in Appendix A.

Total Monthly Flows (m³/d)

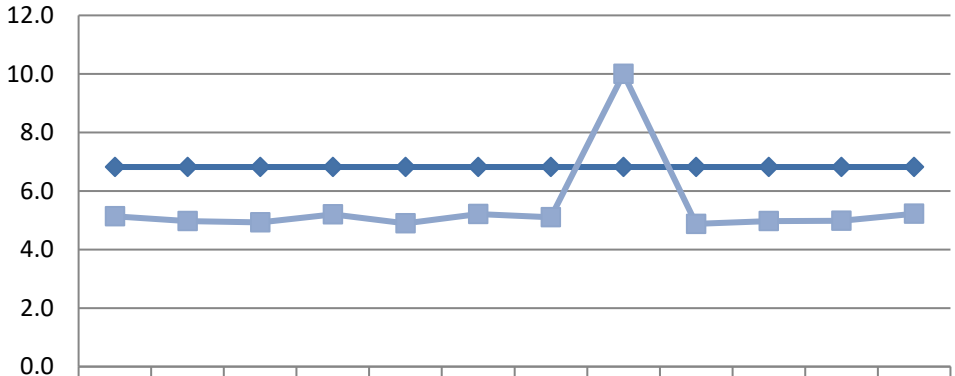
Max Allowable PTTW- Well #1



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2
Max Flow (m³/d)	6.5	7.3	7.8	6.8	6.0	5.8	7.6	12.8	4.4	7.7	106.2	8.8
Avg (m³/d)	1.2	0.8	0.8	0.8	0.8	0.7	1.3	1.1	0.4	0.7	17.6	0.4

Monthly Rated Flows (L/s)

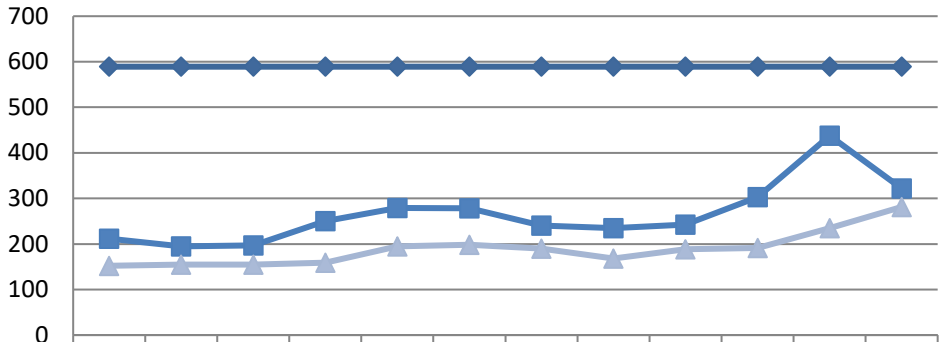
Max allowable rate – PTTW- Well #1



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Max Rate (L/s)	5.1	5.0	4.9	5.2	4.9	5.2	5.1	10.0	4.9	5.0	5.0	5.2

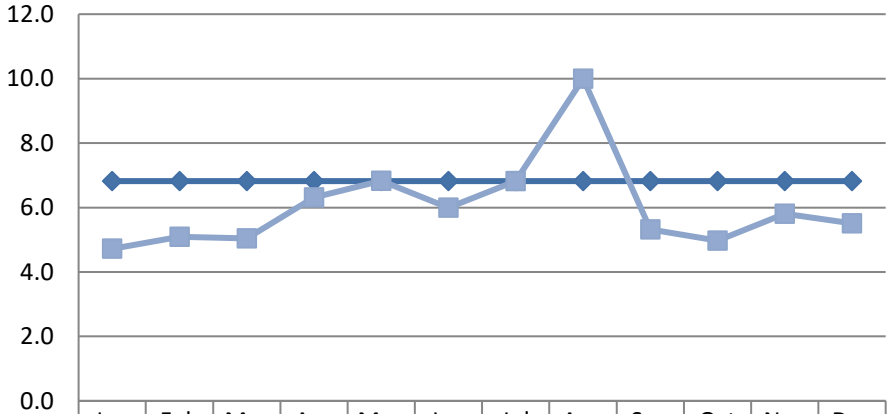
Note: The scheduled Flow Meter calibration occurred in August 2023.

Total Monthly Flows (m³/d)
Max Allowable PTTW- Well #2



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2
Max Flow (m³/d)	211.6	194.7	196.9	250.2	279.0	278.4	240.5	234.6	242.8	303.3	437.6	321.6
Avg (m³/d)	152.1	154.8	154.9	159.1	194.5	198.3	189.9	167.8	188.7	191.5	234.9	281.2

Monthly Rated Flows (L/s)
Max allowable rate – PTTW- Well #2

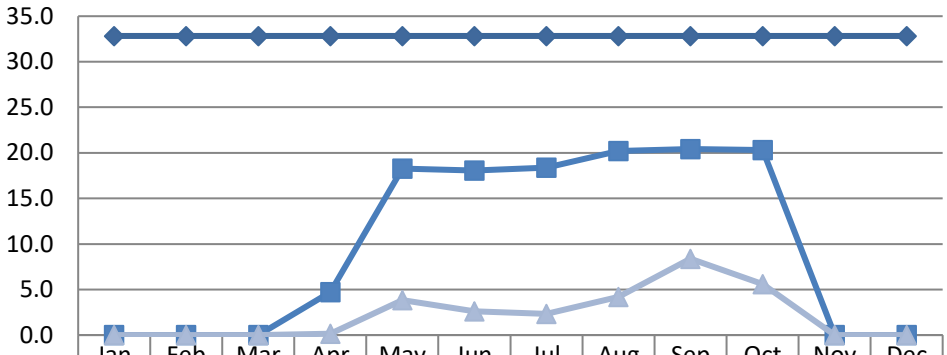


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Max Rate (L/s)	4.7	5.1	5.0	6.3	6.8	6.0	6.8	10.0	5.3	5.0	5.8	5.5

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) which were short in duration and reviewed for compliance. The scheduled Flow Meter calibration occurred in August 2023. Readings can also spike during generator runs or unplanned power outages.

Total Monthly Flows (m³/d)

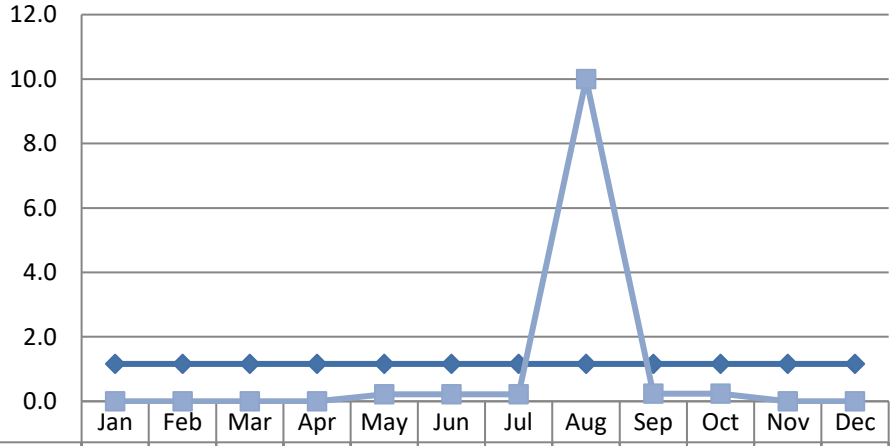
Max Allowable PTTW- Well #3 (Pond Makeup Well)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8
Max Flow (m3/d)	0.0	0.0	0.0	4.7	18.3	18.1	18.4	20.2	20.4	20.3	0.00	0.00
Avg (m³/d)	0.0	0.0	0.0	0.2	3.8	2.6	2.3	4.2	8.4	5.6	0.00	0.00

Monthly Rated Flows (L/s)

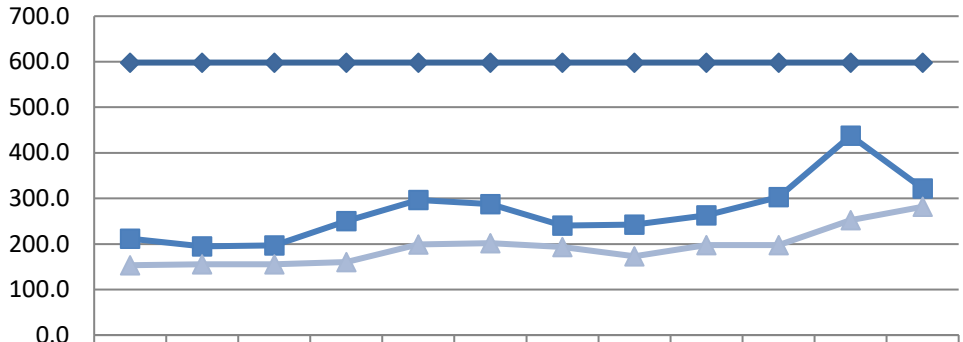
Max allowable rate – PTTW- Well #3



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Max Rate (L/s)	0.0	0.0	0.0	0.0	0.22	0.22	0.22	10.0	0.24	0.24	0.0	0.0

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) which were short in duration and reviewed for compliance. The scheduled Flow Meter calibration occurred in August 2023.

Total Monthly Flows (m³/d)
Max Allowable PTTW- Total Raw

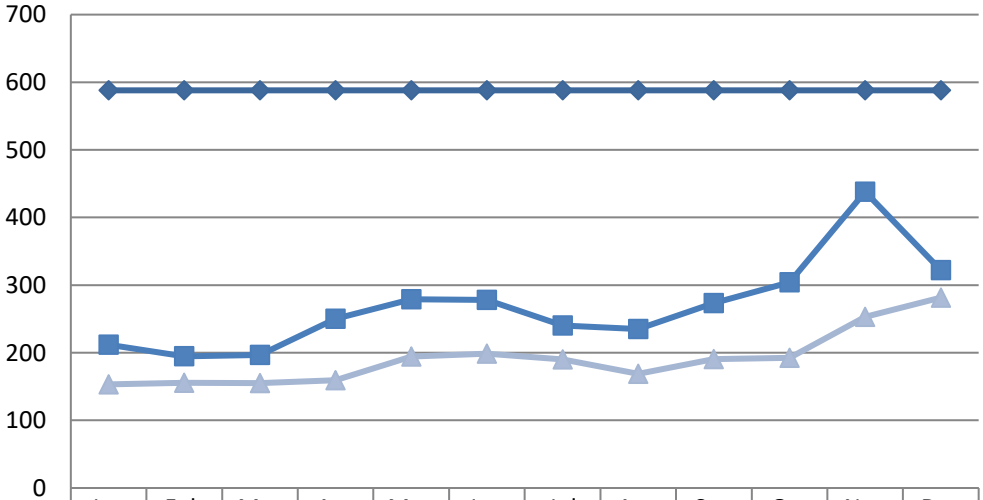


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	598.2	598.2	598.2	598.2	598.2	598.2	598.2	598.2	598.2	598.2	598.2	598.2
Max Flow (m³/d)	211.7	194.7	196.9	250.2	296.6	287.2	240.5	242.6	263.1	303.3	437.6	321.6
Avg (m³/d)	153.3	155.6	155.7	160.0	199.2	201.7	193.5	173.1	197.5	197.9	252.6	281.6

Treated Water Flows

The Treated Water flows are regulated under the Municipal Drinking Water Licence (MDWL) 141-115.

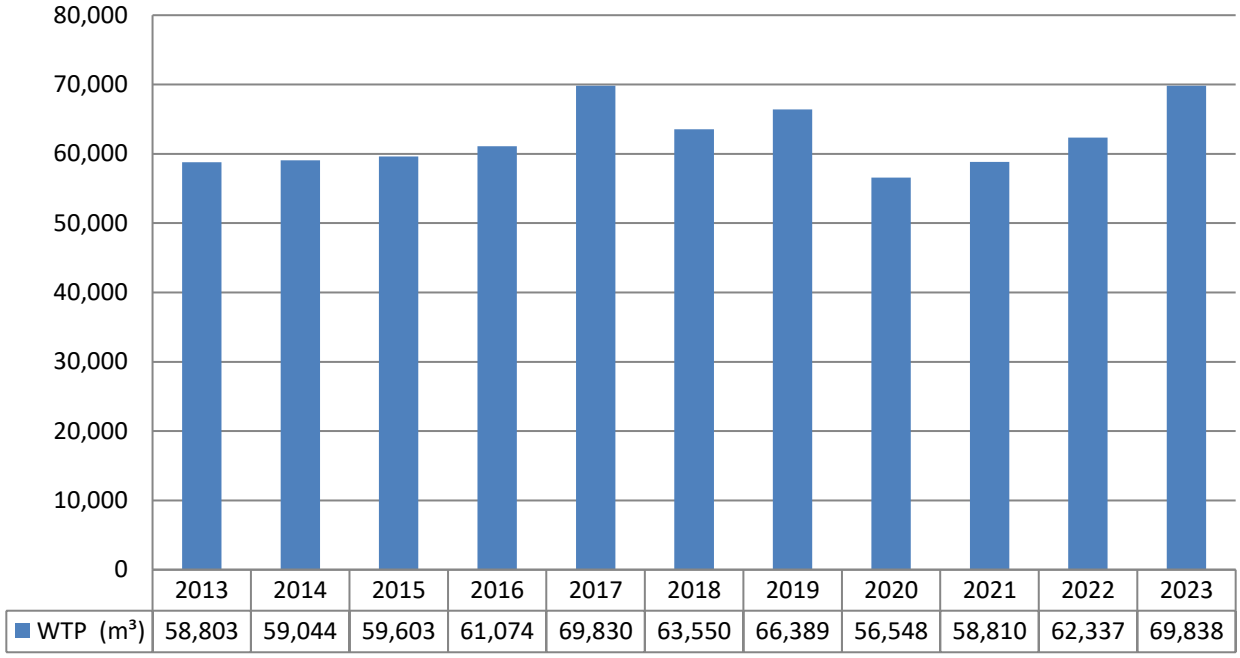
Monthly Rated Flows
Rated Capacity - MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m3/d)	588	588	588	588	588	588	588	588	588	588	588	588
Max Daily Flow (m3/d)	211.7	194.7	196.9	250.2	279.0	278.3	240.3	235.1	273.4	304.0	438.0	322.2
Avg (m3/d)	153.2	155.6	155.1	159.6	194.6	198.7	190.1	169.0	190.7	192.6	252.9	281.5

Annual Total Flow Comparison

Total Annual m³



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	Results of HPC Results	Results of HPC Results
		Min	Max	Min	Max	Min	Max
Raw Well 1	57	0	0	0	15		
Raw Well 2	52	0	0	0	3		
Treated	52	0	0	0	0	0	3
Distribution	156	0	0	0	0	0	3

Operational Testing

Parameter	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Well 1 (NTU)	51	0.2	0.97
Turbidity Well 2 (NTU)	51	0.15	0.81
Turbidity Filter Train 1/2	8760	0	2.00
Turbidity Filter Train 3/4	8760	0	2.00
Chlorine	8760	0	4.66
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 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

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Antimony: Sb (ug/L)	2023/01/04	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L)	2023/01/04	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L)	2023/01/04	41.2	1000.0	No	No
Boron: B (ug/L)	2023/01/04	15.0	5000.0	No	No
Cadmium: Cd (ug/L)	2023/01/04	0.03	5.0	No	No
Chromium: Cr (ug/L)	2023/01/04	0.34	50.0	No	No
Mercury: Hg (ug/L)	2023/01/04	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L)	2023/01/04	0.6	50.0	No	No
Uranium: U (ug/L)	2023/01/04	0.689	20.0	No	No
Additional Inorganics					
Fluoride (mg/L)	2023/01/04	<MDL 0.06	1.5	No	No
Nitrite (mg/L)	2023/01/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2023/04/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2023/07/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2023/10/03	<MDL 0.003	1.0	No	No
Nitrate (mg/L)	2023/01/03	1.78	10.0	No	No
Nitrate (mg/L)	2023/04/03	1.96	10.0	No	No

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Nitrate (mg/L)	2023/07/06	1.49	10.0	No	No
Nitrate (mg/L)	2023/10/03	1.75	10.0	No	No
Sodium: Na (mg/L)	2023/01/04	11.0	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 Minimum	Range of Results Maximum	MAC (ug/L)	Number of Exceedances
Alkalinity (mg/L)	2	4	249	257	N/A	N/A
pH	2	4	7.09	7.27	N/A	N/A
Lead (ug/l)	2	4	0.11	0.34	10	0

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.

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Results	MAC	Exceedance MAC	Exceedance ½ MAC
Alachlor (ug/L)	2023/01/04	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L)	2023/01/04	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L)	2023/01/04	<MDL 0.05	20.0	No	No
Benzene (ug/L)	2023/01/04	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L)	2023/01/04	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L)	2023/01/04	<MDL 0.33	5.0	No	No
Carbaryl (ug/L)	2023/01/04	<MDL 0.05	90.0	No	No
Carbofuran (ug/L)	2023/01/04	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L)	2023/01/04	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L)	2023/01/04	<MDL 0.02	90.0	No	No
Diazinon (ug/L)	2023/01/04	<MDL 0.02	20.0	No	No
Dicamba (ug/L)	2023/01/04	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L)	2023/01/04	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L)	2023/01/04	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L)	2023/01/04	<MDL 0.35	5.0	No	No

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Results	MAC	Exceedance MAC	Exceedance ½ MAC
1,1-Dichloroethylene (ug/L)	2023/01/04	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L)	2023/01/04	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L)	2023/01/04	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2023/01/04	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L)	2023/01/04	<MDL 0.4	9.0	No	No
Dimethoate (ug/L)	2023/01/04	<MDL 0.06	20.0	No	No
Diquat (ug/L)	2023/01/04	<MDL 1.0	70.0	No	No
Diuron (ug/L)	2023/01/04	<MDL 0.03	150.0	No	No
Glyphosate (ug/L)	2023/01/04	<MDL 1.0	280.0	No	No
Malathion (ug/L)	2023/01/04	<MDL 0.02	190.0	No	No
Metolachlor (ug/L)	2023/01/04	<MDL 0.01	50.0	No	No
Metribuzin (ug/L)	2023/01/04	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)	2023/01/04	<MDL 0.3	80.0	No	No
Paraquat (ug/L)	2023/01/04	<MDL 1.0	10.0	No	No
PCB (ug/L)	2023/01/04	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L)	2023/01/04	<MDL 0.15	60.0	No	No
Phorate (ug/L)	2023/01/04	<MDL 0.01	2.0	No	No
Picloram (ug/L)	2023/01/04	<MDL 1.0	190.0	No	No
Prometryne (ug/L)	2023/01/04	<MDL 0.03	1.0	No	No
Simazine (ug/L)	2023/01/04	<MDL 0.01	10.0	No	No
Terbufos (ug/L) -	2023/01/04	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L)	2023/01/04	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	2023/01/04	<MDL 0.2	100.0	No	No
Triallate (ug/L)	2023/01/04	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L)	2023/01/04	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L)	2023/01/04	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)	2023/01/04	<MDL 0.12	100.0	No	No
Trifluralin (ug/L)	2023/01/04	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L)	2023/01/04	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average	2023	26.0	100.0	No	No
HAA Total (ug/L) Annual Average	2023	10.6	80.0	No	No

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

Additional Legislated Samples

Additional Samples required under Permit to Take Water 1207-AHKRZV.

Parameter	Location	No. of Samples Collected	Range of Results Minimum	Range of Results Maximum
Nitrite (mg/L)	Well 1	14	<MDL 0.003	<MDL 0.003
Nitrite (mg/L)	Well 2	14	<MDL 0.003	<MDL 0.003
Nitrate (mg/L)	Well 1	14	1.34	1.88
Nitrate (mg/L)	Well 2	14	1.44	1.69
Nitrites + Nitrates (mg/L)	Well 1	14	1.34	1.88
Nitrites + Nitrates (mg/L)	Well 2	14	1.44	1.69
Calcium (mg/L)	Well 1	2	99	100
Calcium (mg/L)	Well 2	2	81.1	103
Magnesium (mg/L)	Well 1	2	10.7	11.5
Magnesium (mg/L)	Well 2	2	11.0	11.6
Sodium (mg/L)	Well 1	2	5.19	7.39
Sodium (mg/L)	Well 2	2	6.45	8.9
Potassium (mg/L)	Well 1	2	1.56	1.76
Potassium (mg/L)	Well 2	2	1.82	1.97
Chloride (mg/L)	Well 1	2	7.5	13.0
Chloride (mg/L)	Well 2	2	8.2	15.0
Sulphate (mg/L)	Well 1	2	17	22
Sulphate (mg/L)	Well 2	2	18	23
Alkalinity (mg/L as CaCO3)	Well 1	2	260	264
Alkalinity (mg/L as CaCO3)	Well 2	2	260	265
pH	Well 1	2	7.96	7.96
pH	Well 2	2	7.88	7.97
Ammonia+Ammonium (N) (mg/L)	Well 1	14	<MDL 0.04	0.06
Ammonia+Ammonium (N) (mg/L)	Well 2	14	<MDL 0.04	0.18
Total Kjeldahl Nitrogen (mg/L)	Well 1	14	<MDL 0.05	0.25
Total Kjeldahl Nitrogen (mg/L)	Well 2	14	<MDL 0.05	1.62
Conductivity (uS/cm)	Well 1	2	553	593
Conductivity (uS/cm)	Well 2	2	553	593
Total Dissolved Solids (mg/L)	Well 1	2	314	329
Total Dissolved Solids (mg/L)	Well 2	2	303	334
Hydrogen Sulphide (mg/L)	Well 1	2	<MDL 0.006	MDL<0.006
Hydrogen Sulphide (mg/L)	Well 2	2	<MDL 0.006	MDL<0.006
Ion Ratio	Well 1	2	1.87	1.97
Ion Ratio	Well 2	2	1.21	2.34

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

WO #	Description
3384927	Filter Performance Testing NSF Certification
3525327	Well 3 Troubleshoot Inhibit State SCADA
3662780	Grey Water Cell Float, Replacement/Inspection
3665158	Standpipe Communication Issue, Repair/Replace
3705349	Compliance Analyzer UPS Battery, Refurbish/Replacement
3706533	Standpipe Radio Transmitter, Testing

Appendix A

WTRS Data and Submission Confirmation