

Mariposa Estates Drinking Water System

Waterworks # 220012322
System Category – Small Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2022

Issued: February 17, 2023

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 residences. The annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office by appointment and on the [City's website](#). 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: 220012322

Drinking Water System Name: Mariposa Estates DWS

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Small Municipal Residential

Period Being Reported: January 1, 2022 - December 31, 2022

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	Oct. 25, 2022	Announced - Detailed Drinking Water Inspection - Final Inspection Rating has not been received at the time this report was issued.
AWQI's	0		
Number of Non-Compliances; Other Inspection Findings	1	Jan. 13, 2023*	Inconsistent documentation of low chlorine alarm response(s)
Number of Boil Water Advisories	0		

*Note: The date indicated was the date the Inspection Report was issued by the Provincial Officer responsible for the annual inspection of the Drinking Water System.

System Process Description

Raw Source

The water supply for the DWS comes from two (2) groundwater wells that are designated as non-GUDI (groundwater under direct influence).

Treatment

The treatment system consists of the following:

- two (2) nitrate removal systems, with softener
- sodium hypochlorite disinfection system
- clearwell/contact storage tank
- two (2) supply pumps and on-line monitoring equipment
- stand-by diesel generator on-site

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi Water Technologies

Summary of Non-Compliance

Adverse Water Quality Incidents

There were no adverse water quality incidents reported during the reporting period.

Non-Compliance(s)

There were no non-compliance issues reported during the reporting period.

Non-Compliance(s) Identified in a Ministry Inspection

Note: The MECP issued the Inspection Report with a finding listed under Other Inspection Findings. This was an administrative issue.

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. dates)	Corrective Action	Status
Not applicable	O. Reg. 128/04, Section 27	Not applicable	Revised Standard Operating Procedure for Low Free Chlorine Residual Alarm to address issue identified by the Provincial Officer.	Complete

Flows

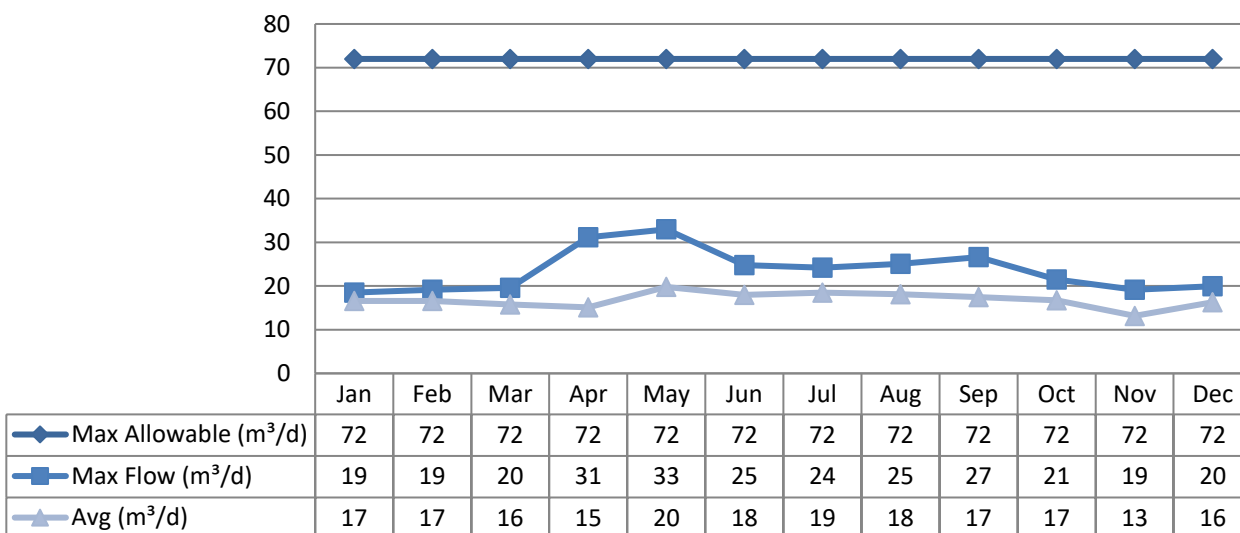
The Mariposa Estates Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2022 Raw Flow Data was submitted to the Ministry electronically under permit #8473-AZUGSX. The confirmation of the data that was submitted is attached in Appendix A.

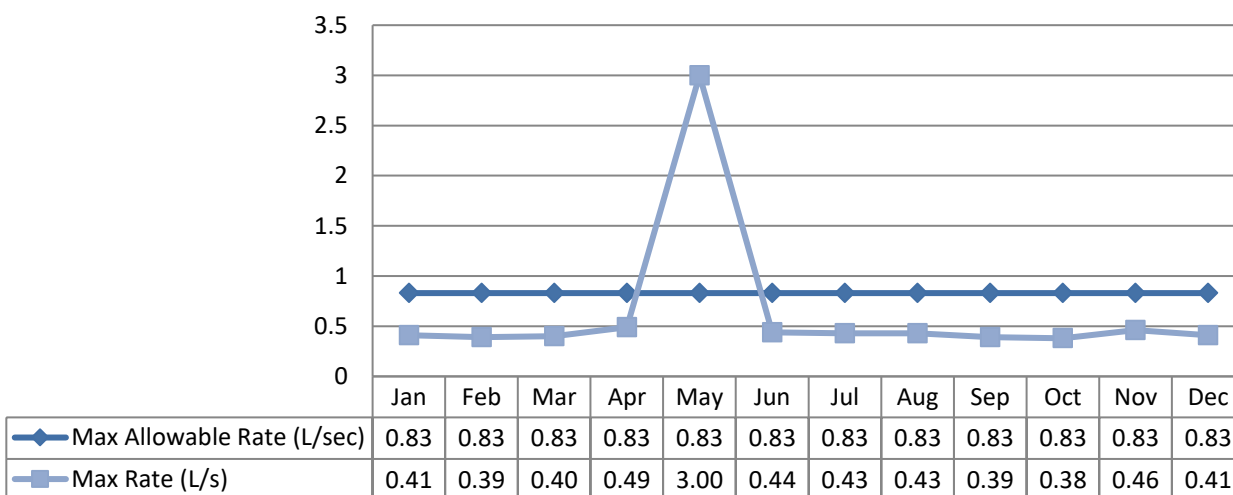
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #1



Monthly Rated Flows (L/s)

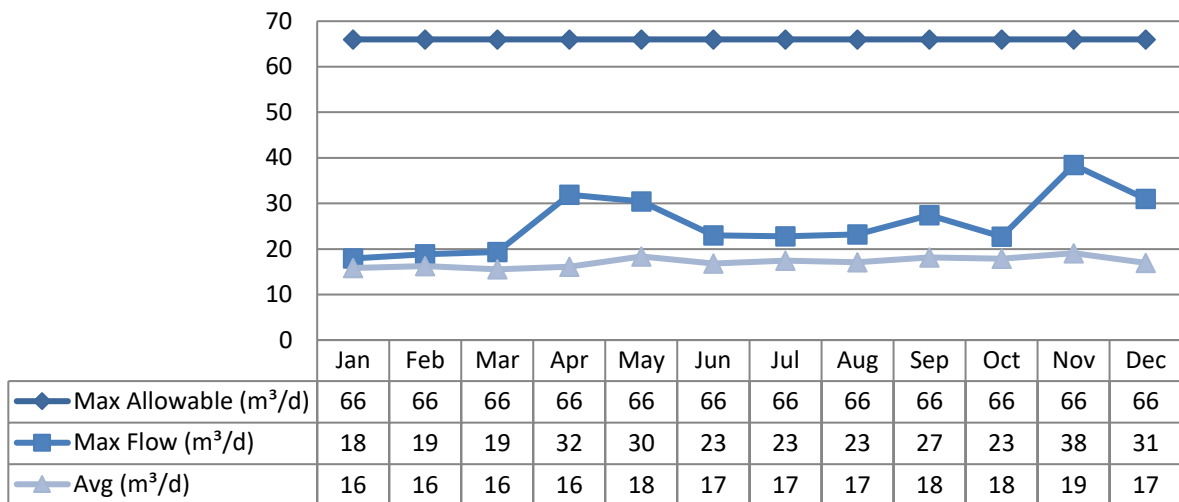
Max allowable rate – PTTW – Well #1



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

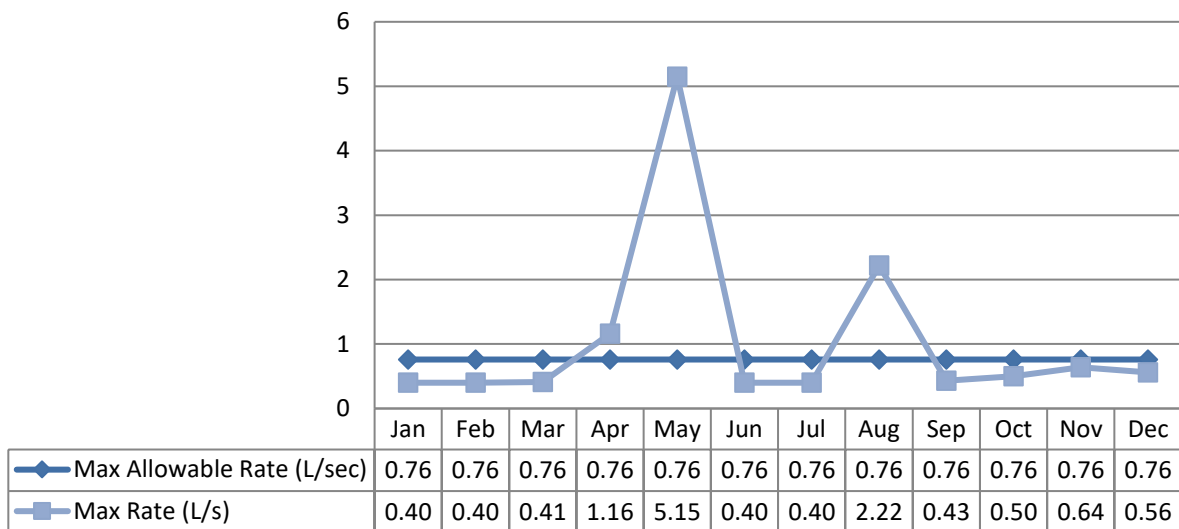
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #2



Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #2



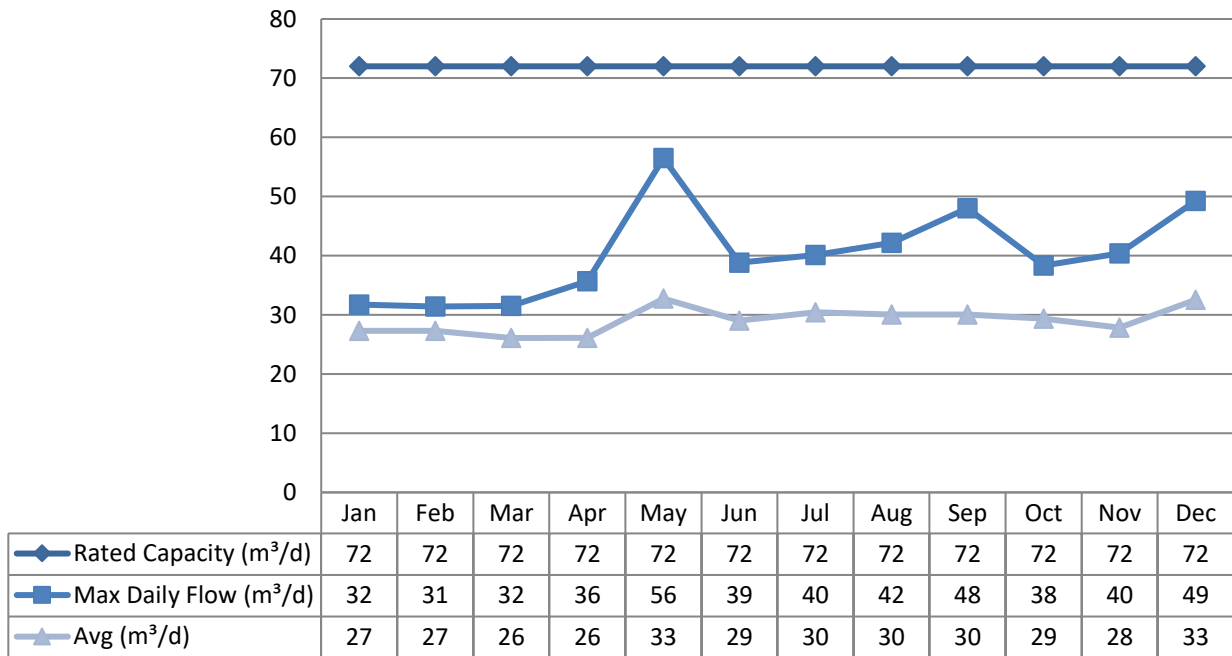
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The significant spike in May was due to scheduled Flow Meter calibration. The spike in April was due to pump start-up after repairing well power line. The spike in August was due to troubleshooting a well flow issue.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

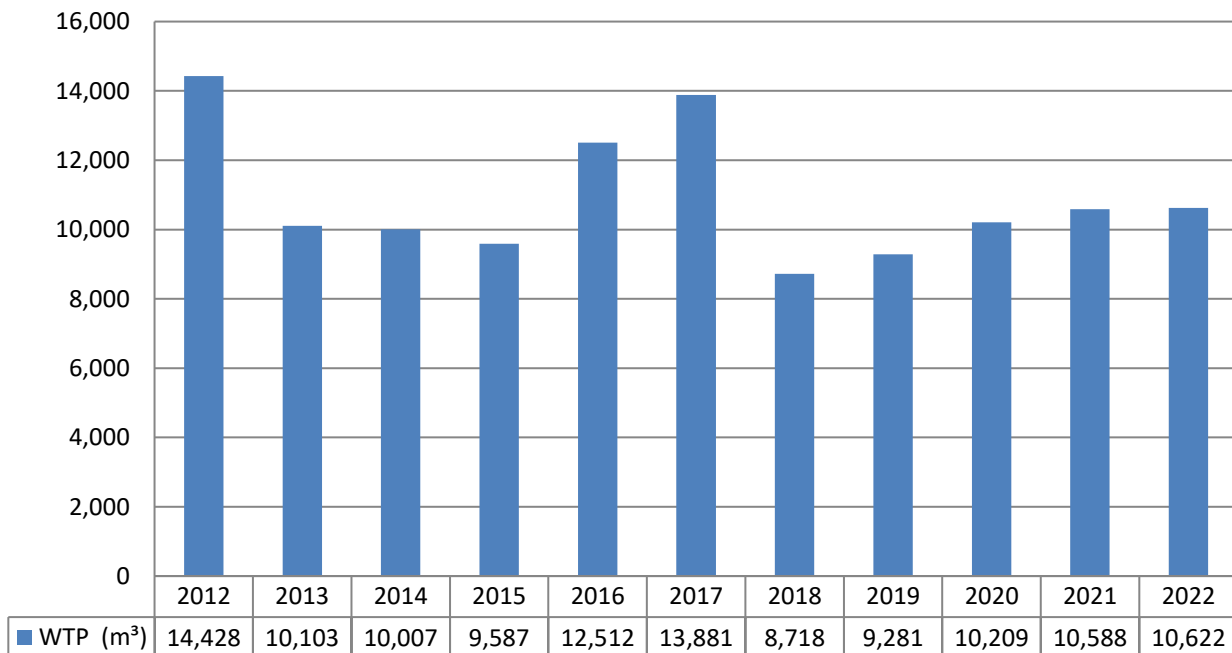
Monthly Rated Flows

Rated Capacity – MDWL



Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

Source	No. of Samples	Range of E.coli Results MIN	Range of E.coli Results MAX	Range of Total Coliform Results MIN	Range of Total Coliform Results MAX	Range of HPC Results MIN	Range of HPC Results MAX
Raw Well 1	30	0	0	0	16		
Raw Well 2	26	0	0	0	0		
Treated	0						
Distribution	52	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)	12	0.29	0.70
Turbidity Well 2 (NTU)	12	0.15	0.92
Turbidity – TW (NTU)	8760	0.04	2
Chlorine	8760	0.55	4.21
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	Exceedances ½ MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2020/01/06	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L) - TW	2020/01/06	<MDL	10.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances MAC	Exceedances ½ MAC
		0.2			
Barium: Ba (ug/L) - TW	2020/01/06	40.8	1000.0	No	No
Boron: B (ug/L) - TW	2020/01/06	13.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2020/01/06	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2020/01/06	0.42	50.0	No	No
Mercury: Hg (ug/L) - TW	2020/01/06	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2020/01/06	0.18	50.0	No	No
Uranium: U (ug/L) - TW	2020/01/06	1.57	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2020/01/06	0.06	1.5	No	No
Nitrite (mg/L) - TW	2022/03/07	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2022/06/20	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2022/09/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2022/12/05	0.007	1.0	No	No
Nitrate (mg/L) - TW	2022/03/07	2.04	10.0	No	No
Nitrate (mg/L) - TW	2022/06/20	2.34	10.0	No	No
Nitrate (mg/L) - TW	2022/09/06	2.10	10.0	No	No
Nitrate (mg/L) - TW	2022/12/02	2.30	10.0	No	No
Sodium: Na (mg/L) - TW	2020/01/06	34.2	20*	Yes	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	No. of Sampling Points	No. of Samples	Range of Results MIN	Range of Results MAX	MAC (ug/L)	No. of Exceedances
Alkalinity (mg/L)	1	2	285	303	N/A	N/A
pH	1	2	7.19	7.35	N/A	N/A
Lead (ug/L)	2	0	N/A	N/A	10	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	Exceedance MAC	Exceedance ½ 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
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

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
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
Trihalomethane: Total (ug/L) Annual Average - DW	2022	11.7	100	No	No
Distribution Water					
HAA Total (ug/L) Annual Average - DW	2022	5.3	80	No	No

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
3066599	Softener and Nitrate Remover UPS, Purchase and Install
3108238	Softener and De-Nitrate Units Valve Count Mismatch
3148792	Softener 1 Media Loss
2777383	Well 2 Hydro Feed, Fail, Repair
2871340	Chlorine Pump 2 Leaking on Pump Head, Replace

Appendix A

WTRS Submission Confirmation



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: 8473-AZUGSX
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Jan 31, 2023 1:47 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.

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