Birch Point Drinking Water System

2024 Annual Water Report

Drinking Water System Number: 220012572

Drinking Water System Operating Authorities: City of Kawartha Lakes and Ontario Clean Water Agency

Drinking Water System Category: Large Municipal Residential

Reporting Period: January 1 – December 31, 2024

OCWA

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Annual Drinking Water Report
City of Kawartha Lakes

Kawartha Lakes
Jump In

Table of Contents

2024 Annual Drinking Water System Summary Report

General Information

The City of Kawartha Lakes prepares a report summarizing system operation and water quality for every municipal drinking water system annually. This report has been prepared to satisfy the annual reporting requirements in O. Reg. 170/03 Section 11 and Schedule 22. The annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office by appointment and the City's website. Notification that the 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.

This system does not serve more than 10,000 residences.

Drinking Water System Number: 220012572
Drinking Water System Name: Birch Point Drinking Water System
Drinking Water System Owner: City of Kawartha Lakes
Drinking Water System Category: Large Municipal Residential
Reporting Period: January 1, 2024 – December 31, 2024

Compliance Summary

Table 1. Drinking Water Compliance Summary

	Number of Events	Date	Details
Ministry (MECP) Inspections	1	November 18, 2024	2024/2025 Unannounced, Focused Drinking Water Inspection, Final Report 100%
Adverse Water Quality Incidents (AWQIs)	1	January 8, 2024	Sodium Exceedance
Non-Compliances	0		
Boil Water Advisories	0		
Health and Safety	0		

Drinking Water System Description

The Birch Point drinking water system is a large municipal residential drinking water system that serves the Birch Point and Highview Acres subdivisions near Ennismore, Ontario. The drinking water system is classified as a Class I Water Treatment and Class I Water Distribution subsystems under O. Reg. 128/04

Source Water

The water supply for the system comes from three groundwater wells: Well #3, Well #4 and Well #5. The wells are designated as non-GUDI (groundwater under the direct influence).

Water Treatment Facility

The treatment system consists of the following: sodium hypochlorite feed system, cartridge filtration system for iron removal, treated water storage reservoir, three (3) centrifugal high lift pumps, four (4) hydropneumatic tanks, raw and treated water flow meters.

Treatment is achieved through a pre-chlorination phase and cartridge filtration for iron removal (which consists of two treatment trains), and the water then enters the clearwell in series. After post-chlorination of the water, treated water is stored in the two clearwells and contact chamber at the well system, and is pumped directly from the clearwell to the distribution system. The underground clearwell provides chlorine contact time and treated water storage.

There are chlorine analyzers to continuously monitor chlorine residual as the treated water enters the contact chamber and then again as it leaves the clearwells. As well, a turbidity analyzer continuously monitors turbidity as treated water leaves the clearwell.

In the Highview Acres Subdivision, there is a monitoring station which continuously monitors the distribution chlorine residual through the use of a chlorine analyzer.

A diesel generator is onsite to provide standby power to the water treatment facility in the event of a power failure.

Distribution System

The distribution system has approximately three kilometers of watermains and is not rated for fire protection. The watermains in the Birch Point Distribution System are all PVC. There is no storage, chlorine boosting, secondary disinfection or pressure boosting capabilities within the control of the distribution system.

At 3 Cardinal Road in Highview Acres, there is a pre-fabricated structure serving as the distribution system's remote monitoring station which continuously monitors the distribution chlorine residual

through the use of a chlorine analyzer (regulatory) that is alarmed to meet a pre-set chlorine residual.

Table 2. Treatment Chemicals Used

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi

Summary of Non-Compliance

Adverse Water Quality Incidents

Table 3. Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
2024 01 08	164304	Treated Water	Sodium Exceedance	Exceeded above 20 mg/L at 58.1 mg/L	O. Reg. 170/03 Schedule 13-8	Resample, post notice

Non-Compliance

There were no non-compliances reported during the reporting period.

Non-Compliance Identified in a Ministry Inspection

There were no non-compliances identified in a Ministry Inspection during this period.

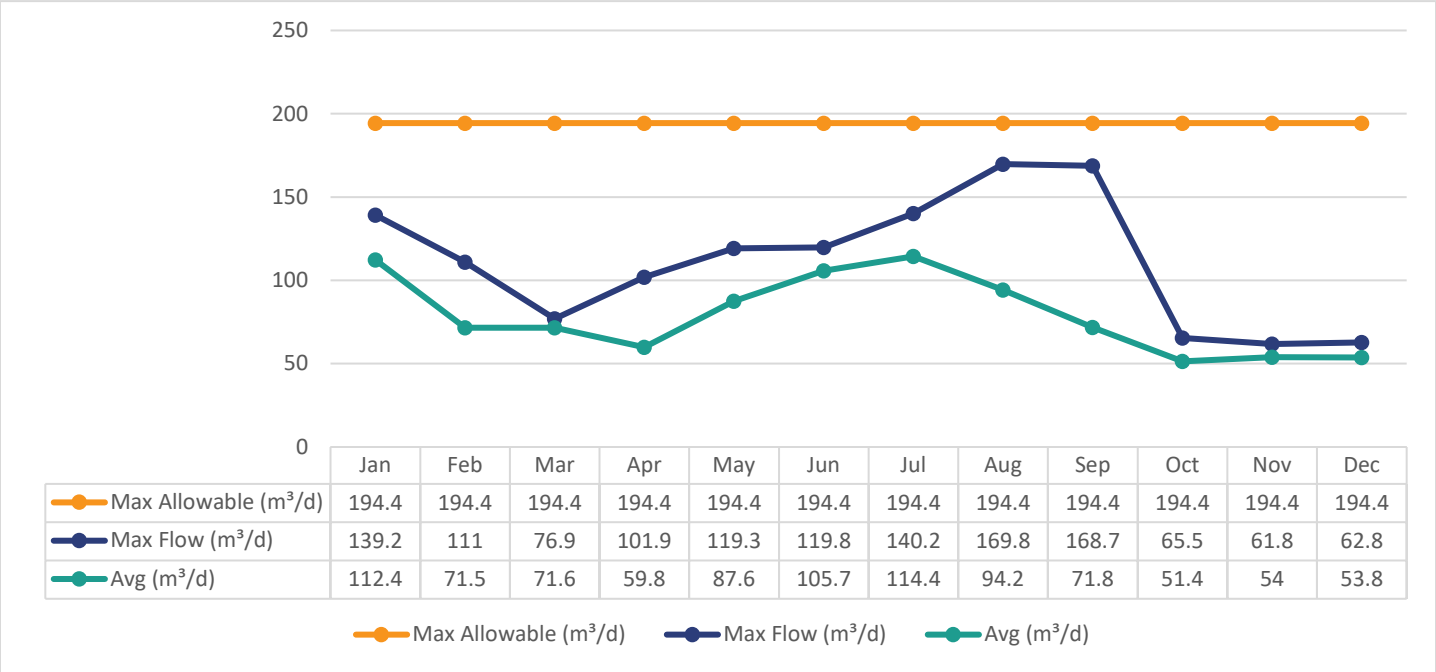
Flows

The Birch Point Drinking Water System is operating on average under half the rated capacity. The rated capacity of the system (treated water flows) is 324 m^3/day.

Raw Water Flows

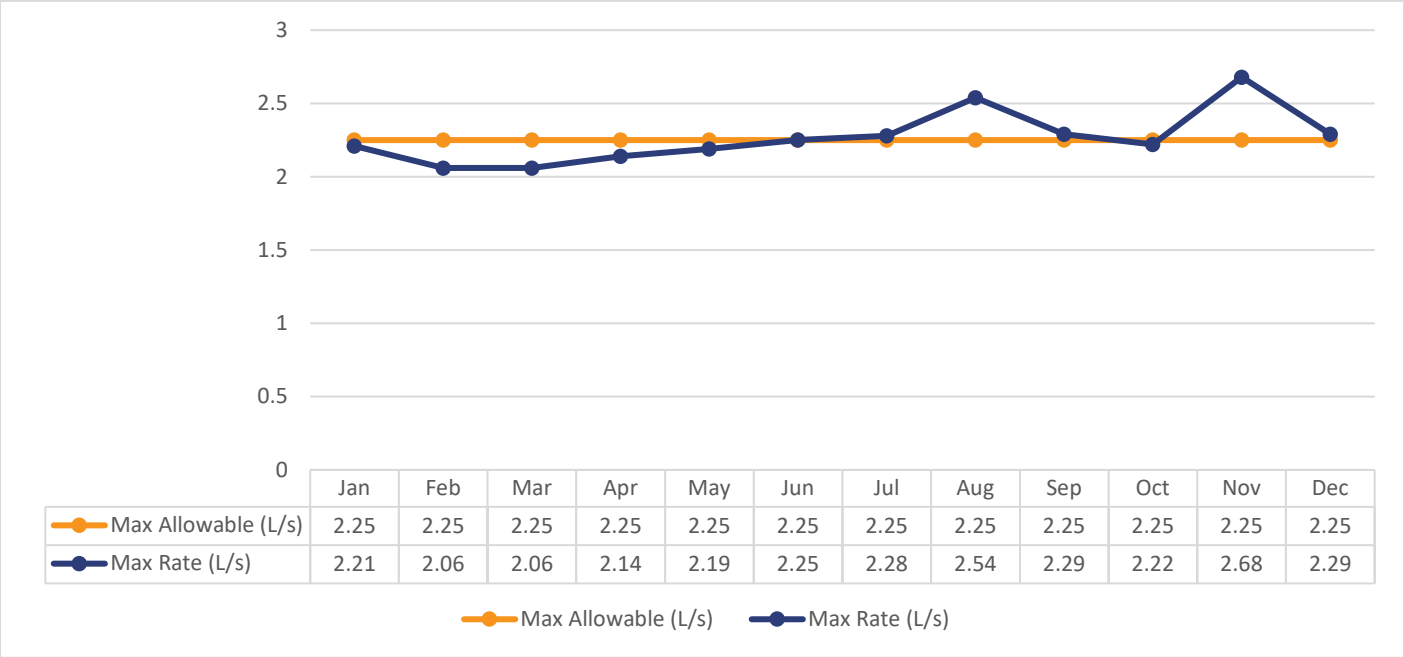
The raw water flows are regulated under the Permit to Take Water. Raw flow data for 2024 was submitted to the Ministry of Environment, Conservation and Parks (MECP) electronically under permit #7147-9Y7HWV. The confirmation of the data that was submitted is attached in Appendix A.

Graph 1. Total Monthly Flows (m³/d) – Well #3 (Max Allowable PTTW)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	194.4	194.4	194.4	194.4	194.4	194.4	194.4	194.4	194.4	194.4	194.4	194.4
Max Flow (m³/d)	139.2	111	76.9	101.9	119.3	119.8	140.2	169.8	168.7	65.5	61.8	62.8
Avg (m³/d)	112.4	71.5	71.6	59.8	87.6	105.7	114.4	94.2	71.8	51.4	54	53.8

Graph 2. Monthly Rated Flows (L/s) – Well #3 (Max Allowable Rate PTTW)

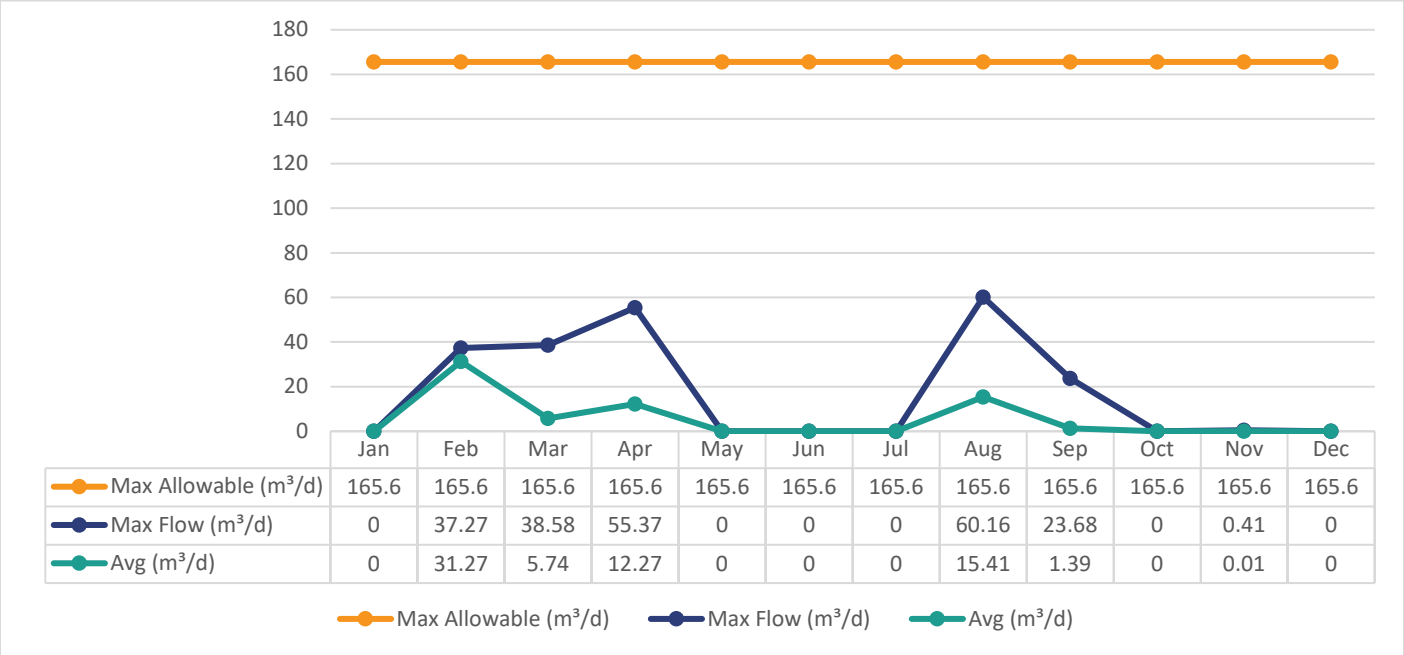


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (L/s)	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Max Rate (L/s)	2.21	2.06	2.06	2.14	2.19	2.25	2.28	2.54	2.29	2.22	2.68	2.29

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) but these exceedances were short in duration. Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. The significant spike in

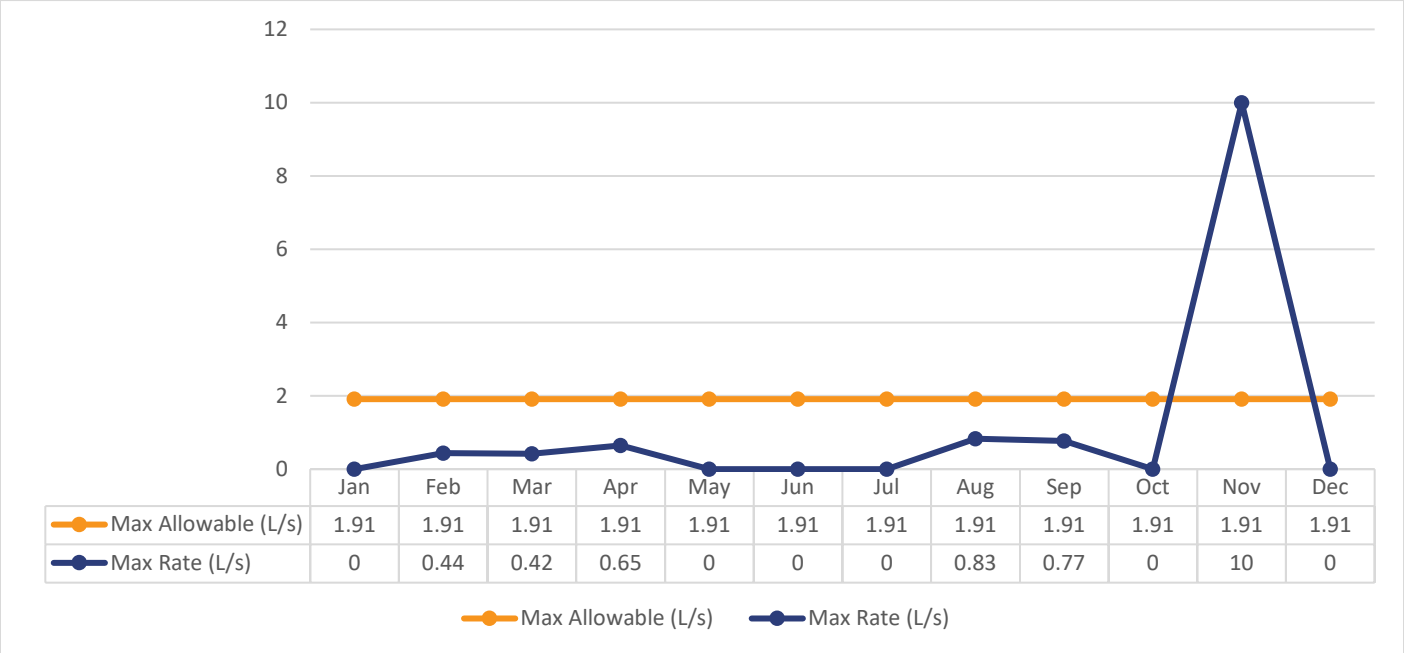
November was due to scheduled flow meter calibration. All spikes are reviewed for compliance with O. Reg. 170/03.

Graph 3. Total Monthly Flows (m³/d) – Well #4 (Max Allowable PTTW)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	165.6	165.6	165.6	165.6	165.6	165.6	165.6	165.6	165.6	165.6	165.6	165.6
Max Flow (m³/d)	0	37.27	38.58	55.37	0	0	0	60.16	23.68	0	0.41	0
Avg (m³/d)	0	31.27	5.74	12.27	0	0	0	15.41	1.39	0	0.01	0

Graph 4. Monthly Rated Flows (L/s) – Well #4 (Max Allowable Rate

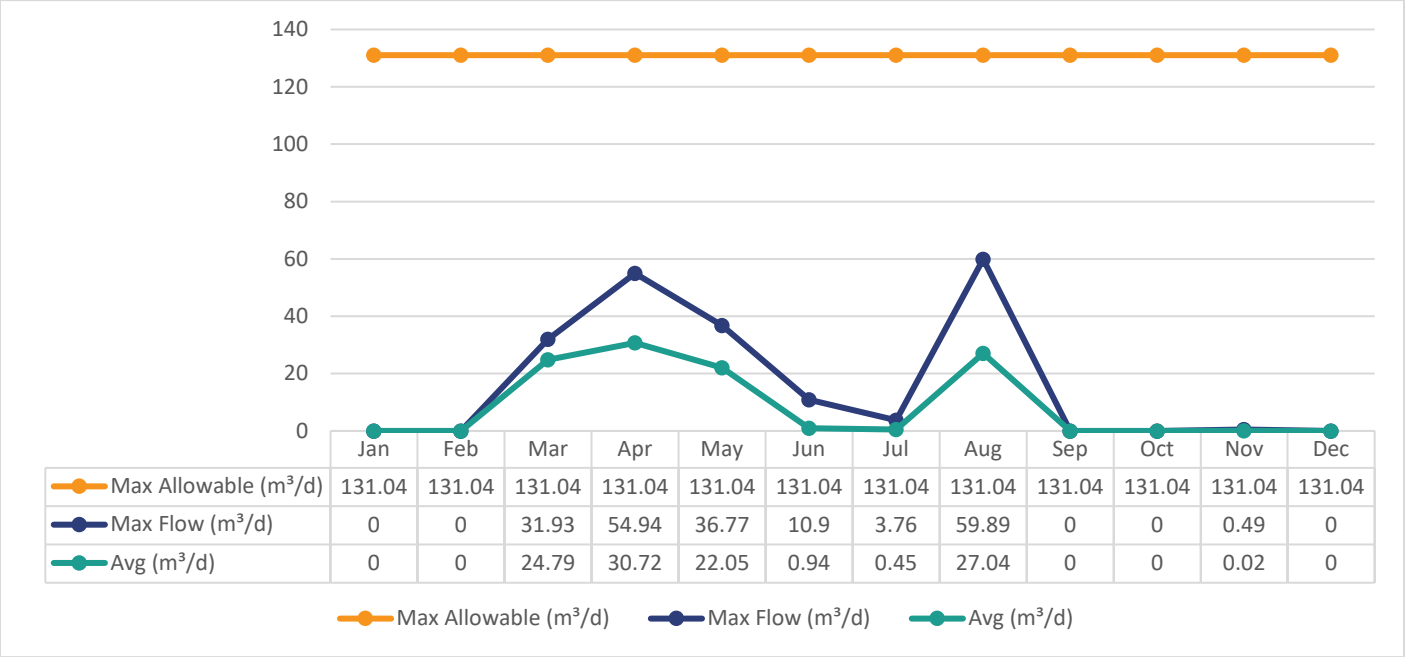


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (L/s)	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91
Max Rate (L/s)	0	0.44	0.42	0.65	0	0	0	0.83	0.77	0	10	0

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) but these exceedances were short in duration. Spikes recorded by on-line instrumentation were a

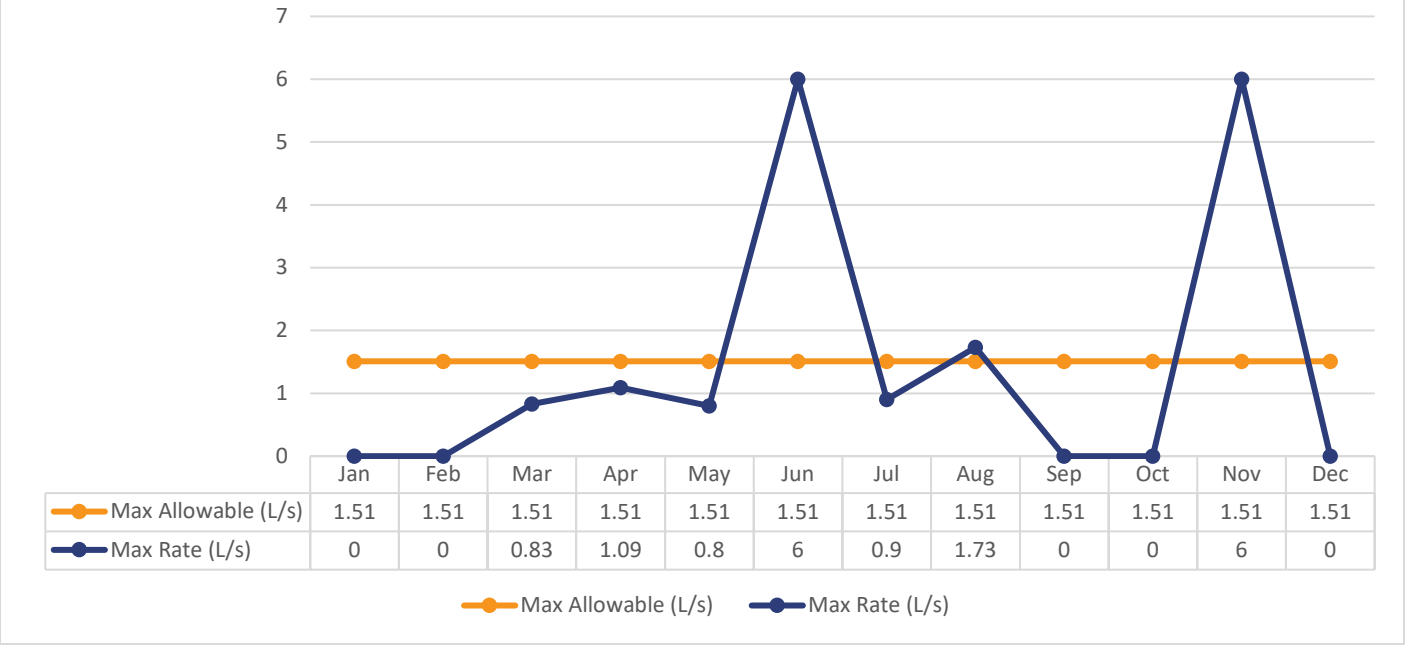
result of air bubbles and various maintenance/calibration activities. The significant spike in November was due to scheduled flow meter calibration. All spikes are reviewed for compliance with O. Reg. 170/03. Well #4 is being reserved for standby use only due to high iron levels.

Graph 5. Total Monthly Flows (m³/d) – Well #5 (Max Allowable PTTW)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	131.04	131.04	131.04	131.04	131.04	131.04	131.04	131.04	131.04	131.04	131.04	131.04
Max Flow (m³/d)	0	0	31.93	54.94	36.77	10.9	3.76	59.89	0	0	0.49	0
Avg (m³/d)	0	0	24.79	30.72	22.05	0.94	0.45	27.04	0	0	0.02	0

Graph 6. Monthly Rated Flows (L/s) – Well #5 (Max Allowable Rate



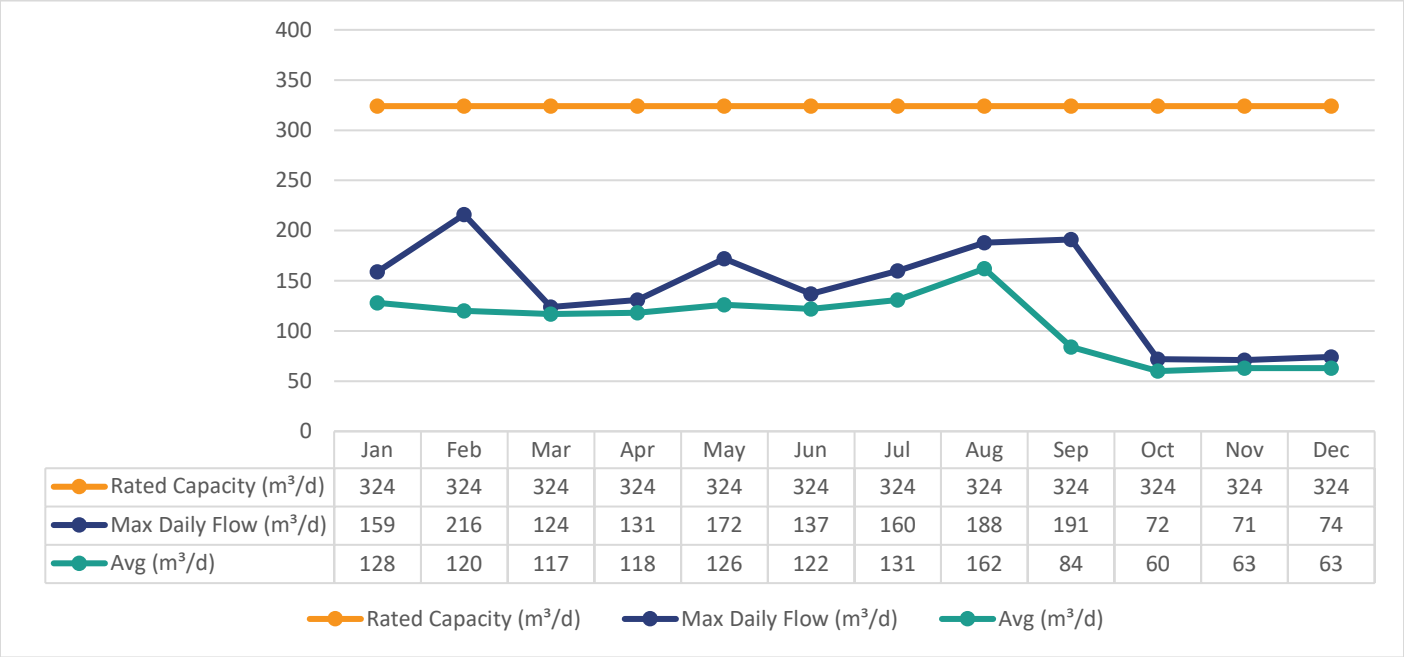
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (L/s)	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
Max Rate (L/s)	0	0	0.83	1.09	0.8	6	0.9	1.73	0	0	6	0

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) but these exceedances were short in duration. Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. The significant spike in November was due to scheduled flow meter calibration. The significant spike in June was due to false readings. All spikes are reviewed for compliance with O. Reg. 170/03. Well #5 is not in production rotation.

Treated Water Flows

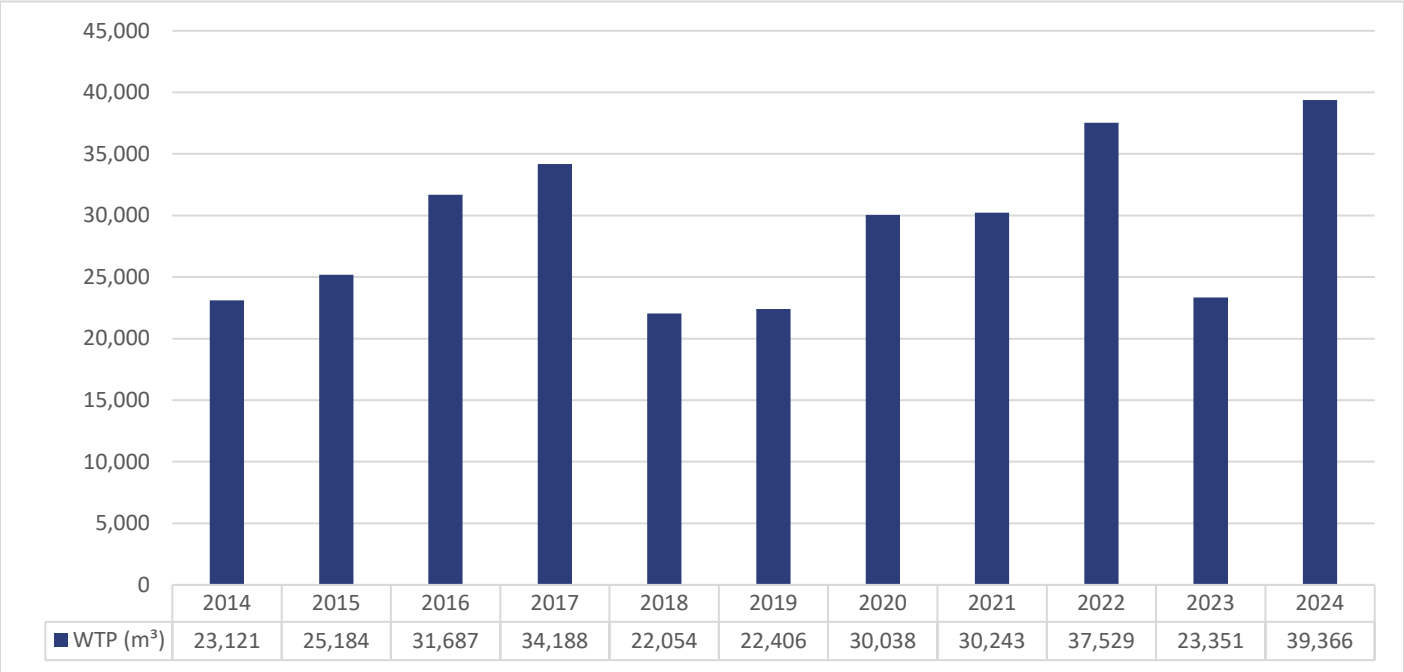
The Treated Water flows are regulated under the Municipal Drinking Water Licence 141-109.

Graph 7. Monthly Rated Flows (m³/d) – Rated Capacity - MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m³/d)	324	324	324	324	324	324	324	324	324	324	324	324
Max Daily Flow (m³/d)	159	216	124	131	172	137	160	188	191	72	71	74
Avg (m³/d)	128	120	117	118	126	122	131	162	84	60	63	63

Graph 8. Annual Total Flow Comparison (m³)



Regulatory Sample Results Summary

Microbiological Testing

Table 4. Microbiological Test Results

	No. of Samples Collected	Range of E. Coli Results	Range of E. Coli Results	Range of Total Coliform Results	Range of Total Coliform Results	Range of HPC Results	Range of HPC Results
		Min	Max	Min	Max	Min	Max
Raw Well 3	54	0	0	0	0	N/A	N/A
Raw Well 4	52	0	0	0	0	N/A	N/A
Raw Well 5	53	0	0	0	0	N/A	N/A
Treated	53	0	0	0	0	0	2
Distribution	159	0	0	0	0	0	10

OG = Overgrowth

HPC = Heterotrophic Plate Count

Note: Well #4 was not in production rotation during the reporting period due to high iron levels. Well #5 was not in production rotation during the reporting period.

Operational Testing

Table 5. Operational Test Results

Parameter	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Well 3 (NTU)	13	0.15	0.78
Turbidity Well 4 (NTU)	13	0.15	5.46
Turbidity Well 5 (NTU)	13	0.18	4.46
Chlorine	8760	0.00	5.00
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measurement if it is **not** milligrams per litre.
Note: For continuous monitors 8760 is used as the number of samples. Spikes recorded by online 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 Nitrate 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 listed in Schedule 23 or 24 of O. Reg. 170/03 exceed half of the maximum allowable concentration the parameter is required to be samples quarterly. Based on the latest test results no additional testing is required.

Table 6. Inorganic Parameters Test Results

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Treated Water					
Antimony	2023 01 04	<MDL 0.6	µg/L	6.0	No
Arsenic	2023 01 04	<MDL 0.2	µg/L	10.0	No
Barium	2023 01 04	201.0	µg/L	1000.0	No
Boron	2023 01 04	88.0	µg/L	5000.0	No
Cadmium	2023 01 04	0.016	µg/L	5.0	No
Chromium	2023 01 04	0.16	µg/L	50.0	No

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Mercury	2023 01 04	<MDL 0.01	µg/L	1.0	No
Selenium	2023 01 04	0.04	µg/L	50.0	No
Uranium	2023 01 04	0.929	µg/L	20.0	No
Additional Organics					
Fluoride	2023 12 04	0.12	mg/L	1.5	No
Nitrite	2024 01 03	<MDL 0.003	mg/L	1.0	No
Nitrite	2024 04 03	<MDL 0.003	mg/L	1.0	No
Nitrite	2024 07 02	<MDL 0.003	mg/L	1.0	No
Nitrite	2024 10 07	<MDL 0.003	mg/L	1.0	No
Nitrate	2024 01 03	2.90	mg/L	10.0	No
Nitrate	2024 04 03	2.41	mg/L	10.0	No
Nitrate	2024 07 10	3.08	mg/L	10.0	No
Nitrate	2024 10 07	2.72	mg/L	10.0	No
Sodium	2024 01 03	58.1	mg/L	20*	Yes
Sodium	2024 01 10	61.1	mg/L	20*	Yes

MAC = Maximum Allowable Concentration as per O. Reg. 169/03
MDL = Method Detection Limit
*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. Sodium results exceeding 20 mg/L are to be reported to the Medical Officer of Health as per Schedule 16-3 (8) of O. Reg. 170/03.

Schedule 15 Sampling (Lead)

The Schedule 15 sampling is required under O. Reg. 170/03. This system is under reduced sampling. Only distribution samples were collected, and no plumbing samples were collected.

Table 7. Schedule 15 Test Results (Lead)

	Number of Sampling Points	Number of Samples	Range of Results Minimum	Range of Results Maximum	MAC (µg/L)	Number of Exceedances
Alkalinity (mg/L)	2	2	251	295	N/A	N/A
pH	2	2	7.06	7.22	N/A	N/A

	Number of Sampling Points	Number of Samples	Range of Results Minimum	Range of Results Maximum	MAC (µg/L)	Number of Exceedances
Lead (µg/L)	0	0	N/A	N/A	10	0

Organic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. In the event any of the parameters listed in Schedule 23 or 24 of O. Reg. 170/03 exceed half of the maximum allowable concentration the parameter is required to be samples quarterly. Based on the latest test results no additional testing is required.

Table 8. Organic Parameters Test Results

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Treated Water					
Alachlor	2023 01 04	<MDL 0.02	µg/L	5.0	No
Atrazine + N-dealkylated metabolites	2023 01 04	<MDL 0.01	µg/L	5.0	No
Azinphos-methyl	2023 01 04	<MDL 0.05	µg/L	20.0	No
Benzene	2023 01 04	<MDL 0.32	µg/L	1.0	No
Benzo(a)pyrene	2023 01 04	<MDL 0.004	µg/L	0.01	No
Bromoxynil	2023 01 04	<MDL 0.33	µg/L	5.0	No
Carbaryl	2023 01 04	<MDL 0.05	µg/L	90.0	No
Carbofuran	2023 01 04	<MDL 0.01	µg/L	90.0	No
Carbon Tetrachloride	2023 01 04	<MDL 0.17	µg/L	2.0	No
Chlorpyrifos	2023 01 04	<MDL 0.02	µg/L	90.0	No
Diazinon	2023 01 04	<MDL 0.02	µg/L	20.0	No
Dicamba	2023 01 04	<MDL 0.2	µg/L	120.0	No
1,2-Dichlorobenzene	2023 01 04	<MDL 0.41	µg/L	200.0	No
1,4-Dichlorobenzene	2023 01 04	<MDL 0.36	µg/L	5.0	No
1,2-Dichloroethane	2023 01 04	<MDL 0.35	µg/L	5.0	No
1,1-Dichloroethylene	2023 01 04	<MDL 0.33	µg/L	14.0	No
Dichloromethane (Methylene Chloride)	2023 01 04	<MDL 0.35	µg/L	50.0	No
2,4-Dichlorophenol	2023 01 04	<MDL 0.15	µg/L	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2023 01 04	<MDL 0.19	µg/L	100.0	No
Diclofop-methyl	2023 01 04	<MDL 0.4	µg/L	9.0	No
Dimethoate	2023 01 04	<MDL 0.06	µg/L	20.0	No

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Diquat	2023 01 04	<MDL 1.0	µg/L	70.0	No
Diuron	2023 01 04	<MDL 0.03	µg/L	150.0	No
Glyphosate	2023 01 04	<MDL 1.0	µg/L	280.0	No
Malathion	2023 01 04	<MDL 0.02	µg/L	190.0	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2023 01 04	<MDL 0.12	µg/L	100.0	No
Metolachlor	2023 01 04	<MDL 0.01	µg/L	50.0	No
Metribuzin	2023 01 04	<MDL 0.02	µg/L	80.0	No
Monochlorobenzene (Chlorobenzene)	2023 01 04	<MDL 0.3	µg/L	80.0	No
Paraquat	2023 01 04	<MDL 1.0	µg/L	10.0	No
PCB	2023 01 04	<MDL 0.04	µg/L	3.0	No
Pentachlorophenol	2023 01 04	<MDL 0.15	µg/L	60.0	No
Phorate	2023 01 04	<MDL 0.01	µg/L	2.0	No
Picloram	2023 01 04	<MDL 1.0	µg/L	190.0	No
Prometryne	2023 01 04	<MDL 0.03	µg/L	1.0	No
Simazine	2023 01 04	<MDL 0.01	µg/L	10.0	No
Terbufos	2023 01 04	<MDL 0.01	µg/L	1.0	No
Tetrachloroethylene	2023 01 04	<MDL 0.35	µg/L	10.0	No
2,3,4,6-Tetrachlorophenol	2023 01 04	<MDL 0.2	µg/L	100.0	No
Triallate	2023 01 04	<MDL 0.01	µg/L	230.0	No
Trichloroethylene	2023 01 04	<MDL 0.44	µg/L	5.0	No
2,4,6-Trichlorophenol	2023 01 04	<MDL 0.25	µg/L	5.0	No
Trifluralin	2023 01 04	<MDL 0.02	µg/L	45.0	No
Vinyl Chloride	2023 01 04	<MDL 0.17	µg/L	1.0	No
Distribution Water					
Trihalomethane Total Annual Average Q1	2024 01 03	20.75	µg/L	100.0	No
Trihalomethane Total Annual Average Q2	2024 04 03	21.75	µg/L	100.0	No
Trihalomethane Total Annual Average Q3	2024 07 02	22.25	µg/L	100.0	No
Trihalomethane Total Annual Average Q4	2024 10 07	24.75	µg/L	100.0	No
HAA Total Annual Average Q1	2024 01 03	<MDL 5.3	µg/L	80.0	No
HAA Total Annual Average Q2	2024 04 03	<MDL 5.3	µg/L	80.0	No
HAA Total Annual Average Q3	2024 07 02	<MDL 5.3	µg/L	80.0	No

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
HAA Total Annual Average Q4	2024 10 07	<MDL 5.3	µg/L	80.0	No

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

Additional Legislated Samples

There were no additional legislated samples required to report during this reporting period.

Minor Maintenance

- Analyzer feed pump replacement
- Outside light repair
- Junction box on wellhead #3 inspect and repair
- Chlorine pump #2 replacement
- Sample pump switch replacement
- Monitoring hut UPS battery replacement
- Peristaltic pump replacement
- Well #3 fault repair
- Well #3 electronic pressure gauge investigation and replacement
- Analyzer feed pump tubing replacement

Major Maintenance Expense (above $10,000)

Under Section 11 of O. Reg. 170/03, a description of any major expenses incurred during this reporting period to install, repair or replace required equipment must be included in the annual report. The details of the major expenses for this drinking water system are as follows:

Nothing to report for the reporting period.

APPENDIX A

WTR 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: 7147-9Y7HWV
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on:Feb 5, 2025 8:18 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.

Return to Main Page

CITY OF KAWARTHA LAKES | 2025/02/05
version: v4.5.0.21 (build#: 22)
Last modified: 2018/09/18