

Buckhorn Lake Estates Drinking Water System

Waterworks # 220006437
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The Municipality of Trent Lakes

Reporting Period of January 1st – December 31st, 2024

Issued: February 20 2025

Revision: 0

Operating Authority:



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 Municipality of Trent Lakes Office and copies will provided free of charge if requested. The Municipality of Trent Lakes Office is located at 760 Peterborough County Road 36 Trent Lakes Ontario, KOM 1AO. A copy of the annual report is also available on the Municipality of Trent Lakes www.trentlakes.ca.

Compliance Report Card

Drinking Water System Number: 220006437

Drinking Water System Name: Buckhorn Lake Estates WTP

Drinking Water System Owner: Municipality of Trent Lakes

Drinking Water System Category: Large Municipal Residential

Period Being Reported: January 1, 2024 - December 31, 2024

Health & Safety	# of Events	Date	Details
Number of Incidents	1	March 4, 2024	Employee Over exerted arm when locating and exposing curb stops and valve boxes. Ground was frozen in some areas.

Drinking Water	# of Events	Date	Details
MECP Inspections	0	N/A	N/A
Number of Non-Compliances	0	N/A	N/A
Number of Boil Water Advisories	0	N/A	N/A

System Process Description

Raw Source

The Buckhorn Lake Estates Water Treatment Plant is supplied by one GUDI well.

Treatment

The treatment system consists of the following:

- One groundwater production well with pump
- Sodium hypochlorite feed system with metering pumps
- Sodium permanganate feed system with metering pumps (if required)
- Polymer (SternPAC) feed system with metering pumps
- Four oxidation retention tanks for manganese removal
- Two continuous treated water free chlorine residual analyzers

- Two continuous filter turbidity analyzers
- Dual media granular filters in parallel
- Two 15.9 m³ inter connected backwash wastewater settling tanks
- Clearwell consisting of two 35 m³ interconnected underground tanks
- Two flow meters: raw and treated water
- Two High Lift Centrifugal Pumps
- Four Hydropneumatic Pressure Vessels
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi
SternPAC	Coagulant	Kemira
Sodium Permanganate	Iron Sequestering	System not in use during reporting period

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI#	Location	Problem	Details	Legislation	Corrective Action Taken
There were no Adverse Water Quality Incidents during this period						

Non-Compliances

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

Non-Compliances Identified in a Ministry Inspection:

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

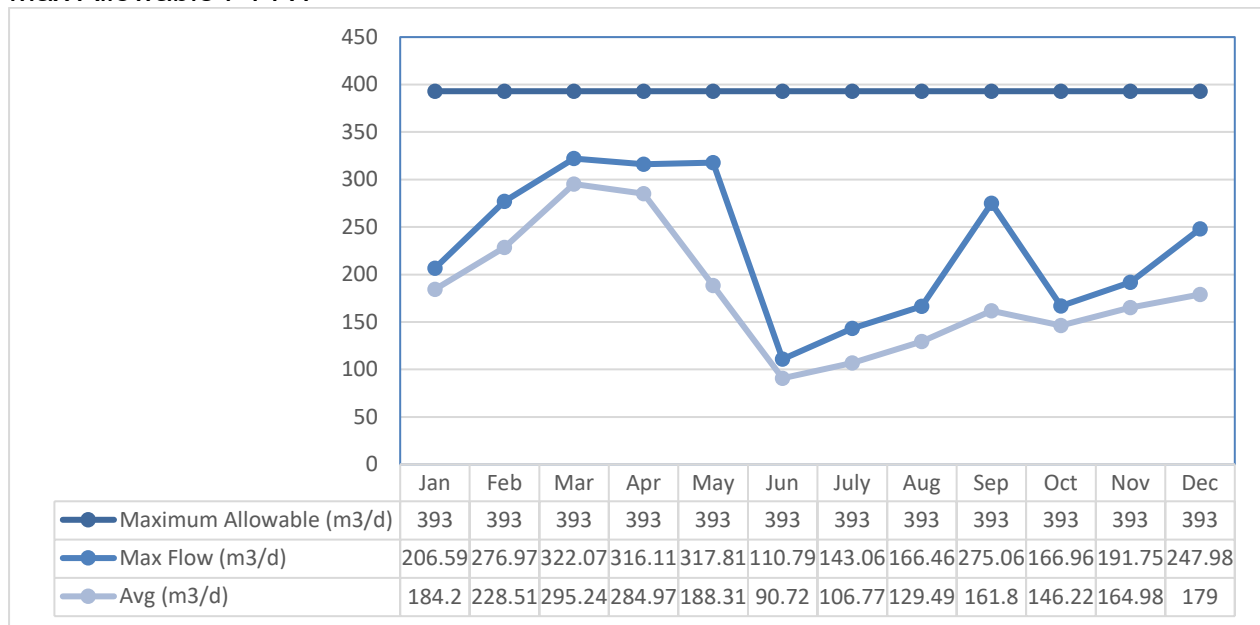
Flows

The Buckhorn Lake Estates Drinking Water System is operating below the rated capacity.

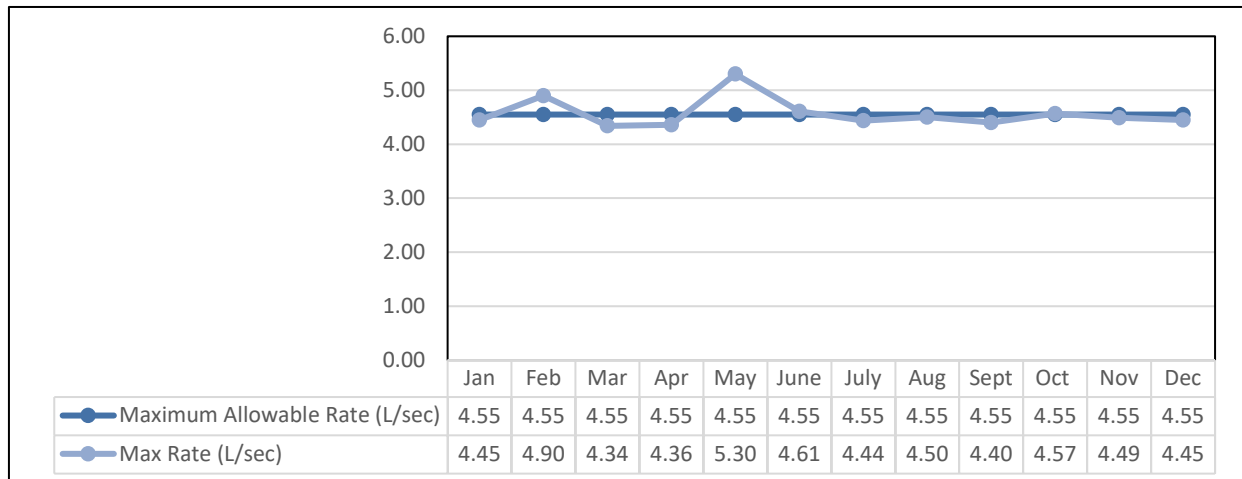
Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water (PTTW). 2024 Raw Flow Data was submitted to the Ministry of the Environment, Conservation and Parks electronically under permit No. P-300-7202725183. The confirmation and a copy of the data that was submitted are attached in Appendix A.

Total Monthly Flows (m3/d)
Max Allowable PTTW



Monthly Rated Flows (L/s)
Max allowable rate – PTTW



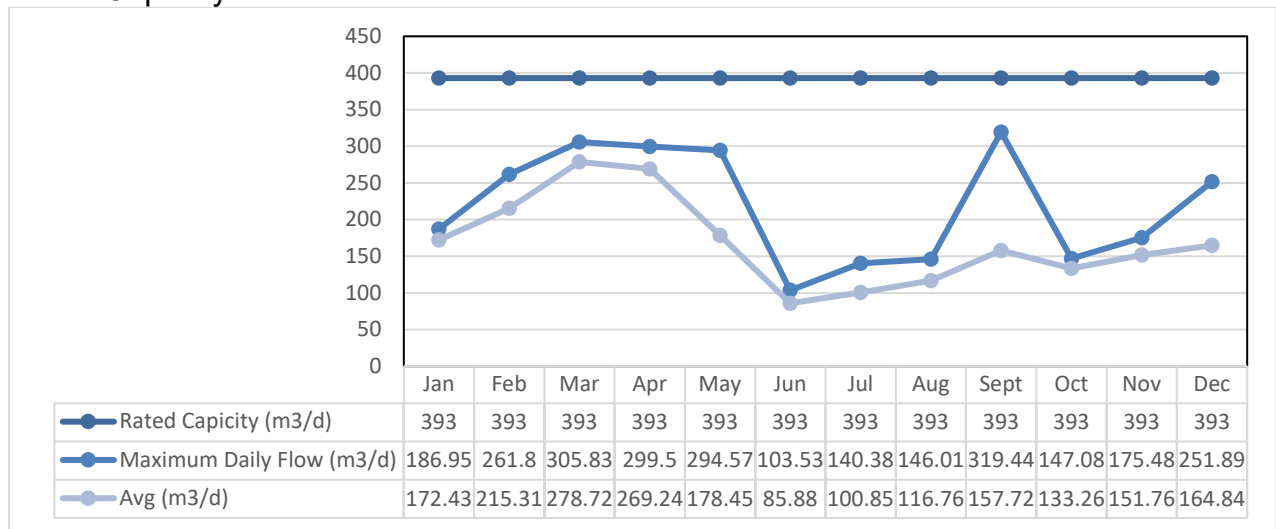
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) caused by maintenance activities and pump start up. Spikes were brief and reviewed for compliance. The scheduled Flow Meter calibration was in May.

Treated Water Flows

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

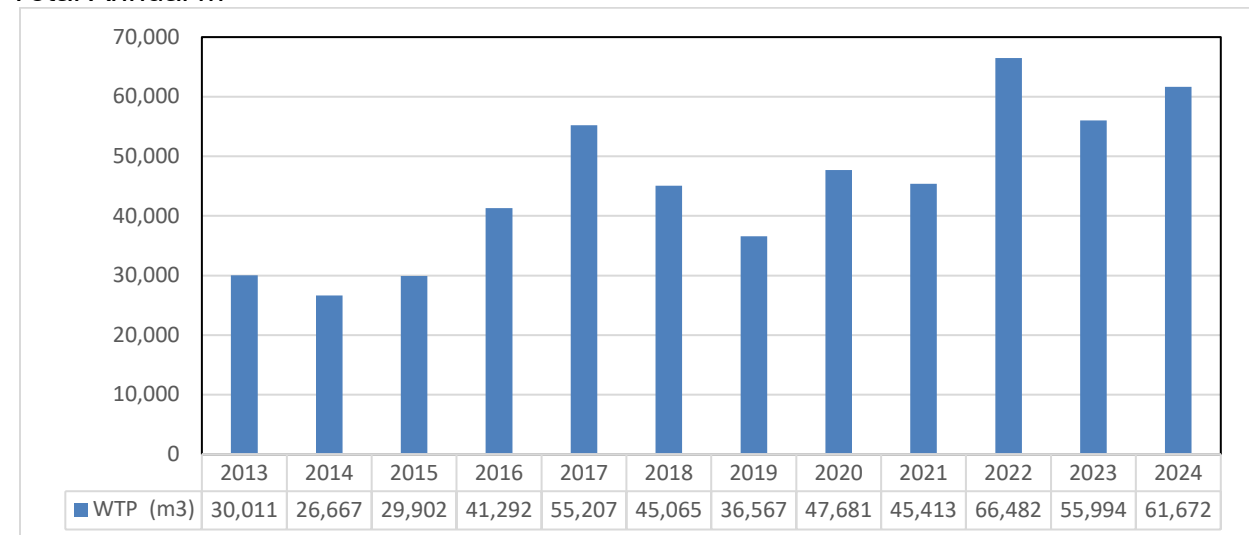
Monthly Rated Flows

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	53	0	NDOGT	0	NDOGT		
Treated	53	0	0	0	0	0	29
Distribution	160	0	0	0	0	0	8

Note: NDOGT - No Data: Overgrown with Target Bacteria

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity Raw	12	0.10	0.30
Turbidity Filter 1 (NTU)	8760	0	2.0
Turbidity Filter 2 (NTU)	8760	0	2.0
Chlorine (mg/L)	8760	0.76	3.44

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 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 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	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L)	2024/01/02	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L)	2024/01/02	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L)	2024/01/02	134.0	1000.0	No	No
Boron: B (ug/L)	2024/01/02	33.0	5000.0	No	No
Cadmium: Cd (ug/L)	2024/01/02	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L)	2024/01/02	0.19	50.0	No	No

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Mercury: Hg (ug/L)	2024/01/02	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L)	2024/01/02	0.14	50.0	No	No
Uranium: U (ug/L)	2024/01/02	0.174	20.0	No	No
Additional Inorganics					
Fluoride (mg/L)	2023/01/05	<MDL 0.06	1.5	No	No
Nitrite (mg/L)	2024/01/02	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2024/04/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2024/07/02	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2024/10/01	<MDL 0.003	1.0	No	No
Nitrate (mg/L)	2024/01/02	3.71	10.0	No	No
Nitrate (mg/L)	2024/04/03	2.94	10.0	No	No
Nitrate (mg/L)	2024/07/02	3.05	10.0	No	No
Nitrate (mg/L)	2024/10/01	2.44	10.0	No	No
Sodium: Na (mg/L)	2023/01/11	46.8	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 and 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)	6	2	302	305		
pH	6	2	7.07	7.29		
Lead (ug/l)	6	2	3.36	4.15	10	0

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03

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	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L)	2024/01/02	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L)	2024/01/02	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L)	2024/01/02	<MDL 0.05	20.0	No	No
Benzene (ug/L)	2024/01/02	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L)	2024/01/02	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L)	2024/01/02	<MDL 0.33	5.0	No	No
Carbaryl (ug/L)	2024/01/02	<MDL 0.05	90.0	No	No
Carbofuran (ug/L)	2024/01/02	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L)	2024/01/02	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L)	2024/01/02	<MDL 0.02	90.0	No	No
Diazinon (ug/L)	2024/01/02	<MDL 0.02	20.0	No	No
Dicamba (ug/L)	2024/01/02	<MDL 0.20	120.0	No	No
1,2-Dichlorobenzene (ug/L)	2024/01/02	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L)	2024/01/02	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L)	2024/01/02	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L)	2024/01/02	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L)	2024/01/02	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L)	2024/01/02	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2024/01/02	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L)	2024/01/02	<MDL 0.40	9.0	No	No
Dimethoate (ug/L)	2024/01/02	<MDL 0.06	20.0	No	No
Diquat (ug/L)	2024/01/02	<MDL 1.0	70.0	No	No
Diuron (ug/L)	2024/01/02	<MDL 0.03	150.0	No	No
Glyphosate (ug/L)	2024/01/02	<MDL 1.0	280.0	No	No
Malathion (ug/L)	2024/01/02	<MDL 0.02	190.0	No	No
Metolachlor (ug/L)	2024/01/02	<MDL 0.01	50.0	No	No
Metribuzin (ug/L)	2024/01/02	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)	2024/01/02	<MDL 0.3	80.0	No	No
Paraquat (ug/L)	2024/01/02	<MDL 1.0	10.0	No	No
PCB (ug/L)	2024/01/02	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L)	2024/01/02	<MDL 0.15	60.0	No	No
Phorate (ug/L)	2024/01/02	<MDL 0.01	2.0	No	No
Picloram (ug/L)	2024/01/02	<MDL 1.0	190.0	No	No
Prometryne (ug/L)	2024/01/02	<MDL 0.03	1.0	No	No
Simazine (ug/L)	2024/01/02	<MDL 0.01	10.0	No	No

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Terbufos (ug/L)	2024/01/02	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L)	2024/01/02	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	2024/01/02	<MDL 0.20	100.0	No	No
Triallate (ug/L)	2024/01/02	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L)	2024/01/02	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L)	2024/01/02	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)	2024/01/02	<MDL 0.12	100.0	No	No
Trifluralin (ug/L)	2024/01/02	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L)	2024/01/02	<MDL 0.17	1.0	No	No

Distribution Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Trihalomethane: Total (ug/L) Annual Average	2024	33.25	100.00	No	No
HAA Total (ug/L) Annual Average	2024	<5.30	80.00	No	No

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

Additional Legislated Samples

Municipal Drinking Water Licence	Collected Weekly June – Oct	Total Microcystin Raw Results Range (ug/L)	Total Microcystin Treated Water Results Range (ug/L)	Treated Water Total Microcystin Limit 1.5 ug/L Exceeded Y/N
Harmful Algal Blooms Monitoring required June to October at a minimum. Samples collected weekly. Treated water tested only if Total Microcystins detected in Raw Water.	June	<0.1 – <0.1	-	N
	July	<0.1 - <0.1	-	N
	August	<0.1 - <0.1	-	N
	September	<0.1 - <0.1	-	N
	October	<0.1 – <0.1	-	N

The following additional samples are not required but Iron and Manganese are sampled

monthly to provide operational guidance.

Parameter	Location	No. of Samples Collected	Range of Results	
			Minimum	Maximum
Iron (ug/L)	Raw	12	<7MDL	124
Iron (ug/L)	Treated	12	<7MDL	33
Manganese (ug/L)	Raw	12	0.71	60.8
Manganese (ug/L)	Treated	12	0.17	9.40

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

WO #	Description
3705195	Pump Submersible HLP 1 and 2, Replacement
3765020	Filter Valve, Maintenance
3805244	Low Pressure Switch Failure, Replace
3835099	Hypo Injector, Replacement
3949267	Distribution Leak, Cedar Circle, Repair
3949668	Dehumidifier, Replacement
3949807	170 Sumcot main valve extensions
3950648	162/166 Sumcot Dr., Leak
4050869	Well Pump Hour Meter Failure, Investigate/Replace
4143733	Outdoor Light Photocell Fail, Replace
4192781	45-47 Sumcot Dr Service Repair
4193869	45 Sumcot Curb Stop Extension Install

Equipment was maintained in a fit state of repair as per legislation.

Appendix A

WTRS Submission Confirmation

Hello,

Attached is a copy of your completed Online Reporting. Please keep this for your records should you need it for future reference.

Service Name: Confirmation of Water Taking PTTW Reporting Submission - 2024

Date/Time Submitted: Feb 11, 2025 1:38:22 PM

Submission Confirmation#: 1000269764

Submitted To:

Ministry of the Environment, Conservation and Parks Water User Reporting Section

125 Resources Road, West Wing

Toronto, ON M9P 3V6

[Tel:1-877-344-2011](tel:1-877-344-2011)

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