

Southview Estates Drinking Water System

Waterworks # 220012260
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2021

Issued: February 23, 2022

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 free of charge at the City of Kawartha Lakes Public Works Administration Office and on [the City 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: 220012260

Drinking Water System Name: Southview Estates DWS

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Large Municipal Residential

Reporting Period: January 1, 2021 - December 31, 2021

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	November 10, 2021	2021/2022 Announced Focused Drinking Water Inspection, 100% rating.
AWQI's	2	August 24, 2021	AWQI 155228 – Distribution bacti result - 4 Total Coliform, 4 E. coli
		October 5, 2021	AWQI 155815 -The four quarter Rolling Annual Average (RAA) for THM was 104 ug/L. The RAA limit is 100 ug/L.
Number of Non-Compliances	0		
Number of Boil Water Advisories	1	August 24, 2021	As a result of AWQI 155228, rescinded on August 27, 2021

System Process Description

Raw Source

The Southview Estates Drinking Water System draws water from Sturgeon Lake.

Treatment

The treatment system consists of the following:

- Dual train conventional filtration package plant
- Inline static mixer
- Coagulant feed system with addition of SternPAC
- Coagulant aid feed system with addition of polymer
- Two mono-media upflow clarifier units
- Two dual media rapid gravity filters
- Sodium hypochlorite feed system for primary disinfection
- Dual celled chlorine contact tanks (274 m3) located beneath the plant
- Two highlift pump chambers housing five pumps; three highlift and two backwash
- Sodium hypochlorite feed system for post chlorination
- Online analyzers to monitor both free treated chlorine and filter effluent turbidity
- Wastewater treatment system that consists of two backwash pumps and two settling tanks that receive backwash water and clarifier sludge
- SCADA computer control system
- Zebra mussel control system
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi
SternPAC	Coagulant	Kemira
Magnafloc	Coagulant Aid	BASF

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
August 24, 2021	155228	Distribution	Bacti result - 4 cfu/100ml Total Coliform (TC) - 4cfu/100ml E. coli (EC)	Limit for both TC and EC is 0 cfu/100ml	O Reg 169 & 170/03 Schedule 17-5 and 17-6	-Water mains were flushed -Chlorine dosage at the treatment plant was increased - DW bacteriological re-samples were taken at the adverse

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
						location SH#5 and upstream/downstream sample locations (SH#2 and SH#1). - A Boil Water Advisory (BWA) was issued by HKPR and notices were distributed to residents on August 24, 2021. - 1st set of resample bacteriological samples were taken on August 24 and returned 0/0 for TC/EC. - 2nd set of resample bacteriological samples were taken on August 26 and returned 0/0 for TC/EC. - The BWA was rescinded by HKPR on August 27, 2021 and rescind notices were distributed to residents that day.

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
October 5, 2021	155815	Distribution	104.16 ug/L	The RAA limit is 100 ug/L.	O. Reg. 170/03 Schedule 16 Section 10	<p>Reduced chlorine residual.</p> <p>Lowered clearwell level to reduce detention time.</p> <p>Change rotation of highlifts to promote better mixing.</p> <p>Clearwell cleaning to reduce THM production in clearwell</p> <p>Conducting jar tests & additional sampling for chemical dosage optimization</p>

Non-Compliance

There were no non-compliances identified during this period.

Non-Compliance Identified in a Ministry Inspection:

There were no non-compliances identified during this period.

Flows

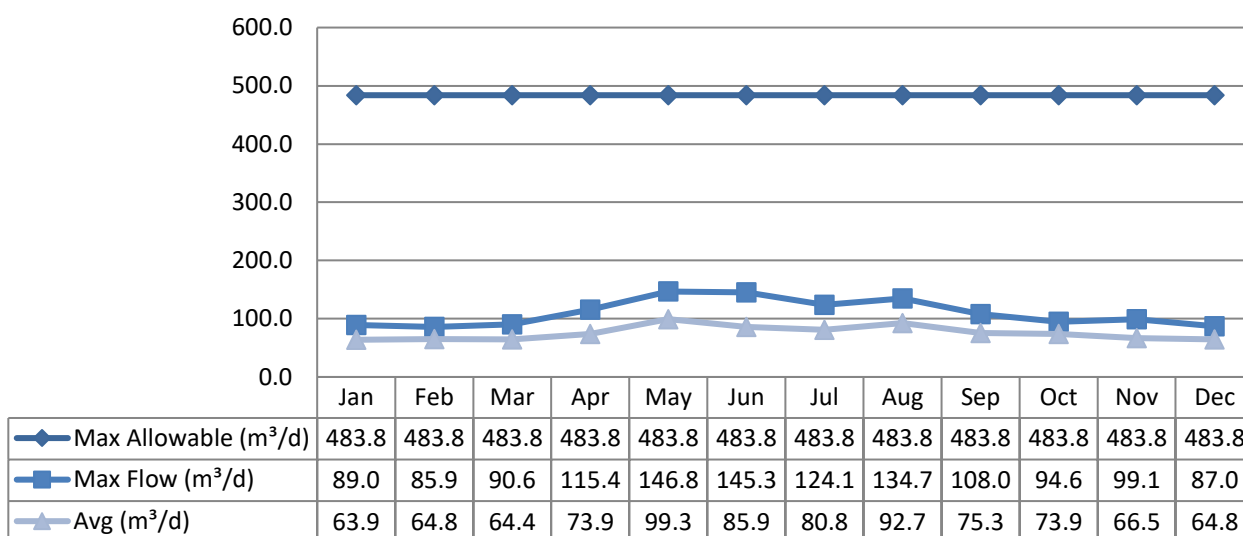
The Southview Estates Drinking Water System is operating under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2021 Raw Flow Data was submitted to the Ministry electronically under permit #8118-AW2NZT. The confirmation and a copy of the data that was submitted are attached in Appendix A.

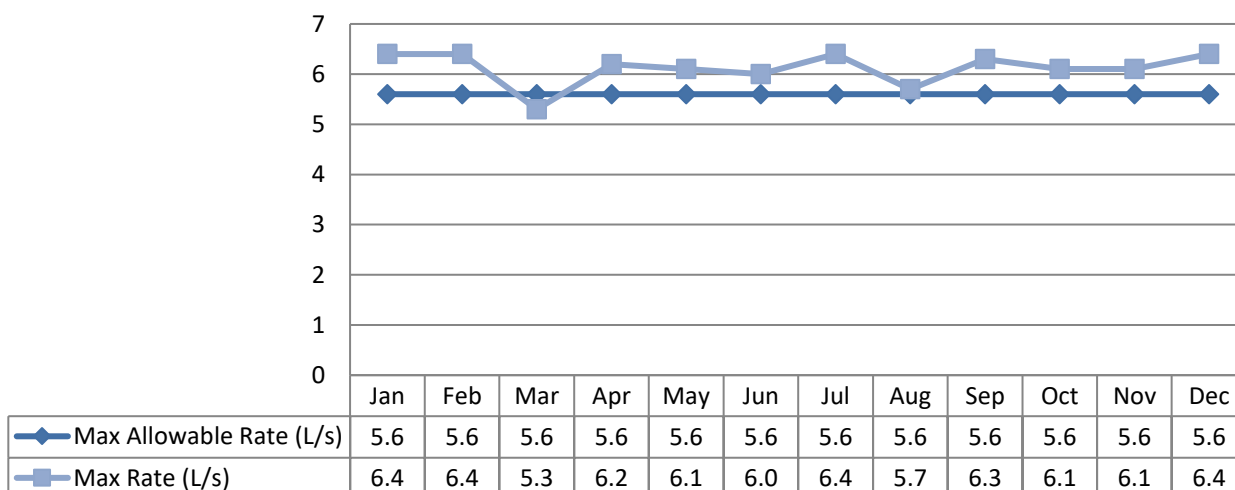
Total Monthly Flows (m³/d)

Max Allowable PTTW- Raw



Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Raw



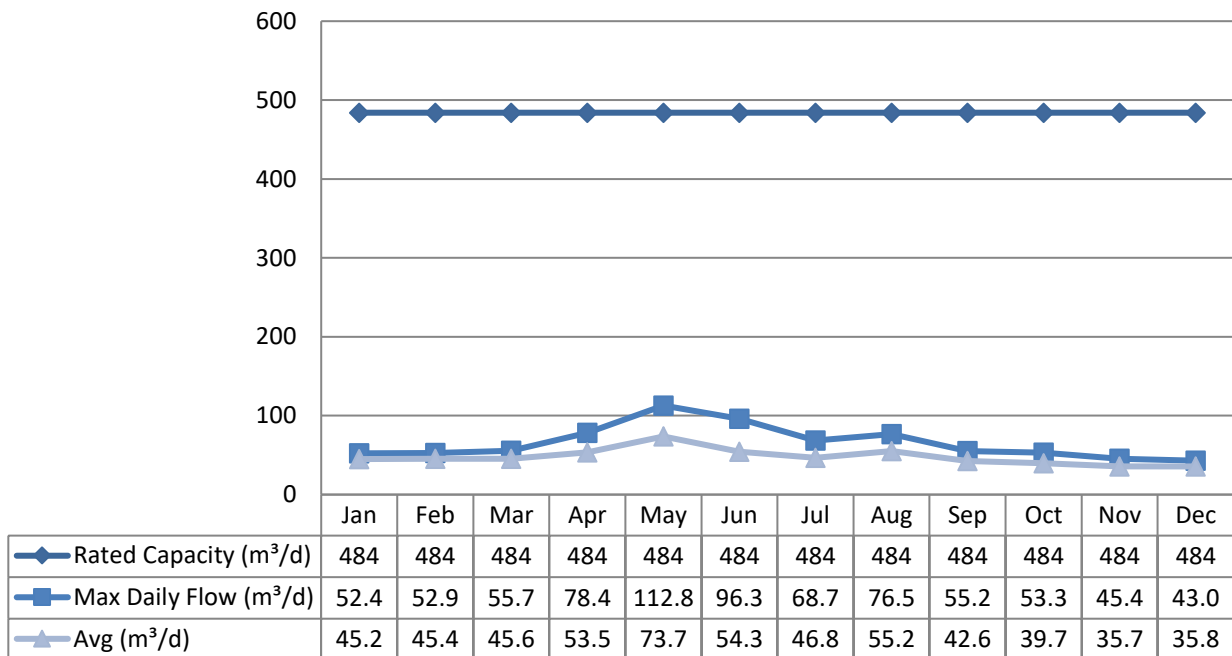
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) and exceedances were short in duration. The scheduled Flow Meter calibration was in August 2021.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

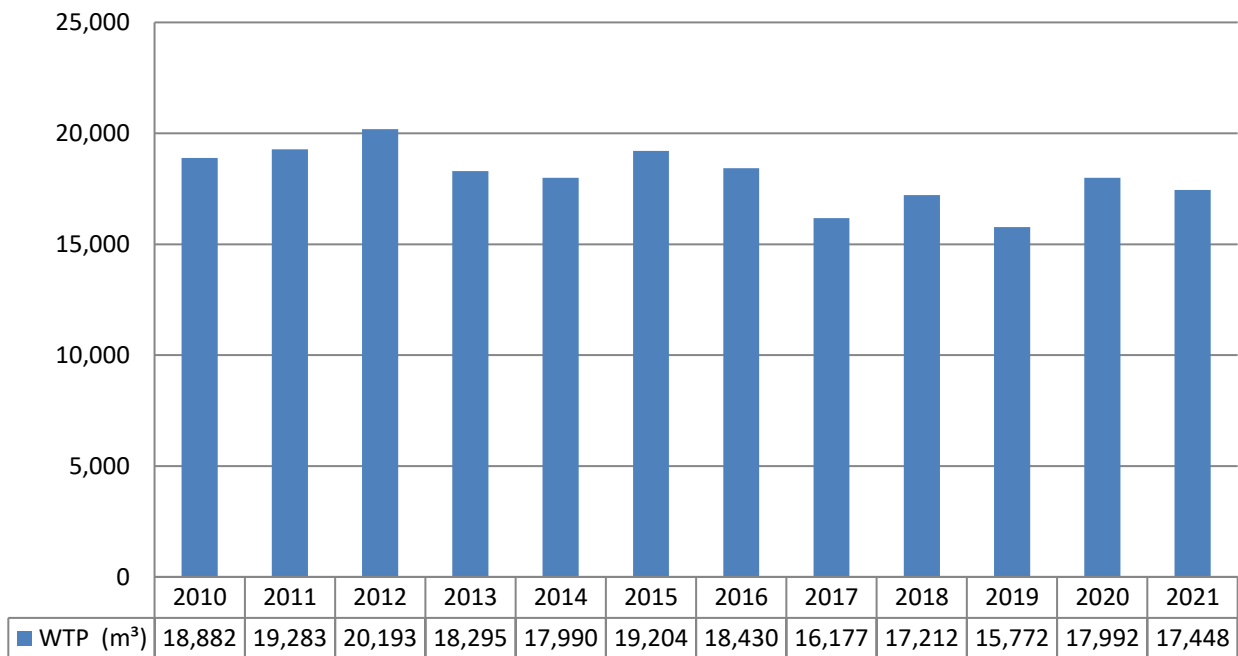
Monthly Rated Flows

Rated Capacity - MDWL



Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

	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	52	0	6	0	300		
Treated	52	0	0	0	0	0	1
Distribution	162	0	4	0	4	0	13

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity Raw (NTU)	53	0.28	2.26
Turbidity Filter 1 (NTU)	8760	0	2.96
Turbidity Filter 2 (NTU)	8760	0	2.99
Chlorine	8760	0.75	5.00
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 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

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L)	2021/01/04	<MDL 0.9	6.0	No	No
Arsenic: As (ug/L)	2021/01/04	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L)	2021/01/04	19.3	1000.0	No	No
Boron: B (ug/L)	2021/01/04	19.0	5000.0	No	No
Cadmium: Cd (ug/L)	2021/01/04	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L)	2021/01/04	0.16	50.0	No	No
Mercury: Hg (ug/L)	2021/01/04	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L)	2021/01/04	<MDL 0.04	50.0	No	No
Uranium: U (ug/L)	2021/01/04	0.013	20.0	No	No
Additional Inorganics					
Fluoride (mg/L)	2018/01/15	<MDL 0.06	1.5	No	No
Nitrite (mg/L)	2021/01/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2021/04/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2021/07/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2021/10/04	<MDL 0.003	1.0	No	No
Nitrate (mg/L)	2021/01/04	0.3	10.0	No	No
Nitrate (mg/L)	2021/04/06	0.81	10.0	No	No
Nitrate (mg/L)	2021/07/05	0.349	10.0	No	No
Nitrate (mg/L)	2021/10/04	0.278	10.0	No	No
Sodium: Na (mg/L)	2018/01/15	10.7	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	64	77	N/A	N/A
pH	2	2	8.33	8.75	N/A	N/A
Lead (ug/l)	2	0	N/A	N/A	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.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L)	2021/01/04	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L)	2021/01/04	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L)	2021/01/04	<MDL 0.05	20.0	No	No
Benzene (ug/L)	2021/01/04	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L)	2021/01/04	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L)	2021/01/04	<MDL 0.33	5.0	No	No
Carbaryl (ug/L)	2021/01/04	<MDL 0.05	90.0	No	No
Carbofuran (ug/L)	2021/01/04	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L)	2021/01/04	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L)	2021/01/04	<MDL 0.02	90.0	No	No
Diazinon (ug/L)	2021/01/04	<MDL 0.02	20.0	No	No
Dicamba (ug/L)	2021/01/04	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L)	2021/01/04	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L)	2021/01/04	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L)	2021/01/04	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L)	2021/01/04	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L)	2021/01/04	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L)	2021/01/04	<MDL 0.15	900.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2021/01/04	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L)	2021/01/04	<MDL 0.4	9.0	No	No
Dimethoate (ug/L)	2021/01/04	<MDL 0.06	20.0	No	No
Diquat (ug/L)	2021/01/04	<MDL 1.0	70.0	No	No
Diuron (ug/L)	2021/01/04	<MDL 0.03	150.0	No	No
Glyphosate (ug/L)	2021/01/04	<MDL 1.0	280.0	No	No
Malathion (ug/L)	2021/01/04	<MDL 0.02	190.0	No	No
Metolachlor (ug/L)	2021/01/04	<MDL 0.01	50.0	No	No
Metribuzin (ug/L)	2021/01/04	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)	2021/01/04	<MDL 0.3	80.0	No	No
Paraquat (ug/L)	2021/01/04	<MDL 1.0	10.0	No	No
PCB (ug/L)	2021/01/04	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L)	2021/01/04	<MDL 0.15	60.0	No	No
Phorate (ug/L)	2021/01/04	<MDL 0.01	2.0	No	No
Picloram (ug/L)	2021/01/04	<MDL 1.0	190.0	No	No
Prometryne (ug/L)	2021/01/04	<MDL 0.03	1.0	No	No
Simazine (ug/L)	2021/01/04	<MDL 0.01	10.0	No	No
Terbufos (ug/L)	2021/01/04	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L)	2021/01/04	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	2021/01/04	<MDL 0.2	100.0	No	No
Triallate (ug/L)	2021/01/04	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L)	2021/01/04	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L)	2021/01/04	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)	2021/01/04	<MDL 0.12	100.0	No	No
Trifluralin (ug/L)	2021/01/04	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L)	2021/01/04	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average	2021	126.714	100.0	Yes	Yes
HAA Total (ug/L) Annual Average	2021	62.85	80.0	No	Yes

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

MDL = Method Detection Limit

Additional Legislated Samples

	Location	No. of	Range of Results
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		Samples Collected	Minimum	Maximum
Alkalinity (mg/L as CaCO ₃)	Point of Entrance to Distribution System	4	63.0	99.0
Aluminum (ug/L)	Point of Entrance to Distribution System	4	19.0	76.0
Dissolved Organic Carbon (mg/L)	Point of Entrance to Distribution System	55	2.0	6.0
Total Suspended Solids (mg/L)	Settling Tank Discharge Point	12	3.0	16.0

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

WO #	Description
2267321	Replace Filter Turbidity Analyzers
2267164	Filter Media Replacement
2361740	Lowlift Pump Replacement

Appendix A

WTRS Data and Submission Confirmation



Ministry of the Environment,
Conservation and Parks

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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: 8118-AW2NZT
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Jan 31, 2022 2:07 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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