

Norland Drinking Water System

Waterworks # 250001910
System Category – Small Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes
Reporting Period of January 1st – December 31st 2020

Issued: February 4 2021

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

Table of Contents

Annual Water Report	1
Report Availability	1
Compliance Report Card	1
System Process Description	2
Raw Source	2
Treatment	2
Treatment Chemicals used during the reporting year:	2
Summary of Non-Compliance.....	3
Adverse Water Quality Incidents	3
Non-Compliance.....	3
Non-Compliance Identified in a Ministry Inspection:.....	3
Flows	3
Raw Water Flows	3
Total Monthly Flows (m3/d).....	4
Monthly Rate Flows (L/s)	4
Treated Water Flows	5
Monthly Rated Flows.....	5
Annual Total Flow Comparison	5
Regulatory Sample Results Summary	6
Microbiological Testing.....	6
Operational Testing	6
Inorganic Parameters	6
Schedule 15 Sampling:	7
Organic Parameters	7
Additional Legislated Samples	9
Major Maintenance Summary.....	10
WTRS Data Submission Confirmation.....	A

Report Availability

This system does not serve more than 10,000 residences. The annual reports are available to residents free of charge at the City of Kawartha Lakes – Public Works Administration Office located at 322 Kent Street in Lindsay, Ontario. The reports are also available online at the [City of Kawartha Lakes website](http://www.kawarthalakes.ca). (www.kawarthalakes.ca)

Compliance Report Card

Drinking Water System Number: 250001910

Drinking Water System Name: Norland DWS

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Small Municipal Residential

Period Being Reported: January 1, 2020 - December 31, 2020

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	0		2020-21 inspection not yet started at time of issue
AWQI's	0		
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Norland Water Treatment Plant is supplied with surface water from the Gull River.

Treatment

The treatment system is a dual train conventional filtration package plant consisting of the following:

- In-line static mixer
- Coagulant feed system with SternPac addition upstream of static mixer
- Two stage variable speed flocculators located in flocculation tanks
- Coagulant aid feed system with polymer added to flocculation tanks
- Two upflow clarifier units equipped with tube settlers
- Two dual media rapid gravity filters

- Sodium hypochlorite feed system for primary disinfection
- Dual celled chlorine contact tanks located beneath the plant
- Two highlift pump chambers housing four highlift pumps
- 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 a settling tank that receives backwash wastewater and clarifier sludge
- SCADA computer control system
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag
Polyalumunium Chloride	Flocculation	FloChem
Polymer	Flocculation	Basf
Sodium hydroxide	pH adjustment	Not required in 2020

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-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

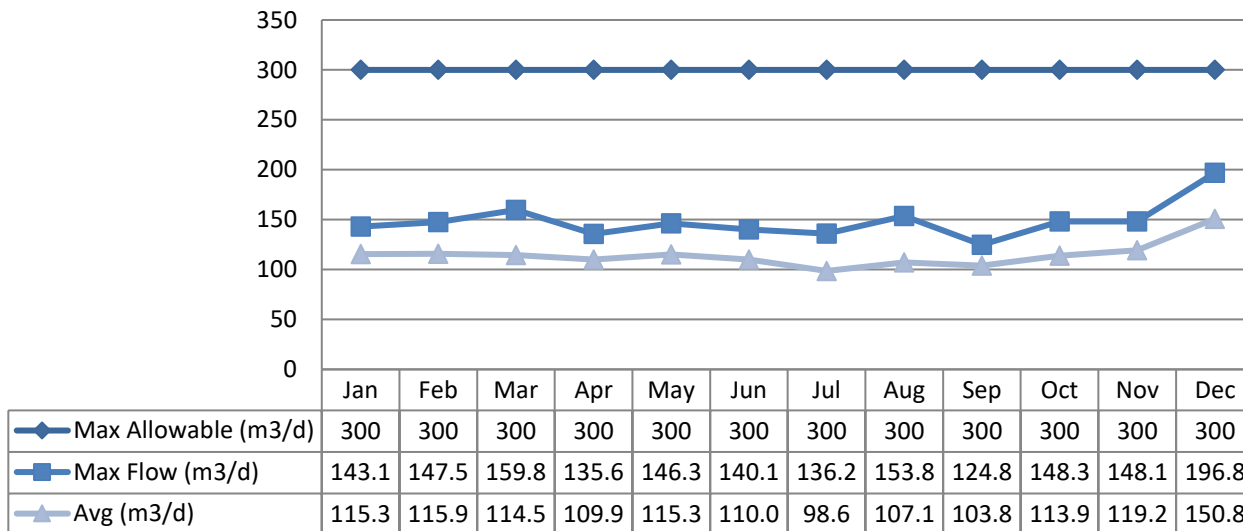
The Norland Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water takings are regulated by the Permit to Take Water (PTTW). 2020 Raw Flow Data was submitted to the Ministry electronically under permit #6033-AQ5HFW. The confirmation for the data that was submitted is attached in Appendix A.

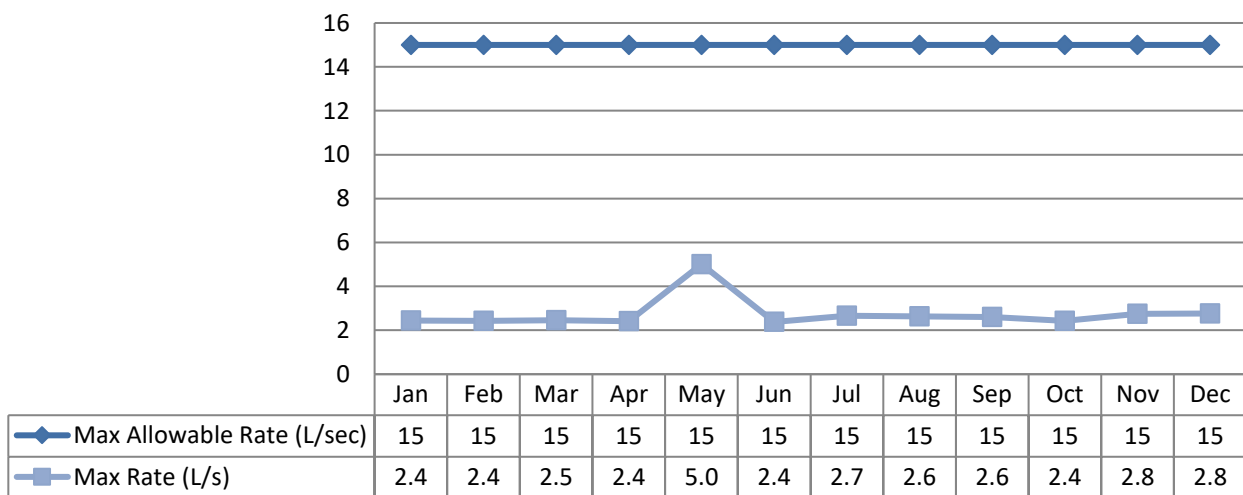
Total Monthly Flows

Max Allowable PTTW- Raw



Monthly Rated Flows

Max allowable rate – PTTW- Raw

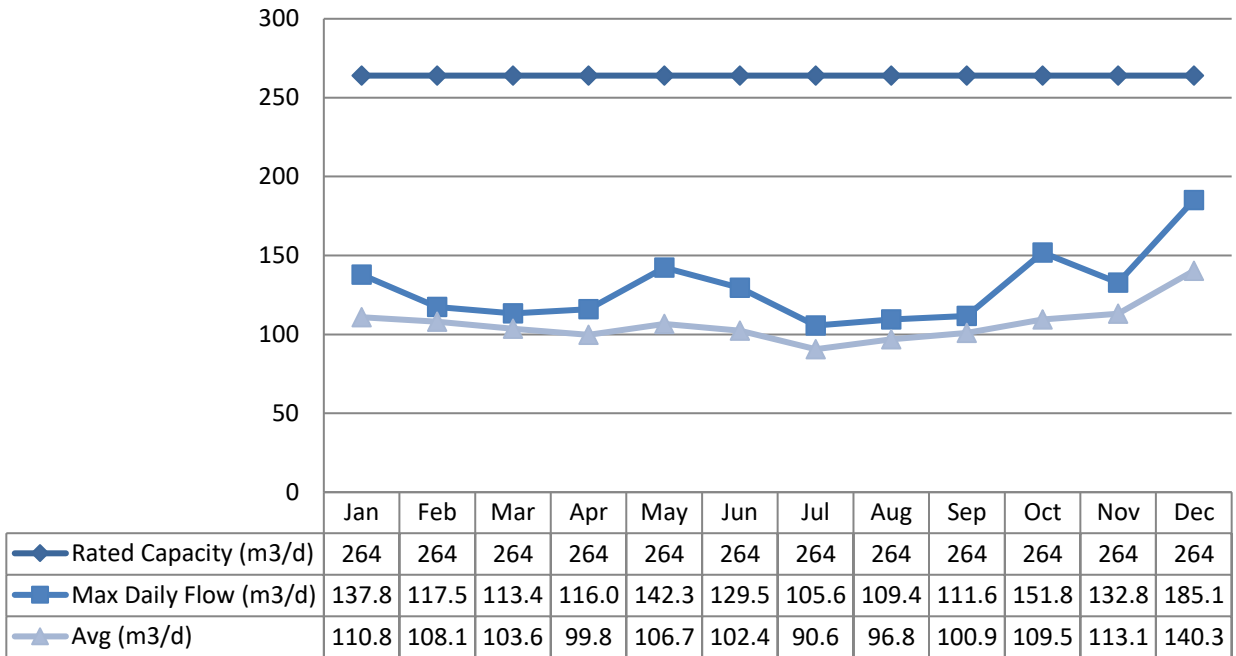


Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

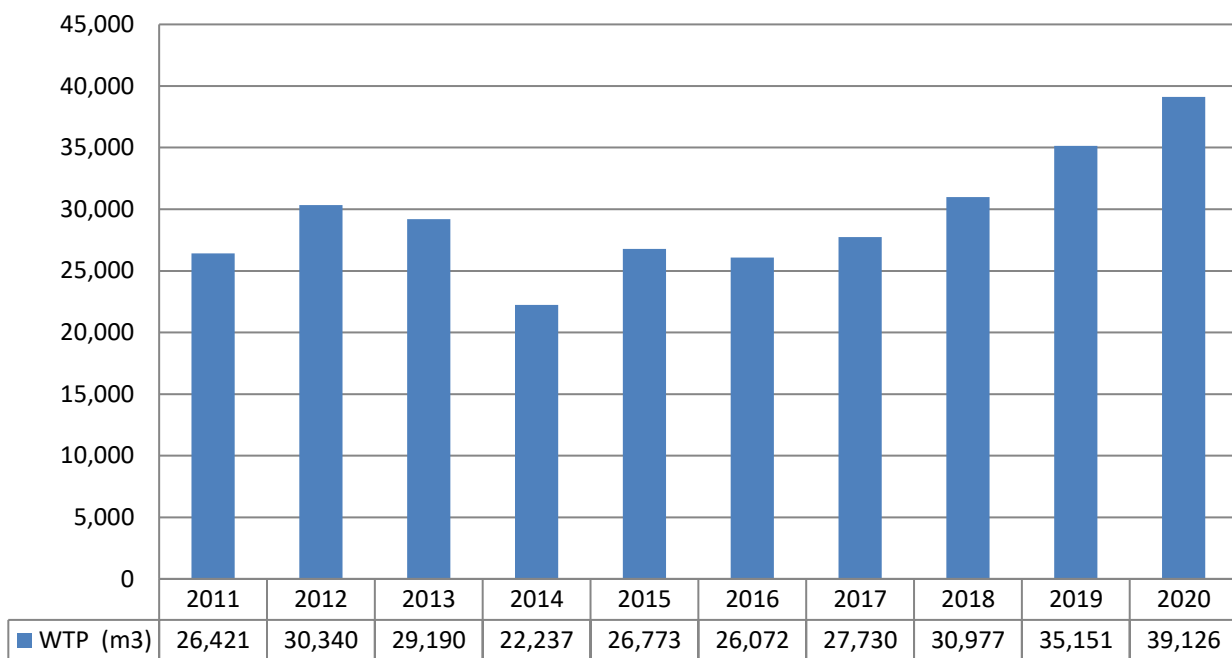
Monthly Rated Flows

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		No. of Samples Collected	Range of HPC Results	
		Min	Max	Min	Max		Min	Max
Raw	26	0	39	16	154			
Distribution	52	0	0	0	0	52	0	29

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity Filter 1 (NTU)	8760	0.00	1.00
Turbidity Filter 2 (NTU)	8760	0.00	1.19
Chlorine	8760	0.00	3.21
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 170/03. Sodium, Fluoride and the metals are required to be tested every 5 years while Nitrate and Nitrite are tested quarterly. 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

Parameter Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2020/01/13	0.12	6.0	No	No
Arsenic: As (ug/L) - TW	2020/01/13	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2020/01/13	19.2	1000.0	No	No
Boron: B (ug/L) - TW	2020/01/13	20	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2020/01/13	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2020/01/13	0.11	50.0	No	No
Mercury: Hg (ug/L) - TW	2020/01/13	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2020/01/13	0.04	50.0	No	No
Uranium: U (ug/L) - TW	2020/01/13	0.024	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2020/01/13	<MDL 0.06	1.5	No	No
Nitrite (mg/L) - TW	2020/01/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/04/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/07/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/10/05	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2020/01/06	0.102	10.0	No	No
Nitrate (mg/L) - TW	2020/04/06	0.123	10.0	No	No
Nitrate (mg/L) - TW	2020/07/06	0.018	10.0	No	No
Nitrate (mg/L) - TW	2020/10/05	0.01	10.0	No	No
Sodium: Na (mg/L) - TW	2020/01/13	7.77	20*	No	No

*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 mg/L 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	15	16	N/A	N/A
pH	2	2	7.2	7.27	N/A	N/A
Lead (ug/l)	2	2	0.06	0.15	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.

Parameter Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2020/01/13	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2020/01/13	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L) - TW	2020/01/13	<MDL 0.05	20.0	No	No
Benzene (ug/L) - TW	2020/01/13	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L) - TW	2020/01/13	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2020/01/13	<MDL 0.33	5.0	No	No
Carbaryl (ug/L) - TW	2020/01/13	<MDL 0.05	90.0	No	No
Carbofuran (ug/L) - TW	2020/01/13	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L) - TW	2020/01/13	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L) - TW	2020/01/13	<MDL 0.02	90.0	No	No
Diazinon (ug/L) - TW	2020/01/13	<MDL 0.02	20.0	No	No
Dicamba (ug/L) - TW	2020/01/13	<MDL 0.2	120.0	No	No

Parameter Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
1,2-Dichlorobenzene (ug/L) - TW	2020/01/13	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L) - TW	2020/01/13	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L) - TW	2020/01/13	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L) - TW	2020/01/13	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2020/01/13	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L) - TW	2020/01/13	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4- D) (ug/L) - TW	2020/01/13	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L) - TW	2020/01/13	<MDL 0.4	9.0	No	No
Dimethoate (ug/L) - TW	2020/01/13	<MDL 0.06	20.0	No	No
Diquat (ug/L) - TW	2020/01/13	<MDL 1.0	70.0	No	No
Diuron (ug/L) - TW	2020/01/13	<MDL 0.03	150.0	No	No
Glyphosate (ug/L) - TW	2020/01/13	<MDL 1.0	280.0	No	No
Malathion (ug/L) - TW	2020/01/13	<MDL 0.02	190.0	No	No
Metolachlor (ug/L) - TW	2020/01/13	<MDL 0.01	50.0	No	No
Metribuzin (ug/L) - TW	2020/01/13	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2020/01/13	<MDL 0.3	80.0	No	No
Paraquat (ug/L) - TW	2020/01/13	<MDL 1.0	10.0	No	No
PCB (ug/L) - TW	2020/01/13	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L) - TW	2020/01/13	<MDL 0.15	60.0	No	No
Phorate (ug/L) - TW	2020/01/13	<MDL 0.01	2.0	No	No
Picloram (ug/L) - TW	2020/01/13	<MDL 1.0	190.0	No	No
Prometryne (ug/L) - TW	2020/01/13	<MDL 0.03	1.0	No	No
Simazine (ug/L) - TW	2020/01/13	<MDL 0.01	10.0	No	No

Parameter Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Terbufos (ug/L) - TW	2020/01/13	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L) - TW	2020/01/13	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2020/01/13	<MDL 0.2	100.0	No	No
Triallate (ug/L) - TW	2020/01/13	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L) - TW	2020/01/13	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2020/01/13	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2020/01/13	<MDL 0.12	100.0	No	No
Trifluralin (ug/L) - TW	2020/01/13	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L) - TW	2020/01/13	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2020	44.75	100	No	No
HAA Total (ug/L) Annual Average - DW	2020	40	80	No	No

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

MDL = Method Detection Limit

Additional Legislated Samples

Municipal Drinking Water Licence	Date Collected	Suspended Solids (mg/L)	Free Chlorine Residual (mg/L)
Settling Tank Discharge Point	January	29	0.01
	February	36	0.01
	March	32	0.02
	April	13	0.01
	May	5	0.02
	June	25	0.02
	July	4	0.02
	August	23	0.02
	September	6	0.02
	October	15	0.02

Municipal Drinking Water Licence	Date Collected	Suspended Solids (mg/L)	Free Chlorine Residual (mg/L)
	November	8	0.02
	December	9	0.01
	Annual Average	17	

Note: The Suspended Solids annual average limit is 25 mg/L.


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

WO #	Description
1342267	Lifting Device Repairs – Chainfall on Monorail HLP Room
1536451	Lowlift Pump LLP-02 Replacement
1708465	WSP Backwash Program Investigation
1709273	Highlift 02 & 03 Faulting on Power Loss Repair
1709793	Install New PAC Pumps
1873032	Actuator Valve CV 215 Repaired

Appendix A

WTRS Data Submission Confirmation

1/27/2021 Water Taking Reporting System

 WTRS-WT-008

Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#)

Water Taking Data submitted successfully.

Confirmation:


Thank you for submitting your water taking data online.

Permit Number: 6033-AQ5HFW
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Jan 27, 2021 12:42 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.

[Return to Main Page](#)

CITY OF KAWARTHA LAKES | 2021/01/27
version: v4.5.0.21 (build#: 22)
Last modified: 2018/09/18

 This site maintained by the Government of Ontario ©2021 [Queen's Printer for Ontario](#)