



2025 Summary Report

for the

Town of Minto

CLIFFORD DRINKING WATER SYSTEM

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1.0 INTRODUCTION

1.1 Background

In December 2002, the Safe Drinking Water Act (SDWA) was enacted. Subsequently, on June 1, 2003, under the SDWA, a new '*Drinking-Water Systems Regulation*', Ontario Regulation 170/03 (O. Reg. 170/03), was enacted. In addition, several supporting regulations and procedures were also enacted to assist with the administration of O. Reg 170/03. The list of relevant drinking-water legislation is presented in Appendix A.

The SDWA identifies the responsibilities of owners and operating authorities of municipal drinking water systems (SDWA, Sections 11 and 19). Their duties include ensuring that:

- All water provided by the drinking water system meets prescribed drinking water quality standards;
- The drinking water system is operated in accordance with the Act and regulations and is kept in a good state of repair;
- All facilities are appropriately staffed and supervised;
- All sampling, testing and monitoring requirements are complied with;
- All reporting requirements are complied with; and
- Only persons holding valid operator's certificates operate the drinking water system.

O. Reg. 170/03 establishes the standard for protection of drinking water. It includes sets of schedules, specific to municipal residential systems that define requirements for:

- Minimum treatment levels;
- Operational checks;
- Chemical and microbiological sampling and testing;
- Adverse results reporting;
- Corrective procedures; and
- Report documentation and retention.

The system's Municipal Drinking Water Licence (MDWL), Drinking Water Works Permit (DWWP) and Permit To Take Water (PTTW) imposes system specific rules and conditions applicable to the standards set out in O. Reg. 170/03.

1.2 Objective

This Summary Report for the Clifford Drinking Water System is being prepared in fulfillment of Schedule 22 of O. Reg. 170/03 and will be given to Members of the Municipal Council. This report covers the period from January 1, 2025 to December 31, 2025.

This Summary Report lists any requirements of the Act, the regulations, the PTTW, the MDWL, the DWWP and any order that the system failed to meet during the period of this report. For any such failure, the measures that were taken to correct the failure are detailed. The report also includes relevant information that will assist the Town of Minto to assess the water work's capability to meet existing and future planned uses of the system.

1.3 Description of Drinking Water System

Clifford is a community with a population of approximately 1,000 people and approximately 400 residential properties, located within the Town of Minto at the northwest corner of Wellington County, along the route of Provincial Hwy. No. 9.

Clifford is serviced by a municipal Drinking Water System that is comprised of: three drilled well supplies, two pumphouses, an elevated 1,275 m³ storage tank and a distribution network of watermains. The watermains range in diameter from 100 mm to 300 mm. The municipal water system is also used for fire protection and has approximately 56 fire hydrants throughout the distribution system. In the event of a prolonged power outage, the water tower is equipped with a stationary natural gas stand-by generator and associated auto transfer switch for wells #3 & #4 as well as a portable generator is available to Wellhouse #1 and Wellhouse #3 & #4 to supply back-up power.

Well #3 is a deep overburden well and serves as the primary production well for the system. Wells #1 and #4 are bedrock wells and provide peak flows and redundancy to the system. Wells #3 and #4 are a *combined supply* and are not allowed to operate together. All three operating wells are equipped with submersible pumps; the pump in Well #3 is a variable speed pump.

In the pumphouses, the raw water supply is injected with 12% sodium hypochlorite for disinfection and the chemical sodium silicate, for iron sequestering. The treated water from Well #1 leaves the pumphouse and enters an underground contact pipe and is discharged into the distribution system after adequate contact time is achieved. Treated water from Well #3 and #4 is discharged back into the elevated storage tank before being discharged into the distribution system.

SCADA provide continuous monitoring for the Clifford Drinking Water System.

The Clifford Drinking Water System operates under MDWL 106-101 Issue 3, DWWP 106-201 Issue 3, PTTW #0441-AQ4H8H until May 21, 2025 and PTTW #4363-DGJNLJ starting May 22, 2025.

2.0 SUMMARY OF UPGRADES

2.1 Upgrades Completed in 2025

The disinfection treatment system in the Clifford Drinking Water System meets all the standards imposed by O. Reg. 170/03 and the MECP's "*Procedures for Disinfection of Drinking Water in Ontario*".

Typically, maintaining the system includes repairs and/or replacement of individual components as necessary. In 2025 \$53,570 was spent upgrading the Well #1 SCADA system, \$10,560 for a chlorine analyzer replacement and \$14,075 on Engineering for Tower painting.

The following purchases were made to be shared between all of Minto's water systems. \$13,605 on water meters, \$490 on tablet replacements, \$3,770 on the SCADA system and \$12,730 on the Rate Study and Financial Plan.

Preventative maintenance measures are being followed to ensure proper operation of the Drinking Water System.

All routine maintenance throughout the year and planned maintenance during the monthly scheduled maintenance programs was completed by Minto Operations Staff.

2.2 Upgrades Scheduled to be Completed in 2026

In 2026, the Town of Minto is planning to spend \$275,000.00 to paint the Clifford water tower and \$40,000 for Temporary Water during the Tower painting.

The following will also be purchased to be shared within the water department. \$28,500 for the Studies and Data Loggers. \$110,000 on the SCADA monitoring system, \$20,000 for water meters, \$15,000 on pumps and or valves and \$10,000 for chloring dosing boards.

3.0 OPERATION OF THE DRINKING WATER SYSTEM

3.1 Summary of the Quantities and Flow Rates of Water Supplied

O. Reg. 170/03 stipulates that a summary of the quantities and flow rates of the water supplied from each of Clifford's wells be included in the Summary Report. Tables 3.1, 3.2 and 3.3 provide a summary of quantities and flow rates supplied during 2025, for Wells #1, #3 and #4 respectively, on a monthly basis. Well #1 supplies the Allan Street Wellhouse and wells #3 & #4 supply the Nelson Street Wellhouse.

Table 3.1
Clifford Drinking Water System – Well #1
Treated Water Flow, Turbidity, and Disinfectant Residual
January 1, 2025 – December 31, 2025

Month	Raw Water Flow (Max Daily Volume = 1,309 m ³ /day (Max Flow Rate = 15.15 L/s)			Chlorine	Monthly Averages				Distribution System Disinfectant
	Operator Observed Peak Flow (L/s)	Maximum Day Flow (m ³ /day)	Monthly Total (m ³)		Treated Water Turbidity		Treated Water Disinfectant Point of Entry		
				Monthly Total (L)	No. of Samples Collected	Monthly Average Turbidity (NTU)	No. of Treated Samples Collected	Monthly Average Residual (mg/L)	No. of Samples Collected
January	9.9	144	2,335	64	4	0.45	31	1.31	See Clifford Well #3 Data
February	9.9	118	1,787	65	4	0.37	28	1.33	
March	9.9	96	1,667	40	5	0.39	31	1.25	
April	10.1	106	1,416	20	5	0.25	30	1.25	
May	10.0	111	1,306	42	5	0.25	31	1.16	
June	9.9	135	1,508	42	5	0.36	30	1.19	
July	9.8	113	1,285	43	6	0.35	31	1.24	
August	9.7	97	1,342	64	5	0.57	31	1.38	
September	9.7	141	1,202	22	7	0.46	30	1.32	
October	9.7	151	1,569	42	5	0.25	31	1.31	
November	9.8	89	1,314	44	4	0.53	30	1.34	
December	9.8	170	1,971	66	5	0.48	31	1.37	
Total			18,703	554	60		365		
Average			1,559			0.39		1.29	
Maximum	10.1	170							

Disinfectant Compound Used: **12% Sodium Hypochlorite**
 Form of Residual Displayed: **Free**
 Quantity of Disinfectant Used During 2025: **554 L**
 Distribution System Minimum Target Residual: **0.2 mg/L**

Table 3.2
Clifford Drinking Water System – Well #3
Treated Water Flow, Turbidity, and Disinfectant Residual
January 1, 2025 – December 31, 2025

Month	Raw Water Flow (Max Flow Rate = 7.6 L/s) (Max Daily Volume = 1,309 m ³ /d) This is the allowable combined limits for Well # 3 & Well # 4			Chlorine	Monthly Averages				Distribution System Disinfectant
	Operator Observed Peak Flow (L/s)	Maximum Day Flow (m ³ /day)	Monthly Total (m ³)		Treated Water Turbidity		Treated Water Disinfectant Point of Entry		
				Monthly Total (L)	No. of Samples Collected	Monthly Average Turbidity (NTU)	No. of Treated Samples Collected	Monthly Average Residual (mg/L)	No. of Samples Collected
January	4.5	210	4,431	88	4	0.48	31	1.20	49
February	4.5	208	4,542	109	4	0.33	28	1.26	43
March	4.6	252	3,790	85	5	0.30	31	1.23	49
April	4.7	177	2,804	83	5	0.30	30	1.28	45
May	4.6	169	3,076	87	5	0.25	31	1.24	48
June	4.5	178	3,250	44	5	0.23	30	1.28	48
July	4.5	186	3,603	86	6	0.43	31	1.31	46
August	4.4	210	2,779	88	5	0.21	31	1.26	47
September	4.4	271	3,372	89	7	0.29	30	1.26	48
October	4.4	261	3,631	108	5	0.26	31	1.29	49
November	4.4	197	3,997	108	4	0.36	30	1.30	43
December	4.5	253	4,827	131	6	0.28	31	1.31	48
Total			44,101	1106	61		365		563
Average			3,675			0.31		1.27	
Maximum	4.7	271							

Disinfectant Compound Used: **12% Sodium Hypochlorite**

Form of Residual Displayed: **Free**

Quantity of Disinfectant Used During 2025 for Wells #3 and #4 combined: **1,106 L** *(Wells #3 and #4 share the same NaOCl storage container)

Distribution System Minimum Target Residual: **0.2 mg/L**

Table 3.3
Clifford Drinking Water System – Well #4
Treated Water Flow, Turbidity, and Disinfectant Residual
January 1, 2025 – December 31, 2025

Month	Raw Water Flow (Max Flow Rate = 15.15 L/s) (Max Daily Volume = 1,309 m ³ /d) This is the allowable combined limits for Well # 3 & Well # 4			Chlorine	Monthly Averages				Distribution System Disinfectant
	Operator Observed Peak Flow (L/s)	Maximum Day Flow (m ³ /day)	Monthly Total (m ³)		Monthly Total (L)	Treated Water Turbidity		Treated Water Disinfectant Point of Entry	
				No. of Samples Collected		Monthly Average Turbidity (NTU)	No. of Treated Samples Collected	Monthly Average Residual (mg/L)	No. of Samples Collected
January	10.0	104	1,420	See Clifford Well #3 Data	4	0.43	31	1.26	See Clifford Well #3 Data
February	10.0	65	1,113		4	0.32	28	1.30	
March	9.8	110	1,968		5	0.35	31	1.27	
April	9.5	126	1,734		5	0.36	30	1.19	
May	9.7	124	1,752		5	0.22	31	1.24	
June	9.7	125	1,880		5	0.40	30	1.32	
July	9.8	145	2,134		6	0.30	31	1.32	
August	9.7	120	2,111		5	0.29	31	1.18	
September	9.8	141	2,122		7	0.43	30	1.31	
October	9.7	132	2,060		4	0.47	31	1.29	
November	9.7	167	2,160		4	0.27	30	1.32	
December	9.7	204	2,074		5	0.47	31	1.35	
Total			22,528	1,106	59		365		
Average			1,877			0.36		1.28	
Maximum	10.0	204							

Disinfectant Compound Used: **12% Sodium Hypochlorite**

Form of Residual Displayed: **Free**

Quantity of Disinfectant Used During 2025 for Wells #3 and #4 combined: **1,106 L** *(Wells #3 and #4 share the same NaOCl storage container)

Distribution System Minimum Target Residual: **0.2 mg/L**

Table 3.4
Clifford Drinking Water System – Well #3 & #4 Combined
Treated Water Flow
January 1, 2025 – December 31, 2025

Month	Treated Water Flow (Well #3 Max Flow Rate = 7.6 L/s) (Well #4 Max Flow Rate = 15.1 L/s) (Max Daily Volume = 1309 m ³ /d)				Chlorine
	Operator Observed Peak Flow Well #3 (L/s)	Operator Observed Peak Flow Well #4 (L/s)	Maximum Day Flow (m ³ /day)	Monthly Total (m ³)	Monthly Total (L)
January	4.5	10.0	210.41	5,851	88
February	4.5	10.0	207.74	5,655	109
March	4.6	9.8	251.77	5,758	85
April	4.7	9.5	177.34	4,538	83
May	4.6	9.7	169.35	4,828	87
June	4.5	9.7	178.29	5,129	44
July	4.5	9.8	186.33	5,737	86
August	4.4	9.7	210.04	4,890	88
September	4.4	9.8	270.82	5,493	89
October	4.4	9.7	260.96	5,692	108
November	4.4	9.7	197.13	6,157	108
December	4.5	9.7	253.07	6,901	131
Total				66,629	1,106
Average				5,552	
Maximum	4.7	10.0	270.819		

3.2 Comparison of Actual Rates and Maximum Allowable Rates

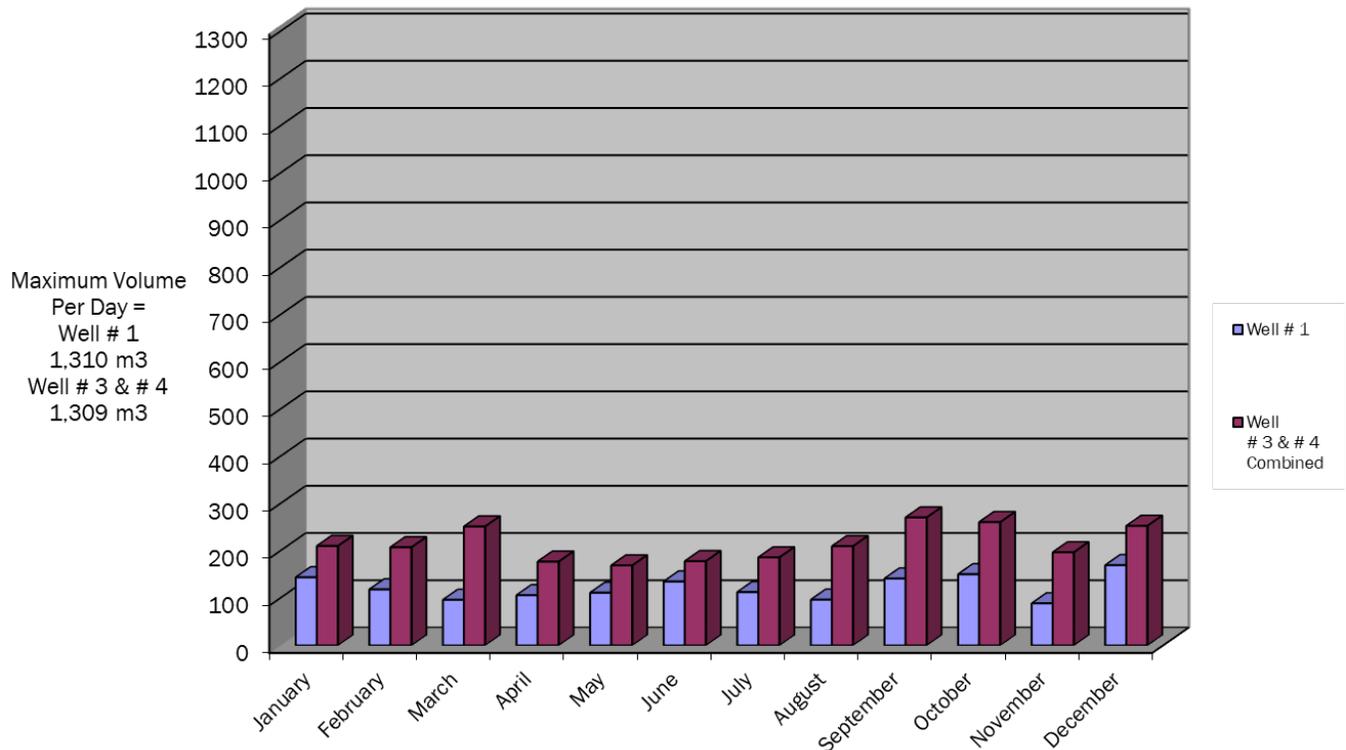
O. Reg. 170/03 stipulates that a summary of the quantities and flow rates of the water supplied from each of Clifford’s wells be included in the Summary Report and compared against the rated capacity and flow rate for the system. As such, a comparison of the instantaneous peak flow to the PTTW’s rated capacity is included and a comparison of the maximum daily flow to the MDWL’s rated capacity is included in Table 3.5.

Table 3.5
Comparison of Flow Rates and Flow Capacities
To
Rated Flow Rate (PTTW) and Rated Capacity (MDWL)

Well Supply	PTTW Max. Flow Rate	Operator Observed Peak Flow	Percent of Maximum Allowable	MDWL Schedule Maximum Daily Quantity	Maximum Daily Flow	Percent of Maximum Allowable
	L/s	L/s	%	m ³ /day	m ³ /day	%
Well #1	15.1	10.1	66	1,310	170	13
Well #3	7.6	4.7	61	655	271	41
Well #4	15.1	10.0	66	1,310	204	16

The MDWL stipulates, “The maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in Schedule C Table 1.”

Table 3.6
Maximum Water Usage Per Day by Month



Short-term peaks, in excess of permitted values, may occur at pump start up, while doing specific maintenance procedures or during emergency demand situations.

The time and duration of any flow exceedance is recorded for each event along with the reason for the occurrence. There were no extended exceedances or exceedances over the daily permitted rate in the Clifford Drinking Water System.

3.3 Raw Water Qualities and Required Treatment

The Clifford Drinking Water System has Arsenic (As) levels for wells #1 and #4 which exceed half the MAC (maximum acceptable concentration) of 10 ug/L. Reg. 170/03 Section 13.5 states “If a test result obtained under section 13-2 or 13-4 for a parameter exceeds half of the standard prescribed for the parameter in Schedule 2 to the Ontario Drinking Water Quality Standards, the frequency of sampling and testing for that parameter under that section shall be increased so that at least one water sample is taken and tested every three months”, therefore this will result in continuous quarterly sampling for the Clifford wells, see Table below.

Table 3.7
2025 Arsenic Quarterly Sample Results
for Clifford Drinking Water System

	Parameter	Sample Date	Result Value	Unit of Measure	MAC
Well # 1	Arsenic	19/03/25	6.8	ug/L	10
	Arsenic	22/05/25	7.6	ug/L	10
	Arsenic (Sch. 23 & 24)	23/05/25	7.8	ug/L	10
	Arsenic	15/08/25	6.3	ug/L	10
	Arsenic	14/11/25	7.3	ug/L	10
Well # 4	Arsenic	19/03/25	6.6	ug/L	10
	Arsenic	22/05/25	7.4	ug/L	10
	Arsenic (Sch. 23 & 24)	23/05/25	7.1	ug/L	10
	Arsenic	15/08/25	6.3	ug/L	10
	Arsenic	14/11/25	6.5	ug/L	10

The Allan Street Wellhouse (Well #1) and the Nelson Street Wellhouse (Wells #3 and #4) are equipped with continuous monitoring analyzers for measuring free chlorine residuals. The chlorine analyzer is equipped with an alarm to a monitoring centre who will call the on-call water operator to notify of a critical alarm. The average monthly turbidity and free chlorine residual measurements for treated water are presented in Tables 3.1, 3.2 and 3.3.

There were no turbidity readings exceeding 1.0 NTU in 2025. The minimum, maximum, and average turbidity readings for raw water from each well are presented in Table 3.8.

Sodium Hypochlorite is the disinfectant used for Wells #1, #3 and #4. Free chlorine residual is monitored continuously at the “Point of Entry” (POE) into the distribution system.

Additional “*grab samples*” are taken daily (*excluding weekends and holidays*) within the distribution system and tested for the free chlorine residual. The minimum, maximum and average values of free chlorine residual at the POE are presented in Table 3.8.

The free chlorine residual in the distribution system ranged between 0.52 mg/L and 1.47 mg/L. O. Reg. 170/03, Schedule 1-2 stipulates that the free chlorine residual can never be less than 0.05 mg/L. In addition, O. Reg. 170-03, Schedule 1-4 stipulates that the water treatment equipment must be “...*capable of achieving, at all locations within the distribution system, a free chlorine residual of 0.2 mg/L ...*”. The Clifford Drinking Water System meets both of these requirements.

Table 3.8
2025 Annual Summary of
Raw Water Turbidity and POE Free Chlorine Residual
for Clifford Drinking Water System

Location	Range	Raw Water Turbidity	Free Chlorine Residual at POE
		NTU	mg/L
Well #1	Minimum	0.11	0.82
	Maximum	0.68	1.66
	Average	0.27	1.29
Well #3	Minimum	0.09	0.85
	Maximum	0.79	1.63
	Average	0.28	1.27
Well #4	Minimum	0.10	0.95
	Maximum	0.89	1.64
	Average	0.35	1.28

3.4 Summary of Treatment Chemicals Used

The disinfectant chemical used in the Clifford Drinking Water System is 12% sodium hypochlorite. Measurements of free residual are recorded on a continuous basis. Wells #3 and #4 share the same storage container; 1,106 L of is the combined usage for Wells #3 and #4. In 2025, a total of 1,660 L was used for all three wells. The annual average dosage rates for Well #1, and Wells #3 and #4 are presented in Table 3.9.

In 2025, 1,140 L of sodium silicate was used for the sequestering of iron sequestering. The annual average dosage rates for Well #1, Well #3 and Well #4 are presented in Table 3.9.

Table 3.9
Clifford Drinking Water System
2025 Annual Summary of
Treatment Chemicals Used

Treatment Chemical	Well	Volume Used	Mass Used	Annual Flow	Dosage Rate
		L	kg	m ³	mg/L
12 % Sodium Hypochlorite (NaClO)	Well #1	554	66.5	18,703	3.55
	Well #3 & Well #4	1,106	132.7	66,629	1.99
	Total	1,660	199.2	85,332	2.33
Sodium Silicate (Na ₂ SiO ₃)	Well #1	227	314.8	18,703	16.83
	Well # 3 & Well #4	913	1269.1	66,629	19.05
	Total	1,140	1,584	85,332	18.56

- Note:**
- Wells #3 and #4 share the same Sodium Hypochlorite storage container; 1,106 L is the combined NaOCl usage for both wells.
 - Wells #3 and #4 share the same storage container for the sequestering agent, sodium silicate; 913 L is the combined usage for both wells
 - 12% Sodium Hypochlorite = 120,000 mg/L = 120 kg/m³
 - Sodium Silicate has a specific gravity = 1.39

4.0 COMPLIANCE

4.1 Assessment of Compliance

The objective of the Summary Report is to list any requirements of the Act, the regulations, the PTTW, the MDWL, the DWWP and any MECP order that the system failed to meet from January 1, 2025 to December 31, 2025, and the corresponding corrective measure(s) taken. Compliance was assessed as follows:

- MECP Completed their Annual Inspection of the Clifford DWS on April 23, 2025. Final inspection rating score 92.86%
- There was a Regulatory Non-compliance issue noted for Clifford, Harriston, Palmerston and Minto Pines due to a sampling issue where the required samples were collected outside the 120 day window for sample collection of quarterly samples. The samples were collected on March 19th 2025 once the sampling issue had been discovered. The issue was resolved by operator training and calendar reminders for all water staff.
- There were **No MECP Orders** issued for the Clifford Drinking Water System in 2025.

- The MDWL imposes the specific rules and conditions governing the standards set out in O. Reg. 170/03. It is an important instrument in defining the requirements of compliance of a Drinking Water System.
- O. Reg. 170/03 establishes the standard for protection of drinking water; specifically, through 12 schedules that municipal residential drinking water systems must follow to meet the requirements of the regulation.
- The SDWA clearly identifies the responsibilities of owners and operating authorities of municipal drinking water systems. It places a recommended statutory standard of care on those who have oversight of municipal drinking water systems. In essence, the standard of care has two themes: be informed and exercise diligent oversight.
- Adverse Test Results reported under the Safe Drinking Water Act, 18(1) or O Reg.170/03, Schedule 16-4
 - a) Adverse Water Quality Incidents (AWQI) refer to any unusual test results that do not meet provincial water quality standard or situation where the disinfection of the drinking water may be compromised.

Table 4.1
Adverse Water Quality Incidents

AWQI #	Date	Parameter	Result	Corrective Action
169138	July 21, 2025	Total Coliform	1	Resample

4.2 Summary of Compliance

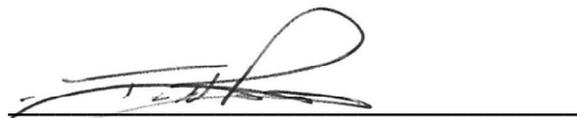
The Town of Minto works diligently to maintain compliance, with all the requirements of the SDWA, O. Reg. 170/03, as well as the Clifford Drinking Water System’s MDLW 106-101 Issue 3, DWWP 106-201 Issue 3, PTTW #0441-AQ4H8H until May 21st and PTTW #4363-DGJNLJ starting May 22nd.

Table 4.2 identifies any non-compliances related to the following: SDWA, O. Reg. 170/03, the MDWL, the DWWP. and the PTTW.

Table 4.2
Clifford Drinking Water System
Requirements the System Failed to Meet

Compliance With	Description of Item the System Failed to Meet	Correction of This Situation How/When
MDWL # 106-101 Issue 3	<i>Clifford Drinking Water System is in compliance with all of the requirements of the MDWL.</i>	
DWWP # 106-201 Issue 3	<i>Clifford Drinking Water System is in compliance with all of the requirements of the DWWP.</i>	
O. Reg. 170/03	<i>Clifford Drinking Water System was in non-compliance with the 1st Quarter Sampling requirements, the issue was resolved with no further action required per MECF. The Clifford DWS is in compliance with all other requirements of O. Reg. 170/03.</i>	
SDWA	<i>Clifford Drinking Water System is in compliance with all of the requirements of the SDWA.</i>	
PTTW #0441-AQ4H8H (until May 21) PTTW #4363-DGJNLJ (from May 22)	<i>Clifford Drinking Water System is in compliance with all of the requirements of the PTTW.</i>	

Dated this 5th day of March 2026



Todd Rogers
 Water Services Manager