

Annual Report

Red Lake Drinking Water System



2023

Prepared by **Northern Waterworks Inc.**
on behalf of the **Municipality of Red Lake**



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1 Introduction

1.1 Annual Reporting Requirements

This consolidated Annual Report (the Report) has been prepared in accordance with both section 11 (Annual Reports) and Schedule 22 (Summary Reports for Municipalities) of Ontario Regulation 170/03 (Drinking Water Systems Regulation). This Report is intended to inform both the public and Municipal Council about the operation of the system over the previous calendar year (January 1 to December 31, 2023).

Section 11 of O. Reg. 170/03 requires the development and distribution to the public of an annual report summarizing water quality monitoring results, adverse water quality incidents, system expenses and chemicals used in the water treatment process.

Schedule 22 of O. Reg. 170/03 requires the development and distribution to Council of an annual report summarizing incidents of regulatory non-compliance and associated corrective actions, in addition to providing flow monitoring results for the purpose of enabling the Owner to assess the capability of the system to meet existing and planned demand.

1.2 Report Availability

In accordance with section 11 of O. Reg. 170/03, this Report must be given, without charge, to every person who requests a copy. Effective steps must also be taken to advise users of water from the system that copies of the report are available, without charge, and of how a copy may be obtained. This Annual Report shall be made available for inspection by the public at the Red Lake Municipal Office and on the Municipality's website.

In accordance with Schedule 22 of O. Reg. 170/03, this Annual Report must be given to the members of Municipal Council. Section 19 (Standard of care, municipal drinking-water system) of Ontario's *Safe Drinking Water Act* (SDWA) also places certain responsibilities upon those municipal officials who oversee an accredited operating authority or exercise decision-making authority over a system. The examination of this Report is one of the methods by which municipal officials may fulfil the obligations required by section 19 of the SDWA.

System users and members of Council should contact a representative of NWI for assistance in interpreting this Report. Questions and comments may be directed to the local NWI Operations Manager or by email to compliance@nwi.ca.

2 System Overview & Expenses

2.1 System Description

The Red Lake Drinking Water System must meet extensive treatment and testing requirements to ensure that human health is protected. The operation and maintenance of the system is governed by Ontario's *Safe Drinking Water Act* and the regulations therein, in addition to requirements within system-specific environmental approvals. Important system information is summarized in Table 1.

Table 1: System information	
Drinking-Water System Name:	Red Lake Drinking Water System
DWS Number:	210000265
DWS Category:	Large Municipal Residential
DWS Owner:	The Corporation of the Municipality of Red Lake
DWS Operating Authority:	Northern Waterworks Inc.
DWS Components:	<ul style="list-style-type: none"> • Red Lake Water Treatment Plant • Red Lake water distribution system and standpipe
Treatment Processes:	<ul style="list-style-type: none"> • Chemical coagulation, flocculation and clarification • Dual media (rapid sand) filtration • Free chlorine disinfection • pH adjustment

Water production begins as raw water flows by gravity from the intake structure located in Skookum Bay (Red Lake) to underground reservoirs located at the Red Lake Water Treatment Plant. Pumps then transfer water from the reservoirs directly to the treatment units. Aluminum sulphate (coagulant) and sodium carbonate solution (pH/alkalinity adjustment) are injected and rapidly mixed into the raw water immediately upstream from the two package treatment units, which each include a four-chambered flocculation basin, clarifier and filter.

To promote floc formation water is gently mixed as it passes through the flocculation basins. Polymer (flocculant) is also added to the water at this stage of treatment to form larger and more stable floc aggregates. Water then enters the clarifier where its velocity is reduced to allow for the separation and settling of floc. Supernatant overflows into effluent launderers and is directed to the filter unit. Settled floc is periodically removed from the bottom of the clarifier.

Impurities that were not captured and settled as floc in the clarifier are removed by passing water through a dual media filter composed of anthracite and silica sand on a layer of support gravel. Chlorine gas (disinfectant) and sodium carbonate solution are added to the filtrate as it is directed from the filters to the treated water storage reservoir. The filters are periodically cleaned by using an air scour to agitate the entire media bed and reversing the flow of water through the filter.

Primary disinfection is achieved as disinfectant mixes with the water in the reservoir. Treated water is then delivered from the reservoir to the community standpipe and water distribution system using pumps located at the treatment facility. The standpipe is used to regulate system pressure and to provide a reserve volume of water for emergency situations. Secondary disinfection requirements in the water distribution system are achieved by maintaining a free chlorine residual at all locations.

2.2 Water Treatment Chemicals

In accordance with section 11 of O. Reg. 170/03, this Report must include a list of all water treatment chemicals used by the system during the period covered by the report (summarized in Table 2). All chemicals used in the treatment process are NSF/ANSI 60 certified for use in potable water, as required by system approvals.

Table 2: Water treatment chemicals used in 2023

Treatment Chemical	Application
aluminum sulphate	coagulant
sodium carbonate	pH/alkalinity adjustment
polymer (Polyfloc CP1160P)	flocculant
chlorine gas	disinfectant

2.3 System Expenses

In accordance with section 11 of O. Reg. 170/03, this Report must describe any major expenses incurred during the reporting period to install, repair, or replace required equipment. Major expenses incurred in 2023 are summarized in Table 3.

Table 3: Major expenses incurred in 2023

Category	Description	Expense
New Equipment	3102 Flygt pump	\$13,870
Replace/Upgrade	SCADA PC	\$10,269
Maintenance	Flow meter calibration verifications	\$2,000
Maintenance/Repairs	SCADA firmware updates ¹	\$9,000

1. Total cost for updates in Red Lake, BCMI and Madsen



3 Water Quality

3.1 Overview

Water quality monitoring is conducted to determine and confirm that drinking water delivered to the consumer is safe and aesthetically pleasing. Monitoring is also required to assess compliance with legislation and to control the treatment process. In accordance with section 11 of O. Reg. 170/03, this Report must summarize the results of water quality tests required by regulations, approvals and orders. The following sections summarize the results of all required water quality tests and compare the results to applicable water quality standards.

3.2 Microbiological Parameters

Microbiological sampling and testing requirements are provided in Schedule 10 (Microbiological sampling and testing) of O. Reg. 170/03. In 2023, a total of 266 routine source, treated and distribution water samples were collected for microbiological analysis by an accredited laboratory. Samples were collected on a weekly basis and included tests for E. coli (EC), total coliforms (TC) and heterotrophic plate counts (HPC). Results from microbiological analyses are summarized in Table 4. All results were below the associated Ontario Drinking Water Quality Standards.

Sample Type	# of Samples	EC Results Range ¹ (MPN/100mL)	TC Results Range ¹ (MPN/100mL)	# of HPC Samples	HPC Results Range (CFU/mL)
Raw Water	52	0 to 2	0 to 488	---	---
Treated Water	53	absent	absent	52	0 to 3
Distribution	161	absent	absent	54	0 to 39

1. The Ontario Drinking Water Quality Standard for E. Coli and Total Coliforms in a treated or distribution sample is 'not detectable'. The presence of either parameter in a treated or distribution sample constitutes an exceedance.

3.3 Operational Parameters

In accordance with Schedule 7 (Operational checks) of O. Reg. 170/03, regulated operational parameters that must be monitored include raw water turbidity, filtrate turbidity and the free chlorine residuals associated with primary and secondary disinfection. In accordance with the system's *Municipal Drinking Water Licence*, additional parameters that must be monitored include treated water pH and alkalinity. Table 5 summarizes water quality results for regulated and selected unregulated operational parameters. In accordance with Schedule 6 (Operational checks, sampling and testing – general) of O. Reg. 170/03, certain operational parameters are continuously monitored.

Table 5: Results summary for operational parameters

Parameter (Sample Type)	Number of Samples	Units	Min. Result	Max. Result	Annual Avg.	Adverse Result ¹
Turbidity (Raw Water)	81	NTU	0.31	1.60	0.86	n/a
Turbidity (Filter 1)	Continuous	NTU	0.031	>2.0 ¹	0.159	>1.0
Turbidity (Filter 2)	Continuous	NTU	0.049	>2.0 ¹	0.142	>1.0
Turbidity (Treated)	365	NTU	0.024	0.343	0.084	n/a
pH (Treated)	365	---	6.66	8.36	7.80	n/a
Alkalinity (Treated)	243	mg/L	20.0	78.0	52.4	n/a
Aluminum Residual (Treated)	238	mg/L	0.022	0.980	0.050	n/a
FCR ² (Treated) ³	Continuous	mg/L	1.41	2.55	1.92	n/a
FCR ² (Distribution) ⁴	450+	mg/L	0.07	2.16	1.28	<0.05

1. Adverse results for filtrate turbidity are prescribed within Schedule 16 of O. Reg. 170/03. There are additional factors not included in the table that are necessary to determine whether a result is adverse, such as the duration of the result.
2. FCR = free chlorine residual.
3. There is no adverse result corresponding to the treated water free chlorine residual. However, an observation of adverse water quality occurs if the residual is low enough such that water has not been disinfected in accordance with the system's *Municipal Drinking Water Licence*.
4. Free chlorine residuals are tested at various locations in the distribution system, and the values in the table pertain to the minimum and maximum results collected across all locations in the calendar year.

3.4 Conventional Filtration Performance

In accordance with the system's *Municipal Drinking Water Licence*, conventional filtration facilities must meet certain performance criteria in order to claim removal credits for *Cryptosporidium* oocysts and *Giardia* cysts. In addition to continuously monitoring filtrate turbidity and other requirements, filtrate turbidity must be less than or equal to 0.3 NTU in at least 95% of the measurements each month. Table 6 summarizes filtrate turbidity compliance against the <0.3 NTU/95% performance criterion. Minimum and maximum values in the table correspond to the proportion of time that filtered water turbidity was less than or equal to 0.3 NTU in a calendar month in 2023. One (1) AWQI pertaining to conventional filtration performance occurred during the reporting period, refer to the compliance section of this report for more information.

Filter	Minimum Result	Maximum Result	Adverse Result
Filter 1	99.2%	100%	<95%
Filter 2	99.6%	100%	<95%



3.5 Nitrate & Nitrite

Treated water is tested for nitrate and nitrite concentrations on a quarterly basis in accordance with Schedule 13 (Chemical sampling and testing) of O. Reg. 170/03. Nitrate and nitrite results are provided in Table 7. All results were below the Ontario Drinking Water Quality Standards.

Sample Date	Nitrate		Nitrite	
	Result (mg/L)	ODWQS (mg/L)	Result (mg/L)	ODWQS (mg/L)
13-Feb-2023	0.1	10	<0.010	1
15-May-2023	0.097		<0.010	
22-Aug-2023	0.021		<0.010	
20-Nov-2023	0.08		<0.010	

3.6 Trihalomethanes & Haloacetic Acids

Trihalomethanes (THMs) and haloacetic acids (HAAs) are sampled on a quarterly basis from a distribution system location that is likely to have an elevated potential for their formation, in accordance with Schedule 13 (Chemical sampling and testing) of O. Reg. 170/03. Total THM and HAA results are provided in Table 8 and Table 9, respectively. Compliance with the provincial standards for trihalomethane and haloacetic acid concentrations is determined by calculating a running annual average (RAA). The 2023 running annual averages for THMs and HAAs were below the respective Ontario Drinking Water Quality Standards.

Sample Date	Result (µg/L)
13-Feb-2023	76.9
15-May-2023	69.6
21-Aug-2023	89.5
20-Nov-2023	93.4
Regulatory Average (RAA)	82.4
ODWQS (RAA)	100

Sample Date	Result (µg/L)
13-Feb-2023	62.6
15-May-2023	62.0
21-Aug-2023	84.2
20-Nov-2023	61.5
Regulatory Average (RAA)	67.6
ODWQS (RAA)	80

3.7 Lead Sampling

In 2011 and in accordance with Schedule 15.1 (Lead) of O. Reg. 170/03, a *Corrosion Control Plan* was required to be developed for the Red Lake Drinking Water System following unfavourable results associated with the community lead sampling program. Corrosion control measures were implemented at this time and involved maintaining treated water pH at a value of 7.8 +/- 0.2 units using a sodium carbonate chemical feed system. Corrosion control has been effective and has resulted in a 90% reduction in average lead levels and an 82% reduction in the 90th percentile lead concentration. The ODWQS exceedance rate has also been significantly reduced from 20.6% to 1.4% (i.e., 20.6% of plumbing samples collected prior to corrosion control exceeded the standard for lead in drinking-water), and there have been no lead exceedances in plumbing samples since 2011.

The system now adheres to the lead monitoring program outlined in its *Municipal Drinking Water Licence*, which requires the collection of distribution and plumbing samples on an annual basis. Table 10 summarizes the results of community lead sampling conducted in 2023. Distribution and plumbing samples were collected on August 22, 2023, and all results were below the Ontario Drinking Water Quality Standard for lead in drinking water.

Sample Type	No. of Sample Points	No. of Samples	Min. Result (µg/L)	Max. Result (µg/L)	ODWQS (µg/L)	No. of Sample Point Exceedances
Distribution	2	2	<1.0	<1.0	10	0
Plumbing ¹	12	24	<1.0	1.9 ²		0
<p>1. In accordance with the sampling protocol outlined in Schedule 15.1 of O. Reg. 170/03, two samples are collected and analyzed for lead at each sample point for plumbing samples.</p> <p>2. Only one (1) sample tested above the lower analytical detection limit for lead in drinking water.</p>						

3.8 Inorganic & Organic Parameters

Most inorganic parameters are sampled on an annual basis in treated water in accordance with Schedules 13 (Chemical sampling and testing) and 23 (Inorganic parameters) of O. Reg. 170/03. The inorganic parameters sodium and fluoride are sampled every five (5) years in

treated water in accordance with Schedules 13 and 23 of O. Reg. 170/03. The most recent inorganic parameter sampling results are provided in Table 11. All results were below the associated Ontario Drinking Water Quality Standards.

Table 11: Inorganic parameter sampling results

Parameter	Most Recent Sample Date	Units	Result	ODWQS
Antimony	21-Aug-2023	µg/L	<0.60	6
Arsenic	21-Aug-2023	µg/L	<1.0	10
Barium	21-Aug-2023	µg/L	<10	1000
Boron	21-Aug-2023	µg/L	<50	5000
Cadmium	21-Aug-2023	µg/L	<0.10	5
Chromium	21-Aug-2023	µg/L	<1.0	50
Fluoride	13-Feb-2023	mg/L	<0.020	1.5
Mercury	21-Aug-2023	µg/L	<0.10	1
Selenium	21-Aug-2023	µg/L	<1.0	50
Sodium	13-Feb-2023	mg/L	26.2 ¹	20
Uranium	21-Aug-2023	µg/L	<2.0	20

1. The parameter sodium is not considered a toxic element and is not associated with a Standard as prescribed in O. Reg. 169/03, although an exceedance of 20 mg/L requires reporting and corrective actions. The result in the table is associated with Adverse Water Quality Incident no. 161352, and a resample collected on February 27, 2023, yielded a sodium result of 25.8 mg/L.

Organic parameters are sampled on an annual basis in treated water in accordance with Schedules 13 (Chemical sampling and testing) and 24 (Organic parameters) of O. Reg. 170/03. These parameters include various organic acids, pesticides, herbicides, PCBs, volatile organics and other chemicals. Sampling for all organic parameters was conducted on August 21, 2023, and results are provided in Table 12. All results were below the associated Ontario Drinking Water Quality Standards.

Table 12: Organic parameter sampling results

Parameter	Result (µg/L)	ODWQ S (µg/L)	Parameter	Result (µg/L)	ODWQ S (µg/L)
Alachlor	<0.10	5	Diuron	<1.0	150
Atrazine & Metabolites	<0.20	5	Glyphosate	<0.2	280
Azinphos-methyl	<0.10	20	Malathion	<0.10	190
Benzene	<0.50	1	MCPA	<0.000	100
Benzo(a)pyrene	<0.005	0.01	Metolachlor	<0.10	50
Bromoxynil	<0.200	5	Metribuzin	<0.10	80
Carbaryl	<0.20	90	Monochlorobenzene	<0.50	80
Carbofuran	<0.20	90	Paraquat	<1.0	10
Carbon Tetrachloride	<0.20	2	Pentachlorophenol	<0.50	60
Chlorpyrifos	<0.10	90	Phorate	<0.10	2
Diazinon	<0.10	20	Picloram	<0.20	190
Dicamba	<0.20	120	Total PCBs	<0.030	3
1,2-Dichlorobenzene	<0.50	200	Prometryne	<0.10	1
1,4-Dichlorobenzene	<0.50	5	Simazine	<0.10	10
1,2-Dichloroethane	<0.50	5	Terbufos	<0.10	1
1,1-Dichloroethylene	<0.50	14	Tetrachloroethylene	<0.50	10
Dichloromethane	<1.0	50	2,3,4,6-Tetrachlorophenol	<0.50	100
2,4-Dichlorophenol	<0.30	900	Triallate	<0.10	230
2,4-D	<0.050	100	Trichloroethylene	<0.50	5
Diclofop-methyl	<0.20	9	2,4,6-Trichlorophenol	<0.50	5
Dimethoate	<0.10	20	Trifluralin	<0.10	45
Diquat	<1.0	70	Vinyl Chloride	<0.50	1

3.9 Environmental Discharge Sampling

The *Municipal Drinking Water Licence* for the Red Lake Drinking Water System requires additional sampling associated with discharges to the natural environment. Specifically, samples must be collected from settling tank effluent on a monthly basis and tested for the parameter total suspended solids (TSS). This effluent is discharged to Red Lake and originates from the onsite treatment of the wastewater produced during plant operation (e.g., filter

backwashing and clarifier solids removal). The *Licence* also requires that the effluent discharged to the natural environment has an annual average TSS concentration below 25 mg/L. Table 13 summarizes 2023 environmental discharge sampling results.

Table 13: Environmental discharge sampling results summary

Number of Samples	Minimum TSS Result (mg/L)	Maximum TSS Result (mg/L)	TSS Annual Average (mg/L)
12	3.4	21.9	13.3



4 Water Production

4.1 Overview

In accordance with Schedule 22 (Summary Reports for Municipalities) of O. Reg. 170/03, this Annual Report must include certain information for the purpose of enabling the Owner to assess the capability of the system to meet existing and planned uses. Specifically, this Report must include a summary of the quantities and flow rates of the water supplied during the reporting period, including monthly average and maximum daily flows. The Report must also include a comparison of flow monitoring results to the rated capacity and flow rates approved in the system's *Municipal Drinking Water Licence*.

4.2 Flow Monitoring Results

Throughout the reporting period the Red Lake Drinking Water System operated within its rated capacity and supplied a total of 357,184 m³ of treated water. On an average day in 2023, 879 m³ of treated water was supplied to the community, which represents 15% of the rated capacity of the Red Lake Water Treatment Plant (6,048 m³/day). The maximum daily flow in 2023 was 1,551 m³/day, which represents 26% of the rated capacity of the treatment facility. Flow monitoring results are summarized in Figure 1 and Table 14. The capacity assessments provided in the table compare the average and maximum daily treated water flows to the rated capacity of the treatment facility.

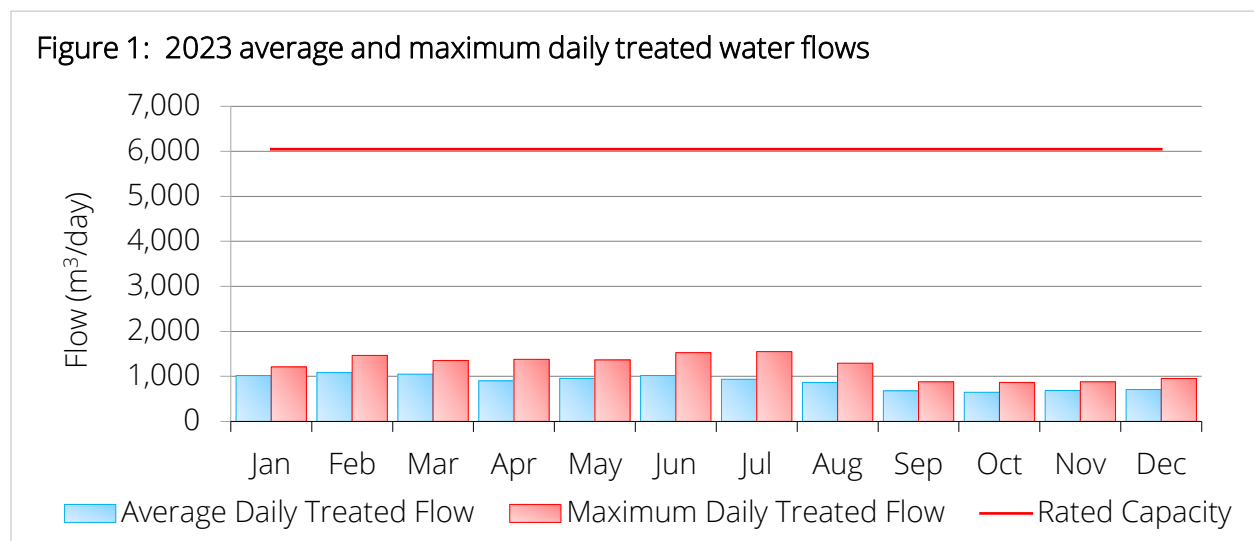


Table 14: 2023 water production summary

Month	Total Volumes (m ³)		Daily Flows (m ³ /day)		Capacity Assessments	
	Raw Water	Treated Water	Average - Treated	Maximum - Treated	Average - Treated	Maximum - Treated
Jan	35,232	31,596	1,019	1,211	17%	20%
Feb	33,807	30,391	1,085	1,467	18%	24%
Mar	36,472	32,594	1,051	1,355	17%	22%
Apr	30,717	27,051	902	1,380	15%	23%
May	33,189	29,667	957	1,366	16%	23%
Jun	34,475	30,595	1,020	1,528	17%	25%
Jul	32,257	29,055	937	1,551	15%	26%
Aug	29,532	26,781	864	1,294	14%	21%
Sep	22,183	20,410	680	880	11%	15%
Oct	21,939	20,090	648	867	11%	14%
Nov	22,593	20,615	687	880	11%	15%
Dec	24,788	21,981	709	955	12%	16%
Total	357,184	320,826	---	MAX:	---	---
Average	29,765	26,736	879	1,551	15%	---



4.3 Recent Historical Flows

Table 15 summarizes recent historical flow monitoring results for the Red Lake Drinking Water System. There were decreases in the volumes of source water withdrawn and treated water supplied in 2023 when compared to 2022, and flows have generally remained stable over the previous decade. Total annual volumes of treated water supplied in the near future may be expected to be between 300,000 m³ and 450,000 m³, which represents approximately 14% to 20% of the rated capacity of the Red Lake Water Treatment Plant.

Table 15: Recent historical water production summary

Year	Total Volumes (m ³)		Daily Flows (m ³ /day)		Annual % Change	
	Raw Water	Treated Water	Average – Treated	Maximum – Treated	Raw Water	Treated Water
2008	633,689	543,403	1,485	3,567	-18.3%	-14.2%
2009	548,288	472,192	1,294	3,157	-13.5%	-13.1%
2010	477,015	369,761	1,013	2,465	-13.0%	-21.7%
2011	429,785	295,498	810	2,112	-9.9%	-20.1%
2012	355,397	297,396	813	1,654	-17.3%	+0.6%
2013	350,834	304,087	833	1,567	-1.3%	+2.2%
2014	389,092	331,219	907	1,645	+10.9%	+8.9%
2015	413,969	357,230	979	1,886	+6.4%	+7.9%
2016	396,239	345,746	945	2,231	-4.3%	-3.2%
2017	381,516	334,669	917	1,700	-3.7%	-3.2%
2018	439,388	379,157	1,039	2,290	+15.2%	+13.3%
2019	410,962	358,997	984	1,917	-6.5%	-5.3%
2020	451,078	402,134	1,099	2,036	+9.8%	+12.0%
2021	439,893	394,204	1,080	1,943	-2.5%	-2.0%
2022	455,672	401,942	1,101	2,074	+3.6%	+2.0%
2023	357,184	320,826	880	1,551	-21.6%	-20.2%

5 Compliance

5.1 Overview

Northern Waterworks Inc. and the Municipality of Red Lake employ an operational strategy that is committed to achieving the following goals:

- Providing a safe and reliable supply of drinking water to the community of Red Lake;
- Meeting or exceeding all applicable legislative and regulatory requirements; and,
- Maintaining and continually improving the operation and maintenance of the system.

The following sections will summarize incidents of adverse water quality and regulatory noncompliance that occurred during the reporting period. NWI is committed to employing timely and effective corrective actions to prevent the recurrence of identified incidents of adverse water quality and noncompliance.

5.2 Adverse Water Quality Incidents

In accordance with section 11 (Annual Reports) of O. Reg. 170/03, this Report must summarize any reports made to the Ministry under subsection 18(1) (Duty to report adverse test results) of *the Act* or section 16-4 (Duty to report other observations) of Schedule 16 of O. Reg. 170/03. Additionally, this Report must describe any corrective actions taken under Schedule 17 of O. Reg. 170/03 during the period covered by the report. Two (2) adverse water quality incidents were reported in 2023 and are summarized below.

- **AWQI No. 161352 (February 17, 2023)**

NWI received notice from the licensed laboratory that a routine treated water sample collected from the Red Lake WTP on February 17, 2023 yielded a sodium result of 26.2 mg/L. This result exceeded the regulatory reporting limit of 20 mg/L. The issue was reported to the Ministry's Spills Action Centre and to the Northwestern Health Unit on February 17, 2023.

Corrective action was performed in accordance with Schedule 17 of O. Reg. 170/03 and included collecting a water sample from the same location as the sample that gave rise to the corrective action. This sample was collected from on February 27 and yielded a sodium concentration of 25.8 mg/L. A sodium advisory is already in place for Red Lake and no additional corrective actions were indicated. The *Notice of Issue Resolution* was provided on March 2, 2023.

- **AWQI No. 162548 (July 12, 2023)**

Adverse results for filtrate turbidity are prescribed within Schedule 16 of O. Reg. 170/03. While filters are in production, and directing water to the next stage of treatment, filtrate turbidity must be continually monitored and must be less than 0.3 NTU in at least 95% of the measurements in each calendar month. In addition, filtrate turbidity cannot exceed 1.0 NTU for more than 15 minutes.

On July 12, 2023 a loss of continuous monitoring of filter #1 effluent occurred for more than 15 minutes. Filter #1 effluent valve failed to completely close during a backwash cycle. This rinse to waste cycle normally sends water to backwash tanks with the filtrate turbidity analyzer solenoid valve (OFF). The valve failure caused this water to for to the next stage of treatment (clearwells) for 25 minutes without continuous monitoring within 15 minutes. A treated water sample and four (4) distribution samples were collected and tested for chlorine residual and bacteria. All sample results were acceptable, and the event did not result in a concern with the safety of the drinking water. No further corrective action was required.

5.3 Regulatory Compliance

In accordance with Schedule 22 (Summary Reports for Municipalities) of O. Reg. 170/03, this Report must list any requirements of the *Act*, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report (i.e., an incident of regulatory noncompliance). Additionally, this Report must specify the duration of the failure and the measures that were taken to correct the failure.

The most recent inspection by Ontario's Ministry of the Environment, Conservation and Parks was conducted on August 31, 2023 and a final report was received on November 7, 2023. The final inspection rating was 95.73%, and one (1) incident of regulatory noncompliance was identified. Information concerning the duration of failures and the measures taken to address those failures is provided below.

- **Noncompliance item no. 1**

All continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were not equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6. During the review period, there were 2 occasions when a regulatory alarm should

have triggered and called out an operator, but an alarm was not generated. Neither event resulted in a concern with the safety of the drinking water.

As a result of these events, On July 5, 2023 the facility's computer programmer completed a firmware update and on July, 7, 2023, the facility's alarm Pro-Talk was upgraded. It is believed these improvements have resolved the issue with missed alarms. No further actions are required at this time and compliance with respect to these issues will be reassessed during the next annual inspection.