2018 ANNUAL REPORT
Atikokan Drinking Water System

Prepared by Northern Waterworks Inc. on behalf of the Town of Atikokan

CONTENTS

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 on the operation of the system over the previous calendar year (January 1 to December 31, 2018).

Section 11 of O. Reg. 170/03 requires the development and adequate 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 Atikokan Public Library, on the Town of Atikokan's website (atikokan.ca), and on NWI's website (nwi.ca/publications).

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* 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 O. Reg. 170/03.

System users and members of Council are strongly encouraged to 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

2.1 System Description

The Atikokan Drinking Water System (DWS No. 220000950) must meet extensive treatment and testing requirements in order 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 approvals.

The Atikokan Drinking Water System (DWS) is classified as a large municipal residential system and is composed of a raw water pumping station, the Atikokan Water Treatment Plant (WTP), and the Atikokan water distribution system. The system is owned by the Corporation of the Town of Atikokan and is operated, maintained and managed by Northern Waterworks Inc. Potential pathogenic organisms are removed and inactivated by chemical coagulation, sand-ballasted flocculation, clarification, rapid sand filtration and free chlorine disinfection processes.

Pumps located at the raw water pumping station transfer source water from the Atikokan River and through a transmission line to the two proprietary Actiflo treatment units at the WTP, each of which includes a coagulation basin, injection basin, maturation basin and settling zone. Polyaluminum chloride (coagulant) is injected into the raw water immediately upstream from the coagulation basin. Water and coagulant are rapidly mixed in the coagulation basin and flow is directed to the injection basin, where microsand and polyacrylamide (polymer – a flocculant) are added to enhance the formation of robust flocs. Floc formation continues in the maturation basin before water is directed to the settling zone, where its velocity is reduced to allow for the separation and settling of floc. Supernatant then overflows into a launder and is directed to the filter units.

Impurities that were not captured and settled in the clarifier are removed by passing water through four dual media filters composed of anthracite and silica sand on a layer of support gravel. The filters are periodically cleaned by reversing the flow of water through the filter using pumps. Chlorine gas (disinfectant), sodium carbonate solution (pH adjustment), and hydrofluorosilicic acid (fluoridation) are added to the filtrate as it is directed from the filters to the treated water storage reservoir.

The reservoir at the Atikokan WTP uses a baffling system to ensure that disinfectant is adequately mixed with the water, and disinfected water is held in the reservoir for a sufficient amount of time to achieve primary disinfection. Treated water is then delivered from the reservoir to the distribution system using pumps located at the WTP. Secondary disinfection requirements in the water distribution system are achieved by maintaining a free chlorine residual at all locations.

2.2 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. This Report also summarizes those expenses related to strengthening equipment inventories and to maintenance activities undertaken by subcontracted service providers. Major expenses incurred in 2018 are summarized in Table 1.

Table 1: Major expenses incurred in 2018.

Category	Description	Expense
Replace/Repair	Sewage and decant tank pumping system upgrades	$52,452
Replace	High lift pump no. 4 automatic flow control valve	$16,111
Replace/Inventory	Online turbidimeters complete with controllers (2)	$9,932
Repair	Backwash pump no. 2	$9,454
Inventory	Free chlorine, pH and fluoride residual probes	$5,988
Replace	Online free chlorine residual/pH analyzer	$5,612
Replace	Benchtop turbidity analyzer	$5,099
Replace	Sewage and decant tank pump motor breakers (4)	$4,325
New Equipment	Electric submersible dewatering pumps (4)	$3,568
Maintenance	Flow meter calibration verifications	$3,294
Maintenance	Emergency generator servicing and load testing (all sites)	$2,906
Replace	Refrigerated air dryer for pneumatic valve systems	$2,815
Replace	Decant tank water level sensor	$1,850
Maintenance	Backflow prevention device testing	$1,344
Repair	Automation troubleshooting and repairs	$1,108

2.3 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 (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 2018.

Treatment Chemical	Application
polyaluminum chloride (SternPAC)	coagulant
silica dioxide (Actisand)	flocculant
polymer (Superfloc C-492)	flocculant
sodium carbonate (soda ash)	pH/alkalinity adjustment
hydrofluorosilicic acid	fluoridation
chlorine gas	disinfectant

3 WATER QUALITY

3.1 Overview

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 use technical water quality terms, some of which the reader may not be familiar with. It is recommended that the reader refer to the *Technical Support Document for Ontario Drinking Water Standards, Objectives, and Guidelines* available at the following website: http://www.ontla.on.ca/library/repository/mon/14000/263450.pdf. Within this document the reader will find information on provincial water quality standards, objectives and guidelines, rationale for monitoring, and a brief description of water quality parameters.

3.2 Microbiological Parameters

Microbiological analyses are performed on source, treated, and distribution system water. 260 routine water samples were collected for microbiological analysis by an accredited laboratory in 2018, as required by Schedule 10 (Microbiological sampling and testing) of O. Reg. 170/03. These water 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 provided in Table 3. All results were below the associated Ontario Drinking Water Quality Standards.

Table 3: Microbiological sampling results.

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	1 to 38	44 to >2420	---	---
Treated Water	52	absent	absent	52	0 to 2
Distribution	156	absent	absent	52	0 to 6
Distribution (Nonroutine)	19	absent	absent	---	---

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 is considered 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, treated water fluoride residuals, and the free chlorine residuals associated with primary and secondary disinfection. The Atikokan DWS employs a comprehensive monitoring program that extends beyond these regulated operational parameters to include additional tests conducted on source, process and treated water samples. Table 4 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 4: Results summary for operational parameters.

Parameter (Sample Type)[1]	Sample Method (Minimum Frequency)	Units	Minimum Result	Maximum Result	Annual Average	Adverse Result[2]
Turbidity (Raw Water)	Grab (4x weekly)	NTU	0.52	2.51	1.00	n/a
Turbidity (Filter 1)	Continuous	NTU	0.051	>2.0	0.077	>1.0
Turbidity (Filter 2)	Continuous	NTU	0.044	>2.0	0.085	>1.0
Turbidity (Filter 3)	Continuous	NTU	0.029	>2.0	0.064	>1.0
Turbidity (Filter 4)	Continuous	NTU	0.031	>2.0	0.063	>1.0
Turbidity (Treated)	Continuous	NTU	0.077	0.374	0.148	n/a
pH (Treated)	Grab (4x weekly)	---	6.42	8.17	7.29	n/a
FR (Treated)	Continuous	mg/L	0.50	1.07	0.67	>1.5
FCR (Treated)	Continuous	mg/L	1.07	2.81	2.21	n/a
FCR (Distribution)	Grab (Daily)	mg/L	0.27	2.20	n/a[3]	<0.05

1. FR = fluoride residual; FCR = free chlorine residual.
2. Adverse results 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 and whether water is being directed to the next stage of the treatment process.
3. Grab samples are collected and tested for free chlorine residual at various locations throughout the water distribution system. The free chlorine residual varies with water age and distribution system location, and for this reason an annual average cannot be provided. 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 *Procedure for Disinfection of Drinking Water in Ontario*, conventional filtration facilities must meet certain performance criteria in order to claim removal credits for Cryptosporidium oocysts, Giardia cysts, and viruses. 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 5 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 2018.

Table 5: Filtration performance.

Filter	Minimum Result	Maximum Result	Adverse Result
Filter 1	99.15%	100.00%	<95%
Filter 2	98.65%	99.99%	<95%
Filter 3	99.61%	99.99%	<95%
Filter 4	99.19%	100.00%	<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 6. All results were below the Ontario Drinking Water Quality Standards.

Table 6: Nitrate and nitrite results.

Sample Date	Nitrate Result (mg/L)	Nitrite Result (mg/L)
12-Feb-2018	0.065	<0.010
15-May-2018	<0.020	<0.010
20-Aug-2018	<0.020	<0.010
19-Nov-2018	<0.020	<0.010
ODWQS	10	1

3.6 Trihalomethanes & Haloacetic Acids

Trihalomethanes (THMs) and haloacetic acids (HAAs) are required to be 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 summarized in Table 7 and Table 8, respectively. Compliance with the provincial standard for trihalomethane concentrations is determined by calculating a running annual average (with a Maximum Acceptable Concentration of 0.100 mg/L or 100 µg/L). In 2018, the running annual average for THMs was 94.8 µg/L. A new provincial standard for haloacetic acids, also expressed as a running annual average with a Maximum Acceptable Concentration of 0.080 mg/L or 80 µg/L, will come into effect on January 1, 2020. In 2018, additional samples were collected and analyzed for total haloacetic acids in an effort to characterize HAA formation in the water distribution system.

Table 7: Total THM results.

Sample Date	Result (µg/L)
12-Feb-2018	66.6
14-May-2018	99.0
20-Aug-2018	141
19-Nov-2018	72.6
Regulatory Average	94.8
ODWQS (RAA)	100

Table 8: Total HAA results.

No. of Distribution Sample Points	4
No. of Distribution Samples	13
Minimum Result (µg/L)	54.1
Maximum Result (µg/L)	111
Regulatory Average (µg/L)	82.1
Future ODWQS (RAA)	80

3.7 Environmental Discharge Sampling

The Municipal Drinking Water Licence for the Atikokan Drinking Water System requires additional sampling associated with environmental discharges. During normal water treatment plant operation, process wastewater is transferred directly to the wastewater collection (sanitary sewer) system. If conditioned process wastewater is discharged to the natural environment, composite samples must be collected and analyzed for total suspended solids (TSS). The Licence also requires that the effluent discharged to the natural environment has an annual average TSS concentration below 25 mg/L. In 2018, there were four (4) discharge events and the effluent discharged to the natural environment had an annual average TSS concentration of 16.7 mg/L.

3.8 Lead Sampling

Based on the results of community lead sampling conducted in 2014 and 2015, the Atikokan DWS previously qualified for reduced lead sampling in accordance with Schedule 15.1 (Lead) of O.Reg. 170/03. Reduced sampling for lead resumed in the Winter 2018 sample period (i.e. December 15, 2017 to April 15, 2018). However, unfavourable lead results from this sample period indicated that the system had to return to the standard lead sampling schedule beginning in the Summer 2018 sample period (i.e. June 15, 2018 to October 15, 2018). Table 9 summarizes the results of community lead sampling conducted during the reporting period. The system will continue to follow the standard lead sampling schedule throughout the 2019 sample periods.

Table 9: Lead sampling results summary.

Sample Period	Winter 2018		Summer 2018	
Sample Type	Distribution	Plumbing	Distribution	Plumbing
Total No. of Sample Points[1]	2	12	2	22
Total No. of Samples	2	24	2	44
Minimum Result (µg/L)	1.1	<1.0	<1.0	<1.0
Maximum Result (µg/L)	1.4	14.6	<1.0	21.2
No. of Sample Points greater than ODWQS (>10 µg/L)	0	2	0	2
Sample Point ODWQS Exceedance Rate	0%	16.7%	0%	9.1%
No. of Samples greater than ODWQS (>10 µg/L)	0	2	0	2
No. of Samples between LDL[2] and ODWQS (1 - 10 µg/L)	2	6	0	22
No. of Samples below LDL (<1.0 µg/L)	0	16	2	20

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.
2. LDL = lower detectable limit (i.e. <1.0 µg/L); lead concentrations below the LDL are not detected by the analytical method.

3.9 Inorganic Parameters

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. Sodium is sampled every five (5) years in treated water in accordance with Schedule 13 of O. Reg. 170/03. Although grab samples may be analyzed, regulatory testing for fluoride is achieved using continuous monitoring equipment, in accordance with Schedule 6 of O. Reg. 170/03. The most recent inorganic parameter sampling results are provided in Table 10. All results were below the associated Ontario Drinking Water Quality Standards.

Table 10: Inorganic sampling results.

Parameter	Sample Date	Units	Result	ODWQS
Antimony	19-Nov-2018	µg/L	<0.60	6
Arsenic	19-Nov-2018	µg/L	<1.0	10
Barium	19-Nov-2018	µg/L	<10	1000
Boron	19-Nov-2018	µg/L	<50	5000
Cadmium	19-Nov-2018	µg/L	<0.10	5
Chromium	19-Nov-2018	µg/L	<1.0	50
Fluoride	14-Nov-2017	mg/L	0.543	1.5
Mercury	19-Nov-2018	µg/L	<0.10	1
Selenium	19-Nov-2018	µg/L	<1.0	50
Sodium	14-Nov-2017	mg/L	13.2	20
Uranium	19-Nov-2018	µg/L	<2.0	20

3.10 Organic Parameters

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 acids, pesticides, herbicides, PCBs, volatile organics, and other organic chemicals. Organic parameter sampling results are provided in Table 11. Sampling for all organic parameters was conducted on November 19, 2018. All results were below the associated Ontario Drinking Water Quality Standards.

Table 11: Organic parameter sampling results.

Parameter	Result (µg/L)	ODWQS (µg/L)	Parameter	Result (µg/L)	ODWQS (µg/L)
Alachlor	<0.10	5	Diuron	<1.0	150
Atrazine & Metabolites	<0.20	5	Glyphosate	<5.0	280
Azinphos-methyl	<0.10	20	Malathion	<0.10	190
Benzene	<0.50	1	MCPA	<0.20	100
Benzo(a)pyrene	<0.010	0.01	Metolachlor	<0.10	50
Bromoxynil	<0.20	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	<0.035	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	<0.20	1
1,1-Dichloroethylene	<0.50	14	Tetrachloroethylene	<0.50	10
Dichloromethane	<5.0	50	2,3,4,6-Tetrachlorophenol	<0.50	100
2,4 -Dichlorophenol	<0.30	900	Triallate	<0.10	230
2,4-D	<0.20	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	<0.20	1

4 FLOW MONITORING

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 2018 Flow Monitoring Results

Throughout the reporting period, the Atikokan DWS operated within its rated capacity and supplied a total of 785,846 m^3 of treated water. On an average day in 2018, 2,153 m^3 of treated water was supplied to the community, which represents 36% of the rated capacity of the Atikokan WTP (6,048 m^3/day). The maximum daily flow in 2018 was 3,464 m^3/day, which represents 57% of the rated capacity of the facility. Flow monitoring results are summarized in Figure 1 and Table 12.

Figure 1: 2018 average and maximum daily treated water flows.

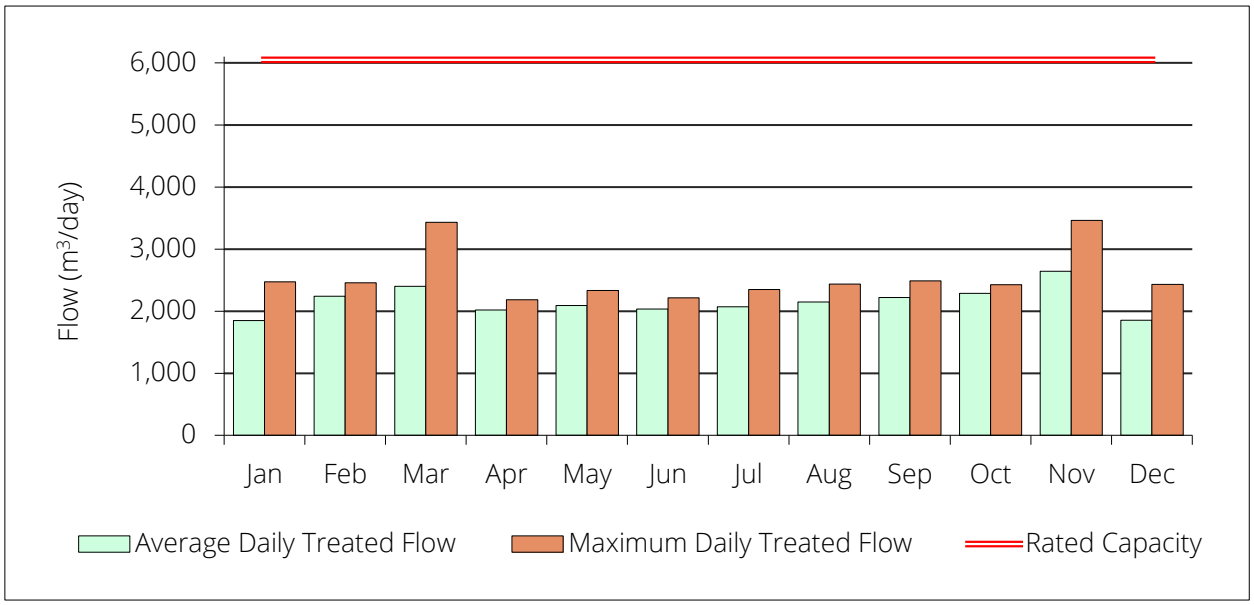

Table 12: 2018 total volumes, daily flows and capacity assessments.

Month	Total Volumes (m^3)		Daily Flows (m^3/day)		Capacity Assessments[1]	
	Raw Water	Treated Water	Average - Treated Water	Maximum - Treated Water	Average - Treated Water	Maximum - Treated Water
Jan	65,430	57,335	1,850	2,470	31%	41%
Feb	72,870	62,695	2,239	2,454	37%	41%
Mar	87,260	74,399	2,400	3,429	40%	57%
Apr	73,980	60,565	2,019	2,182	33%	36%
May	77,790	64,873	2,093	2,335	35%	39%
Jun	73,230	61,031	2,034	2,212	34%	37%
Jul	75,360	64,111	2,068	2,350	34%	39%
Aug	77,590	66,625	2,149	2,438	36%	40%
Sep	79,030	66,565	2,219	2,486	37%	41%
Oct	86,120	70,849	2,285	2,424	38%	40%
Nov	92,990	79,291	2,643	3,464	44%	57%
Dec	66,110	57,507	1,855	2,429	31%	40%
Total	927,760	785,846	---	---	---	---
Avg.	77,313	65,487	2,153	---	36%	---

1. Capacity assessments compare average and maximum daily treated water flows to the rated capacity of the treatment facility, as provided within the Municipal Drinking Water Licence.

4.3 Recent Historical Flows

Table 13 summarizes recent historical flow monitoring results for the Atikokan DWS. There were appreciable increases in the amounts of source water withdrawn and treated water supplied in 2018 when compared to 2017. In addition to population factors, annual variations in average daily flows may be in part attributable to the frequency and severity of distribution system leaks and the quantities of water used to prevent water lines from freezing. Total annual volumes of treated water supplied in the near future may be expected to be between 625,000 m^3 and 825,000 m^3, which represents approximately 28% to 37% of the rated capacity of the Atikokan WTP.

Table 13: Recent historical flow monitoring results.

Year	Total Volumes (m^3)		Daily Flows (m^3/day)		Annual % Change	
	Raw Water	Treated Water	Average – Treated Water	Maximum – Treated Water	Raw Water	Treated Water
2011	762,600	615,934	1,687	3,889	-4.4%	-0.6%
2012	747,243	642,622	1,756	3,082	-2.0%	+4.3%
2013	798,360	639,019	1,751	5,530	+6.8%	-0.6%
2014	943,794	789,592	2,163	3,770	+18.2%	+23.6%
2015	1,029,030	825,522	2,262	4,124	+9.0%	+4.6%
2016	771,350	656,030	1,792	3,389	-25.0%	-20.5%
2017	768,291	639,453	1,752	2,813	-0.4%	-2.5%
2018	927,760	785,846	2,153	3,464	+20.8%	+22.9%

5 COMPLIANCE

5.1 Overview

Northern Waterworks Inc. and the Town of Atikokan employ an operational strategy that is committed to achieving the following goals:

1) Providing a safe and reliable supply of drinking water to the community of Atikokan;
2) Meeting or exceeding all applicable legislative and regulatory requirements; and,
3) Maintaining and continually improving the operation and maintenance of the system.

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

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. There were four (4) adverse water quality incidents during the reporting period for the Atikokan Drinking Water System:

- AWQI No. 138845 (March 5, 2018)

  As per Ontario's *Watermain Disinfection Procedure*, a distribution system repair for a water main break was classified as a Category 2 event and constituted an observation of improper disinfection. The repair resulted in a localized loss of pressure affecting users on 127 to 132 Elm Crescent. The issue was reported to the Ministry's Spills Action Centre and the Northwestern Health Unit on March 5, 2018.

  Corrective actions included completing the repair, restoring pressure, issuing a localized and precautionary Boil Water Advisory, flushing water lines and collecting sets of microbiological samples. All samples tested absent for E. coli and total coliform parameters and the Boil Water Advisory was subsequently rescinded. The Notice of Issue Resolution was provided on March 12, 2018.

- AWQI No. 138991 (March 27, 2018)

  As per Ontario's *Watermain Disinfection Procedure*, a distribution system repair for a water main break was classified as a Category 2 event and constituted an observation of improper disinfection. The repair resulted in a localized loss of pressure affecting users on 162 to 182 Pine Crescent. The issue was reported to the Ministry's Spills Action Centre and the Northwestern Health Unit on March 27, 2018.

  Corrective actions included completing the repair, restoring pressure, issuing a localized and precautionary Boil Water Advisory, flushing water lines and collecting sets of microbiological samples. All samples tested absent for E. coli and total coliform parameters and the Boil Water Advisory was subsequently rescinded. The Notice of Issue Resolution was provided on April 10, 2018.

- AWQI No. 139526 (May 30, 2018)

  As per Ontario's *Watermain Disinfection Procedure*, a distribution system repair for a service line break resulted in a localized loss of pressure and constituted an observation of improper disinfection. The repair affected users on 314 to 360 and 400 O'Brien Street and on 399 to 417 Steerola Street. The issue was reported to the Ministry's Spills Action Centre and the Northwestern Health Unit on May 30, 2018.

  Corrective actions included completing the repair, restoring pressure, issuing a localized and precautionary Boil Water Advisory, flushing water lines and collecting sets of microbiological samples. All samples tested absent for E. coli and total coliform parameters and the Boil Water Advisory was subsequently rescinded. The Notice of Issue Resolution was provided on June 15, 2018.

- AWQI No. 140221 (July 4, 2018)

  An operational indicator of adverse water quality occurred following a transient reduction of distribution system pressure caused by equipment failure at the Atikokan WTP. There was no evidence that pressure was lost at any location in the water distribution system. The issue was reported to the Ministry's Spills Action Centre and the Northwestern Health Unit on July 4, 2018. Corrective actions included restoring distribution system pressure, correcting the equipment failure, and taking steps to prevent its recurrence. The Notice of Issue Resolution was provided on July 12, 2016.

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.

Two (2) incidents of regulatory noncompliance were identified during the most recent inspection initiated on February 25, 2018, by Ontario's Ministry of the Environment, Conservation and Parks. Information concerning the duration of failures and the measures taken to address those failures is provided for each item of noncompliance. The details of the noncompliance items and the actions required may utilize some or all of the original wording contained within the inspection report. Updates concerning the status of actions required have been provided where appropriate.

- Operators in charge had not been designated for all subsystems which comprised the drinking water system.

  Verification that an Operator-In-Charge (OIC) was designated for the distribution system could not be made. The distribution logbooks contain a field for recording who is OIC but this field was left blank for the inspection review period. An OIC was designated and recorded in the logbooks for the WTP.

  Action(s) Required: Effective immediately, distribution system operators shall record who is acting as OIC in the logbook. By March 16, 2018, the Town of Atikokan shall provide a copy of the logbooks, covering the period of February 9 - March 9, 2018, to the water inspector.

  Update: Town of Atikokan water distribution operators immediately began recording who is acting as OIC in the appropriate logbook fields. A copy of the logbook for the requested time period was submitted to the water inspector on March 15, 2018.

- The following instance(s) of non-compliance were also noted during the inspection:

  Logbook content requirements are prescribed by O. Reg. 128/04, subsection 27.(1). A review of the logbooks for the distribution system revealed the following issues: (1) At times, operator names were listed in the logbook even though they were not on shift that day, (2) operators on duty were not consistently recording the start and end time of their shift, (3) operators were not consistently initialling next to their name and/or logbook entries, and (4) operators were not consistently recording the time that they made entries.

  Action(s) Required: Effective immediately, operators shall ensure that the distribution logbooks contain the required information as prescribed by O. Reg. 128/04, subsection 27. (1). By March 16, 2018, the Town of Atikokan shall provide a copy of the logbooks, covering the period of February 9 - March 9, 2018, to the water inspector.

  Update: Town of Atikokan water distribution operators immediately began adhering to logbook content requirements. A copy of the logbook for the requested time period was submitted to the water inspector on March 15, 2018.