Operational Plan

Balmertown, Cochenour & McKenzie Island Drinking Water System

BCMIDWS-OP-3.3

NORTHERN WATERWORKS INC.

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0 DWQMS Matrix

The DWQMS Matrix provided below indicates how the PLAN requirements of Ontario's DWQMS are addressed by Northern Waterworks Incorporated. DWQMS Elements are addressed through a combination of documentation which includes Operational Plans, corporate procedures, and system-specific procedures.

This matrix is intended to facilitate the understanding of the reader with respect to the structure of NWI's QMS. Additionally, this matrix will act to facilitate internal and external auditing processes.

DWQMS Element	Document Title
1 – Quality Management System	Operational Plan [BCMIDWS-OP-3.3]
2 – QMS Policy	Operational Plan [BCMIDWS-OP-3.3]
3 – Commitment and Endorsement	Operational Plan [BCMIDWS-OP-3.3]
4 – QMS Representative	QMS Representative Policy [NWI-QMS-4]
5 – Document & Records Control	Document & Records Control Procedure [NWI-QMS-5]
6 – Drinking-Water System	Operational Plan [BCMIDWS-OP-3.3]
7 – Risk Assessment	Risk Assessment Procedure [NWI-QMS-7]
8 – Risk Assessment Outcomes	Risk Assessment Outcomes [BCMIDWS-QMS-8]
9 – Organizational Structure, Roles, Responsibilities and Authorities	Organizational Policy [NWI-QMS-9]
10 – Competencies	Competencies Policy [NWI-QMS-10]
11 – Personnel Coverage	Personnel Coverage Policy [NWI-QMS-11]
12 – Communications	QMS Communication Procedure [NWI-QMS-12]
13 – Essential Supplies and Services	Essential Supplies and Services Procedure [NWI-QMS-13]
14 – Review and Provision of Infrastructure	Review and Provision of Infrastructure Procedure [NWI-QMS-14]
15 – Infrastructure Maintenance, Rehabilitation and Renewal	Operational Plan [BCMIDWS-OP-3.3]
16 – Sampling, Testing and Monitoring	Sampling, Testing and Monitoring Procedure [BCMIDWS-QMS-16]
17 – Measurement and Recording Equipment Calibration and Maintenance	Measurement and Recording Equipment Calibration and Maintenance Procedure [BCMIDWS-QMS-17]
18 – Emergency Management	Emergency Management Procedure [NWI-QMS-18]
19 – Internal Audits	Internal Audit Procedure [NWI-QMS-19]
20 – Management Review	Management Review Procedure [NWI-QMS-20]
21 – Continual Improvement	Continual Improvement Procedure [NWI-QMS-21]

1 Quality Management System

The Drinking Water Quality Management System (QMS) for the Balmertown, Cochenour & McKenzie Island (BCMI) Drinking Water System is documented in this Operational Plan as part of NWI's efforts to ensure that clean, safe, and reliable drinking water is supplied to all customers served by this system. The development and continual improvement of the Operational Plan will help to ensure that all regulatory requirements are met and that consumers can be confident that their drinking water will be protected through the effective application of the QMS. This Operational Plan was developed to meet the Ministry of the Environment's Drinking Water Quality Management Standard.

2 Quality Management System Policy

The Corporation of the Municipality of Red Lake utilizes the services of Northern Waterworks Incorporated (NWI), an independent contracted operating authority, to operate, maintain, manage and administer the BCMI Drinking Water System (as per agreement). The Municipality of Red Lake and Northern Waterworks Incorporated are committed to the following:

1) Providing the consumer with clean, safe drinking water;

2) Meeting or exceeding all applicable legislative and regulatory requirements; and,

3) Maintaining and continually improving our quality management system.

3 Commitment and Endorsement

The Municipality of Red Lake and NWI support the implementation, maintenance, and continual improvement of a drinking water Quality Management System for the BCMI DWS, as documented in this Operational Plan. The Municipality and NWI acknowledge the need for and support the provision of sufficient resources to maintain and continually improve the QMS. All the undersigned persons hereby endorse this Operational Plan:

Name & Title:	Signature:	Date:
Mark Vermette Chief Administrative Officer Municipality of Red Lake	DocuSigned by: Mark Vermette 6554BE11571D436...	April 23, 2018
Todd Olson Infrastructure Development Coordinator Municipality of Red Lake	DocuSigned by: 50DE8218A0A24D8...	April 10, 2018
Jason LeBlanc Chief Administrative Officer Northern Waterworks Incorporated	DocuSigned by: Jason LeBlanc 88889B60117145B...	April 5, 2018
Gilles Vachon Northwest Regional Manager Northern Waterworks Incorporated	DocuSigned by: Gilles Vachon 1C255A37B8324B2...	April 5, 2018

4 QMS Representative

Refer to the *QMS Representative Policy* [NWI-QMS-4].

5 Document & Records Control

Refer to the *Document and Records Control Procedure* [NWI-QMS-5].

6 Drinking-Water System

6.1 General Process Description

The BCMI Drinking Water System provides a potable water supply to the communities of Balmertown, Cochenour and McKenzie Island. The system is composed of a raw water pumping station, the Cochenour Water Treatment Plant (CWTP, a Class III chemically-assisted conventional filtration water treatment plant having an approved capacity of 6,065 m^3/day), the Balmertown Reservoir Pumping Station, the Cochenour & McKenzie Island distribution system, and the Balmertown distribution system. The BCMI DWS is owned by the Corporation of the Municipality of Red Lake and Northern Waterworks Incorporated serves as the accredited operating authority.

The source water for the treatment process is drawn from a surface water source (Bruce Channel, Red Lake) located within the Municipality. Potential pathogenic organisms are removed from the raw water by coagulation, flocculation, sedimentation, dual-media filtration, and disinfection processes. This multiple barrier approach helps to ensure consistently safe and clean drinking water.

6.2 Source Water Characteristics and Event-Driven Fluctuations

General characteristics for the source water supply (Bruce Channel, Red Lake) are provided in the table below.

Parameter	Results Range* (2011 - 2017)	Average (2011 - 2017)
Turbidity (NTU)	0.48 - 2.07	1.11
Colour (Pt/Co)	43 - 124	71
Temperature (^oC)	2 - 21	9
pH	6.8 - 7.5	7.1
Alkalinity (mg/L as $CaCO_3$)	18 - 25	22
E. Coli (MPN/100mL)	<1 - 13	---
Total Coliforms (MPN/100mL)	<1 - 1410	---

*The minimum and maximum values for the results range are expressed as minimum and maximum monthly averages. Results in the table were compiled using water quality data collected between January 1, 2011 and December 31, 2017.

Event-driven fluctuations in the source water and subsequent operational challenges are summarized as follows:

(1) Seasonal changes in water temperature may impact treatment performance as it concerns chemically-assisted filtration and disinfection processes. Higher water temperatures are also associated with increased biological activity in the source water, resulting in high turbidity, colour, micro-organism counts, and the potential for taste and odour problems.

Generally, seasonal changes pose only minor operational challenges, and these challenges can be anticipated and may require adjustments to treatment processes or chemical dosages.

(2) Several potential pollution sources from nearby or upstream land use activities are known to affect Bruce Channel. There is a significant amount of activity on Bruce Channel, including float plane and boat activity, ferry service between Cochenour and McKenzie Island, its use as an ice road in the winter, the previous presence of drilling barges for mining exploration activities, the presence of a public beach, etc. There also exist upstream mining activities, and the surrounding area is well known for its gold mining activity. The area is susceptible to natural bacteriological contamination by wildlife.

An unnamed creek also discharges into Bruce Channel downstream of the drinking-water intake. This creek serves as the discharge watercourse for 1) treated effluent seasonally discharged from the Cochenour Lagoon, 2) treated effluent originating from an industrial arsenic removal water treatment facility and 3) supernatant created by conditioning process wastewater at the Cochenour WTP. Although geographically downstream, there is evidence that discharge from the creek affects water quality at the location of the intake. Specifically, a historical event that involved a collapsed manhole and caused the discharge of raw sewage into the creek resulted in an observable deterioration in the microbiological quality of the source water during the event.

Monitoring processes (i.e. routine or additional regulatory sampling and water quality testing, continuous monitoring), control measures (including normal treatment barriers), and emergency response procedures are available to minimize the operational challenges posed by a source water contamination event.

(3) Algal blooms in the source water pose a potential concern, whereby such events could interfere with treatment processes and associated toxins may pose a risk of treated water contamination.

Monitoring processes, control measures and response procedures are available to minimize the operational challenges posed by algal blooms.

6.3 Treatment Processes

6.3.1 Source Water Intake & Pumping

The intake structure is located approximately 110 m from the shoreline adjacent to the raw water pumping station in the community of Cochenour. Water flows by gravity from the source and through the intake structure and 300 mm diameter by 135 m long intake pipe into the raw water well at the raw water pumping station. From the wet well, three vertical turbine low lift pumps are available to transfer water directly to the package treatment units at the Cochenour Water Treatment Plant. The required rate of flow is determined by community demand and controlled by an ultrasonic level sensor located in the treated water storage reservoir at the Cochenour WTP.

6.3.2 Coagulation, Flocculation and Sedimentation

The three (3) package treatment units at the facility operate in parallel and each have a rated capacity of 2,125 m^3/day. Each unit includes a three-chambered flocculation basin, a clarifier (settling tank) equipped with upflow tube settlers, and a dual-media filter. A coagulant (aluminum sulphate) and a pre-treatment alkalinity adjustment chemical (sodium carbonate) are added to the incoming raw water upstream from the flocculation basins. Rapid mixing of these chemicals with the raw water occurs as the raw water passes through an in-line static mixer.

The coagulated water solution then enters the flocculation basins of the respective treatment units, where gentle mixing promotes the formation of floc. Polyacrylamide (polymer – a flocculant) is also added to the water at this stage of treatment to form larger and more stable floc aggregates. Process water then enters the clarifier or sedimentation basin, where its velocity is reduced to allow for the separation and settling of floc. Supernatant then overflows into effluent launders and is directed to the filter unit. Settled floc (sludge) is automatically removed from the bottom of the clarifiers.

6.3.3 Filtration

Any suspended particles that did not settle 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. Filtered water passes through the filter under-drain system and is directed to the treated water storage reservoirs. 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 using dedicated backwash pumps.

6.3.4 Disinfection

Chlorine gas is used to achieve both primary and secondary disinfection at the Cochenour Water Treatment Plant. Primary disinfection ensures that any potentially pathogenic organisms that remain after previous treatment processes are destroyed or inactivated. To achieve primary disinfection, a super-chlorinated solution is applied to the filtrate upstream from the treated water storage reservoirs. Consistent disinfection is ensured by the continuous monitoring of the disinfectant residual in treated water leaving the facility.

Secondary disinfection requirements are achieved by adding a sufficient amount of free chlorine at the water treatment plant to maintain a residual throughout the respective distribution systems. The purpose of this procedure is to prevent the growth of biofilm within the distribution system and to protect the water from re-contamination as it flows through the community.

6.3.5 pH Adjustment

The primary coagulant used at the Cochenour WTP reduces the pH of the water, and a pH/alkalinity adjustment chemical (sodium carbonate) is added to the filtrate as it is directed to the treated water storage reservoir. Increasing the pH of finished water at the facility helps to prevent corrosion in the water distribution systems.

6.3.6 Treated Water Storage and Delivery

Following the application of disinfectant and pH adjustment chemicals, filtrate is directed to a two-cell treated water underground storage reservoir with a total volume of 1,179 m^3. Disinfected water is then held in the reservoir for a sufficient amount of time to achieve primary disinfection. At the Cochenour WTP, a total of four (4) vertical turbine high lift pumps are available to transfer finished water from the reservoir to the Cochenour and McKenzie Island distribution system. The high lift pumps are equipped with variable frequency drive motor controllers to maintain pressure and supply in the distribution system. Operation of the high lift pumps is controlled by a pressure switch located on the distribution header inside the water treatment plant.

Two constant speed vertical turbine pumps are also used to transfer a majority of the treated water from the storage reservoir at the Cochenour WTP and through a transmission main to the storage reservoir at the Balmertown RPS. At the Balmertown RPS, four (4) more variable speed vertical turbine high lift pumps are available to transfer finished water from the reservoir to the Balmertown distribution system. The reservoir at the Balmertown RPS has a total volume of 2,238 m^3.

6.3.7 Instrumentation and Emergency Power

The Cochenour WTP and Balmertown RPS include programmable logic controllers complete with SCADA systems for process monitoring and control. Critical process instruments include one raw water flow measuring device, three filtrate turbidity analyzers, two treated water flow measuring devices (one at the CWTP, one at the BRPS), two treated water turbidity analyzers (one at the CWTP, one at the BRPS), and two treated water free chlorine residual analyzers for monitoring primary disinfection (one at the CWTP, one at the BRPS)

The raw water pumping station, Cochenour WTP, and Balmertown RPS each include a standby diesel generator for supplying emergency power.

6.3.8 Process Waste Residuals Management

Process wastewater generated from water treatment processes is also managed at the Cochenour WTP. Sludge discharge, backwash wastewater, and rinse-to-waste wastewater are directed to the sludge holding tank (also referred to as the backwash surge tank or surge tank). Using a submersible pump, process wastewater is then transferred from the sludge holding tank to the thickening tank (also referred to as the backwash thickening tank, thickening tank, or decant tank). Upon transfer, a coagulant aid (polymer) is added to condition the sludge for settling. After sludge has settled in the thickening tank, the supernatant is returned to Bruce Channel. Thickened sludge is periodically removed by pumping it to the sanitary sewer system. Alternatively, thickened sludge may be removed by pumping it to a truck for haulage and disposal at a designated waste management site.

6.4 Distribution System Components

6.4.1 Cochenour & McKenzie Island Distribution System

The Cochenour & McKenzie Island water distribution system is a standalone distribution system that consists of approximately 9.2 km of watermain and 33 hydrants, with associated watermain and hydrant isolation valves. The most common watermain sizes consist of between 75 mm to 200 mm diameter piping. The system includes a submerged line that extends between Cochenour and McKenzie Island.

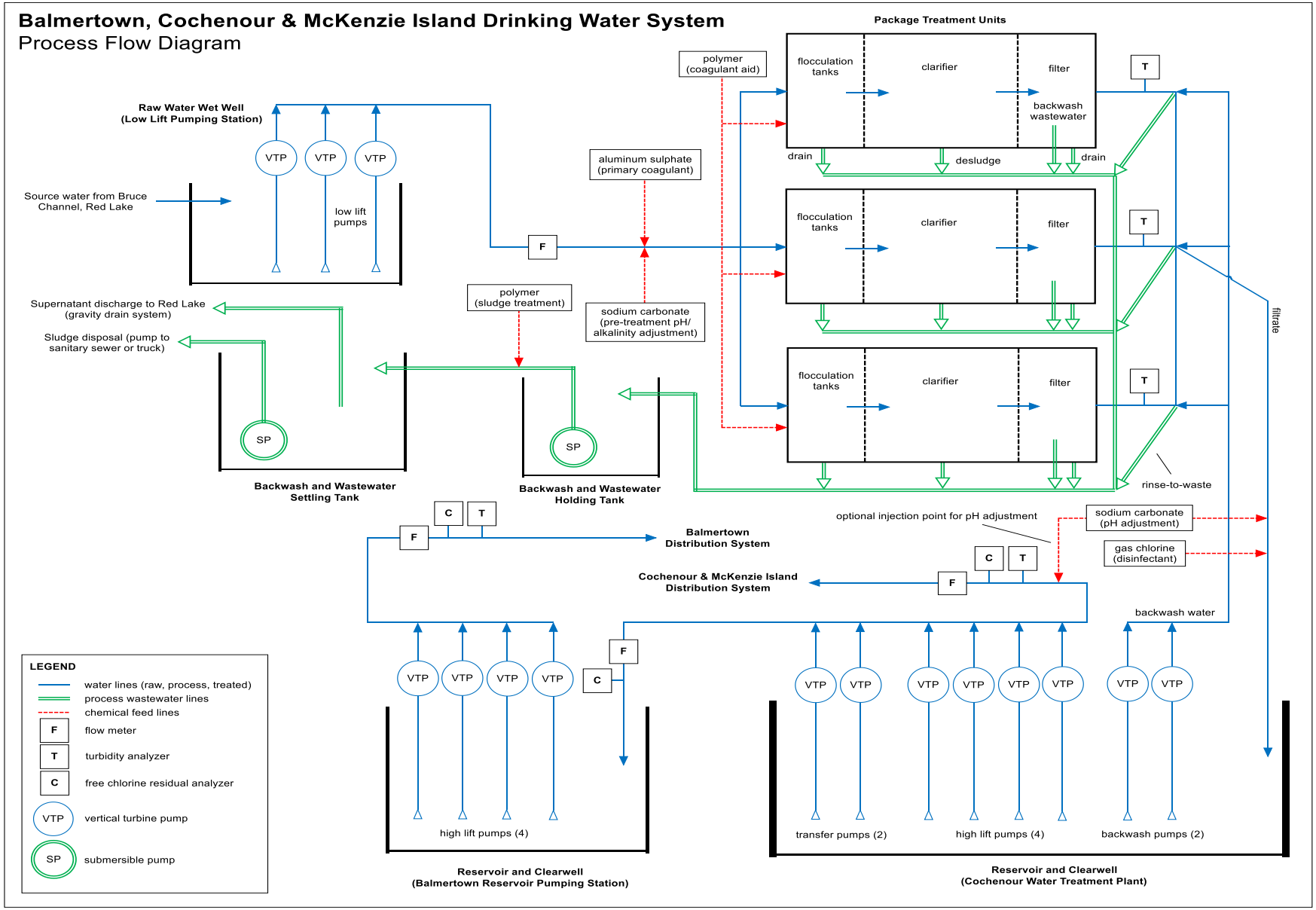
6.4.2 Balmertown Distribution System

The Balmertown water distribution system is a standalone system that consists of approximately 8.8 km of watermain and 45 hydrants, with associated watermain and hydrant isolation valves. The system includes watermains made from ductile iron, cast iron, and asbestos-concrete materials; the majority of watermains consist of 150 mm or 200 mm diameter pipes.

6.5 Process Flow Diagram

A process flow diagram for the system is provided on the following page.

Balmertown, Cochenour & McKenzie Island Drinking Water System
Process Flow Diagram



7 Risk Assessment

Refer to the *Risk Assessment Procedure* [NWI-QMS-7].

8 Risk Assessment Outcomes

8.1 Interpretation of the Risk Assessment Outcomes

The risk assessment outcomes were developed using the *Risk Assessment Procedure* [NWI-QMS-7]. This procedure contains all the information necessary to interpret the *Risk Assessment Outcomes* for the BCMI Drinking Water System [BCMIDWS-QMS-8]. The risk assessment outcomes include the following:

(1) Potential hazardous events and associated hazards;

(2) Assessed risks associated with the occurrence of hazardous events, including considering the likelihood, severity, and detectability of the event;

(3) Ranked hazardous events;

(4) Monitoring processes and control measures associated with each hazardous event;

(5) Critical control points and their respective critical control limits; and,

(6) Response procedures for hazardous events.

8.2 Monitoring Critical Control Limits

Various monitoring processes are in place to monitor critical control limits and to identify deviations from those limits. Critical control limits and other parameters associated with critical control limits are monitored by the following processes:

(1) Continuous monitoring and alarm systems (i.e. analyzers and trending associated with filtrate turbidity, free chlorine residual, flow, pressure, etc.). Alarm systems notify operators when critical control limits or other alarm set points have been breached;

(2) Routine regulatory sampling (i.e. weekly microbiological analyses, quarterly chemical analyses, annual chemical analyses, etc.);

(3) Routine water quality tests (i.e. daily tests for free chlorine and turbidity, routine process water quality tests);

(4) Operational checks, where operators collect and interpret data (i.e. pump hours, flows, analyzer readings, compliance data) and inspect facilities on a daily basis;

(5) Additional operational checks associated with planned maintenance, where certified operators conduct more detailed inspections of facilities on a monthly basis; and,

(6) Notification from external parties (i.e. notification that a chemical contamination event has occurred, notification of a large fire in the community, a water quality complaint that results in the identification of a cross-connection, etc.).

8.3 Critical Control Limits Deviations

Procedures outlining how to respond to, report and record deviations from critical control limits exist as a series of *Emergency Response Procedures*. Specifically, *Emergency Response Procedures* contain step-by-step response instructions, including instructions related to communication protocols and recordkeeping requirements.

All critical control limit deviations are recorded in the facility logbook but may also be recorded within Adverse Water Quality Incident documentation, call-out records, customer complaint records, and operational spreadsheets.

9 Organizational Structure, Roles, Responsibilities and Authorities

Refer to the *Organizational Policy* [NWI-QMS-9].

10 Competencies

Refer to the *Competencies Policy* [NWI-QMS-10].

11 Personnel Coverage

Refer to the *Personnel Coverage Policy* [NWI-QMS-11].

12 Communications

Refer to the *QMS Communication Procedure* [NWI-QMS-12].

13 Essential Supplies and Services

Refer to the *Essential Supplies and Services Procedure* [NWI-QMS-13].

14 Review and Provision of Infrastructure

Refer to the *Review and Provision of Infrastructure Procedure* [NWI-QMS-14].

15 Infrastructure Maintenance, Rehabilitation, & Renewal

15.1 Planned Maintenance, Rehabilitation, & Renewal

Major components of the infrastructure maintenance, rehabilitation and renewal programs in place for the BCMI Drinking Water System include the following:

(1) The *Planned Maintenance Activities* Standard Operating Procedure [BCMIDWS-SOP-1] documents a comprehensive planned maintenance program that is carried out by Operators at the BCMI Drinking Water System on a monthly or less frequent basis. This procedure dictates planned inspection and maintenance activities associated with infrastructure components including pumps, valves, chemical feed systems, treatment equipment, emergency response equipment, standby power systems, heating systems, lighting, and other components necessary to ensure a safe and reliable supply of drinking-water.

This procedure also facilitates infrastructure rehabilitation and renewal, as it requires the identification and reporting of deficiencies. Identified deficiencies may be addressed through operational budgets, particularly as it concerns the rehabilitation and renewal of smaller infrastructure components such as chemical feed systems and valves. Records of planned maintenance activities are controlled in accordance with NWI's *Document and Records Control Procedure* [NWI-QMS-5].

(2) The *Measurement and Recording Equipment Calibration and Maintenance Procedure* [BCMIDWS-QMS-17] documents certain planned calibration and maintenance activities that are specific to instrumentation. The associated *Calibration and Maintenance Records* are used to indicate a variety of maintenance activities, such as instrument inspection, cleaning, and quality assurance. Generally, such activities are carried out by Operators at the BCMI DWS on a monthly or quarterly basis. Calibration and maintenance records are controlled in accordance with NWI's *Document and Records Control Procedure* [NWI-QMS-5].

(3) The respective distribution systems are flushed, and hydrants are operated, inspected and 'winterized' on an annual basis. Major distribution system and hydrant deficiencies identified during this program are used to plan for future maintenance activities. Records of such distribution maintenance activities are controlled in accordance with NWI's *Document and Records Control Procedure* [NWI-QMS-5].

(4) NWI tracks and oversees additional maintenance activities that include infrastructure inspection, maintenance or servicing that occur on a less frequent basis. These activities may be performed by third parties and may include a) flow meter verifications, b) hoist inspections, c) fire extinguisher inspections, d) backflow prevention device testing, e) thermal imaging inspections, f) emergency generator inspection and servicing, g) generator battery replacement, h) UPS and UPS component replacement, i) reservoir cleaning and inspections, and j) the inspection of intake structures and standpipes.

(5) The *Review and Provision of Infrastructure Procedure* [NWI-QMS-14] and annual budgeting procedures are the main methods through which infrastructure rehabilitation and renewal occurs. Specifically, the annual infrastructure review process evaluates overall infrastructure adequacy and provision. This process also requires the identification of deficiencies and the application of recommendations to address those deficiencies. The outcomes of the infrastructure review represent the main inputs into annual capital budgets prepared by NWI for consideration and approval by the Municipality of Red Lake. The integration of annual budgeting and infrastructure review processes represents a continuous and cohesive effort to identify deficiencies and plan for infrastructure rehabilitation and renewal.

15.2 Unplanned Maintenance

Unplanned maintenance tasks related to the treatment component of the BCMI Drinking Water System result from equipment or infrastructure failures. Unplanned maintenance is authorized by the Operations Manager, Northwestern Regional Manager, or the Overall Responsible Operator. Documentation of these unplanned maintenance tasks are recorded in the facility logbooks. Measures to prepare for and expedite unplanned maintenance tasks in these scenarios include equipment interchangeability and redundancy, spare parts inventories, and the availability of relevant operations and maintenance manuals.

Unplanned maintenance tasks, infrastructure repair, and infrastructure renewal related to distribution system components of the BCMI Drinking Water System are typically performed by the Municipality of Red Lake, in conjunction with representation from Northern Waterworks Inc. Measures to prepare for and expedite unplanned maintenance tasks include the cataloguing of the distribution system, maintaining a parts inventory, and having access to repair procedures.

15.3 Long Term Forecast

A long term forecast of major infrastructure maintenance, rehabilitation and renewal activities is included in the *Infrastructure Asset Management System* [RLDWS-QMS-14-1] for the Red Lake project. In accordance with the *Review and Provision of Infrastructure Procedure* [NWI-QMS-14], the forecast is reviewed and updated once per calendar year coincident with the completion of the infrastructure asset condition assessments.

15.4 Program Monitoring

To ensure that the planned maintenance program remains effective, the *Planned Maintenance Activities* SOP and the *Measurement and Recording Equipment Calibration and Maintenance Procedure* are reviewed and updated annually. This review is facilitated by Compliance Coordinators and includes Operations Managers and Operators. The review accounts for changes to infrastructure and allows an opportunity to refine and continually improve the maintenance program, particularly as it involves incorporating new best practices.

15.5 Program Communication

NWI's infrastructure maintenance, rehabilitation and renewal programs for the BCMI DWS are communicated to the Municipality of Red Lake on annual basis as a component of the *Management Review Report*. Significant planned and unplanned infrastructure maintenance, rehabilitation and renewal activities are also described in monthly operational reports submitted to the Municipality by the Operations Manager.

16 Sampling, Testing, & Monitoring

Refer to the *Sampling, Testing, & Monitoring Procedure* for the BCMI Drinking Water System [BCMIDWS-QMS-16].

17 Measurement and Recording Equipment Calibration and Maintenance

Refer to the *Measurement and Recording Equipment Calibration and Maintenance Procedure* for the BCMI Drinking Water System [BCMIDWS-QMS-17].

18 Emergency Management

Refer to the *Emergency Management Procedure* [NWI-QMS-18].

19 Internal Audits

Refer to the *Internal Audit Procedure* [NWI-QMS-19].

20 Management Review

Refer to the *Management Review Procedure* [NWI-QMS-20].

21 Continual Improvement

Northern Waterworks Incorporated is committed to continually improving the effectiveness of its Quality Management System. Continual improvement is facilitated by the management review and internal auditing processes, which include the identification of QMS deficiencies and the assignment of preventive and corrective actions.

Refer to the *Continual Improvement Procedure* [NWI-QMS-21].

22 Revision History

Date	Version	Comments
1-Dec-2009	1.0	Initial publication of Operational Plan
1-Jul-2011	2.0	Revisions to address external audit results.
25-Jul-2012	3.0	Publication of new version following QMS restructuring.
25-Oct-2013	3.1	Section 3 (Commitment and Endorsement) was amended to include NWI's current Top Management with respect to the Standard.
29-Apr-2014	3.2	Updates to section 15 (Infrastructure Maintenance, Rehabilitation, and Renewal); section 13 (Essential Supplies and Services) removed following replacement with corporate procedure.
2-Apr-2018	3.3	Updates to sections 2 (QMS Policy), 3 (Commitment and Endorsement), 6 (Drinking-Water System), 8 (Risk Assessment Outcomes), 15 (Infrastructure Maintenance, Rehabilitation, and Renewal) and 21 (Continual Improvement).

Ontario

Ministry of the Environment and Climate Change

Schedule C – Director's Directions for Operational Plans (Subject System Description Form)

Municipal Residential Drinking Water System

Fields marked with an asterisk (*) are mandatory.

Owner of Municipal Residential Drinking Water System *
The Corporation of the Municipality of Red Lake

Name of Municipal Residential Drinking Water System *
Balmertown, Cochenour & McKenzie Island Drinking Water System

Subject Systems

☑ Check here if the Municipal Residential Drinking Water System is operated by one operating authority. Enter the name of the operating authority in the below table.

	Name of Operational Subsystems(if Applicable)	Name of Operating Authority *	DWS Number(s) *
1		Northern Waterworks Incorporated	210000522

Provide the information outlined in the 'Contact Information' section for **each** Operational Subsystem.

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LeBlanc	Jason	

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