


SAULT STE. MARIE DRINKING WATER SYSTEM

DWQMS OPERATIONAL PLAN


OPERATIONAL PLAN NUMBER 216-401



	DWQMS Operational Plan	
	Revision Date: October 1, 2024	Revision: 4
	Approved By: Vice President Operations & Engineering	
Title: Table of Contents		Page 1 of 1

<i>Operational Plan Section & Title</i>
1. Overview of Operational Plan
2. Quality Management System Policy
3. Commitment and Endorsement
4. Quality Management System Representative
5. Document and Records Control
6. Drinking Water System: The PUC of the City of Sault Ste. Marie
7. Risk Assessment
8. Risk Assessment Outcomes: The PUC of the City of Sault Ste. Marie
9. Organizational Structure, Roles, Responsibilities and Authorities
10. Competencies
11. Personnel Coverage
12. Communications
13. Essential Supplies and Services
14. Review and Provision of Infrastructure
15. Infrastructure Maintenance, Rehabilitation and Renewal
16. Sampling Testing and Monitoring
17. Measurement and Recording Equipment Calibration & Maintenance
18. Emergency Management
19. Internal Audits
20. Management Review
21. Continual Improvement

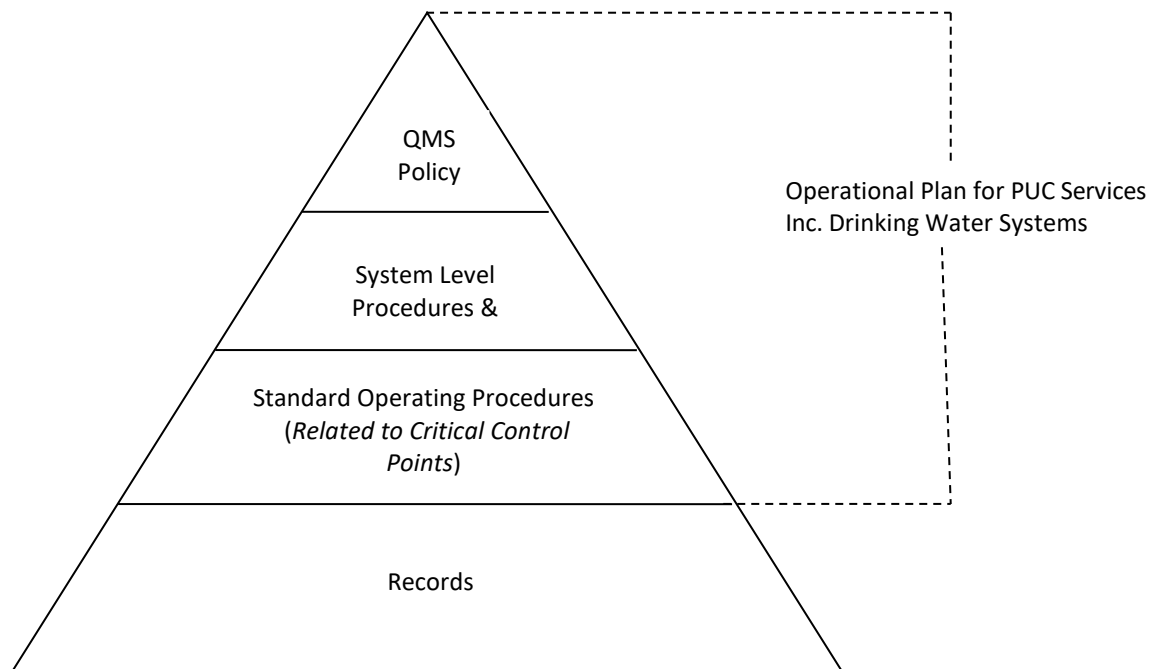
- Sault Ste. Marie DWQMS Operational Plan -

	DWQMS Operational Plan	QMS-01
	Revision Date: April 12, 2024	Revision: 3
	Approved By: Director, Water Operations	
Title: Overview of Operational Plan		Page 1 of 1

Overview of Operational Plan


The Operational plan is one portion of the mandated Drinking Water Quality Management System (DWQMS) that is enforced by the Ministry of the Environment, Conservation and Parks for all Drinking Water Systems in the province of Ontario. This operational plan is a document created by PUC Services Inc. to help ensure that safe, reliable drinking water is provided to all the citizens, businesses, and visitors of the City of Sault Ste. Marie. The operational plan is a document that provides an understanding of the drinking water system, the responsibilities of the owner and operator (operating authority) of the water system, and a commitment to the provision of safe drinking water. This will allow PUC Services Inc. to plan, implement, check, and continually improve, helping to build confidence and security in the Drinking Water Systems (treatment and distribution) they operate.

The Quality Management System (QMS) has been developed to meet the requirements of the DWQMS. The QMS is based on the Plan, Do, Check and Improve principle. The Operational Plan is the documentation that addresses the 21 elements of the DWQMS. The QMS for PUC Services Inc. is comprised of the Operational Plan (documentation) and the records that demonstrate implementation of the Operational Plan. The following is the structure of the QMS (including the implementation records):



As described in Element 5 - Document and Records Control of the Operational Plan, the Table of Contents has been signed off to demonstrate that the “approval date” in the Operational Plan procedures has been approved. The “revision number” is located on each separate document within the Operational Plan.

- Sault Ste. Marie DWQMS Operational Plan -


	DWQMS Operational Plan	QMS-02
	Revision Date: April 12, 2024	Revision: 3
	Approved By: Director, Water Operations	
Title: The PUC of the City of Sault Ste. Marie Quality Policy		Page 1 of 1

The Public Utilities Commission of the City of Sault Ste. Marie

PUC Services Inc., as the Operating Authority of the Sault Ste. Marie municipal drinking water system (including both treatment and distribution) is committed to:

- Providing safe drinking water to our customers and the communities we serve
- Complying with applicable legislation and regulations as related to the provisions of the Safe Drinking Water Act
- Maintaining and continually improving the effectiveness of our Quality Management System

This quality policy has been developed in accordance with the objectives of the Ministry of the Environment's Drinking Water Quality Management Standard and is aligned with our Corporate Mission.



	DWQMS Operational Plan	QMS-03
	Revision Date: February 14, 2024	Revision: 6
	Approved By: Director, Water Operations	
Title: Commitment and Endorsement		Page 1 of 2

The Owner endorses the Operational Plan through a Resolution. The Owner's commitment to an effective QMS is evidenced by the resources provided during implementation and maintenance of the Operational Plan and QMS.

The Owner and Top Management of the Operating Authority (as defined in QMS-09) are committed to the implementation, maintenance and continual improvement of a Quality Management System that meets the requirements of the Drinking Water Quality Management Standard. The QMS for the drinking water systems is documented in the Operational Plan. Endorsement by the Owner and Top Management acknowledges the need for and supports the provision of sufficient resources to maintain and continually improve the QMS. Top Management demonstrates their endorsement of the Operational Plan through reporting to the Owner on the results of Management Review and by the key signatures below.

Top Management's commitment to an effective QMS is evidenced by:

- Ensuring that a QMS is in place that meets the requirements of the DWQMS,
- Ensuring that the Operating Authority is aware of all applicable legislative and regulatory requirements,
- Communicating the QMS according to procedures (QMS-12), and
- Determining, obtaining or providing the resources needed to maintain and continually improve the QMS.

Date:	Signature & Title:
Jan 16, 2018	 President & CEO (PUC Services Inc.), Robert Brewer
FEB 14, 2024	 Director, Water Operations (PUC Services Inc.), Brooke Suurna

PUBLIC UTILITIES COMMISSION

Agenda Item # 5.4

Date: December 17, 2009

Moved by: PBT

Seconded by: DOUC

Resolution:



"That the Commission endorse the Operational Plan which has been developed in coordination with the operating authority, PUC Services Inc., for the Sault Ste. Marie municipal drinking water system in accordance with the requirements of the Ministry of Environment's Drinking Water Quality Management Standard and presented at the regular meeting of December 17, 2009.

<input checked="" type="checkbox"/> Carried	<input type="checkbox"/> Defeated	<input type="checkbox"/> Deferred
<input type="checkbox"/> Referred	<input type="checkbox"/> Amended	<input type="checkbox"/> Officially Read Not Dealt With


Chair

Action

<input type="checkbox"/> Chair	<input type="checkbox"/> PUC Inc.	<input type="checkbox"/> _____
<input type="checkbox"/> President	<input type="checkbox"/> PUC Telecom	<input type="checkbox"/> _____
<input type="checkbox"/> Secretary	<input type="checkbox"/> PUC Services	<input type="checkbox"/> _____
<input type="checkbox"/> Treasurer	<input type="checkbox"/> PUC Energies	<input type="checkbox"/> _____

 	DWQMS Operational Plan	QMS-04
	Revision Date: April 12, 2024	Revision: 2
	Approved By: Director, Water Operations	
Title: QMS Representative		Page 1 of 1

1 PURPOSE

To identify a Quality Management System (QMS) Representative and outline their specific responsibilities.

2 PROCEDURE

2.1 Designation Process


- 2.1.1 Top Management appoints and provides authority to the Quality Management System Representative, irrespective of their other responsibilities. The authority, roles and responsibilities are provided in QMS-09.
- 2.1.2 A letter of appointment of the QMS Representative has been signed by Top Management and is included in Appendix 4-A.

3 REFERENCES

QMS-09 Organizational Structure, Roles, Responsibilities and Authorities

4 APPENDICES

QMS 04 Appendix A Management Representative Appointment

	DWQMS Operational Plan	QMS-05
	Revision Date: March 5, 2025	Revision: 14
	Approved By: Director, Water Operations	
Title: Document and Record Control		Page 1 of 3

1 PURPOSE

Procedure describes how documents are required by QMS to be kept current, legible, readily identifiable, retrievable; as well as stored, protected, retained and disposed.

2 PROCEDURE

2.1 Documents

Controlled documents include the Operational Plan and its associated policies, procedures (including applicable Standard Operating Procedures), forms, exhibits, flowcharts, or other documents that are subject to revision and are maintained on the Document Master List (Form 05-01).

Controlled documents (excluding drawings) of both internal (refers to documents created by the Operating Authority) or external origin are included on the Document Master List. The QMS Representative is responsible for maintaining the electronic list and ensuring an updated hard copy is included in the Operational Plan.

All electronic controlled documents (excluding drawings) for the QMS are available on the network drive. Data is pulled from remote servers and stored to disk nightly, in real-time the data backup is automatically replicated to Disaster Recovery site for off-site data protection. Data is also written to tape media for long term data retention and stored in a fireproof safe.


Documents have revision numbers and a date listed on them to identify the current version. The “revision number” is located on each separate document within the Operational Plan. Revisions are made to a document when a change in content occurs. A formatting, grammar, or spelling change does not require a revision change. Most recent document changes will be denoted by a red line.

The electronic documents are normally in PDF format on the network drive under a software program called File Nexus. QMS documents can be viewed in Dayforce Learning Plans and/or PUC Connect via the document search portal. If the document is printed, then the document is considered uncontrolled and not subject to revision.

All staff are responsible for ensuring that documents remain legible, readily identifiable, and of the current version. If a document has been damaged or made illegible, staff are responsible for downloading the most current version for replacement.

The QMS Office Assistant keeps all original documents, containing signatures, in file folders within the QMS filing cabinet. Documents that are only available in hard copy are kept in a safe, dry location that will ensure no damage or deterioration.

- Sault Ste. Marie DWQMS Operational Plan -

	DWQMS Operational Plan	QMS-05
	Revision Date: March 5, 2025	Revision: 14
	Approved By: Director, Water Operations	
Title: Document and Record Control		Page 2 of 3

2.2 Document Changes

Any employee can make a request for the creation or a change to a QMS document (e.g., system procedures in the Operational Plan). Document revisions can be a result of change in procedure, results of an audit or suggestion for improvement.

Requests may be recorded in Part A on a Document change form (Form 05-02). Draft revisions can also be attached to the Document Change form. The form is then sent to the QMS Representative who will ensure that the suggested changes are reviewed and updated. Part C of the Document Change Form is completed, dated, and filed. If the request is denied the responder will send notification to the requester advising of the decision and the reasoning.

Alternatively, an employee also can suggest changes to Supervisor of Water Treatment Operations and/or Lead Hand. The QMS Representative and Office Assistant will ensure appropriate changes are made in a timely manner.

File Nexus only allows the most current version of the document to be viewed and provides tracking for document and record control.

The QMS Representative updates the Document Master List (Form 05-01) and sends an updated document for review if there has been a significant change in content. Management are responsible for advising any staff affected by the change.


Obsolete documents must be marked “Obsolete” if retained for legal and/or historical purposes, otherwise they are disposed of once a current version is made available. Only current versions of documents are maintained on the Document Master List. The user of the obsolete document is responsible for disposing once advised it is no longer in use. The retention time for obsolete documents is not pre-set and is based on the user’s requirements.

QMS documents are retained until they are replaced by a more current version (e.g., forms) or the life of the asset (e.g., manufacturing specifications). Documents that have identified as obsolete or superseded by updated versions are disposed.

The QMS Representative will review the Document Master List a minimum of once per year to verify that any documents that have not been revised since the previous review are still adequate.

2.3 Records

The Records Master List (Form 05-03) identifies all the records that this procedure applies to.

	DWQMS Operational Plan	QMS-05
	Revision Date: March 5, 2025	Revision: 14
	Approved By: Director, Water Operations	
Title: Document and Record Control		Page 3 of 3

Records may be paper-based or electronic.

The electronic documents and records associated with the QMS are maintained on the network drive which is backed up daily with a weekly rotation of tapes. All electronic controlled documents (excluding drawings) for the QMS are available on the network drive. Data is pulled from remote servers and stored to disk nightly, in real-time the data backup is automatically replicated to Disaster Recovery site for off-site data protection. Data is also written to tape media for long term data retention and stored in a fireproof safe.

The QMS Representative, in consultation with department management, determines the retention time (active and storage) for records. Electronic on-line data (i.e., production data, lab reports, SCADA) storage and management of these records is by daily and weekly backing up of electronic versions and a paper copy of records is filed, where necessary, as identified on Form 05-01.

QMS records are tracked on Form 05-03 Record Master List for retention times.

The person completing the record must ensure the record is legible, accurate and complete regarding recording requirements.


When records are removed from the active filing system, they are put into inactive storage for a period of 10 years. If records are duplicated electronically, the hard copies may be disposed.

2.4 Drawings

Drawings (electronic or paper copies) are kept for the life of the asset or 10 years, whichever is longer, and are then disposed. Distribution drawings are maintained by a Consulting Engineering if requested by the Township. Paper copies of drawings are located at the Municipal Office and the Water Treatment Plant and are available to operational field staff. Original physical plant drawings are stored at the Municipal Office. Paper copies for each facility are located at the Water Treatment Plant.

3 REFERENCES

Form 05-01	Document Master List
Form 05-02	Document Change Form
Form 05-03	Records Master List

	DWQMS Operational Plan	QMS-06
	Revision Date: April 19, 2024	Revision: 10
	Approved By: Director, Water Operations	
Title: Drinking Water System		Page 1 of 3

Overview of the Sault Ste. Marie Drinking Water System

The Sault Ste. Marie Drinking Water System (SSM DWS) is categorized as a Large Municipal Residential system under O. Reg. 170/03 where the treatment plant is a Class 3 WT subsystem and the distribution is a Class 2 WD subsystem. The Drinking Water System serves a population of approximately 74,000 (within the Urban Service Line area) of the City of Sault Ste. Marie and Rankin Indian Reserve. Typical annual water pumpage is in the order of 10 million cubic meters per year and maximum peak day is in the range of 40,000 cubic meters.

Water for the Sault Ste. Marie area is presently obtained from two independent sources. One source of supply is from four deep wells in 3 pumping stations located at the Steelton Pump Station, Goulais Pump Station and the Shannon Pump Station. The Lorna Pump station is only used as an emergency resource. It does not supply water to the system. The well at Steelton is 25 meters deep, Goulais wells are 55 meters deep and Shannon well is 102 meters deep. The water pumped from the wells is disinfected and pumped directly to the distribution system.

All four pump stations utilize chlorine for primary and secondary disinfection. Two of the well sites are located in the West areas of the city, while the other two are in the eastern part of the city. Water quality and quantity within the aquifer are both excellent with very little fluctuation of both throughout the year.

All wells are located in residential areas, with some light commercial/industrial sites nearby. Any new development or changes to existing sites within the recharge area of the aquifer is to be studied to determine the impact on the water supply.


Weekly operational and biological analysis support this statement, with turbidity averaging 0.12 NTU, average temperature of 9 degrees C. Periodically, bacterial results show some presence of total coliforms from the raw samples.

The second source is from Lake Superior at Gros Cap. The intake structure, located in 15 meters of water is connected to the Raw Water Pumping Station by 830 meters of 1200mm diameter polyethylene pipe. The raw water from Lake Superior is pumped to the twin control tanks on Marshall Drive and then flows by gravity through a 750mm diameter concrete watermain to the Water Treatment Plant (filtration plant).

The difference in elevation between the pumping station at Gros Cap and the control tanks at Marshall Drive is 40 meters, while the difference in elevation between the control tanks and the treatment plant inlet is 20 meters. The filtration plant is of the direct filtration type incorporating chemically assisted coagulation (utilizing aluminum sulfate), flocculation and dual media filtration but with no sedimentation. The plant is located on the south side of Second Line between Town Line Road and Carpin Beach Road immediately east of the Little Carp River.

The surface water treatment plant is rated at 40,000 cubic meters/day, using chemically assisted filtration and chlorination for treatment and primary disinfection. Secondary disinfection is achieved through chlorination maintaining a free residual in the distribution system.

- Sault Ste. Marie DWQMS Operational Plan -

	DWQMS Operational Plan	QMS-06
	Revision Date: April 19, 2024	Revision: 10
	Approved By: Director, Water Operations	
Title: Drinking Water System		Page 2 of 3

Corrosion control and pH adjustment was implemented at all treatment sites in the Spring of 2015. Soda ash is applied at the Water Treatment Plant and carbon dioxide (CO₂) at the east end wells (Lorna and Shannon) to stabilize pH, while the west end wells (Goulais, Steelton) have no treatment. Blended phosphates are dosed at all treatment sites for mitigation of lead.

The complete water supply system, including the Gros Cap Pumping Station, deep wells and filtration plant, are monitored and controlled through a SCADA system from the Control Room at the Water Treatment Plant. There is a central process controller and data logging facility along with a graphic panel indicating the plant and the distribution system components.

Gros Cap Water Intake

The intake is located in Lake Superior upstream of all local industry, wastewater treatment plants and the St. Mary's River. The source is ideally situated in terms of its limited potential for microbiological contamination even as a source of raw water.


The intake is located over 800 meters off-shore of Gros Cap in approximately 15 meters of water. Raw water is transferred to the water treatment plant through a pumping station located at Gros Cap which is approximately 18 km west of Sault Ste. Marie. The raw water is low in temperature, suspended solids, alkalinity and hardness.

This source supplies up to 65 percent of the water for the community during the summer months. The water is cold and relatively pristine with very little fluctuations in quality throughout the year. Weekly operational checks and biological analysis support this statement as turbidity values range from a minimum value of 0.10 NTU to maximum values of 1.00 NTU, but average 0.40 NTU. Temperatures average 6 degrees C with a minimum value of 1 degree in the winter months to a maximum value of 20 degrees in the summer. In general, the raw source bacterial results show some presence of total coliform and rare presence of E.Coli.



There are very little residential and industrial influences within the immediate vicinity of the intake, but there is recreational boating and commercial shipping that could pose a potential hazard of contamination.

Distribution System

The distribution system is divided into two pressure zones; one below the escarpment and the second above. A 27,275 m³ reservoir located on Second Line west of Highway 17 North provides balancing storage for the pressure zone (Zone 1) below the escarpment. Pressure for Zone 2, above the escarpment, is provided by a 9,000 m³ reservoir located on Peoples Road at Coronation Drive. There are four booster stations throughout the distribution system. They include the Zone II, Coronation, Crimson Ridge, and the People's Road.

	DWQMS Operational Plan	QMS-06
	Revision Date: April 19, 2024	Revision: 10
	Approved By: Director, Water Operations	
Title: Drinking Water System		Page 3 of 3

Sizes of mains vary from 900 mm diameter down to 50 mm diameter to provide a total length of approximately 470 km of distribution mains. Approximate breakdown of major pipe materials includes 51% cast iron, 26% ductile iron, 14 % PVC and 9% concrete pressure pipe.

 	DWQMS Operational Plan	QMS-07
	Revision Date: August 14, 2025	Revision: 8
	Approved By: Director, Water Operations	
Title: Risk Assessment		Page 1 of 5

1 Purpose

To document the procedure used to complete a risk assessment in order to identify the vulnerabilities within the drinking-water systems operated by PUC Services. The risk assessment process will:

- Identify potential hazardous events and associated hazards
- Assess and rank the risks associated with the hazards
- Identify control measures to address the hazards
- Identify critical control points within the drinking water system
- Identify a method to verify the risk assessment validity and assumptions at least once a year
- Ensure a risk assessment is conducted at least once every three years
- Consider the reliability and redundancy of the equipment

2 PROCEDURE

2.1 Annual Review Process

At least once per calendar year, or following a major process change, the QMS Representative facilitates a review of the currency of the information and validity of the assumptions used in the risk assessment process for the drinking water system. This is undertaken by a team comprised of (at a minimum) Manager of Water Treatment Operations, Supervisor of Water Treatment Operations and other applicable staff.

When reviewing the currency of the risk assessment information, the following may be considered:

- Process changes
- Reliability and redundancy of equipment
- Emergency situations
- Critical control point deviations (including adverses)
- QMS non-conformances related to standard operating procedures



Risk Assessment Methodology

The risk assessment is completed by filling out the Risk Assessment Form (Table 08-T1) in the order of the drinking water system steps so that the risk assessment outcomes are created (as per QMS-08). The previous years' completed form is used as a template during the annual review: newly identified hazards are inserted into the previous year's form and the columns are filled out as described below and removed hazards are deleted.

Identification of Hazardous Events

To facilitate the risk assessment process, the QMS Representative shall compile and present to the risk assessment team a list of potential hazardous events for the subject system. This list shall be developed by considering 1) the hazardous events identified by the previous risk assessment conducted for the subject system (if applicable), 2) the hazardous events identified by risk assessments conducted for other similar systems and 3) the mandatory hazardous events and hazards identified in the Ministry document titled Potential Hazardous Events for Municipal Residential Drinking Water Systems.

Although the DWS must be reviewed as a whole system, for ease of review will be divided into 4 sections as follows:

 	DWQMS Operational Plan	QMS-07
	Revision Date: August 14, 2025	Revision: 8
	Approved By: Director, Water Operations	
Title: Risk Assessment		Page 2 of 5

1. **Raw Water Source:** Evaluation of hazards associated with the raw water up until the first point of treatment.
2. **Treatment Processes:** Evaluation of hazards associated within the treatment facility until the point of release to the distribution.
3. **Distribution and Storage:** Evaluation of hazards associated within distribution or storage facilities to point of consumers.
4. **General:** systemic issues that may affect the entire DWS.

Hazard Outcomes:



1. **Loss of Water Supply** – a full or partial loss of supply to either plant and/or ultimately to the consumer
2. **Source Water Contamination** - includes physical, chemical, biological or radiological contamination of the source water
3. **Treated Water Contamination** - physical, chemical, biological or radiological contamination of treated water (i.e. the water leaving the treatment facility and within the distribution system), treatment processes were not effective at removing the hazards.
4. **Inadequate Treatment (AWQI)** – in plant failure of primary disinfection (or other adverse event) resulting in adverse notifications.
5. **Operational Challenge** – event causing additional resources (equipment, manpower, etc.) to maintain compliance of water quality
6. **Sustained Loss of Pressure** - A system-wide sustained loss of pressure includes any hazard that results in a sustained loss of pressure affecting either the entire system or a significant portion of it. A localized loss of pressure includes any hazard that results in a sustained loss of pressure affecting a localized section of the distribution system (routine breaks and repairs).
7. **Loss of Automation, Instrumentation or Control Functions:** Includes any hazard that undermines automated systems, including but not limited to process monitoring or control. Losses of automation may be associated with a loss of water production or supply. This hazard is typically associated with specific instrumentation failures or malfunctions, SCADA terminal and other HMI failures, failures of programmable logic controllers (PLC) or failures of power supplies (i.e. a failure of an uninterruptible power supply that is providing power to a PLC during a power outage).
8. **Loss of Site Access or Security:** Includes any hazard that undermines normal site access or site security, such as road obstructions or physical damage to facilities.
9. **Threats to Personal or Public Safety:** Includes any hazard that poses a threat to personal or public safety and would disrupt the normal operation of the system, such as a major chlorine gas leak, a major chemical spill, or a terrorist threat.
10. **Facility, Equipment or Property Damage** – potential damage impairing operations

Monitoring Processes:

1. **Continuous Monitoring** - monitored by SCADA and/or alarmed alerting of a condition.
2. **Daily Operational Checks** – daily rounds, equipment inspection, operation trends and data review
3. **Less Frequent Operational Checks** – (less than daily) checks or on-site maintenance activities
4. **Routine Water Quality Sampling and Testing** – sampling sent out to a third party (weekly, quarterly, annual)
5. **Monitoring by External Parties** – may include water quality complaints, notification from regulatory authorities or private organizations concerning a chemical contamination event, notification from system owners about a fire or water main break in the community

Identifying Control Measures

After the hazardous events, corresponding hazards and monitoring processes have been identified, the team

 	DWQMS Operational Plan	QMS-07
	Revision Date: August 14, 2025	Revision: 8
	Approved By: Director, Water Operations	
Title: Risk Assessment		Page 3 of 5

shall consider measures that are in place to control the hazards and hazardous events. This activity involves considering what is currently in place to keep the hazards or hazardous event under control. It is important to note that not all hazards or hazardous events can be controlled through subsequent processes, and that the best that can be achieved with some hazards or hazardous events is monitoring or response.



Control Measures

1. **Alarm Systems** – notification of condition to alarm centre to review, resolve or respond.
2. **Preventative Maintenance and Inspection** - procedures are designed to inspect, preserve, and restore equipment reliability by replacing components prior to failure may reduce the likelihood of an event by preventing its occurrence.
3. **Redundant Equipment or Process in Active Service** - considers the redundancy of equipment and refers to the availability of an identical piece of equipment or process in active service that can be used to fulfil the function of the failed component
4. **Spare Parts and Equipment Interchangeability** - the availability of spare parts or equipment on site or at a nearby location that may be used to facilitate repairs to equipment or to provide a level of backup functionality.
5. **Automatic Shutdown or Process Diversion Capability** - the capability of equipment or processes to automatically shut down or be diverted in response to some deviation in the value of a continuously monitored parameter
6. **Isolation and/or Bypass Capability** - the ability to manually isolate equipment or processes in a manner that minimizes the severity of the event and facilitates recovery.
7. **Manual Control Capability** - the capability to manually control equipment or processes
8. **Site Security and Remote or Alternate Facility Access** - the availability of site security measures, including keyed entry, intrusion alarm systems, security fencing and gated access, the use of security cameras, etc., remotely access automation systems for process monitoring or control in the event that physical access to the facility is compromised, alternate facility access in the event that the main access route is compromised.
9. **Water Storage Capacity** - the availability of temporary water storage capacity that may allow for an event to be resolved without any interruption to the supply of safe drinking water
10. **Treatment Processes and Operational Modifications** - the capability of treatment processes to minimize or eliminate drinking-water health hazards, to adjust or modify treatment processes or operational practices prior to or in response to a hazardous event
11. **Response Procedures** - the availability of emergency response procedures, if a hazardous event associated with a critical control point does not have a procedure in place, then that situation must be prioritized for upcoming emergency response training and testing and subsequent procedure development

The outcome of the Risk Assessment is the completed form in Table 08-T1 Risk Assessment Form. Additionally, the identified CCPs are summarized in Table 08-T2 (Summary of Critical Control Points).

Assessing Risks and Ranking Hazardous Events

The risk assessment team shall assess the risks for each hazardous event. Each hazardous event is assigned a numeric value ranging from 1 to 5 in three different categories: likelihood, consequence, and detectability (refer to Risk Assessment Rating Table 07-T1). Each numeric value is generally determined by group discussion and

 	DWQMS Operational Plan	QMS-07
	Revision Date: August 14, 2025	Revision: 8
	Approved By: Director, Water Operations	
Title: Risk Assessment		Page 4 of 5

consensus.

Following the assessment of risks, the three assigned values for each event are then added to determine the overall risk value. An overall risk value provides a means to rank hazardous events. The highest overall risk values are indicators of high-risk hazardous events.

Critical Control Point Determination

The risk assessment team shall consider the following events when determining critical control points (CCPs): 1) All high-risk hazardous events (i.e. hazardous events ranking above the chosen threshold value) and 2) any hazardous event associated with a recommended minimum critical control point.

For each identified high-risk hazardous event, the team shall determine whether or not the hazardous event can be controlled. If the hazardous event cannot be controlled to prevent, eliminate or reduce a drinking-water health hazard, it is not a CCP.

For high-risk hazardous events that cannot be controlled, it may be appropriate to develop a (CP) control point or emergency response procedures. In the risk assessment process for a drinking-water system based on the multiple barrier approach, there could be several control points that could address any particular hazard or hazardous events..

In addition to high-risk hazardous events that can be controlled, any other hazardous event that is associated with a step or process shall be considered a critical control point.

Critical Control Limit Identification



Critical limits are established for values that measure critical events. These limits provide operators with a range of acceptable values within which no preventive or corrective actions are required. Critical limits define the point at which an operator must take action to prevent escalation of the critical event or to correct the critical event. Limits are determined based on regulatory requirements, process monitoring capabilities, off-hours response time and historical plant performance. Process alarms are normally set at, or near, critical limits. The risk assessment team will proceed in assigning critical control limits for each critical control point.

Where critical control point limits may be associated with alarm set points, such limits may be expressed as a range which includes all potential alarm set point values.

There may also exist a limit which applies to many different parameters or is otherwise not associated with numerical value. For example, any adverse result associated with regulatory sampling may be sufficient to trigger action.

2.2 Three-Year Review Process

Every three years a more comprehensive review of the drinking water system risk assessment process is conducted. This is an opportunity to review the risk assessment process and outcomes. For example, the reviewers could consider changes in microbial risks based on new research, or changes to the risk assessment process as a continual improvement feature. To undertake this more comprehensive review the QMS Representative facilitates a team comprised of (at a minimum) Manager of Water Treatment Operations, Supervisor of Water Treatment Operations and other applicable staff.

 	DWQMS Operational Plan	QMS-07
	Revision Date: August 14, 2025	Revision: 8
	Approved By: Director, Water Operations	
Title: Risk Assessment		Page 5 of 5

In the years where the three-year review process is completed, the annual risk assessment review will be completed at the same time.

2.3 Document and Records Management

The completed Risk Assessment Form (08-T1) is made available to the Director, Water Operations for review in PUC Connect.

The QMS Representative is responsible for ensuring that minutes are taken during the annual and three-year review meetings and that these are maintained as per Document and Records Control (QMS-05).

The QMS Representative is responsible for maintaining and making any necessary changes/updates to the Risk Assessment Form as per Document and Records Control QMS-05.


The QMS Representative is responsible for ensuring that any necessary changes are made to the training requirements, standard operating procedures, system procedures or other parts of the QMS resulting from changes to the Risk Assessment.

3 REFERENCES

BR QMS-05 Document and Records Control
BR Table 07-T1 Risk Assessment Rating & Best Management Practices
BR Table 08-T1 Risk Assessment Form
BR Table 08-T2 Summary of Critical Control Points

4 APPENDICES

Not Applicable

	DWQMS Operational Plan	QMS-09
	Revision Date: April 19, 2024	Revision: 1
	Approved By: Director, Water Operations	
Title: Organizational Structure, Roles, Responsibilities and Authorities		Page 1 of 1

1 PURPOSE

To document a procedure ensuring that the Owner, Operating Authority and Top Management are defined, the organizational structure of the Operating Authority is described and the roles, responsibilities and authorities of Top Management and key positions within the Operating Authority are identified.

2 PROCEDURE

2.1 Identifying Key QMS Roles

The organizational structure of the Operating Authority is outlined in Appendix 9-A: PUC Services Organizational Chart.

Top Management (within the Operating Authority), QMS Representative and the Owner of the drinking water system are defined in Appendix 9-B.

Top Management is responsible for conducting management review as outlined in procedure QMS 20 Management Review.

The QMS Representative is appointed by Top Management and irrespective of other responsibilities has specific QMS related responsibilities and authorities as outlined in Table 09-T1.

The appointment letter for the QMS Representative is included in procedure QMS 04.

2.2 Organizational Roles, Responsibilities and Authorities

Specific responsibilities and authorities for positions with key roles in the Drinking Water Quality Management System are detailed in the various system procedures and standard operating procedures that form the Operational Plan.


Table 09-T1 provides a summary of the overall roles, responsibilities and authorities related to the provision of safe drinking water in the drinking water system.

3 REFERENCES

SSM QMS 04 QMS Representative Appointment
SSM QMS 20 Management Review
SSM Table 09-T1 DWQMS Roles, Responsibilities and Authorities

4 APPENDICES

SSM QMS 09 Appendix A PUC Services Organizational Chart
SSM QMS 09 Appendix B Key QMS Roles

	DWQMS Operational Plan	QMS-10
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Competencies		Page 1 of 3

1 PURPOSE

To document a procedure that identifies:

- competencies required for personnel performing duties directly affecting drinking water quality,
- activities to develop and maintain competencies for personnel performing duties directly affecting drinking water quality, and
- activities to ensure that personnel are aware of the relevance of their duties and how they affect safe drinking water.

2 PROCEDURE

2.1 Competencies

The Department Managers and Supervisors are responsible for identifying required competencies for employees performing duties directly affecting drinking water quality. The minimum levels of competencies required for personnel with duties affecting drinking water quality are identified in job descriptions.

Job descriptions are reviewed periodically for currency by the Department Managers. The Job Descriptions describe responsibilities and duties, accountabilities, job specifications, license requirements and minimum educational requirements for each position.

New or transferred employees undergo a probationary period. At the end of the probationary period the Department Supervisor evaluates the employee's competency to confirm them into the position.

Individual competency is assessed by management through consideration of the education, training, skills, experience and license level of each employee. Continuing competency is maintained through periodic assessment of training needs.

Competency for management positions is reviewed at least annually during performance reviews conducted by the manager one level up.


Copies of current operator licenses are posted in the WTP facility. Copies of training certificates are maintained and filed as per QMS-05.

2.2 Training Needs Identification

Department Managers and Supervisors identify training needs and ensure competencies are maintained for employees performing duties directly affecting drinking water quality based on the identified competencies.

Each individual employee is responsible for maintaining their individual licenses. This includes advising management of potential training needs.

The Lead Hands assist with the identification of training needs for the Operational staff. The Supervisor provides the training and/or determines what training is required and ensures they

	DWQMS Operational Plan	QMS-10
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Competencies		Page 2 of 3

receive this.

The need for training (to ensure competency is maintained) may also be determined based on the following:

- Comparison of the person's skills and abilities with the requirements of the job description and qualifications, in particular for new, temporary and transferred employees;
- Corrective action (e.g., resulting from internal audits or non-conformances) if the need for training is found to be a root cause (QMS-21);
- Changes due to updates to the risk assessment outcomes (QMS-08); and
- Changes in legislative/regulatory requirements.

2.3 Training Plan

Department Managers and Supervisors plan throughout the year the training for positions affecting drinking water quality for the next year. They refer to the required competencies, the completed training from previous years, and other currently available courses to develop the training plan for the year.

Department Managers and Supervisors review the training schedule annually to determine additional requirements (e.g., CEUs, on-the-job training, Ministry of the Environment, Conservation and Parks Director approved courses) and to assist in monitoring the required training hours for positions with duties directly affecting the drinking water quality.

The Office Assistant (for Treatment) records each employee's completed training hours in Dayforce and in a Training Spreadsheet. The Office Assistant - Operations (for Distribution) records employees training in Dayforce and in a database.

Training Records are maintained as per QMS-05 Document and Records Control.

2.4 Employee DWQMS Orientation


The Department Supervisor ensures a Drinking Water Quality Management Standard (DWQMS) awareness session is provided to new or transferred employees. The following types of information are included in the DWQMS awareness session:

- introduction to management systems and QMS Representative;
- review of pertinent procedures and Standard Operating Procedures; and
- review of QMS policy and ensuring that personnel are aware of the relevance of their duties and how they affect safe drinking water.

DWQMS documents shall be reviewed by staff in the Dayforce software.

2.5 Training Methods

Competency requirements can be satisfied through the use of in-house, off-site, or on-line

	DWQMS Operational Plan	QMS-10
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Competencies		Page 3 of 3

training, attendance at seminars/conferences, presentations by subject matter experts, crew meetings, internal training sessions related to emergency and/or standard operating procedures or on-the-job training.

On-the-job training is determined by the Department Supervisors including what should be done, who they should work with in order to demonstrate and monitor how to perform various job duties using the appropriate documented procedures.

2.6 Effectiveness of Training

When external trainers conduct courses, the trainer may review and verify training effectiveness through various means (e.g., mini quiz or mini workshops are undertaken for CEU courses). If the employee is knowledgeable and able to demonstrate the skills, then the external trainer often issues a certificate to indicate the training was effective.

When internal training courses are conducted, the Department Managers and Supervisors talk to staff following completion of the course to determine the effectiveness of the training. In addition, they may ask the instructor to provide feedback on the trainee's understanding of the information.

Training needs may be identified through the Continual Improvement process (QMS-21), and documented in a Corrective Action Report (CAR). For these training needs, the employee's Supervisor is responsible for ensuring the training is completed and competency is achieved and reporting it to the QMS Representative.


On-the-job training is provided to employees through courses and job shadowing and is determined to be effective by the Department Supervisor.

3 REFERENCES

QMS-05 Procedure Document and Records Control
QMS-08 Risk Assessment Outcomes
QMS-21 Continual Improvement
Form 10-02 Training Assessment Form
Training Database
Corrective Action Report
Job Descriptions

4 APPENDICES

None

	DWQMS Operational Plan	QMS-11
	Revision Date: April 22, 2024	Revision: 7
	Approved By: Director, Water Operations	
Title: Personnel Coverage		Page 1 of 3

1 PURPOSE

To describe the means for ensuring there are sufficient licensed personnel meeting the identified competencies are available for duties that directly affect drinking water quality.

2 PROCEDURE

Regular hours for the drinking water system are:

Water Distribution:

- Monday to Friday 8:00 am to 4:30 pm
- Water Distribution (WD) On-Call Operator after hours and weekends (Standby Operator)

Water Treatment (Sault Ste. Marie - only):

- 24 hours/365 days per year (SSM Shift Operator – 12 hour shift rotation)
- Monday to Friday – 8:00 am to 4:30 pm (regular day operators)
- On call after hours and weekends (Standby Operator)

Water Treatment: (Desbarats, Blind River, North Shore, Richards Landing)

- Monday to Friday – 8:00 am to 4:30 pm
- On call after hours and weekends (Standby Operator)
- 24 hours per day/365 days per year (SSM Shift Operator – accessible by phone)

Non-regular hours are:


Water Treatment (All locations):

- Monday to Friday 4:30 pm to 8:00 am (Standby Operator)
- Weekends Friday at 4:30 pm to Monday at 8:00 am (Standby Operator)
- Holidays 12:00 am to and 12:00 am (Standby Operator)

Water Treatment (All Locations)

Only licensed operators are employed and they follow a rotating schedule to ensure there is coverage by licensed operators all day, every day. Operators are required to enter a cycle of on call duty that ensures an operator is available for emergencies at all times.

During regular hours, Operators are available to conduct inspections, calibrations, investigations, station checks, sampling and monitoring, maintenance and other work as assigned at the drinking water facilities, including the distribution system.

	DWQMS Operational Plan	QMS-11
	Revision Date: April 22, 2024	Revision: 7
	Approved By: Director, Water Operations	
Title: Personnel Coverage		Page 2 of 3

When problems occur during regular hours that are not able to be resolved, Operators can contact their Lead Hand or their immediate Supervisor. Supervisors/Managers are the designated Overall Responsible Operator (ORO) unless otherwise designated. When a problem or alarm occurs during non-regular hours, the SSM Shift Operator will contact the Supervisor on call. A decision can be made to call out a Standby Operator or Maintenance Personnel or additional staff. Phone numbers are available to the SSM Shift Operator within the rolodex. If the on call person is unreachable, the SSM Shift Operator will contact the designated ORO.

In the event that the designated ORO is unable to act for a period of time, a backup ORO is designated at that time. The SSM WTP Shift Operator has a listing (PUC Form 05-105 ORO Tracking) of the ORO at all times which is updated on the whiteboard in the SSM WTP Control Room.

Annually, Water Treatment on-call schedule is developed for the upcoming year and is available in the SSM WTP Control Room. The current staff member that is on call is identified on the whiteboard for quick reference.

Operators may request changes (i.e., due to vacation schedules) to the schedule during the year. These are made through the Water Treatment Supervisor and/or by making arrangements with another Operator and informing the Control Room for the week affected. The Office Assistant updates the spreadsheet based on the change.

The person designated as on-call is the Operator in Charge (OIC) during non-regular hours unless they are an Operator in Training (OIT). In this case, the OIC will be designated.



The Control Room receives emergency calls during after-hours as well as water system alarms through the SCADA system.

In the case of outside contracts, the on call person will contact the Town to make arrangements for contractors. The Town Officials are listed on QMS 18 Appendix A Emergency Contact Listing for each location.

Water Distribution

The WD Manager and Supervisor are the designated Overall Responsible Operator (ORO) unless otherwise designated. The SSM WTP Shift Operator has a listing (PUC Form 05-105 ORO Tracking) of the WD ORO at all times which is updated on the whiteboard in the SSM WTP Control Room.

All WD Operators are required to be licensed in order to operate the water distribution system. For after-hour emergencies a licensed WD Operator will be designated and scheduled as WD Operator On-Call according to *Water Distribution Stand Operating Procedure Departmental Standby WD-54-002*. The SSM WTP Shift Operator will be informed of the WD Operator On-Call which is updated on the whiteboard in the SSM WTP Control Room.

 	DWQMS Operational Plan	QMS-11
	Revision Date: April 22, 2024	Revision: 7
	Approved By: Director, Water Operations	
Title: Personnel Coverage		Page 3 of 3

During regular hours, licensed WD Operators are assigned duties to perform maintenance and operational tasks on the water distribution system by the WD Supervisor. For emergencies during regular hours, the WD Supervisor will assign the appropriate on-duty staff to address the issue.

When an emergency occurs during non-regular hours, the SSM Shift Operator in the WTP Control Room will receive the emergency call. The Shift Operator will then contact the WD Operator On-Call to respond. Phone numbers are available to the SSM Shift Operator within the rolodex. The WD Operator On-Call will respond to identify and confirm the issue, and if possible address the emergency or place barriers to protect the distribution system and/or the public until the necessary resources can be assembled to effect repairs.

If the after-hours emergency requires additional work and resources, the SSM WTP Shift Operator will refer to the Water Department Callout Procedure to determine the required water distribution staff required. The WDO Callout Procedure includes contact numbers for key functions.

The WD Operator On-Call shall be the designated Operator in Charge (OIC) during non-regular hours until an appropriate Lead hand Operator has been assigned to the work. If required, the ORO will be contacted for operational instructions.

All emergency response notification shall be accordance with QMS-18 Emergency Response Protocol - Appendix B

3 REFERENCES


PUC Form 05-105 ORO Tracking

WD SOP#54-002 – Departmental Standby

Water Department Callout Procedure

4 APPENDICES

Not applicable

	DWQMS Operational Plan	QMS-12
	Revision Date: June 6, 2025	Revision: 6
	Approved By: Director, Water Operations	
Title: Communications		Page 1 of 3

1 PURPOSE

To describe how the Quality Management System is communicated between the operating authority's top management and:

- Owner
- Personnel
- Suppliers
- Public/consumers

2 PROCEDURE

The Quality Policy is made available to all operating authority personnel and the public as it is posted in the facilities.

The Quality Management System is communicated between top management and the owner, personnel, suppliers and public/consumers through various methods, such as meetings (formal and informal), e-mails, telephone calls, website postings, log books, memos, and continual improvement forms, etc. The communication with each group varies and is described below.

2.1 Owner


Communication is through the meetings with municipal staff and/or Council, e-mails (i.e., between directors, managers and Councilors). As well, contact during emergency situations may be made directly between Top Management and the applicable municipal official (e.g., Mayor).

Sault Ste Marie Drinking Water System

The Manager provides monthly updates (President's Report) to applicable municipal staff which includes conditions. Generally, on a quarterly basis the Owner is updated on the state of the infrastructure. The report is a condensed version of the monthly report.

Communication from the owner back to Top Management could be through e-mails, Board meetings, meetings with PUC Services Inc. staff and/or motions of Council.

Communication on the Quality Management System is also achieved through the Owner retaining an uncontrolled copy of the Operational Plan. This is one means of informing the Owner about the Quality Management System.

	DWQMS Operational Plan	QMS-12
	Revision Date: June 6, 2025	Revision: 6
	Approved By: Director, Water Operations	
Title: Communications		Page 2 of 3

2.2 Personnel

Communication with personnel is through regular meetings that are generally held on a monthly basis. Daily communications occur between Top Management and Managers. Management has an “open door” policy for communication to and from operational staff. Any minutes of meetings taken are maintained (as per Procedure QMS-05 Document and Records Control).

E-mails are another form of communication and are common between staff and Management.

Managers and/or Supervisors apprise staff of information (e.g., corporate) and are responsible for relaying specific information to staff. Information sessions (e.g., new Employee Orientation sessions, tailgate talks, formal information sessions) are another means of communicating between Manager and/or Supervisor and personnel.

Communication with the QMS Representative is through similar means as outlined for the Operating Authority Personnel. Additional communication is outlined in QMS-20 Management Review.

2.3 Suppliers



Communication is described in Procedure QMS-13 Essential Supplies and Services. Examples of the means of communication include purchase orders and contracts (which may include a copy of the QMS Policy). Communication is generally through emails and phone calls between management and/or Stores Clerks.

Copies of applicable operating procedures and the QMS Policy are provided with contracts and/or purchase orders to inform essential suppliers and contractors that there is a QMS maintained by Operations & Engineering.

2.4 Public / Consumers

Annual water reports (as required by the Ministry of the Environment, Conservation and Parks) will be available on the PUC website. A description of the DWQMS and QMS policy is accessible to all customers and on the PUC Services Inc. (Water Commission) website. Information is communicated to the public through notices, advertisements and/or inserts in billings.

Communication may also be through direct telephone calls and/or e-mails. The public may call directly to the water facilities and/or PUC Services Inc. (Customer Service). Calls received by Customer Service are forwarded to the appropriate water treatment or distribution operational staff.


 	DWQMS Operational Plan	QMS-12
	Revision Date: June 6, 2025	Revision: 6
	Approved By: Director, Water Operations	
Title: Communications		Page 3 of 3

3 REFERENCES

QMS-05 Document and Records Control
QMS-13 Essential Supplies and Services
QMS-20 Management Review

4 APPENDICES

Not applicable

	DWQMS Operational Plan	QMS-13
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Essential Supplies & Services		Page 1 of 4

1 PURPOSE

To document a procedure ensuring specifications and quality of essential supplies and services, in as much as they may affect drinking water quality. The procedure shall include identification of these supplies and services and a means to ensure their procurement.

2 PROCEDURE

2.1 Procurement Process

The acquisition of goods and services related to the provision of drinking water is addressed by Purchase Orders which is administered by the Purchasing Department through the corporate financial tracking system (Cayenta).

Requisitioners may obtain supplies from controlled inventory or may requisition non-inventoried supplies. Non-inventoried supplies are identified by the requisitioner. The Purchasing Agent (or designate) is responsible for purchasing and managing stock inventory for PUC with input from representatives of Stores and other departments.

The requisitioner obtains specifications and/or certification of product requirements for supplies and services prior to issuance of purchase orders, standing purchase orders, tenders, etc.

Standard purchase specifications can be used to ensure frequently purchased supplies and services conform to required standards. Specifications will be determined on a case by case basis for less frequently purchased supplies and services or where no standard purchase specification has been developed. The manager approving the purchase requisition will ensure required product standards are met.


The approved requisition is forwarded to Purchasing who generates a Purchase Order to a supplier.

Stores receives products and notifies the Supervisor or Manager if requested when it is in stock. Alternatively, Water Treatment products are delivered directly to the water facility.

Staff receiving the supplies conduct the following activities at the time of delivery:

- Check the received shipment against the Bill of Lading (B/L); identify any anomalies on the B/L; provide a copy of the B/L to the carrier;
- Perform receiving inspection (performed in conjunction with the requisitioner where applicable);
- Compare the product against the packing slip and PO;
- verify that the manufacturer/vendor matches the PO;

- Sault Ste. Marie DWQMS Operational Plan -

	DWQMS Operational Plan	QMS-13
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Essential Supplies & Services		Page 2 of 4

- verify that the full product description, including make, model, and catalogue number, matches the PO;
- Check for applicable certification labels and or marks in accordance with NSF, AWWA etc.
- Document anomalies on the packing slip;
- Count the product or items delivered;
- Spot check the contents;
- Notify the Purchasing Agent and/or Supplier for resolution of anomalies.
- Forward supplier-provided documentation to the requisitioner for review and approval before acceptance of product where applicable. (e.g. NSF certificates for valves)
- Identify accepted product on the packing slip hardcopy, date and initial same;
- Transport accepted inventoried product to its storage location, ensuring the product bears appropriate identification.
- Items received at plants need to be placed in appropriate staging area.

Standing Purchase Orders may be used to obtain frequently purchased products. These are issued by Purchasing based on specifications and/or certification of product requirements provided by the Manager. Lead Hands or Supervisors may purchase materials directly from suppliers and/or through Purchasing and the issuance of a Purchase Order.



A copy of the relevant procedures/specifications, a copy of the Quality Policy and general information regarding the presence of a QMS are included in the appropriate “contract specifications” for capital works projects supplied by Engineering.

Availability and quality of chemicals is ensured by having back-up suppliers and/or additional chemicals that are rotated through to ensure they have not expired. All supplies (including chemicals) are received by PUC Services and re-distributed to appropriate facilities by designated staff.

2.2 Stores

Supplies that are kept in stock (e.g., repair clamps, pipes, etc.) which includes quantities for emergency repairs are managed by Stores.

During regular business hours, staff may come in and pick up appropriate material, which is tracked by Stores through completion of a material requisition.

 	DWQMS Operational Plan	QMS-13
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Essential Supplies & Services		Page 3 of 4

After hours, Lead Hands call in to the Shift Operator requesting Stores staff meet them at Stores.

Emergency field purchases may be made directly from local suppliers. The competence of the purchaser shall ensure only quality purchases are made in emergency situations.

2.3 Identification of Supplies & Services and Requirements

Form 13-01 Essential Supplies and Services for drinking water identifies the essential supplies and services critical to the provision of safe drinking water.

The form provides a description of the Procurement of Supplies or Services including:

- How do you ensure it is available, when required
- How do you ensure it is made available, when required (daily operations & emergencies)

The form also includes identification of the Quality Requirements:

- What requirements are needed related to quality of supply or service (e.g., product/service quality; performance of supplier/service provider; method of delivery; on-site activities)
- How the requirements are satisfied

2.4 Monitoring Supplies and Services



For products that are received at the Sault Ste Marie Water Treatment Plant, an Operator is present during receiving in order to inspect and receive the product. The Operator accepts the product and follows the steps listed:

1. Verify the contents with the enclosed packing slip
2. Date and initial the packing slip
 - For chemicals: The Operator verifies that the product meets specifications and notifies the Shift Operators that a load and/or product has been delivered and is acceptable

For products that do not meet the specifications or are incorrect (e.g., wrong material delivered), the Operator refuses the product by sending it back to Stores. The Operator will then notify their Lead Hand/Supervisor who in turn will contact Purchasing and inform them of any issues or problems. Purchasing would then contact the supplier to return/replace the material.

Any discrepancies are resolved by Stores and Purchasing Agent.

Any problems that are encountered regarding the supplies and/or services are documented (generally by e-mail) and forwarded to the Purchasing Department. Managers, Supervisors and/or Operators may also contact suppliers or contractors directly if problems arise.


 	DWQMS Operational Plan	QMS-13
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Essential Supplies & Services		Page 4 of 4

3 REFERENCES

SSM Form 13-01 Essential Supplies and Services
SSM QMS 13 Appendix A Essential Supply Listing

4 APPENDICES

Not Applicable

	DWQMS Operational Plan	QMS-14
	Revision Date: April 22, 2024	Revision: 6
	Approved By: Director, Water Operations	
Title: Review & Provision of Infrastructure		Page 1 of 2

1 PURPOSE

To describe the annual review process that results in the provision of drinking water infrastructure. The objective is to annually review what infrastructure is necessary to operate and maintain the drinking water system and to determine if that infrastructure is in place as needed. The procedure also describes how the findings of the review are communicated to the Owner.

2 PROCEDURE

Review and provision of the drinking water infrastructure needs is achieved through consideration of performance and condition of existing infrastructure along with forecasted needs related to potential growth.

- a) Performance measures
- b) Input from city council and annual meetings with the Board
- c) Engineering consulting reports (when required)
- d) MECP inspection reports and/or orders
- e) Consider outcomes from Annual Risk Assessments
- f) Input from operational staff
- g) Feedback from reports by outside contractors

2.1 Review of Infrastructure Needs

The budget process is generally initiated in September each year by the Finance Department. Managers provide input and recommendations on infrastructure needs to Director of Water Operations in order to develop a list of priority projects for the next year.

During the budget process, Managers and Supervisors may review Monthly, Quarterly, Annual Reports, input from engineering and operational staff, MECP Compliance Inspection Reports, water quality reports and maintenance records to assist in determining priority needs.


Engineering, Distribution and Treatment Departments look at infrastructure improvements by assessing condition of infrastructure, risk of failure, age, and ease of accessibility. Factors considered include operational knowledge, maintenance records, age and condition

Areas of main breaks are reviewed in conjunction with road reconstruction to be undertaken by the municipality. The municipality's 5-year road reconstruction program is reviewed to identify where watermain construction (rehabilitation and/or renewal) could be undertaken.

2.2 New Infrastructure

The need for new infrastructure is driven by the Planning and Engineering Departments of the municipality. The municipality maintains plans to determine how the area will grow (both short term and long term) and where the infrastructure and resources will be necessary. In general, these growth plans are development-driven.

- Sault Ste. Marie DWQMS Operational Plan -

	DWQMS Operational Plan	QMS-14
	Revision Date: April 22, 2024	Revision: 6
	Approved By: Director, Water Operations	
Title: Review & Provision of Infrastructure		Page 2 of 2

PUC Services Inc. provides specifications for new infrastructure to the applicable department. In addition, Managers and Supervisors will generally review designs prior to issuance of the Certificate of Approval.

2.3 Provision of Infrastructure

The Director of Water Operations reviews budget requests from Managers and holds meetings to discuss project priorities. The Director, Managers and Engineers discuss project impacts recognizing that all projects identified may not be undertaken due to various factors including financial limitations.

The finalized list of priority projects is forwarded to the Finance Department. Finance develops a preliminary budget which looks at projected revenue and capital to determine rate impacts. Senior Management reviews the draft budget and develops a final draft for presentation to the Commission.

Finance moves the budget forward to the Commission for review and approval. Generally, approval is obtained in late fall of each year.


Projects that were approved but were not able to be constructed during the year, will be re-considered when setting the priority projects for the next year's budget.

3 REFERENCES

MOE Compliance Inspection Reports
Internal Reports

4 APPENDICES

None

	DWQMS Operational Plan	QMS-15
	Revision Date: June 9, 2025	Revision: 4
	Approved By: Director, Water Operations	
Title: Infrastructure Maintenance, Renewal and Rehabilitation		Page 1 of 3

1 PURPOSE

To document a procedure for infrastructure maintenance, rehabilitation and renewal programs for the drinking water systems. This is a continuation from the review and provision of infrastructure and is a summary of the infrastructure rehabilitation, renewal and maintenance programs and activities that are undertaken.

2 PROCEDURE

2.1 PREVENTATIVE MAINTENANCE

Maintenance programs are developed based on requirements established by the operating authority taking into account manufacturer's instructions, regulatory requirements, industry best practice and/or standards.

Standard Operating Procedures exist for some of the maintenance activities and these are available to Operations staff that are required to complete the maintenance activities.

Distribution

Maintenance programs for the distribution system include: leak detection, exercising valves, dead-end flushing, hydrant winterizing and annual inspections.

Dead-end Flushing program - work orders are issued through the computerized maintenance system by the Water Distribution Supervisor. The work orders are provided to distribution operations staff to record completed work. The completed work orders are returned to the Water Distribution Supervisor and processed.


The preventative maintenance flushing program addresses the dead ends in the drinking water system. The Water Distribution Supervisor and Engineering review new infrastructure to determine additional flushing locations within the drinking water systems. The Water Distribution Supervisor is responsible for determining the frequency of the flushing program based on results of the sampling program.

Exercising Valve Program – valves are exercised annually within the distribution system, with a goal of achieving full system coverage over a five year cycle. Deficiencies are noted and work orders are issued for repair.

Valves exercised are documented in the valve operator data recorder which is down loaded after the daily activity. A valve maintenance sheet is used for valves operated manually within the system.

Hydrant Annual Inspections - work orders are issued through the computerized maintenance system by the Water Distribution Supervisor. The work orders are provided to distribution operations staff to record completed work. The completed work orders are returned to the Water Distribution Supervisor and processed.

Inspections on the hydrants are completed based on routes to ensure coverage of the entire distribution system on an annual basis. Deficiencies are noted on a completed hydrant maintenance field data form.

	DWQMS Operational Plan	QMS-15
	Revision Date: June 9, 2025	Revision: 4
	Approved By: Director, Water Operations	
Title: Infrastructure Maintenance, Renewal and Rehabilitation		Page 2 of 3

Work orders are issued to repair deficiencies. The completed hydrant maintenance field data form is sent to Engineering for entry into the hydrant database.

Leak Detection Program - a leak detection survey is conducted annually on a portion of the distribution system, with a goal of achieving full system coverage over a five year cycle. Deficiencies/leaks are noted and work orders are issued for repair.

Treatment

The facility preventative maintenance program has been implemented by the Manager of Water Treatment into the computerized maintenance system. All re-occurring work orders are issued to the Lead Hand who provides the work orders to treatment operations staff where work completed is recorded. The completed work orders are returned to the Water Treatment Office Assistant to be processed and entered on a tracking spreadsheet available on the corporate drive for reference.

Existing maintenance work orders that are currently in the computerized maintenance management system are handled similarly as above by issuance to the maintenance staff, but much of the work is scheduled by the supervisor on a priority basis through discussion with the trades, engineering, and operations groups.

2.2 UNPLANNED MAINTENANCE

Distribution

Work Requests are used to address unplanned maintenance activities. These unplanned activities may arise from a customer complaint, inspection or other emergency situation.

The Work Request is issued to the Water Distribution Supervisor for authorization. Once the Work Request is authorized then a work order is developed and issued. The Work Orders are provided to the Lead Hand and assigned to distribution operations staff. The work orders are used to record the work completed. The completed work orders are returned to the Water Distribution Supervisor and processed.

Treatment


Unplanned maintenance for equipment failures is typically brought to the attention of the maintenance group, operations lead-hand, and supervisor via e-mail or verbally. The concern is prioritized and entered into the weekly maintenance schedule.

2.3 EFFECTIVENESS OF MAINTENANCE

The work order system supports tracking the effectiveness of maintenance activities.

Effectiveness in part is tracked through:

- number of completed work orders
- percentage of overdue planned maintenance activities
- frequency of unplanned maintenance activities (e.g., mainbreaks)

	DWQMS Operational Plan	QMS-15
	Revision Date: June 9, 2025	Revision: 4
	Approved By: Director, Water Operations	
Title: Infrastructure Maintenance, Renewal and Rehabilitation		Page 3 of 3

Reports on the maintenance activities are forwarded to Top Management for review under Management Review Element (QMS-20).

2.4 COMMUNICATION TO OWNER

Major unplanned maintenance issues (greater than \$500,000) require authorization of the Owner in accordance with the PUC Services Signing Authorities Policy. Minor unplanned maintenance can be performed without the consent of the Board, but notification is made to the Owner by the President during Board meetings.

2.5 REHABILITATION / RENEWAL

The capital works budget covers issues that are not operations and maintenance and includes extending the life of plant, replacement of plant and/or increases in capacity.

Rehabilitation and renewal works are identified and defined through the capital budget process.

The annual budget includes allowances for replacement of capital assets (e.g., hydrants, services). As well, planned replacement programs are identified for these assets.

Rehabilitation and renewal projects are developed on a continuous 5 year works plan. The program covers distribution, production and treatment.

Operations and Engineering may also identify where additional programs (e.g., lead services, well upgrades) are required that may need additional operating budget.

Distribution

Distribution renewal projects are usually tied in with the City's major road works program and typically watermains are replaced at that time. There is a capital works budget for these projects.

Treatment


The Water Treatment Supervisor and maintenance staff review potential capital projects in the Fall of each year for budget approval for the next calendar year. The list is prioritized to put forward the most critical projects with consideration of available resources to accomplish the work. This list is forwarded to the Senior Distribution Engineer for evaluation prior to approval by the Director of Water Operations.

3 REFERENCES

QMS-05 Document and Records Control
QMS-20 Management Review
Standard Operating Procedures

4 APPENDICES

Not Applicable

	DWQMS Operational Plan	QMS-16
	Revision Date: May 22, 2025	Revision: 8
	Approved By: Director, Water Operations	
Title: Sampling, Testing and Monitoring		Page 1 of 3

1 PURPOSE

To document a procedure for sampling, testing, and monitoring activities completed for all drinking water quality. The procedure describes how the sampling, testing, and monitoring results are recorded and shared with the Owner, where applicable.

2 PROCEDURE

2.1 Sampling & Testing

Sampling, testing, and monitoring is completed on the drinking water to:

- provide operators with knowledge required to proactively operate the drinking water system, especially at Critical Control Points,
- ensure water quality is maintained as water moves through treatment process and travels through the distribution system, and
- ensure compliance with applicable Ontario Drinking Water Regulations.

For the purposes of this procedure, “sampling” is defined as the process of collecting water samples for laboratory analysis, and “testing” is the laboratory analysis. “Monitoring” consists of on-site data collection (e.g., SCADA instrumentation or handheld equipment) and analysis.


The samples, tests and monitoring are undertaken according to regulation 170, and 169 or more often. The sampling program is coordinated by the Lead Hands.

There are multiple sampling points and monitoring points that are used for process control. A sampling, testing, and monitoring schedule provides details of how PUC Services Inc. samples, tests, and monitors the process from raw water to finished product.

Based on best practice, monitoring of water quality in dead ends is managed through use of the computerized maintenance system. Distribution Operators flow dead ends and take chlorine residual tests. Additional samples may be undertaken based on customer complaints of water quality in the distribution system.

The protocols for collecting and handling water samples (including the control limits) are provided in the standard operating procedures.

On a yearly basis Managers and Supervisors are responsible for reviewing the water quality sampling program for changes required to the water quality parameters, sampling frequency and sampling locations. The Supervisor is responsible for updating the sampling schedule based on this review.

	DWQMS Operational Plan	QMS-16
	Revision Date: May 22, 2025	Revision: 8
	Approved By: Director, Water Operations	
Title: Sampling, Testing and Monitoring		Page 2 of 3

2.2 Sampling & Testing Results

Samples are submitted to an accredited and licensed lab. All results from the lab are received in digital format and maintained on the network drive and a copy is printed and managed as per QMS-05 (Document and Records Control).

In-house samples are analyzed following approved laboratory procedures. The results of these activities are recorded by Operators in the station log books and on electronic Lab Data Sheet. Any adjustments made to process parameters are recorded in the applicable station logbook.

Adverse conditions are identified through alerts from SCADA and/or lab notification. Should the analytical results indicate an adverse condition the Standard Operating Procedures are followed that indicate how these adverse conditions are reported and addressed.

Sampling and testing records are managed in accordance with QMS-05 (Document and Record Control System Procedure).

2.3 Monitoring

SCADA instrumentation (alarms) and handheld equipment are used to monitor drinking water quality in the plant and distribution system.

Monitoring is completed by operators, and when controlled by the SCADA system the shift operator is notified of alarms indicating when control limits are exceeded. All parameters for the SCADA system designs are reviewed by the Supervisor to ensure monitoring requirements are met. Automatic shutdowns are put in place to prevent the control limits from being exceeded. SCADA tracks and monitors all parameters through trending for operator review.


Station logbooks or data entry sheets are used to track information from handhelds.

2.4 Reporting to the Owner

Sault Ste. Marie – Annual reports are made to the Owner (which includes the Services Board and Commission) regarding the drinking water system. In addition, regular updates (referred to as the President's Report) and quarterly reports are provided to the shareholders (e.g., municipal council).

The Manager reports to the owner on the sampling, testing, and monitoring for the system on an annual basis. The annual report of the drinking water system is provided to the owner on a yearly basis, and this provides a summary of the results.

In accordance with relevant legislation, summary reports are provided and posted on the PUC Services Inc.'s website on an annual basis, with an emphasis on outlining problems/issues (abnormal conditions) that have occurred during the past year. The summary report includes a spreadsheet showing a summary of the results.


	DWQMS Operational Plan	QMS-16
	Revision Date: May 22, 2025	Revision: 8
	Approved By: Director, Water Operations	
Title: Sampling, Testing and Monitoring		Page 3 of 3

3 REFERENCES

QMS 05 Document and Records Control
 SSM Form 05-04 SSM WTP Daily Report
 SSM Form 05-53 SSM WTP Lab Entry Form
 SSM Form 05-54 Distribution Lab Entry Form
 SSM Form 05-55 Supply Lab Entry Form
 SSM Form 16-01 DWQMS Sample Protocol
 SSM-WT-009 AWQI Reporting
 SSM-WT-012 Sampling Protocol
 D04 Well Station Goulais Ave – Process Control Narrative
 D05 Well Station Steelton – Process Control Narrative
 D11 Well Station Shannon – Process Control Narrative
 D12 Well Station Lorna Drive – Process Control Narrative
 W03 WTP Water Treatment Plant – Process Control Narrative

4 APPENDICES

Not Applicable

	DWQMS Operational Plan	QMS-17
	Revision Date: April 22, 2024	Revision: 2
	Approved By: Director, Water Operations	
Title: Measurement and Recording Equipment, Calibration & Maintenance		Page 1 of 1

1 PURPOSE

To document the calibration and maintenance of measurement and recording equipment used for safe drinking water quality.

2 PROCEDURE

2.1 Calibration and Maintenance Frequency and Schedule

The measurement and recording equipment is maintained and calibrated as per equipment manufacturer's specifications or as required by O. Reg. 170-03; whichever is more frequent.

The frequency and responsibility for calibration and maintenance of each equipment type is summarized on Form 17-01. Calibration work orders are generated by the maintenance management system to operational staff to indicate when calibration of monitoring equipment is required.

The Supervisor and/or Manager are responsible for ensuring that the calibration is undertaken and the appropriate forms are completed by the Operator (for in-house calibration and maintenance) or the designated outside contractor.

The SCADA alarm system is maintained and calibrated through daily, weekly and yearly activities that Operators and the instrument technicians undertake for the alarms and settings.

SCADA alarm communication for remote sites is verified by a weekly test and operating the field sensors for annunciation at the control centre. At the start of each shift the Operator reviews the status of the event and alarm conditions on the SCADA display and records on the black board. The SCADA system records all status, events and alarms.


2.2 Annual Review

On an annual basis the Manager/Supervisor undertakes a review of the schedule (refer to Form 17-01 Measurement and Recording Equipment Calibration Schedule) to confirm which work has been completed.

At least once per year the Manager/Supervisor and the QMS Representative review the calibration and maintenance schedules to ensure the information is up to date.

3 REFERENCES

QMS-05 Document and Records Control QMS System Procedure
Form 17-01 Measurement & Recording Equipment Maintenance & Calibration Schedule

	DWQMS Operational Plan	QMS-18
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Emergency Management		Page 1 of 3

1 PURPOSE

The purpose of this procedure is to document how we maintain a state of emergency preparedness, including:

- a) a list of potential emergency situations or service interruptions
- b) processes for emergency response & recovery
- c) emergency response training & testing requirements
- d) Owner & Operating Authority responsibilities during emergency situations
- e) references to municipal emergency planning measures
- f) emergency communication protocol and up-to-date list of emergency contacts

2 PROCEDURE

2.1 Identification of Emergency Situations or Service Interruptions


On an annual basis the Manager Water Treatment Operations, Manager Water Distribution Operations, Director of Water Operations, Manager, Electrical Engineering, and/or their designates will meet. The purpose of the meeting is to review the QMS-18 Appendix B which includes a list of emergency situations or service interruptions that have been identified and to examine current operations to determine if additional emergency situations or service interruptions exist.

In addition, during the risk assessment process (including the annual and three-year reviews) the outcomes (QMS-08) are identified which include some emergency situations or service interruptions. This is another opportunity where the review process may identify emergency situations or service interruptions that can be added to the list from the above noted meeting.

Emergencies can stem from man-made or natural occurrences such as:

- Major service disruption - large scale watermain breaks affecting water supply
- Ice/snowstorms or flooding (e.g., road closures)
- Hazardous material spillage
 - Chlorine Gas – Tonners/Cylinders (Appendix D – WTP Chlorine E2 Plan)
- Mechanical or electrical failure which may disrupt the water supply system
- Power outage causing a disruption of service
- Adverse water quality – microbial or chemical contamination
- Large scale health issue (e.g., Pandemic)

The QMS Representative is responsible for maintaining and updating the potential emergency situations or service interruptions (see Appendix B).

	DWQMS Operational Plan	QMS-18
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Emergency Management		Page 2 of 3

2.2 Process for Emergency Response and Recovery

Based on the emergencies identified, the QMS Representative is responsible for ensuring that Standard Operating Procedures (SOPs) are developed.

The SOPs outline the roles and responsibilities for various staff and the activities related to the response and recovery from the emergency situation or service interruption.

The municipality has a municipal emergency plan that outlines communication procedures during emergency situations and the roles and responsibilities of the Owner, depending on the level of emergency.

The Emergency Coordinator is responsible for initiating communications with the municipality for emergencies that have escalated to a higher level of response than PUC Services Inc. Operations staff.

For escalation of emergencies, the Emergency Communications Protocol (Appendix B) should be referred to as it provides the emergency communication protocol for situations that have the potential to escalate to higher level impacts. The emergency list of contacts is included in the PUC Water System Emergency Preparedness Plan.

2.3 Emergency Response Training and Testing Requirements



The Managers are responsible for ensuring that appropriate staff receive emergency response training. Training is tracked as per QMS-10 Competencies.

In addition, a debriefing after larger scale emergencies will be undertaken by the Manager responsible for the affected area and will include the QMS Representative and other applicable staff. Any corrective actions related to the QMS that are identified during the debriefing will be recorded as per QMS-21 Continual Improvement and utilizing Form 21-01.

Periodically the emergency procedures (response and recovery) will be evaluated, and modifications made to the procedures where required based on the review and/or debriefing following emergency situations.


3 REFERENCES

QMS-08 Risk Assessment Outcomes
QMS-10 Competencies
QMS-21 Continual Improvement
Standard Operating Procedures
PUC Water System Emergency Preparedness Plan - Sault Ste. Marie
Municipal Emergency Plan
Form 05-16 SSM Emergency Testing (Template)

 	DWQMS Operational Plan	QMS-18
	Revision Date: April 22, 2024	Revision: 5
	Approved By: Director, Water Operations	
Title: Emergency Management		Page 3 of 3

4 APPENDICES

Appendix 18-A	Emergency Contact List
Appendix 18-B	Emergency Communications Protocol
Appendix 18-C	Emergency Management SOP Table of Contents
Appendix 18-D	WTP Chlorine E2 Plan

	DWQMS Operational Plan	QMS-19
	Revision Date: April 22, 2024	Revision: 4
	Approved By: Director, Water Operations	
Title: Internal Audits		Page 1 of 3

1 PURPOSE

To document the procedure for internal audits that:

- Evaluates conformity of the QMS with the requirements of the DWQMS
- Identifies internal audit criteria, frequency, scope, methodology and record keeping requirements
- Considers previous internal and external audit results
- Describes how the QMS corrective actions are identified and initiated

2 PROCEDURE

2.1 Audit Team Structure and Roles

The audit team roles are as follows:

- The **QMS Representative** acts as a liaison between the audit team (through the Lead Auditor) and the auditees
- The **Lead Auditor(s)** is responsible for overseeing the internal audit process and ensuring qualified auditors conduct internal audits
- **Auditors** work with the Lead Auditor(s) to prepare for and conduct internal audits

2.2 Auditor Qualifications and Selection

The Lead Auditor(s) and Auditors must meet the following criteria:

- Knowledge of the DWQMS and the drinking water QMS
- Independent of the work that is going to be audited
- Ability to make objective observations and record the results
- Successfully complete an auditing course


The Lead Auditor(s) along with the QMS Representative will select internal auditors.

2.3 Audit Process

2.3.1 Schedule

Each element of the QMS for the drinking water system must be audited a minimum of once per calendar year. Additional audits can be scheduled based on the importance of the process or area, or in response to previous audits results (internal and external). Typically, the internal audit focuses on the previous calendar year.

The Lead Auditor(s) creates an Annual Internal Audit Schedule using Form 19-01, with assistance from the QMS Representative. The Lead Auditor or QMS Representative forwards the Audit Schedule to the Manager and Supervisors for review.

	DWQMS Operational Plan	QMS-19
	Revision Date: April 22, 2024	Revision: 4
	Approved By: Director, Water Operations	
Title: Internal Audits		Page 2 of 3

An email notification of the audit schedule is sent out by the QMS Representative or Lead Auditor to the Manager and Supervisors.

2.3.2 Checklist

The Lead Auditor works with the QMS Representative to prepare an Internal Audit Checklist Form 19-02 or other similar documents that record questions asked and points verified. If schedules permit, a pre-audit meeting will be held with the auditing team to review and approve the checklist and/or documents. The checklist defines the scope (i.e., applicable area of the QMS, time period to be audited, organizational unit and/or facility) and audit criteria (i.e., applicable manuals and standards).

The checklist reflects the current policies and procedures of the area that are being audited. A copy of the procedures with the points highlighted that are going to be checked can be attached to the checklist and referenced for the audit.

2.3.3 Audit

The audit is performed by the auditing team using the Internal Audit Checklist Form 19-02 or applicable document. Observations that provide evidence of conformance or non-conformance are noted on the Internal Audit Checklist.

2.3.4 Audit Findings

The results of the audit are reviewed by the audit team. Agreement is reached under the leadership of the Lead Auditor. The Auditors complete the summary of findings on the Audit Report Form 19-03 or similar document.

The Lead Auditor(s) records non-conformances from the internal audits on SSM Form 21-01 Corrective Action Report which records:

- Audit report name
- Date
- Brief description of non-conformance


The Office Assistant, DWQMS tracks the internal audit non-conformances by recording the CAR number in the SSM Form 21-02 CAR Log.

2.3.5 Closing Meeting

The results of the audit are presented at the closing meeting, if one is held. At a minimum the Supervisor responsible for the area audited and the Audit Team would attend.

The closing meeting will include the following:

- Thank the staff for their cooperation
- Review the commendable features

	DWQMS Operational Plan	QMS-19
	Revision Date: April 22, 2024	Revision: 4
	Approved By: Director, Water Operations	
Title: Internal Audits		Page 3 of 3

- Review documented observations – meets standards, opportunity for improvement, non-conformance
- Ensure the issue is understood and provide feedback for questions and concerns

2.4 Audit Report

The Auditors prepare an Internal Audit Report (PUC Form 19-03 Internal Audit Report), fill out any corrective actions that may be required from the audit, and determine due dates of corrective actions. The report has to be signed by the Lead Auditor and the person responsible for the audited area.

A copy of the report is given to the Director, Water Operations, Managers & Supervisors of the affected areas and the QMS Representative; the original is kept by the Lead Auditor(s) and used for follow up. The report is filed according to QMS 05 Procedure Document and Records Control.

2.5 Audit Follow Up and Report

The Lead Auditor makes sure that the audit follow up is carried out to verify that the corrective action has been taken, is effective, and been closed on SSM Form 21-02 CAR Log.


The results of the internal audits and the follow up audits are reviewed by management at the annual Management Review meeting as per QMS 20 (Management Review) or more frequently, if required.

3 REFERENCES

PUC Form 19-01 Annual Internal Audit Schedule
PUC Form 19-02 Internal Audit Checklist
PUC Form 19-03 Internal Audit Report
SSM Form 21-01 Corrective Action Report
SSM Form 21-02 CAR Log QMS 05 Document and Records Control
SSM QMS 20 Management Review

4 APPENDICES

Not Applicable

	DWQMS Operational Plan	QMS-20
	Revision Date: April 22, 2024	Revision: 7
	Approved By: Director, Water Operations	
Title: Management Review		Page 1 of 2

1 PURPOSE

To document the procedure for describing how the QMS will ensure its continuing suitability, adequacy and effectiveness. To ensure that necessary information is collected for Top Management to review and to provide review output of any decisions and actions related to the QMS and maintain records of the reviews.

2 PROCEDURE

2.1 Management Review

QMS-09 Organizational Roles, Responsibilities and Authorities identify the management team for Top Management. A Management Review will be held once per calendar year by Top Management to review the overall suitability, adequacy and effectiveness of the QMS. At a minimum, the Director of Water Operations and the QMS Representative must attend the Management Review meeting. The President & CEO PUC Services Inc. should be provided with a report if not available for the meeting.


The QMS Representative communicates directly with Top Management on the QMS and is responsible for:

- establishing the date for the Annual Management Review meeting
- forwarding notification of the meeting to participants
- forwarding the agenda for the meeting to the participant
- tracking the status of action items identified during Management Review meeting
- reporting to the Owner

2.2 Management Review Input

Top Management will review information in the agenda on Form 20-01, where applicable on:

- a) Incidents of regulatory non-compliance
- b) Incidents of adverse drinking water tests
- c) Deviations from critical control point limits and response actions
- d) Efficacy of the risk assessment process
- e) Results of audits (internal and external)
- f) Results of relevant emergency response testing
- g) Operational performance
- h) Raw water supply and drinking water quality trends
- i) Follow-up action items from previous management reviews
- j) Status of management action items identified between reviews
- k) Changes that could affect the QMS
- l) Summary of consumer feedback
- m) Resources needed to maintain the QMS
- n) Results of the infrastructure review

	DWQMS Operational Plan	QMS-20
	Revision Date: April 22, 2024	Revision: 7
	Approved By: Director, Water Operations	
Title: Management Review		Page 2 of 2

- o) Operational Plan currency, content and updates
- p) Summary of staff suggestions
- q) New Business – Other issues that impact on the quality management system
- r) Date of Next Meeting

2.3 Management Review Output

Management review outputs will include identification of specific actions items to address deficiencies, personnel responsible for delivering those action items and proposed implementation timelines. During Management Review, Top Management will provide a record of any decisions and actions related to:

- Improvement of the QMS and related procedures
- Improvement of the Operating Authority's ability to implement consistently the QMS
- Human and financial resource needs

A summary will be compiled in a Power Point Presentation for reporting to the Owner. A presentation is held on a date selected by the Owner.

The QMS Representative will track the status of the action items identified during Management Review meeting and will report on this at subsequent meetings. The QMS Representative will track this on Form 20-01 by filling in the "status" column. A copy of Form 20-01 will be kept (as per QMS-05) as the minutes of the meeting with the "status" column left blank. The column will then be filled in by the QMS Representative as a means of tracking the status of the action items.

2.4 Recording of Management Review

Minutes of the meeting will be recorded on Form 20-01 and maintained as per QMS-05 Document and Records Control. These minutes will reflect the review inputs for the meetings. Copies of the minutes are distributed to Top Management by the QMS Representative.


The QMS Representative will ensure the results of the management review, the identified deficiencies, decisions and action items are conveyed to the Owner on Form 20-02.

3 REFERENCES

Form 20-01 Management Review Agenda & Meeting Minutes
QMS-05 Document and Records Control

4 APPENDICES

Not Applicable

	DWQMS Operational Plan	QMS-21
	Revision Date: April 22, 2024	Revision: 3
	Approved By: Director, Water Operations	
Title: Continual Improvement		Page 1 of 3

1 PURPOSE

To document the procedure established for the Operating Authority to strive to continually improve the effectiveness of its Quality Management System through corrective actions, preventative actions to eliminate potential non-conformities and review of best management practices.

2 PROCEDURES

2.1 CORRECTIVE ACTION

Corrective action involves taking measures to eliminate causes of identified quality problems (e.g., related product, process or service) to ensure the problems do not recur.

Corrective action may be initiated as a result of the following indicators of a breakdown in the Quality Management System:

- Internal audits
- External audits
- AWQI's
- MECP Inspection Reports


Any employee can initiate corrective action by issuing a Corrective Action Report (CAR) Form 21-01.

The Issuer completes Part A of the CAR Form 21-01 and forwards the CAR to the QMS Representative. The QMS Representative will issue the CAR number and determine who is assigned as Team Leader to address the issue. The QMS Representative records the CAR in the CAR Log Form 21-02 and notes the CAR number on the report.

The Team Leader creates a cross-functional team which includes the Manager of the affected area (minimum of 2 people) and completes Part B of the CAR.

The Team Leader is responsible for the process which includes:

- describing and implementing the corrective action
- investigating who is involved in the corrective action
- determining the root cause of the problem or potential problem
- identifying actions required to correct the non-conformance
- identifying and making changes to documentation as per QMS-05 Document & Record Control
- ensuring that the necessary actions are taken in an appropriate timeframe
- completing the Corrective Action Report (Form 21-01)

	DWQMS Operational Plan	QMS-21
	Revision Date: April 22, 2024	Revision: 3
	Approved By: Director, Water Operations	
Title: Continual Improvement		Page 2 of 3

The Team Leader forwards the CAR Form 21-01 to the QMS Representative to determine that the corrective action has been taken and is effective. The QMS Representative completes Part C of the CAR.

The QMS Representative reviews the CAR Log during Management Review and records if any further action is required.

CAR and CAR Log are maintained as per procedure QMS-05 Document and Record Control.

2.2 PREVENTATIVE ACTIONS

Preventative Actions may eliminate the occurrence of potential non-conformities in the Quality Management System. Sources of Preventative actions may include:

- Opportunities for Improvement
- Staff suggestions
- Customer complaints
- Risk assessment outcomes
- Emergency response training outcomes
- Management reviews



The QMS Rep is responsible for ensuring preventative actions identified are implemented and their effectiveness monitored in the Preventative Action Log.

Continual improvement can also be initiated through review and implementation of Best Management Practices relevant to operations of the drinking water system. Best management practice may be a program, process or procedure which, if implemented, may assist the owner and operating authority of a drinking water system in the delivery of safe, high quality drinking water; provide mechanisms to optimize efficiencies within the drinking water system and/or QMS, and provide information to assist in future planning for the systems.

2.3 BEST PRACTICES

Best practices may be identified:

- Annual MECP inspections
- MECP publications and notification emails
- OFI's from a third-party audit
- Annual risk assessments
- Information received through formal training or workshop
- Industry-published best practice documents

 	DWQMS Operational Plan	QMS-21
	Revision Date: April 22, 2024	Revision: 3
	Approved By: Director, Water Operations	
Title: Continual Improvement		Page 3 of 3

3 REFERENCES

Form 21-01 Corrective Action Report
Form 21-02 Corrective Action Report Log
PUC Form 21-03 Preventative Action Log
PUC Form 21-04 Best Practice Reference Listing
QMS-05 Document and Record Control

4 APPENDICES

Not Applicable