TABLE OF CONTENTS

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

OP-01 OCWA's Quality & Environmental Management System (QEMS)
OP-02 Quality & Environmental Management System Policy
OP-03 Commitment & Endorsement of OCWA's QEMS & Operational Plan
OP-03A Signed Commitment and Endorsement
OP-04 Quality Management System Representative
OP-05 Document and Records Control
OP-05A Document and Records Control Locations
OP-06 Drinking Water System
OP-07 Risk Assessment
OP-08 Risk Assessment Outcomes
OP-08A Summary of Risk Assessment Outcomes
OP-09 Organizational Structure, Roles, Responsibilities & Authorities
OP-09A Organizational Structure
OP-10 Competencies
OP-11 Personnel Coverage
OP-12 Communications
OP-13 Essential Supplies and Services
OP-14 Review and Provision of Infrastructure
OP-15 Infrastructure Maintenance, Rehabilitation and Renewal
OP-16 Sampling, Testing and Monitoring
OP-17 Measurement and Recording Equipment Calibration and Maintenance
OP-18 Emergency Management
OP-19 Internal QEMS Audits
OP-20 Management Review
OP-21 Continual Improvement
Schedule "C" MOECC's Director's Directions *Minimum Requirements for Operational Plans*

1. Purpose

To document OCWA's Quality & Environmental Management System (QEMS). This Operational Plan defines and documents the QEMS for the Opasatika Well Supply System operated by the Ontario Clean Water Agency (OCWA). It sets out the OCWA's policies and procedures with respect to quality and environmental management in accordance with the requirements of the Province of Ontario's Drinking Water Quality Management Standard (DWQMS).

2. Definitions

Drinking Water Quality Management Standard (DWQMS) – means the quality management standard approved by the Minister in accordance with section 21 of the SDWA.

Operational Plan – means the operational plan required by the Director's Direction.

Quality & Environmental Management System (QEMS) – a system to:
a) Establish policy and objectives, and to achieve those objectives; and
b) Direct and control an organization with regard to quality.

3. Procedure

3.1 The Opasatika Well Supply System is owned by the Township of Opasatika. OCWA is the contracted Operating Authority for the Opasatika Well Supply System, which includes the Opasatika water treatment plant and the Opasatika distribution system.

3.2 OCWA's Quality & Environmental Management System (QEMS) is structured and documented with the purpose of:

1. Establishing policy and objectives with respect to the effective management and operation of water/wastewater facilities;
2. Understanding and controlling the risks associated with the facility's activities and processes;
3. Achieving continual improvement of the QEMS and the facility's performance.

3.3 The Operational Plan for the facility listed above fulfils the requirements of the Ministry's DWQMS. The 21 QEMS Procedures within this Operational Plan align with the 21 elements of the DWQMS.

4. Related Documents

All QEMS Procedures and Documents referenced in this Operational Plan
Ministry's Drinking Water Quality Management Standard

1. Purpose

To document a QEMS Policy that provides the foundation for OCWA's Quality & Environmental Management System.

2. Definitions

Quality Management System Policy – means the policy described in Element 2 developed for the Subject System or Subject Systems

3. Procedure

3.1 The Ontario Clean Water Agency, its Board of Directors, Officers and entire staff are committed to the principles and objectives set out in our QEMS Policy.

OCWA's Policy is to:

- Deliver safe, reliable and cost-effective clean water services that protect public health and the environment.
- Comply with applicable legislation and regulations.
- Promote client, consumer and stakeholder confidence through service excellence, effective communications and reporting.
- Train staff on their QEMS responsibilities.
- Maintain and continually improve the QEMS.

Originally issued as Environmental Policy on June 8, 1995
Last revised, approved by OCWA's Board of Directors on April 6, 2016
(This policy is annually reviewed)

3.2 Our Board of Directors, Officers and entire staff will act to ensure the implementation of this Policy and will monitor progress of the Quality & Environmental Management System (QEMS).

3.3 OCWA's QEMS Policy is readily communicated and available to all OCWA personnel, the Owner and the public through OCWA's intranet and public websites. A hardcopy of the QEMS Policy is posted as specified in the OP-05 Document and Records Control procedure.

3.4 Essential suppliers and service providers are advised of OCWA's QEMS Policy as per the OP-13 Essential Supplies and Services procedure.

COMMITMENT AND ENDORSEMENT

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

1. Purpose

To document the endorsement of the Operational Plan for the Opasatika Well Supply System by OCWA Top Management and the Township of Opasatika (Owner) and to set out when re-endorsement would be required

2. Definitions

Top Management – a person, persons or a group of people at the highest management level within an Operating Authority that makes decisions respecting the QMS and recommendations to the Owner respecting the Subject System or Subject Systems

3. Procedure

3.1 The Operational Plan is provided to OCWA Top Management and to the Owner for endorsement. The signed written endorsement is presented in Appendix OP-03A. At a minimum, two members of Top Management must endorse the Operational Plan; however, the Operational Plan is made available to all members of Top Management in the specified document control location (refer to OP-05 Document and Records Control). Endorsement by OCWA's Top Management is represented by Senior Operations Manager and the Regional Hub Manager.

3.2 Any major revision of the operational plan will be re-endorsed by OCWA Top Management and the Owner. Major revisions include:

1. A revision to OCWA's QEMS Policy;
2. A change to both representatives of the facility's Top Management and/or both of the Owner's representatives that endorsed the Operational Plan;
3. A modification to the drinking water system processes/components that would require a major change to the description in OP-06 Drinking Water System;
4. The addition of a drinking water subsystem owned by the same Owner to this operational plan.

Any other changes would be considered a minor change and would not require the Operational Plan to be re-endorsed.

4. Related Documents

OP-03A Signed Commitment and Endorsement
OP-05 Document and Records Control
OP-06 Drinking Water System

QEMS Ontario Clean Water Agency	**OPERATIONAL PLAN** Opasatika Well Supply System	QEMS Doc: OP-03A Rev Date: 2019 03 20 Rev No: 0 Pages: 1 of 1

SIGNED COMMITMENT AND ENDORSEMENT

This Operational Plan sets out the framework for OCWA's Quality & Environmental Management System (QEMS) that is specific and relevant to your drinking water system(s) and supports the overall goal of OCWA and the Township of Opasatika (Owner) to provide safe, cost-effective drinking water through sustained cooperation. OCWA will be responsible for developing, implementing, maintaining and continually improving its QEMS with respect to the operation and maintenance of the Opasatika Well Supply System and will do so in a manner that ensures compliance with applicable legislative and regulatory requirements.

Through the endorsement of this Operational Plan, the Owner commits to work with OCWA to facilitate this goal.

OCWA Top Management Endorsement

Claude Rancourt — April 16/19 — Date

Claude Rancourt
Senior Operations Manager, Hearst Cluster

Eric Nielson — Apr 23/19 — Date

Eric Nielson
Regional Hub Manager, Northeastern Ontario Regional Hub

Owner Endorsement

Alain Tremblay — 25 March 2019 — Date

Alain Tremblay
Clerk-Treasurer

Denis Dorval — 25 March, 2019 — Date

Denis Dorval
Mayor

The endorsement above is based on the Operational Plan that was current as of the revision date of this document (OP-03A).

QUALITY & ENVIRONMENTAL MANAGEMENT SYSTEM (QEMS) REPRESENTATIVE

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

1. Purpose

To identify and describe the specific roles and responsibilities of the QEMS Representative(s) for the Opasatika Well Supply System

2. Definitions

None

3. Procedure

3.1 The role of QEMS Representative for the Opasatika Well Supply System is the Process and Compliance Technician (PCT). The Safety, Process and Compliance Manager (or alternate PCT) will act as an alternate QEMS Representative when required.

3.2 The QEMS Representative is responsible for:

- Administering the QEMS for the Opasatika Well Supply System by ensuring that processes and procedures needed for the facility's QEMS are established and maintained;
- Reporting to Top Management on the facility's QEMS performance and identifying opportunities for improvement;
- Ensuring that current versions of documents related to the QEMS are in use;
- Promoting awareness of the QEMS to all operations personnel; and
- In conjunction with Top Management, ensuring that operations personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the system.

4. Related Documents

None

5. Revision History

Date	Revision #	Reason for Revision
2018 12 19	0	Procedure issued – Information within OP-04 was originally set out in the main body of the Opasatika Well Supply System Operational Plan (revision 4, dated May 18, 2017). New Purpose, Definitions, Procedure, Related Documents and separate Revision History sections. Change to responsibilities: Operations Manager no longer considered QEMS Representative and SPC Manager to act as alternate as required (s. 3.1); added wording to clarify shared responsibilities for Top Management and QEMS Representative to ensure operations personnel are aware of applicable legislative and regulatory requirements (s. 3.2).

DOCUMENT AND RECORDS CONTROL

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

1. Purpose

To describe how OCWA's QEMS documents are kept current and how QEMS documents and records are kept legible, readily identifiable, retrievable, stored, protected, retained and disposed of. This procedure applies to QEMS Documents and QEMS records pertaining to the Opasatika Well Supply System as identified in this procedure.

2. Definitions

Document – includes a sound recording, video tape, film, photograph, chart, graph, map, plan, survey, book of account, and information recorded or stored by means of any device

Record – a document stating results achieved or providing proof of activities performed

QEMS Document – any document required by OCWA's QEMS as identified in this procedure

QEMS Record – any record required by OCWA's QEMS as identified in this procedure

Controlled – managed as per the conditions of this procedure

Retention Period – length of time that a document or record must be kept; starts from the date of issue for QEMS records or from the point of time when a QEMS document is replaced by a new or amended document

3. Procedure

3.1 Documents and records required by OCWA's QEMS and their locations are listed in Appendix OP-05A Document and Records Control Locations.

3.2 Internally developed QEMS documents and QEMS records (whenever possible) are generated electronically to ensure legibility and are identified through a header/title and issue date. Handwritten records must be legible and permanently rendered in ink or non-erasable marker.

3.3 Controls for the Operational Plan include the use of authorized approval, alpha-numeric procedure code, issue date, page numbers on every page, revision number and revision history.

Authorized personnel for review and approval of this Operational Plan are:

Review: QEMS Representative, Senior Operator or ORO
Approval: SPC Manager or Operations Management

3.4 The QEMS Representative is responsible for ensuring that current versions of QEMS documents are being used at all times. Current QEMS documents and records are

Type of Document/Record	Minimum Retention Time	Requirement Reference
DWQMS Operational Plan	10 years	Director's Direction under SDWA
Internal QEMS Audit Results	10 years	OCWA Requirement
External QEMS Audit Results	10 years	OCWA Requirement
Management Review Documentation	10 years	OCWA Requirement
Documents/records required to demonstrate conformance with the DWQMS (specifically all the documents/records listed in OP-05A)	3 years*if no specified legislative requirement below*	OCWA Requirement
Log Books or other record-keeping mechanisms	5 years	O. Reg. 128/04
Training Records for water operators and water quality analysts	5 years	O. Reg. 128/04
Operational checks, sampling and testing (e.g., chlorine residuals, turbidity, fluoride, sampling records), microbiological sampling and testing and chain of custodies	2 years	O. Reg. 170/03
Schedule 23 & 24 (LMR) and THM, HAA, nitrates, nitrites and lead program sampling and testing, Section 11 Annual Reports and Schedule 22 Summary Reports	6 years	O. Reg. 170/03
Sodium test results and related corrective action records/reports, 60 month fluoride test results (if the system doesn't fluoridate), Engineering Reports	15 years	O. Reg. 170/03
Lead samples, corrective action records/reports for *E. coli*, Total Coliforms and bacterial species	2 years	O. Reg. 170/03
Corrective action records/reports for chemical and radiological parameters under SDWA O. Reg. 169/03, pesticides not listed under O. Reg. 169/03 and health-related parameters in an order or approval	6 years (LMR) 15 years (SMR)	O. Reg. 170/03
Flow Meter Calibration Records, Analyzer Calibration Reports Maintenance Records/Work Orders	2 years	O. Reg. 170/03

3.10 The Operational Plan is reviewed for currency by the QEMS Representative during internal/external audit and Management Review processes. Other QEMS-related documents are reviewed as per the frequencies set out in this Operational Plan or as significant changes (e.g., changes in regulatory requirements, corporate policy or

DOCUMENT AND RECORDS CONTROL LOCATIONS

Designated locations for documents and records required by OCWA's QEMS

Type of Document/Record	Designated Document Control Location (HC = Hardcopy, EC = Electronic)
Internal QEMS Documents	
Confined Space Program	HC – Hearst Water Treatment Plant
Emergency Response Plan (corporate)	EC - OCWA's intranet (ocwanet.ocwa.com)
Facility Emergency Plan (FEP) Binder (includes Emergency Contact List, Essential Supplies and Services List, Contingency Plans, Site Specific Emergency Procedures and OCWA's Emergency Management Program)	HC - Opasatika Water Treatment Plant (FEP Binder) EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
OCWA's Health & Safety Management System	EC - OCWA's Portal http://portal.ocwa.com/
On-call Schedule	HC- Hearst Water Treatment Plant
Operational Plan (includes QEMS Procedures)	EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System HC - Opasatika Water Treatment Plant
ORO Letter	HC – Opasatika Water Treatment Plant
QEMS Policy	EC – OCWA's public website www.ocwa.com & OCWA's intranet (ocwanet.ocwa.com) HC – Hearst Water Treatment Plant
QEMS Reference Manual	EC - \\ocwfile\public\NEO DWQMS
Sample Schedule	EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System HC - Opasatika Water Treatment Plant (FEP Binder)
Vacation Calendar	HC – Hearst Water Treatment Plant
Internal QEMS Forms (blank)	
Analysis and Action Plan (AAP) Form	EC - \\ocwfile\public\NEO DWQMS\DWQMS HC - DWQMS Hearst Water Treatment Plant
Community Complaint Form	
Contingency Plan Review/Test Summary Form	
Distribution Maintenance and Repair Form	
Environmental Incident Report Form	
Facility Rounds Sheets	
Incidents of Non-Compliance Form	
Instrumentation Calibration/Maintenance Report Form	
Laboratory Chain of Custody Forms	
Loss of Pressure Incident Form	
QEMS – Summary of Findings Spreadsheet	
Tailgate Meeting Form	
Transportation of Dangerous Goods Form	

DOCUMENT AND RECORDS CONTROL LOCATIONS

Type of Document/Record	Designated Document Control Location (HC = Hardcopy, EC = Electronic)
Incidents of Non-Compliance Records	EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
Infrastructure Review (Capital Letter & 5 Year Capital/Major Maintenance Recommendations)	EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
Laboratory Analytical Reports and completed Chain of Custody Forms	EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
Maintenance & Calibration Records (completed WMS work orders)	EC - Workplace Management System (WMS)
Management Review Documentation	EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
Ministry Records (Form 1,2,3 & Director Notification)	EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
Operator Training Records (OCWA)	EC - OCWA's Training Summary Database
QEMS Communications - External	EC - Microsoft Outlook E-mail and/or \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
QEMS Communications - Internal	EC - Microsoft Outlook E-mail and/or \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
QEMS – Summary of Findings Record	EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
Operations Reports (to the Owner)	EC - \\ocwfile\public\NEO DWQMS\DWQMS - Opasatika Well Supply System
SCADA Records	EC - Outpost5/Wonderware
Tailgate Records	HC – Hearst Water Treatment Plant
Transportation of Dangerous Goods Record	HC – Hearst Water Treatment Plant

Revision History

Date	Revision #	Reason for Revision
2018 12 19	4	Appendix issued; Table was originally included within the Document and Records Control Procedure (QP-01) (revision 3, dated May 18, 2017). Added section for blank external QEMS forms, changed location for Confined Space Program and Operational Plan and changed name of OCWA's Safety Manual to OCWA's Health and Safety Management System and its location.

1. Purpose

To document the following for the Opasatika Well Supply System:

- The name of the Owner and Operating Authority; and
- Provide a description of the system, including all applicable water sources, treatment system processes and distribution system components.

2. Definitions

Distribution System - means the part of a drinking water system that is used in the distribution, storage or supply of water and that is not part of a treatment system.

Primary Disinfection - means a process or series of processes intended to remove or inactivate human pathogens such as viruses, bacteria and protozoa in water.

Secondary Disinfection - means a process or series of processes intended to provide and maintain a disinfectant residual in a drinking water system's distribution system, and in plumbing connected to the distribution system, for the purposes of:

(a) protecting water from microbiological re-contamination;
(b) reducing bacterial regrowth;
(c) controlling biofilm formation;
(d) serving as an indicator of distribution system integrity; and

includes the use of disinfectant residuals from primary disinfection to provide and maintain a disinfectant residual in a drinking water system's distribution system for the purposes described in clauses (a) to (d).

Treatment System - means any part of a drinking water system that is used in relation to the treatment of water and includes,

(a) any thing that conveys or stores water and is part of a treatment process, including any treatment equipment installed in plumbing,
(b) any thing related to the management of residue from the treatment process or the management of the discharge of a substance into the natural environment from the system, and
(c) a well or intake that serves as the source or entry point of raw water supply for the system;

3. Procedure

3.1 Drinking Water System Overview

Owner / Operating Authority

The Opasatika Well Supply System is a communal ground water well supply that services the Town of Opasatika. It is owned by the Corporation of the Township of Opasatika and consists of a Class 2 water treatment subsystem and a Class 1 water distribution subsystem. The Ontario Clean Water Agency (OCWA) is the accredited

Characteristic	2017			2018		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Total Coliforms (CFU/100 mL)	0	0	0	0	0	0
Turbidity (NTU)	0.38	5.60	1.47	0.44	10.8	1.74
Temperature (°C)	3.0	9.0	6.5	4.0	9.0	7.0
pH	6.43	7.46	6.99	6.40	7.50	6.98
Iron (mg/L)	3	8	6	1	10	6
Manganese (mg/L)	0.086	0.263	0.157	0.073	0.219	0.145
Colour (TCU)	0	76	16	0	54	17

Common Fluctuations

The water quality remains consistent because well water is not subject to the same fluctuations as surface water.

Threats

The wells are properly sloped and maintained thus infiltration is not an issue. Currently, there are no upstream or downstream processes.

Operational Challenges

On the rare occasion that a power interruption occurs for a prolonged period of time there are emergency generators to assist in keeping the plant running until power is restored.

3.3 Treatment System Description

Water Treatment

Raw water enters the water treatment plant through one common 150 mm raw water main. Once water enters the building it is pre-chlorinated with sodium hypochlorite and injected with potassium permanganate before being directed to the two greensand pressure filters. The greensand filters each have a maximum filtration rate of 15.78 m^3/hr and each contain 0.6 m of greensand, 0.3 m of anthracite and 1.09 m of sand. The greensand filters are set to automatically backwash every 11 hours, however if the filters effluent turbidity or iron levels start to increase the operators will manually backwash the filters. Wastewater generated from the filters being backwashed is directed to a sludge tank before being discharged to the sanitary sewers.

do not, for systems that are connected to another system with different owners, must now include which system is relied upon to ensure the provision of safe drinking water). Moved order of system description to follow the process (e.g., source water first, then treatment, then distribution). Updated the Raw Water Characteristics table with more current data

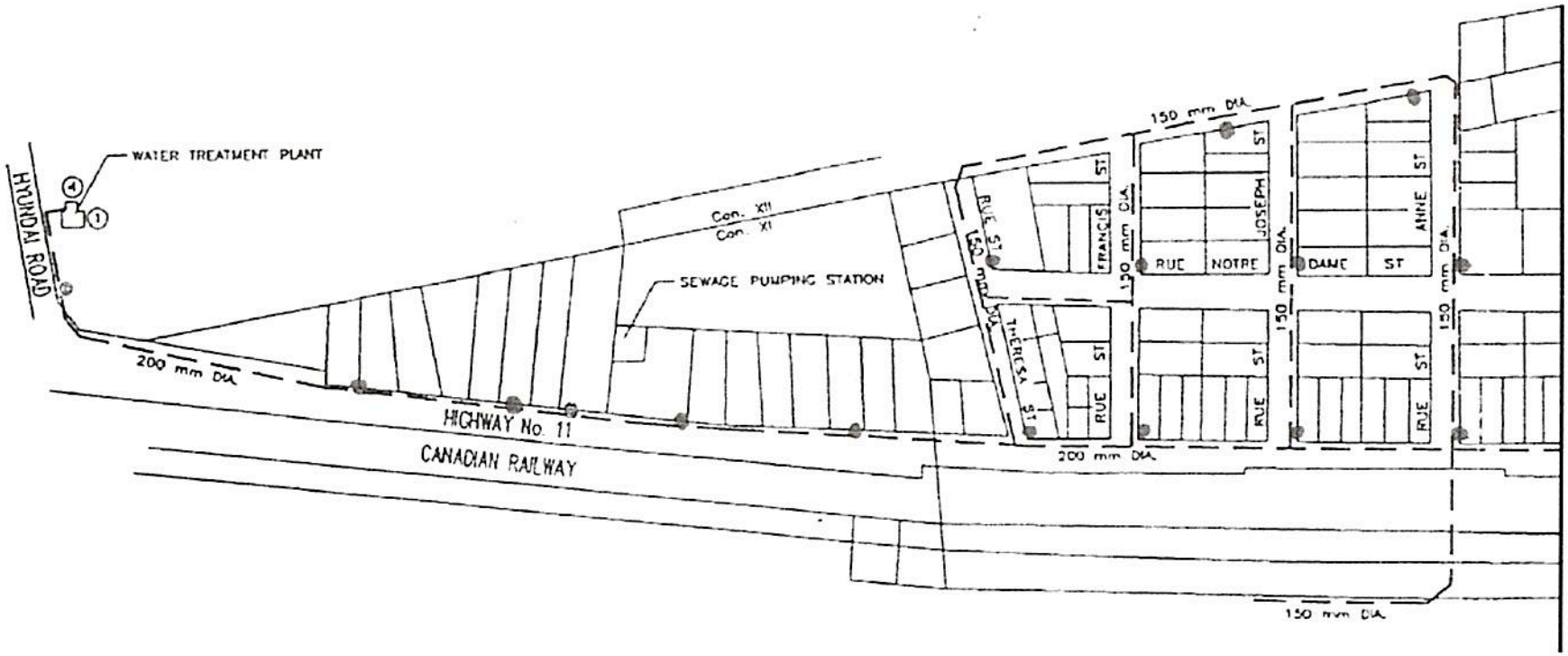


Figure 2 – Opasatika Distribution Map (First Half)

1. Purpose

To document the following for the Opasatika Well Supply System:

- The name of the Owner and Operating Authority; and
- Provide a description of the system, including all applicable water sources, treatment system processes and distribution system components.

2. Definitions

Distribution System - means the part of a drinking water system that is used in the distribution, storage or supply of water and that is not part of a treatment system.

Primary Disinfection - means a process or series of processes intended to remove or inactivate human pathogens such as viruses, bacteria and protozoa in water.

Secondary Disinfection - means a process or series of processes intended to provide and maintain a disinfectant residual in a drinking water system's distribution system, and in plumbing connected to the distribution system, for the purposes of:

(a) protecting water from microbiological re-contamination;
(b) reducing bacterial regrowth;
(c) controlling biofilm formation;
(d) serving as an indicator of distribution system integrity; and

includes the use of disinfectant residuals from primary disinfection to provide and maintain a disinfectant residual in a drinking water system's distribution system for the purposes described in clauses (a) to (d).

Treatment System - means any part of a drinking water system that is used in relation to the treatment of water and includes,

(a) any thing that conveys or stores water and is part of a treatment process, including any treatment equipment installed in plumbing,
(b) any thing related to the management of residue from the treatment process or the management of the discharge of a substance into the natural environment from the system, and
(c) a well or intake that serves as the source or entry point of raw water supply for the system;

3. Procedure

3.1 Drinking Water System Overview

Owner / Operating Authority

The Opasatika Well Supply System is a communal ground water well supply that services the Town of Opasatika. It is owned by the Corporation of the Township of Opasatika and consists of a Class 2 water treatment subsystem and a Class 1 water distribution subsystem. The Ontario Clean Water Agency (OCWA) is the accredited

Characteristic	2017			2018		
	Minimum	Maximum	Average	Minimum	Maximum	Average
Total Coliforms (CFU/100 mL)	0	0	0	0	0	0
Turbidity (NTU)	0.38	5.60	1.47	0.44	10.8	1.74
Temperature (°C)	3.0	9.0	6.5	4.0	9.0	7.0
pH	6.43	7.46	6.99	6.40	7.50	6.98
Iron (mg/L)	3	8	6	1	10	6
Manganese (mg/L)	0.086	0.263	0.157	0.073	0.219	0.145
Colour (TCU)	0	76	16	0	54	17

Common Fluctuations

The water quality remains consistent because well water is not subject to the same fluctuations as surface water.

Threats

The wells are properly sloped and maintained thus infiltration is not an issue. Currently, there are no upstream or downstream processes.

Operational Challenges

On the rare occasion that a power interruption occurs for a prolonged period of time there are emergency generators to assist in keeping the plant running until power is restored.

3.3 Treatment System Description

Water Treatment

Raw water enters the water treatment plant through one common 150 mm raw water main. Once water enters the building it is pre-chlorinated with sodium hypochlorite and injected with potassium permanganate before being directed to the two greensand pressure filters. The greensand filters each have a maximum filtration rate of 15.78 m^3/hr and each contain 0.6 m of greensand, 0.3 m of anthracite and 1.09 m of sand. The greensand filters are set to automatically backwash every 11 hours, however if the filters effluent turbidity or iron levels start to increase the operators will manually backwash the filters. Wastewater generated from the filters being backwashed is directed to a sludge tank before being discharged to the sanitary sewers.

do not, for systems that are connected to another system with different owners, must now include which system is relied upon to ensure the provision of safe drinking water). Moved order of system description to follow the process (e.g., source water first, then treatment, then distribution). Updated the Raw Water Characteristics table with more current data

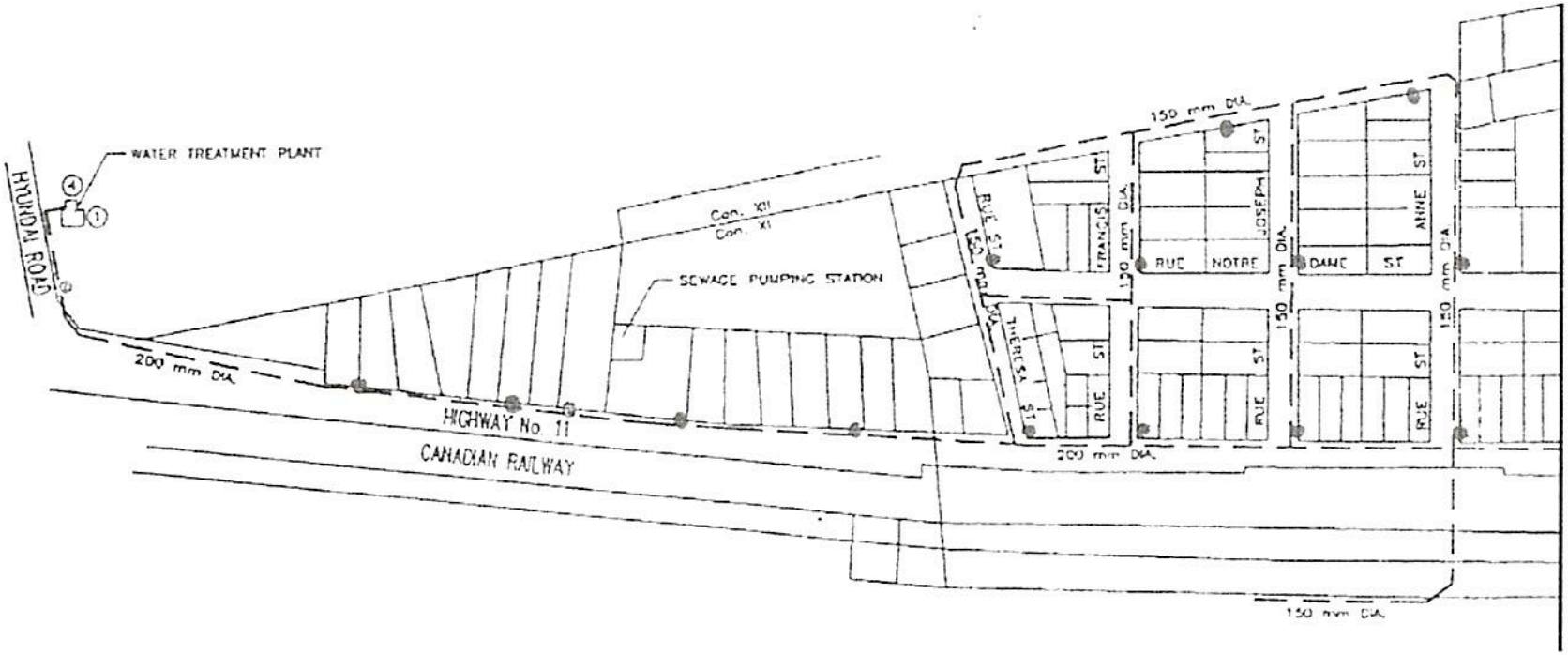


Figure 2 – Opasatika Distribution Map (First Half)

1. Purpose

To document the process for conducting a risk assessment to identify and assess potential hazardous events and associated hazards that could affect drinking water safety.

2. Definitions

Consequence – the potential impact to public health and/or operation of the drinking water system if a hazard/hazardous event is not controlled

Control Measure – includes any processes, physical steps or other practices that have been put in place at a drinking water system to prevent or reduce a hazard before it occurs

Critical Control Point (CCP) – An essential step or point in the subject system at which control can be applied by the Operating Authority to prevent or eliminate a drinking water health hazard or reduce it to an acceptable level

Drinking Water Health Hazard – means, in respect of a drinking water system,

a) a condition of the system or a condition associated with the system's waters, including any thing found in the waters,
    i. that adversely affects, or is likely to adversely affect, the health of the users of the system,
    ii. that deters or hinders, or is likely to deter or hinder, the prevention or suppression of disease, or
    iii. that endangers or is likely to endanger public health,
b) a prescribed condition of the drinking water system, or
c) a prescribed condition associated with the system's waters or the presence of a prescribed thing in the waters

Hazardous Event – an incident or situation that can lead to the presence of a hazard

Hazard – a biological, chemical, physical or radiological agent that has the potential to cause harm

Likelihood – the probability of a hazard or hazardous event occurring

3. Procedure

3.1 Operations Management ensures that operations personnel are assigned to conduct a risk assessment at least once every thirty-six months. At a minimum, the Risk Assessment Team must include the QEMS Representative, at least one Operator for the system and at least one member of Operations Management.

3.2 The QEMS Representative is responsible for coordinating the risk assessment and ensuring that documents and records related to the risk assessment activities are maintained.

Value	Likelihood of Hazardous Event Occurring
1	**Rare** – Estimated to occur every 50 years or more (usually no documented occurrence at site)
2	**Unlikely** – Estimated to occur in the range of 10 – 49 years
3	**Possible** – Estimated to occur in the range of 1 – 9 years
4	**Likely** – Occurs monthly to annually
5	**Certain** – Occurs monthly or more frequently

Value	Consequence of Hazardous Event Occurring
1	**Insignificant** – Little or no disruption to normal operations, no impact on public health
2	**Minor** – Significant modification to normal operations but manageable, no impact on public health
3	**Moderate** – Potentially reportable, corrective action required, potential public health impact, disruption to operations is manageable
4	**Major** – Reportable, system significantly compromised and abnormal operations if at all, high level of monitoring and corrective action required, threat to public health
5	**Catastrophic** – Complete failure of system, water unsuitable for consumption

The likelihood and consequence values are multiplied to determine the risk value (ranking) of each hazardous event. Hazardous events with a ranking of 12 or greater are considered high risk.

3.3.7 Hazardous events and rankings are reviewed and any activity/process step is identified as an additional CCP if all of the following criteria are met:

- ✓ The associated hazardous event has a ranking of 12 or greater;
- ✓ The associated hazardous event can be controlled through control measure(s);
- ✓ Operation of the control measures can be monitored and corrective actions can be applied in a timely fashion;
- ✓ Specific control limits can be established for the control measure(s); and
- ✓ Failure of the control measures would lead to immediate notification of Medical Officer of Health (MOH) or MECP or both.

3.4 The outcomes of the risk assessment are documented as per OP-08 Risk Assessment Outcomes.

RISK ASSESSMENT OUTCOMES

Reviewed by: A. Swanson, PCT | Approved by: Y. Rondeau, SPC Manager

1. Purpose

To document the outcomes of the risk assessment conducted as per OP-07 Risk Assessment.

2. Definitions

Critical Control Point (CCP) – An essential step or point in the subject system at which control can be applied by the Operating Authority to prevent or eliminate a drinking water health hazard or reduce it to an acceptable level

Critical Control Limit (CCL) – The point at which a Critical Control Point response procedure is initiated

3. Procedure

3.1 The QEMS Representative is responsible for updating the information in OP-08A Summary of Risk Assessment Outcomes as required.

3.2 The results of the risk assessment conducted as per OP-07 are documented in Table 2 of OP-08A. This includes:

- Identified potential hazardous events and associated hazards (possible outcomes) for each of the system's activities/process steps;
  Note: Hazards listed in the MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems" are indicated in the appropriate column using the reference numbers in Table 1 of OP-08A.
- Identified control measures to address the potential hazards and hazardous events; and
- Assigned rankings for the hazardous events (likelihood x consequence = risk value) and whether the hazardous event is a Critical Control Point (CCP) (mandatory or additional).
  Note: If the hazardous event is ranked as 12 or higher and it is <u>not</u> being identified as a CCP, provide rationale as to why it does not meet the criteria set out in section 3.3.7 of OP-07).

3.3 Operations Management is responsible for ensuring that for each CCP:

- Critical Control Limits (CCLs) are set;
- Procedures and processes to monitor the CCLs are established; and
- Procedures to respond to, report and record deviations from the CCLs are implemented.

The identified CCPs, their respective CCLs and associated procedures are documented in Table 3 of OP-08A.

3.4 A summary of the results of the annual review/36-month risk assessment is recorded in Table 4 of OP-08A.

Summary of Risk Assessment Outcomes
Opasatika Well Supply System

Table 1: Risk Assessment Table

Note: Processes referred to in section 5.4 of QP-02 Risk Assessment and Risk Assessment Outcomes must be identified as mandatory Critical Control Points (CCPs) as applicable for all OCWA-operated facilities. Mandatory CCPs are not required to be ranked.

Activity/ Process Step	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
Raw Water/Well	Well casing collapse	Loss of raw water	Second well and pump	2	2	4	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No
	Well pump failure	Loss of raw water	Second well and pump, Automatic switchover Site specific Environmental Emergency Procedure for Well Pump Failure	3	2	6	
	Fuel/Chemical Spill	Contamination of aquifer	Monitor and sample Site specific Environmental Emergency Procedure for Off-site Chemical/Fuel Spill Site specific Environmental Emergency Procedure for Contaminated Raw Water	2	4	8	
Sodium Hypochlorite System (pre chlorination for iron and manganese removal)	Chemical feed pump failure	Loss of oxidation, Increased Fe and Mn levels	Consumer complaints Grab samples for in-house testing Spare pump within hub	2	3	8	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No

Activity/ Process Step	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
			Water, Environmental Emergency Procedure for Reporting and Responding to Adverse Chlorine Residuals in Large Municipal Residential Systems, Contingency Plan for Adverse Water/Potential and/or Unsafe Water.				
Sodium Hypochlorite System (for primary disinfection) (continued)	Low supply of sodium hypochlorite	Inadequate disinfection, Potential for AWQI	Low chlorine residual alarms (set point no lower than 0.6 mg/L), Operator checks, Chemical available within hub Standard Operating Procedure for Chlorine Contact Time, Site specific Environmental Emergency Procedure for Low or High Chlorine Residual in Treated Water. Environmental Emergency Procedure for Reporting and Responding to Adverse Chlorine Residuals in Large Municipal Residential Systems, Contingency Plan for Adverse Water/Potential and/or Unsafe Water.				
Clearwell	Low level	Inadequate contact time for primary disinfection Inadequate treated water supply	Schedule maintenance and inspection activities, low level clearwell alarm, town ordered water conservation or ban Site specific EEP for Water Supply Shortage, Low Clearwell Level Alarm and Reservoir	3	3	9	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No

Activity/ Process Step	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
			Adverse Chlorine Residuals in Large Municipal Residential Systems				
Water Treatment System	Power failure	Loss of treated water supply	Back-up diesel generator, Scheduled maintenance activities for back-up generator, Site specific Environmental Emergency Procedure for Power Failure of Long Duration, Site specific Environmental Emergency Procedure for Standby Power Failure.	4	1	4	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No
	Vandalism/terrorism	Contamination of the water supply, Damage to critical equipment	Locked (water plant , well house), Signage, Alarmed, Visited routinely by OCWA staff, Site specific Environmental Emergency Procedure for Vandalism or Suspected Unauthorized Entry.	2	4	8	
Distribution System	Adverse Water Quality Result as described in O. Reg. 170/03	Potential for unsafe drinking water	Site specific SOP Sampling Schedule EEP for Reporting and Responding to Adverse Results in Large Municipal Residential Systems (several EEPs)				☒ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☐ No
	Main Break	Contamination, Loss of supply	SOPs, upstream/downstream sampling, training, AWWA standards and Ontario's Watermain Disinfection Procedure	3	3	9	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No
	Cross connection/ Backflow, siphonage	Contamination	Design standards; Respond to complaints, Bacti monitoring	2	3	6	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No

Table 2: Identified Critical Control Points (CCPs)

CCP	Critical Control Limits	Monitoring Procedures	Response, Reporting and Recording Procedures
Sodium Hypochlorite System (Chemical Feed)	**Chlorine Residual Alarms – Plant** Free Chlorine Set Points: Low alarm: no lower than 0.60 mg/L High alarm: no higher than 2.95 mg/L Total Chlorine Set Points: Low alarm: no lower than 0.70 mg/L High alarm: no higher than 2.8 mg/L	SCADA (continuous online analyzers), Regular daily operator checks via remote monitoring system, On-site checks routinely by OCWA staff Trend review and sign-off as per O. Reg. 170/03.	Refer to: • Site specific Standard Operating Procedure for Chlorine Contact Time • Site specific Environmental Emergency Procedure for Chlorine Pump Failure • Site specific Environmental Emergency Procedure for Low or High Chlorine Residual in Treated Water, • Environmental Emergency Procedure for Reporting and Responding to Adverse Chlorine Residuals in Large Municipal Residential Systems.
Secondary Disinfection	**Chlorine Residual - Distribution** **Free:** Low - 0.05 mg/L High - 4.0 mg/L **Combined:** Low = 0.25 mg/L High = 3.0 mg/L	Distribution chlorine residuals monitored as per O. Reg. 170/03.	Refer to: • Environmental Emergency Procedure for Reporting and Responding to Adverse Chlorine Residuals in Large Municipal Residential Systems

Note: Standard Operating Procedures (SOPs) referenced in Tables 1 and 2 are controlled as QP-01 Document and Records Control.

Revision History

Date	Revision	Reason for Revision
2010 May 30	0	Initial risk assessment conducted
2011 Sep 09	1	Template revised to include 'Record of Annual Review/36-Month Risk Assessment' (Table 3)
2013 Mar 08	2	Table 3 was updated
2013 Jul 23	3	Risk Assessment Conducted on June 17, 2013
2014 Sep 23	4	Table 3 was updated
2015 Sep 22	5	Table 3 was updated
2016 Apr 28	6	Risk Assessment Conducted and Table 3 updated
2017 Apr 26	7	Table 3 was updated
2018 Apr 27	8	Table 3 was updated

Summary of Risk Assessment Outcomes
Opasatika Well Supply System

Table 1: Risk Assessment Table

Note: Processes referred to in section 5.4 of QP-02 Risk Assessment and Risk Assessment Outcomes must be identified as mandatory Critical Control Points (CCPs) as applicable for all OCWA-operated facilities. Mandatory CCPs are not required to be ranked.

Activity/ Process Step	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
Raw Water/Well	Well casing collapse	Loss of raw water	Second well and pump	2	2	4	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No
	Well pump failure	Loss of raw water	Second well and pump, Automatic switchover Site specific Environmental Emergency Procedure for Well Pump Failure	3	2	6	
	Fuel/Chemical Spill	Contamination of aquifer	Monitor and sample Site specific Environmental Emergency Procedure for Off-site Chemical/Fuel Spill Site specific Environmental Emergency Procedure for Contaminated Raw Water	2	4	8	
Sodium Hypochlorite System (pre chlorination for iron and manganese removal)	Chemical feed pump failure	Loss of oxidation, Increased Fe and Mn levels	Consumer complaints Grab samples for in-house testing Spare pump within hub	2	3	8	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No

Activity/ Process Step	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
			Water, Environmental Emergency Procedure for Reporting and Responding to Adverse Chlorine Residuals in Large Municipal Residential Systems, Contingency Plan for Adverse Water/Potential and/or Unsafe Water.				
Sodium Hypochlorite System (for primary disinfection) (continued)	Low supply of sodium hypochlorite	Inadequate disinfection, Potential for AWQI	Low chlorine residual alarms (set point no lower than 0.6 mg/L), Operator checks, Chemical available within hub Standard Operating Procedure for Chlorine Contact Time, Site specific Environmental Emergency Procedure for Low or High Chlorine Residual in Treated Water. Environmental Emergency Procedure for Reporting and Responding to Adverse Chlorine Residuals in Large Municipal Residential Systems, Contingency Plan for Adverse Water/Potential and/or Unsafe Water.				
Clearwell	Low level	Inadequate contact time for primary disinfection Inadequate treated water supply	Schedule maintenance and inspection activities, low level clearwell alarm, town ordered water conservation or ban Site specific EEP for Water Supply Shortage, Low Clearwell Level Alarm and Reservoir	3	3	9	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No

Activity/ Process Step	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
			Adverse Chlorine Residuals in Large Municipal Residential Systems				
Water Treatment System	Power failure	Loss of treated water supply	Back-up diesel generator, Scheduled maintenance activities for back-up generator, Site specific Environmental Emergency Procedure for Power Failure of Long Duration, Site specific Environmental Emergency Procedure for Standby Power Failure.	4	1	4	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No
	Vandalism/terrorism	Contamination of the water supply, Damage to critical equipment	Locked (water plant , well house), Signage, Alarmed, Visited routinely by OCWA staff, Site specific Environmental Emergency Procedure for Vandalism or Suspected Unauthorized Entry.	2	4	8	
Distribution System	Adverse Water Quality Result as described in O. Reg. 170/03	Potential for unsafe drinking water	Site specific SOP Sampling Schedule EEP for Reporting and Responding to Adverse Results in Large Municipal Residential Systems (several EEPs)				☒ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☐ No
	Main Break	Contamination, Loss of supply	SOPs, upstream/downstream sampling, training, AWWA standards and Ontario's Watermain Disinfection Procedure	3	3	9	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No
	Cross connection/ Backflow, siphonage	Contamination	Design standards; Respond to complaints, Bacti monitoring	2	3	6	☐ Yes – Mandatory CCP ☐ Yes – Additional CCP identified for facility ☒ No

Table 2: Identified Critical Control Points (CCPs)

CCP	Critical Control Limits	Monitoring Procedures	Response, Reporting and Recording Procedures
Sodium Hypochlorite System (Chemical Feed)	**Chlorine Residual Alarms – Plant** Free Chlorine Set Points: Low alarm: no lower than 0.60 mg/L High alarm: no higher than 2.95 mg/L Total Chlorine Set Points: Low alarm: no lower than 0.70 mg/L High alarm: no higher than 2.8 mg/L	SCADA (continuous online analyzers), Regular daily operator checks via remote monitoring system, On-site checks routinely by OCWA staff Trend review and sign-off as per O. Reg. 170/03.	Refer to: • Site specific Standard Operating Procedure for Chlorine Contact Time • Site specific Environmental Emergency Procedure for Chlorine Pump Failure • Site specific Environmental Emergency Procedure for Low or High Chlorine Residual in Treated Water, • Environmental Emergency Procedure for Reporting and Responding to Adverse Chlorine Residuals in Large Municipal Residential Systems.
Secondary Disinfection	**Chlorine Residual - Distribution** **Free:** Low - 0.05 mg/L High - 4.0 mg/L **Combined:** Low = 0.25 mg/L High = 3.0 mg/L	Distribution chlorine residuals monitored as per O. Reg. 170/03.	Refer to: • Environmental Emergency Procedure for Reporting and Responding to Adverse Chlorine Residuals in Large Municipal Residential Systems

Note: Standard Operating Procedures (SOPs) referenced in Tables 1 and 2 are controlled as QP-01 Document and Records Control.

Revision History

Date	Revision	Reason for Revision
2010 May 30	0	Initial risk assessment conducted
2011 Sep 09	1	Template revised to include 'Record of Annual Review/36-Month Risk Assessment' (Table 3)
2013 Mar 08	2	Table 3 was updated
2013 Jul 23	3	Risk Assessment Conducted on June 17, 2013
2014 Sep 23	4	Table 3 was updated
2015 Sep 22	5	Table 3 was updated
2016 Apr 28	6	Risk Assessment Conducted and Table 3 updated
2017 Apr 26	7	Table 3 was updated
2018 Apr 27	8	Table 3 was updated

ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

1. Purpose

To document the following for the Opasatika Well Supply System:

- Owner;
- Organizational structure of the Operating Authority;
- QEMS roles, responsibilities and authorities of staff, Top Management and individuals/groups that provide corporate oversight; and
- Responsibilities for conducting the Management Review

2. Definitions

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

Senior Leadership Team (SLT) – members include President and CEO, Executive Vice President and General Counsel, Vice Presidents of OCWA's business units and Regional Hub Managers

Top Management – a person, persons or a group of people at the highest management level within an operating authority that makes decisions respecting the QMS and recommendations to the owner respecting the subject system or subject systems

Operations Personnel – Employees of the drinking water system who perform various activities related to the compliance, operations and maintenance of the drinking water system that may directly affect drinking water quality

3. Procedure

3.1 Organizational Structure

The Opasatika Well Supply System is owned by the Corporation of the Township of Opasatika and is represented by the Mayor, Clerk-Treasurer and Council.

The organizational structure of OCWA, the Operating Authority, is outlined in appendix OP-09A: Organizational Structure.

3.2 Top Management

Top Management for the Opasatika Well Supply System consists of:

- Operations Management – Hearst Cluster
- Regional Hub Manager – Northeastern Ontario Regional Hub
- Safety, Process & Compliance Manager – Northeastern Ontario Regional Hub

3.4 Regional Hub Roles, Responsibilities and Authorities

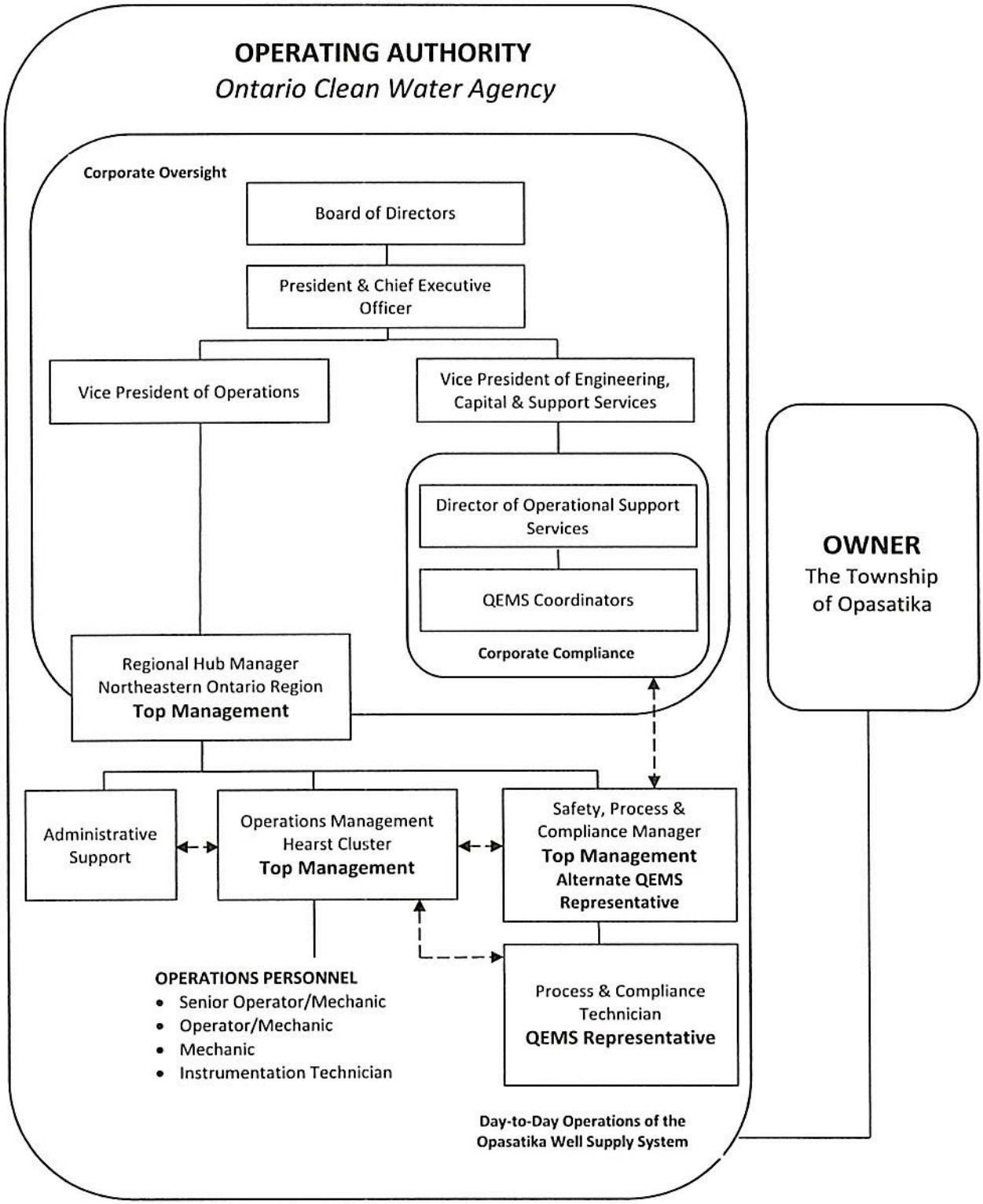
QEMS roles, responsibilities and authorities of Northeastern Ontario Regional Hub personnel are summarized in Table 9-2 below. This information is kept current as per the Document and Records Control procedure (OP-05) and is communicated to staff as per the Communications procedure (OP-12).

Additional duties of employees are detailed in their job specifications and in the various QEMS programs and procedures that form, or are referenced in, this Operational Plan.

Table 9-2: QEMS Roles, Responsibilities and Authorities for the Regional Hub

Role	Responsibilities and Authorities
All Operations Personnel	• Perform duties in compliance with applicable legislative and regulatory requirements • Be familiar with the QEMS Policy and work in accordance with QEMS programs and procedures • Maintain operator certification (as required) • Attend/participate in training relevant to their duties under the QEMS • Document all operational activities • Identify potential hazards at their facility that could affect the environmental and/or public health and report to Operations Management • Report and act on all operational incidents • Recommend changes to improve the QEMS
Regional Hub Manager (Top Management)	• Oversee the administration and delivery of contractual water/wastewater services on a Regional Hub level • Fulfill role of Top Management • Ensure corporate QEMS programs and procedures are implemented consistently throughout the Regional Hub • Manages the planning of training programs for Regional Hub • Report to VP of Operations/SLT on the regional performance of the QEMS and any need for Agency-wide improvement
Operations Management (Top Management)	• Manage the day-to-day operations and maintenance of his/her assigned facilities and supervise facility operational staff • Fulfill role of Top Management • Ensure corporate and site-specific QEMS programs and procedures are implemented at his/her assigned facilities • Determine necessary action and assign resources in response to operational issues • Report to the Regional Hub Manager on facility operational performance • Ensure operational training is provided for the cluster (in consultation with the SPC Manager as required)

Role	Responsibilities and Authorities
	• Act for management during vacations or periodic absences. • Perform duties of Operator/Mechanic as required • May act as Operator-in-Charge (OIC) and/or Overall Responsible Operator (ORO) when required. Refer to ORO Letter.
Operator/Mechanic	• Perform duties as assigned by Operations Management or designate • Monitor, maintain and operate facilities in accordance with applicable regulations, approvals and established operating procedures • Collect samples and perform laboratory tests and equipment calibrations as required • Regularly inspect operating equipment, perform routine preventive maintenance and repairs and prepare and complete work orders as assigned • Participate in facility inspections and audits • May act as Operator-in-Charge (OIC) and/or Overall Responsible Operator (ORO) when required. Refer to ORO Letter.
Mechanic	• Perform duties as assigned by Operations Management or designate • Act as lead with other staff on extensive maintenance/repair projects • Schedule and perform maintenance on equipment and processes in accordance with established procedures and record the maintenance data • Regularly inspect operating equipment, perform routine preventive maintenance and repairs
Instrumentation Technician	• Provide advice and technical expertise on the services required for process control and automation systems • Discuss and advise on detailed system and programming requirements, modify existing and new software in response to plant requests, analyze and resolve problems/error conditions, document changes/modifications and configure, install and support related software, hardware and network for such systems • Conduct inspections of the process control and automation systems to validate that all is operating within established parameters as requested • Install and commission new electrical/electronic equipment and automation systems
Data Clerk	• Support the administrative functions of the regional hub/cluster/facility including coordinating delivery of training as directed • Assist with entering operational data (including operational


OPERATING AUTHORITY
Ontario Clean Water Agency
Corporate Oversight
Board of Directors
President & Chief Executive Officer
Vice President of Operations
Vice President of Engineering, Capital & Support Services
Director of Operational Support Services
QEMS Coordinators
Corporate Compliance
Regional Hub Manager Northeastern Ontario Region
Top Management
Administrative Support
Operations Management Hearst Cluster
Top Management
Safety, Process & Compliance Manager
Top Management
Alternate QEMS Representative
OPERATIONS PERSONNEL
Senior Operator/Mechanic
Operator/Mechanic
Mechanic
Instrumentation Technician
Process & Compliance Technician
QEMS Representative
Day-to-Day Operations of the Opasatika Well Supply System
OWNER
The Township of Opasatika

1. Purpose

To document a procedure that describes:

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

2. Definitions

Competence – the combination of observable and measurable knowledge, skills, and abilities which are required for a person to carry out assigned responsibilities

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

Operations Personnel – employees of the drinking water system who perform various activities related to the compliance, operations and maintenance of the drinking water system that may directly affect drinking water quality

Top Management – a person, persons or a group of people at the highest management level within an operating authority that makes decisions respecting the QMS and recommendations to the Owner respecting the subject system or subject systems

3. Procedure

3.1 The following table presents the minimum competencies required by operations personnel.

Position	Required Minimum Competencies
Operations Management	• Valid operator certification • Experience and/or training in managing/supervising drinking water system operations, maintenance, financial planning and administration • Training and/or experience related to drinking water system processes, principles and technologies • Training on OCWA's QEMS and the DWQMS • Training on relevant legislation, regulations, codes, policies, guidelines and procedures • Experience using computers and operational computerized systems

Position	Required Minimum Competencies
	• Experience in conducting management system audits or internal auditor education/training • Training on OCWA's QEMS and the DWQMS • Training on relevant legislation, regulations, codes, policies, guidelines and procedures • Experience using computers and operational computerized systems
Instrumentation Technician	• Valid operator certification • Experience and/or training in monitoring, programming, installing and troubleshooting network, hardware, software and instrumentation • Experience and/or training in drinking water system processes, design, instrumentation, process control and automation systems • Training on OCWA's QEMS and the DWQMS • Training on relevant legislation, regulations, codes, policies, guidelines and procedures • Experience using computers and operational computerized systems

3.2 The following table presents the minimum competencies required by staff that provide administrative support to operations personnel

Position	Required Minimum Competencies
Data Clerk	• Experience and/or training related to procurement and business administration practices • Awareness of OCWA's QEMS and the DWQMS • Awareness of relevant legislation, regulations, codes, policies, guidelines and procedures • Experience using computers

3.3 OCWA's recruiting and hiring practices follow those of the Ontario Public Service (OPS). As part of the OPS, minimum competencies, which include education, skills, knowledge and experience requirements, are established when designing the job description for a particular position. As part of the recruitment process, competencies are then evaluated against the job description. Based on this evaluation, the hiring manager selects and assigns personnel for specific duties.

3.4 OCWA's Operational Training Program aims to:

- Develop the skills and increase the knowledge of staff and management;
- Provide staff with information and access to resources that can assist them in performing their duties; and
- Assist OCWA certified operators in meeting the legislative and regulatory requirements with respect to training.

3.12 Individual OCWA employee training records are maintained and tracked using a computerized system, the Training Summary database, which is administrated by OCWA's Training Department.

4. Related Documents

OCWA's Mandatory Compliance Training list (OCWA intranet)
OCWA's Training Resources (OCWA Intranet)
OCWA's Training Summary Database
Performance Planning and Review (PPR) Database
OP-5 Document and Records Control

5. Revision History

Date	Revision #	Reason for Revision
2018 12 19	0	Procedure issued – Information within OP-10 (s. 3) was originally set out in Appendix J (revision 3, dated January 22, 2014) of the Opasatika Well Supply System Operational Plan. New Purpose, Definitions, Procedure, Related Documents and separate Revision History sections. Added definitions for Operations Management and Operations Personnel and throughout procedure replaced 'Senior Operations Manager' references with 'Operations Management'. Modified table in procedure (s. 3.1 and s. 3.2): removed/revised non-measurable competencies, added the word 'minimum' to competencies; removed 'Valid Class G Driver's License' listed under individual positions and referenced in s. 3.11; added competencies for SPC Manager and Data Clerk and merged competencies for Senior Operations Manager and Operations Manager under Operations Management. Updated training sections (s. 3.4 to s. 3.7) to reference new Environmental 101 course, Mandatory Compliance Training list and removed specific references to Orientation Training Program. Added s. 3.11 related to ensuring operators make Operations Management aware of changes to operator certification and other certificates/licenses. Other minor changes to wording.

PERSONNEL COVERAGE

Reviewed by: A. Swanson, PCT | Approved by: Y. Rondeau, SPC Manager

1. Purpose

To describe the procedure for ensuring that sufficient and competent personnel are available for duties that directly affect drinking water quality at the Opasatika Well Supply System.

2. Definitions

Competency – an integrated set of requisite skills and knowledge that enables an individual to effectively perform the activities of a given occupation *

Essential Services – services that are necessary to enable the employer to prevent,

(a) danger to life, health or safety,
(b) the destruction or serious deterioration of machinery, equipment or premises,
(c) serious environmental damage, or
(d) disruption of the administration of the courts or of legislative drafting.

(*Crown Employees Collective Bargaining Act*, 1993)

3. Procedure

3.1 Operations Management ensures that personnel meeting the competencies identified in OP-10 Competencies are available for duties that directly affect drinking water quality.

3.2 The Opasatika Well Supply System is considered an un-manned facility. OCWA operations personnel routinely visit the system twice per week and monitor the facility daily using OCWA's remote monitoring SCADA system

OCWA operators are available 24 hours a day, 7 days a week by an alarm system and cell phone.

3.3 Operations personnel are assigned to act as and fulfill the duties of Overall Responsible Operator (ORO) and Operator-in-Charge (OIC) in accordance with SDWA O. Reg. 128/04.

A properly certified operator is designated as ORO. When the ORO is unavailable, the alternate is designated as the ORO and is recorded as such in the facility logbook (refer to the ORO Letter).

The designated OIC for each shift is recorded in the facility logbook.

3.4 The Senior Operations Manager (or designate) assigns an on-call operator for the time that the facility is un-staffed (i.e., evenings, weekends and Statutory Holidays). The

* Based on the *2005 National Occupational Guidelines for Canadian Water and Wastewater Operators* and International Board of Standards for Training, Performance and Instruction

PERSONNEL COVERAGE

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

Date	Revision #	Reason for Revision
2011 09 09	1	Procedure 5.9 was added to reference contingency planning for Critical Shortage of Staff
2013 03 08	2	Updated managerial title changes – Operations Manager is now the Senior Operations Manager and Cluster Manager is now the Operations Manager. References to Process Compliance Manager have been replaced with Senior Operations Manager or removed if redundant.
2018 12 19	3	Appendix K, QP-03 procedure renamed OP-11. Removed Scope and Responsibilities sections. Other minor edits in wording.

1. Purpose

To describe the procedure for facility level internal and external QEMS-related communications between Top Management and:

- OCWA staff;
- the Owner;
- essential suppliers and service providers (as identified in OP-13); and
- the public.

2. Definitions

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

Operations Personnel – employees of the drinking water system who perform various activities related to the compliance, operations and maintenance of the drinking water system that may directly affect drinking water quality.

3. Procedure

3.1 Operations Management and the QEMS Representative are responsible for identifying and coordinating any site-specific communications in relation to the status/ development of the facility's QEMS

3.2 Internal and external communication responsibilities and reporting requirements for emergency situations are set out under OCWA's Emergency Management Program (i.e., Facility Emergency Plan and OCWA's Emergency Response Plan). Refer to OP-18 Emergency Management for more information.

3.3 Communication with OCWA staff:

3.3.1 Within the first year of hire, all staff are required to complete the Environmental Compliance 101 (EC101) course. The objective of the EC 101 course is to ensure that staff are aware of applicable legislative and regulatory requirements and of OCWA's QEMS and to reinforce their roles and responsibilities under OCWA's QEMS.

3.3.2 Operations Management are responsible for ensuring operations personnel receive site-specific training on the Operational Plan, the organizational structure for the facility including the roles and responsibilities and authorities (outlined in OP-09 Organizational Structure, Roles, Responsibilities and Authorities), QEMS Procedures and other related operating instructions and procedures as part of the orientation process and on an on-going basis as required.

3.5 Communications with Essential Suppliers and Service Providers:

3.5.1 Communication requirements to ensure essential suppliers and service providers understand the relevant OCWA QEMS policies, procedures and expectations are described in OP-13 Essential Supplies and Services.

3.6 Communication with the Public:

3.6.1 Media enquiries must be directed to the facility's designated media spokesperson as identified in the Facility Emergency Plan. The media spokesperson coordinates with local and corporate personnel (as appropriate) and the Owner in responding to media enquiries.

3.6.2 OCWA's QEMS and QEMS Policy are communicated to the public through OCWA's public website. The QEMS Policy is also posted at the Hearst Water Treatment Plant.

3.6.3 Facility tours of interested parties must be approved in advance by the Owner. A record of any tour is made in the facility logbook.

3.6.4 All complaints, whether received from the consumer, the community or other interested parties, are documented on a Community Complaint form. As appropriate, the Operations Management or the Senior Operator ensures that the Owner is informed of the complaint and/or an action is developed to address the issue in a timely manner. The QEMS Representative ensures that consumer feedback is included for discussion at the Management Review.

4. Related Documents

Community Complaint Form
Emergency Response Plan
Facility Emergency Plan
OP-05 Document and Records Control
OP-09 Organizational Structure, Roles, Responsibilities and Authorities
OP-13 Essential Supplies and Services
OP-18 Emergency Management
OP-20 Management Review

5. Revision History

Date	Revision #	Reason for Revision
2010 05 30	0	Procedure issued
2011 09 09	1	Correction of some employee titles and update to Procedure 5.2 to include information how revisions are communicated

ESSENTIAL SUPPLIES AND SERVICES

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

1. Purpose

To describe OCWA's procedures for procurement and for ensuring the quality of essential supplies and services.

2. Definitions

Essential Supplies and Services – supplies and services deemed to be critical to the delivery of safe drinking water

3. Procedure

3.1 Essential supplies and services for the Opasatika Well Supply System are contained in the Facility Emergency Plan on the Essential Supplies and Services List. The list is reviewed at least once every calendar year by the QEMS Representative and updated as required.

3.2 Purchasing is conducted in accordance with OCWA's Corporate Procurement and Administration policies, procedures and guidelines, which are adopted from those of the Ontario Public Service.

Purchases of capital equipment are subject to formal approval by the facility's owner.

3.3 As part of the corporate procurement process, potential suppliers/service providers are informed of relevant aspects of OCWA's QEMS through the tendering process and through specific terms and conditions set out in our agreements and purchase orders. Essential suppliers and service providers (including those contracted locally) are sent a letter that provides an overview of the relevant aspects of the QEMS.

3.4 Contractors are selected based on their qualifications and ability to meet the facility's needs without compromising operational performance and compliance with applicable legislation and regulations.

Contracted personnel including suppliers may be requested or required to participate in additional relevant training/orientation activities to ensure conformance with facility procedures and to become familiar with OCWA workplaces.

If necessary, appropriate control measures are implemented while contracted work is being carried out and communicated to all relevant parties to minimize the risk to the integrity of the drinking water system and the environment.

3.5 All third-party drinking water testing services are provided by accredited and licensed laboratories. The Ministry of the Environment, Conservation and Parks (MECP) has agreement with The Canadian Association for Laboratory Accreditation (CALA) for accreditation of laboratories testing drinking water. The QEMS Representative is

ESSENTIAL SUPPLIES AND SERVICES

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

Date	Revision #	Reason for Revision
2018 12 19	3	Appendix M, QP-05 procedure renamed OP-13. Removed Scope and Responsibilities sections. Changes to wording to provide clarification on ensuring quality of essential supplies and services (s. 3.5, 3.6, 3.7 and 3.9).

REVIEW AND PROVISION OF INFRASTRUCTURE

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

1. Purpose

To describe OCWA's procedure for reviewing the adequacy of infrastructure necessary to operate and maintain the Opasatika Well Supply System

2. Definitions

Infrastructure – the set of interconnected structural elements that provide the framework for supporting the operation of the drinking water system, including buildings, workspace, process equipment, hardware, software and supporting services, such as transport or communication

3. Procedure

3.1 At least once every calendar year, Operations Management in conjunction with operations personnel (Senior Operator, PCT, operators, mechanics and instrumentation technicians) conducts a review of the drinking water system's infrastructure to assess its adequacy for the operation and maintenance of the system. Operations personnel assist with identifying the need for infrastructure repairs, replacements or alterations and with prioritizing each identified item. Documents and records that are reviewed may include:

- Maintenance records
- Call-in reports
- Adverse Water Quality Incidents (AWQIs) or other incidents
- Health & Safety Inspections
- MECP Inspection Reports
- QEMS Audit Reports

3.2 The outcomes of the risk assessment documented as per OP-08 are considered as part of this review.

3.3 The output of the review is a 5 year rolling Recommended Capital and Major Maintenance Report to assist the Owner and OCWA with planning infrastructure needs for the short and long-term. A letter, summarizing capital works recommendations and estimated expenditures for the upcoming year, is submitted to the Owner for review and approval. A capital letter is submitted, at least once every calendar year by Operations Management.

3.4 The final approved capital items form the long term forecast for any major infrastructure maintenance, rehabilitation and renewal activities as per OP-15.

3.5 Operations Management ensures that results of this review are considered during the Management Review process (OP-20).

INFRASTRUCTURE MAINTENANCE, REHABILITATION AND RENEWAL

1. Purpose

To describe OCWA's infrastructure maintenance, rehabilitation and renewal program for the Opasatika Well Supply System

2. Definitions

Infrastructure – the set of interconnected structural elements that provide the framework for supporting the operation of the drinking water system, including buildings, workspace, process equipment, hardware, software and supporting services, such as transport or communication

Rehabilitation – the process of repairing or refurbishing an infrastructure element.

Renewal – the process of replacing the infrastructure elements with new elements.

3. Procedure

3.1 OCWA, under contract with the Owner, maintains a computerized Work Management System (WMS) to manage maintenance, rehabilitation and renewal of infrastructure for which it is operationally responsible. The major components of the WMS consist of planned maintenance, unplanned maintenance, rehabilitation, renewal and program monitoring and reporting.

3.1.1 Planned Maintenance

Routine planned maintenance activities include:

- Inspect, adjust and calibrate process control equipment to ensure proper operation of water systems, pumps, chemical feeders, and all other equipment installed at the facilities.
- Inspect reservoir
- Perform routine maintenance duties to equipment including checking machinery and electrical equipment when required.
- Maintain an inventory of all equipment
- Maintain accurate records of work conducted, activities, and achievements.

Planned maintenance activities are scheduled in the WMS that allows the user to:

- Enter detailed asset information;
- Generate and process work orders;
- Access maintenance and inspection procedures;
- Plan preventive maintenance and inspection work;
- Plan, schedule and document all asset related tasks and activities; and
- Access maintenance records and asset histories.

operation and maintenance of the system. (Refer to OP-14 Review and Provision of Infrastructure).

To assist in monitoring the effectiveness of the program Operations Management (or designate) are provided monthly summary reports which are automatically generated and emailed from WMS.

3.2 OCWA's infrastructure maintenance, rehabilitation and renewal program is initially communicated to the Owner through the operating agreement. OCWA's program is communicated to the Owner on an on-going basis through operational reports and at a minimum once every calendar year through submission of the capital letter and the results of the Management Review.

4. Related Documents

Capital and Major Maintenance Recommendations Report
Capital Letter & Acknowledgement/Approval from the Owner
Minutes of Management Review
OP-05 Document and Records Control
OP-14 Review and Provision of Infrastructure

5. Revision History

Date	Revision #	Reason for Revision
2018 12 19	0	Procedure issued – Information within OP-15 (s. 3) was originally set out in Appendix O (last revision 3, dated January 22, 2014). of the Opasatika Well Supply System Operational Plan. New Purpose, Definitions, Procedure, Related Documents and separate Revision History sections. Added the requirement to ensure the long term forecast is reviewed at once every calendar year and to document a long term forecast (s. 3.1.3) to reflect in DWQMS v. 2.0. Minor wording updates to reflect OCWA's current WMS.

SAMPLING, TESTING AND MONITORING

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

1. Purpose

To describe the procedure for sampling, testing and monitoring for process control and finished drinking water quality

2. Definitions

Challenging Conditions – any existing characteristic of the water source or event-driven fluctuations that impact the operational process as identified and listed under OP-06 Drinking Water System

3. Procedure

3.1 All sampling, monitoring and testing is conducted at a minimum in accordance with SDWA O. Reg. 170/03 and the facility's Municipal Drinking Water License (MDWL).

3.2 Sampling requirements for the facility are defined in the facility's sampling schedule which is available to operations personnel, at the location(s) noted in OP-05 Document and Records Control. The sampling schedule is maintained by the PCT and is updated as required.

3.3 Samples that are required to be tested by an accredited and licensed laboratory, are collected, handled and submitted according to the directions provided by the licensed laboratory(ies) that conducts the analysis. The laboratory(ies) used for this facility are listed in the Essential Supplies and Services List (within the Facility Emergency Plan (FEP)).

Electronic and/or hardcopy reports received from the laboratory are maintained as per OP-05 Document and Records Control. Analytical results from laboratory reports are uploaded into OCWA's Process Data Management system (PDM).

3.4 Continuous monitoring equipment is used to sample and test for the following parameters related to process control and finished drinking water quality:

- Raw and treated water flow rates
- Treated Turbidity
- Clear Well Level
- Distribution pressures

Test results from continuous monitoring equipment are captured by OCWA's SCADA system and are reviewed by a certified operator in accordance with the requirements of SDWA O. Reg. 170/03. A Data Review Protocol and a Standard Operating Procedure for the Continuous Monitoring of Operational Parameters for Drinking Water Systems are available in the systems Operations Manual.

Owners are provided Operations Reports which discusses regulatory results and operational issues. Owners are also provided with an annual summary of sampling, testing and monitoring results through the SDWA O. Reg. 170/03 Section 11 - Annual Report, Schedule 22 - Municipal Summary Report and through the Management Review process outlined in OP-20 Management Review.

In addition, updates regarding sampling, testing and monitoring activities are provided as per the operating agreement and during regular client meetings.

4. Related Documents

Annual Report (O. Reg. 170 Section 11)
Continuous Monitoring of Operational Parameters for Drinking Water Systems SOP
Data Review Protocol
Facility Emergency Plan (FEP) Binder
Facility Logbook
Facility Round Sheets
Laboratory Analysis Reports
Laboratory Chain of Custody Forms
Municipal Summary Report (O. Reg. 170 Schedule 22)
Process Data Management System (PDM)
Quarterly Operations Reports
Reporting and Responding to Adverse Results (EEPs)
Sampling Schedule
OP-05 Document and Records Control
OP-06 Drinking Water System
OP-20 Management Review

5. Revision History

Date	Revision #	Reason for Revision
2010 05 30	0	Procedure issued
2011 09 09	1	Addition of Process and Compliance Manager (3.0 Responsibility) and clarification of sampling under 5.0 Procedure
2013 03 08	2	Updated managerial title changes – Operations Manager is now the Senior Operations Manager and Cluster Manager is now the Operations Manager. References to Process Compliance Manager have been replaced with Senior Operations Manager or removed if redundant. Updated chemical reading frequency (5.4)
2017 05 18	3	Replaced references to PDC with PDM and added reference to client reports to related documents section
2018 12 19	4	Appendix P, QP-07 procedure renamed OP-16. Removed Scope and Responsibilities sections. Updated s. 3.1 to reference Municipal Drinking Water License and s. 3.2 to reference sampling calendar/plan and removed sampling table. Expanded information related to accredited and

MEASUREMENT AND RECORDING EQUIPMENT CALIBRATION AND MAINTENANCE

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

1. Purpose

To describe the procedure for the calibration and/or verification and maintenance of measurement and recording equipment at the Opasatika Well Supply System

2. Definitions

None

3. Procedure

3.1 All measurement and recording equipment calibration and maintenance activities must be performed by appropriately trained and qualified personnel or by a qualified third-party calibration service provider (refer to OP-13 Essential Supplies and Services).

3.2 The Instrumentation Technician establishes and maintains a list of measurement and recording devices and associated calibration and/or verification schedules using the automated Work Management System (WMS). When a new device is installed, it is added to the WMS system by a primary user. The new device is tagged with a unique identification number and the maintenance schedule is set up. Work orders are then automatically generated as per the schedule (refer to OP-15 Infrastructure Maintenance, Rehabilitation and Renewal).

3.3 Details regarding the results of the calibration and/or verification are recorded within each individual work order generated by the WMS, and in the facility logbook.

3.4 Calibration and maintenance activities are carried out in accordance with procedures specified in the manufacturer's manual, instructions specified in WMS or OCWA's calibration procedures.

3.5 Standards, reagents and/or chemicals that may be utilized during calibration and/or verification and/or maintenance activities are verified before use to ensure they are not expired. Any expired standards, reagents and/or chemicals are appropriately disposed of and are replaced with new standards, reagents and/or chemicals as applicable.

3.6 Any measurement device which does not meet its specified performance requirements during calibration and/or verification must be removed from service (if practical) until repaired, replaced or successfully calibrated. The failure must be reported to Operations Management and ORO, as soon as possible so that immediate measures can be taken to ensure that drinking water quality has not been compromised by the malfunctioning device. Any actions taken as a result of the failure are recorded in the facility logbook and Instrumentation Calibration/Maintenance form. Operations Management or the PCT ensures that any notifications required by applicable legislation are completed and documented within the specified time period.

1. Purpose

To describe the procedure for maintaining a state of emergency preparedness at the facility level under OCWA's Emergency Management Program.

2. Definitions

Emergency Response Plan (ERP) – a corporate-level emergency preparedness plan for responding to and supporting serious (Level 3) operations emergencies

Facility Emergency Plan (FEP) – a facility-level emergency preparedness plan for responding to and recovering from operations emergencies

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

3. Procedure

3.1 The Facility Emergency Plan (FEP) is the corporate standard for emergency management at OCWA-operated facilities. The FEP supports the facility-level response to and recovery from Level 1, 2 and 3 events related to water and wastewater operations and directly links to the corporate-level Emergency Response Plan (ERP) for management of Level 3 events that require corporate support. Operations Management is responsible for establishing a site-specific FEP that meets the corporate standard for this drinking water system.

3.2 OCWA recognizes three levels of events:

Level 1 is an event that can be handled entirely by plant staff and regular contractors. The event and the actions taken to resolve it (and to prevent a reoccurrence, if possible) are then included in regular reporting (both internally and externally). Examples may include response to an operational alarm, first aid incident, small on-site spill, or a process upset that can be easily brought under control.

Level 2 is an event that is more serious and requires immediate notification of others (regulator, owner). Examples may include minor basement flooding, injury to staff that requires medical attention, or a spill that causes or is likely to cause localized, off-site adverse effects. If the event reaches this level, the instructions indicate the need to contact the Safety, Process and Compliance Manager and/or Regional Hub Manager.

Level 3 is an actual or potential situation that will likely require significant additional resources and/or threatens continued operations. It may require corporate-level support including activation of the OCWA Action Group and opening of an Emergency Operations Centre (EOC) as described in the corporate ERP. Level 3 events usually

CP as long as the outcomes are evaluated using the FEP-01 form. A CP-related response to an actual event may also be considered a review or a test. A review of the incident including lessons learned should be recorded on FEP-01 following the resolution of the actual event, along with any opportunities for improvement/actions identified.

3.7 Revisions to the CPs, SOPs and other FEP documents are made (as necessary) following a review, test, actual event or other significant change (e.g., changes in regulatory requirements, corporate policy or operational processes and/or equipment, etc.). Results of the emergency response testing and any opportunities for improvement/actions identified are considered during the Management Review (OP-20).

3.8 Roles and responsibilities for emergency management at OCWA-operated facilities are set out in the FEP. Specific roles and responsibilities related to a particular emergency situation or service interruption (including those of the Owner where applicable) are set out in the relevant site-specific CP. A general description of the respective responsibilities of the Owner and the operating authority in the event an emergency occurs is included in the service agreement with the Owner (as required by the *Safe Drinking Water Act*).

3.9 Where they exist, any relevant sections of the Municipal Emergency Response Plan (MERP) are included or referenced in the appendices section of the FEP. Measures specified in the MERP are incorporated into CPs where appropriate.

3.10 An emergency contact list in conjunction with the essential supplies and services list is contained within the FEP and is reviewed/updated at least once per calendar year. An emergency communications protocol is contained within the FEP. Specific notification requirements during emergency situations or service interruptions are set out in the individual CPs and in the ERP.

4. Related Documents

Corporate Emergency Response Plan
Emergency Contact List/Essential Supplies & Services List (Contacts section of FEP)
Facility Emergency Plan
FEP-01 Contingency Plan Review/Test Summary Form
Municipal Emergency Response Plan (as applicable)
OP-20 Management Review

5. Revision History

Date	Revision #	Reason for Revision
2010 05 30	0	Procedure issued

1. Purpose

To describe the procedure for conducting internal audits at the facility level that evaluate the conformance of OCWA's Quality & Environmental Management System (QEMS) to the requirements of the Drinking Water Quality Management Standard (DWQMS).

This procedure applies to Internal QEMS Audits conducted at the Opasatika Well Supply System for the purpose of meeting the DWQMS requirements for internal audits.

Note: This procedure does not apply to internal compliance audits conducted in accordance with OCWA's Internal Audit Program.

2. Definitions

Audit Team – one or more Internal Auditors conducting an audit

Internal Auditor – an individual selected to conduct an Internal QEMS Audit

Internal QEMS Audit – a systematic and documented internal verification process that involves objectively obtaining and evaluating documents and processes to determine whether a quality management system conforms to the requirements of the DWQMS

Lead Auditor – Internal Auditor responsible for leading an Audit Team

Non-conformance – non-fulfillment of a DWQMS requirement

Objective Evidence – verifiable information, records or statements of facts. Audit evidence is typically based on interviews, examination of documents, observations of activities and conditions, reviewing results of measurements and tests or other means. Information gathered through interviews should be verified by acquiring supporting information from independent sources

Opportunity for Improvement (OFI) – an observation about the QEMS that may, in the opinion of the Internal Auditor, offer an opportunity to improve the effectiveness of the system or prevent future problems; implementation of an OFI is optional

3. Procedure

3.1 Audit Objectives, Scope and Criteria

3.1.1 In general, the objectives of an internal QEMS audit are:

- To evaluate conformance of the implemented QEMS to the requirements of the DWQMS;
- To identify non-conformances with the documented QEMS; and
- To assess the effectiveness of the QEMS and assist in its continual improvement.

- Confirm the audit logistics (locations, dates, expected time and duration of audit activities, any health and safety considerations, availability of key personnel, audit team assignments, etc.).

3.4.2 Each Internal Auditor is responsible for:

- Reviewing documentation to prepare for their audit assignments including:
  - the Operational Plan and related procedures;
  - results of previous internal and external QEMS audits;
  - the status and effectiveness of corrective and preventive actions implemented;
  - the results of the management review;
  - the status/consideration of OFIs identified in previous audits; and
  - other relevant documentation.
- Preparing work documents (e.g., checklists, forms, etc.) for reference purposes and for recording objective evidence collected during the audit

3.5 Conducting the Audit

3.5.1 Opening and closing meetings are not required, but may be conducted at the discretion of the QEMS Representative and the Lead Auditor taking into account expectations of Top Management.

3.5.2 The Audit Team gathers and records objective evidence by engaging in activities that may include conducting interviews with Operations Management and staff (in person, over the phone and/or through e-mail), observing operational activities and reviewing documents and records.

3.5.3 The Audit Team generates the audit findings by evaluating the objective evidence against the audit criteria (s. 3.1.3). In addition to indicating conformance or non-conformance, the audit findings may also lead to the identification of opportunities for improvement (OFIs). The Lead Auditor is responsible for resolving any differences of opinion among Audit Team members with respect to the audit findings and conclusions.

3.6 Reporting the Results

3.6.1 The Lead Auditor reviews the audit findings and conclusions with the QEMS Representative and Top Management. Other audit participants may also take part in this review as appropriate. This review may take place in person (e.g., during a closing meeting) or through other means (phone call, email, etc.). Any diverging opinions regarding the audit findings and conclusions should be discussed and, if possible, resolved. If not resolved, this should be noted by the Lead Auditor.

5. Revision History

Date	Revision #	Reason for Revision
2010 May 30	0	Procedure issued
2011 Sep 09	1	Clarification of time frames in Procedure 5.1; corrected Process Compliance Manager's title; updated the development of audit protocol in Procedure 5.2
2013 Mar 08	2	Updated managerial title changes – Operations Manager is now the Senior Operations Manager and Cluster Manager is now the Operations Manager. References to Process Compliance Manager have been replaced with Senior Operations Manager or removed if redundant
2018 12 19	3	Appendix S, QP-10 procedure renamed OP-19. Removed Scope and Responsibilities sections and moved scope wording to purpose section. Added definition 'Objective Evidence' and modified 'non-conformance' definition. Replaced 'audit evidence' with 'objective evidence', and 'conformity' with 'conformance' throughout procedure. Replaced 'once every 12 months' with 'once every calendar year' (s. 3.2.1, s. 3.2.3 and s. 3.4.1) to reflect wording in DWQMS v. 2.0. Added s. 3.2.3 (and modified s. 3.4.1) to describe the frequency for auditing all DWSs covered in multi-facility Operational Plans. Changed s. 3.4.2 to include preventive actions, the results of the management review and the status/consideration of OFIs. Included wording 'for each element', and 'identified referencing the requirement that was not met' to s. 3.6.2. Moved description of process for corrective actions from QP-10 s. 5.7 and OFIs from QP-10 s. 5.8 to OP-21. Added s. 3.7 to refer to OP-21.

MANAGEMENT REVIEW

Reviewed by: A. Swanson, PCT	Approved by: Y. Rondeau, SPC Manager

1. Purpose

To describe the procedure for conducting a Management Review of the Quality & Environmental Management System (QEMS) at the facility level

2. Definitions

Management Review – a formal (documented) meeting conducted at least once every calendar year by Top Management to evaluate the continuing suitability, adequacy and effectiveness of OCWA's Quality & Environmental Management System (QEMS)

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

Top Management – a person, persons or group of people at the highest management level within an operating authority that makes decisions respecting the QMS and recommendations to the owner respecting the subject system or subject systems

OCWA has defined Top Management for the Opasatika Well Supply System as:

- Operations Management – Hearst Lake Cluster
- Regional Hub Manager – Northeastern Ontario Regional Hub
- Safety, Process & Compliance (SPC) Manager – Northeastern Ontario Regional Hub

3. Procedure

3.1 Top Management ensures that a Management Review is conducted at least once every calendar year.

Management Reviews for more than one drinking water system may be conducted at the same meeting provided the systems belong to the same owner and the considerations listed in section 3.4 below are taken into account for each individual system and documented in the Management Review meeting minutes.

3.2 At a minimum, the QEMS Representative, at least one member of Top Management and at least one facility operator must attend the Management Review meeting. Other members of Top Management may participate though their attendance is optional.

3.3 Other staff may be invited to attend the Management Review meeting or to assist with presenting information or in reviewing the information presented, where they offer additional expertise regarding the subject matter.

3.4 The standing agenda for Management Review meetings is as follows:

a) Incidents of regulatory non-compliance;
b) Incidents of adverse drinking water tests;
c) Deviations from critical control limits and response actions;

5. Revision History

Date	Revision #	Reason for Revision
2010 05 20	0	Procedure issued
2011 09 09	1	Corrected Process Compliance Manager's title
2013 03 08	2	Updated managerial title changes – Operations Manager is now the Senior Operations Manager and Cluster Manager is now the Operations Manager. References to Process Compliance Manager have been replaced with Senior Operations Manager or removed if redundant
2018 11 01	3	Appendix T, Removed Scope and Responsibilities sections. Added definitions for Top Management and Operations Management. Revisions based on new requirements of the Standard; at least once every 12 months changed to once every calendar year (s. 3.1) and efficacy changed to effectiveness (s. 3.4). Added s. 3.2 and s. 3.3 to describe who is participating in the Management Review process. Added clarification on including any preventive actions implemented to address Opportunities for Improvement (OFI) or rationale as to why OFIs were not implemented when reviewing audit results (s. 3.4.e). Added Best Management Practices (BMPs) as a standing agenda item (s. 3.4.q). Added s. 3.5 to include consideration of BMPs and link OP-20 to OP-21 Continual Improvement.

1. Purpose

To describe the procedure for tracking and measuring continual improvement of the Quality & Environmental Management System (QEMS) for the Opasatika Well Supply System

2. Definitions

Continual Improvement - recurring activity to enhance performance *(ISO 14001:2014)*

Corrective Action – action to eliminate the cause of detected nonconformity of the QMS with the requirements of the DWQMS or other undesirable situation

Non-conformance – the non-fulfilment of a DWQMS requirement

Preventive Action – action to prevent the occurrence of nonconformity of the QMS with the requirements of the DWQMS or other undesirable situation

3. Procedure

3.1 OCWA strives to continually improve the effectiveness of its QEMS for this drinking water system(s) through the identification and implementation of corrective/preventive actions and, as appropriate, through review and consideration of applicable Best Management Practices (BMPs).

3.2 Corrective Actions

3.2.1 Non-conformances may be identified through an internal or external QEMS audit(s) conducted for this drinking water system. They may also be identified as a result of other events such as:

- an incident/emergency;
- community/Owner complaint;
- other reviews; and
- operational checks, inspections or audits

3.2.2 The QEMS Representative (in consultation with Operations Management and/or the SPC Manager) investigates the need for a corrective action to eliminate the root cause(s) so as to prevent the non-conformance from recurring. The investigation may also include input from the operators and other stakeholders and the consideration of BMPs as appropriate.

3.2.3 The QEMS Representative determines the corrective action needed based on this consultation. The Operations Management (or designate) assigns responsibility and a target date for resolution.

3.4 The QEMS Rep. and Operations Management monitor corrective/preventive actions on an ongoing basis and review the status and effectiveness of the actions during subsequent Management Review meetings.

3.5 Best Management Practices (BMPs)

3.5.1 The QEMS Representative and/or Operations Management in consultation with the SPC Manager will review and consider applicable internal and/or external BMPs identified by internal and/or external sources as part of the Management Review (OP-20) and in the corrective and preventive action processes described above.

3.5.2 BMPs may include, but are not limited to:

- Facility/Regional Hub practices developed and adopted as a result of changes to legislative or regulatory requirements, trends from audit findings or drinking water system performance trends;
- OCWA-wide BMPs/guidance or recommended actions;
- Drinking water industry based standards/BMPs or recommendations; or
- Those published by the Ministry of the Environment and Climate Change.

3.5.3 At a minimum, applicable BMPs must be reviewed and considered once every 36 months.

4. Related Documents

Internal Audit Records
QEMS - Summary of Findings spreadsheet
OP-05 Document and Records Control
OP-20 Management Review

5. Revision History

Date	Revision #	Reason for Revision
2018 12 19	0	Procedure issued – The original information within the main body of the Opasatika Well Supply System Operational Plan (revision 4, dated May 18, 2017) was not used in OP-21 as it did meet the requirements of the new DWQMS v. 2.0. Information from QP-10 Internal Audit (s. 5.7 and s. 5.8) was incorporated into s. 3.2 and s. 3.3 of OP-21 but was modified to address non-conformances identified from additional inputs other than internal audits and preventive actions resulting from means other than OFIs from internal audits. In addition R&Rs were revised to include the SPC Manager, and to clarify the role of the QEMS Representative in investigating and determining corrective and preventive actions needed. A section on Best Management Practices (s. 3.5) was added to meet the new

Ontario

Ministry of the Environment and Climate Change

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

Municipal Residential Drinking Water System

Fields marked with an asterisk (*) are mandatory.

Owner of Municipal Residential Drinking Water System *
The Corporation of the Township of Opasatika

Name of Municipal Residential Drinking Water System *
Opasatika Drinking Water System

Subject Systems

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

	Name of Operational Subsystems(if Applicable)	Name of Operating Authority *	DWS Number(s) *
1	Opasatika Drinking Water System	Ontario Clean Water Agency	220007203

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

Contact Information

Last Name *	First Name *	Middle Initial
Swanson	April	

Title *	Phone Number *
Process and Compliance Technician (OCWA)	705 568-7571

Email Address *
aswanson@ocwa.com

 © Queen's Printer for Ontario, 2016 Disponible en français