Operations Management International Canada Inc.

DWQMS OPERATIONAL PLAN

OIL SPRINGS WATER DISTRIBUTION SYSTEM

MDWL#: 251-101; ISSUE # 4

DWWP#: 251-201; ISSUE # 3

This Operational Plan defines and documents the Quality Management System (QMS) for the Village of Oil Spring Water Distribution System which is operated by:

Operations Management International Canada Inc. (OMI)

This document sets out the policies and procedures with respect to quality management in accordance with the requirements of the Province of Ontario's **D**rinking **W**ater **Q**uality **M**anagement **S**tandard 2.0 (DWQMS).

Oil Springs Water Distribution System No. - 210000238

Approved and Authorized for Use – November 13, 2025

Joe Bloomfield – OMI Project Manager
Top Management

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ELEMENT # 1 – QUALITY MANAGEMENT SYSTEM (QMS)

The DWQMS (**D**rinking **W**ater **Q**uality **M**anagement **S**tandard) requires an Operating Authority to develop and document a Quality Management System (QMS) for the Drinking Water System that it operates.

An Operational Plan is a document or series of documents that outlines policies, processes and procedures for the overall quality management of the drinking water system.

This document will be the Quality Management System Operational Plan for The Village of Oil Springs Water Distribution System. (System Number - 260046761)

Operations Management International Canada Inc. (OMI) (Jacobs) is the Operating Authority for the Oil Springs Water Distribution System.

The Quality Management System for The Village of Oil Springs, covers the transmission and distribution of potable drinking water to consumers within the Village of Oil Springs Water Distribution System. Treated potable water is purchased from the Enniskillen Water Distribution System (Number-220004377) and enters the Oil Springs Water Distribution System from two (2) metered connection points. One meter is located at 4898 Oil Springs Line and one meter is located at 2868 Oil Heritage Road

Top Management duties are performed by the Project Manager and in his/her absence the Area Manager.

Ontario — Ministry of the Environment, Conservation and Parks

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 Village of Oil Springs

Subject Systems

Name of Drinking Water System (DWS) *	Licence Number *	Name of Operating Subsystems (if applicable)	Name of Operating Authority *	DWS Number(s) *
1. Oil Springs Drinking Water System	251-101		Operations Management International (OMI)	2600046761

Contact Information for Questions Regarding the Operational Plan

Primary Contact			
Last Name * Culnan	First Name * Cathy		Middle Initial
Title * Operator	Telephone Number * 519-466-4631 ext.	Email Address * cathy.culnan@jacobs.com	
Secondary Contact			
Last Name Bloomfield	First Name Joseph		Middle Initial
Title Project Manager - Top Management	Telephone Number 519-3810542 ext.	Email Address joe.bloomfield@jacobs.com	

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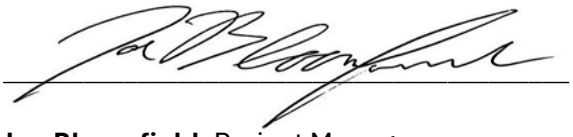
ELEMENT # 2 – QUALITY MANAGEMENT SYSTEM (QMS) POLICY

The Operating Authority for The Village of Oil Springs Water Distribution System is committed to comply with all water legislative requirements, regulations, to supply clean safe drinking water that meets the consumers requirements, understands the importance of the maintenance & continual improvement of the QMS and is committed to the principals & objectives set out in the QMS Policy.

The QMS Policy is to:

- *comply with all applicable legislative requirements and regulations*
- *supply clean safe drinking water to meet the consumers' requirements.*
- *maintain and continual improve the effectiveness of the Quality Management System.*
- *provide effective communication between the Operating Authority Personnel, the Owner and the Public.*

The QMS Policy is approved by the Project Manager (Top Management) and is available on The Village of Oil Springs website at www.oilsprings.ca and posted at the Water Department.



Date: November13, 2025

Joe Bloomfield, Project Manager
OMI Canada Inc. Top Management

ELEMENT # 3 – COMMITMENT AND ENDORSEMENT

This Operational Plan has been reviewed and endorsed by the Owner and the Operating Authority's Top Management. The Owner's commitment to an effective Quality Management System is evidenced by the resources provided during implementation, maintenance and continual improvement of the Operational Plan and the QMS that meets the requirements of the Drinking Water Quality Management Standard.

This Endorsement by the Owner and Top Management acknowledges the need for and supports the provision of sufficient resources to maintain and continually improve the QMS.

Top Management demonstrates their endorsement of the Operational Plan through reporting to the Owner on the results of the Management Review and by key signature(s) below:

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

- *ensuring that a QMS is in place that meets the requirements of the Standard*
- *ensuring that the Operating Authority is aware of all applicable legislative and regulatory requirements*
- *communicating the QMS according to the procedure for communications*
- *determining, obtaining or providing the resources needed to maintain and continually improve the QMS*

The Owner and Top Management will endorse the Operational Plan and re-endorse when there is a major change in the plan's content or when the majority of signing parties are no longer filling positions.

Date: November 13, 2025

Ian Veen; Village of Oil Springs - Mayor

Owner: Village of Oil Springs

Date: November 13, 2025

Joe Bloomfield; Project Manager

OMI Canada Inc. - Top Management

ELEMENT # 4 – QMS REPRESENTATIVE

Top Management appoints the role of QMS Representative (as indicated in Element # 9)
The alternate QMS Representative is the Project Manager.

The commitments of the QMS Representative irrespective of other responsibilities are to:

- *administer the Quality Management System by ensuring the processes and procedures needed for the QMS are established, implemented and maintained,*
- *report to Top Management on the performance of the QMS and any need for improvement,*
- *ensure that current versions of documents required by the QMS are being used at all times,*
- *ensure that personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the subject system, and*
- *promote awareness of the QMS throughout the Operating Authority.*

The QMS Representative assists with development of the Operational Plan and on-going maintenance of the QMS including re-accreditation, auditing requirements and renewal applications.

Additionally, the QMS Rep will organize QMS training with new staff to understand the content of the Operational Plan, their duties and legislative requirements regarding the DWQMS.

Designation of DWQMS Representative

Element # 4 of the DWQMS Operational Plan describes the requirements for the role of DWQMS Representative

Top Management shall appoint and authorize a Quality Management System Representative

I the undersigned shall appoint _____Cathy Culnan_____ to fulfill the role of DWQMS Representative for the Oil springs Water Distribution System

Regards,

Joe Bloomfield - Oct 29, 2021

Top Management – Project Manager

ELEMENT # 5 – DOCUMENT AND RECORD CONTROL

All records and/or documents required to demonstrate compliance and conformance with the legislation, regulations and QMS shall be maintained as per the SDWA; O. Reg 170/03 and also O. Reg 128/04.

The documents and records received are reviewed, acted upon if needed, and retained as per Appendix A.

Under the Directors Direction, Section 4.0 (made under the authority of subsection 15 (1) of the SDWA) Operational Plans that are the subject of an audit by an auditor for the accrediting body shall be retained for ten (10) years by the Owner and Accredited Operating Authority for the subject system to which the Operational Plans apply.

The Municipal Drinking Water License specifies that records related to the License and/or the Drinking Water Works Permit are retained for a minimum of five (5) years, unless otherwise specified – such as for MECP Form 1's, Form 2's and Form 3's- which are to be retained for a minimum of ten (10) years.

Refer to: **Appendix "A" – QMS Documents & Records Control**

ELEMENT # 6 – DRINKING WATER SYSTEM

The Village of Oil Springs is the Owner of the Water Distribution System and Operations Management International Canada Inc. (OMI) (Jacobs) is the Operating Authority.

The Oil Springs Water Distribution System is a Class I Distribution System and does not include any treatment, storage or pumping components. The Village purchases potable drinking water from the Township of Enniskillen and is supplied from the Enniskillen Water Distribution System via two-meter chambers, located on municipal boundaries. The Village of Oil Springs monitors water consumption. The Operating Authority monitors the Oil Springs WD system pressure at the Municipal office and documents in facility logbook.

The Township of Enniskillen operates a water reservoir and pumping station north of the Village boundary at 2868 Oil Heritage Road. This facility provides pressurized potable water and fire flow during fire emergencies. Re-chlorination occurs at the Enniskillen Water Reservoir when water enters the Reservoir. Water is replenished through the night (11:00 pm to 05:00 am)

Enniskillen Township sampling protocol follows O. Reg 170/03

The Town of Petrolia operates the WTP at 2701 Old Lakeshore Rd, Brights Grove. Their system includes a reservoir and booster station at 3517 Confederation Line in Plympton-Wyoming and an elevated water tank at 345 Centre Street in Petrolia.

There are two (2) in-line boundary emergency isolation valves that connect the Enniskillen WDS to the Oil Springs WDS (100 m South of the Reservoir on the East side & at 4898 Oil Springs Line) both locations are marked & valve caps are painted blue to easily identify location.

At the Township of Enniskillen Water Reservoir there are in-line pumps which are used to increase water pressure for pumping water into the water distribution system and for fire flow. The total storage capacity of the water reservoir is 1360 m^3 (300,000 imp. gallons). The pumps are capable of supplying 4.55 m^3/minute (1,000 imp. gallons/minute) of fire flow to the Oil Springs Water Distribution System.

The Village's water purchase agreement with the Township of Enniskillen limits the amount of water that can be used in the water distribution system. Water supply to large users may be restricted to off peak times. Daily peaks occur at approximately 7:00 am and 5:00 pm. There is minimal change between summer and winter.

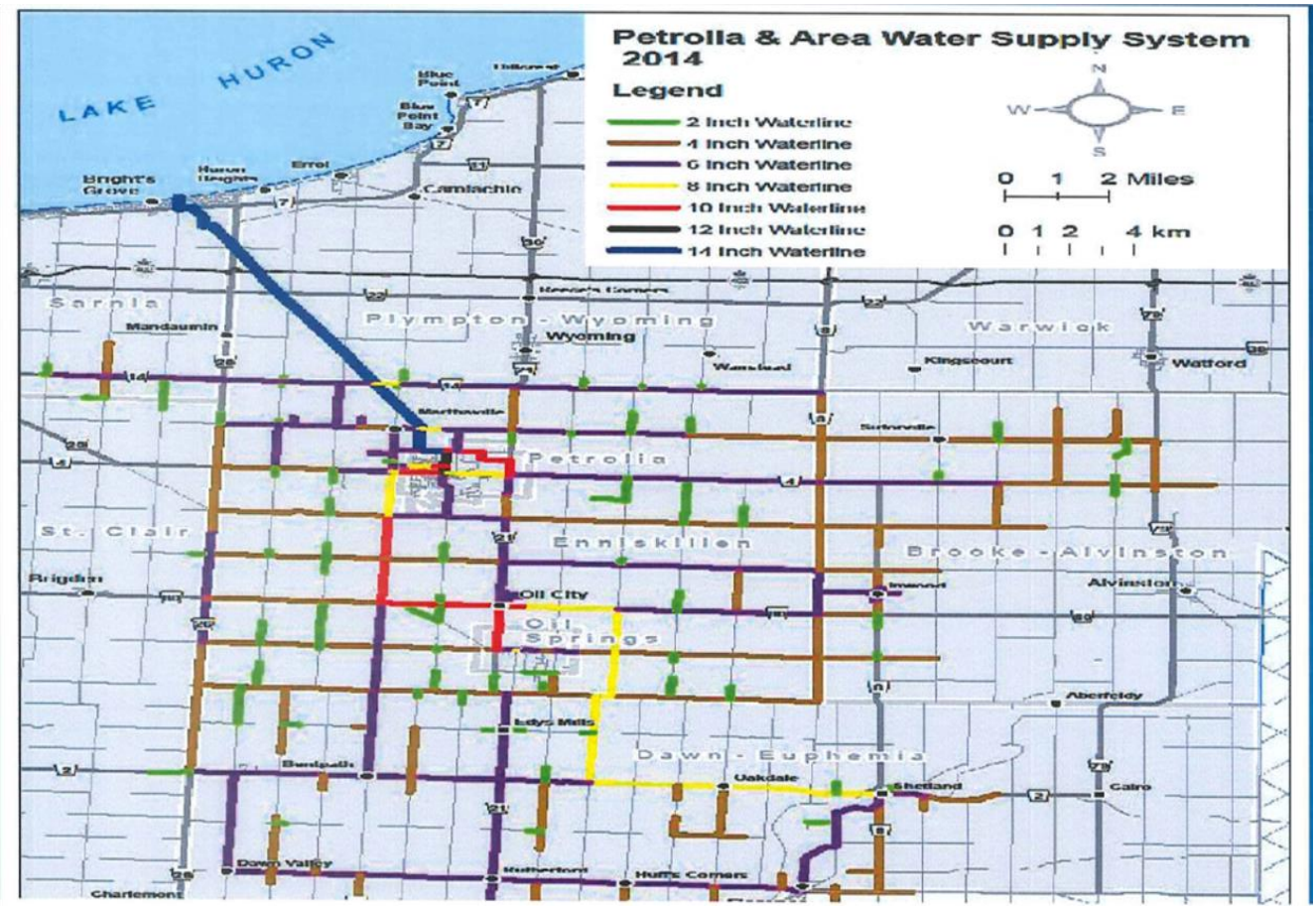
The main challenge was the cast iron watermain pipes within the system. These pipes were installed in the late 1940's and were a source of corrosion (rusty water) They were also prone to leaks during the winter. Also, there were undersized watermains supplying water on side streets in the east end of the Village. The Village has since completed a program of replacing these watermains in 2007, 2009, 2010, 2011.

To maintain chlorine disinfection residuals in the Distribution system, routine flushing is conducted on the fire hydrants and dead end blow offs which refreshes the water and improves flow by removing accumulated sediment & other impurities that can buildup in pipes. The Operating Authority has SOPs to check chlorine residuals and act as required.

Components of the distribution system are water sample stations, fire hydrants, blow offs at dead ends, watermain isolation valves, water meters and residential water services (curb stops). Sample Station # 1 is located at 2423 Kelly Road (behind museum in the trees) and Sample Station # 2 is located at 4898 Oil Springs Line.

Fire Fow testing was conducted on all hydrants in 2023/2024 with a report submitted.

SYSTEM SCEMATIC:



ELEMENT # 7 – RISK ASSESSMENT

Top Management, the QMS Representative and the Operating Authority's Operators make up the Team who identifies potential hazards and hazardous events that could affect the drinking water system, the control measures to address the hazards, the Critical Control Points (CCPs) and Critical Control Limits (CCLs), the associated methods of monitoring, recording and responding to CCL deviations and reporting on them.

Control Measure: any procedure, process, device, or means of eliminating, preventing or reducing the risk of a hazardous event.

Critical Control Point (CCP): an essential step or point in the subject system at which control procedures can be applied by the OA to prevent or eliminate a drinking water health hazard or reduce to an acceptable level.

Critical Control Limit (CCL): the point at which a critical control point response procedure is initiated. Based on regulatory requirements, process monitoring, after-hours response time and historical performance.

During the Risk Assessment the Team:

- *considers the potential hazardous events and associated hazards, as identified in the MOECC document "Potential Hazardous Events for Municipal Residential Drinking Water Systems – dated April/2022 and available at www.ontario.ca/drinkingwater*
- *identifies additional potential hazardous events and associated hazards*
- *assesses the risks associated with the occurrence of hazardous events*
- *ranks the hazardous events according to the associated risks*
- *identifies the control measures to address the potential hazards and hazardous events*
- *identifies the Critical Control Points and their respective Critical Control Limits*
- *document procedures and/or processes to monitor the Critical Control Limits*
- *document procedures to respond to deviations from the Critical Control Limits*
- *procedures for reporting and recording deviations from the Critical Control Limits*
- *considers the reliability and redundancy of equipment*

Top Management, QMS Representative and Operators conduct a full risk re-assessment at least once every Calendar Year while conducting the review on the same occasion to ensure that the information and assumptions used in this process for all hazardous events and hazards listed in the Outcomes Table remain current and valid.

The risk criteria for hazardous events and hazards are evaluated on the basis of likelihood, severity and detectability; the combined total of which gives a ratings value (see table below)

The rating values are added together to give an overall risk factor number for the identified hazard. All hazards or hazardous events with an overall risk factor number greater than seven (7) are associated with a CCP & CCL. The reliability and redundancy of system equipment is considered in the process.

The Risk Assessment Team will ensure the risks, ratings values, risk factor numbers and outcomes are discussed, assessed & agreed upon.

The risk criteria and the associated rating values are summarized in the table below:

Column A - Likelihood	Column B - Severity	Column C -Detectability	Column D - Rating Value
Rare: may occur in exceptional circumstances and has not occurred in the past	Insignificant: impact, little public exposure, little or no health risk	Very Detectable: easy to detect, visual	1
Unlikely: could occur at some time, historically has occurred less than once every 5-10 yrs.	Minor: limited exposure, minor health risk	Moderately Detectable: increased flow rates	2
Possible: Has occurred or may occur once or more per year	Moderate: minor public exposure, minor health risk	Normally Detectable: visually detectable on rounds or through regular maintenance	3
Likely: has occurred or may occur on a monthly basis	Major: large population at risk	Poorly Detectable: visually detectable, but not inspected on a regular basis, lab tests conducted quarterly or longer, not normally detected before a problem becomes evident	4
Very likely: one or more occurrences on a monthly or more frequent basis	Catastrophic: major impact for large population, complete failure of systems.	Undetectable: cannot detect until problem is evident	5

The agreed upon rating value for each hazard is documented in the corresponding column in Appendix “C”

Refer to: Appendix “C” - Risk Assessment Outcomes Table

ELEMENT # 8 – RISK ASSESSMENT OUTCOMES

The outcome of the risk assessment process is summarized in the risk assessment outcomes table that documents the:

- *identified potential hazardous events and associated hazards,*
- *assessed risks associated with the occurrence of hazardous events,*
- *ranked hazardous events,*
- *identified control measures to address potential hazard and hazardous events,*
- *identified critical control points (CCPs) and their respective critical control limits (CCLs)*
- *procedures and/or processes to monitor the CCLs,*
- *procedures for responding to deviations from CCLs, and*
- *procedures for reporting and recording deviations from the CCLs.*

SOPs and Procedures used to monitor CCPs, CCLs, respond to deviations, and for reporting & recording deviations are available at the Water Department and are identified in the Outcomes Table in Appendix "C"

Oil Springs Water Works Bylaw # 1035 of 2025; section 2 (2.6) and section 6 (6.1)(1) documents the restricted use and access to Fire Hydrants.

Oil Springs Water Works Bylaw # 1035 of 2025; section 9 (9.2.2) and Schedule 8 documents the Backflow Prevention Device requirement.

Refer to: **Appendix "C" - Risk Assessment Outcomes Table**
Oil Springs Water Works Bylaw # 1035 of 2025

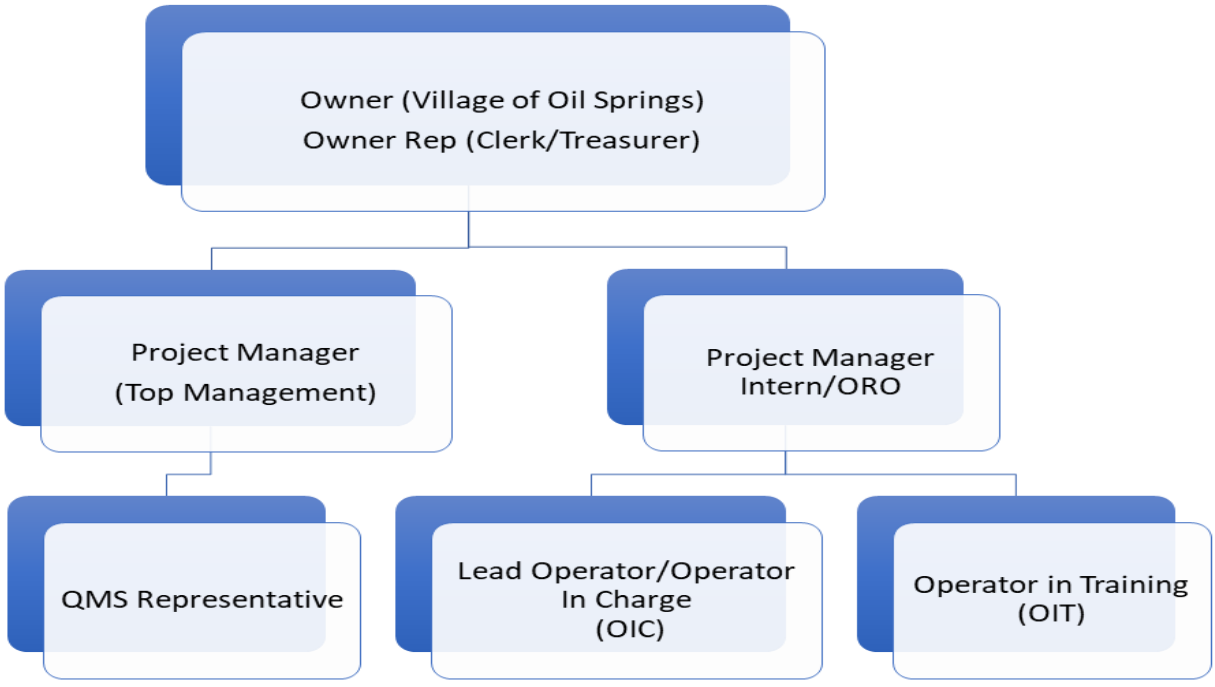
ELEMENT # 9 – ORGANIZATIONAL ROLES, RESPONSIBILITIES AND AUTHORITIES

Top Management shall keep the organizational structure, respective roles, responsibilities and authorities current and shall communicate & discuss the information to the Owner/Owner Rep during the Management Review.

An evaluation/review of the operational structure, respective roles, responsibilities and authorities takes place once every Calendar Year during the Operational Plan review with staff.

The Project Manager Intern fulfills the role of ORO with a backup ORO designation. A notice is provided to the Municipality & displayed at the Municipal Office for the Public to view.

Operations Organization Chart:



The Roles, Responsibilities and Authorities related to the provision of safe, potable drinking water are described in the table below:

Role	Responsibilities	Authorities
Mayor & Council (Owners) **Clerk/Treasurer (Owner Representative)**	- Ultimate responsibility for the provision of safe drinking water - Ensure compliance with applicable legislation & regulations - Endorses the Operational Plan - Provides resources for the maintenance and continual improvement of the QMS - Reviews OA's capital plan recommendations and sets budgets as appropriate - Participate in Management Review	- Financial and administrative authority related to the distribution of safe drinking water - Recommend and approve budget items, rates and bylaws pertaining to water - Communicate system needs with Operating Authority
Operating Authority Area Manager (Top Management)	- Corporate oversite for OMI (Jacobs) operations - Provides Project Manager duties in the absence of the Project Manager - Demonstrated expertise in the principles of supervision and training; principles of budget preparation and expenditure control; and safe work practices	- Provides resources required for operation of the drinking water system according to the contract - Ensure operations are performed as per the contract and by regulatory requirements
Operating Authority Project Manager / Project Manager Intern (ORO) (Top Management)	- Communication liaison with Area Manger, Owner, Owner Rep, Operators, Engineers, MECP, and repair contractors - Participates in Management Review (Chair) - Oversee the day-to-day operations of the drinking water system - Oversee adverse water quality incident responses and reporting - Prepare reports and maintain records - Appointing the QMS Representative - Recommends and/or implement improvements or changes according to the operating contract - Communications during emergencies	- Identify and oversee staff training needs - Schedules work assignment for operations staff - Recommend changes to the QMS - Ensure personnel are aware of the applicable legislative and regulatory requirements that pertain to their duties for the operation of the subject system
Operating Authority Operators (Lead & OIC)	- Conducts operational checks and performs compliance sampling and analysis - Adjust, monitor, test & evaluates system processes, flows, pressure and/or quality of the drinking water. - Responds to repairs, complaints, AWQI, alarms - Assist with preparing reports	- Reports and acts upon non-conformances - Assists in OIT training - OIT's operate under the direction of the OIC or ORO - Recommend changes to the QMS
Operating Authority QMS Representative	- Administer the QMS by ensuring that processes needed for the QMS are established and maintained - Communicates with Top Management, Owner, Owner Rep, Essential Suppliers and Operators regarding the QMS - Participates in Management reviews - Reports to Top Management on the performance of the QMS and any need for improvement (through internal audits and management reviews)	- Promotes awareness of the QMS throughout the OA - Ensure the OA is accredited and administers the re-accreditation process - Updates QMS and documents changes - Ensure current versions of the QMS are being used at all times.

ELEMENT # 10 – COMPETENCIES

The following table illustrates the competencies required by personnel whose duties **directly** affect drinking water quality:

Function	Required Competencies	Desired Competencies
Operating Authority Area Manager	- Knowledge of the principles and practices of water distribution - Demonstrated expertise in the principles of supervision and training; principles of budget preparation and expenditure control; and safe work practices - Valid Driver's License	- First Aid / CPR Training - Leadership Training - DWQMS Provincial Workshop training - WHMIS - Internal Audit Training
Operating Authority Project Manager	- Knowledge of the principles and practices of water distribution - Knowledge of legislative requirements and DWQMS - Demonstrated knowledge in the principles of supervision and training - Valid Driver's License	- First Aid / CPR Training - Leadership Training - DWQMS Provincial Workshop training - WHMIS - Internal Audit Training
Operating Authority Project Manager Intern / ORO	- Class I Water Distribution Certification - Knowledge of the principles and practices of water distribution - Knowledge of legislative requirements and the DWQMS - Knowledge of principals and methods of bacteriological analysis/sampling - Valid Driver's License	- Class II WD Certification - First Aid / CPR Training - Leadership Training - DWQMS Provincial Workshop Training - WHMIS - Internal Audit Training
Operating Authority Operators (Lead & OIC)	- Class I Water Distribution Certification - O. Reg 128 duties - Knowledge of the principles and practices of water distribution - Knowledge of principles and methods of bacteriological analysis/sampling - Knowledge of DWQMS - Valid Driver's License	- Class II WD Certification - First Aid & CPR Training - Confined Space Training - WHMIS
Operating Authority Operators (OIT) (operator in training)	- OIT Certification - Knowledge of the principles and practices of water distribution - Valid Driver's License	- Class 1 WD Certification - First Aid & CPR Training - Confined Space Training - WHMIS - Knowledge of DWQMS

Competency is the demonstrated ability of an employee to apply their knowledge, skills, understanding, behaviors and techniques when performing their duties & responsibilities.

All personnel performing duties **directly** affecting drinking water quality must have adequate training and be competent in their positions. Activities to develop and/or maintain competencies include the following:

- *certified operators are responsible for completing the annual number of training hours required as per applicable regulations. Reference to the table below taken from O. Reg. 128/04; Certification of Drinking Water System Operators and Water Quality Analysts, s.29 regarding the minimum annual training hours for operators, based on the highest class of system they work in*
- *training consists of both continuing education and on the job training and is delivered using a combination of methods. (e.g. internal classroom courses and custom courses/sessions)*
- *certified operators are required to complete once every calendar year a review of the QMS Operational Plan*
- *individual employees' training records are maintained and tracked on the Operating Authority's SharePoint site.*
- *certified operators are also required to complete the 3-year mandatory drinking water course to the ministry requirements for license renewal.*
- *the Project Manager takes reasonable steps to ensure that every Operator has the opportunity to attend training to meet the requirements of certification.*
- *QMS Rep also tracks Operator training with certification expiry emails as a reminder to personnel throughout the year.*

TABLE
ANNUAL TRAINING FOR OPERATORS

Type and Class of Subsystem Where the Operator is Employed	Training Requirements	Minimum Total Hours
Limited Groundwater or Limited Surface Water	7 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	20
Class I Water Treatment or Class I Distribution or Class I Distribution and Supply	7 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	30
Class II Water Treatment or Class II Distribution or Class II Distribution and Supply	12 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	35
Class III Water Treatment or Class III Distribution or Class III Distribution and Supply	14 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	40
Class IV Water Treatment or Class IV Distribution or Class IV Distribution and Supply	14 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	50

O. Reg. 128/04, s. 29, Table.

SDWA Part III- General Requirements – Operators Certificate
12 (1) no person shall operate a municipal drinking water system or a regulated non-municipal drinking water system unless the person holds a valid operator's certificate issued in accordance with the regulations. 2002, c. 32, s. 11 (1).

ELEMENT # 11 – PERSONNEL COVERAGE

The Water Department is staffed Monday to Friday 7:00 am to 3:30 pm, five days a week.

The Overall Responsible Operator (ORO) is tracked through the facility logbook with the name being displayed at the top of page. All activities are documented in the facility logbook.

The 24/7 personal coverage procedure ensures that sufficient and competent personnel are available for duties that directly affect drinking water quality. The table below demonstrates how after hour emergencies are conducted. The on-call answering service dials directly to the on-call cell phone which is forwarded to the on-call OA's staff member.

OIT's (operators-in-training) directed by the ORO or OIC can work on their own with an OIC (operator-in-charge) being readily available by phone. Employees not certified, cannot make any operational changes to the system. Sub-contractors (not performing operational duties) if required are used at the discretion of the ORO or OIC.

Competent OA's personnel can be utilized from nearby projects in times of potential staff shortages (e.g. pandemic or labor disruptions) peak holiday season and during emergencies.

Regular Hours	After Hours
The Public will call the Village of Oil Springs Municipal Office: 519-834-2939	The Public will call the Village of Oil Springs Municipal Office: **519-834-2939** ….and follow message prompts for after hours contact information, directing the public to call: **519-339-8106** **OR** The after-hours water/sewer/emergencies contact information is available on the Municipal website www.oilsprings.ca under "contact us" and the website also displays OMI/Jacobs after hours contact number. **1-888-399-1643**
Public Works staff will contact the Operating Authority at: **1-888-399-1643** The call will be directed to the on-duty Operator and necessary repairs are made	On-call Operator receives call either from Oil Springs Public Works or the after-hours service. The Operator assess information, provides direction & necessary repairs are made.

ELEMENT # 12 – COMMUNICATIONS

The QMS Representative shall make sure the Owner/Owner Representative is provided with a current copy of the Operational Plan.

Top Management shall keep the Owner/Owner Representative informed of changes to the QMS, the adequacy of infrastructure requirements, the outcome of Management reviews and other issues about the QMS. Any updates are provided through regular reports to the Owner/Owner Representative.

Top Management delegates the QMS Rep to communicate and/or contact the Owner/Owner Rep, Essential Suppliers & Consumers when needed regarding:

- *providing the Owner / Owner Rep and Top Management and OA Personnel with a current copy of the Operational Plan*
- *keeping the Owner /Owner Rep informed of any changes to the QMS, the adequacy of infrastructure requirements, the outcome of management reviews and other issues about the QMS.*
- *informing the Operating Authority personnel of any changes or updates through QMS meetings and reviews. The current version of the Operational Plan and SOPs are available for review by staff at the Water Department.*
- *informing the Operating Authority personnel of upcoming training opportunities and certification requirements.*
- *communications with Essential Suppliers*
- *communications with MECP and / or MOH*
- *communications with consumers (complaints, water meter exchanges)*

Operating Authority submits a monthly report to the Owner/Owner Rep which documents the systems lab analysis results and summarizes the repairs/maintenance to the Drinking Water System.

Essential suppliers identified by the OA or Owner receive communications about products or services' quality, quantity, timeframes, certification or accreditation requirements through the procurement and purchase order process.

Consumers have access to the DWQMS Operational Plan and the QMS Policy through the Municipal website www.oilsprings.ca

All complaints received from the consumer are reported to the Owner Representative and the Operating Authority will take the necessary action(s) to address the issue.

ELEMENT # 13 – ESSENTIAL SUPPLIES AND SERVICES

The Village purchases potable drinking water from the Township of Enniskillen and is supplied from the Enniskillen Water Distribution System.

Where applicable, supplies must meet or be equal to AWWA specifications. The Oil Springs Public Works Department orders & stocks extra supplies for repair – pipes, clamps, water meters, water services (curb stops). Chemicals purchased for use in the drinking water process (disinfecting parts) must meet AWWA Standards and be certified ANSI/NSF. Ordered supplies are verified/compared against the order requisition/packing slip when received. ANSI/NSF certifications are available at the water department.

Appendix "B" contains a Contact list of suppliers, agencies and contractors that has been developed. The Supplier's/Agencies which are deemed to be "Essential" are identified in red font with a single "E" proceeding the supplier/agency. The remaining suppliers/agencies are considered non-essential. This list is reviewed once every Calendar Year with staff during the Emergency test & review, to ensure that it is current and up-to-date.

Contractors are selected based on their qualifications and ability to meet the facility's needs without compromising operational performance or compliance with applicable legislation and regulations. Operating Authority attends repairs to ensure measures are taken to protect the water supply against backflow / back-siphoning using air gap measures or the installation of a backflow protection device. If necessary, appropriate control measures are implemented while contracted work is being carried out and communicated to all relevant parties minimizing the risk to the integrity of the drinking water system and the environment.

Contracted personnel including suppliers may be requested or required to participate in additional relevant training/orientation activities to confirm conformance to requirements.

All third-party drinking water analysis services are provided by accredited and licensed laboratories.

Refer to: Appendix "B" - Essential Supplies & Services Contact List

ELEMENT # 14 – REVIEW AND PROVISION OF INFRASTRUCTURE

Owner/Owner Rep, Top Management and Operators will once every Calendar Year, tour the facilities and review the inventory to determine that the proper infrastructure is in place to operate and maintain the subject system, in addition, considers the current outcomes of the Risk Assessment (Appendix "C") to ensure the adequacy of the infrastructure necessary to operate and maintain the system.

This review will also determine the suitability and need of replacement of parts, repairs and/or any upgrades within the infrastructure to reduce the likelihood or impact of a hazard or hazardous event occurring.

The Owner/Owner Representative shall receive a copy of the Infrastructure Tour & Review meeting minutes.

The results of the Infrastructure review will be discussed during the once every Calendar Year Management review which will include any capital plan proposals. This ensures that the adequate infrastructure needs are added to the Oil Springs Capital Plan and that the proper funding/resources are available to maintain and continually improve the subject system.

Refer to: **Appendix "C" - Risk Assessment Outcomes Table**

ELEMENT # 15 – INFRASTRUCTURE MAINTENANCE, REHABILITATION AND RENEWAL

Planned Maintenance: activities include inspection/maintenance and regular flushing of distribution hydrants & dead-end lines to maintain a free chlorine residual, refresh the water and remove impurities/sediment to increase flow ensuring the water provided to the consumers is aesthetically pleasing. An annual program includes exercising of the distribution system's watermain and hydrant valves to verify proper functioning during an emergency. Records of these activities will be kept at the Water Department. Notice of activities which may affect consumers are posted on the Municipal website & displayed at the Municipal office (e.g.- hydrant flushing). The maintenance program is reviewed during the Infrastructure Tour & Review where Operators may offer input regarding the effectiveness of the program.

Planned Maintenance Program:

- *Fire Hydrants are flushed 2X's per year (spring & fall) with an overall condition inspection being conducted simultaneously (ports, ports gaskets, operating nut, paint) and a report submitted. During the "fall" flushing hydrants are pumped out to prevent from freezing. Inoperable fire hydrants are bagged Out-of-Service & necessary repairs completed in a timely manner.*
- *Watermain Isolation valves are exercised annually with an overall condition inspection being conducted simultaneously (crooked stem, stiff when turning, cracked cap) and a report submitted. Inoperable watermain valves are documented on report, submitted to the Municipality and scheduled to be repaired in a timely manner.*
- *Hydrant Isolation valves are exercised annually, during the "spring" hydrant flushing.*
- *Operations of the sample stations are checked weekly (flow, drainage) while the microbiological sample and/or chlorine residual is being collected. During the colder months the sample stations are pumped out to prevent from freezing.*

Unplanned Maintenance: activities may include emergency watermain breaks, emergency shut off's (leaks or frozen lines) and is conducted as required under the direction of the ORO/OIC. All maintenance is completed within government regulations and AWWA standards.

OA's staff update the Oil Springs Public Works Dept. when scheduling and performing repairs to the WDS to keep them informed. Operators notify residents in the affected area of an emergency shut off with a hand delivered notice directly to the door.

Operating Authority provides monthly operating reports to the Owner Representative which summarizes the repairs and maintenance of the drinking water system.

At least once every Calendar Year during the Management review, the long term forecast of major infrastructure maintenance, rehabilitation, renewal activities & recommendations from the OA will be reviewed with the Owner/Owner Representative to ensure adequate Capital Plan funding is available and all parties have had an opportunity to provide input.

ELEMENT # 16 – SAMPLING, TESTING AND MONITORING

Sterile sample bottles are received from the laboratory with qualified Operators collecting the regulated samples as per Reg 170/03.

Relevant sampling, testing, and monitoring is conducted upstream of the Oil Springs Water Distribution System by the Enniskillen Water Distribution System, the Petrolia Water Distribution System and the Petrolia Water Treatment plant. They ensure that the water supplied meets the Ontario Drinking Water Quality Standards (ODWQS) and has a minimum chlorine residual of 0.20 mg/l. The Petrolia WTP has online chlorine residual analyzers with 24/7 alarm monitoring capabilities, which monitor the treated water leaving the facility. Enniskillen Township doses chlorine onto the system at the Enniskillen Reservoir.

The sampling schedule is as follows:

a) *Two (2) water samples are collected in various locations throughout the Oil Springs Water Distribution system on a weekly basis and analyzed for E. coli, and Total Coliform at the accredited Laboratory*
b) *Two (2) water samples are collected in various locations throughout the Oil Springs Water Distribution system on a monthly basis and analyzed for HPC (Heterotrophic Plate Count) at the accredited Laboratory*
c) *One (1) water sample is collected quarterly from Hydrant # 34 (this is closest to chlorine injection point) and analyzed for HAA's (Haloacetic Acids) at the accredited Laboratory*
d) *One (1) alternating water sample is collected quarterly from Sample Station #1 or from Hydrant # 38 (both are furthest point in system) and analyzed for THM's (Trihalomethanes) at the accredited Laboratory*
e) *Lead analysis is completed as required by Reg 170/03 - Reduced Lead Sampling Schedule*

The chlorine residuals are also checked manually by the operator at these locations simultaneously with the microbiological samples that are collected. The laboratory will notify the Operating Authority immediately, orally, of any adverse readings. Reference SOPs are available at the Water Department

The Operating Authority provides an annual report to the Owner Representative and includes any adverse incidents. Laboratory results are directly received by the Owner Representative and Top Management. Results are available to the Public on the Municipal website in the Annual Report.

The Oil Springs Water Distribution's pressure is manually monitored by the Operating Authority's Operators at the Municipal Office and documented in facility logbook.

Results of analysis from the laboratory are entered onto secured data programs by the accredited laboratory. The data programs are the DWIS (Drinking Water Information System) for MECP (Ministry of the Environment, Conservation & Parks) and the LRMA (Laboratory Results Management Application) for MOHLTC (Ministry of Health & Long-Term Care)

ELEMENT # 17 – MEASUREMENT AND RECORDING EQUIPMENT CALIBRATION AND MAINTENANCE

All calibrations are performed by qualified personnel.

Accuracy of the measurement & recording devices are essential in providing quality drinking water to the consumer. The Operating Authority conducts a monthly performance verification of the DPD Pocket Colorimeter (s) (used to analyze chlorine residual) according to the manufacturers' procedure and recorded.

All standards and reagents that are utilized during calibrations and/or verification activities are confirmed before use to ensure they have not expired. Any expired standards and/or reagents are properly disposed of and replaced with new as applicable.

Any device which does not meet the specified performance requirements must be removed from service and labeled "Out-Of-Service" until repaired, replaced or successfully calibrated.

The two (2) meter chambers which record the volume of water purchased from Enniskillen are calibrated through the Township of Enniskillen and the results provided to the Owner Representative and Operating Authority.

Refer to: **SOP # 3 - Performance Verification with DPD Pocket Colourimeter**

ELEMENT # 18 – EMERGENCY MANAGEMENT

An Emergency is a potential situation or service interruption that may result in the loss of the ability to maintain an adequate supply of safe drinking water to the consumers.

Some examples of potential emergency situations/service interruptions would consist of:

- *adverse water quality incident (AWQI)*
- *community complaints (taste/odour/colour/low pressure)*
- *line breaks – interruptions in pressure*
- *back siphoning – loss of water supply*
- *threshold exceedances*

The Risk Assessment Outcomes Table for the Water Distribution System, contained in the QMS Operational Plan (Appendix "C") can be referenced for emergency procedures and corresponding SOPs. Staff notifies the ORO during an emergency. The ORO/Top Management notifies the Owner/Owner Representative.

The Village of Oil Springs has a Municipal Emergency Plan which documents their roles and responsibilities during an emergency. The Operating Authority has a Water Distribution Emergency Plan which contains the Emergency contacts and procedures. The Emergency Plan is approved by Top Management.

A list of Emergency Contacts and Essential Supplies & Services are included in the Operational Plan (Appendix "B") and is updated once every Calendar Year and will be kept current by the QMS Representative.

Emergency response testing and training will be completed once every Calendar Year and meeting minutes are on record at the Water Department for review.

If there is a water problem/complaint after hours, the resident will call the Municipal Office listed in the telephone book and on the Municipal web-site. A message can be left, or directions are available to contact staff after hours. The call will be directed to the OA's on-call Operator and the problem investigated (as per Element # 11)

Project Manager and/or ORO shall notify Owner/Owner Rep regarding boil water advisories and any public emergencies.

Refer to: **Appendix "C" - Risk Assessment Outcomes Table**
Appendix "B" - Essential Supplies and Services Contact List

ELEMENT # 19 – INTERNAL AUDITS

Internal Audits are conducted to ensure that the QMS conforms to the DWQMS, operates effectively, efficiently and to identify any opportunities for improvement.

The Auditor may observe / engage in activities as necessary to ensure that the status of the audited elements of the QMS has been effectively covered which may include:

- *reviewing & discussing documents and/or records with Staff*
- *evaluating previous Internal/External audits*
- *reviewing previous QMS meetings*
- *reviewing maintenance reports/documents (hydrant flushing, valve exercising reports)*
- *reviewing Action Tracking Register spreadsheets (BMP's, OFI's, Action Items, CAR's)*
- *reviewing the MECP Annual Inspection report*
- *assessing Community Complaints*

Audit Procedure:

- *the audit shall be performed by personnel with adequate skills, training and/or experience. Auditors must have successfully completed the DWQMS internal audit training. The methodology taught in Walkerton Clean Water Centre's Internal Auditor course for the DWQMS is followed.*
- *all Elements and corresponding Appendices are audited once every Calendar Year.*
- *the audit date shall be determined between the QMS representative and the Internal auditor.*
- *a written report of the audit results shall be submitted to Top Management and the results included in the Management review.*
- *when a non-conformity is identified through the audit process, an action plan to rectify the issue is developed by Top Management & QMS Representative through the Action Tracking Register (CAR's, OFI's, Action Items, BMP's, Revisions) spreadsheets.*
- *a non-conformity is documented on the CAR's spreadsheet with "root cause" and "action implemented" categories to ensure continual maintenance and improvement of the QMS*
- *corrective actions are communicated to the responsible individual and included as part of the Management Review.*
- *a 90-day evaluation is conducted on the corrective actions by the QMS Rep to ensure completion and/or a resolution.*

Qualified consultants used to carry out an internal audit may use their own audit report formats and checklists that meet the DWQMS requirements.

ELEMENT # 20 – MANAGEMENT REVIEW

Top Management conducts a management review with the Owner/Owner Representative, once every Calendar Year to evaluate the continuing stability, adequacy and effectiveness of the QMS.

Top Management duties are performed by the Project Manager and in his/her absence the Area Manager.

The QMS Representative provides related information/data regarding the following categories for the review:

a) *incidents of regulatory non-compliance*
b) *incidents of adverse drinking water tests*
c) *deviations from critical control limits and response actions*
d) *effectiveness of the risk assessment process*
e) *internal and third-party audit results*
f) *results of emergency response testing*
g) *operational performance*
h) *raw water supply and drinking water quality trends*
i) *follow-up action items from previous management reviews*
j) *the status of management action items identified between reviews*
k) *change that could affect the Quality Management System*
l) *consumer feedback*
m) *resources needed to maintain the Quality Management System*
n) *results of the infrastructure review*
o) *operational plan currency, content and updates, and*
p) *staff suggestions*
q) *corrective actions, preventative actions and best management practices*

Review Process

Management Review is a planned event. An appropriate amount of time is set aside by participants to confirm a thorough review of the QMS is conducted. Each of the required categories (a to q) shall be reviewed to identify if, where, or when improvement to the QMS and its procedures are required.

The QMS Rep shall make note of any changes or action items required during the review. All action items will be recorded on the corresponding report in the Action Tracking Register.

Review Output

The Management review output will include the results of the review, identified deficiencies, decisions, action items and best management practices. The QMS Rep will distribute by email a copy of the review to the Owner/Owner Representative, Top Management and any other applicable parties within 30 days of the meeting. A copy of the Management review will be available at the Water Department.

ELEMENT # 21 – CONTINUAL IMPROVEMENT

The Water Operating Authority shall strive to continually improve the effectiveness of its Quality Management System through the use of corrective actions, MECP Publications, on-going Management Reviews and resulting corrective actions will be the basis for further improvement.

Corrective Actions, Preventative Actions and Best Management Practices are recorded on the Action Tracking Register spreadsheets. Sources may include:

Corrective Actions
Corrective Actions can be identified through Internal or external audits, OFI suggestions, results of other events such as an incident/emergency, community/owner complaint, other/staff reviews, operational checks, inspections or audits, emergency response training outcomes/training sessions, management reviews

Preventative Actions
Preventive actions can be assessed through; Internal or external audits as OFI's, during a management review, staff/owner suggestions, MECP inspections, evaluation of incidents/emergency response/tests, analysis of data/trends, non-conformances identified at other drinking water systems, considering a BMP, staff suggestions/feedback, risk assessment outcomes, emergency response training outcomes/training sessions, management reviews

Best Management Practices (BMP)
Considers the Best Management Practice identified in the MECP document "Drinking Water System Best Management Practices; published October 3, 2025, and available on the website: https://www.ontario.ca/page/drinking-water-system-best-management-practices
Considers changes to legislative or regulatory requirements and/or outcomes from the audit findings, staff reviews, MECP inspections, drinking water industry-based standards, staff suggestions/feedback, emergency response training outcomes/training sessions, management reviews, best practices with neighboring systems.

36-month Best Management Practices – Reviewing and considering applicable Best Management Practices, including any published by the Ministry of Environment Conservation and Parks at least once every thirty-six months. The Operating Authority & staff identify, discuss and review BMPs at QMS meetings throughout the year.

The Action Tracking Register will be reviewed during the once every calendar year Management Review to ensure the actions recorded are implemented and are effective in correcting and preventing a re-occurrence of the non-conformity. Additionally the effectiveness of these items shall be reviewed at the time of the Management Review by reviewing the number of MECP non-compliances, internal and external audit results , consumer complaints etc.

APPENDIX "A" - QMS DOCUMENT AND RECORD CONTROL PROCEDURE

Documents: includes Operational Plan, as built drawing/mapping, equipment manual, chart, graph, survey, logbook, forms, SOPs, photograph, and information stored by means of any device.

- documents are generated electronically to ensure legibility and are identifiable though a title/header.
- electronic documents are retrievable and stored on a shared web-based network, (SharePoint) secured by a password. The SharePoint network is subjected to daily backups. Electronic versions of the documents for disposal will be stored in a historical/obsolete file
- obsolete documents (due to changes) shall be collected and destroyed.

Records: a document(s) which states the results achieved and/or provide proof of activities being performed (data entry log sheets, monthly reports, management reviews, internal & external audit reports etc..)

- records will be shredded & disposed of after applicable retention time has expired
- records shall be stored in such a manner as to prevent deterioration.
- manual records shall be legible and permanently rendered in ink. Pencil or any other erasable marker shall not be used to record processes, product information or data.
- records shall show the name or initials of the recorder, date and time (if appropriate) the record was generated.
- QMS related water distribution records will be retrievable at the Water Department

Creating New or Updating Existing Documents:

- the need for document changes or for new document(s) or procedures may be identified through audits, management reviews or staff reviews.
- electronic versions of the new/changed documents will be created by the QMS Representative and approved by Top Management.
- an employee or contract operator may request a change to an existing QMS document. The request must be made in writing, dated and submitted to QMS Rep and must include the following:
    1. State the reason for the new or changed document & the reason must belong in one or more of these categories**:**
        a) Enhances process control & may improve operational efficiency
        b) Reduces risk(s)
        c) Supports regulatory requirements
        d) Required by the DWQMS
    2. Outline of document change or new document content – narrative format is acceptable
    3. The requester shall develop the new/revised document and submit it to Top Management for approval.

Approving Documents

- QMS related documents shall be approved by Top Management.
- the QMS Representative shall be responsible for ensuring copies of the new or changed document show the revision number and/or date modified/issued.

Reviewing Documents

- the Operational Plan and all Appendices shall be reviewed once every Calendar Year for applicability and relevance.

Document Availability

- procedures, Instructions, QMS meetings, are retained at the Water Department
- applicable equipment manuals and specifications are kept at the Public Works Office/Garage
- as Built drawings are kept at the Municipal Office, Public Works Garage & Water Dept.
- the MDWL and MWWP are kept the Water Department for staff to review and on the Town's web-site for the public to view/review

QMS Record Control

- this procedure is applicable to all records that pertain to DWQMS requirements. All records that demonstrate compliance are covered by the Ontario Safe Drinking Water Act (OSDWA)
- documents and records have designated minimum retention times, which must comply with applicable legislated requirements, and conform to the DWQMS.

Municipal Drinking Water License & Drinking Water Works Permit: 5 yrs (section 1.0 of the License)

Operator Training records: 5 yrs (O. Reg. 128/04 under SDWA, 2002)

Annual Reports and Summary Reports: 5 yrs (O. Reg. 170/03 under SDWA, 2002)

Logbooks & other record-keeping mechanisms: 5 yrs (O. Reg. 128/04 under SDWA/2002)

Lab analyses of samples for chemical tests: 15 yrs (O. Reg. 170/03 under SDWA/2002)

Lab analyses of samples for microbiological, chlorine and turbidity tests, and fluoride tests where fluoridation is provided: 5 yrs (O. Reg. 170/03 under SDWA, 2002)

APPENDIX "B" – ESSENTIAL SUPPLIES & SERVICES CONTACT LIST

E – ESSENTIAL – The remaining contacts are non-essential

Oil Springs		
Oil Springs Clerk/Treasurer	519-834-2939 (office)	519-834-2333 (fax)
Oil Springs Administration	519-834-2939 (office)	519-834-2333 (fax)
Oil Springs Public Works		
24/7 contact	519-339-8106 (on-call cell)	
OMI		
24/7 Answering Service	1-888-399-1643	
24/7 on-call cell	519-490-4431	
Joe Bloomfield	519-381-0542	
Cathy Culnan	519-466-4631 (cell)	
Derek Daly	519-381-3211 (cell)	
Township of Enniskillen		
Enniskillen Administration	519-882-2490 (office)	519-882-3335 (fax)
E – Pager – after hours	519-339-8128	
Adverse Water Contacts		
MOH (Lambton Health Unit)	519-383-8331	519-383-7092 (fax)
SAC (Spill Action Center)	1-800-268-6060	1-800-268-6061 (fax)
SAC (Spill Action Center)	moe.sac.moe@ontario.ca	
MECP District office	519-336-4030	519-336-4280 (fax)
E – SGS laboratories (London)	519-672-4500 (office) 519-870-7345 (after hours)	Sample analysis: E-coli, Total Coliforms, Lead, HPC, THM, HAA
Equipment & Parts Suppliers		
E – EMCO Acct # 8390042939	519-686-7340 (office)	6, 8, 10, 12-inch piping 1- & 2-inch curb stops Hydrants and Hydrant parts Distribution & Isolation valves
E – KTI Limited	1-800-665-9654	¾ & ½ inch water meters
E – Hach Canada	1-800-227-4224 ext. 6152	Chlorine residual reagents, verification reagents

Repairs/Excavators/Contractors		
Dan McNally	519-383-9373 (cell)	
E – Gillier Drainage	519-692-3300 (office)	on site excavation responsibilities
John Drury	519-844-2661 (home)	
Copes Construction	519-344-5221 (office)	
Copes Construction	519-384-2379 (Randy) (24/7)	519-490-4804 (Clayton) (24/7)
VAC Trucks		
Central Sanitation	519-336-2465 (office)	519-490-4339 (after hours)
CT Environmental	1-519-236-7401 (office)	519-476-4956 (24/7 cell)
D & B Flushing	519-350-2399 (24/7 cell)	
Electrical		
Jim Orvis	519-331-7791 (cell)	
DMW	519-336-3003 (office)	519-336-3995 (fax)
Kirt Roach (DMW)	519-490-4787 (cell)	
Electrozad	519-336-8550	519-336-4812 (fax)
Bulk Fuel		
Waddick Fuels (Petrolia)	519-882-2420 (office)	1-888-561-0999 (24/7)
Bond Petroleum (Sarnia)	519-337-5085 (24/7)	
Mackenzie Oil	519-336-0521 →	Also answering service after Hrs.
Bottled/Bulk Water Suppliers		
Kern Water (Sarnia) (bottled)	519-542-4211 (office)	519-381-5485 (after hours)
Huron Water Supply (bulk) (3500 gal)	519-383-3240 (Mark)	519-383-4055 (Shawn)
Harold Marcus Ltd (bulk) (8000 gal)	519-695-3734 (office)	519-695-2249 (fax)
Harold Marcus Ltd	1-800-265-9426 (24/7)	
Other		
Town of Petrolia	519-882-2350 (office)	
Township of Dawn Euphemia	519-692-5148 (office)	
Ontario One Call Locates	1-800-400-2255	
Union Gas Emergencies	1-877-969-0999	

APPENDIX "C" – RISK ASSESSMENT & OUTCOMES TABLE

Activity or Process Step	Description of Hazard	Potential Result of Hazard	Comments	Available Monitoring & Control Measures	Emergency Procedure or Contingency Plan	A	B	C	D	CCP?	Critical Control Limits	Reference Procedure
Source Water (treated water – Petrolia via Enniskillen)	Contamination of source water Source water supply shortfall or loss	Chemical or biological contamination of source water AWQI	No control.	Enniskillen Water Reservoir and Pumping Station with alarm system. Online monitoring system by water supplier (Petrolia)	Isolate distribution system from supply. Notify Health unit May need emergency connection Flush & analyze chlorine residual	2	3	1	6	No		SOP # 1 SOP # 10 SOP # 5
Distribution	Watermain break within distribution system Contamination of water source	Quantity/ quality Low pressure or back siphoning Loss of water to customers Bacteriological or chemical contamination	No elevated distribution system storage. Contact Enniskillen to maintain supply from Enniskillen or isolate & continuously pump from reservoir	Customer complaints, low pressure or high flow through supply meters, visual if at ground.	Repair according to SOP for Water Main Repair Analyze for Chlorine residual Microbiological testing as necessary. Notify Health Unit as necessary (boil water order)	1	4	4	9	No – can isolate flow from Enniskillen	0.20 mg/L free chlorine residual	SOP # 1 SOP # 7 SOP # 9

Activity or Process Step	Description of Hazard	Potential Result of Hazard	Comments	Available Monitoring & Control Measures	Emergency Procedure or Contingency Plan	A	B	C	D	CCP?	Critical Control Limits	Reference Procedure
Distribution	Loss of chlorine residual Chlorine Saturation	Biological contamination	Legislated under O. Reg. 170/03	Continuous chlorine residual monitoring at Enniskillen reservoir equipped with alarms. Chlorine residual analysis 2X's per week	Flush distribution system to increase chlorine dosage and resample. Contact/Inform the Enniskillen Public Works Emergency connection to neighboring systems	1	4	2	7	Yes	Chlorine residual < 0.20 mg/ L Chlorine residual > 4.0 mg/L	SOP # 1 SOP # 4 SOP # 5 SOP # 11
Distribution	Commissioning of new watermains causing contamination	Biological contamination Potential AWQI Potential Loss of Water		Follow procedures for watermain repair Check chlorine residual and conduct microbiological testing	Follow corrective action per O. Reg. 170/03. Notify Health Unit as necessary (boil water order) Resample if necessary	1	2	1	4	No		SOP # 1 SOP # 4 SOP # 9
Distribution	Pandemic	Staff Shortage Loss of Staff		Masks, gloves, hand sanitizer, disinfecting workplace On-site questionnaire for visitor's	Follow Federal & Provincial Mandated Guidelines Alternating Staff	2	2	1	5	No		Federal & Provincial Orders

Activity or Process Step	Description of Hazard	Potential Result of Hazard	Comments	Available Monitoring & Control Measures	Emergency Procedure or Contingency Plan	A	B	C	D	CCP?	Critical Control Limits	Reference Procedure
					Schedules/work from home/utilizing staff from other projects							
Distribution	Loss of pressure – watermain break, major fire Sustained Pressure loss	AWQI Low pressure/ back siphoning Bacteriological or chemical contamination Water hammer		Consumer complaints Backflow contamination prevented by backflow preventers on all service connections Emergency connection	Check pressure and chlorine residual, discussions with MECP and Health Unit Restore pressure and chlorine residual. Conduct sampling per MECP and Health Unit direction Contact/Inform the Enniskillen Public Works	3	2	2	7	Yes	< 20 psi	SOP # 1 SOP # 7 SOP # 9 SOP # 10

Activity or Process Step	Description of Hazard	Potential Result of Hazard	Comments	Available Monitoring & Control Measures	Emergency Procedure or Contingency Plan	A	B	C	D	CCP?	Critical Control Limits	Reference Procedure
Distribution	Backflow from private plumbing (cross connection)	AWQI Biological and chemical contamination	Backflow preventers on all service connections	Meters are installed on all water services that are in use. Backflow required on all active water services through bylaw	Notify Health Unit, MECP and Spills Action Centre, if necessary communicate boil water order after consultation with Health Unit	2	2	2	6	No		SOP # 1 SOP # 10 Bylaw # 1035 of 2025
Distribution	Biofilms	Biological and quality Loss of chlorine residual		Visual inspection of pipe breaks, reduced flow in pipes, inability to maintain chlorine residual Flushing and swabbing	Flush system hydrants to maintain system chlorine residual Contact/Inform the Enniskillen Public Works	1	1	5	5	No		SOP # 1 SOP # 5
Distribution	Long Term Impacts of Climate Change -Drought -Heat Wave -Deep Freeze -Sustained Extreme Temperatures	Potential for Increased demand Potential for reduction in water Potential for water conservation	www.climatedata.ca	Monitor Chlorine residuals Hydrants are pumped out to prevent from freezing Sample Stations are pumped out during winter	Flushing hydrants to ensure chlorine residual in system during extreme heat Possible water conservation order Emergency connection to neighboring systems	2	3	1	6	No		SOP # 1 SOP # 4 SOP # 10 SOP # 11

Activity or Process Step	Description of Hazard	Potential Result of Hazard	Comments	Available Monitoring & Control Measures	Emergency Procedure or Contingency Plan	A	B	C	D	CCP?	CCL	Reference Procedure
Distribution	Extreme weather events -Tornado -Flooding -Ice Storm	Potential for AWQI Potential for loss of water Increased demand Frozen services		Environmental monitoring trends Historical Events News reports	Monitor chlorine residuals in system Possible water conservation order Emergency connection	2	2	1	5	No		SOP # 1 SOP # 14
Distribution	Terrorist threat Cyber Security Threat	Potential for AWQI & loss of water Loss of Data		Observant staff News reports SharePoint and/or paper backup copies	Monitor chlorine residuals in system Notify Health unit as necessary Refer to SharePoint	1	1	4	6	No		SOP # 1 SOP # 14
Distribution	Vandalism	Potential for AWQI	Document with pictures if possible	Observant staff Routine Inspections Fences, gates, locks	Check chlorine residual Contact Authorities Contact Owner/Owner Rep & ORO	1	3	1	5	No		SOP # 1