

**DRINKING WATER QUALITY MANAGEMENT STANDARD**

**OPERATIONAL PLAN**

**OMI**

**WATER OPERATING AUTHORITY FOR**

**THE VILLAGE OF OIL SPRINGS WATER DISTRIBUTION SYSTEM**



This Operational Plan defines and documents the Quality Management System (QMS) for The Village of Oil Springs Water Distribution System, which is operated by;  
**Operations Management International Canada Inc. (OMI)**

It 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 DWQMS – Standard 2.0

**Drinking Water System No. 260046761**

Approved and Authorized for Use – Oct 29/2021

A handwritten signature in black ink, appearing to read 'Joe Bloomfield'.

Joe Bloomfield  
Project Manager – Top Management

OMI	Title: Table of Contents	Approval Date: Nov-17-2020
		Revision No: 0
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Reviewed by: QMS Representative	Approved by: Top Management	

## Quality Management System - Operational Plan - Table of Contents

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Element 1		
Reviewed by: QMS Representative		Approved by: Top Management


## 1. Quality Management System

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

Operations Mangement International Canada Inc. 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 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

 <b>Ministry of the Environment, Conservation and Parks</b>		<b>Schedule C – Director's Directions for Operational Plans (Subject System Description Form)</b> 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				
<b>Subject Systems</b>				
<b>Name of Drinking Water System (DWS) *</b>	<b>Licence Number *</b>	<b>Name of Operating Subsystems (if applicable)</b>	<b>Name of Operating Authority *</b>	<b>DWS Number(s) *</b>
1. Oil Springs Drinking Water System	251-101		Operations Management International (OMI)	2600046761
<b>Contact Information for Questions Regarding the Operational Plan</b>				
<b>Primary Contact</b>		<b>Secondary Contact</b>		
Last Name *		First Name *		Middle Initial
Culnan		Cathy		
Title *		Telephone Number *		Email Address *
Operator		519-466-4631 ext.		cathy.culnan@jacobs.com
Last Name		First Name		Middle Initial
Bloomfield		Joseph		
Title		Telephone Number		Email Address
Project Manager - Top Management		519-3810542 ext.		joe.bloomfield@jacobs.com

OMI	Title: Quality Management System Policy	Approval Date: Jan-18-2021
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Element 2		
Reviewed by: QMS Representative		Approved by: Top Management

## 2. Quality Management System Policy

The Operating Authority for The Village of Oil Springs Water Distribution System is committed to the principals and objectives set out in the QMS Policy.

The policy is to:

1. Comply with all applicable legislative requirements and regulations.
2. Supply clean safe drinking water to meet the consumers' requirements.
3. Maintain and continual improve the effectiveness of the Quality Management System.
4. Provide effective communication between the Operating Authority Personnel, the Owner and the Public.

The QMS Policy is approved by the Project Manager (Top Management)

The QMS Policy is available on The Village of Oil Springs website at [www.oilspings.ca](http://www.oilspings.ca) and posted at the Water Department.

**Refer to:**  
**Annex F – Policy Statement**

OMI	Title: Commitment and Endorsement	Approval Date: July-14-2020
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Element 3		
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### 3. Commitment and Endorsement

The Owner and Top Management will endorse the Operational Plan of the Drinking Water Quality Management System.

- a) ensuring that a QMS is in place that meets the requirements of the Standard
- b) ensuring that the Operating Authority is aware of all applicable legislative and regulatory requirements
- c) communicating the QMS according to the procedure for communications
- d) determining, obtaining or providing the resources needed to maintain and continually improve the QMS
- e) the Owner and Top Management will endorse the Operational Plan and should be re-endorsed when there is a major change in the plan's content or when the majority of signing parties are no longer filling positions.

**Refer to:**  
**Annex A – Commitment & Endorsement**

OMI	Title: Quality Management System Representative	Approval Date: Oct-29-2021
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Element 4		
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#### 4. Quality Management System Representative

Top Management appoints the role of QMS Representative. The Project Manager will fulfill the duties of QMS Rep in the absence of the regular QMS Rep.

The Quality Management System representative irrespective of other responsibilities shall:

- a) administer the Quality Management System by ensuring the processes and procedures needed for the Quality Management System are established and maintained
- b) report to Top Management on the performance of the Quality Management System and any need for improvement
- c) ensure that current versions of documents required by the Quality Management System are being used at all times
- d) 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
- e) promote awareness of the Quality Management System throughout the Operating Authority

#### 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 7, 2021

Top Management – Project Manager

Refer to:  
Annex D – Organization Responsibilities

OMI	Title: Document and Records Controls	Approval Date: Nov-17-2020
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Element 5		
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## 5. Document and Records Control

All records to demonstrate compliance and or conformance shall be maintained per the Safe Drinking Water Act (SDWA)

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

Operational Plans that are the subject of an audit by an auditor for the accrediting body shall be retained for 10 years by the Owner of the Operational Plans and Accredited Operating Authority for the subject system to which the Operational Plans apply.

**Refer to:**  
**Procedure A - Document and Records Control**

<b>OMI</b>	Title: Drinking Water System	Approval Date: July-14-2020
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Element 6		
Reviewed by: QMS Representative		Approved by: Top Management

## 6. Drinking Water System

The Village of Oil Springs is the Owner of the distribution system and Operations Management International Canada Inc. is the Operating Authority.

The Oil Springs Water Distribution System 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 during peak hours and provides fire flow during fire emergencies. When pumps are not operating, the treatment and quality of the water is controlled by the water supplier to the Township of Enniskillen, which is the Town of Petrolia.

The Town of Petrolia operates the WTP at 2701 Old Lakeshore Rd in Sarnia. And 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.

Re-chlorination occurs at the Enniskillen water reservoir and pumping station when water enters the reservoir and again when water is pumped into the Oil Springs Water Distribution System. The water in the reservoir is replenished about every 3.5 days. There is an online chlorine residual analyzer with 24/7 alarm monitoring capabilities, located at the water reservoir and pumping station, which is operated by the Township of Enniskillen's Public Works Department.



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The Operating Authority has SOP's to check chlorine disinfectant residuals and act as required.

At the Township of Enniskillen water reservoir there are Inline 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<sup>3</sup> (300,000 imp. gallons). The pumps are capable of supplying 4.55 m<sup>3</sup>/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 2009/2010.

To maintain disinfection residuals in the Distribution system, the fire hydrants and dead ends are flushed regularly.

Components of the distribution system - are fire hydrants, blow offs at dead ends, main isolation valves, water meters and residential water services (curb stops).

**Refer to:**

**Annex B – System Schematic**

**SOP 4 – Analyzing Free Chlorine in Distribution System**

OMI	Title: Risk Assessment and Risk Assessment Outcomes	Approval Date: Mar-27-2019
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Element 7 and Element 8		
Reviewed by: QMS Representative		Approved by: Top Management

## 7. & 8. Risk Assessment and Outcomes

Project Manager, QMS Representative and Operators make up the Risk Assessment team that:

- considers the potential hazardous events and associated hazards, as identified in the MOECC document “Potential Hazardous Events for Municipal Residential Drinking Water Systems – dated Feb/2017 and available at [www.ontario.ca/drinkingwater](http://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

Hazardous events and hazards were assessed on the basis of likelihood, severity and detectability. The assessment criteria are summarized in the associated tables shown in Procedure B. Values were combined to give an overall level of risk.

The Risk Assessment team will review the Risk Assessment once every Calendar Year to ensure that the information and assumptions remain current and valid.

Once every thirty-six months, the QMS rep will assemble the Risk Assessment team to conduct a new Risk Assessment, to ensure the risks are being re-assessed.

**Refer to:**  
**Procedure B - Assessment & Outcomes**

OMI	Title: Organizational Structure, Roles, Responsibilities and Authorities	Approval Date: Oct-29-2021
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Element 9		
Reviewed by: QMS Representative		Approved by: Top Management

## 9. Organizational Structure, Roles, Responsibilities and Authorities

Top Management will keep the operational structure, respective roles, responsibilities, and authorities current, and will communicate this information to the Owner during the once every Calendar Year Management Review.

The Project Manager fulfills the role of ORO with an ORO designation notice being provided to the Municipality and displayed at the Municipal Office on the Municipal Community board for the Public.

The Management Review is conducted by Top Management also described in Procedure F.

An evaluation of the operational structure, respective roles, responsibilities and authorities takes place during the once every Calendar Year during the Operational Plan review. Personnel shall be kept informed of their roles and responsibilities during the Operational Plan review

### Refer to:

**Annex C – Organizational Structure**

**Annex D – Organizational Responsibilities and Authorities**

**Procedure F**

OMI	Title: Competencies	Approval Date: July-14-2020
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## 10. Competencies

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

Function	Required Competencies	Desired Competencies
Project Manager	Class I Certification  Knowledge of the principles and practices of water distribution, operating principles of valves, pumps and motors  Knowledge of principles and methods of bacteriological analyses  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 including CPR Training Confined Space Training WHMIS Leadership Training
Lead Operator	Class I Certification  Knowledge of principles and practices of water distribution, operating principles of valves, pumps and motors  Valid Driver's License	First Aid including CPR Training Confined Space Training  WHMIS Leadership Training
Operators	Class 1 Certification  Knowledge of the principles and practices of water distribution, operating principles of valves, pumps and motors  Valid Driver's License	First Aid including CPR Training Confined Space Training WHMIS
OIT	OIT Certification  Knowledge of the principles and practices of water distribution, operating principles of valves, pumps and motors  Valid Driver's License	Class 1 Certification First Aid including CPR Training Confined Space Training WHMIS

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Activities to develop and/or maintain competencies for personnel performing duties directly affecting drinking water quality include the following:

- Certified Operators are responsible for completing the annual number of required training hours as per applicable regulations. This training consists of both continuing education and on the job training and is delivered using a combination of methods. (e.g. classroom courses and custom courses/sessions)
- As a reminder OWWCO (Ontario Water Wastewater Certification Office) issues the Operator a renewal notice before certification license expires.
- Certified Operators are required to complete once every Calendar Year, a review of the Operational Plan
- Once every Calendar Year Emergency testing and training is conducted to ensure that personnel are aware of the relevance of their duties and how they affect safe drinking water.
- Certified Operators are also required to complete the mandatory drinking water course to the 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 which includes a budget for the QMS Rep to attend the annual WCWC Provincial Workshop. Individual employee records are maintained and tracked in accordance with Element 5.

**Refer to:**

**Element 5: Document and Record Control**

OMI	Title: Personnel Coverage	Approval Date: Oct-29-2021
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Element 11		
Reviewed by: QMS Representative		Approved by: Top Management

## 11. Personnel Coverage

The Overall Responsible Operator (ORO) is tracked through the facility log book with 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 Organizational chart in Procedure D – Personnel Coverage, demonstrates how after hour emergencies are handled. The on-call answering service dials directly to the on-call cell phone which is forwarded to the on-call OA's staff member.

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

Competent OA's personnel can be utilized from nearby projects in times of potential staff shortages and during peak holiday season.

**Refer to:**  
**Procedure D – Personnel Coverage**

OMI	Title: Communications	Approval Date: Nov-2-2020
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Element 12		
Reviewed by: QMS Representative		Approved by: Top Management

## 12. Communication

The QMS Representative shall make sure the Owner Representative is provided with a current copy of the Operational Plan. Top Management shall keep the Owner Representative informed of any changes to the QMS, the adequacy of infrastructure requirements, the outcome of Management reviews and other issues about the QMS. Top Management delegates the QMS Rep to communicate/contact the Owner/Owner Rep/Essential Suppliers & Consumers when needed. Any updates are provided through regular reports to the Owner Representative.

Operating Authority personnel will be informed of the QMS and of any changes or updates to it through staff meetings/reviews with the QMS Representative. A current version of the Operational Plan is available for review by staff at the Water Department.

The Operating Authority submits a monthly report to the Owner Representative that documents the systems lab analysis results and summarizes the repairs/maintenance to the Distribution System.

Essential suppliers identified by the Operating Authority and/or Owner/Owner Representative shall receive information by email and/or an essential supplies information letter, regarding the QMS from the purchaser when there are changes to legislation or regulations relevant to the supplier  
Consumers will be informed of the QMS and any significant changes through the municipal website [www.oilsprings.ca](http://www.oilsprings.ca)

Consumers can view the Operational Plan and QMS Policy on the Municipal web site

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

**Refer to:**  
**Annex F – Policy Statement**

OMI	Title: Essential Supplies and Services	Approval Date: Oct-29-2021
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Element 13		
Reviewed by: QMS Representative		Approved by: Top Management

### 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 ANS/NSF certified. Supplies are verified against the order requisition/packing slip when received.

Annex E contains a Contact list of suppliers, agencies and contractors that has been developed. The Supplier's/Agencys 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 during the Operational Plan 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 and compliance with applicable with legislation and regulations.

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

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 drinking water system and the environment.

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

Calibration services are provided by qualified personnel.

**Refer to:**

**Annex E - Essential Supplies & Services Listing - Contact List**



OMI	Title: Review and Provision of Infrastructure	Approval Date: Mar-27-2019
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Element 14		
Reviewed by: QMS Representative		Approved by: Top Management

## 14. Review and Provision of Infrastructure

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 documented under Element 8 - Procedure B, 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.

The 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 and will include any capital plan proposals. This ensures that the adequate infrastructure needs are added to the Municipalities Capital Plan and that the proper funding/resources are available to maintain and continually improve the subject system.

**Refer to:**

**Procedure B – Risk Assessment & Outcomes**

<b>OMI</b>	Title: Infrastructure Maintenance, Rehabilitation and Renewal	Approval Date: Mar-27-2019
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Element 15		
Reviewed by: QMS Representative		Approved by: Top Management

## 15. Infrastructure, Maintenance, Rehabilitation and Renewal

The Operating Authority has a water distribution maintenance program.

**Planned Maintenance** activities includes inspection/maintenance and regular flushing of distribution hydrants and dead-end system main lines. Also, a program that includes exercising of the distribution system's main valves to ensure 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 and at the Municipal office (e.g.- hydrant flushing, shut down for repairs)

The maintenance program is reviewed during the Operational Plan review and the Infrastructure Tour & review where Operators may offer input regarding the effectiveness of the maintenance program.

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

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 and renewal activities included in the Owners Capital Plan and any recommendations from the OA that was identified at the Infrastructure Tour and Review, will be reviewed by the Owner Representative and Operating Authority to ensure both parties have an opportunity to provide input.

<b>OMI</b>	Title: Sampling, Testing and Monitoring	Approval Date: Oct-29-2021
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Element 16		
Reviewed by: QMS Representative		Approved by: Top Management

## 16. Sampling, Testing and Monitoring

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

Relevant sampling, testing, and monitoring is done 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. They have online chlorine residual analyzers with 24/7 alarm monitoring capabilities, which monitor the treated water leaving the facilities.

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 various locations within the Oil Springs Distribution system and analyzed for HAA's (Haloacetic Acids) at the accredited Laboratory
- d) One (1) water sample is collected quarterly from Hydrant # 38 (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.

The chlorine residuals are also checked manually by the operator at these sites at the same time that the microbiological samples are collected. The laboratory will notify the Operating Authority immediately, orally, of any adverse readings.

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The Operating Authority provides an annual report to the Owner Representative and will include any adverse readings. Laboratory results are received by the Owner Representative and Top Management.

The Oil Springs Water Distribution 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)

Sampling, testing and monitoring results are accessible to the Public on The Village of Oil Springs website – in the annual report.

**Refer to:**  
**SOP # 1 – Adverse Water Quality Incidence**  
**SOP # 2 – Distribution System Sampling**

OMI	Title: Measurement and Recording Equipment Calibration and Maintenance	Approval Date: Jan-30-2020
		Revision No: 3
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Element 17		
Reviewed by: QMS Representative		Approved by: Top Management

## 17. Measurement and Recording

All calibrations are performed by qualified personnel.

The Operating Authority conducts a monthly performance verification of the DPD Pocket Colorimeter (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 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:

**Pocket Colorimeter equipment manual (kept with unit)**

**SOP # 5 – Performance Verification with DPD Pocket Colorimeter**

<b>OMI</b>	Title: Emergency Management	Approval Date: Oct-29-2021
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Element 18		
Reviewed by: QMS Representative		Approved by: Top Management

## 18. Emergency Management

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

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

The Risk Assessment chart for the Water Distribution System, contained in the QMS Operational Plan, Procedure B, can be referenced for emergency procedures, SOP's and contingency plans. Staff notifies the ORO during an emergency. The ORO notifies the 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 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, Annex E. This list 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 for the emergency response and testing on record 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.

**Refer to:**  
**Operating Authority Emergency Response Plan**  
**Annex E – Essential Supplies and Services Listing**  
**Procedure D – Personnel Coverage**

OMI	Title: Internal Audit	Approval Date: Jan-18-2021
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Element 19		
Review by: QMS Representative		Approved by: Top Management

## 19. Internal Audit

Once every Calendar Year, the Internal Audit shall be conducted following Procedure E in the Operational Plan.

The Auditor may engage in activities that may include:

- reviewing & discussing documents and/or records
- considers previous Internal/External audits
- reviewing Action Tracking Register spreadsheets (BMP's, OFI's, Action Items)
- reviewing the MECF annual inspection report
- reviewing Community Complaints

The audit shall be performed by personnel with adequate skills, training and/or experience. All Elements and corresponding Annex's & Procedures 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 the QMS Representative through the Action Tracking Register (CAR's, OFI's, Action Items) spreadsheets.

A non-conformity is documented on the CAR's spreadsheet with a "root cause" and "action implemented" categories to ensure continual maintenance and improvement of the QMS

A 90-day evaluation is conducted on the corrective actions by the QMS Rep to ensure completion and/or a resolution.

### Refer to:

**Action Tracking Register Report Spreadsheets**  
**Procedure E – Internal Audit**

OMI	Title: Management Review	Approval Date: Dec-18-2018
		Revision No: 2
		Page 1 of 1
Element 20		
Reviewed by: QMS Representative		Approved by: Top Management

## 20. Management Review

Top Management will implement and conform to the Management Review procedure (Procedure F) with the Owner/Owner Representative, once every Calendar Year to evaluate the continuing stability, adequacy and effectiveness of the QMS. The Owner Representative will receive the results of the Management Review by email.

**Refer to:**  
**Procedure F - Management Review**



OMI	Title: Continual Improvement	Approval Date: Jan-18-2021
		Revision No: 4
		Page 1 of 1
Element 21		
Reviewed by: QMS Representative		Approved by: Top Management

## 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. 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**

Internal or external audits, opportunity for improvement, result 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**

Internal or external audits as OFI's, during a management review or through other means such as 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)**

Changes to legislative or regulatory requirements and BMP's published by the MECP, audit findings and 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

**Best Management Practices** – Reviewing and considering applicable Best Management Practices, including any published by the Ministry of Environment Conservation and Parks and available on [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater), at least once every thirty six months.

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 corrective 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.

**Refer to:**

**Action Tracking Register Report Spreadsheets**  
**Annual MECP Inspection Report**

OMI	Title: Commitment & Endorsement	Approval Date: Oct-15-2021
		Revision No: 3
		Page 1 of 1
Annex A – Commitment & Endorsement		
Reviewed by: QMS Representative		Approved by: Top Management

## Annex A – Commitment & Endorsement

### DRINKING WATER QUALITY MANAGEMENT SYSTEM COMMITMENT AND ENDORSEMENT VILLAGE OF OIL SPRINGS DRINKING WATER SYSTEM

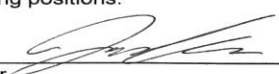
This Operational Plan has been reviewed and endorsed by the Owner and the Operating Authority. The Owner's commitment to an effective Quality Management System is evidenced by the resources provided during implementation and maintenance of the Operation Plan and the QMS.

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


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

- Ensuring that a QMS is in place that meets the requirements of the DWQMS.
- Ensuring that the Operating Authority is aware of the applicable and regulatory requirements.
- Communicating the QMS, (Element 12, Communications, Element 20, Management Review)
- Determining, obtaining or providing the resources needed to maintain and continually improve the QMS (Element 14, Review and Provision of Infrastructure)
- The Owner and Top Management will endorse the Operational Plan and should be re-endorsed when there is a major change in the plan's content or when the majority of signing parties are no longer filling positions.

Date: OCT 13/2021

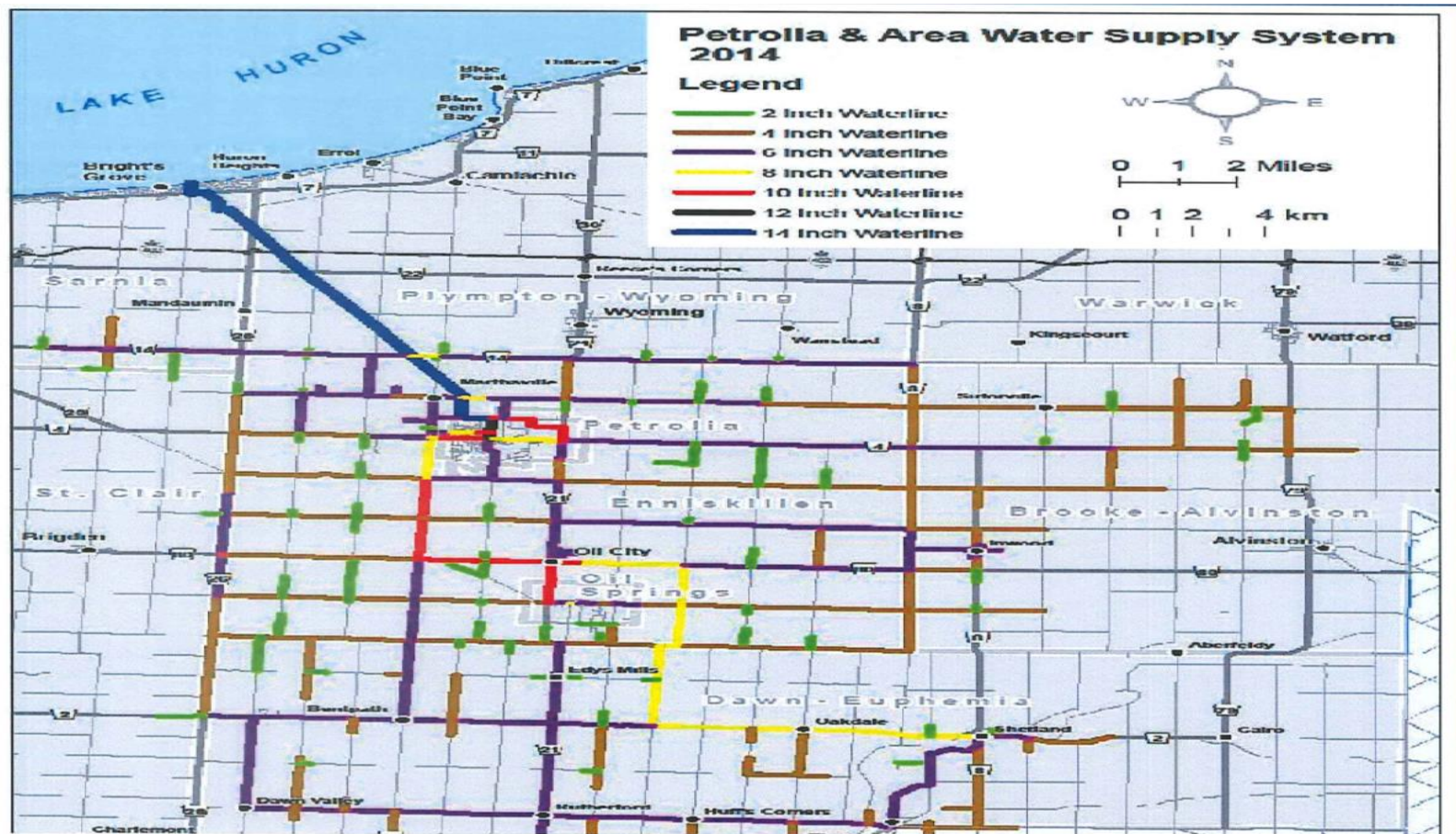
  
Mayor  
Owner, Ian Veen

Date: OCT 15/2021

  
Joe Bloomfield – Project Manager  
Top Management

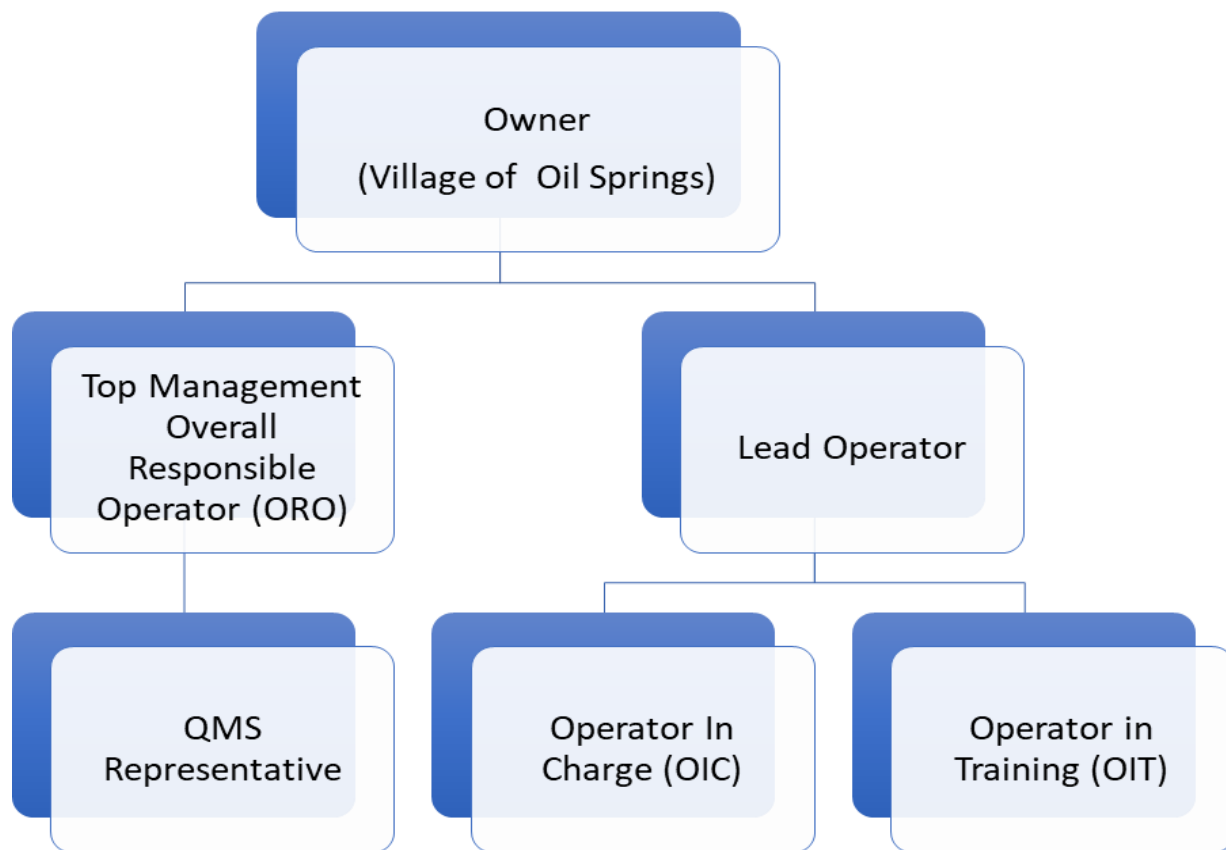
OMI	Title: System Schematic	Approval Date: Dec-18-2018
		Revision No: 1
		Page 1 of 1
Annex B		
Reviewed by: QMS Representative		Approved by: Top Management

## Annex B – System Schematic



<b>OMI</b>	Title: Operations Organization Chart	Approval Date: Oct-29-2021
		Revision No: 2
		Page 1 of 1
Annex C		
Reviewed by: QMS Representative		Approved by: Top Management

## Annex C – Operations Organization Chart



<b>OMI</b>	Title: Organizational Responsibilities	Approval Date: Oct-29/2021
		Revision No: 5
		Page 1 of 2
Annex D		
Reviewed by: QMS Representative		Approved by: Top Management

## Annex D - Organizational Responsibilities and Authorities

Title	Responsibilities	Authorities
Mayor/Council (Owners)  Owner Representative	<ul style="list-style-type: none"> <li>- provides resources for the maintenance and continual improvement of the QMS</li> <li>- ultimate responsibility for the provision of safe drinking water</li> <li>- ensure compliance with applicable legislation and regulations</li> <li>- participate in annual Management Review</li> <li>- communicate with Top Management</li> </ul>	<ul style="list-style-type: none"> <li>- financial, administrative authority related to the distribution of safe water</li> <li>- recommend and approve budget items, rates and bylaws pertaining to water</li> </ul>
Top Management (Project Manager)	<ul style="list-style-type: none"> <li>- perform ORO duties</li> <li>- communication with Owner/Owner rep</li> <li>- approves DWQMS Operational Plan</li> <li>- prepares reports and maintains records</li> <li>- ensure that the system is operated in accordance with all applicable legislation and regulations</li> <li>- schedule and oversee the day to day activities relating to the distribution system</li> <li>- lead for Management Reviews</li> <li>- communications during an emergency</li> <li>- recommendation of system improvements</li> <li>- develop procedures and processes for assuring water quality</li> <li>- designates a QMS Representative</li> </ul>	<ul style="list-style-type: none"> <li>- oversee adverse water quality incidences and replies</li> <li>- monitors process and equipment</li> <li>- recommends changes to the QMS</li> <li>- assumes the role of QMS rep in absence of regular QMS rep</li> </ul>
QMS Representative	<ul style="list-style-type: none"> <li>- communications with Top Management &amp; Owner/Owner Rep</li> <li>- prepares reports and maintains records</li> <li>- communications during emergency</li> <li>- report and act on any incidents of non-compliance</li> <li>- communication with Top Management &amp; Operators</li> <li>- document and record control</li> <li>- record minutes of meetings</li> <li>- administer the QMS by ensuring that processes needed for the QMS are established and maintained</li> <li>- report to Top Management on the performance of the QMS and any need for improvement</li> <li>- Promotes awareness of the QMS</li> </ul>	<ul style="list-style-type: none"> <li>- Responds to adverse water quality incidences and replies</li> <li>- recommend changes to the QMS</li> <li>- monitors processes and equipment</li> <li>- update and document changes to QMS</li> </ul>

OMI	Title: Organizational Responsibilities	Approval Date: Oct-29-2021
		Revision No: 5
		Page 2 of 2
Annex D		
Reviewed by: Cathy Culnan		Approved by: Top Management

<b>Title</b>	<b>Responsibilities</b>	<b>Authorities</b>
Lead Operator	<ul style="list-style-type: none"> <li>- communication with Top Management &amp; Operators</li> <li>- report and act on any incidents of non-compliance</li> <li>- oversees/performs regular maintenance of water system</li> <li>- assist with the development of procedures and processes for assuring water quality</li> <li>- respond to and document public complaints</li> </ul>	<ul style="list-style-type: none"> <li>- oversees/responds to adverse water quality incidences and replies</li> <li>- monitors processes and equipment</li> <li>- recommend changes to the QMS</li> </ul>
Operator	<ul style="list-style-type: none"> <li>- communication with Top Management &amp; Operators</li> <li>- report and act on any incidents of non-compliance</li> <li>- regular maintenance of water system</li> <li>- assist with the development of procedures and processes for assuring water quality</li> <li>- respond to and document public complaints</li> </ul>	<ul style="list-style-type: none"> <li>- responds to water quality incidents and public complaints</li> <li>- monitors processes and equipment</li> <li>- recommend changes to the QMS</li> </ul>
OIT (Operator in Training)	<ul style="list-style-type: none"> <li>- Perform day to day operations and maintenance under the direction of the OIC</li> <li>- Communicates with Operators</li> </ul>	<ul style="list-style-type: none"> <li>- recommend changes to QMS</li> </ul>

OMI	Title: Essential Supplies/Services Listing and Contact List	Approval Date: Jan-18-2021
		Revision No: 6
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Annex E		
Reviewed by: QMS Representative		Approved by: Top Management

## Essential Supplies/Services Listing and 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)	
Mike Cyr	226-932-5816 (cell)	
Township of Enniskillen		
Enniskillen Administration	519-882-2490 (office)	519-882-3335 (fax)
E – Pager – after hours	519-339-8128	
E – Jake Van Damme	519-331-9538 (cell)	
E – Mike Cummings	519-331-5580 (cell)	
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 – Iconix Water Products	519-668-6095 (office) 519-668-4607 (fax)	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

<b>OMI</b>	Title: Essential Supplies/Services Listing and Contact List	Approval Date: Jan-18-2021
		Revision No: 6
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Annex E		
Reviewed by: QMS Representative		Approved by: Top Management

Repairs/Excavators/Contractors		
Dan McNally	519-383-9373 (cell)	
<b>E – All Season Excavating</b>	<b>519-384-2994 (office)</b>	<b>on site excavation responsibilities</b>
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)	



	Title: Essential Supplies/Services Listing and Contact List	Approval Date: Jan-18-2021
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Annex E		
Reviewed by: QMS Representative		Approved by: Top Management

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	

OMI	Title: Policy Statement	Approval Date: Oct-15-2021
		Revision No: 5
		Page 1 of 1
Annex F		
Reviewed by: QMS Representative		Approved by: Top Management

## Annex F – Policy Statement

# OMI

### DRINKING WATER QUALITY MANAGEMENT SYSTEM

#### POLICY STATEMENT

The Water Operating Authority (Operations Management International Canada Inc. – OMI) is committed to providing safe drinking water to all residents. The Drinking Water Management System will guide the operations and programs undertaken throughout the distribution system which is owned by The Village of Oil Springs.

The Water Operating Authority is committed to:

- The maintenance and continual improvement of the Quality Management System
- The consumer to providing safe drinking water
- Complying with applicable legislation and regulations
- Providing the Quality Management in a form that can be communicated to all Operating Authority personnel, the Owner and the public
- Shall establish and maintain a Quality Management System that is consistent with the Policy

Approved By:



Top Management – Joe Bloomfield – Oct 15, 2021  
Operations Management International Canada Inc. (OMI)

OMI	Title: QMS Document and Record Control	Approval Date: Nov-2-2020
		Revision No: 3
		Page 1 of 3
Procedure A		
Reviewed by: QMS Representative		Approved by: Top Management

## Procedure A - QMS Document and Record Control

This procedure is applicable to the following QMS documents

- Operational Plan
- Procedures/SOP's
- Forms
- Equipment Manuals
- As Built Drawings

### 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. The QMS Representative is responsible for creating new document(s) or can delegate the task of creating the new document(s)
- Any 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 Representative.

The request must include the following information:

1. The reason for new or changed document: Must belong in one or more of these categories:
  - Enhances process control
  - Reduces risk
  - Supports regulatory requirements
  - May improve operational efficiency
2. Outline of document change or new document content
  - Narrative format is acceptable

OMI	Title: QMS Document and Record Control	Approval Date: Nov-2-2020
		Revision No: 3
		Page 3 of 3
Procedure A		
Reviewed by: QMS Representative		Approved by: Top Management

- The requester shall develop the new/revised document and submit it to Top Management for approval.
- Electronic versions of the new/changed documents will be created by the QMS Representative and approved by Top Management. Electronic versions for disposal will be stored in a Historical/Obsolete file
- Electronic documents are available on a shared web-based network, (SharePoint) secured by username and password. The network is subjected to daily backups.

#### Approving Documents

- QMS related documents shall be approved by Top Management.
- The QMS Representative shall be responsible for ensuring that copies of the new or changed document show the revision number and date modified and are distributed. Obsolete documents (due to changes) shall be collected and destroyed.

#### Reviewing Documents

- The Operational Plan, Annex's and Procedures shall be reviewed once every Calendar Year for applicability and relevance.

#### Document Availability

- All procedures, instructions and forms are retained in the QMS binders.
- Equipment manuals and specifications are kept at the Water Department.
- As built drawings are kept at the Municipal office.
- Municipal Drinking Water License and Municipal Water Works Permit are kept at the Water Department for review.

OMI	Title: QMS Document and Record Control	Approval Date: Nov-2-2020
		Revision No: 3
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Procedure A		
Reviewed by: QMS Representative		Approved by: Top Management

## QMS Record Control

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

### Record Retention Time Legislation

Operator training records 2002	5 years O. Reg. 128/04 under SDWA,
Annual Reports and Summary Reports 2002	5 years O. Reg. 170/03 under SDWA,
Log books and other record-keeping mechanisms 2002	5 years O. Reg. 128/04 under SDWA,
Lab analyses of water samples for chemical tests 2002	15 years O. Reg. 170/03 under SDWA,
Lab analyses of water samples for microbiological, chlorine and turbidity tests, and fluoride tests where fluoridation is provided 2002	5 years O. Reg. 170/03 under SDWA,

## Disposing of Records

- Documents will be shredded and disposed of after applicable retention time has expired.

## Manual Records

- The record title shall be clearly visible and legible.
- Manual records shall be legible. Pencil or any other erasable marker shall not be used to record processes, product information or data.
- QMS related water distribution records will be available at the Water Department.
- QMS records shall be stored in such a manner as to prevent deterioration.
- All manual records shall show the name or initials of the recorder and the date (and time if appropriate) the record was generated.

OMI	Title Water Distribution Risk Assessment and Outcomes	Approval Date: Oct-29-2021
		Revision No: 6
		Page 1 of 7
Procedure B		
Reviewed by: QMS Representative		Approved by: Top Management

## Procedure B – Risk Assessment and Outcomes

Top Management, QMS Representative and Operators made up the Risk Assessment team that identifies the potential hazards and hazardous events which could affect the quality and operations of the water system, the control measures to address the hazards, identify the Critical Control Points (CCP) and Critical Control Limits (CCL), and associated methods of monitoring and controlling them. The Risk Assessment team shall consider the MECP document – “Potential Hazardous Events for Municipal Residential Drinking Water Systems” – dated Feb/2017, as it may be amended. A copy is available at [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater)

Hazardous events and hazards are assessed on the basis of likelihood, severity and detectability. The assessment criteria are summarized in the associated tables shown in Procedure B. The values were combined to give an overall level of risk as shown. All hazards or hazardous events with an overall risk factor greater than 7 are associated with a CPP & CCL

The reliability and redundancy of equipment is considered when assigning ratings to the hazard and hazardous events.

The once every Calendar Year Risk Assessment and Outcomes meeting will monitor the Critical Control Limits and respond to any deviations from the Critical Control Limits. The meeting minutes will record and report the deviations and procedures will be developed from the findings. Results from the meeting minutes will be submitted for the once every Calendar Year Management Review meeting.

The Risk Assessment team will review the Risk Assessment once every Calendar Year to ensure the information and assumptions remain current and verify the validity of the information used in the Risk Assessment.

Once every thirty-six months, Top Management will assemble a team to conduct a new Risk Assessment, to ensure the risks are re-assessed.

<b>OMI</b>	Title Water Distribution System Risk Assessment and Outcomes	Approval Date: Oct 29/2021
		Revision No: 6
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Procedure B		
Reviewed by: QMS Representative		Approved by: Top Management

Description	<b>Column A - Likelihood</b> of Hazardous Event Occurring	Rating
Rare	May occur in exceptional circumstances, and has not occurred in past	1
Unlikely	Could occur at some time, historically has occurred less than once every 5-10 years	2
Possible	Has occurred or may occur once or more per year	3
Likely	Has occurred or may occur on a monthly to quarterly basis	4
Very Likely	One or more occurrences on a monthly or more frequent basis	5

Description	<b>Column B – Severity</b> of Hazardous Event Occurring	Rating
Insignificant	Insignificant impact, little public exposure, little or no health risk	1
Minor	Limited public exposure, minor health risk	2
Moderate	Minor public exposure, minor health risk	3
Major	Large population at risk	4
Catastrophic	Major impact for large population, complete failure of systems	5

OMI	Title: Water Distribution System Risk Assessment and Outcomes	Approval Date: Oct 29/2021
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Procedure B		
Reviewed by: QMS Representative		Approved by: Top Management

Description	<b>Column C – Detectability</b> of Hazardous Event	Rating
Highly Detectable	Easy to detect, visual	1
Moderately Detectable	Increased flow rates, system pressure complaints	2
Normally Detectable	Visually detectable but not on rounds or regular basis	3
Poorly Detectable	Visually detectable but not inspected on a regular basis	4
Undetectable	Cannot detect	5

**Column D – is the Total Rating Value of the overall level of risk**



<b>OMI</b>	Title: Water Distribution System Risk Assessment and Outcomes	Approval Date: Oct 29/2021
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Procedure B		
Reviewed by: QMS Representative		Approved by: Top Management

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  Loss of water to consumers  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 – follow directions  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	Quantity/ quality  Low pressure/ back siphoning  Bacteriological or chemical contamination	No elevated distribution system storage. Need to maintain supply from Enniskillen or isolate and 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)	2	2	2	6	No		SOP # 1  SOP # 7  SOP # 9

<b>OMI</b>	Title: Water Distribution System Risk Assessment and Outcomes	Approval Date: Oct 29/2021
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Procedure B		
Reviewed by: QMS Representative		Approved by: Top Management

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 with alarms.  Bi-weekly Chlorine residual analysis	Flush distribution system to increase chlorine dosage and resample.  Contact the Enniskillen water distribution system.  Emergency connection to neighboring systems	1	4	2	7	Yes	Chlorine residual < 0.05 mg/ L  Chlorine residual > 4.0 mg/L	SOP # 1  SOP # 4  SOP # 5  SOP # 11
Distribution	Commissioning of new watermain 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 visitors	Follow Federal & Provincial Mandated Guidelines Alternating Staff Schedules/work from home/utilizing staff from other projects	2	2	1	5	No		Federal & Provincial Orders

<b>OMI</b>	Title: Water Distribution System Risk Assessment and Outcomes	Approval Date: Oct 29/2021
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Procedure B		
Reviewed by: QMS Representative		Approved by: Top Management

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 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 if low Notify Health Unit as necessary (boil water order) Restore pressure and chlorine residual. Conduct sampling per MECP and Health Unit direction	3	2	2	7	Yes	< 20 psi	SOP # 1  SOP # 7  SOP # 9  SOP # 10
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 Emergency connection	2	2	2	6	No		SOP # 1  SOP # 10  Bylaw # 756
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 the Enniskillen water distribution system	1	1	5	5	No		SOP # 1  SOP # 5
Distribution	THM Exceedance (RAA)	Adverse		Quarterly sampling	Notify SAC & MOH via written notice within 7 days of completion quarter. Follow direction from MOH	1	1	5	7	Yes	0.100 mg/L (100 ug/L)	SOP # 12
Distribution	HAA Exceedance (RAA)	Adverse		Quarterly sampling	Notify SAC & MOH via written notice within 7 days of completion quarter. Follow direction from MOH	1	1	5	7	Yes	0.080 mg/L (80 ug/L)	SOP # 14

OMI	Title: Water Distribution System Risk Assessment and Outcomes	Approval Date: Oct 29/2021
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Procedure B		
Reviewed by: QMS Representative		Approved by: Top Management

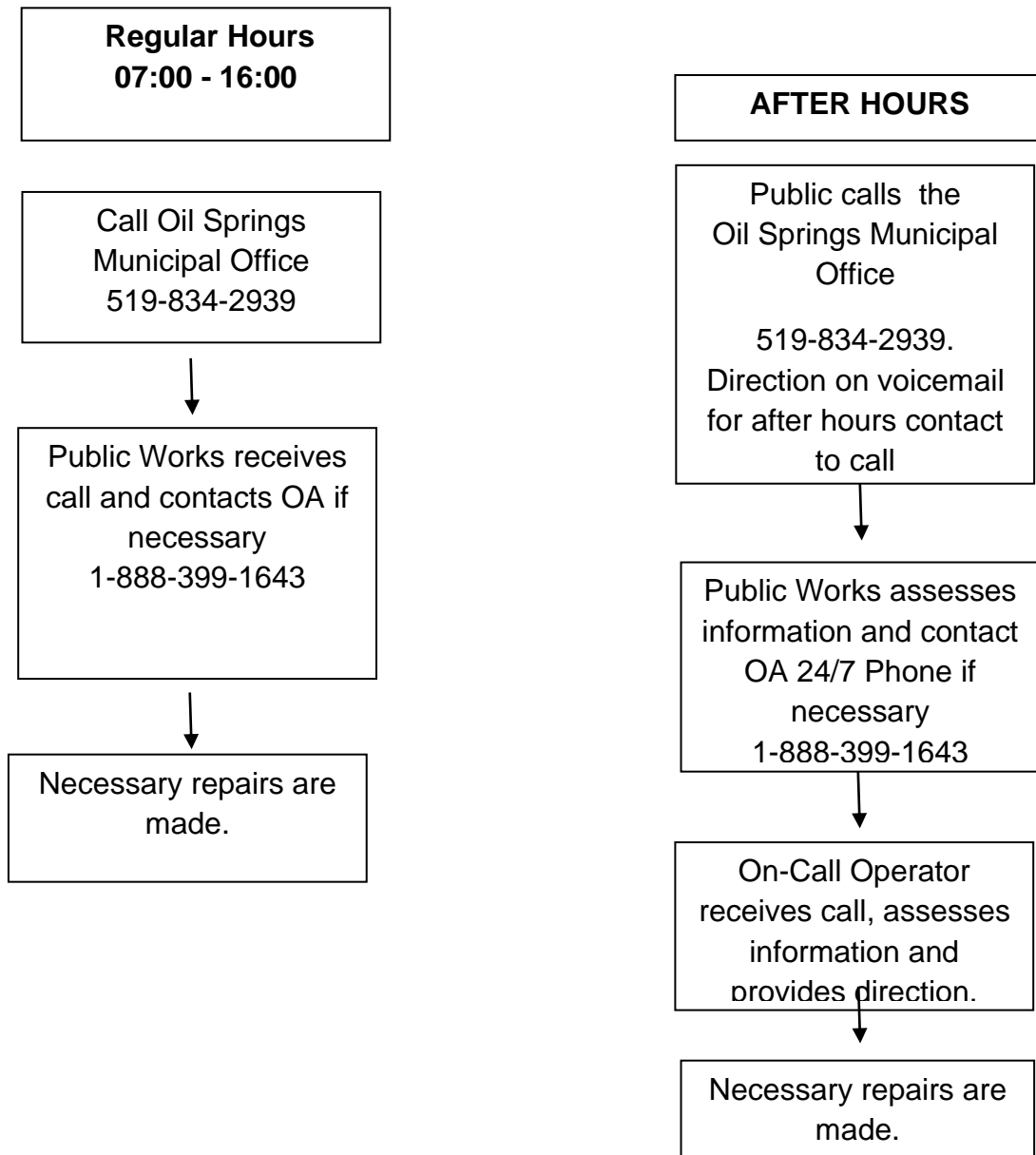
Activity or Process Step	Description of Hazard	Potential Result of Hazard	Comments	Available Monitoring & Control Measures	Emergency Procedure or Contingency Plan	A	B	C	D	CCP?	Critical Control Limits	Reference Procedure
Distribution	Long Term Impacts of Climate Change -Drought -Heat Wave -Deep Freeze -Sustained Extreme Temperatures	Potential for Increased demand Potential reduction in water Potential for water conservation		Monitor Chlorine residuals  Hydrants are pumped out to prevent frozen hydrants	Flushing hydrants to ensure chlorine residual in system during extreme heat  Possible water conservation order	2	3	1	6	No		SOP # 1  SOP # 10  SOP # 11
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 breach	Potential for AWQI & loss of water   Loss of Data		Observant staff  News reports  Data on back-up SharePoint	Monitor chlorine residuals in system Notify Health unit as necessary (boil water order)  Refer to Sharepoint for data	1	1	4	6	No		SOP # 1  SOP # 14
Distribution	Vandalism	Potential for AWQI		Observant staff  Routine Inspections  Fences, gates, locks	Check chlorine residual  Document with pictures  Contact Authorities	1	3	1	5	No		SOP # 1

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Procedure C		
Reviewed by: QMS Representative		Approved by: Top Management

## Procedure C – Not Applicable for this System

OMI	Title: Personnel Coverage 24/7	Approval Date: Oct-29-2021
		Revision No: 3
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Procedure D		
Reviewed by: QMS Representative		Approved by: Top Management

## Procedure D – Personnel Coverage 24/7



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		Revision No: 2
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Procedure E		
Reviewed by: QMS Representative		Approved by: Top Management

## Procedure E – Internal Audit

Internal audits are conducted to ensure that the QMS conforms to the requirements of the DWQMS. These requirements include ensuring that the QMS has been effectively implemented and properly maintained.

### Audits conducted by Operating Authority

#### Auditor Training

- All internal auditors must have successfully completed the DWQMS internal auditing training.

#### Internal Audit Schedule.

- The audit schedule is developed every year by the QMS Representative.
- Each Element and corresponding Annex & Procedure of the Standard is audited at least once every Calendar Year.

#### Audit Planning

- Prior to the audit, the auditor shall review all related QMS documentation including previous internal and external audits, action tracking register spreadsheets and MECP annual inspection report

#### Audit Check List

- Meeting Date, Time and Location
- Invitees to the meeting
- Review meeting minutes from previous audits
- Review external/surveillance audit reports, MECP Inspection report
- Action Tracking Register Spreadsheets: CAR's, OFI's, Action items, BMP/Continual Improvement
- Identify elements scheduled for internal audit - 1 through 21 with corresponding Annex's & Procedures

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Procedure E		
Reviewed by: QMS Representative		Approved by: Top Management

### Conducting the Audit

- The auditor shall observe activities, review records and discuss events with personnel as necessary to ensure that the status of the audited element of the QMS has been effectively covered.

### Reporting the Results

- The auditor shall submit a completed report to QMS Representative
- The report shall include any requirement for corrective actions
- Corrective actions shall be communicated to the responsible individual and included as part of Management Review input.
- Top Management shall receive a copy of the report by email.

### **Audits Conducted by another Municipality**

#### Auditors

- Outside auditors must provide proof of competency prior to conducting an audit.

#### Audit Schedule

- Audits are to be conducted per the Operating Authority's schedule.

### Planning and Conducting the Audit and Reporting the Results

- Audits may be planned and conducted per the procedures of the auditing Municipality. Prior approval by QMS Representative.
- Audit results may be reported per the procedures of the auditing Municipality as long as the results are documented. Requirements for corrective action must be indicated.



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Procedure F		
Reviewed by: QMS Representative		Approved by: Top Management

## Procedure F - Management Review

This procedure defines the Management Review process to ensure the continuing suitability, adequacy and effectiveness of the QMS.

### Review Once Every Calendar Year

The Management Review is convened by Top Management. Attendees include Top Management and the Owner and/or Owner Representative and the QMS Representative.

### Review Input

The QMS Representative shall provide information and data concerning the following categories, for the review:

- incidents of regulatory non-compliance
- incidents of adverse drinking water tests
- deviations from critical control point limits and response actions
- the effectiveness of the risk assessment process
- internal and 3<sup>rd</sup> party audit results
- results of emergency response testing
- operational performance
- raw water and drinking water quality trends
- follow-up actions items from previous management reviews – refer to Action Tracking Register spreadsheets
- status of management action items identified between reviews – refer to Action Tracking Register spreadsheets
- changes that could affect the Quality Management System
- consumer feedback
- the resources needed to maintain the Quality Management System
- results of the infrastructure review
- Operational Plan currency, content and updates
- staff suggestions

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Procedure F		
Reviewed by: QMS Representative		Approved by: Top Management

### Review Process

The Management Review shall be a planned event. A minimum of two hours shall be set aside by the participants to ensure a thorough review of the QMS is conducted.

Each input category shall be reviewed in order to identify if, where and when improvements to the QMS and its procedures are required.

The QMS Representative or designate shall make note of any changes or action items required during the review. All action items will be recorded on the Action Tracking Register spreadsheets.

### Review Output

The output from the Management Review shall include meeting minutes maintained by the QMS Representative. The minutes shall include:

- the date and time of the management review and the names of the participants and attendees
- any identified deficiencies
- a list of "action" items. All action items shall identify an individual responsible and the proposed time lines for implementation
- recommendation(s) for any resources needed for maintenance or improvement of the QMS

The Management Review minutes will be provided to the Owner/Owner Representative and Top Management.