



Operations Management International Canada Inc.

DWQMS OPERATIONAL PLAN
PLYMPTON-WYOMING WATER DISTRIBUTION SYSTEM
MDWL#: 035-101; ISSUE # 6
DWWP#: 035-201; ISSUE # 6

This Operational Plan defines and documents the Quality Management System (QMS) for the Corporation of the Town of Plympton-Wyoming WDS 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 Drinking Water Quality Management Standard 2.0 (DWQMS)

System No. 260006594

Approved and Authorized for Use – January 7, 2026



Joe Bloomfield – OMI Project Manager
Top Management

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ELEMENT # 1 – QUALITY MANAGEMENT SYSTEM (QMS)

The DWQMS (Drinking Water Quality Management Standard) 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 Plympton-Wyoming Water Distribution System. (Number 260006594)

The Quality Management System for Plympton-Wyoming covers the transmission and distribution of potable drinking water to consumers within the Plympton-Wyoming Water Distribution System. Treated potable water is purchased from Lambton Area Water Supply System (LAWSS) (Number 210000906).

Operations Management International Canada Inc. (OMI) (Jacobs) is the Operating Authority for the Oil Springs Water Distribution System. Top Management duties are performed by the OMI Project Manager and in his/her absence the Area Manager.

The Plympton-Wyoming Distribution System supplies potable water to the BluePoint Lookout Condominium WDS (Number 260096980)

Owner Representative for the Plympton-Wyoming Water Distribution system is Plympton-Wyoming's Director of Public Works

Ontario		Ministry of the Environment, Conservation and Parks			Schedule C – Director's Directions for Operational Plans (Subject System Description Form)		
Fields marked with an asterisk (*) are mandatory.		Owner of Municipal Residential Drinking Water System *			Municipal Residential Drinking Water System		
The Town of Plympton-Wyoming		Name of Drinking Water System (DWS) *			Name of Operating Subsystems (Optional) *		
Subject Systems		1. Plympton-Wyoming DWS			035-101		
Name of Drinking Water System (DWS) *		Licence Number *		Name of Operating Subsystems (Optional) *		Name of Operating Authority *	
1. Plympton-Wyoming DWS		035-101		Blue Point Lookout Condominium DWS		Operations Management International (OMI)	
DWS Number(s) *							
260006594							
Contact Information for Questions Regarding the Operational Plan							
Primary Contact		First Name *		Middle Initial			
Last Name *		First Name *		Middle Initial			
Title *		Telephone Number *		Email Address *			
QMS Rep - Operator II		519-466-4631 ext.		cathy.culnan@jacobs.com			
Secondary Contact							
Last Name *		First Name *		Middle Initial			
Title *		First Name *		Middle Initial			
Bloomfield		Joseph					
Project Manager		Telephone Number *		Email Address *			
		519-381-0542 ext.		joe.bloomfield@jacobs.com			

ELEMENT # 2 – QUALITY MANAGEMENT SYSTEM (QMS) POLICY

The Operating Authority for The Plympton-Wyoming 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 continually 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 Municipal website at www.plympton-wyoming.com and posted at the Water Department.



Date: January 7, 2026

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 representative and the Operating Authority's Top Management. The Owner/Owner Reps 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 Representative 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:** January 8, 2026

**Paul DaSilva; Director of Public Works
Owner Representative: Town of Plympton-Wyoming**

J. B. Blaylock,

Date: January 7, 2026

**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 # 10). 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 Culman to fulfill the role of DWQMS Representative for the Plympton-Wyoming Water Distribution System

Regards,



Joe Bloomfield, July 21/2021
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.

Relevant MECP Forms can be retrieved from the Ministry's "Central Forms Repository" at:
<https://forms.mgcs.gov.on.ca/en>

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

ELEMENT # 6 – DRINKING WATER SYSTEM

The Corporation of the Town of Plympton-Wyoming is the Owner of the Plympton- Wyoming WDS. Operations Management International Canada Inc (OMI) is the Operating Authority. The Plympton-Wyoming WDS is a Class I Distribution System.

Plympton-Wyoming purchases potable drinking water from the Lambton Area Water Supply System (LAWSS # 210000906) which is situated in Point Edward on the southern tip of Lake Huron. LAWSS is owned by the Lambton Area Water Supply Joint Management Board whose municipal members are:

Owner	Distribution System	Operating Authority
Corporation of the City of Sarnia	Sarnia WDS	City of Sarnia
Corporation of the Village of Point Edward	Village of Point Edward WDS	Village of Point Edward
Corporation of the Township of St. Clair	St. Clair WDS	Township of St. Clair
Corporation of the Town of Plympton-Wyoming	Plympton-Wyoming WDS	OMI
Corporation of the Township of Warwick	Township of Warwick WDS	OCWA
Corporation of the Municipality of Lambton Shores	Lambton Shores WDS	OMI

There is approximately 78 Km's of transmission lines owned by LAWSS. The transmission lines also supply water to Forest, Warwick/Watford and Brooke-Alvinston. Water meters, which are located on municipal boundary lines, record the water flow and are monitored by LAWSS through the SCADA system. Two (2) bulk water fill up stations allow residents to purchase water either in Camlachie or on London Line at Plowing Match Road.

Water supplied by LAWSS supplies sufficient secondary disinfection to meet the regulatory requirements within the distribution system. LAWSS performs sampling and monitoring to ensure safe drinking water is supplied to the system. Supplemental re- chlorination is practiced at the LAWSS East Lambton Booster Station which feeds the Plympton-Wyoming WDS.

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.

The Owner Rep retrieves the LAWSS annual report from the water providers website, once approved by the Lambton Area Water Supply Joint Management Board.

Potable water for the Plympton-Wyoming is distributed throughout the system as follows:

Wyoming:

Wyoming area consists of one steel standpipe with a storage capacity of 1586 m³. Continuous pressure monitoring takes place in the chamber used to fill the Wyoming Standpipe. Results are

captured by the LAWSS SCADA system. Distribution piping ranges from 100 mm to 200 mm, also components of the distribution system consist of sample stations, hydrants, water services, dead-end blow offs, and water main isolation valves.

Plympton:

Plympton area consists of Distribution piping ranging in size 50 mm to 200 mm, also components included are sample stations, hydrants, water services, dead-end blow offs and water main isolation valves.

BluePoint Lookout Condominium: (260096980)

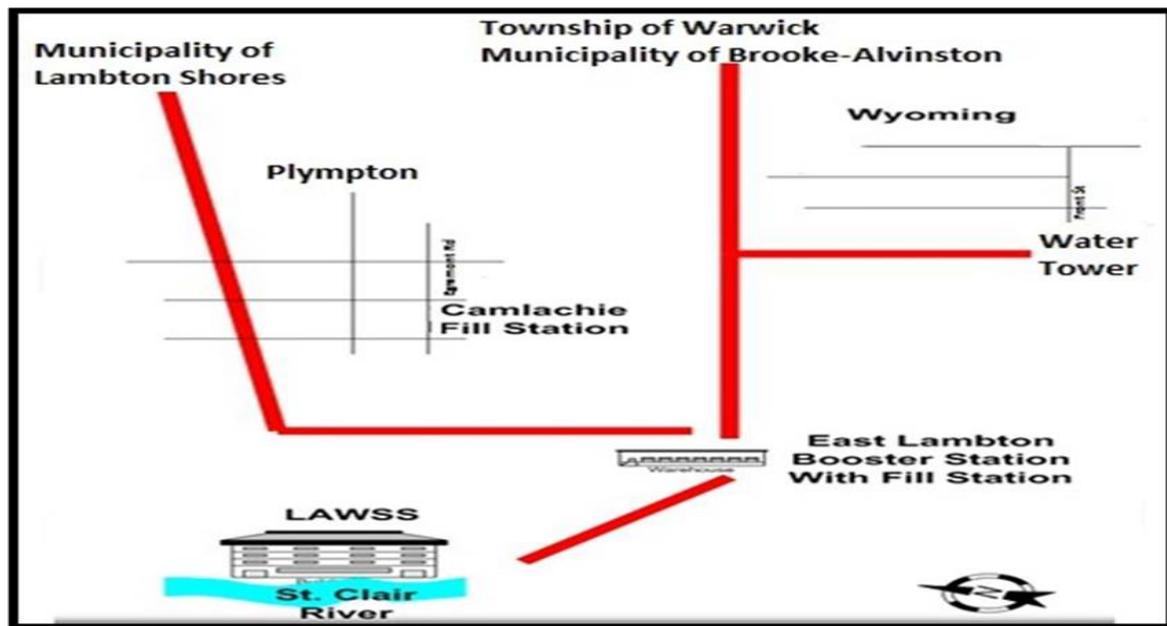
The Plympton-Wyoming WDS supplies potable water to the Bluepoint Lookout Condominium WDS. BluePoint is an NMYRRS (Non-Municipal Year-Round Residential System)

The BluePoint Condominium WDS consists of a flow meter & chamber, piping ranging from 50 mm to 200 mm, also components include hydrants, residential water services, dead-end blow offs and water main isolation valves.

During a loss of water emergency Plympton-Wyoming has emergency water connection capabilities. The locations are:

Location	Owners	Operating Authority
Mandaumin Rd & Confederation Line	City of Sarnia	City of Sarnia
Churchill Rd & Canada Drive	Township of Enniskillen	Township of Enniskillen
Townsend Line & Lakeshore Rd	West Lambton Shores	OMI
Egremont Rd & Forest Rd	Warwick	OCWA
Mandaumin Rd & Lakeshore Rd	LAWSS	OCWA
Confederation Rd & Mandaumin Rd	Town of Petrolia	OCWA

SYSTEM SCHEMATIC:



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

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, overall risk factor numbers and outcomes are discussed, assessed & agreed upon.

Going forward starting in 2026; Top Management, QMS Representative and Operators will conduct a full risk re-assessment at least once every Calendar Year while conducting the risk assessment & outcomes review on the same occasion to ensure that the information and

assumptions used in this process for all procedures, hazardous events, hazards, ratings, ratings values & risk factor numbers listed in the Outcomes Table remain current and valid.

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

Plympton-Wyoming Bylaw # 96-2023; section 6 (6.1), page 7, documents the restricted use and access to Fire Hydrants

Plympton-Wyoming Bylaw # 96-2023; section 9 (9.2.2), page 10, documents the Backflow Prevention device requirement

Refer to: Appendix “C” - Risk Assessment Outcomes Table
Plympton-Wyoming Bylaw # 96-2023

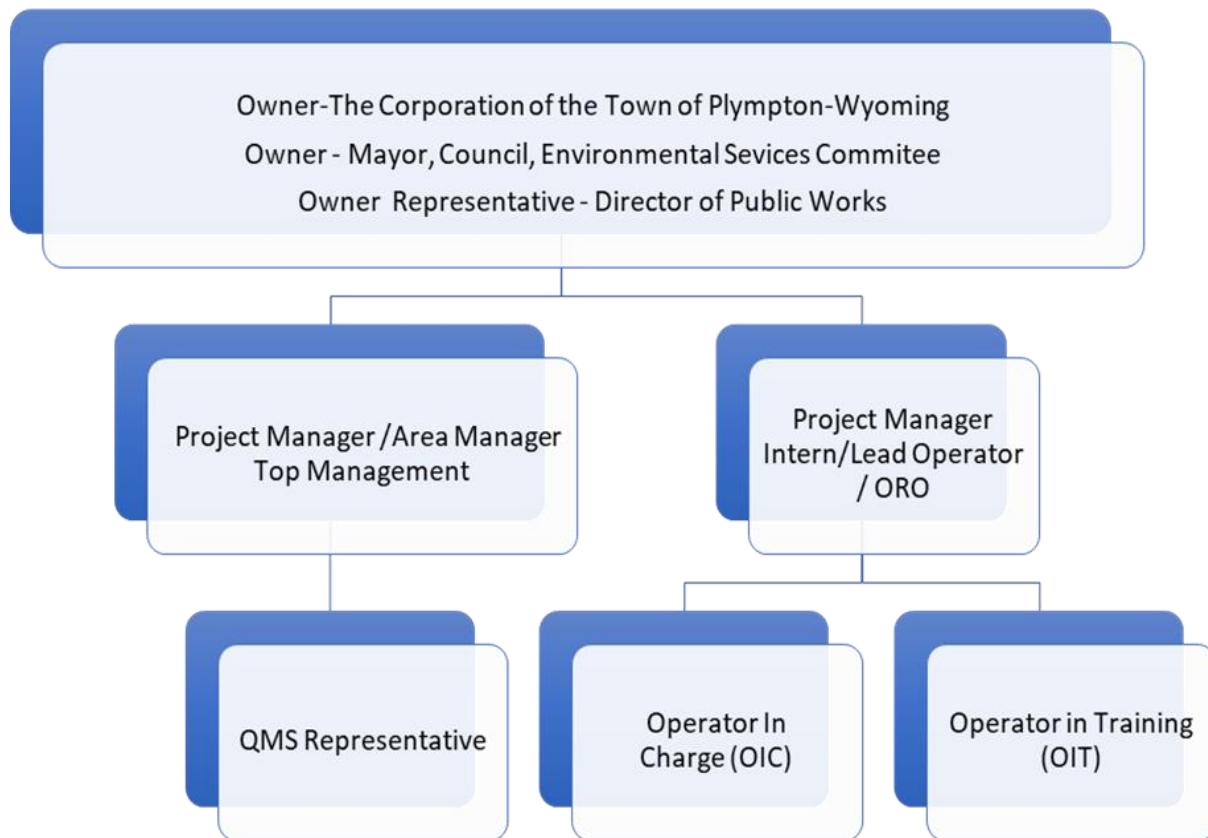
ELEMENT # 9 – ORGANIZATIONAL ROLES, RESPONSIBILITIES AND AUTHORITIES

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
Owners (Mayor/Council) (Environmental Services Committee)	<ul style="list-style-type: none"> - Ultimate responsibility for the provision of safe drinking water - Ensure compliance with applicable legislation & regulations - Provides resources for the maintenance and continual improvement of the QMS - Participating in Environmental Services committee meetings 	<ul style="list-style-type: none"> - Financial and administrative authority related to the distribution of safe drinking water - Recommend and approve budget items, rates and bylaws pertaining to water
Owner Representative (Director of Public Works)	<ul style="list-style-type: none"> - Participating in Management Reviews - Communicating with Top Management - Ensure compliance with applicable legislation and regulations - Communications with Mayor and Council regarding QMS and water distribution system - Communicate with Environmental Services Committee 	<ul style="list-style-type: none"> - Review and recommend budget items, rates and bylaws pertaining to water - Financial, administrative authority related to the distribution of safe water
Operating Authority Area Manager (Top Management)	<ul style="list-style-type: none"> - Corporate oversite for OMI (Jacobs) operations - Provides Project Manager duties in the absence of the regular Project Manager - Demonstrated expertise in the principles of supervision and training; principles of budget preparation and expenditure control; and safe work practices - Communications with Environmental Services Committee, Owner, Owner Rep 	<ul style="list-style-type: none"> - 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 - Review & recommend budget items
Operating Authority Project Manager (Top Management)	<ul style="list-style-type: none"> - Communication liaison with Area Manger, Owner, Owner Rep, Operators, Engineers, MECP, and repair contractors - Communications and training with Project Manager Intern - Participates in Management Review (Chair) - Appointing the QMS Representative - Recommends and/or implement improvements or changes according to the operating contract - Communications during emergencies 	<ul style="list-style-type: none"> - 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 - QMS Rep in absence of regular QMS Rep
Project Manager Intern (ORO)	<ul style="list-style-type: none"> - Communication liaison with Area Manger, Owner, Owner Rep, Operators, Engineers, MECP, and repair contractors - Participates in Management Review - Recommends improvements or changes - Performs ORO duties 	<ul style="list-style-type: none"> - Oversee the day-to-day operations of the drinking water system - Oversee adverse water quality incident responses and reporting - Recommend changes to the QMS

Operating Authority Operators (Lead & OIC)	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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 OIT (Operator in Training)	<ul style="list-style-type: none"> - Perform day to day operations and maintenance under the direction of the OIC and/or ORO 	<ul style="list-style-type: none"> - Monitor process and equipment - Recommend changes to QMS
Plympton-Wyoming Public Works Operator	<ul style="list-style-type: none"> - Water meter repair / install - Water shut off / water turn on 	<ul style="list-style-type: none"> - Order repair parts - Order water meters
Operating Authority QMS Representative	<ul style="list-style-type: none"> - 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) - Ensure personnel are aware of the applicable legislative and regulatory requirements that pertain to their duties for the operation of the subject system through QMS meetings and audits 	<ul style="list-style-type: none"> - 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

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

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	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - First Aid / CPR Training - Leadership Training - DWQMS Provincial Workshop training - WHMIS - Internal Audit Training
Operating Authority Project Manager	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - First Aid / CPR Training - Leadership Training - DWQMS Provincial Workshop training - WHMIS - Internal Audit Training
Operating Authority Project Manager Intern / ORO	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - Class II WD Certification - First Aid / CPR Training - Leadership Training - DWQMS Provincial Workshop Training - WHMIS - Internal Audit Training
Operating Authority Operators (Lead & OIC)	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - Class II WD Certification - First Aid & CPR Training - Confined Space Training - WHMIS
Operating Authority Operators (OIT) (operator in training)	<ul style="list-style-type: none"> - OIT Certification - Knowledge of the principles and practices of water distribution - Valid Driver's License 	<ul style="list-style-type: none"> - 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 a review of the QMS Operational Plan once every calendar year.*
- *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 expiry certification 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 8:00 am to 4:30 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
<p>The Public will call the Plympton-Wyoming Municipal Office: 519-845-3939</p>	<p>The Public will call the Plympton-Wyoming Municipal Office: 519-834-2939and follow message prompts for after hours contact information, directing the public to call:</p> <p>1-888-399-1643</p> <p>OR</p> <p>The after-hours water/sewer/emergencies contact information is available on the Municipal website:</p> <p>www.plympton-wyoming.com</p> <p>Under: "utilities" then "water & sewer emergencies"</p>
<p>Public Works staff will contact the Operating Authority at:</p> <p>1-888-399-1643</p> <p>The call will be directed to the on-duty Operator and necessary repairs are made</p>	<p>On-call Operator receives call from the after-hours service.</p> <p>The Operator assess information & contacts ORO if needed.</p> <p>The Operator performs required repairs as necessary</p>

ELEMENT # 12 – COMMUNICATIONS

The QMS Representative shall ensure 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 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, purchase order process and/or emails

Consumers have access to the DWQMS Operational Plan and the QMS Policy through the Municipal website www.plympton-wyoming.com

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.

The current version of the Operational Plan and SOPs are available for review by staff at the Water Department.

ELEMENT # 13 – ESSENTIAL SUPPLIES AND SERVICES

Plympton-Wyoming purchases potable water from the **Lambton Area Water Supply System** (LAWSS # 210000906)

Where applicable, supplies must meet or be equal to AWWA specifications. The Plympton-Wyoming 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. 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 conducted 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

The Owner Representative, OA's Top Management and Operators will once every Calendar Year, tour the facilities and evaluate the inventory for the WDS in order to determine that the proper infrastructure is in place to operate and maintain the subject system safely and effectively, in addition, shall consider the current outcomes of the Risk Assessment (Appendix C) to ensure the adequacy of the infrastructure necessary to operate and maintain the system. The results of this review will also be discussed during the Management Review.

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

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

Top Management will communicate with the Owner Representative once every Calendar Year at the Management Review, the results of the infrastructure review/evaluation and include any capital plan proposals. This ensures that the appropriate infrastructure needs are added to the capital plan and that suitable funding and resources are available to maintain & continually improve the Plympton-Wyoming Water Distribution 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 safe & appealing/pleasing; both aesthetically & taste. 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).

Planned Maintenance Program:

- *Fire Hydrants are divided into areas and flushed 1X's per year with an overall condition inspection being conducted simultaneously (ports, ports gaskets, operating nut, paint) and a report submitted. During flushing hydrants are pumped out to prevent freezing. Inoperable fire hydrants are bagged Out-of-Service & necessary repairs are completed in a timely manner.*
- *Watermain Isolation valves are exercised upon new installation, repairs & scheduling with an overall condition inspection being conducted simultaneously (crooked stem, stiff when turning, cracked cap) and a report is 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 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 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 Owner Rep and/or Plympton-Wyoming 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.

The maintenance program is reviewed during the once every calendar year Infrastructure Tour & Review where Owner Rep, Top Management & Operators may offer input regarding the effectiveness of the program.

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 an opportunity to provide input.

ELEMENT # 16 – SAMPLING, TESTING AND MONITORING

Sterile sample bottles are received from the accredited laboratory with qualified Operators collecting the required samples.

Relevant sampling, testing, and monitoring is done upstream of the Plympton-Wyoming WDS by LAWSS, which is operated by OCWA. 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. LAWSS has online chlorine residual analyzers with 24/7 alarm capabilities which monitor the treated water leaving the plant and downstream.

The sampling schedule is as follows:

- a) Seventeen (17) samples are collected in various locations throughout the Plympton-Wyoming Water Distribution System on a monthly basis and analyzed for *E. coli* and Total Coliform at the accredited laboratory.
- b) Five (5) samples are collected in various locations throughout the Plympton-Wyoming Water Distribution System on a monthly basis and analyzed for HPC (Heterotrophic Plate Count) at an accredited laboratory
- c) One (1) sample is collected quarterly from various locations within the Plympton-Wyoming Water Distribution System and analyzed for HAA's (Haloacetic Acids) at the accredited laboratory
- d) One (1) sample is collected quarterly from the Wyoming Sewage Treatment Plant (Water main dead end – Furthest Point in system) and analyzed for THM's (Trihalomethanes) at an accredited laboratory
- e) Lead analysis is completed as required by O. Reg 170/03
- f) Seven (7) chlorine residuals shall be taken each week

Chlorine residuals are analyzed manually by the operator at the sampling locations simultaneously while microbiological samples are collected. The laboratory will notify the Operating Authority immediately, orally, of any adverse reading. Laboratory results from the Plympton-Wyoming WDS are directly received by the Plympton-Wyoming WDS Owner Representative and the OA's Project Manager.

The Operating Authority provides an annual report to the Plympton-Wyoming Owner Representative which includes any adverse readings. The Plympton-Wyoming Distribution system's pressure is manually monitored by the Operators and documented.

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) to review and the LRMA (Laboratory Results Management Application) for MOHLTC (Ministry of Health & Long- Term Care) to review.

Sampling testing and monitoring results are accessible to the Public on the Town's website – in the annual report.

ELEMENT # 17 – MEASUREMENT AND RECORDING EQUIPMENT CALIBRATION AND MAINTENANCE

Qualified personnel perform all calibrations.

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 boundary water meter chambers which record the volume of water purchased from LAWSS are calibrated through LAWSS and the results provided to the Owner Representative.

Refer to: Pocket Colorimeter Equipment Manual
SOP # 13 - Performance Verification with DPD Pocket Colorimeter

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 / threshold exceedances*
- *water main breaks / service line breaks*
- *interruption in pressure / loss of pressure*
- *back siphoning / loss of water supply / contamination*
- *community complaints (taste/odor/color, multiple complaints for identical issue)*

The Risk Assessment & Outcomes Table for the WDS contained in the QMS Operational Plan, Appendix C can be referenced for emergency procedures which include information regarding associated SOP's

Staff notify the ORO by phone or email during an emergency situation. The ORO notifies the Owner representative.

Plympton-Wyoming has a Municipal Emergency Response Plan which documents their roles and responsibilities during an emergency.

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

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

If there is a water problem after hours, the resident will call the Municipal Office listed in the telephone book and on the Municipal website. A message can be left, or directions are available to contact staff after hours. The call will be directed to the on-call Operator and the problem investigated.

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 to possibly incorporate improvements and track trends*
- *reviewing BMP published by the MECP*

Audit Procedure:

- *the audit shall be conducted 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 conduct an internal audit may use their own audit report formats and checklists that meet the DWQMS requirements.

ELEMENT # 20 – MANAGEMENT REVIEW

Top Management conducts management reviews 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. Participants set aside an appropriate amount of time 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. As an alternative to the once every 36-month BMP review the Operating Authority & staff identify, discuss and review BMPs at QMS meetings, audits, tests and during operations 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, 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 QMS 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 through 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/deleted.

Records: a document(s) which states the results achieved and/or provide proof of activities being performed (data entry log sheets, monthly reports, QMS review 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 will 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 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 website 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

Plympton-Wyoming		
Director of Public Works	519-845-3939 (Office)	Paul daSilva: 519-383-2347 (cell)
Municipal Office	519-845-3939	
BluePoint Lookout Condo	289-288-3430	Kyle Bittman
Rob Brooks	519-402-0137	
Plympton-Wyoming On-call	519-311-2068	
OMI		
24/7 Answering Service	1-866-399-1643	Also, OMI Lambton Shore
Joe Bloomfield	519-381-0542 (cell)	Project Manager
Chris Toulouse	519-466-8450 (cell)	Project Manager Intern / Lead Operator
Cathy Culnan	519-466-4631 (cell)	QMS Representative
Derek Daly	519-381-3211 (cell)	Lead Operator (Oil Springs WDS)
Rae Piggot	226-232-7542 (cell)	Operator
LAWSS – Water Supplier		
LAWSS Plant	519-344-7429	
LAWSS On-call Cell	519-332-9327	
Adverse Water Contacts		
MOH (Lambton Health Unit)	519-383-8331	519-383-7092 (fax)
SAC (Spills Action Center)	1-800-268-6060	1-800-268-6061 (fax)
	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
E – Hach Canada	1-800-227-4224 ext6152	Chlorine Reagent, DPD Colorimeter, Verification Reagent
Equipment & Parts Suppliers		
E – Iconix Water Products	519-688-6095 (office)	8, 10, 12 – inch piping 1- & 2-inch curb stops Hydrants and hydrant parts Distribution & Isolation Valves

Repairs / Contractors / Excavators		
Vozza Contracting	519-464-6374 (cell)	Vac Truck, Excavation & Repair
Gillier Drainage	519-365-7323	Vac Truck, Excavation & Repair
Bluewater Power	519-466-0293	Vac Truck, Excavation & Repair
Copes Construction	519-344-5221	Vac Truck, Excavation & Repair
VanBree Drainage	519-828-3641	Vac Truck, Excavation & Repair
Vac Trucks / Plumbing		
Central Sanitation	519-336-2465 (office)	519-490-4339 (after hours)
CT Environmental	519-236-7401 (office)	519-476-4956 (after hours)
Badger	519-472-6181 (office)	519-521-1491 (after hours)
Bluewater Plumbing	519-332-8050	
JR Plumbing	519-882-4129	
Plympton Plumbing	519-845-3726	
Electrical		
DMW	519-336-3003 (office)	519-336-3995 (fax)
Kirk Roach (DMW)	519-490-4787 (cell)	
Electrozad	519-336-8550 (office)	519-336-4812 (fax)
Bulk Fuel		
Waddick Fuels (Petrolia)	519-882-2420 (office)	1-888-561-0999 (24/7)
Mackenzie Oil	519-336-0521	
Suppliers of Bottles & Bulk Water		
Kern Water (Sarnia) (bottled)	519-542-4211 (office)	519-381-5485 (after hours)
Culligan (Sarnia) (bottled)	519-339-0146 (office)	1-800-265-4606
Huron Water Supply (bulk) (3500 gal)	519-383-3240 (Mark)	519-383-4055 (Shawn)
Harold Marcus Ltd (bulk) (8000 gal)	519-695-3734 (office) 1800-265-9426 (after hours)	519-695-2249 (fax)
Township of Enniskillen		
Municipal Office	519-882-2490	
After Hours Pager	519-339-8128	
Other		
Town of Petrolia	519-882-2350	
Ontario One Call (id32707)	1-800-400-2255	
Union Gas	1-877-969-0999	
Bluewater Power	519-337-8201	
OCWA (Ontario Clean Water Agency)	1-888-522-0117	Operating Authority for Warwick Township WDS

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 (LAWSS)	Contamination of source water Source water supply shortfall or loss	Chemical or biological contamination of source water Loss of Water AWQI	No control.	Online monitoring system by water supplier (LAWSS)	Isolate distribution system from supply. Notify Health unit May need emergency connection Flush & analyze chlorine residual	2	3	1	6	No		SOP # 1 SOP # 14 SOP # 7
Distribution	Watermain break within distribution system Contamination of water source	Quantity/ quality Low pressure or back siphoning Bacteriological or chemical contamination	Storage in Standpipe	Customer complaints, low pressure or high flow through supply meters, visual if at ground.	Repair according to SOP for Water Main Repair – maintain positive pressure Analyze for Chlorine residual Microbiological testing as necessary. Notify Health Unit as necessary (boil water order)	5	2	1	8	Yes	Pressure maintained at > 20 psi 0.20 mg/L free chlorine residual	SOP # 1 SOP # 6 SOP # 14

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	AWQI Loss of chlorine residual Chlorine Saturation Watermain Dead-ends	Biological contamination Total Coliform and/or E-coli Exceedance	Legislated under O. Reg. 170/03 Must be result of "0" cfu/mL	Chlorine residual analysis 2X's per week On-going watermain construction to eliminate dead-ends Weekly Bacteriological sampling	Flush distribution system to increase chlorine dosage and resample. Notify health Unit (if necessary) Resample for Bacteriological analysis	2	4	1	7	Yes	Chlorine residual < 0.20 mg/ L Chlorine residual > 4.0 mg/L	SOP # 1 SOP # 2 SOP # 3 SOP# 14 O. Reg 170/03
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 # 6 SOP # 14
Distribution	Pandemic	Staff Shortage Loss of Staff		Masks, gloves, hand sanitizer, disinfecting workplace	Follow Federal & Provincial Mandated Guidelines Alternating Staff and/or Scheduled work from home	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
Distribution	Loss of pressure – watermain break, major fire Sustained Pressure loss	AWQI Low pressure/ back siphoning Bacteriological or chemical contamination Water hammer	Storage in Standpipe	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	4	2	1	7	Yes	maintain pressure at > 20 psi	SOP # 1 SOP # 4 SOP # 6 SOP # 7 SOP# 14
Distribution	Biofilm	Biological quality Loss of Chlorine residual		Visual inspection of pipe during breaks Inability to maintain Chlorine residual	Analyze Chlorine residual Flush system main lines Swab & clean as per AWWA	2	1	2	5	No		SOP # 1 SOP# 2 SOP# 3 SOP# 14
Distribution	THM Exceedance	AWQI		Quarterly Sampling	Notify SAC & MECP via written notice within 7 days of the completion quarter	1	1	5	7	Yes	0.100 mg/L (100 ug/L)	SOP# 16
Distribution	HAA Exceedance	AWQI		Quarterly Sampling	Notify SAC & MECP via written notice within 7 days of the completion quarter	1	1	5	7	Yes	0.080 mg/L (80 ug/L)	SOP# 17

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 # 7 Bylaw # 67 of 2017
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 Storage in Standpipe	Monitor Chlorine residuals Hydrants are pumped out to prevent freezing Sample Stations are pumped out during winter	Ensure contact with LAWSS Flushing hydrants to ensure chlorine residual in system during extreme heat Possible water conservation order	2	3	1	6	No		SOP # 1 SOP # 2 SOP # 7 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 # 7 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	Terrorist threat	Potential for AWQI & loss of water		Observant staff News reports	Monitor chlorine residuals in system Notify Health unit as necessary Refer to SharePoint	1	1	4	6	No		SOP # 1 SOP # 3
	Cyber Security Threat	Loss of Data		SharePoint and/or paper backup copies								SOP# 7
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 SOP# 3