

Agenda Item #	Page #

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON DECEMBER 16, 2014
FROM:	JOHN LUCAS, P.ENG. DIRECTOR - WATER AND WASTEWATER
SUBJECT:	2014 EXTERNAL AUDIT OF LONDON'S DRINKING WATER QUALITY MANAGEMENT SYSTEM AND 2014 MANAGEMENT REVIEW

RECOMMENDATION

That, on the recommendation of the Director - Water and Wastewater, the following report on the 2014 external audit of London's Drinking Water Quality Management System, and the subsequent 2014 Management Review meeting, **BE RECEIVED** for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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[Ontario's New Municipal Drinking Water Licensing Program and Endorsement of Operational Plan, November 24, 2008, Environment and Transportation Committee, Agenda Item 14](#)

[2013 External Audit of London's Drinking Water Quality Management System and 2013 Management Review](#)

BACKGROUND

Quality Management Systems (QMSs) can be defined as sets of interrelated elements (e.g. policies and procedures) that direct and control the way a facility operates with regard to quality. A QMS is a way of formally ensuring that an organization is consistently in control of the quality of the product or services that it supplies.

Following the Walkerton tragedy of May 2000, Justice Dennis O'Connor recommended that *"the MOE should initiate the development of a drinking water quality management standard for Ontario."* The Ministry of the Environment (MOE) led the development of a Drinking Water Quality Management Standard (DWQMS) which combined elements of existing ISO 9001 and HACCP standards. Through the Municipal Drinking Water Licensing Program, the MOE mandated that municipal drinking water systems develop and implement Quality Management Systems that met the requirements of Ontario's DWQMS. An Operational Plan was therefore developed for London's drinking water system based on the 21 Elements of the DWQMS.

In June, 2013, the City of London's Drinking Water Quality Management System received its first On-Site Verification Audit by third-party auditors SAI Global Assurance Services. As a result, the City of London became fully accredited as the operating authority for London's drinking water system under Ontario's Municipal Drinking Water Licensing Program.

On-Site Verification Audits are performed every 3 years, with 12-month Off-Site Surveillance Audits being performed in the intervening years. In June, 2014, SAI Global conducted a 12-month Off-Site Surveillance Audit of London's Drinking Water Quality Management System. The purpose of the audit was to ensure conformity with all 21 elements of the approved Operational Plan.

Agenda Item #	Page #

DISCUSSION

Following London's 12-month Surveillance Audit, SAI Global reported that *"The overall effectiveness of The Corporation of the City of London's Quality Management System is considered effective"* and recommended *"Maintenance of existing accreditation after response to corrective action requests has been deemed acceptable to SAI Global."*

The corrective action requests referred to by the auditor relate to two nonconformities that were identified during the audit. One of the nonconformities was identified as a major nonconformity, while the other was identified as a minor nonconformity.

The major nonconformity related to Element 19 – Internal Audits. The auditor reported that an annual internal audit had not been completed in the previous 12 months. The internal audit had been scheduled, but was not conducted until August 19 & 20, 2014. Internal audits are not performed by the accreditation body, but are arranged by the operating authority for the water system as a self-check of the Quality Management System. Internal audits are to be conducted yearly. The annual QMS internal audit is a large undertaking that consumes a great deal of staff resources; however, municipalities have several options available aside from having the internal audit performed by staff, as has been the case in London. One option is to contract the services of a professional auditing firm. This option was chosen as a pilot project for the 2014 internal audit. Once the decision was made to implement the pilot project, and the external auditor was selected, the audit could not be scheduled within the remainder of the 12 month time frame.

The pilot project was considered to be a success in that the internal audit was successfully completed with presently available staff resources. The same auditing firm has been retained to complete the 2015 internal audit in March, 2015.

The minor nonconformity related to Element 5, Document and Records Control. The auditor reported that (1) A version number has not been recorded on every page of the Operational Plan, and (2) The 10 year retention time of operational plans that were the subject of an audit by the accreditation body has not been identified on QMS Form 05-F3.

It is a requirement that every page of the Operational Plan must have a Version Number and a Revision Date. Staff had misunderstood this to be that every page of the Operational Plan must have a Version Number or a Revision Date. As a result, several pages of London's Operational Plan had Revision Dates, but no Version Numbers.

QMS Form 05-F3 lists water system records and the minimum retention time for those records. Operational plans that were the subject of an audit by the accreditation body must be retained for a minimum of 10 years. Due to an oversight, this required retention time was not listed on QMS Form 05-F3.

Following receipt of the audit report, staff were required to submit Nonconformance Reports (NCRs) to the Auditor for each of the identified nonconformities. Staff were required to detail the root cause of each nonconformity, the action taken to correct the incident and contain the problem, and the systemic (long term) corrective action(s) planned or taken to eliminate the root cause to prevent recurrence.

On September 17, 2014, SAI Global informed the City that the *"Corrective actions taken to resolve the non-conformance(s) have been reviewed and found to be fully satisfactory in meeting the requirements of DRINKING WATER QUALITY MANAGEMENT STANDARD (DWQMS):2006. As a result your organization will be recommended for (continued) registration."*

On September 25, 2014, the Top Management team of the accredited operating authority for London's water system (the Director - Water and Wastewater, and the Division Managers of Water Engineering and Operations) held the annual Management Review for London's Drinking Water Quality Management System. The results of the Management Review are summarized in Appendix 'A'.

Agenda Item #

Page #

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SUMMARY

Section 19 of the *Safe Drinking Water Act, 2012* imposes a statutory standard of care on the “owner of a municipal drinking water system, and every person who, on behalf of the municipality, oversees the accredited operating authority of the system or exercises decision-making authority over the system”. In recommending the Standard of Care provision, Justice O’Connor stated that “*the fact that a municipality has an accredited operating agency will do much to satisfy the standard of care.*”

In June, 2014, a 12 month Off-Site Surveillance Audit was completed for the Quality Management System of London’s drinking water system. The auditor reported that “*The overall effectiveness of The Corporation of the City of London’s Quality Management System is considered effective*”. In addition, two nonconformities were identified, which were subsequently addressed to the satisfaction of the auditor.

As a result of the audit, the City of London has maintained its accreditation as the operating authority for London’s drinking water system under Ontario’s Municipal Drinking Water Licensing Program.

PREPARED BY	RECOMMENDED BY:
JOHN SIMON, P.ENG. DIVISION MANAGER, WATER OPERATIONS	JOHN LUCAS, P.ENG. DIRECTOR - WATER AND WASTEWATER
REVIEWED & CONCURRED BY:	
JOHN BRAAM, P.ENG. MANAGING DIRECTOR OF ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER	

CC:

Art Zuidema – City Manager
 Roland Welker – Division Manager – Water Engineering
 Dan Huggins - Water Quality Manager

Agenda Item #	Page #

APPENDIX 'A'

Report on QMS to Council

Date: Management Review Meeting of September 25, 2014

RESULTS OF MANAGEMENT REVIEW	REPORT (where applicable include Personnel Responsible & Due Date)
Summary of Management Review	The 2014 Management Review meeting was held between 12:30 pm and 3:30 pm on September 25, 2014. The meeting was attended by John Lucas, Director – Water and Wastewater, Roland Welker, Division Manager – Water engineering, John Simon, Division Manager – Water Operations, and Dan Huggins, Water Quality Manager and QMS Representative. The agenda items discussed were, a) Incidents of regulatory non-compliance, b) Incidents of adverse drinking water tests, c) Deviations from critical control point limits and response actions, d) Efficacy of the risk assessment process, e) Results of audits (internal and external), f) Results of relevant emergency response testing, g) Operational performance, h) Drinking water quality trends, i) Follow-up action items from previous management reviews, j) Status of management action items identified between reviews, k) Changes that could affect the QMS, l) Summary of consumer feedback, m) Resources needed to maintain the QMS, n) Results of the infrastructure review, o) Operational Plan currency, content and updates, and p) Summary of staff suggestions.
Deficiencies Identified	<ol style="list-style-type: none"> 1) It was noted that the gas chlorination equipment at the Springbank Reservoir Complex is approximately 20 years old, and that there have been ongoing maintenance and control issues related to this equipment. 2) The June 2014 12-Month Surveillance Audit of the QMS identified 2 nonconformities (NCs), and several opportunities for improvement (OFIs). The August 2014 Internal Audit of the QMS identified 4 nonconformities (NCs), and several opportunities for improvement (OFIs). 3) Previous internal and external audits have indicated that the QMS is effective, but is not being maintained as well as it could be due to insufficient staff resources. Council approved additional staff resources within the 2014 Water Budget in the form of a full-time Compliance Coordinator; however, Management undertook a pilot project in 2014 which utilized a portion of those resources to hire a professional auditing firm to complete the annual internal QMS audit.
Decisions Made / Action Items	<ol style="list-style-type: none"> 1) It was agreed that an Engineering Review is required for the entire chlorination process at the Springbank Reservoirs. Roland Welker is to coordinate the review. 2) Dan Huggins to address the Opportunities for Improvement that were identified through the audits and update the Operational Plan accordingly. 3) The pilot project was determined to be a success. The same auditing firm has been retained to complete the 2015 internal QMS audit in March, 2015.
Other QMS Issues Identified (including summary of corrective actions)	N/A