

Title: Monitoring		Control Number: SLD 16c	
Revision: 2.0	Effective Date: Aug. 7, 2009	Section: SE, O&M	
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1.0 Purpose

The procedure describes the monitoring activities for Waterworks.

2.0 Scope

This procedure applies to the monitoring activities for Waterworks, related to process control and finished drinking water quality.

3.0 Definitions

- SE – System Engineering
- O&M – Operations and Maintenance
- MOE – Ministry of the Environment

4.0 Procedure

- 4.1 No SCADA system currently exists for on-line monitoring.
- 4.2 Waterworks SE & O&M shall monitor the water quality distribution system through daily activities and by the means of customer complaints.
- 4.3 Abnormalities shall be reported to the Supervisor or Section Manager, and Operators shall record such findings in the log book and/or on Work Order.

Monitoring of Test Results from Accredited Laboratory

- 4.4 Test results from the accredited laboratory shall first be reviewed by qualified personnel at the laboratory against legislated requirements.
- 4.5 Upon receipt of results, both the Water Quality Supervisor (O&M) and the Water Quality Coordinator (SE) shall review the results against legislated requirements.

- 4.6 Questionable results shall be discussed between the Waterworks Supervisor responsible for Water Quality (O&M) and the Water Quality Coordinator (SE). Appropriate action shall be taken and communicated to the Manager of Operations & Maintenance and the Manager of System Engineering.
- 4.7 The Water Quality Coordinator (SE) shall maintain the test results that allows for the tracking of outstanding lab test results.
- 4.8 All results shall be tracked by the Water Quality Coordinator (SE) in order to ensure that there are results for all samples taken and submitted to the lab.
- 4.9 Results that are an adverse condition shall initiate an adverse water response, as per **Response to Adverse Water Quality Test Result SOP**.
- 4.10 Original copies of lab results shall be sent to the Water Quality Coordinator (SE) (test results are normally picked up from the lab by Waterworks staff), and filed with the corresponding submission form.

Monitoring of Test Results from On-Site Testing

- 4.11 Test results from on-site testing shall be reviewed by the Operator performing the test.
- 4.12 Test results shall be recorded on the appropriate work order. The work order shall be processed as per the **Maintenance SOP**.
- 4.13 Both the Water Quality Coordinator (SE) and the Waterworks Supervisor responsible for Water Quality (O&M) shall review the results.
- 4.14 Questionable results shall be discussed between the Waterworks Supervisor responsible for Water Quality (O&M) and the Water Quality Coordinator (SE), and appropriate action shall be taken.
- 4.15 Results that are an adverse condition shall initiate an adverse water response, as per the **Response to Adverse Water Quality Test Result SOP**.

Adverse Water Quality Readings

- 4.16 If an adverse reading is obtained through testing, the laboratory shall notify the Waterworks, as required in Schedule 16 of O. Reg. 170/03, by following the laboratory's procedure for communication protocol.

- 4.17 Adverse test results shall be handled by Waterworks as per the **Response to Adverse Water Quality Test Result SOP**.

Upstream Monitoring

- 4.18 Upstream system parameters shall be monitored by the Region of York or the City of Toronto respectively, as per the applicable regulatory requirements. The Region of York shall communicate any adverse quality results to Waterworks as required by following the **Region of York's Inter-Municipal Communication Protocol in Response to Operational and Water Quality Issues SOP**.
- 4.19 No regular reporting of data is provided from the City of Toronto to the Town of Markham but the Annual Water Quality Report for the City of Toronto is available from city's website.
- 4.20 An annual Water Quality Report is issued from York Region to Markham through the Waterworks General Manager, as per regulated requirements.
- 4.21 Waterworks may have online access to the water levels in the reservoirs, which is presented as a read only output from the York Region's SCADA system.

Communication of Monitoring

- 4.22 The results from sampling, testing and monitoring are compiled in the Annual Water Quality Report. This report is forwarded to the Owner and Top Management of the Operating Authority for review and approval.
- 4.23 Any highlights in any water quality sampling, testing and monitoring results are reviewed in the Management Review. Any actions required to be taken are identified as action items. These action items are reported to the Top Management and the Owner under the Management Review Outcomes report.

5.0 Associated SOPs

- SOP – Response to Adverse Water Quality Test Result
- SOP – Maintenance

6.0 References

- DWQMS Element 16 – Sampling, Testing and Monitoring
- The Region of York's Inter-Municipal Communication Protocol in Response to Operational and Water Quality Issues SOP

7.0 Records

- Laboratory Test Results
- In-house Test Results

8.0 History of Changes

Revision	Date	Description	By
2.0	Jul. 22, 2009	Sections 4.3, 4.6, 4.9, 4.10, 4.13, 4.14, 4.15, 4.17, 5.0, 6.0; addition of 4.22, 4.23	H. Dutaud / E. Wu