

AGENDA

Lake Huron Primary Water Supply System Joint Board of Management

Committee Room #5
2nd Floor, City Hall

1:30 p.m.
Thursday, March 9, 2017

PART 1 CALL TO ORDER

1. Disclosures of Pecuniary Interest.

PART 2 ADOPTION OF MINUTES

2. Minutes of the 1st Meeting held on Thursday, December 1, 2016.

PART 3 CONSENT ITEMS

I. Correspondence

A. Note and File:

3. K. Scherr, Chief Administrative Officer - **Retirement Announcement – Rob Andrews, President and CEO Ontario Clean Water Agency**

B. Receipt with response by Administration:

C. Receipt and Deferral Pending Report from Administration:

II. Staff Reports

4. K. Scherr, Chief Administrative Officer – **Quarterly Compliance Report (4th Quarter 2016 – October – December).**
5. K. Scherr, Chief Administrative Officer – **Environmental Management System and Quality Management System.**
6. K. Scherr, Chief Administrative Officer – **Environmental Objectives.**
7. K. Scherr, Chief Administrative Officer – **Capital Status Report.**
8. K. Scherr, Chief Administrative Officer – **Distressed Pipe #32-48 Replacement Project.**
9. K. Scherr, Chief Administrative Officer – **Regional Water Office and Divisional Restructuring.**

PART 4 ITEMS FOR DISCUSSION

10. K. Scherr, Chief Administrative Officer – **Emergency Chlorine Shut-off Actuators.**
11. K. Scherr, Chief Administrative Officer – **LH1222 – Low Lift Pump Rebuild Project.**

PART 5 ADDITIONAL BUSINESS

PART 6 DEFERRED ITEMS, PENDING NEW ITEMS AND REPORTS

PART 7 CONFIDENTIAL MATTERS

PART 8 UPCOMING MEETING DATES

June 8, 2017
October 5, 2017
December 7, 2017

March 1, 2018
June 7, 2018
October 4, 2018

January 24, 2019

MINUTES OF THE
1ST MEETING OF THE
JOINT BOARD OF MANAGEMENT
LAKE HURON PRIMARY WATER SUPPLY SYSTEM

Meeting held on Thursday, December 1, 2016 at the London City Hall, commencing at 1:30 p.m.

PRESENT: V. Ridley (Chair), C. Burghardt-Jesson, M. Cassidy, M. Cole, J. Gillespie, J. Helmer, A. Hemming, M. van Holst, J. Vanderheyden and B. Weber and B. Westlake-Power (Acting Secretary).

ALSO PRESENT: T. Bender, J. Bunn, S. Core, J. Finlay, D. Gibson, A. Henry, E. McLeod, C. Murchland, K. Scherr, M. Vaughan and J. Walker.

1. Disclosures of Pecuniary Interest

None are disclosed.

2. Election of Chair and Vice Chair

HELMER AND CASSIDY

That Virginia Ridley **BE ELECTED** Chair, for the term ending November 30, 2018.

CARRIED

BURGHARDT-JESSON AND VANDERHEYDEN

That John Gillespie **BE ELECTED** Vice Chair, for the term ending November 30, 2018.

CARRIED

3. Adoption of Minutes

HELMER AND CASSIDY

That the Minutes of the October 6, 2016 meeting of the Lake Huron Primary Water Supply System Joint Board of Management **BE NOTED AND FILED. CARRIED**

4. Quarterly Compliance Report (3rd Quarter 2016 – July - September)

HELMER AND VAN HOLST

That, on the recommendation of the Chief Administrative Officer, the report dated December 1, 2016, with respect to the general, regulating and contractual obligations of the Lake Huron Primary Water Supply System, for July to September, 2016, **BE RECEIVED. CARRIED**

5. Environmental Management System and Quality Management System

CASSIDY AND WEBER

That, on the recommendation of the Chief Administrative Officer, the report dated December

1, 2016 with respect to the Environmental Management System and Quality Management System, **BE RECEIVED. CARRIED**

6. Ministry of the Environment and Climate Change Inspection Report

VAN HOLST AND VANDERHEYDEN

That, on the recommendation of the Chief Administrative Officer, the report dated December 1, 2016 with respect to the Ministry of the Environment and Climate Change Inspection Report, **BE RECEIVED. CARRIED**

7. 2017 and 2018 Meeting Schedule

WEBER AND GILLESPIE

That the following revised meeting dates **BE APPROVED** for the Lake Huron Primary Water Supply System Board of Management:

March 9, 2017	March 1, 2018
June 8, 2017	June 7, 2018
October 5, 2017	October 4, 2018
December 7, 2017	January 24, 2019.

CARRIED

8. HELP Contribution Amending Agreement

BURGHARDT-JESSON AND CASSIDY

That, on the recommendation of the Chief Administrative Officer, the Amending Agreement for the HELP Clean Water Initiative with the Government of Canada and the Government of Ontario, as appended to the staff report dated December 1, 2016, **BE APPROVED** for execution by The Corporation of the City of London, in its capacity as Administering Municipality for the Lake Huron Primary Water Supply System Joint Board of Management. **CARRIED**

9. Board Restructuring – *Municipal Act*

HELMER AND CASSIDY

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to the potential restructuring of the Lake Huron Primary Water Supply System Joint Board of Management:

- a) the December 2009 resolution of the Board directing staff to undertake the consultation process with the benefiting municipalities, related to restructuring the Board of Management and the water supply system under the *Municipal Act*, **BE ENDORSED**; and,
- b) the reports dated December 1, 2016 and December 10, 2009 (resubmitted) **BE RECEIVED** for information. **CARRIED**

10. Operations and Maintenance Services Agreement – Negotiation of Term Extension

WEBER AND VAN HOLST

11. Adjournment

CASSIDY AND WEBER

That the meeting adjourn. **CARRIED**

The meeting adjourns at 2:27 PM; it being noted that the next meeting date is March 9, 2017.

V. Ridley, Chair

B. Westlake-Power, Acting Secretary



12 January 2017

Board Chair and Members
Lake Huron Primary Water Supply System
Board of Management

Board Chair and Members
Elgin Area Primary Water Supply System
Board of Management

VIA eMAIL

**Re: Retirement Announcement – Rob Andrews, President and CEO
Ontario Clean Water Agency**

Chairs and Members;

On January 9th, Rob Andrews, President and CEO of the Ontario Clean Water Agency, announced his pending retirement effective February 3, 2017. Rob Andrews has been President and CEO of OCWA for three years and has overseen a significant transformation of the Crown Corporation during his tenure. Beyond the dedication and commitment of the OCWA staff in the Huron/Elgin OCWA Hub, this transformation has contributed to the operational success and improvements in the Lake Huron and Elgin Area water system that we see today.

Board staff have had discussions with Rob and some of his senior leadership team, and are confident that this transformation and operational success will continue with Rob's successor. I wanted to take this opportunity to advise each of you of this pending retirement, and assure the Boards of Management that your staff will continue to work diligently with OCWA and its new CEO to ensure the continued success of the regional water systems.

As always, if you have any questions or concerns, please do not hesitate to contact me at your earliest convenience.

Best regards,

A handwritten signature in black ink that reads "K. Scherr".

Kelly Scherr, P.ENG., MBA, FEC
Chief Administrative Officer
Lake Huron and Elgin Area Water Systems

c.c. A. Henry, J. Bunn



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To: Chair and Members
Lake Huron Primary Water Supply System Board of Management

From: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Meeting Date: March 9, 2017

Subject: Quarterly Compliance Report (4th Quarter 2016: October - December)

RECOMMENDATION

That the Quarterly Compliance report with respect to the general, regulatory and contractual obligations of the Lake Huron Primary Water Supply System **BE RECEIVED** for the information of the Board of Management; it being noted that there were no Adverse Water Quality Incidents or adverse laboratory results in the 4th quarter of 2016.

BACKGROUND

Pursuant to Board of Management resolution, this Compliance Report is prepared on a quarterly basis to report on general, regulatory and contractual compliance issues relating to the regional water system. For clarity, the content of this report is presented in two basic areas, namely regulatory and contractual, and does not intend to portray an order of importance or sensitivity nor a complete list of all applicable regulatory and contractual obligations.

REGULATORY ISSUES

Recent Regulatory or Other Changes:

Regulation Decision: Updates to Ontario's Drinking Water Quality Standards and other regulations of the Safe Drinking Water Act, 2002, related to: lead in schools and day nurseries; drinking water systems; drinking water testing services; and drinking water operator certification

The Ministry of the Environment and Climate Change (MOECC) has finalized revisions to several regulations under the *Safe Drinking Water Act*. With the exception of one amendment related to laboratory reporting of pesticides, the amended regulations will be in force on July 1, 2017.

The exception related to pesticides sets a specific minimum reporting limit of 100 nanograms for all pesticides, regardless of whether there is a Maximum Allowable Limit is established, and requires laboratories to submit to the MOECC results from all drinking water tests for which they are licensed to analyze, and comes into effect on January 1, 2018.



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File No. H17/2017

Changes to O.Reg. 169/03 (Ontario’s Drinking Water Quality Standards):

Three new drinking water quality standards based on new federal guidelines will be introduced:

- 0.06 mg/L for Toluene;
- 0.14 mg/L for Ethylbenzene; and
- 0.09 mg/L for Total Xylenes

Two drinking water quality standards will be revised:

- From 0.01 mg/L to 0.05 mg/L for Selenium; and
- From 0.03 mg/L to 0.01 mg/L for Tetrachloroethylene.

One drinking water standard, which is a sum of nitrate and nitrite, will be removed. This standard is redundant since there are individual standards for these parameters. Consequently, the following drinking water quality standard will be removed:

- 10 mg/L for Nitrate + Nitrite.

Changes to the MOECC’s Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines:

One new Aesthetic Objective will be introduced:

- 0.015 mg/L for methyl t-butyl ether (MTBE).

Two Aesthetic Objectives will be revised:

- From 0.0024 mg/L to 0.0016 mg/L for ethylbenzene; and
- From 0.3 mg/L to 0.02 mg/L for xylenes.

Changes to O.Reg. 170/03 (Drinking Water Systems):

All pesticides found at levels above 100 nanograms/Litre (ng/L) will initiate an AWQI. This includes pesticides that are not included in Schedule 2 of O. Reg. 169/03 and currently do not have a drinking water standard in place.

- All test results that indicate the presence of pesticides – even if their concentration levels are at or below the threshold of 100 ng/L – will need to be provided to the ministry.

Municipal and non-municipal drinking water system owners will no longer be required to submit lead testing summary reports to the ministry, as the same information will have to be included in the system’s annual report which is required to be made available to the public.

In addition, general changes and corrections were made to the regulation.

Changes to O.Reg. 128/04 (Certification of Drinking Water Operators and Water Quality Analysts):

Requirements for Drinking Water Operator-in-Training (OIT) Certification have been updated as follows:

- Temporary Drinking Water OIT certificates will cease to be issued.
- Drinking water OIT certificates will be valid for 36 months.
- Drinking water OITs will be permitted to operate Limited Systems under the supervision of an Operator-in-Charge or Overall Responsible Operator.

The changes to O.Reg. 243/07 (Schools, Private Schools and Day Nurseries) and O.Reg. 248/03 (Drinking Water Testing Services) do not impact the Lake Huron Primary Water Supply System (LHPWSS).



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Potential Impacts to the Board:

The impacts of the regulatory changes will be minimal for the LHPWSS. Historical water quality data for the LHPWSS is available for selenium, toluene, ethylbenzene, total xylenes and tetrachloroethylene. All results to date are non-detect. There is no data available for methyl t-butyl ether (MTBE) in either the LHPWSS water quality database or the MOECCC's research data. The MOECC is proposing an aesthetic objective only, and therefore there is no immediate concern. The changes to operator certification is applicable mainly to the operating authority who employs the certified operators.

New Environmental Bill of Rights (EBR) Registry Postings: At the time of drafting this report, there were proposed regulations or policies posted on the Environmental Bill of Rights (EBR) Registry for public comment, or in the draft consultation process with the Ministry of the Environment and Climate Change (MOECC) or other agencies as follows:

Proposed Guideline Technical Document on Lead in Drinking Water

Health Canada has issued a proposed guideline technical document on lead in drinking water for public comment. The proposed Maximum Acceptable Concentration (MAC) for lead in drinking water is being lowered from 0.01 mg/L (10 µg/L) to 0.005 mg/L (5 µg/L).

Health Canada's existing guideline for lead was last updated in 1992. The current MAC of 0.01 mg/L was based on health risk and established from recommendations by the World Health Organization (WHO). The proposed new MAC of 0.005 mg/L is based on considerations that the MAC must be measurable, achievable at reasonable cost, and have a significant impact on the blood lead levels of children which are the most vulnerable population. The new guideline document identifies reductions in IQ as the critical effect of lead, with the proposed MAC of 0.005 mg/L based on analytical achievability.

The revised guideline document provides updated data and information related to exposure to lead in Canada, to analytical methods and to treatment approaches available at the municipal and residential scales. Based on this information, the document proposes a lowered MAC of 0.005 mg/L for total lead in drinking water.

Potential Impacts to the Board:

The province of Ontario has established a MAC of 0.01 mg/L for lead in drinking water. If Health Canada adopts a lowered MAC, it is likely that Ontario will also eventually follow suit and consider adopting a lowered MAC. Any future regulatory changes proposed by the MOECC for Ontario would be subject to a regulation proposal notice posted on the EBR registry for public comment.

Lead is usually found in drinking water as a result of leaching from distribution and plumbing system components. The LHPWSS is a treatment and transmission system only, meaning that there is no distribution system directly connected to the plumbing that supplies consumers with drinking water.

Ontario municipalities are required to conduct lead sampling within their distribution systems. Where the prescribed standard for lead is exceeded, municipalities may be required to develop a Corrosion Control Plan (CCP). If a municipality that obtains water from the LHPWSS was required to implement a CCP, the LHPWSS would also be required to jointly participate in the development of the CCP.



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There are currently 29 water systems in Ontario that have a CPP as a result of lead levels in the drinking water. It has been estimated by the MOECC that if the lead standard were reduced from 0.01 mg/L to 0.005 mg/L, consistent with the Health Canada guideline, it is anticipated that the number of water systems requiring a CPP would increase to in excess of 65 systems. If the lead standard were to be reduced to 0.001 mg/L, a theoretical standard discussed during the initial consultation process with Health Canada, the number of municipal water systems in Ontario requiring a CPP would likely be in excess of 260 systems.

Any future regulatory changes in Ontario could impact the LHPWSS member municipalities and subsequently the LHPWSS. The LHPWSS and City of London currently have a joint CCP in place.

Quarterly Water Quality Reports: The Water Quality Quarterly Report for the period of October 1st to December 31st, 2016 inclusive was completed by the operating authority. There were no adverse laboratory test results for the LHPWSS during this quarter. The report is posted on the Water Systems' website at www.watersupply.london.ca and is included in this report as Appendix A for the Board's information. The water quality sample results will continue to be provided and posted on a quarterly basis for the Board's and the public's information.

It is important to note that the Maximum Allowable Concentration (MAC) are the permitted maximum values of the listed parameter, and are considered adverse incidents where the water quality exceeds the listed value. Alternatively, "aesthetic objectives" and operational guidelines are not regulated but are included as suggested guidelines for the associated parameters. Variance of water quality beyond the listed aesthetic objective is not considered an adverse incident as there are no health risks associated with exceeding the suggested objective.

Adverse Water Quality Incidents (AWQIs): There were no AWQI reported by the operating authority during this quarter.

O.Reg. 170/03, Section 11 "Annual Reports": Under the Drinking Water Systems Regulation (O.Reg. 170/03), an Annual Report for the LHPWSS is required to be prepared by February 28th of each year. The report summarizes water quality and maintenance information for the 2016 calendar year. This report is completed by Ontario Clean Water Agency (OCWA), the contracted operating authority for the LHPWSS. Although the report is no longer required to be submitted to the MOECC, the LHPWSS is required to provide copies of the report to drinking water systems that obtain water from this system. The Annual Report was forwarded to the LHPWSS member municipalities on February 21, 2017. A copy of the Annual Report is included in Appendix B for the information of the Board. All Annual Reports are posted on the Water Systems' website at www.watersupply.london.ca for public information. The Annual Reports are also available for viewing at the Lake Huron Water Treatment Plant and at the Board's Administration Office in London. Copies of all reports are available to the public upon request and free of charge as required by O.Reg. 170/03.



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O.Reg. 170/03, Section 22 “Summary Reports for Municipalities”: Under the Drinking Water Systems Regulation (O.Reg. 170/03) a summary report is required by March 31st of each year which:

Lists the requirements of the Act, the regulations, the system’s approval and any order that the system failed to meet at any time during the period covered by the report, and the duration of the failure. For each failure referred to, a description of the measures that were taken to correct the failure is required.

In order to allow the system’s owner to “assess the capability of the system to meet existing and planned uses of the system”, provide a summary of the quantities and flow rates of the water supplied, including monthly average and maximum daily flows and daily instantaneous peak flow rates, with a comparison to the systems rated capacity.

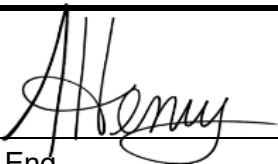
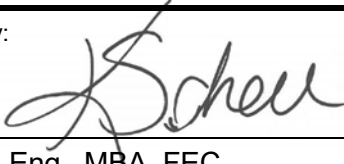
This report will also be compiled by OCWA. The Summary Report will be forwarded to the member municipalities of the LHPWSS as required by the March 31, 2017 deadline. The report will be posted on the Water Systems’ website at www.watersupply.london.ca for public information. All Summary Reports are available for viewing at the Lake Huron Water Treatment Plant and at the Board’s Administration Office in London. Copies of all reports are available to the public upon request and free of charge as required by O.Reg. 170/03.

CONTRACTUAL ISSUES

ARTICLE 3, “Operation and Maintenance of the Facilities – General”:

Board staff informally meets with OCWA on a monthly basis to discuss operations and maintenance related issues, and on a formal basis quarterly to review contractual performance. The 2016 fourth quarter Contract Report was received from OCWA on January 30, 2017 and is scheduled to be discussed at the next quarterly administration meeting between Board staff and OCWA. Copies of the monthly Operations and Maintenance Reports, or quarterly reports are available at the Board’s Administration Office in London upon request.

Information for this report was provided by Erin McLeod, Quality Assurance & Compliance Manager.

Report by:  <hr/> Andrew Henry, P. Eng. Division Manager, Regional Water Supply	Recommended by:  <hr/> Kelly Scherr, P.Eng., MBA, FEC Chief Administrative Officer
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Attachments:

- Appendix A: Water Quality Quarterly Report – 4th Quarter 2016 (October - December)
- Appendix B: 2016 Annual Report



APPENDIX A: WATER QUALITY QUARTERLY REPORT – 4TH QUARTER 2016 (OCTOBER - DECEMBER)

***There were no adverse laboratory test results for the Lake Huron Primary Water Supply System during this quarter.**

Analytical Test Results: (All values are reported in mg/L unless otherwise noted)

Microbiological Parameters (Required Testing Under O.Reg. 170/03)

Microbiological Parameters	MAC or IMAC	No. of Samples	No. of Detectable Results	No. of Adverse Results	Method	Sampling Date	Results		Comments
							Min.	Max.	
Total Coliform (counts/100ml) *	Not Detectable	67	0	0	Membrane Filtration	Oct-Dec	0	0	Parameter sampled is used to test for the possible presence of fecal matter. Zero detectable test results indicates that Total Coliforms were not detected.
<i>E. Coli</i> (counts/100ml) *	Not Detectable	67	0	0	Membrane Filtration	Oct-Dec	0	0	Parameter sampled is used to test for the possible presence of fecal matter. Zero detectable test results indicates that E.Coli was not detected.
Heterotrophic Plate Count (counts/1ml)	N/A	67	11	0	Spread Plate Count	Oct-Dec	<10	900	Test parameter is used as an indicator of possible deterioration of water quality. Increases in HPC concentrations above baseline levels are considered undesirable.



Operational Parameters:

Operational Parameters	MAC or IMAC	Objective AO/OG	No. of Samples	Sampling Date	Results			Comments
					Min.	Max.	Avg.	
Chlorine Residual ¹ , Free (mg/L)			Continuous monitoring plus 6 grab samples per day	Oct-Dec	0.87	1.61	1.28	The maintenance of an adequate free chlorine residual is essential to the protection of public health. Values reported are based on the 6 daily grab samples. The regulated minimum for free chlorine residual concentration in a water distribution system is 0.05mg/L; however the contractual obligation of the water system is to achieve 0.5mg/L at the point of supply to the municipalities.
Chlorine Residual ¹ , Total (mg/L)			Continuous monitoring plus 6 grab samples per day	Oct-Dec	1.14	1.73	1.40	The maintenance of an adequate free chlorine residual is essential to the protection of public health. Values reported are based on the 6 daily grab samples.
Colour (TCU)		5	2 grab samples per day	Oct-Dec	<3	<3	<3	Values reported are based on the 2 daily grab samples.
Conductivity (µS/cm)			Continuous monitoring plus 2 grab samples per day	Oct-Dec	196.0	228.0	200.7	Values reported based on daily minimum, maximum and average that have been recorded electronically.
pH (no units)		6.5 – 8.5	Continuous monitoring plus 6 grab samples per day	Oct-Dec	7.17	8.84	8.20	Values reported are based on the 6 daily grab samples.
Turbidity ^{1, 2} (NTU)			Continuous monitoring plus 6 grab samples per day	Oct-Dec	0.054	0.095	0.068	Turbidity (cloudiness) of water is an indication of the presence of particles in the water. If excessive, it may interfere with proper disinfection. Values reported are based on the 6 daily grab samples.
Aluminum (mg/L)		< 0.1	2 grab samples per day	Oct-Dec	0.001	0.055	0.026	Aluminum levels are slightly elevated during treatment as a result of the use of alum to help in the removal of particulates.
Temperature (Celsius)		15	Continuous monitoring plus 6 grab samples per day	Oct-Dec	5.4	17.5	12.1	Raw Water Temperature. Values reported are based on the 6 daily grab samples.



Inorganic Parameters (Required Testing Under O.Reg. 170/03 – Schedule 23):

Schedule 23 - Inorganic Parameters		MAC or IMAC (mg/L)	Objective AO/OG	O.Reg. 170/03 Required Frequency of Testing (months)	2016				Reportable Detection Limit (mg/L)	Comments
					Q1	Q2	Q3	Q4		
1.	Antimony	0.006		12	0.00016	NT	NT	NT	0.00002	
2.	Arsenic	0.025		12	0.0002	NT	NT	NT	0.0002	
3.	Barium	1.0		12	0.0128	NT	NT	NT	0.00001	
4.	Boron	5.0		12	0.0128	NT	NT	NT	0.0002	
5.	Cadmium	0.005		12	ND	NT	NT	NT	0.000003	
6.	Chromium	0.05		12	0.00009	NT	NT	NT	0.0005	
7.	Mercury	0.001		12	ND	NT	NT	NT	0.00002	
8.	Selenium	0.01		12	0.00014	NT	NT	NT	0.001	
9.	Uranium	0.02		12	0.000061	NT	NT	NT	0.000001	



Organic Parameters (Required Testing Under O.Reg. 170/03 – Schedule 24):

Schedule 24 – Organic Parameters		MAC or IMAC (mg/L)	Objective AO/OG	O.Reg. 170/03 Required Frequency of Testing (months)	2016				Reportable Detection Limit (mg/L)	Comments
					Q1	Q2	Q3	Q4		
1.	Alachlor	0.005		12	ND	NT	NT	NT	0.00002	Herbicide
2.	Atrazine + N-dealkylated metabolites	0.005		12	0.00003	NT	NT	NT	0.00001	Herbicide
3.	Azinphos-methyl	0.02		12	ND	NT	NT	NT	0.00002	Insecticide
4.	Benzene	0.005		12	ND	NT	NT	NT	0.00032	An aromatic hydrocarbon present in gasoline
5.	Benzo(a)pyrene	0.00001		12	ND	NT	NT	NT	0.000004	A polycyclic aromatic hydrocarbon (PAH) that forms during the combustion of organic matter (eg. emissions from burning fossil fuels)
6.	Bromoxynil	0.005		12	ND	NT	NT	NT	0.00033	Herbicide
7.	Carbaryl	0.09		12	ND	NT	NT	NT	0.00001	Insecticide
8.	Carbofuran	0.09		12	ND	NT	NT	NT	0.00001	Insecticide
9.	Carbon Tetrachloride	0.005		12	ND	NT	NT	NT	0.00016	An organic liquid that is primarily released from man-made sources; used in industrial and agricultural process
10.	Chlorpyrifos	0.09		12	ND	NT	NT	NT	0.00002	Pesticide
11.	Diazinon	0.02		12	ND	NT	NT	NT	0.00002	Insecticide
12.	Dicamba	0.12		12	ND	NT	NT	NT	0.0002	Herbicide
13.	1,2-Dichlorobenzene	0.2	0.003	12	ND	NT	NT	NT	0.00041	An organic compound used in both industrial and commercial products (coolant, degreaser, solvent)
14.	1,4-Dichlorobenzene	0.005	0.001	12	ND	NT	NT	NT	0.00036	An organic compound used in both industrial and commercial products (deodorizer, fungicide, lubricant)
15.	1,2-Dichloroethane	0.005		12	ND	NT	NT	NT	0.00035	An organic chemical with many industrial and commercial applications (solvent, fumigant, ingredient in plastics etc.)



Schedule 24 – Organic Parameters		MAC or IMAC (mg/L)	Objective AO/OG	O.Reg. 170/03 Required Frequency of Testing (months)	2016				Reportable Detection Limit (mg/L)	Comments
					Q1	Q2	Q3	Q4		
16.	1,1-Dichloroethylene (vinylidene chloride)	0.014		12	ND	NT	NT	NT	0.00033	Volatile organic compound; imported for use in the food packaging and textile industries
17.	Dichloromethane (Methylene Chloride)	0.05		12	ND	NT	NT	NT	0.00035	Volatile organic compound used in a variety of industries (electronics, textiles, pharmaceuticals, plastics etc.)
18.	2,4-Dichlorophenol	0.9	0.0003	12	ND	NT	NT	NT	0.00015	An organic compound used in industry and chemical manufacturing
19.	2,4-Dichlorophenoxy acetic acid (2,4-D)	0.1		12	ND	NT	NT	NT	0.00019	Herbicide
20.	Diclofop-methyl	0.009		12	ND	NT	NT	NT	0.0004	Herbicide
21.	Dimethoate	0.02		12	ND	NT	NT	NT	0.00003	Insecticide
22.	Diquat	0.07		12	ND	NT	NT	NT	0.001	Herbicide
23.	Diuron	0.15		12	ND	NT	NT	NT	0.00003	Herbicide
24.	Glyphosate	0.28		12	ND	NT	NT	NT	0.006	Herbicide
25.	Malathion	0.19		12	ND	NT	NT	NT	0.00002	Insecticide
26.	Metolachlor	0.05		12	ND	NT	NT	NT	0.00001	Herbicide
27.	Metribuzin	0.08		12	ND	NT	NT	NT	0.00002	Herbicide
28.	Monochlorobenzene	0.08	0.03	12	ND	NT	NT	NT	0.0003	A man-made organic compound; primarily used as a solvent
29.	Paraquat	0.01		12	ND	NT	NT	NT	0.001	Herbicide
30.	Pentachlorophenol	0.06		12	ND	NT	NT	NT	0.00015	An organic compound; used as a pesticide and wood preservative (manufacture and use banned since the 1980's)
31.	Phorate	0.002		12	ND	NT	NT	NT	0.00001	Insecticide



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Schedule 24 – Organic Parameters		MAC or IMAC (mg/L)	Objective AO/OG	O.Reg. 170/03 Required Frequency of Testing (months)	2016				Reportable Detection Limit (mg/L)	Comments
					Q1	Q2	Q3	Q4		
32.	Picloram	0.19		12	ND	NT	NT	NT	0.001	Herbicide
33.	Polychlorinated Biphenyls (PCB)	0.003		12	ND	NT	NT	NT	0.00004	An organic compound; used in electrical equipment and as a fire retardant (use has been banned since the 1980's)
34.	Prometryne	0.001		12	ND	NT	NT	NT	0.00003	Herbicide
35.	Simazine	0.01		12	ND	NT	NT	NT	0.00001	Herbicide
36.	Terbufos	0.001		12	ND	NT	NT	NT	0.00001	Insecticide
37.	Tetrachloroethylene (perchloroethylene)	0.030		12	ND	NT	NT	NT	0.00035	An organic compound; used as a solvent in dry cleaning and metal cleaning industries
38.	2,3,4,6-Tetrachlorophenol	0.10	0.001	12	ND	NT	NT	NT	0.00014	An organic compound; currently used mainly as a wood preservative
39.	Triallate	0.23		12	ND	NT	NT	NT	0.00001	Herbicide
40.	Trichloroethylene	0.05		12	ND	NT	NT	NT	0.00044	Volatile organic compound; used in metal degreasing operations and chemical manufacturing
41.	2,4,6-Trichlorophenol	0.005	0.002	12	ND	NT	NT	NT	0.00025	Volatile organic compound; used in the manufacture of pesticides
42.	Trifluralin	0.045		12	ND	NT	NT	NT	0.00002	Herbicide
43.	Vinyl Chloride	0.002		12	ND	NT	NT	NT	0.00017	Volatile organic compound; Used in making PVC (polyvinyl chloride) plastic items
44.	2 methyl-4-chlorophenoxyacetic acid (MCPA)	0.1 *		12	ND	NT	NT	NT	0.00012	Herbicide *The MAC takes effect on January 1, 2017



Additional Organic Parameters (Removed from Schedule 24 as of January 1, 2016)		MAC or IMAC (mg/L)	Objective AO/OG	Required Frequency of Testing (months)	2016				Reportable Detection Limit (mg/L)	Comments
					Q1	Q2	Q3	Q4		
1.	Aldicarb			NR	NT	NT	NT	NT	0.00001	Insecticide
2.	Aldrin + Dieldrin			NR	NT	NT	NT	NT	0.00001	Insecticide
3.	Bendiocarb			NR	NT	NT	NT	NT	0.00001	Insecticide
4.	Chlordane (total)			NR	NT	NT	NT	NT	0.00001	Pesticide
5.	Cyanazine			NR	NT	NT	NT	NT	0.00003	Herbicide
6.	Dichlorodiphenyltrichloroethane (DDT) + metabolites			NR	NT	NT	NT	NT	0.00001	Insecticide
7.	Dinoseb			NR	NT	NT	NT	NT	0.00036	Insecticide, Herbicide
8.	Heptachlor + Heptachlor Epoxide			NR	NT	NT	NT	NT	0.00001	Insecticide
9.	Lindane (Total)			NR	NT	NT	NT	NT	0.00001	Pesticide
10.	Methoxychlor			NR	NT	NT	NT	NT	0.00001	Insecticide
11.	Parathion			NR	NT	NT	NT	NT	0.00002	Insecticide
12.	Temephos			NR	NT	NT	NT	NT	0.00001	Insecticide
13.	2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)			NR	NT	NT	NT	NT	0.00022	Herbicide



General Chemistry and Physical Parameters (Additional Regulatory and Contractual Testing)

General Chemistry and Physical Parameters	MAC or IMAC (mg/L)	Objective AO/OG (mg/L)	O.Reg. 170/03 Required Frequency of Testing (months)	Contractual Required Frequency of Testing (months)	2016				Reportable Detection Limit (mg/L)	Comments
					Q1	Q2	Q3	Q4		
Alkalinity (Total as CaCO ₃)		30 – 500	NR	6	79.5	98.0	76.0	77.0	2	Q4 value is an average of 2 sample results
Chloride		250	NR	12	9.3	NT	NT	NT		
Copper		1.0	NR	12	0.00078	NT	NT	NT	0.001	
Dissolved Organic Carbon (mg/L as C)		5	NR	12	1.44	1.4	2.0	1.5	0.1	Q4 value is an average of 2 sample results
Dissolved Inorganic Carbon (mg/L as C)			NR	6	19.5	22.4	12.0	NT	0.1	
Ethylbenzene		0.0024	NR	12	ND	NT	NT	NT		
Geosmin (ng/L)		4.0	NR	Weekly as Required	NT	NT	0.23	ND	3.0 ng/L	Geosmin is tested weekly from July 1-Oct 31. Results are expressed as the average per quarter when testing is required.
Haloacetic Acids (Arva Reservoir)	0.08 *	0.060	NR	3	ND	0.015	0.009	ND	0.0053	The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. Running annual average: 0.006mg/L *The MAC takes effect January 1, 2020.
Haloacetic Acids (Exeter-Hensall)	0.08 *	0.060	NR	3	0.009	0.022	0.014	0.009	0.0053	The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. Running annual average: 0.014mg/L *The MAC takes effect January 1, 2020.
Haloacetic Acids (Komoka-Mt. Brydges)	0.08 *	0.060	NR	3	0.007	0.017	0.0096	ND	0.0053	The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the Running annual average: 0.008mg/L *The MAC takes effect January 1, 2020.

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General Chemistry and Physical Parameters	MAC or IMAC (mg/L)	Objective AO/OG (mg/L)	O.Reg. 170/03 Required Frequency of Testing (months)	Contractual Required Frequency of Testing (months)	2016				Reportable Detection Limit (mg/L)	Comments
					Q1	Q2	Q3	Q4		
Haloacetic Acids (Strathroy-Caradoc)	0.08 *	0.060	NR	3	ND	0.012	0.010	ND	0.0053	The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. Running annual average: 0.006mg/L *The MAC takes effect January 1, 2020.
Hardness (mg/L as CaCO ₃)		80 – 100	NR	12	97.2	NT	NT	NT	1	
Iron		0.30	NR	12	ND	NT	NT	NT		
Lead	0.01		NR	6	ND	0.00005	ND	0.00002	0.00002	
Manganese		0.05	NR	12	ND	NT	NT	NT		
Methane (L/m ³)		3L/m ³	NR	12	ND	NT	NT	NT		
2-Methylisoborneol (MIB) (ng/L)		8.5	NR	Weekly as Required	NT	NT	ND	ND	3.0 ng/L	MIB is tested weekly from July 1-Oct 31. Results are expressed as the average per quarter when testing is required.
Nitrate	10.0		3	3	0.452	0.954	0.339	0.264	0.013	Where both nitrate and nitrite are present, the total of the two should not exceed 10 mg/L (as nitrogen)
Nitrite	1.0		3	3	ND	ND	ND	ND	0.005	Where both nitrate and nitrite are present, the total of the two should not exceed 10 mg/L (as nitrogen)
Organic Nitrogen		0.15	NR	12	ND	NT	NT	NT	0.1	Organic nitrogen is calculated by subtracting Total Ammonia from Total Kjeldahl Nitrogen
Sodium		200	60	12	10.5	NT	NT	NT	0.5	The local Medical Officer of Health must be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.
Sulphate		500	NR	12	27	NT	NT	NT	1	



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General Chemistry and Physical Parameters	MAC or IMAC (mg/L)	Objective AO/OG (mg/L)	O.Reg. 170/03 Required Frequency of Testing (months)	Contractual Required Frequency of Testing (months)	2016				Reportable Detection Limit (mg/L)	Comments
					Q1	Q2	Q3	Q4		
Sulphide		0.05	NR	12	ND	NT	NT	NT		
Toluene		0.024	NR	12	ND	NT	NT	NT	0.0002	
Total Dissolved Solids		500	NR	12	154	NT	NT	NT		
Trihalomethanes (Arva Reservoir)	0.100		3	3	0.015	0.021	0.027	0.014	0.00037	The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. Running annual average: 0.0192mg/L
Trihalomethanes (Exeter-Hensall)	0.100		3	3	0.030	0.029	0.041	0.033	0.00037	The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. Running annual average: 0.0332mg/L
Trihalomethanes (Komoka-Mt. Brydges)	0.100		3	3	0.022	0.026	0.034	0.023	0.00037	The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. Running annual average: 0.0262mg/L
Trihalomethanes (Strathroy-Caradoc)	0.100		3	3	0.018	0.021	0.029	0.018	0.00037	The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. Running annual average: 0.0215mg/L
Xylenes		0.3	NR	12	ND	NT	NT	NT		
Zinc		5.0	NR	12	0.002	NT	NT	NT	0.005	



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Discussion of Analytical Results:

* Indicator of adverse water quality

¹ In addition to the analytical samples noted above, chlorine residual, and turbidity are measured on a continuous basis at the treatment facility using on-line instrumentation.

² Turbidity is both regulated by the Province of Ontario, and specified in accordance with the operating agreement with the Contracted Operating Authority. The turbidity reported (6 daily grab samples) is taken from the plant treated water discharge, which is not explicitly regulated in Provincial Regulations. Provincial Standards recommend an aesthetic objective of 5 NTU within a distribution system, and Provincial Regulation specifies a maximum of 1 NTU on individual filter effluent. The contract with the Operating Authority specifies a maximum turbidity of 0.2 NTU on treated water discharge from the water treatment plant and 0.1 NTU on individual filter effluent. There is currently no standard for combined filter effluent.

MAC or IMAC – Maximum Acceptable Concentration or Interim Maximum Acceptable Concentration; as identified in O.Reg. 169 (Ontario Drinking-Water Quality Standards) and the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines

AO/OG – Aesthetic Objective/Operational Guideline; as identified in the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines

NT – Not Tested during this quarter

NR – Not Required

ND – Not Detected



Lake Huron
Primary Water Supply System

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APPENDIX B: 2016 ANNUAL REPORT

[Attached]



Drinking-Water System Number:	210000791
Drinking-Water System Name:	Lake Huron Primary Water Supply System
Drinking-Water System Owner:	Lake Huron Primary Water Supply System Joint Board of Management
Drinking-Water System Operating Authority:	Ontario Clean Water Agency (OCWA)
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2016 through December 31, 2016

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Lake Huron and Elgin Area Water Supply Systems c/o Regional Water Supply Division 235 North Centre Road, Suite 200 London, ON N5X 4E7 http://www.watersupply.london.ca</p> <p>Lake Huron Water Treatment Plant 71155 Bluewater Hwy., Grand Bend, ON</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div> </p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Systems that receive their drinking water from the LHPWSS:

Drinking Water System Name	Drinking Water System Number
City of London	260004917
Municipality of Bluewater	260006542
Municipality of Lambton Shores (East Lambton Shores Water Distribution System)	260006568
Township of Lucan-Biddulph	260003071



Municipality of Middlesex Centre (Middlesex Centre Distribution System)	260004202
Municipality of North Middlesex	260006529
Municipality of Strathroy-Caradoc (Strathroy- Caradoc Distribution System)	260080106
Municipality of South Huron (South Huron Water Distribution System)	220001520

Systems that may receive their drinking water from the LHPWSS:

Drinking Water System Name	Drinking Water System Number
Municipality of Lambton Shores (West Lambton Shores Distribution System) *Normally supplied by the Lambton Area Water Supply System (LAWSS) but a connection to the LHPWSS exists	260006581

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes No

Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method News Release

Describe your Drinking-Water System

The Lake Huron Water Treatment Plant (WTP) employs pre-chlorination, screening, powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, post-chlorination, and pH adjustment using sodium hydroxide to treat raw water obtained from Lake Huron. The WTP intake crib and raw water intake pipe have an estimated gross capacity of 454.6 Megalitres/day (MLD). The WTP rated capacity is 340.0 MLD.

A Residue Management Facility providing equalization, clarification, sludge thickening and dechlorination is also housed in the main complex where thickened sludge is dewatered by centrifuges and sludge cake is sent to the landfill for final disposal. Clarified and dechlorinated liquid streams are sent back to Lake Huron through the plant drain via the Diversion Chamber.

The distribution system is comprised of the McGillivray Booster Pumping Station and Reservoir, the Exeter-Hensall Booster Pumping Station and Reservoir, the Arva Terminal Reservoir, the Komoka-Mt. Brydges Booster Pumping Station (PS#4) and the associated interconnecting transmission water mains, which includes the primary, Strathroy, Exeter-Hensall, and Komoka-Mt. Brydges transmission water mains.

The drinking water system is monitored at various locations throughout the system via a Supervisory Control and Data Acquisition (SCADA) system.



List all water treatment chemicals used over this reporting period

Filter Aid Polymer (on an as-required basis)
Aluminum Sulphate
Powder Activated Carbon
Chlorine Gas
Sodium Hydroxide
Sodium Hypochlorite (Exeter Hensall Pumping Station)
Dewatering Polymer (Residuals Management Facility)
Sodium Bisulphite (Residuals Management Facility)

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

Capital Projects:

- Instrumentation replacements
- Concrete crack injection
- Low lift surge valve replacement
- Clarifier instrument upgrades
- Grit pump replacement
- Meter replacement and upgrades
- Filter media rebuilds
- Vehicle security gate replacement
- SCADA security upgrades
- Residuals management facility HVAC
- Plant drain pipe replacement
- Site drainage improvements
- Easement maintenance
- Alum tempering/flushing system upgrade
- Pipeline chamber upgrades
- Chlorine injector replacement
- UPS battery replacement
- General control upgrades
- Pipeline marker signs installed
- Air compressor upgrades
- Pipeline CMMS project

Maintenance Projects:

- Residuals management facility - north equalization tank floc drain upgrade
- North B-Line chamber repair/rebuild
- Low lift #4 pump rebuild
- Filter backwash valve rebuild
- Plant security camera replacement

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
NA	NA	NA	NA	NA	NA

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Results (CFU/100mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100mL) (min #)-(max #)	Range of HPC Results (CFU/1mL) (min #)-(max #)
Raw Water	102	(0)-(<100)	(0)-(18,600)	(<10)-(>2,000)
Treated Water (WTP)	257	(0)-(0)	(0)-(0)	(<10)-(>2,000)
Distribution (McGillivray PS)	51	(0)-(0)	(0)-(0)	(<10)-(30)
Distribution (North Exeter)	52	(0)-(0)	(0)-(0)	(<10)-(40)
Distribution (South Exeter)	52	(0)-(0)	(0)-(0)	(<10)-(60)
Distribution (Exeter-Hensall Reservoir)	52	(0)-(0)	(0)-(0)	(<10)-(30)
Distribution (Komoka-Mt. Brydges PS)	52	(0)-(0)	(0)-(0)	(<10)-(10)

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

Parameter	Number of Grab Samples	Range of Results (min #)-(max #)
Treated Water Free Chlorine (mg/L)	Continuous Monitoring	(0.61) – (1.75)
	2145	(0.87) - (1.76)
Treated Water Turbidity (NTU)	Continuous Monitoring	(0.021) – (2.00)
	2141	(0.030) - (0.099)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.020) - (0.349)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.013) - (0.681)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.022) - (0.400)
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.011) - (0.236)
Filter #5 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.017) - (0.357)
Filter #6 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.015) - (0.240)
Filter #7 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.022) - (0.147)
Filter #8 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.017) - (0.790)
Filter #9 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.020) - (0.166)
Filter #10 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.017) - (0.146)
Filter #11 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.015) - (0.538)
Filter #12 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.010) – (0.175)
Combined Filtered Water Turbidity (NTU)	2139	(0.006) - (0.120)

Summary of Inorganic parameters tested during this reporting period
*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	January 8, 2016	0.00016	mg/L	NO
Arsenic	January 8, 2016	0.0002	mg/L	NO
Barium	January 8, 2016	0.0128	mg/L	NO
Boron	January 8, 2016	0.0128	mg/L	NO
Cadmium	January 8, 2016	Not Detected	mg/L	NO
Chromium	January 8, 2016	0.00009	mg/L	NO
Lead <i>(Komoka Mt-Brydges Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	Not Detected 0.00005 Not Detected 0.00002	mg/L mg/L mg/L mg/L	NO
Mercury	January 8, 2016	Not Detected	mg/L	NO
Selenium	January 8, 2016	0.00014	mg/L	NO
Sodium	January 8, 2016	10.5	mg/L	NO
Uranium	January 8, 2016	0.000061	mg/L	NO
Fluoride	NA	Not Tested	mg/L	--
Nitrite	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO

Nitrate	January 8, 2016	0.452	mg/L	NO
	April 13, 2016	0.954	mg/L	
	July 15, 2016	0.339	mg/L	
	October 6, 2016	0.264	mg/L	

Summary of Organic parameters sampled during this reporting period or the most recent sample results

(*All tests were conducted on treated water leaving the WTP unless otherwise noted)

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	January 8, 2016	Not Detected	µg/L	NO
Atrazine + N-dealkylated metabolites	January 8, 2016	0.03	µg/L	NO
Azinphos-methyl	January 8, 2016	Not Detected	µg/L	NO
Benzene	January 8, 2016	Not Detected	µg/L	NO
Benzo(a)pyrene	January 8, 2016	Not Detected	µg/L	NO
Bromoxynil	January 8, 2016	Not Detected	µg/L	NO
Carbaryl	January 8, 2016	Not Detected	µg/L	NO
Carbofuran	January 8, 2016	Not Detected	µg/L	NO
Carbon Tetrachloride	January 8, 2016	Not Detected	µg/L	NO
Chlorpyrifos	January 8, 2016	Not Detected	µg/L	NO
Diazinon	January 8, 2016	Not Detected	µg/L	NO
Dicamba	January 8, 2016	Not Detected	µg/L	NO
1,2-Dichlorobenzene	January 8, 2016	Not Detected	µg/L	NO
1,4-Dichlorobenzene	January 8, 2016	Not Detected	µg/L	NO
1,2-Dichloroethane	January 8, 2016	Not Detected	µg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	January 8, 2016	Not Detected	µg/L	NO
Dichloromethane	January 8, 2016	Not Detected	µg/L	NO
2-4 Dichlorophenol	January 8, 2016	Not Detected	µg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	January 8, 2016	Not Detected	µg/L	NO
Diclofop-methyl	January 8, 2016	Not Detected	µg/L	NO
Dimethoate	January 8, 2016	Not Detected	µg/L	NO
Diquat	January 8, 2016	Not Detected	µg/L	NO
Diuron	January 8, 2016	Not Detected	µg/L	NO
Glyphosate	January 8, 2016	Not Detected	µg/L	NO
Haloacetic Acids (HAA's) <i>(Arva Reservoir)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	Not Detected 15.0 9.0 Not Detected	µg/L µg/L µg/L µg/L	NO
Haloacetic Acids (HAA's) <i>(Exeter-Hensall Monitoring Station #3)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	9.4 22.0 14.0 9.1	µg/L µg/L µg/L µg/L	NO



Haloacetic Acids (HAA's) <i>(Komoka Mt-Brydges Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	6.5 17.0 9.6 Not Detected	µg/L µg/L µg/L µg/L	NO
Haloacetic Acids (HAA's) <i>(Strathroy-Caradoc Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	Not Detected 12.0 10.0 Not Detected	µg/L µg/L µg/L µg/L	NO
Malathion	January 8, 2016	Not Detected	µg/L	NO
2-Methyl-4-chlorophenoxyacetic acid	January 8, 2016	Not Detected	µg/L	NO
Metolachlor	January 8, 2016	Not Detected	µg/L	NO
Metribuzin	January 8, 2016	Not Detected	µg/L	NO
Monochlorobenzene	January 8, 2016	Not Detected	µg/L	NO
Paraquat	January 8, 2016	Not Detected	µg/L	NO
Pentachlorophenol	January 8, 2016	Not Detected	µg/L	NO
Phorate	January 8, 2016	Not Detected	µg/L	NO
Picloram	January 8, 2016	Not Detected	µg/L	NO
Polychlorinated Biphenyls (PCB)	January 8, 2016	Not Detected	µg/L	NO
Prometryne	January 8, 2016	Not Detected	µg/L	NO
Simazine	January 8, 2016	Not Detected	µg/L	NO
Total Trihalomethanes <i>(Arva Reservoir)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	15.0 21.0 27.0 14.0	µg/L µg/L µg/L µg/L	NO
Total Trihalomethanes (THMs) <i>(Arva Reservoir)</i> Running Annual Average	2016	19.25	µg/L	NO
Total Trihalomethanes <i>(Exeter-Hensall Monitoring Station #3)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	30.0 29.0 41.0 33.0	µg/L µg/L µg/L µg/L	NO
Total Trihalomethanes <i>(Exeter-Hensall Monitoring Station #3)</i> Running Annual Average	2016	33.25	µg/L	NO
Total Trihalomethanes <i>(Komoka Mt-Brydges Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	22.0 26.0 34.0 23.0	µg/L µg/L µg/L µg/L	NO



Total Trihalomethanes <i>(Komoka Mt-Brydges Monitoring Station #2)</i> Running Annual Average	2016	26.25	µg/L	NO
Total Trihalomethanes <i>(Strathroy-Caradoc Monitoring Station #2)</i>	January 8, 2016 April 13, 2016 July 15, 2016 October 6, 2016	18.0 21.0 29.0 18.0	µg/L µg/L µg/L µg/L	NO
Total Trihalomethanes <i>(Strathroy-Caradoc Monitoring Station #2)</i> Running Annual Average	2016	21.5	µg/L	NO
Terbufos	January 8, 2016	Not Detected	µg/L	NO
Tetrachloroethylene	January 8, 2016	Not Detected	µg/L	NO
2,3,4,6-Tetrachlorophenol	January 8, 2016	Not Detected	µg/L	NO
Triallate	January 8, 2016	Not Detected	µg/L	NO
Trichloroethylene	January 8, 2016	Not Detected	µg/L	NO
2,4,6-Trichlorophenol	January 8, 2016	Not Detected	µg/L	NO
Trifluralin	January 8, 2016	Not Detected	µg/L	NO
Vinyl Chloride	January 8, 2016	Not Detected	µg/L	NO

NOTE: During 2016, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.



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To: Chair and Members
Lake Huron Primary Water Supply System Board of Management

From: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Meeting Date: March 9, 2017

Subject: Environmental Management System and Quality Management System

RECOMMENDATION

That the following report with respect to the Environmental Management System and Quality Management System for the Lake Huron Primary Water Supply System **BE RECEIVED** for information.

DISCUSSION

Environmental Management System (EMS)

The Lake Huron Primary Water Supply System (LHPWSS) has an Environmental Management System (EMS) which has been registered to the ISO14001 standard since 2003. The LHPWSS underwent a three-year re-registration audit in October 2015 and was recommended for continued registration to the ISO14001:2004 standard for another three-year period (ending in 2018). The latest revision of the standard, ISO14001:2015, was released in September 2015 and the transition to meet the requirements of the new standard will take place over the next year in advance of the anticipated re-registration in 2018.

The continued utilization and registration of the EMS to the ISO14001 standard is a requirement of the Service Agreement with Ontario Clean Water Agency (OCWA), the contracted Operating Authority for the water supply system.

Drinking Water Quality Management System (DWQMS)

In 2006, a Drinking Water Quality Management System (DWQMS) was integrated with the existing EMS and the combined system is maintained by the contracted Operating Authority. The *Safe Drinking Water Act* and Municipal Drinking Water License (MDWL) require that an accredited operating authority be in operational charge of the drinking water system. In order to become accredited, the Operating Authority must maintain an operational plan that meets the requirements of the DWQMS standard, and must undergo an external accreditation audit every three years. OCWA received full scope DWQMS re-accreditation in October 2016 and is currently accredited for another three-year period (ending in 2019).

Management Review

The documented EMS/DWQMS and its performance requires Management Review by Top Management a minimum of once annually to ensure that the management team of the Board and the Operating Authority stay informed of environmental and quality issues. Items discussed at the Management Review meetings include, but are not limited to, water quality test results, environmental and quality performance,



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legislative changes, identified non-conformances, corrective and preventive actions, staff suggestions, changing circumstances and business strategies, and resource requirements. Corrective and preventive actions include not only those to address non-conformance issues and opportunities for improvement identified as part of internal and external audits, but also non-compliance issues identified by the Ministry of the Environment and Climate Change (MOECC), suggestions from staff, and opportunities for improvement identified during the Management Review process.

In order to carry out more effective Management Review meetings, the Board's administration has opted to conduct shorter meetings at more frequent intervals. Although each required Management Review input may not be covered at every meeting, over the course of the year all required inputs are reviewed at least once. A Management Review meeting was held on January 31, 2017. The meeting minutes are attached as Appendix A of this report for the information of the Board.

Internal Audits

Pursuant to the international ISO14001 EMS standard and the provincial DWQMS standard, periodic "internal" audits are performed by the Board's administration to ensure continued compliance with legislated, contractual, and other requirements, as well as conformance with the ISO14001 EMS standard and DWQMS standard. Internal audits also ensure that the ongoing operation of the water supply system conforms to the EMS and DWQMS as implemented. As required by the standards, internal audits are performed a minimum of once annually.

There were no internal audits conducted during this reporting period.

External Audits

Annual surveillance audits (third-party external audits) are conducted for both the EMS and DWQMS, with a recertification audit taking place every third year. The external registrar for both the EMS and DWQMS is currently SAI Global. External audits review all aspects of the EMS or DWQMS, including the internal audits, subsequent management reviews, and corrective action processes.

There were no external audits conducted during this reporting period.

Corrective and Preventive Actions

For an EMS and DWQMS to be effective on an on-going basis, an organization must have a systematic method for identifying actual and potential non-conformities, making corrections and taking corrective and preventative action, preferably preventing problems before they occur. The internal audit process and management review are the two main drivers for identifying potential problems for the LHPWSS and implementing corrective actions. Preventative actions may originate from identified opportunities for improvement as part of an audit, but also staff suggestions and discussions with management.



The following table summarizes the status of action items assigned to date. Action items may be assigned to either the owner or operating authority.

	# of Action Items Assigned	# of Action Items Completed	# of Action Items Outstanding	# of Action Items Overdue	% Completion
2012	50	49	1	1	98
2013	87	87	0	0	100
2014	57	57	0	0	100
2015	82	78	4	4	95
2016	82	72	10	5	88
2017 (year to date)	6	1	5	0	17
TOTAL	364	344	20	10	95

The action items are currently 95% complete overall, which represents an improvement from the previous reporting period.

The 10 overdue action items are all proactive in nature (not corrective) and generally relate to the following:

Implementing an electronic document management system (EDMS), with a follow-up item relating to investigating database software once this is implemented. The project is currently delayed due to coordination and licencing issues with Microsoft, but has since been resolved. Implementation of the document system via Office 365 is projected to begin in the second quarter of 2017.

One action item is related to the recent HVAC project, specifically closing out an EMS/QMS checklist once all documentation is received.

Conducting a control system study to review the process control narrative and programming and recommend improvements. This study was approved as a 2016 capital project and is currently in progress.

Reviewing the existing operational and regulatory reports in SCADA and making recommendations for improvement.

Providing the plant operations staff with training on energy management. Board staff are currently working with a consultant on a training proposal.

Improving parking and access signage around the water treatment plant property.

Conducting a risk assessment of fire alarm and smoke detection systems at the water treatment plant. This is being looked at as part of the security assessment and audit currently taking place in 2017.

Two items relate to the transition to ISO14001:2015 standard and include a review of the Board's guiding principles and strategic plan, and providing staff with an overview of the changes in the new version of the standard and the results of the gap analysis. Board staff are currently working with an external consultant to complete staff training so these items can be completed.

Changes from previous reporting period:

Six (6) new proactive action items were added as a result of the January 31, 2017 Management Review meeting.



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For reporting clarity, the table above will be updated on a quarterly basis to track completions and outstanding items. In addition, any changes which occurred from the previous reporting period will be specifically noted for the reference of the Board.

PLAN-DO-CHECK-IMPROVE

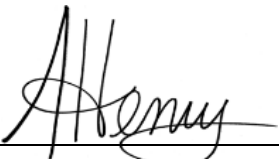
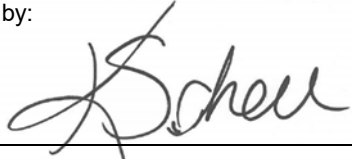
It should be noted that the “PLAN-DO-CHECK-IMPROVE” system required by the ISO14001 and DWQMS standards requires continuous monitoring of the EMS/DWQMS, with periodic review and audits conducted to demonstrate conformance. A key concept of this approach (Plan-Do-Check-Improve) is that it does not require or expect 100% conformance, but promotes an environment of continual review and improvement by identifying shortfalls, implementing corrective measures, and setting objectives and targets for improvement.

The monitor, review and audit philosophy is integrated in not only the monitoring of the registered EMS and DWQMS, but also the Board’s contracted operations.

CONCLUSION

The internal audits and frequent management review meetings continue to effectively identify system deficiencies. The EMS and DWQMS for the Lake Huron Primary Water Supply System continue to be suitable, adequate and effective. Activities by OCWA continue to address the need for change, and the management systems are being revised and refined by OCWA as required.

This report was prepared by Erin McLeod, Quality Assurance & Compliance Manager.

Report by:  <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> Andrew Henry, P. Eng. Division Manager, Regional Water Supply	Recommended by:  <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> Kelly Scherr, P. Eng., MBA, FEC Chief Administrative Officer
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Attachments:

Appendix A: Management Review Meeting Minutes (January 31, 2017)



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APPENDIX A: MANAGEMENT REVIEW MEETING MINUTES (JANUARY 31, 2017)

Lake Huron & Elgin Area Primary Water Supply Systems EMS/DWQMS Management Review	
Date	January 31, 2017
Time	9:00 am
Location	RWS Boardroom
Attendees	Andrew Henry (RWS), Erin McLeod (RWS), Blair Tully (OCWA), Denny Rodrigues (OCWA), Simon Flanagan (OCWA), Shawn Core (OCWA)
Regrets	
C.C.	

-----Meeting Notes -----

1. Review and Approval of Past Meeting Minutes – November 1, 2016

The minutes were approved. No changes required.

2. Huron & Elgin: Compliance Obligations Update

Title	Proposed Guideline Technical Document on Enteric Protozoa in Drinking Water
Source	Health Canada
Date Posted/ Notice Received	October 31, 2016
Comments Due	January 9, 2017
Summary	The proposed guideline is as follows: “Where treatment is required for enteric protozoa, the proposed guideline for Giardia and Cryptosporidium in drinking water is a health-based treatment goal of a minimum 3 log removal and/or inactivation of cysts and oocysts. Depending on the source water quality, a greater log removal and/or inactivation may be required. Treatment technologies and watershed or wellhead protection measures known to reduce the risk of waterborne illness should be implemented and maintained if source water is subject to fecal contamination or if Giardia or Cryptosporidium have been responsible for past waterborne outbreaks.”
Notes	The existing guideline was last updated in 2012. The document proposes to reaffirm the guideline as a health-based treatment goal of a minimum 3 log removal and/or inactivation of cysts and oocysts for enteric protozoa (Giardia and Cryptosporidium) in drinking water.

Title	Regulation Decision: Updates to Ontario Drinking Water Quality Standards and other regulations of the Safe Drinking Water Act, 2002, related to: lead in schools and day nurseries; drinking water systems;
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	drinking water testing services; and drinking water operator certification.
Source	MOECC
Date Posted/ Notice Received	December 19, 2016
Comments Due	N/A
Summary	<p>The amended regulations will be in force on <u>July 1, 2017</u>. The exception is the new requirement for laboratories to submit to the MOECC results from all drinking water tests for which they are licensed to analyze comes into effect on <u>January 1, 2018</u>.</p> <p>Changes to O.Reg. 169/03 (Ontario’s Drinking Water Quality Standards): Three new drinking water quality standards based on new federal guidelines will be introduced:</p> <ul style="list-style-type: none"> • 0.06 mg/L for Toluene; • 0.14 mg/L for Ethylbenzene; and • 0.09 mg/L for Total Xylenes <p>Two drinking water quality standards will be revised:</p> <ul style="list-style-type: none"> • From 0.01 mg/L to 0.05 mg/L for Selenium; and • From 0.03 mg/L to 0.01 mg/L for Tetrachloroethylene. <p>One drinking water standard, which is a sum of nitrate and nitrite, will be removed. Consequently, the following drinking water quality standard will be removed:</p> <ul style="list-style-type: none"> • 10 mg/L for Nitrate + Nitrite. <p>Changes to the MOECC’s Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines: One new Aesthetic Objective will be introduced:</p> <ul style="list-style-type: none"> • 0.015 mg/L for methyl t-butyl ether (MTBE). <p>Two Aesthetic Objectives will be revised:</p> <ul style="list-style-type: none"> • From 0.0024 mg/L to 0.0016 mg/L for ethylbenzene; and • From 0.3 mg/L to 0.02 mg/L for xylenes. <p>Changes to O.Reg. 170/03 (Drinking Water Systems): All pesticides found at levels above 100 nanograms/Litre (ng/L) will initiate an AWQI. This includes pesticides that are not in Schedule 2 of O. Reg. 169/03 and currently do not have a drinking water standard in place.</p> <p style="padding-left: 40px;">All test results that indicate the presence of pesticides – even if their concentration levels are at or below the threshold of 100 ng/L – will need to be provided to the ministry.</p> <p>Municipal and non-municipal drinking water system owners will no longer be required to submit lead testing summary reports to the ministry, as the same information will have to be included in the system’s annual report which is required to be made available to the public.</p>

	<p>Additionally, the following general changes and corrections to the regulation have been made:</p> <p>List of control documents to be recognized by laboratories now include ‘municipal drinking water licence’ where it was omitted. ‘Sound’ has been replaced by ‘signal’ when referring to the requirement for an alarm to sound when there is a problem at the system.</p> <p>Wording has been added to indicate that non-municipal residential systems that receive all their water from another regulated drinking water system and do not re-chlorinate water are not required to prepare Engineering Evaluation Reports.</p> <p>Wording has been clarified around the calculation of Running Annual Averages (RAAs) for situations where tests are only required once every three years.</p> <p>Changes to O.Reg. 128/04 (Certification of Drinking Water Operators and Water Quality Analysts): Requirements for Drinking Water Operator-in-Training (OIT) Certification have been updated as follows:</p> <p>Temporary Drinking Water OIT certificates will cease to be issued. Drinking water OIT certificates will be valid for 36 months. Drinking water OITs will be permitted to operate Limited Systems under the supervision of an Operator-in-Charge or Overall Responsible Operator.</p> <p>The changes to O.Reg. 243/07 (Schools, Private Schools and Day Nurseries) and O.Reg. 248/03 (Drinking Water Testing Services) do not impact the LHPWSS and EAPWSS.</p>
Notes	

Action Item:

Denny Rodrigues to update the quarterly water quality reporting template once the regulatory changes take effect. The Q3, 2017 report will be the first one affected by the changes. Deadline: October 31, 2017

Action Item:

Erin McLeod to review the WaterTrax alert settings once the regulatory changes take effect. Update alert settings as necessary to reflect the changes in the water quality parameters. Deadline: October 31, 2017

Title	Notice: Canadian Environmental Protection Act, 1999 – Notice with Respect to Asbestos
Source	Canada Gazette
Date Posted/ Notice Received	December 17, 2016
Comments Due	January 18, 2017

Summary	The federal government is initiating the development of additional regulatory measures for asbestos under the Canadian Environmental Protection Act (CEPA), to further protect the health of Canadians. To ensure that future decision making is based on the best available information, the Notice will gather information on the manufacture, import, export and use of asbestos and products containing asbestos for 2013 - 2015. Companies that manufacture, import, export or use asbestos are required to respond to the Notice by January 18, 2017.
Notes	The LHPWSS and EAPWSS do not meet the criteria and are therefore not required to respond to this Notice.

Action Item:

RWS (Erin McLeod and Andrew Henry) to notify RWS staff that when preparing tenders and procurement documents, to consider specifying that asbestos containing material (ACM) is not to be used in supplied products. Deadline: April 1, 2017

Title	Notice: Canadian Environmental Protection Act, 1999 – Notice of intent to inform stakeholders of upcoming consultations on proposed changes to the Greenhouse Gas Reporting Program
Source	Canada Gazette
Date Posted/ Notice Received	December 10, 2016
Comments Due	N/A – Consultation in 2017
Summary	The proposed expansion to the reporting requirements includes: lowering the reporting threshold from 50,000 to 10,000 tonnes of carbon dioxide (CO ₂) equivalent. All facilities that emit the equivalent of 10,000 tonnes or more of greenhouse gases (GHGs) in CO ₂ equivalent per year will be required to submit a report; reporting of additional data (e.g. more detailed emissions, quantities of fuels or feedstocks consumed, etc) and applying specific quantification methods to determine emissions. These new requirements will be gradually phased in by sectors. ECCC will begin consultations with stakeholders in early 2017, in advance of issuing requirements for 2017.
Notes	Sources of greenhouse gases are categorized as stationary fuel combustion, industrial process, venting, flaring, fugitive, on-site transportation, waste and wastewater. The changes should not impact the LHPWSS and EAPWSS.

Title	Proposed Guideline Technical Document on Lead in Drinking Water
Source	Health Canada
Date Posted/ Notice Received	January 11, 2017
Comments Due	March 15, 2017

Summary	<p>“The existing guideline for lead, last updated in 1992, based its maximum acceptable concentration (MAC) of 0.01 mg/L (10 µg/L) on a provisional tolerable weekly intake of lead established by the World Health Organization (WHO) at a level that showed no increase in blood lead levels and thus no expected increase in health risks. This new document identifies reductions in IQ as the critical effect of lead, with a proposed MAC of 0.005 mg/L (5 µg/L) based on analytical achievability. It provides updated data and information related to exposure to lead in Canada, to analytical methods and to treatment approaches available at the municipal and residential scales. Based on these considerations, the document proposes a MAC of 0.005 mg/L for total lead in drinking water.”</p> <p>Proposed Guideline: “A maximum acceptable concentration (MAC) of 0.005 mg/L (5 µg/L) is proposed for total lead in drinking water, based on a sample of water taken at the tap and using the appropriate protocol for the type of building being sampled. Every effort should be made to maintain lead levels in drinking water as low as reasonably achievable (or ALARA).”</p>
Notes	<p>If in future Ontario follows the recommendations of Health Canada and also adopts a lowered MAC for lead at 5 ug/L, this could trigger additional Ontario municipalities to have to implement corrosion control plans (CCP). Currently City of London has already implemented a CCP in partnership with the LHPWSS.</p>

Action Item:

Erin McLeod to highlight this item in the text of the next quarterly compliance Board Report, for the information of the Board. Deadline: March 9, 2017.

3. Huron & Elgin: Results of Board Meetings – December 1, 2016

December 1, 2016 Huron Board Meeting

Quarterly Compliance Report:

Staff addressed water quality questions related to the aluminum objective of 0.1 mg/L (to be clarified in future reporting that the objective is actually <0.1 mg/L), and pH fluctuations.

EMS/QMS Report:

Staff addressed a question regarding the moratorium on new water bottling facilities; The LHPWSS would not sell water directly to a large industrial/commercial facility, as they would be a customer of a member municipality.

MOECC Inspection Report:

Regarding the recent inspection rating of 100%, good job.

December 1, 2016 Elgin Board Meeting

EMS/QMS Report:



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Regarding the 9 overdue items noted in the corrective action summary, the Board asked when they can expect these to be addressed. Staff anticipates many of these action items will be completed by March 2017. The status of the 9 outstanding action items was reviewed. The Board would like an update on these in future to ensure they were all completed. At management review there was a suggestion to look at the way the data is being reported (eg. % overdue versus % incomplete).

There was a question regarding the numbering in the management review meeting minutes and why they are not in sequential order. Because it is a combined management review for both Huron and Elgin, to shorten the report only the items related to Elgin are included in the Board report. At management review there was a staff suggestion to keep the numbering, noting “Huron item” or “Elgin item” but without the specific details, to keep the number sequential.

Quarterly Compliance Report:

General comment that the report contains lots of charts and analysis (related to water quality), and the Board wants to be sure they are focusing on the right things. At a future meeting they would like further explanation. Staff suggested a voluntary session (for both Boards) to go over the water quality tables and provide explanation.

4. Huron & Elgin: EMS Objectives

Current objectives:

The objectives expire July 1, 2017 so a review of the current status of all objectives and targets was completed in preparation for setting new objectives and targets.

Handouts: Electricity consumption trends, chemical consumption trends, and process water trends (Fall 2012 – Fall 2016) were reviewed, as well as other data from the Key Performance Indicator (KPI) spreadsheets maintained by RWS.

The status of the current objectives, targets and programs was provided. Overview summary:

- Elgin energy efficiency: quarterly average 642.5 kwh/ML
- Huron energy efficiency: quarterly average 830.0 kwh/ML
- Elgin chemical efficiency: quarterly average 88.6 Kg/ML; average from summer 2014 – fall 2016 (after the pH target was adjusted) was 78.7 kg/ML
- Huron chemical efficiency: quarterly average 50.0 kg/ML
- Elgin process water: quarterly average 5.98%
- Huron RMF: Objective and target fully achieved
- Elgin RMF: Objective and target not achieved yet as commissioning is underway.
- Huron & Elgin waste oil: Intent to reduce unnecessary waste oil is being achieved.

For Huron objective/target #4 and Elgin objective/target #5 related to the reduction of waste oil, it was recommended that these be closed out and not carried forward into future objectives/targets. The oil sampling/analysis prior to removal has now become a standard operating procedure. OCWA has worked this into their regular operations so no need to specifically track.

Huron objective/target #3 related to residuals management can now be closed out. The RMF has been operating since 2013 and the target and regulatory requirements are being met. If there are any issues



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going forward this will be dealt with at the monthly operations meetings. Monitoring of the total chlorine residual and total suspended solids will continue, as this is a requirement of the MDWL.

Elgin objective/target #3 related to process water will be closed out as this is not a significant aspect. Staff will continue to track this is a key performance indicator (KPI), monitor progress and make improvements where possible.

The objectives/targets related to electricity and chemical consumption will carry forward as there are more opportunities available.

New Objectives:

Draft objectives/targets/programs were discussed.

- Huron objective #1 relates to electricity consumption.
- Huron objective #2 relates to chemical consumption.
- Elgin objective #1 relates to electricity consumption.
- Elgin objective #2 relates to chemical consumption.
- Elgin objective #3 relates to residuals management.

The target years for all objectives were set at July 1, 2017 – December 31, 2022 to coincide with the 5 year operating term extension with OCWA.

The new targets and baselines were set by factoring in a review of the data from the past 4 years (Fall 2012 – Fall 2016), taking into account the quarterly average, direction of the trending, and anticipated changes in the next few years.

The draft programs were reviewed and staff and top management provided comments and requested changes. The comments will be incorporated into finalized programs and presented to the Board at the upcoming March 9, 2017 meeting for approval.

5. Huron & Elgin: Staff Suggestions

Huron & Elgin – Training

Suggestion from an RWS staff member that all new staff should be given a basic water treatment training session, similar to what OCWA provides all new staff, as not everyone has a background in water treatment. OCWA has a series of corporate videos available (eg. “Bird’s Eye View of Water Treatment”). OCWA can make arrangements for videos to be available for RWS staff upon request.

Huron – Polymer Trial

OCWA suggestion to trial a dry polymer in the RMF. Currently liquid polymer is used. There are limited options for hydrocarbon-free liquid polymers and it’s expensive. To expand options OCWA is working with Brenntag on setting up a trial. Brenntag may be able to supply equipment needed to conduct a trial. This is being looked at for spring 2018.

Huron & Elgin - Building Envelope Energy Surveys



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OCWA is recommending building envelope energy surveys be conducted to identify energy loss through heating and cooling. Blair Tully provided an email with details on January 7, 2017 along with a sample report. OCWA is currently obtaining pricing and will bring forward a proposal to RWS for consideration. An energy expert from OCWA is looking at rebates on natural gas. Inspection/survey would be done by a consultant (Tremco). The method used is IR and smoke. Both plants have had HVAC upgrades, the next step is optimization (eg. sealing). This project would relate back to the EMS objectives of energy reduction.

Huron & Elgin – Natural Gas Tracking

Staff would like to create a key performance indicator (KPI) to start better tracking natural gas consumption. This is a significant aspect and usage has increased at Huron after the HVAC upgrade (natural gas boilers and dehumidifiers added).

Action Item:

Erin McLeod to create KPIs to track natural gas consumption. Monitor monthly consumption and also look into normalizing the data to the average monthly temperature. Deadline: July 1, 2017

6. Huron & Elgin: QMS – Deviations from Critical Control Points (2016 Summary)

Handouts: WaterTrax Alert Action Reports were generated for 2016.

This provides a summary of all WaterTrax alerts received in 2016.

Huron: Total of 22 alerts received. The alerts were reviewed. No changes are required to the alert settings at this time. Operators will be reminded to enter in comments if an alert is going to be generated.

Elgin: Total of 198 alerts received. The majority of the alerts related to low settled water chlorine, likely as a result of the filter upgrade project. There is a future OFI to start looking into achieving better chemical mixing (for chlorine and fluoride especially). The high conductivity alerts were mainly received in March/April and attributed to spring runoff. The fluoride and pH alerts can mainly be attributed to the twinned pipeline operations and pipeline switching. The fluoride and caustic chemical systems are shut off prior to pipeline switching and back on when the plant reaches steady state again. At this time no changes are recommended to the alert settings. In future if we can address the twinned pipeline operations and eliminate the need for pipeline switching the number of pH and fluoride related alerts will be reduced.

7. Elgin RMF – Impacts to System and Updates Required

A Management of Change Form was completed to capture the changes required to the EMS/QMS as a result of the RMF operation. This should have addressed most items such as updating procedures to include sampling, chemical handling, chemical deliveries etc. Top management is requesting that further review be conducted for all EMS/QMS procedures to ensure any changes as a result of the RMF are documented properly.

Action Item:

Denny Rodrigues and Erin McLeod to complete a review of all EMS/QMS procedures to ensure RMF details are documented as required. Complete this review for both Elgin and Huron. Deadline: July 1, 2017.



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8. Huron & Elgin: Status of Previous Action Items

Handout: A summary of all incomplete action items was provided for review.

Current action item completion status as of January 30, 2017:

Huron 91% complete

Elgin 90% complete

Staff will further update the spreadsheets this week prior to the next Board reporting deadline. The % completion should slightly improve as several more action items are anticipated to be completed.