



JOINT BOARD OF MANAGEMENT

Wednesday, February 19, 2020

9:00 AM

Ruthven Water Treatment Plant
2015 Union Avenue

AGENDA

A. Call to Order:

B. Disclosures of Pecuniary Interest:

C. Approval of Minutes:

Minutes of the meeting of the Union Water Supply System Joint Board of Management Meeting held Wednesday, January 15, 2020
Pages 3 - 7

D. Business Arising Out of the Minutes

E. Items for Consideration:

1. UW/05/20 dated February 14, 2020 re: Status Update of UWSS Operations & Maintenance Activities and Capital Works to February 14, 2020
Pages 8 - 10
2. UW/06/20 dated February 14, 2020 re: Engineering and Design - Dissolved Air Flotation Clarification Retrofit for Clarifier #2
Pages 11 - 16
3. UW/07/20 dated February 11, 2020 re: 2019 Annual Report under the Safe Drinking Water Act and Ontario Regulation 200/03
Pages 17 - 26
4. UW/08/20 dated February 11, 2020 re: 2018 Summary Report for Municipalities under Regulation 200/03 made under the Safe Drinking Water Act.
Pages 27 - 35
5. UW/9/20 dated February 14, 2020 re: Payments from January 10 to February 14, 2020
Pages 36 - 42

F. New Business:

G. Adjournment:

H. Date of Next Meeting: TBD

/kmj



JOINT BOARD OF MANAGEMENT

Wednesday, January 15, 2020

9:00 AM

Ruthven Water Treatment Plant
1615 Union Avenue,
Ruthven

MINUTES

Members Present: Mayor MacDonald (Chair); Deputy Mayor Verbeke, Councillors Dunn, Tiessen (alternate), Wilkinson - Leamington
Mayor Nelson Santos (Vice-Chair); Deputy Mayor Queen,
Councillors DeYong, Neufeld, Patterson - Kingsville
Councillor VanderDoelen - Essex
Councillor Walstedt - Lakeshore

Members Absent: Councillors Hammond & Jacobs - Leamington

Staff Present: Andy Graf - Essex
Shaun Martinho - Kingsville
Kevin Girard - Lakeshore
Shannon Belleau - Leamington

OCWA Staff Present: Dale Dillen
Dave Jubenville

Call to Order: 9:10 am

Election of Chair of the Union Water System Joint Board of Management

The Manager calls for nominations for the position of Chair of the Union Water Supply System Joint Board of Management, for the term 2020, ending on December 31, 2020.

Nomination of Mayor Hilda MacDonald for the position of Chair

No. UW-01-20

Moved by: Deputy Mayor Queen

Seconded by: Councillor Wilkinson

That Mayor, Hilda MacDonald, is nominated for the position of Chair for a term ending December 31, 2020.

Carried

Mayor MacDonald accepts the nomination. There is a second and third call for nominations. There are none.

No. UW-02-20

Moved by: Deputy Mayor Verbeke

Seconded by: Councillor Walstedt

That the nominations are closed.

Carried

The Chair then takes over duties of the meeting.

Nomination of Mayor Nelson Santos for the position of Vice Chair

No. UW-03-20

Moved by: Deputy Mayor Queen

Seconded by: Deputy Mayor Verbeke

That Mayor, Nelson Santos, is nominated for the position of Vice Chair for a term ending December 31, 2020.

Carried

Mayor Santos accepts the nomination. There is a second and third call for nominations. There are none.

No. UW-04-20

Moved by: Deputy Mayor Verbeke

Seconded by: Councillor Dunn

That nominations are closed.

Carried

Disclosures of Pecuniary Interest: none

Adoption of UWSS Joint Board of Management Minutes:

No. UW-05-20

Moved by: Councillor Patterson

Seconded by: Councillor Dunn

That Minutes of the UWSS Joint Board of Management meeting of December 18, 2020 be received as amended.

Carried

Business Arising Out of the Minutes:

The Manager informs members of the Board that there was a slight rounding error on his budget report the previous month. He explains that the error occurred while converting from imperial to metric measurements and the number of decimal places used. He further confirms that the end result of the budget increase for the wholesale water rate remains unchanged.

The recording secretary is to amend the December 18, 2020 minutes and report UW/35/19 to reflect the change of the increase in the wholesale water rate from \$0.0248 per cubic meter to the new increase of \$0.0261 per cubic metre.

Deputy Mayor Verbeke's name will also be added to the December minutes.

Report UW/2/20 dated January 10, 2020 re: Status Update of the UWSS Operations & Maintenance Activities and Capital Works to July 26, 2020

The Manager reviews his report with board members. He notes that the Christmas break was just after the last meeting and not really much has happened since that time. However, he notes that OCWA staff are working hard around the facilities to ensure things continue to run smoothly.

The Manager indicates that PW Makar was retained to inspect the Kingsville Water Tower (KWT), which was completed on January 6, 2020. This is part of the process to establish what will be required to rehab the KWT. He notes that the results of the inspection have not been received, but that the interior and exterior will need recoating. This will require full encapsulation. He is working with the staff at the Town of Kingsville throughout the process to make sure things move smoothly.

The old water softener, that was part of the ammonia system, has been removed. Annual filter maintenance is underway. This includes new flow metres on filters #5 through #8 and chemical cleaning of filter #8.

The Manager provides an update on the SCADA project. He notes that due to the holidays not a lot has changed. He does confirm that the FAT testing will take place at the beginning of February and the site testing can commence. He still expects the project to be completed by March 2020.

The CO2 pH project is moving along as well, however, there were no on-site activities to report during the holiday season. He believes that commissioning should begin by the end of January.

The flows are up, but with only 9 recorded days on this report, it is difficult to confirm any trend. The Manager does feel that flows will continue to be up this year. His understanding is that more greenhouses will be built and with the are having access to more power and gas greenhouses are running year round now.

No. UW-06-20

Moved by: Deputy Mayor Queen

Seconded by: Councillor Walstedt

That report UW/2/20 dated January 10, 2020 re: Status Update of the UWSS Operations & Maintenance Activities and Capital Works to January 10, 2020 is received.

Carried (UW/2/20)

Report UW03/20 dated January 10, 2020 re: Chief Drinking Water Inspector Report for Ontario 2018-2019 and Minister's Annual Report on Drinking Water 2019

The Manager reminds members of the Board that both of these reports are generally provided on a yearly basis.

The Chief Drinking Water Inspectors Report (CDWI) provides aggregate numbers for all systems in Ontario and shows the inspection results. He notes that most facilities that do not obtain 100% inspection rating is generally due to paper issue, not a water quality issue. The four member municipalities' inspections are noted.

The Annual Report on Drinking Water provides information regarding Ontario as a whole and specifically lists projects that the government has undertaken to improve water quality such as the improvements to the Great Lakes, Lake Simcoe and the First Nations.

No. UW-07-20

Moved by: Councillor Wilkinson

Seconded by: Councillor Neufeld

That report UW/03/20 dated January 10, 2020 re: Chief Drinking Water Inspector Report for Ontario 2018-2019 and Minister's Annual Report on Drinking Water 2019 is received.

Carried (UW/03/20)

Report UW/04/20 dated January 10, 2020 re: Payments from December 20th, 2019 to January 10th, 2020

No. UW-08-20

Moved by: Deputy Mayor Verbeke

Seconded by: Mayor Santos

That report UW/04/20 dated January 10, 2020 re: Payments from December 20th, 2019 to January 10th, 2020 is received.

Carried (UW/04/20)

New Business

Councillor Patterson spoke to members of the Board noting that he keeps track of complaints received each year regarding UWSS. He was pleased to state that the one complaint he received did not pertain to water quality. He congratulated UWSS and OCWA staff on an exemplary 2019 year.

Chair MacDonald asks the Manager if he had any comment regarding the BWA that had taken place in Wheatley within the last week. She notes there was a great deal of confusion regarding this incident. The Manager notes that UWSS does not supply water to the area in question. He explains that Leamington Water Department staff might be better able to answer any questions.

Adjournment:**No. UW-09-20**

Moved by: Councillor Tiessen

Seconded by: Councillor Patterson

That the meeting adjourn at 9:28 am

Carried

Date of Next Meeting: Wednesday, February 19, 2020, 9:00 am at the Ruthven WTP

/kmj

UW/05/20

To: Chair and Members of the Union Water Supply System Joint Board of Management

From: Rodney Bouchard, UWSS General Manager

Date: February 14, 2020

Re: Status Update of UWSS Operations & Maintenance Activities and Capital Works to February 14, 2019



Aim:

To inform the UWSS Board about operational and maintenance activities and capital works projects for the Union Water Supply System since the last Board meeting on.

Discussion:

The UWSS Manager conducts regular meeting with OCWA Operations staff in regards to on-going operations and maintenance programs for the UWSS facilities. The following provides an update on UWSS operations, regular maintenance and major maintenance and Capital Works at UWSS facilities:

1. Regular Maintenance on all process equipment and analyzers continue to be completed through OCWA's Workplace Maintenance Management System.
2. Annual filter maintenance continues. Filters 5 and 7 were chemically cleaned and new flow meters installed. These filters were disinfected and returned to service on February 13, 2020. Maintenance on Filters 1-3 will start the week of February 17th, 2020.
3. Clarifier #3 was put into service on February 10th, 2020 after 2 weeks of startup preparation. Clarifier #2 will be started up for chemical blanket preparation the week of February 24th, 2020. Once Clarifier #2 is ready for service, Clarifier #1 will be taken out of service for the installation of a new 18 inch butterfly valve and flow meter, which is scheduled for the week of March 9th.
4. The new inlet valves for filters #2 and #4 have been postponed until October and will be completed in conjunction with #4 filter rehabilitation project.
5. The Harrow/Colchester WTP will be conducting some capital upgrades on their MCC panels and requires the plant to be shut down for approximately two weeks. This work is anticipated for the beginning of March 2020. During that time system interconnect valves between the Kingsville and Essex distribution systems will be opened and the Harrow/Colchester system will be supplied with UWSS treated water. Billing flows for both Kingsville and Essex will be monitored during that time and adjusted accordingly.

Re: UW/05/20 - Status Update of UWSS Operations & Maintenance Activities and Capital Works to February 14, 2020

6. SCADA Upgrade Project Update: The final FAT for all remaining components of the Treatment Plant is scheduled March 3, 4 and 5, 2020 at Summa Offices in Etobicoke, ON.
7. CO2 pH Adjustment/ Chlorine System Improvements Project Update - The four (4) new auto switchover regulators, the emergency chlorine tank shut off system and the chlorine scrubber system were all put into service and commissioned the week of February 10th. The CO2 system was also commissioned during that period and is being operated in manual mode until a new proper sized flow meter for the CO2 is received and installed. Approximate six weeks delivery.
8. NJ Peralta Engineering of Kingsville has been retained for engineering services for the installation of a sewage force main for the UWSS Ruthven Water Treatment Plant and for the new parking area proposed at the Treatment Plant.
9. Phasor Industrial has been retained by UWSS to complete the electrical upgrades at the Low Lift plant. This includes installation of new transformer, new transfer switch gear and all associated electrical work.
10. OCWA Engineering Services (OCWA ES) has been retained by UWSS to provide engineering, project management and contract management services for the Kingsville Water Tower (KWT) recoating and rehabilitation project. This work will also include the construction of a small building on-site to house existing electrical and telecom equipment and a new chlorine analyzer.

The results of the water tower inspection by PW Makar in early January 2020 indicated rust and ice damage to the coating inside the water tower and sufficient damage to the exterior coating to require full removal and recoating. Further, the exterior included the presence of lead in the paint thus requiring full encapsulation of water tower during removal of existing paint coating. The PW Makar report also identified numerous safety related upgrades needed. OCWA ES is currently preparing engineering specs and tender package for this work. It is anticipated that the work will begin in late April/ early May 2020.

11. Eramosa Engineering of Guelph, ON has been retained to provide design/engineering consulting services for the provision and retrofit of 12 hydrants in the larger UWSS distribution system to include real time smart metering capabilities. These "smart hydrant" retrofits will include continual pressure and temperature monitoring and leak detection capabilities. The monitoring data will be continually uploaded to a database and included software will create display graphics that will be available for viewing and interpretation by Ruthven Water Treatment plant operations. UWSS is collaborating with our partner municipalities on this initiative.

Re: UW/05/20 - Status Update of UWSS Operations & Maintenance Activities and Capital Works to February 14, 2020

The first chart shows comparative flows for 2016 through 2020 in Mega Litres (ML) and the second chart shows Millions of Imperial Gallons (MIG) for the period January 1st to February 13th, 2020.

	2016	2017	2018	2019	2020
Flow to Date (ML)	1,119.04	1,166.20	1,315.59	1,328.56	1,384.51
Max Day (ML)	29.34	32.51	35.82	38.81	37.19
Min Day (ML)	19.49	20.72	23.56	20.13	25.44
Average Day (ML)	25.43	26.50	29.90	30.20	31.47
No of Days	44	44	44	44	44

	2016	2017	2018	2019	2020
Flow to Date (MG)	246.16	256.53	289.41	292.27	304.56
Max Day (MGD)	6.46	7.15	7.88	8.54	8.18
Min Day (MGD)	4.29	4.56	5.18	4.43	5.60
Average Day (MGD)	5.59	5.83	6.58	6.64	6.92
No of Days	44	44	44	44	44

Flows to date are up 55.95 ML (12.3 MIG) or 4.2% from last year. The 2020 flows to date are up 12.35% over the previous 4 year average.

Recommendation:

That this report be received by the UWSS Board for information purposes.

Respectfully submitted,



Rodney Bouchard, Manager
Union Water Supply System Joint Board of Management

/kmj

UW/06/20

Report

To: Chair and Members of the Union Water
Supply System Joint Board of Management

From: Rodney Bouchard, Union Water Manager

Date: February 14, 2020

Re: Engineering and Design - Dissolved Air Flotation
Clarification Retrofit for Clarifier #2



Recommendation:

That the Union Water Supply Joint Board of Management (UWSS Board) receives this report for information;

And further, that the UWSS Board authorizes the UWSS General Manager to award a contract in the amount of \$384,200 to Associated Engineering for Conceptual & Detailed Design and Engineering services and project management for the retrofit of Clarifier #2 with a Dissolved Air Flotation clarification system.

Background:

Since 2012, the UWSS has undertaken a number of evaluations and capital improvements to components of the treatment process at the Ruthven Water treatment plants.

Treatment related capital improvements have included the following:

- Various upgrades to Filters #1 through #4 (i.e. air scour system, new valves, new underdrains, new media, etc.).
- Installation of new coagulant chemical feed system (i.e. pumps and controls)
- Replacement of the powdered activated carbon feed system (i.e. pumps, controls, etc.)

Treatment process evaluations have consisted of the following:

- Residuals management study to evaluate the need for a residuals management facility (RMF) and identify types of residuals management technologies that would work for UWSS treatment residuals
- Coagulant evaluation to assess various coagulants and their effectiveness on UWSS raw water and effects on UWSS treated water, including potential for corrosion.

February 14, 2020 - UW/06/20

Re: Engineering and Design -Dissolved Air Flotation Clarification
Retrofit for Clarifier #2

As part of the Union Water Supply System (UWSS) Water Quality Master Plan (WQMP) completed by AE in 2016, the pre-treatment processes (including the clarification process) was identified as the primary limiting process at the Ruthven WTP. During periods of elevated raw water turbidity (e.g. storm events), cold water conditions, fluctuations in flows, and algae blooms, the plant has had difficulty in the operation of the existing circular up-flow solids contact clarifiers. After performing a triple bottom line (TBL) and risk evaluation as part of the Water Quality Master Plan, DAF was identified as the preferred clarification alternative. In AE's report, a recommendation was made to convert the existing circular up-flow solids contact clarifier process to a DAF process to increase the clarification system robustness.

In 2017, UWSS retained AE to conduct pilot-scale testing to evaluate the feasibility of dissolved air flotation (DAF) as a clarification alternative. The preliminary results from this study indicated that through a multi-stage pre-treatment process that includes both a flotation (DAF) and settling (existing up-flow clarifiers) component, DAF would be a feasible clarification process. Further, these preliminary results also indicated that pH adjustment of raw water could improve the effectiveness of the existing pre-treatment process as well as the proposed multi-stage pre-treatment process. As a follow up to the Spring 2017 DAF pilot testing, AE conducted additional testing on the raw water to explore a carbon dioxide (CO₂) pH adjustment system to help improve coagulation processes at the Plant.

Discussion:

In 2018, UWSS retained AE to design and engineer a carbon dioxide (CO₂) based raw water pH adjustment system that would significantly improve and optimize the clarification system at the UWSS Ruthven Water Treatment Plant. The construction contract for the CO₂ pH adjustment system was awarded to Maple Reinders in early 2019. Project management contract management services for this project were undertaken by AE.

As of the date of this report, the CO₂ pH adjustment system has been commissioned and, notwithstanding a few deficiencies that need to be addressed, this system is now in operation. With the CO₂ pH system now in place, the next step to improving the clarification process and to increase water throughput and build additional resiliency for the Ruthven Treatment Plant is to install a DAF system within two of existing Clarifiers. In discussions with operations staff and AE, it was decided that Clarifier #2 would be the best candidate for the first DAF retrofit install.

As part of their existing services to UWSS, AE completed preliminary discussions with DAF vendors (conventional and high rate) and a hybrid, conventional DAF solution was identified as the preferred option with one DAF supplier (Napier-Reid) Ltd.). Associated completed a preliminary hydraulic review of the proposed hybrid conventional DAF system and concluded that the Low Lift Pumping Station can accommodate the slight change in the hydraulic gradeline needed for the proposed DAF process

February 14, 2020 - UW/06/20

Re: Engineering and Design -Dissolved Air Flotation Clarification
Retrofit for Clarifier #2

The UWSS General Manager has solicited a proposal and workplan from AE to provide design, engineering, and project management services for the retrofit of Clarifier #2 with a DAF system. The UWSS General Manager proposes to engage AE for this work due to their significant knowledge of the entire UWSS Water treatment process and because of their professionalism and responsiveness in recent work completed and/or on-going with UWSS.

An initial draft proposal was received from AE on December 17, 2019. After discussion with OCWA operations staff at UWSS and further discussions with AE, a revised proposal dated February 13, 2020 was provided to the UWSS General Manager.

AE's proposal includes the following tasks:

- | | |
|---------|--------------------------------------|
| Task 1: | Conceptual Design |
| Task 2: | Preliminary Design |
| Task 3: | Detailed Design |
| Task 4: | Tender |
| Task 5: | Overall Project Management and QA/QC |

Task 1 Conceptual Design will include the following items:

- Technical Memorandum 1 (TM 01) - Review Hydraulic Profile with UWSS and OCWA operations and confirm DAF effluent water flow paths into the Plant to provide balanced flow to the filters.
- TM 02 -Review of previous bench and pilot studies and summarize the DAF design criteria that will be subsequently used for the DAF unit performance specification.
- TM 03 - Review Low Lift and DAF Power and Controls. This will include a review of the impact of the proposed flow control strategy with the implementation of DAF on the existing Low Lift, review the existing pumps, pipes, valves, flowmeters, pump motors and electrical switchgear and provide upgrade recommendations to update two pumps with VFD controls to provide better flow control.
- TM 04 - Complete a Condition Assessment for Clarifier No. 2 and provide recommendations for upgrades. This will include an evaluation for the feasibility of installing a stair access versus the current ladder system to improve access into the valve chamber.

Task 2 Preliminary Design will include the following items:

- Obtain and review DAF supplier drawings;
- Subsurface utility identification including retaining utility locating contractor, review and coordinate activities as needed.

February 14, 2020 - UW/06/20

Re: Engineering and Design -Dissolved Air Flotation Clarification
Retrofit for Clarifier #2

- Geotechnical investigation terms of reference preparation, coordination and report review.
- Designated Substance and Asbestos Survey terms of reference preparation, coordination and report review.
- Prepare Preliminary Design Report Package for review with UWSS and operations.

Task 3 Detailed Design will include the following sub tasks:

- Develop the 70% Detailed Design Package include drawings, process control narrative (PCN), major specifications, and cost estimate.
- Develop the 95% Detailed Design Package including drawings, PCN, all specifications, cost estimate
- Obtain Permits and Approvals from Building Department, Ministry of Environment, etc.
- Prepare TM 05 - Arc Flash and Coordination Study to advise of any changes to the Plant's existing electrical equipment and proposed new electrical equipment.
- Prepare TM 06 - Pre-Start Health and Safety Review and advise of any safety considerations with the implementation of the new DAF system at the Ruthven WTP.
- Develop the tender package and coordinate the bidding invitation to contractors

Task 4 Tender will include the following sub tasks:

- Coordinate the tender phase on behalf of Union Water.
- Prepare the Tender call out and administer the Tender process electronically
- Receive, review, prepare and issue answers to all questions from bidders during the 4-week tendering period
- Review bids, evaluate the bids and prepare and submit a recommendation letter for award to Union Water. Notify all bidders of tendering results.
- Prepare hard copy packages of the drawing and specs to be used during the construction period.

Task 5 Overall Project Management and QA/QC will include the following activities:

- Provide general project management including project coordination and invoicing throughout the project.
- Conduct internal QA/QC reviews for each design submission as outlined in the proposal.
- Facilitate monthly project calls with UWSS, OCWA operations and Contractor to discuss project progress, any issues and recommended solutions / remediation.

AE will coordinate up to 12 meetings with UWSS, OCWA Operations, bidders, etc. during the provision of these services.

February 14, 2020 - UW/06/20

Re: Engineering and Design -Dissolved Air Flotation Clarification
Retrofit for Clarifier #2

The following schedule is proposed as part of the Scope of Work:

- Notice to proceed - End of February 2020;
- Conceptual Design - February 2020 to April 2020;
- Preliminary Design - April 2020 to June 2020;
- Detailed Design - June 2020 to August 2020; and,
- Tender & Award - August 2020 to September 2020.

Upon award of construction contract, construction work would be initiated in late September/ early October 2020.

Financial Impact:

The UWSS General Manager has requested a proposal from Associated Engineering (AE) for design and engineering services for the Clarifier #2 DAF retrofit raw water pH adjustment system. This proposal was solicited solely from Associated Engineering for the following reasons:

- Associated Engineering assisted UWSS with on-site studies for the residuals management system, the coagulant strategy and corrosion evaluation, DAF pilot study and CO2 pH adjustment system and Primary chlorine disinfection system improvements. As such, Associated Engineering is very familiar with existing UWSS treatment operations & process and water quality concerns/issues.
- UWSS General Manager proposes to get this work initiated immediately with the intent of have the construction work break ground in early Fall 2020 so that outdoor work can be maximized before the on-set of Winter conditions. Due to their familiarity with the UWSS treatment system, Associated Engineering is best suited to help UWSS get this work completed within the proposed timeline.

Based on their February 13, 2020 Fee Letter/Proposal, Associated Engineering proposes to complete the design, engineering and project management services for the Clarifier #2 DAF retrofit \$384,200 + HST. The cost breakdown per Task is as follows:

Task 1 Conceptual Design:	\$38,200
Task 2 Preliminary Design:	\$96,400
Task 3 Detailed Design:	\$187,900
Task 4 Tender:	\$17,100
Task 5 Project Management & QA/QC	<u>\$44,600</u>

TOTAL: \$384,200

February 14, 2020 - UW/06/20

Re: Engineering and Design -Dissolved Air Flotation Clarification
Retrofit for Clarifier #2

As part UWSS approved of 2020 UWSS Capital Budget, a budget of \$1,400,000 funded from UWSS Reserves has been approved for activities relating to Clarifier DAF retrofit work including design, engineering, project management, and construction.

Closing Comments:

Based on the results of DAF pilot test completed in 2017, and subsequent bench testing activities related to DAF, the UWSS General Manager believes that retrofitting existing up-flow clarifiers to DAF would be beneficial to the UWSS treatment process as it would achieve the following:

- Increase the throughput of water through the clarification process. Currently, the existing up-flow clarification process is a bottleneck in the overall treatment process for the Ruthven Water Treatment plant. Up-flow clarifiers take a long time to start (up to 2 weeks) due to the need to build chemical blankets. These types of clarifiers also prefer steady flow conditions and do not respond well to large swings in water demand that is common at the Ruthven WTP. DAF systems are designed to turn on and off as needed and are much more resilient to swings in water demand. Further, clarification processes with DAF are more efficient and such a can double or more the output from each clarifier depending on install set up.
- Improved coagulant performance would likely also improve filter performance as less coagulant particles/ turbidity would be carried over to the filters.
- DAF is recognized in the water industry as a great clarification process for removal of algae in raw water. Since the UWSS drinking water system obtains source water from Lake Erie and that Lake Erie is subject to annual blue green algae blooms that are likely to become worse in the future, then retrofitting DAF into the Ruthven Water Treatment process will reduce the impact of algae on the treatment process. .

Based on the recent work Associated Engineering have completed at the Ruthven Water Treatment Plant and their familiarity with the treatment process and concerns, the UWSS General Manager recommends that this work be awarded to Associated Engineering.

Respectfully submitted,



Rodney Bouchard, General Manager
Union Water Supply System Joint Board of Management
rb/kmj

Filename: t:\union wtr\reports to board\2020\uw06-20 design, engineering and project management - dissolved air flotation (daf) retrofit for clarifier #2.docx

UW/07/20

To: Chair and Members of the Union Water Supply
System Joint Board of Management

From: Rodney Bouchard, Union Water Manager

Date: February 11, 2020

Re: 2019 Annual Report under the Safe Drinking Water Act and Ontario
Regulation 170/03



Aim

To present to the Board the Annual Report for 2019 as required under Regulation 170/03 made under the Safe Drinking Water Act 2002.

Background

Section 11 of Regulation 170/03 made under the Safe Drinking Water Act 2002 requires that an Annual Report be prepared for a water system and submitted to any water systems that are supplied from that water system. This is required to be done before February 28 of the following year.

Discussion

The attached Annual Report has been prepared in accordance with O. Reg. 170/03. A copy has been provided to each of the four participating municipalities therefore satisfying the requirement that it must be received before February 28, 2019.

There was one instance in 2019 when the Union Water Supply System was out of compliance with the requirements of the Safe Drinking Water Act 2002.

- May 2, 2020 - (occurred in the Town of Kingsville as an AWQI) operator received a Hi CL2 alarm at Cottam Boosters Station, for approximately 10 minutes. The faulty piece of equipment was replaced and affected municipalities were advised which areas to flush. Chlorine residuals were monitored and no further action was required. It should be noted that this incident should be under the UWSS distribution number.
- It should be noted that this incident should have been reported under the UWSS and that is why it is being reported here.

Recommendation:

That the Board receive the Annual Report for 2019 prepared under Section 11 of Regulation 170/03 made under the Safe Drinking Water Act 2002.

Respectfully submitted,

Rodney Bouchard, Manager
Union Water Supply System Joint Board of Management

Rb/kmj

Filename: t:\union wtr\reports to board\2020\uw07-20 annual report for 2019 (board report).docx



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Annual Performance Report

Union Area Water Supply System

Drinking Water System # 210000853

2019

Prepared for the Corporation of the Town of Kingsville, the Corporation of the Town of Essex, the Town of Lakeshore & the Municipality of Leamington

By the Ontario Clean Water Agency
Sam Wen
Process & Compliance Technician
swen@ocwa.com
519-326-4447



ANNUAL REPORT

Drinking-Water System Number:	210000853
Drinking-Water System Name:	Union Area Water Supply System
Drinking-Water System Owner:	Union Area Water Supply System Joint Board of Management (Municipality of Leamington, Town of Kingsville, Town of Essex, Town of Lakeshore)
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	01-January-2019 to 31-December-2019

<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><i>Union Water Treatment Plant P.O. Box 340, 1615 Union Ave., Ruthven, Ont. N0P 2G0</i></p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 2px; width: 100px;">N/A</div> <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:</p> <div style="border: 1px solid black; padding: 2px; width: 100px;">N/A</div> <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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Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Municipality of Leamington	220004992
Town of Kingsville	220003403
Town of Essex	220003680
Town of Lakeshore	260004995



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 [X] No []

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

- [X] Public access/notice via the web
[] Public access/notice via Government Office
[] Public access/notice via a newspaper
[X] Public access/notice via Public Request
[] Public access/notice via a Public Library
[X] Public access/notice via other method: Municipal Offices

Describe your Drinking-Water System

The Union Water Treatment Plant (UWTP) is a chemically assisted conventional filtration plant, which draws water from Lake Erie.

The UWTP supplies potable water to the Town of Kingsville, Municipality of Leamington, a portion of the Town of Essex and a portion of the Town of Lakeshore with an estimated service population of 65,000.

The treatment process includes chemically assisted up-flow clarification, filtration with dual media filters, primary disinfection using Chlorine gas and secondary disinfection using Chlorine gas and Sodium Hypochlorite.

Seasonally, the UWTP uses sodium hypochlorite at its intakes to control Zebra Mussel formation.

There are also four water towers and a booster/storage station located on the Union Water Supply System.

List all water treatment chemicals used over this reporting period

Zebra Mussel Control:

- Sodium Hypochlorite – (Seasonal)

Clarification Chemicals:

- DelPac 2020 – Coagulant
- DelPac XG-15 - Coagulant
- Hyper+Ion 1090 – Coagulant
- Magnafloc LT22S (polymer) - Coagulant Aid
- Powdered Activated Carbon – Taste and Odor Control

Filtration:

- Cat-Floc 8103 Plus (polymer) – Filter Aid (Seasonal)

Disinfection:

- Primary: Chlorine Gas
- Secondary: Chlorine Gas and Sodium Hypochlorite



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

	<u>Item Description</u>	Expenditures to 2019 Year End
	<u>Capital Works and Major Maintenance</u>	
	CO2 Raw Water pH Adjustment System Install	\$ 2,385,000
	Full SCADA System Upgrade Project	\$ 620,550
	Treatment Ponds / Residual Management System	\$ 123,450
	Reservoir effluent valve rehabilitation	\$ 79,750
	Cottam Reservoir cover rehabilitation	\$ 48,900
	High Lift Energy Monitoring System	\$ 43,750
	Flow Meter Upgrades - Filiteres #5, 6, 7 & 8	\$ 31,200
	Essex Water Tower Mixer	\$ 18,500
	Sluice Gate Valves - Filters #2 & 4	\$ 12,450
	Turbidity Meters - Clarifiers #3 & 4	\$ 12,200
	Clarifier #1 Raw Water Valve Actuator	\$ 11,900
	SCADA PLC Upgrade Components	\$ 11,850
	High Lift #8 Soft Start	\$ 8,900
	Filter #3 Level Controllers	\$ 7,750
	Spare Cylinder Actuator	\$ 7,300
	Main Wash #1 Electric Valve	\$ 6,350
	Flow Meters for Clarifiers #1 & 3	\$ 5,500
	Wastewater Pump #1 Soft Start	\$ 4,800
	Low Lift #4 Pump Soft Start	\$ 4,800
	High Lift #5 Pump Soft Start	\$ 4,800
	Air wash Blower #1 Soft Start	\$ 4,800
	Filter #2 Flow Control Valve Actuator	\$ 4,400
	High Lift #1 Pump Clutch	\$ 4,250
	Cottam Booster Sodium Hypo Level Transmitter	\$ 4,100
	Total Capital Works/Major Maintenance:	\$ 3,467,250



New Capital Works 2020	
Low Lift Pump #5 Major Maintenance	\$ 35,000
Low Lift Roof Replacement:	\$ 90,000
Blue Green Algae Probes (2):	\$ 30,000
Low Lift Main Electrical/Transformer Upgrades:	\$ 250,000
New Carbon Recirculation Pump:	\$ 10,000
Filter #4 Rehab:	\$ 400,000
New Highlift #7 Pump:	\$ 250,000
SCADA System Upgrades (cont'd from 2019):	\$ 270,000
Security System Install:	\$ 85,000
Kingsville Water Tower Rehabilitation:	\$ 1,300,000
Master Water Meter Upgrades:	\$ 50,000
Laboratory Upgrades:	\$ 100,000
Treatment Plant Admin Area Improvements:	\$ 45,000
Grounds Improvements:	\$ 100,000
Fencing - Water Treatment Plant and Leamington Tower:	\$ 45,000
DAF System Design/Construction:	\$ 1,400,000
Chlorine Gas System Project (cont'd from 2019):	\$ 150,000
CO2 pH System Project (cont'd from 2019):	\$ 150,000
Total New Capital Works:	\$ 4,760,000

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	Incident description	Corrective Action	AWQI #	Corrective Action Date
May 02, 2019	Hi Cl2 residuals (Cl2 analyzer at Cottam Booster station reading 5.00ppm for about 10mins)	Monitored Cl2 residuals in Distribution	#145322	May 03, 2019

Note: Corrective action Date is Date of resolution.



Microbiological testing is done under Schedule 10 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of Ecoli Or Fecal Results (min #)-(max #) (ct/100 mL)	Range of Total Coliform Results (min #)-(max #) (ct/100 mL)	Number of HPC Samples	Range of HPC Results (min #)-(max #) (ct/mL)
Raw	52	2 - 34	2-710	0	N/A
Treated	52	0 – 0	0 – 0	52	<10 - 30
Distribution	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).				

Operational testing is done under Schedule 7 of Regulation 170/03 during the period Covered by this annual report.

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	8760	0.00- 0.553 NTU
Chlorine - Free	8760	0.43-2.37 mg/L
Fluoride (If the DWS provides fluoridation)	N/A	N/A

NOTE: For continuous monitors use 8760 as the number of samples.

NOTE: Record the unit of measure if it is not milligrams per litre.

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of legal instrument issued	Parameter: (Suspended Solids)	Date Sampled	Result	Unit of Measure
18- July - 2019 Municipal Drinking Water Licence Number: 041-101	South Settling Pond	Jan 07/19	<3.0	mg/L
	South Settling Pond	Feb 04/19	<3.0	mg/L
	South Settling Pond	Mar 04/19	4.0	mg/L
	South Settling Pond	April 01/19	<3.0	mg/L
	South Settling Pond	May 06/19	65.0	mg/L
	South Settling Pond	June 03/19	3.0	mg/L
	South Settling Pond	July 02/19	4.0	mg/L
	North Settling Pond	July 02/19	<3.0	mg/L
	South Settling Pond	Aug 06/19	<3.0	mg/L
	North Settling Pond	Aug 06/19	<3.0	mg/L
	South Settling Pond	Sept 03/19	<3.0	mg/L
	North Settling Pond	Sept 03/19	<3.0	mg/L
	South Settling Pond	Oct 07/19	9.0	mg/L
	North Settling Pond	Oct 07/19	3.0	mg/L
	South Settling Pond	Nov 04/19	<3.0	mg/L
	North Settling Pond	Nov 04/19	<3.0	mg/L
	South Settling Pond	Dec 02/19	<3.0	mg/L
	North Settling Pond	Dec 02/19	<3.0	mg/L
Limit 25.0 mg/L		Annual Average:	6.9	mg/L



Date of legal instrument issued	Parameter: (Total Chlorine Residual)	Annual Avg.	Unit of Measure
18- July - 2019 Municipal Drinking Water Licence Number: 041-101	South Settling Pond	0.07	mg/L
	North Settling Pond	0.07	mg/L
Limit 0.02 mg/L Annual Average:		0.07	mg/L

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	January 08, 2019	0.08	ug/L	No
Arsenic	January 08, 2019	0.2	ug/L	No
Barium	January 08, 2019	15.3	ug/L	No
Boron	January 08, 2019	15.0	ug/L	No
Cadmium	January 08, 2019	0.003	ug/L	No
Chromium	January 08, 2019	0.16	ug/L	No
*Lead	n/a			
Mercury	January 08, 2019	0.01	ug/L	No
Sodium	January 08, 2019	6.72	mg/L	No
Selenium	January 08, 2019	0.09	ug/L	No
Uranium	January 08, 2019	0.133	ug/L	No
Fluoride	January 08, 2019	0.09	mg/L	No
Nitrite (N)	October 07, 2019	< 0.1	mg/L	No
Nitrate (N)	October 07, 2019	< 0.1	mg/L	No
Nitrite + Nitrate (N)	July 02, 2019	0.7	mg/L	No
Ammonia (N) - Total	July 02, 2019	0.04	mg/L	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Summary of lead testing under Schedule 15.1 during this reporting period

(Applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).		
Distribution	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).		



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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	January 08, 2019	0.02	ug/L	No
Atrazine + N-dealkylated metabolites	January 08, 2019	0.01	ug/L	No
Atrazine	January 08, 2019	0.01	ug/L	No
Azinphos-methyl	January 08, 2019	0.05	ug/L	No
Benzene	January 08, 2019	0.32	ug/L	No
Benzo(a)pyrene	January 08, 2019	0.004	ug/L	No
Bromoxynil	January 08, 2019	0.33	ug/L	No
Carbaryl	January 08, 2019	0.05	ug/L	No
Carbofuran	January 08, 2019	0.01	ug/L	No
Carbon Tetrachloride	January 08, 2019	0.16	ug/L	No
Chlorpyrifos	January 08, 2019	0.02	ug/L	No
Desethyl atrazine	January 08, 2019	0.01	ug/L	No
Diazinon	January 08, 2019	0.02	ug/L	No
Dicamba	January 08, 2019	0.20	ug/L	No
1,2-Dichlorobenzene	January 08, 2019	0.41	ug/L	No
1,4-Dichlorobenzene	January 08, 2019	0.36	ug/L	No
1,2-Dichloroethane	January 08, 2019	0.35	ug/L	No
1,1-Dichloroethene (vinylidene chloride)	January 08, 2019	0.33	ug/L	No
Dichloromethane	January 08, 2019	0.35	ug/L	No
2-4 Dichlorophenol	January 08, 2019	0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	January 08, 2019	0.19	ug/L	No
Diclofop-methyl	January 08, 2019	0.40	ug/L	No
Dimethoate	January 08, 2019	0.03	ug/L	No
Diquat	January 08, 2019	1.0	ug/L	No
Diuron	January 08, 2019	0.03	ug/L	No
Glyphosate	January 08, 2019	1.0	ug/L	No
HAA (NOTE: show latest annual average)	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).			



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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Malathion	January 08, 2019	0.02	ug/L	No
MCPA	January 08, 2019	0.12	ug/L	No
Metolachlor	January 08, 2019	0.01	ug/L	No
Metribuzin	January 08, 2019	0.02	ug/L	No
Monochlorobenzene	January 08, 2019	0.3	ug/L	No
Paraquat	January 08, 2019	1.0	ug/L	No
Pentachlorophenol	January 08, 2019	0.15	ug/L	No
Phorate	January 08, 2019	0.01	ug/L	No
Picloram	January 08, 2019	1.0	ug/L	No
Polychlorinated Biphenyls(PCB)	January 08, 2019	0.04	ug/L	No
Prometryne	January 08, 2019	0.03	ug/L	No
Simazine	January 08, 2019	0.01	ug/L	No
THM (NOTE: show latest annual average)	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).			
Terbufos	January 08, 2019	0.01	ug/L	No
Tetrachloroethylene	January 08, 2019	0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	January 08, 2019	0.20	ug/L	No
Triallate	January 08, 2019	0.01	ug/L	No
Trichloroethylene	January 08, 2019	0.44	ug/L	No
2,4,6-Trichlorophenol	January 08, 2019	0.25	ug/L	No
Trifluralin	January 08, 2019	0.02	ug/L	No
Vinyl Chloride	January 08, 2019	0.17	ug/L	No

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
None			

UW/08/20

To: Chair and Members of the Union Water Supply System Joint Board of Management

From: Rodney Bouchard, Union Water Manager

Date: February 11, 2020

Re: 2019 Summary Report for Municipalities under Regulation 170/03 made under the Safe Drinking Water Act



Aim:

To provide to the Board a Summary Report for Municipalities for 2019 as required under Schedule 22 of Regulation 170/03 made under the Safe Drinking Water Act 2002.

Background

Schedule 22 of O. Reg. 170/03 requires a water system owner to prepare a "Summary Report for Municipalities". This requirement is applicable only to large and small municipal residential water systems. The UWSS is classified as a large municipal residential water system since it provides drinking water to greater than 10,000 year round residents.

The Summary Report for the preceding year is to be prepared and issued by March 31 of the following year.

The Summary Report must be distributed by the owner of the water system. In particular it must be given to the council or board that owns the system. There are three (3) ownership cases described under the Schedule:

- If the water supply is owned by a municipality then all members of council are to receive the report.
- If owned by a municipal service board established under Section 195 of the Municipal Act, 2001 then all members of that board are to receive the report.
- If owned by a corporation then the board of directors is to receive the report.

Although not explicitly covered by any of the situations above, the UWSS Board is clearly the owner of the Union Water Supply System for the purposes of the regulation.

Also, where a water system provides potable water to another system under contract then the owner of the supplying system shall give, by March 31, a copy of the Summary Report to the system being supplied. Since UWSS provides drinking water to the local municipal drinking water systems owned and operated by the Town of Lakeshore, Town of Essex, Town of Kingsville and Municipality of Leamington

February 11, 2020 - UW/08/20

Re: 2019 Summary Report under the SDWA and Ontario Reg. 170/03

The contents of the Summary Report for Municipalities must include the following:

1. A list of the requirements of the Safe Drinking Water Act and its Regulations that the water system failed to meet during the year covered including the duration of the failure.
2. A list of the requirements of the water system's Certificate of Approval, drinking water works permit or municipal drinking water license that the water system failed to meet during the year covered including the duration of the failure.
3. A list of any Orders that the water system failed to meet during the year covered including the duration of the failure.
4. For each of the above failures, a description of the measures taken to correct the failures.
5. A summary of the quantities and flow rates of the water supplied during the year covered "including monthly average and maximum daily flows and daily instantaneous peak flow rates." (Information is to enable the owner to assess the capability of the water system to meet existing and future uses.).
6. A statement that captures the comparison of the flow information above to the rated capacity and flow rates approved in the water supply's approval.

Discussion

The attached Summary Report fulfils the requirements of Schedule 22 listed above. It will also fulfil the requirements for the municipalities when it is presented to each municipal council for the municipal water supply system supplied with water by the Union Water Supply System if council so wishes.

The UWSS and its participating municipalities were in compliance with all requirements of Ontario Drinking Water legislation and regulations in 2019, except for the noted occurrences in the Summary Report.

Recommendation

That the Board receive the Summary Report for 2019 which fulfils the requirements of Schedule 22 of Ontario Regulation 170/03; and

That the Summary Report be forwarded to the four participating municipalities namely the Town of Kingsville, Town of Essex, Town of Lakeshore, and Municipality of Leamington.

Respectfully submitted,



Rodney Bouchard, Manager
Union Water Supply System Joint Board of Management

rb/kmj

Filename: t:\union wtr\reports to board\2020\uw08-20 summary report for 2019 (board report).docx

UNION WATER SUPPLY SYSTEM SUMMARY REPORT 2019

For the Union Water Supply System
(Made under Schedule 22 of Ontario Regulation 170/03, a regulation made under
the Safe Drinking Water Act, 2002)

EXPLANATION

Schedule 22 of Ontario Regulation 170/03, a regulation made under the Safe Drinking Water Act, 2002 requires that a large municipal residential drinking-water system must provide to its board members a Summary Report on various aspects of the system before March 31 of the following year. The Union Water Supply System is classed as a large municipal residential drinking-water system and all of the municipal water systems that obtain water from it are classified as large municipal residential drinking-water systems and are therefore subject to Schedule 22.

The Summary Report must list the following:

- The requirements of the Safe Drinking Water Act, 2002 that the system failed to meet during the period covered by the Summary Report
- The requirements of the regulations made under the Safe Drinking Water Act, 2002 that the system failed to meet during the period covered by the Summary Report
- Any condition of the drinking-water system's drinking water works permit or municipal drinking water license that the system failed to meet during the period covered by the Summary Report
- Any order that the system failed to meet during the period covered by the Summary Report, the duration of any such failure and any measures that were taken to correct such failure
- A summary of the quantities and flow rates of water supplied by the drinking-water system by monthly average and maximum daily flow rates and instantaneous peak flow rates
- A comparison of actual flow rates with rated capacity and flow rates in the systems approval

A drinking-water system that supplies water to another drinking water system must provide a copy of the Summary Report to that system's owner by March 31 of the year following the year covered in the Summary Report.

The sections below details the occasions on which the Union Water Supply System (UWSS) and the connected municipal water systems failed to meet the requirements of the Safe Drinking Water Act 2002, associated regulations, system approvals and provincial officer orders in 2019.

Union Water Supply System (UWSS)

The following provides details of occurrences where the Union Water Supply System was not in compliance with the requirements of the Safe Drinking Water Act 2002, associated regulations, system approvals and provincial officer orders.

Non-Compliance Item:

The following Adverse Water Quality Incident (AWQI) identified for the Union Water Supply System.

There were no non-compliances or AWQIs identified for the portion of the Union Water Distribution System that is supplied by Union Water Supply System:

- It should be noted that the AWQI listed under the Kingsville Distribution System should actually be under the UWSS identifier

Leamington Water Distribution System**Non-Compliance Item:**

The following Adverse Water Quality Incident (AWQI) identified for the Leamington Distribution System that is supplied by the Union Water Supply System.

There were no non-compliances or AWQIs identified for the portion of the Municipality of Leamington Distribution System that is supplied by Union Water Supply System:

Kingsville Water Distribution System**Non-Compliance Item:**

The following Adverse Water Quality Incident (AWQI) identified for the Kingsville Distribution System that is supplied by the Union Water Supply System

- AWQI #145322 - May 2, 2019 operator received a Hi CL2 alarm at Cottam Boosters Station, for approximately 10 minutes. The faulty piece of equipment was replaced and affected municipalities were advised which areas to flush. Chlorine residuals were monitored and no further action was required. It should be noted that this incident should be under the UWSS distribution number.

Essex Water Distribution System**Non-Compliance Item:**

The following Adverse Water Quality Incident (AWQI) identified for the Essex Distribution System that is supplied by the Union Water Supply System

- AWQI #148095 - September 16, 2019 adverse residual sample station SS-E-04 total coliform was >200. A precautionary boil water advisory was issued to the affected area by the WECHU. Samples were taken at SS-E-11 (upstream) and SS-E-14 (downstream) the following day and then again 24 hours later. All results were clean.

Lakeshore Water Distribution System**Non-Compliance Item:**

The following Adverse Water Quality Incident (AWQI) identified for the Lakeshore Distribution System that is supplied by the Union Water Supply System

There were no non-compliances or AWQIs identified for the portion of the Town of Lakeshore Water Distribution System that is supplied by Union Water Supply System:

SUMMARY OF THE QUANTITIES AND FLOW RATES OF WATER SUPPLIED DURING THE PERIOD COVERED BY THE REPORT, INCLUDING MONTHLY AVERAGE AND MAXIMUM DAILY FLOWS, AND DAILY INSTANTANEOUS PEAK FLOW RATES

The following sections provide information in regards to the Union Water Supply System's Permit to Take Water, issued under Ontario Regulation 387/04 and Drinking Water License issued under the Safe Drinking Water Act, 2002.

Permit to Take Water

The Union Water Supply System operated under Permit to Take Water (PTTW) Number 0816-9T9SVT, which expires at the end of 2025. The PTTW has the following flow conditions:

- Maximum Allowable Amount Taken per Minute (Litres/Min) 113,650
- Maximum Allowable Amount Taken Per Day (Litres/Day) 163,656,000

The maximum amounts of raw water taken during 2019 (see Table 1 below) are as follows:

- Maximum Amount Taken per Minute in 2019 (Litres/Min) 71,798
- Maximum Amount Taken Per Day in 2019 (Litres/Day) 100,365,990

The system did not exceed the PTTW limits in 2019.

Drinking Water License

The UWSS operates under Municipal Drinking Water Licence 041-101; issue Number 7 which has been issued for the period July 18, 2019 to July 17, 2024. The Certificate of Approval and licence had the following condition:

- The drinking water system shall not be operated to exceed 124,588 m³/d (27.4 MIGD) on any calendar day, conveyed from the treatment system to the distribution system.
- The maximum daily volume of water pumped into the distribution system was 82,478 m³ (18.15 MIGD).

Tables 1A through 3B below provide the monthly average, maximum and peak flows for raw and treated water for the Union Water Supply System.

Table 1A
2019 Raw Water Taking from Lake Erie in Metric Units

	Maximum Allowed Flow Rate (m3/Day)	Average Flow (m3/Day)	Maximum Flow (m3/Day)	Maximum Flow (Litres/Day)	Maximum Allowed Flow Rate (Litres/ Minute)	Peak Flow (Litres/ Minute)
January	163,656	31,995	61,220	61,220,080	113,650	28,259
February	163,656	40,869	53,326	53,326,470	113,650	40,892
March	163,656	42,761	74,916	74,915,990	113,650	42,064
April	163,656	48,642	70,046	70,046,240	113,650	57,110
May	163,656	49,376	61,068	61,067,650	113,650	55,634
June	163,656	59,517	79,101	79,100,560	113,650	71,798
July	163,656	73,513	86,007	86,007,260	113,650	68,474
August	163,656	69,689	81,394	81,393,520	113,650	66,688
September	163,656	61,052	70,682	70,681,860	113,650	60,772
October	163,656	54,948	100,366	100,365,990	113,650	60,879
November	163,656	37,286	75,876	75,876,100	113,650	38,617
December	163,656	32,147	58,343	58,342,540	113,650	38,482

Table 1B
2019 Raw Water Taking from Lake Erie in Imperial Units

	Maximum Allowed Flow Rate (MGD)	Average Flow (MGD)	Maximum Flow (MGD)	Maximum Allowed Flow Rate (Gallons/ Minute)	Peak Flow (Gallons/ Minute)
January	36.00	7.04	13.47	25,000	6,216
February	36.00	8.99	11.73	25,000	8,995
March	36.00	9.41	16.48	25,000	9,253
April	36.00	10.70	15.41	25,000	12,563
May	36.00	10.86	13.43	25,000	12,238
June	36.00	13.09	17.40	25,000	15,793
July	36.00	16.17	18.92	25,000	15,062
August	36.00	15.33	17.90	25,000	14,669
September	36.00	13.43	15.55	25,000	13,368
October	36.00	12.09	22.08	25,000	13,391
November	36.00	8.20	16.69	25,000	8,495
December	36.00	7.07	12.83	25,000	8,465

Table 2A**2019 Treated Water Flow Into Distribution System in Metric Units**

	Maximum Allowed Flow Rate (m3/Day)	Average Daily Flow (m3/Day)	Maximum Daily Flow (m3/Day)	Peak Instantaneous Flow (Litres/ Second)
January	124,588	29,373	55,708	685
February	124,588	33,443	40,327	682
March	124,588	38,497	47,991	1,026
April	124,588	41,689	51,857	1,080
May	124,588	46,346	57,218	1,200
June	124,588	57,981	76,896	1,395
July	124,588	72,828	84,521	1,478
August	124,588	65,593	77,862	1,401
September	124,588	57,065	65,849	1,404
October	124,588	45,270	78,972	1,220
November	124,588	33,068	68,468	849
December	124,588	28,897	50,254	716

Table 2B**2019 Treated Water Flow Into Distribution System in Imperial Units**

	Maximum Allowed Flow Rate (MGD)	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)	Peak Instantaneous Flow (Gallons/ Second)
January	27.4	6.46	12.26	151
February	27.4	7.36	8.87	150
March	27.4	8.47	10.56	226
April	27.4	9.17	11.41	238
May	27.4	10.20	12.59	264
June	27.4	12.76	16.92	307
July	27.4	16.02	18.59	325
August	27.4	14.43	17.13	308
September	27.4	12.55	14.49	309
October	27.4	9.96	17.37	268
November	27.4	7.28	15.06	187
December	27.4	6.36	11.06	157

Table 3A
2019 Treated Flow to Local Municipalities in Metric Units

	<u>Leamington</u>		<u>Kingsville</u>		<u>Essex</u>		<u>Lakeshore</u>	
	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)
January	605,729	19,540	213,730	6,895	66,456	2,144	50,078	1,615
February	597,483	20,603	355,833	12,270	63,790	2,200	38,936	1,343
March	632,015	20,388	413,321	13,333	54,617	1,762	39,432	1,272
April	692,739	23,091	394,344	13,145	53,795	1,793	34,751	1,158
May	792,068	25,551	540,013	17,420	66,406	2,142	40,599	1,310
June	1,043,955	34,799	729,151	24,305	76,681	2,556	50,955	1,699
July	1,085,625	35,020	809,634	26,117	83,632	2,698	50,021	1,614
August	1,111,504	35,855	830,486	26,790	85,850	2,769	52,553	1,695
September	947,286	31,576	724,485	24,150	73,358	2,445	54,830	1,828
October	708,878	22,867	496,059	16,002	63,155	2,037	48,283	1,558
November	555,767	18,526	364,153	12,138	61,456	2,049	50,078	1,669
December	463,664	14,957	335,766	10,831	65,567	2,115	53,520	1,726
Total	9,236,713	25,231	6,206,975	16,950	814,763	2,226	564,036	1,541

Table 3A
2019 Treated Flow to Local Municipalities in Imperial Units

	<u>Leamington</u>		<u>Kingsville</u>		<u>Essex</u>		<u>Lakeshore</u>	
	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)
January	133,241,753	4.30	47,014,027	1.52	14,618,276	0.47	11,015,620	0.36
February	131,427,886	4.53	78,272,318	2.70	14,031,838	0.48	8,564,723	0.30
March	139,023,864	4.48	90,917,910	2.93	12,014,060	0.39	8,673,827	0.28
April	152,381,277	5.08	86,743,553	2.89	11,833,246	0.39	7,644,151	0.25
May	174,230,603	5.62	118,786,254	3.83	14,607,278	0.47	8,930,532	0.29
June	229,637,997	7.65	160,390,797	5.35	16,867,462	0.56	11,208,533	0.37
July	238,804,115	7.70	178,094,582	5.74	18,396,468	0.59	11,003,082	0.35
August	244,496,699	7.89	182,681,381	5.89	18,884,360	0.61	11,560,044	0.37
September	208,373,789	6.95	159,364,421	5.31	16,136,504	0.54	12,060,914	0.40
October	155,931,361	5.03	109,117,725	3.52	13,892,158	0.45	10,620,775	0.34
November	122,251,649	4.08	80,102,462	2.67	13,518,430	0.45	11,015,620	0.37
December	101,991,822	3.29	73,858,195	2.38	14,422,724	0.47	11,772,754	0.38
Total	2,031,792,815	5.55	1,365,343,625	3.73	179,222,805	0.49	124,070,575	0.34

UW/09/20

To: Chair and Members of the Union Water Supply
System Joint Board of Management

From: Rodney Bouchard, Union Water Manager

Date: February 14, 2020

Re: Payments for the UWSS from January 16th to February 14th, 2020



Aim:

To provide the Board with a copy of payments made by the Union Water Supply System from January 16th to February 14th, 2020.

Recommendation:

For information purposes.

Respectfully submitted,



Rodney Bouchard, Manager
Union Water Supply System Joint Board of Management
/kmj

Council/Board Report By Dept-(Computer)



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Date : Jan 17, 2020

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Vendor : 0011450 To PT00000188

Batch : All

Department : All

Cheque Print Date : 16-Jan-2020 To 17-Jan-2020

Bank : 07 To 08

Class : All

Vendor Invoice	Vendor Name Description					Batch Invc Date	Inv Due Date	
G.L. Account	CC1	CC2	CC3	GL Account Name				Amount
DEPARTMENT	0700	Union Water System						
010103	ASSOCIATED ENGINEERING (ONT) LTD							
526956	SCADA PROCESS NARRATIVE					749 31-Dec-2019	16-Jan-2020	
70-7-0700-8780				SCADA System				3,205.19
526957	CO2 PH ADJUSTMENT SYSTEM					749 31-Dec-2019	16-Jan-2020	
70-7-0700-8745	700200			Treatment Plant				7,328.57
526958	SECONDARY DISINFECTION REVIEW					749 31-Dec-2019	16-Jan-2020	
70-5-0700-7950	002070			Professional Services				11,017.50
030004	C3 WATER INC							
201912-410	STUDY ON CA BENEFICIAL USE					749 31-Dec-2019	16-Jan-2020	
70-5-0700-7950	002070			Professional Services				5,701.73
180325	RICOH CANADA INC							
SCO92658482	COPIER CONTRACT - NOV18-DEC30					749 31-Dec-2019	16-Jan-2020	
70-5-0700-7010	002070			Office Supplies				133.87
190751	SUMMA ENGINEERING LIMITED							
PC#7 114908	PMT#7 SCADA UPGRADES					749 23-Dec-2019	16-Jan-2020	
70-7-0700-8780				SCADA System				180,144.88
230698	WONDERWARE CANADA EAST							
419253	SCADA - WONDERWARE RENEWAL 2020					24 01-Jan-2020	16-Jan-2020	
70-5-0700-7260	002070			Software Licensing & Support				27,010.39
Department Totals :								234,542.13



Vendor : 0011450 To PT00000188

Batch : All

Department : All

EFT Paid Date : 16-Jan-2020 To 17-Jan-2020

Bank : 07 To 08

Class : All

Vendor Code	Vendor Name					Batch	Inv Date	Inv Due Date	
Invoice No.	Description								
G.L. Account	CC1	CC2	CC3	GL Account Name					Amount
DEPARTMENT 0700	Union Water System								
050099	ENBRIDGE GAS INC								
1929770177678	1495.802M3	GAS - COTTAM BOOSTER STATION			754	31-Dec-2019	16-Jan-2020		
70-5-0700-7410	002073	Gas							453.55
080250	HYDRO ONE NETWORKS INC								
200141677460-I	DEC/19 HYDRO - RUTHVEN WATER TREATMENT				754	31-Dec-2019	16-Jan-2020		
70-5-0700-7420	002073	Electricity							44,875.23
200141680692-I	DEC/19 HYDRO - LOW LIFT				754	31-Dec-2019	16-Jan-2020		
70-5-0700-7420	002073	Electricity							-24.55
70-5-0700-7420	002073	Electricity							21,763.73
200152134969-I	DEC/19 HYDRO - METER#17				754	31-Dec-2019	16-Jan-2020		
70-5-0700-7420	002073	Electricity							-13.06
70-5-0700-7420	002073	Electricity							46.39
130120	MAPLE REINDERS CONSTRUCTORS LTD								
PC#8 24941	PMT#8 CO2 INJ/CL2 GAS				754	30-Nov-2019	16-Jan-2020		
70-7-0700-8745	700200	Treatment Plant							384,640.13
70-7-0700-8745	700200	Treatment Plant							42,737.79
160530	PRICEWATERHOUSE COOPERS LLP								
TR140101010	RESTRUCTURING CONSULTANT - FINANCIAL				754	31-Dec-2019	16-Jan-2020		
70-5-0700-7950	002070	Professional Services							763.18
190635	STANTEC CONSULTING LTD								
1457977	ENG. SERV. - DEC31				754	31-Dec-2019	16-Jan-2020		
70-5-0700-7950	002070	Professional Services							179.40
190755	SUN LIFE ASSURANCE COMPANY OF CANADA								
JAN-20	JAN/20 UNION WATER LOAN 3724:1				27	01-Jan-2020	16-Jan-2020		
70-5-0700-6000	002020	006901	Debenture Principal						37,085.44
70-5-0700-6100	002010	006901	Debenture Interest						103,991.29
Department Totals :									636,498.52

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Date : Feb 14, 2020

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Time 11:24 am

Vendor : 0011450 To PT00000189

Batch : All

Department : All

Cheque Print Date : 23-Jan-2020 To 29-Jan-2020

Bank : 07 To 08

Class : All

Vendor Invoice	Vendor Name Description					Batch Invc Date	Inv Due Date	
G.L. Account	CC1	CC2	CC3	GL Account Name				Amount
DEPARTMENT 0700 Union Water System								
010103 ASSOCIATED ENGINEERING (ONT) LTD								
526970				C02 PH ADJUSTMENT SYSTEM - JAN10		32 14-Jan-2020	23-Jan-2020	
70-7-0700-8745		700200		Treatment Plant				8,918.49
526971				SCADA - PROCESS NARRATIVE - JAN10		32 14-Jan-2020	23-Jan-2020	
70-7-0700-8780				SCADA System				909.99
020120 BELL MOBILITY CELLULAR								
514877178-JAI				MONTHLY CELL PHONE CHARGES		31 01-Jan-2020	23-Jan-2020	
70-5-0700-7110		002070 002083		Telecommunications Usage				21.56
Department Totals :								9,850.04



Vendor : 0011450 To PT00000189

Batch : All

Department : All

EFT Paid Date : 23-Jan-2020 To 29-Jan-2020

Bank : 07 To 08

Class : All

Vendor Code	Vendor Name				Batch	Invc Date	Invc Due Date	Amount
Invoice No.	Description							
G.L. Account	CC1	CC2	CC3	GL Account Name				
DEPARTMENT 0700	Union Water System							
010045	AIR LIQUIDE CANADA INC.							
70979622 - 319	CARBON DIOXIDE - PH CONTROL				33	16-Jan-2020	23-Jan-2020	
70-5-0700-7400		002077		Carbon Dioxide				3,544.36
030215	CANADIAN WATER AND WASTEWATER ASSOCIATION							
4108	2020 CWWA DUES				33	01-Jan-2020	23-Jan-2020	
70-5-0700-7020		002070		Dues, Memberships and Subscriptions				1,808.00
080250	HYDRO ONE NETWORKS INC							
200208899066-	JAN/20 HYDRO - METER#16				33	16-Jan-2020	23-Jan-2020	
70-5-0700-7420		002073		Electricity				-72.47
70-5-0700-7420		002073		Electricity				257.52
190990	SYNTEC PROCESS EQUIPMENT							
0099554-IN	CLARIFIER #1 - VALVE				33	08-Jan-2020	23-Jan-2020	
70-7-0700-8720		700001		Clarifiers				9,508.95
Department Totals :								15,046.36

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Date : Feb 14, 2020

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Vendor : 0011450 To PT00000189

Batch : All

Department : All

Cheque Print Date : 10-Feb-2020 To 13-Feb-2020

Bank : 07 To 08

Class : All

Vendor Invoice	Vendor Name Description				Batch Invc Date	Inv Due Date	
G.L. Account	CC1	CC2	CC3	GL Account Name			Amount
DEPARTMENT 0700	Union Water System						
050003	E.L.K. ENERGY INC						
40010915-JAN: JAN/20 ESSEX WATER TOWER					70	01-Feb-2020	10-Feb-2020
70-5-0700-7420	002073		Electricity				-90.66
70-5-0700-7420	002073		Electricity				322.14
40047150-JAN: JAN/20 METER#9					70	01-Feb-2020	10-Feb-2020
70-5-0700-7420	002073		Electricity				-58.87
70-5-0700-7420	002073		Electricity				209.20
51976611-JAN: JAN/20 KINGSVILLE WATER TOWER					70	01-Feb-2020	10-Feb-2020
70-5-0700-7420	002073		Electricity				-135.48
70-5-0700-7420	002073		Electricity				481.43
90006300-JAN: JAN/20 COTTAM BOOSTER STATION					70	01-Feb-2020	10-Feb-2020
70-5-0700-7420	002073		Electricity				3,931.29
130838	MUNICIPALITY OF LEAMINGTON						
530-17700 FEE TAXES - 446 TALBOT W					70	10-Feb-2020	10-Feb-2020
70-5-0700-6750	002072		Property Tax				895.35
Department Totals :					5,554.40		



Vendor : 0011450 To PT00000189
Batch : All
Department : All

EFT Paid Date : 10-Feb-2020 To 13-Feb-2020
Bank : 07 To 08
Class : All

Vendor Code	Vendor Name				Batch	Inv Date	Inv Due Date	Amount
Invoice No.	Description							
G.L. Account	CC1	CC2	CC3	GL Account Name				
DEPARTMENT 0700 Union Water System								
080250 HYDRO ONE NETWORKS INC								
200141680894-	JAN/20 HYDRO - LEAMINGTON WATER TOWER				71	30-Jan-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				-171.25
70-5-0700-7420		002073		Electricity				608.51
200141681706-	JAN/20 HYDRO - METER#2				71	29-Jan-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				-17.19
70-5-0700-7420		002073		Electricity				61.08
200141682009-	JAN/20 HYDRO - ALBUNA WATER TOWER				71	03-Feb-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				1,993.46
70-5-0700-7420		002073		Electricity				-560.99
200141683120-	JAN/20 HYDRO - METER#5				71	03-Feb-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				-15.33
70-5-0700-7420		002073		Electricity				54.46
200141683423-	JAN/20 HYDRO - METER#6				71	30-Jan-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				-14.12
70-5-0700-7420		002073		Electricity				50.17
200141683524-	JAN/20 HYDRO - METER#8				71	29-Jan-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				-15.26
70-5-0700-7420		002073		Electricity				54.21
200141687362-	JAN/20 HYDRO - METER#22				71	29-Jan-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				-11.45
70-5-0700-7420		002073		Electricity				40.68
200141687766-	JAN/20 HYDRO - METER#29				71	29-Jan-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				-14.14
70-5-0700-7420		002073		Electricity				50.24
200141687867-	JAN/20 HYDRO - METER#24				71	29-Jan-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				-11.20
70-5-0700-7420		002073		Electricity				39.78
200141690190-	JAN/20 HYDRO - METER#26				71	28-Jan-2020	10-Feb-2020	
70-5-0700-7420		002073		Electricity				-22.13
70-5-0700-7420		002073		Electricity				78.64
130120 MAPLE REINDERS CONSTRUCTORS LTD								
PC#9 24996	PMT#9 CO2 INJ/CL2 GAS				71	10-Feb-2020	10-Feb-2020	
70-7-0700-8745		700200		Treatment Plant				106,237.53
70-7-0700-8745		700200		Treatment Plant				11,804.17
150365 ONTARIO CLEAN WATER AGENCY								
INV0000000021	JAN/20 OPER&MTCE				71	31-Jan-2020	10-Feb-2020	
70-5-0700-6720		002071		OCWA Operating Contract				276,874.61
190185 SGS CANADA INC. ENVIRONMENTAL SERVICES								
11308953	WATER QUALITY STUDIES CORROSION-LEAMINGTON				71	28-Jan-2020	10-Feb-2020	
70-5-0700-7989		002075		Operational Programs & Studies				98.31
11308957	WATER QUALITY STUDIES CORROSION-UWSS				71	28-Jan-2020	10-Feb-2020	
70-5-0700-7989		002075		Operational Programs & Studies				621.50
11308976	WATER QUALITY STUDIES CORROSION-LAKESHORE				71	28-Jan-2020	10-Feb-2020	
70-5-0700-7989		002075		Operational Programs & Studies				98.31
11308977	WATER QUALITY STUDIES CORROSION-KINGSVILLE				71	28-Jan-2020	10-Feb-2020	
70-5-0700-7989		002075		Operational Programs & Studies				196.62
Department Totals :								398,109.22