



**JOINT BOARD OF
MANAGEMENT**
Wednesday, February 15, 2023
9:00 AM
Kingsville Arena,
1741 Jasperson 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 17, 2023
Pages 3 - 11

D. Business Arising Out of the Minutes

E. Items for Consideration:

1. UW/05/23 dated February 10, 2023 re: Status Update of UWSS Operations & Maintenance Activities and Capital Works from January 13th to February 10th
Pages 12 - 14
2. UW/06/23 dated February 09, 2023 re: 2022 Annual Report under the Safe Drinking Water Act and Ontario Regulation 170/03
Pages 15 - 24
3. UW/07/23 dated February 9, 2023 re: 2022 Summary Report for Municipalities under Regulation 170/03 made under the Safe Drinking Water Act.
Pages 25 - 33
4. Slide presentation on UWSS Water Demand and Projects
5. UW/08/23 dated February 10, 2023 re: Extension of Moratorium on Applications for UWSS Treated Water Allocations
Pages 34 - 40

F. Special Closed Meeting of the UWSS Joint Board of Management**Recommendation:**

That the UWSS Joint Board of Management move into a Special Closed Meeting, pursuant to the Municipal Act Section 239 (2)(e)(f) for the following reason:

Matters for Consideration:

Verbal update Under Municipal Act Section 239 (2)(e)(f) update regarding potential litigation and advice provided by the solicitor for the Union Water Supply System Joint Board of Management.

The UWSS Board consider this verbal report in closed session pursuant to section 239(2) of the Municipal Act, 2001, subsection(s)(e)(f):

G. Disclosure of Pecuniary Interest and General Nature Thereof**H. Adjournment of Special Closed Meeting****I. Report on Closed Session****J. New Business****K. Adjournment:****L. Date of Next Meeting: to be determined**

/kmj



JOINT BOARD OF MANAGEMENT

Tuesday, January 17, 2023

6:00 pm

County of Essex, Council Chambers
360 Fairview Ave W, Essex, Ontario

MINUTES

Members Present Mayor MacDonald (Chair); Deputy Mayor Verbeke, Councillors
Union Water Abraham, Dunn, Tiessen, Wilkinson - Leamington
Supply System Mayor Rogers, Deputy Mayor DeYong, Councillors Gaffan,
 Patterson - Kingsville
 Mayor Bondy - Essex
 Deputy Mayor Walstedt - Lakeshore

Also in Attendance: Rodney Bouchard, Union Water Supply System Manager
For UWSS Kristine Johnson, Recording Secretary

Municipal Staff Albert Dionne - Municipality of Lakeshore
Present:

OCWA Staff Dale Dillen, Robin Trepanier
Present:

Call to Order: 6:00 pm

The Manager notes that there are many new faces on the Union Water Board Supply System. Everyone introduces who they are around the table.

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

The Manager reviews the rules of procedure for the election of Chair of Union Water Supply System Joint Board of Management (Board).

Councillor Tiessen nominates Mayor MacDonald and she accepts the nomination. Deputy Mayor DeYong seconds the nomination. The Manager calls for nominations two (2) more times. Seeing no other nominations, then nominations for Chair are closed. Mayor MacDonald accepts the nomination and is acclaimed as the Chair of the Union Water Supply System Joint Board of Management.

Minutes of the Union Water Supply System Joint Board of Management

Date: January 17, 2023

Page 2

No. UW-01-23

Moved by: Deputy Mayor Verbeke

Seconded by: Mayor Rogers

That Mayor MacDonald is acclaimed as Chair of the Union Water Supply System Joint Board of Management for the 2023 year, with the term ending on December 31, 2023.

Carried

Mayor MacDonald then presides over the meeting and calls for the election of the Vice-Chair of the UWSS Board.

Mayor Bondy nominates Deputy Mayor DeYong for the position and Councillor Wilkinson seconds the nomination. The Chair calls for nominations two (2) more times and seeing none closes the nominations. Deputy Mayor DeYong accepts the nomination and is acclaimed as the Vice Chair of the Union Water Supply System Joint Board of Management.

No. UW-02-23

Moved by: Deputy Mayor Walstedt

Seconded by: Councillor Dunn

That Deputy Mayor DeYong is acclaimed as Vice Chair of the Union Water Supply System Joint Board of Management for the 2023 year, with the term ending on December 31, 2023.

Carried

Disclosure of Pecuniary Interest: none

Adoption of Board Minutes:

No. UW-03-23

Moved by: Deputy Mayor Verbeke

Seconded by: Councillor Dunn

That the minutes of the Union Water Supply System Joint Board of Management meeting held on October 19, 2022 is received.

Carried

Business Arising out of Minutes:

There was none

Report UW/02/23 dated January 12, 2023 re: Status Update of UWSS Operations & Maintenance Activities and Capital Works from

The Manager notes that it has been since October 2022 that UWSS last had a board meeting and also notes that the report is rather long, encouraging questions throughout if need be.

The Manager explains that DiMenna excavating had been retained back in October to excavate Clarifier #3 & #4 effluent line so that a permanent repair could be completed. A temporary repair had been made in the summer of 2022. Utility Service Corp. was on site and identified the need for a special clamp to allow for a permanent repair. The special clamp was received in December but it was quickly identified that the repair would not work and that a unique manufactured clamp would be needed for this work. It was anticipated that the new clamp would be received sometime in February 2023.

The protective membrane in the truckway for the clearwell was in poor condition and Greenflag Coatings of Kingsville had been retained to make the necessary repairs. Significant repairs to the concrete was also necessary. Greenflag installed a three (3) layer system and the work was completed just before the Christmas holidays.

The Manager reminds the Board that Summa Engineering had been retained to build a new PLC panel for the Cottam Booster Station (CBS). The Factory Acceptance Testing had been completed in October and the new PLC was delivered and installed by Summa on October 17-18, 2022, tested and put into service.

The Manager notes that the Town of Kingsville's inspection report from MECP was received in late November and received a 100% rating.

He further notes that a backup chlorine analyzer had been installed in late November and this will assist with obtaining regulatory compliance disinfection data. He explains that UWSS is in the process of installing back up processes at the WTP for redundancy purposes.

Clarifiers #3 & #4 were taking out of service during the last week of November 2022 for cleaning and inspection. Maintenance staff are working on repairs and the replacement of a blow off valve. The Manager anticipates that Clarifier #3 will be returned to service at the beginning of February once the water flow demand increases and the effluent pipe repair is completed. Clarifier #4 will return to service in March.

The Manager indicates that maintenance staff purchased a new filter to waste valve for Filter #1. He further notes that the Low Lift wells were cleaned in December, however it was noted that travelling screen #3 had a worn sprocket. An inspection by Evoqua Water Technologies was completed and a report is expected sometime in later January.

The Manager explains that staff noticed one (1) of the algae monitoring probes had failed. Staff attempted to repair the probe however it was necessary to send the probe to Hoskin Scientific for inspection and repair. This probe assists with the optimization of the treatment process. It is anticipated that the probe will be back in service sometime in February 2023.

The Manager notes that Meter Chamber #17 flow meter has failed. It was further noted when discussing with Town of Kingsville staff that this water main location was in the area of the Hwy #3 expansion. It was then decided to remove Meter #17 from service. This meter is no longer used as a billing meter. This work will be completed in the Spring/Summer of 2023.

The Manager then reminds the members of the UWSS and Windsor Utilities Commission (WUC) Redundancy project discussed at the June 2022 meeting. He notes that C3 Water and Stantec have been retained to complete the conceptual design and a kick off workshop took place in November 2022. At this workshop preferred operational models were discussed and it was decided a shared reservoir was the best option. This project will require land somewhere between Cottam and Essex. He anticipates another presentation to the UWSS Board sometime in the summer of 2023. He reminds members that this project is for emergency water service only.

The Manager notes that C3 Water has also been retained to resolve the Albuna Water Tower (AWT) capacity issue. He reminds members of the board that the AWT has not worked to its full capacity since being constructed and when it is full it tends to blow watermain lines in Leamington. New smart hydrants have been installed in the area to assist with this project. He expects a Technical Memo shortly.

Associated Engineering (AE) has been retained for the conceptual design for the Reservoir #3 project. He reminds members that the new reservoir will be constructed on the purchased lands to the south of the WTP. The study was approved in September. AE will be providing a Technical Memorandum shortly. Geotechnical studies will be started soon to determine soil type and how deep the reservoir will need to be. He further reminds members that the greenhouse is currently being leased with the lease to be finished by June.

AE further completed a structural inspection of the WTP and the Low Lift (LL) as sizeable cracks were noticed in the building. The Manager wants to ensure that these are monitored so that any structural issues can be addressed promptly.

The Manager updates the Board on the annual filter maintenance of #5 to #7 with #5 still being out of service due to the failure of an actuator. This should be received in a few weeks and reinstalled.

The Manager notes that the DAF Phase 1 retrofit of Clarifier #2 has finally been completed with substantial completion being published December 30, 2022. UWSS now enters the warranty phase of the project, which will take us to the end of 2024.

An unannounced inspection by MECP of the WTP took place in early January. OCWA staff took the inspector around and there were no visible issues reported.

The Manager then reviewed the flows for 2022. Notes that 2022 flows were the highest ever recorded by the UWSS, with a lot of water being pushed through the WTP.

The Chair asks the Manager if it is possible to have a review of all of the projects and a little bit of UWSS history for the new members of the UWSS Board. The Manager intends to potentially hold a 1/2 day workshop in in the near future.

Deputy Mayor Verbeke asks the manager if there is rental potential even after the reservoir is built. The Manager explains that that was the original plan, however, it really depends on where the reservoir is located and the final size. It has been discovered that there is an abandoned gas well on the property that needs to be investigated further.

Councillor Dunn asks if the cracks within the WTP and LL buildings are cause for concern and if they can be repaired. The Manager is hoping they can be repaired until further upgrades can be completed to the administrative section of the building can be completed.

No. UW-04-23

Moved by: Deputy Mayor Verbeke

Seconded by: Councillor Dunn

That report UW/02/23 dated January 12, 2023 re: Status Update of UWSS Operations & Maintenance Activities and Capital Works from October 14, 2022 to January 12, 2023 is received.

Carried (UW/02/23)

Report UW/03/23 dated January 12, 2023 re: Draft 2023 UWSS Operations and Capital Budget for the UWSS

The Manager hopes all the new members have had an opportunity to review the draft budget and encourages questions as he moves through his presentation.

He reviews his report highlights on page 1 of this report, noting that flows have increased by approximately 5% over 2021. He sets out the proposed rate increase of \$0.014/m³ to the wholesale rate, which will bring the new wholesale rate to \$0.7125 m³ and confirms that this rate applies to all of the municipalities. This is a 2% increase, whereas the past four (4) years has been a 4% increase each year.

The Manager briefly moves through the estimated revenue for 2023, which includes wholesale, investment and rental income. The operational and debt service expenditures include the OCWA operating contract as well as the Sun Life debt, which is set to expire in 2026. He also briefly sets out the anticipatory capital program with spending coming in at \$6.6 million and includes expansion to the administrative building, new backup generators and major maintenance/upgrade to the WTP.

The Chair asks for any questions. Councillor Gaffan asks the manager how long flows can continue increasing at this point, if we are seeing a 4.5% increase each year. The Manager explains that this is the purpose of the moratorium. He briefly runs through the history of the flow increases, which significantly bloomed from 2015-2022. He brings a graph up onto the screen. He also explains that right now the Ruthven WTP is at 80% peak, which is the trigger point, to start discussions of expansion. Part of this budget

Minutes of the Union Water Supply System Joint Board of Management

Date: January 17, 2023

Page 6

incorporates approval for undertaking an Environmental Assessment (EA) for WTP expansion. The Manager also discusses the engineering work on-going for the new reservoir, to assist with peak days.

Councillor Wilkinson asks if all the greenhouses approved prior to the moratorium are online. The Manager anticipates that those approved prior to moratorium should be online by end of 2023. Councillor Wilkinson also asks by the wholesale water rate increase is less than the usual rate increase. The Manager explains that our output was higher than anticipated and he is also anticipating that incorporation will be completed, which all assists with brining the rate down.

The Chair reminds members incorporation will allow for UWSS to apply for grants and funding from other sources. The Manager concurs and notes that there is potential funding from both Provincial and Federal sources.

The Manager continues with presentation noting that the OCWA budget is higher this year due to chemical cost increases and staff expansion. He notes other expenses include land transfer tax, increases to electrical and natural gas expenses and the potential of a summer student as well.

The Manager then explains how some capital items have been moved from 2022 to 2023, due in part to supply chain issues. He moves through the 2023 planned capital upgrades including backup generators, the new building at the KWT site, EA of site for new WTP, preliminary engineering for the watermain replacement on County Rd 34, pumps, meter chamber repairs, backup power generation and a work vehicle among others. Other items include meter chamber rehab, a potential bulk water fill station (as there has been multiple inquiries).

The Manager further explains that the budget presented does not include a budget for the construction of the reservoir, as he is anticipatory that the funding needed for this work (\$30million+) would be secured through UWSS Inc. and the budget would be established through a tender process. He also reviews the 10 year capital plan, which includes a new annex "peaking" water treatment facility.

The Manager reads through his recommendation of this report.

Deputy Mayor Verbeke asks if there is a bulk fill station locally to be used. While Councillor Patterson notes that the Manager should inquire with other municipalities about potential issues of having a bulk fill station, which could present issues.

Councillor Dunn inquiries as to whether solar panels have been considered for offsetting the cost of the increasing electrical expenses. The Manager notes that the engineers evaluating the reservoir project are looking into this aspect as part of this project.

Deputy Mayor DeYong inquires why there might be a need for a vehicle. The Manager explains that staff have always used their own personal vehicles for travelling to and from locations/sites and conference/training, and as part of the potential new corporation he felt it might be time to put less wear and tear on his own vehicle.

The Chair reminds members of the board that any substantial items are always brought back to the UWSS board for review and approval.

No. UW-05-23

Moved by: Councillor Dunn

Seconded by: Councillor Tiessen

That the Union Water Supply System Joint Board of Management (UWSS Board) adopts the Proposed 2023 Operational and Capital Budget for the Union Water Supply System;

And further, that the UWSS Board adopts an increase of \$0.014 per cubic metre for the UWSS Wholesale Rate. The new proposed UWSS Wholesale Rate for 2023 would be \$0.7125 per cubic meter.

And further, that the UWSS General Manager be provided the delegated authority to implement the 2023 UWSS Operations & Maintenance Budget and Capital Program

Carried (UW/03/23)

Report UW/04/23 dated January 12, 2023 re: UWSS Representative on the Essex Region Source Water Protection Committee

The Manager reviews this report with members of the UWSS Board. He notes that former Mayor Santos held the position, until his departure in July 2022 and it was felt appropriate to wait until after the October 2023 municipal elections to determine his replacement. He notes that the UWSS representative on this board also represents Essex in regards to its Colchester Water Treatment Plant. The manager indicates that the appointment is a five (5) year obligation. The Essex Region Source Water Protection Authority (ERSPA) project manager would like someone appointed to fill this position. Deputy Mayor Verbeke notes that he has been sitting as a liaison on behalf of ERCA and would like to nominate Mayor Dennis Rogers for the position. Mayor Rogers accepts the nomination. The General Manager indicates that he will inform the ERSPA project manager of Mayor Roger's nomination for the UWSS' representation on the source protection committee.

No. UW-06-23

Moved by: Councillor Patterson

Seconded by: Councillor Dunn

That report UW/04/23 dated January 12, 2023 re: UWSS Representative on the Essex Region Source Water Protection Committee is received.

Carried (UW/04/23)

The Chair notes that the dates for the 2023 Board meeting have been attached to the agenda for members' information and scheduling purposes.

The Chair asks the audience to vacate the Council Chambers so that the UWSS Board can move into closed session.

Special Closed Meeting of the UWSS Joint Board of Management

No. C-UW-01-23

Moved by: Councillor Gaffan

Seconded by: Councillor Abraham

That the UWSS Joint Board of Management move into a Special Closed Meeting, pursuant to the Municipal Act Section 239 (2)(e)(f) for the following reason:

Matters for Consideration:

Verbal update Under Municipal Act Section 239 (2)(e)(f) update regarding potential litigation and advice provided by the solicitor for the Union Water Supply System Joint Board of Management.

The UWSS Board consider this verbal report in closed session pursuant to section 239(2) of the Municipal Act, 2001, subsection(s)(e)(f).

Disclosure of Pecuniary Interest and General Nature Thereof

There was none.

The Manager provides a verbal update on a property issue, with legal advice provided by the UWSS Board solicitor present.

No. C-UW-02-23

Moved by: Mayor Rogers

Seconded by: Councillor Dunn

That the Manager and solicitor are provided direction with regard to the property issue.
Carried

No. C-UW-03-23

Moved by: Councillor Patterson

Seconded by: Deputy Mayor DeYong

That the UWSS Joint Board of Management move out of closed session and return to its regular meeting.
Carried

Report on Closed Session

The Manager reports on the closed session noting that an update Under Municipal Act Section 239 (2)(e)(f) update regarding potential litigation and advice provided by the solicitor for the Union Water Supply System Joint Board of Management.

The UWSS Board considered this verbal report in closed session pursuant to section 239(2) of the Municipal Act, 2001, subsection(s)(e)(f). Also, the Manager was provided direction under solicitor advice to form a resolution of the property issue, which is also to be reviewed by the Chair and the Vice-Chair of the Union Water Supply System Joint Board of Management prior to moving forward.

New Business: none

Adjournment:

No. UW-07-23

Moved by: Mayor Bondy

Seconded by: Deputy Mayor DeYong

Time: 8:43 pm

Date of Next Meeting: February 15th, 2023, Kingsville Arena, 9 am

/kmj

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

From: Rodney Bouchard, UWSS General Manager

Date: February 10, 2023

Re: Status Update of UWSS Operations & Maintenance Activities and Capital Works from January 13 to February 10, 2023



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 January 17, 2023.

Discussion:

The UWSS General 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. UWSS is still awaiting delivery of a special clamp from Utility Service Corp. to complete permanent repairs to the leak on Clarifier #3 and #4 effluent line. This pipe is currently not in operation nor are Clarifiers #3 and #4. The special clamp was sourced from the United States. As of the date of this report, UWSS was informed that the special clamp had been manufactured was being shipped and should cleared through Canada Customs. It is anticipated that the clamp should be received in the next week or so and installation should be completed within a week of receiving the clamp.
2. OCWA maintenance staff at the Union Water plant completed major repairs to Clarifier #4 sludge rake structure. The sludge rake operation was tested on February 7, 2023 and confirmed that repairs were successful. Clarifier #4 is ready to be put back into service once the repairs to the effluent pipe are completed.
3. Annual filter maintenance was completed for Filters #1 and #2 during the week of February 6th. Annual filter maintenance is now complete for all eight filters for the Ruthven Water Treatment Plant.
4. An unannounced inspection of the UWSS supplied portion of the Lakeshore Distribution System was conducted by the Ministry of Environment Conservation and Parks (MECP) on January 31, 2023. The inspection report has yet to be provided.
5. In late October 2022, OCWA Union operations staff noted that one of the two algae monitoring probes at the low lift had failed. Attempts to repair the probe by OCWA Union were not successful. The probe was removed on December 5th and sent to the supplier, Hoskins Scientific, for inspection and repair. The

Re: UW/05/23 - Status Update of UWSS Operations & Maintenance Activities and Capital Works from January 13 to February 10, 2023

- repaired probe was received in January 2023 and has been reinstalled and tested. All is in good working order and ready for the upcoming algae season.
6. In October 2022, OCWA Union operations staff noted that Meter Chamber #17 flow meter had failed. During discussions with Town of Kingsville staff in regards to the water main relocation work to be completed as part of the Hwy #3 expansion, it was decided that it would be best to remove meter chamber #17 and the associated flow meter. This meter is no longer used as a primary billing meter and thus is not needed. Also, the chamber would require substantial rehabilitation due to its poor condition. Billing meter #17 has been decommissioned and the removal of the chamber will be completed as part of the water main relocation work in Spring/Summer 2023.
 7. The consultant team of C3 Water Inc. and Stantec Consulting is making forward progress with the the conceptual design for an emergency water supply sharing solution between UWSS and Windsor Utilities Commission (WUC). Workshops for this project will be held in March 2023. It's anticipated that a final conceptual design report will be issued in early Summer 2023 for presentation to both UWSS and WUC Boards.
 8. C3 Water Inc. is making forward progress to investigate and identify solutions to the existing Albuna Water tower filling and storage issues. It is anticipated that a technical report with preliminary findings and recommendations will be issued in by the end of February or early March 2023.
 9. Associated Engineering (AE) is making forward progress on the conceptual and indicative design for a new reservoir at the property adjacent the water treatment plant that is owned by UWSS. This project also includes the evaluation and design for UV disinfection process at the Ruthven Water Treatment Plant. The first phase of Subsurface Utility Evaluation (SUE) for the property has been completed. Field work for Phase 2 of the SUE will be completed on February 17, 2023. It is anticipated that geotechnical investigations will be initiated once Phase 2 of the SUE is completed. Preliminary options on reservoir sizing and location and were provided to UWSS administration during the week of February 6th and are being evaluated.
 10. Associated Engineering (AE) is working with UWSS and OCWA operations staff to optimize the DAF #1 operation. AE has generated a preliminary report for future optimization and follow up filter capacity testing program. This report is under evaluation.
 11. MECP Draft Inspection report for the Union WTP was received February 7th. The draft report has been reviewed by UWSS and OCWA operations compliance staff. The draft report does not indicate any non-compliances except for the following:

"...during the inspection review period, grab samples were collected weekly from the north and/or south lagoon effluents and tested for total chlorine residual.

Re: UW/05/23 - Status Update of UWSS Operations & Maintenance Activities and Capital Works from January 13 to February 10, 2023

The average total chlorine residual for the inspection review period was 0.07mg/L which exceeds the annual average concentration of 0.02mg/L (noted in Table 3, Schedule C of the Licence). The ministry was notified of this non-compliance via letter on January 3, 2023". UWSS and OCWA are working on identifying solutions to address this issue.

12. An unannounced inspection by the Ministry of Environment Conservation and Parks (MECP) was conducted on January 10th for UWSS facilities including the Low Lift Pumping Plant, the Ruthven Water Treatment Plant and the Cottam Booster and Reservoir Station. Inspection report to follow.

The first chart shows comparative flows for 2019 through 2023 in Mega Litres (ML) and the second chart shows Millions of Imperial Gallons (MIG) for the period January 1st to February 9, 2023.

	2019	2020	2021	2022	2023
Flow to Date (ML)	1,201.44	1,245.79	1,479.94	1,488.74	1,615.80
Max Day (ML)	38.81	35.29	48.81	45.75	50.37
Min Day (ML)	20.13	25.44	26.74	27.58	32.48
Average Day (ML)	30.04	31.14	37.00	37.22	40.40
No of Days	40	40	40	40	40

	2019	2020	2021	2022	2023
Flow to Date (MG)	264.29	274.04	325.55	327.48	355.21
Max Day (MGD)	8.54	7.76	10.74	10.06	11.08
Min Day (MGD)	4.43	5.60	5.88	6.07	7.14
Average Day (MGD)	6.61	6.85	8.14	8.19	8.88
No of Days	40	40	40	40	40

Flows to date are up 127.06 ML (27.73 MIG) or 8.5% from last year. The 2023 flows to date are up 19.3% over the previous 4 year average.

Recommendation:

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

Respectfully submitted,



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

/kmj

Filename: t:\union wtr\reports to board\2023\uw05-23 uwss operations report for period from january 13-february 10, 2023.docx

UW/06/23

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

From: Rodney Bouchard, Union Water Manager

Date: February 9, 2023

Re: 2022 Annual Report under the Safe Drinking Water Act and Ontario Regulation 170/03



Aim

To present to the Board the Annual Report for 2022 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 28th 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 (4) participating municipalities therefore satisfying the requirement that it must be received before February 28, 2022.

There were no instances in 2022 when the Union Water Supply System was out of compliance with the requirements of the Safe Drinking Water Act 2002.

Recommendation:

That the Board receive the Annual Report for 2022 prepared under Section 11 of Regulation 170/03 made under the Safe Drinking Water Act 2002.

Respectfully submitted,



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

Rb/kmj

Filename: t:\union wtr\reports to board\2023\uw06-23 annual report for 2022 (board report).reviewed.docx



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Annual Performance Report

Union Water Supply System

Drinking Water System # 210000853

2022

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

By the Ontario Clean Water Agency



Drinking Water Systems Regulation O. Reg. 170/03

ANNUAL REPORT

Drinking Water System Number:	210000853
Drinking Water System Name:	Union Water Supply System
Drinking Water System Owner:	Union Water Supply System Joint Board of Management (Municipality of Leamington, Town of Kingsville, Town of Essex, Municipality of Lakeshore)
Drinking Water System Category:	Large Municipal Residential
Period being reported:	01-January-2022 to 31-December-2022

<u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u>	<u>Complete for all other Categories</u>
<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; margin-top: 5px;"> Union Water Supply System P.O. Box 340, 1615 Union Ave., Ruthven, Ont. N0P 2G0 </div>	<p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;">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; margin: 5px 0;">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>

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 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
Municipality 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 drinking water?
 Yes [X] 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 _____

Describe your Drinking Water System

The Union Water Supply System (UWSS) includes one water treatment plant, the Ruthven Water Treatment Plant (RWTP) that is located in the hamlet of Ruthven in the Town of Kingsville, Ontario. The RWTP is a chemically assisted conventional filtration plant that draws water from Lake Erie.

The UWSS supplies potable water to the Town of Kingsville, Municipality of Leamington, a portion of the Town of Essex and a portion of the Municipality of Lakeshore with an estimated service population of 66,841.

The treatment process includes raw water pH control, chemically assisted up-flow clarification, chemically assisted Dissolved Air Flootation system, filtration with dual media filters, primary disinfection using Chlorine gas and secondary disinfection using Chlorine gas and Sodium Hypochlorite.

Seasonally, the RWTP 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
- SternPAC 70 - Coagulant
- Magnafloc LT22S (polymer) - Coagulant Aid
- NorFloc 122 (polymer) – Coagulant Aid
- Powdered Activated Carbon – Taste and Odor Control
- CO₂ – PH adjustment

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



Drinking Water Systems Regulation O. Reg. 170/03

- [X] Repair required equipment
[X] Replace required equipment

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

	Item Description	Expenditures to 2022 Year End
	Capital Works and Major Maintenance	
1	DAF #1 Clarifier Mechanism Structure	\$2,460,540
2	DAF#1 (Formerly Clarifier #2) Concrete Tank Rehabilitation	\$1,115,520
3	DAF #1 Air Saturation System Skid	\$889,740
4	DAF System Auxiliary Building	\$515,840
5	DAF#1 Dome Structure	\$455,050
6	DAF#1 Piping	\$378,830
7	DAF System Electrical	\$312,900
8	DAF #1 System Controls	\$258,970
9	DAF System Auxiliary Building HVAC System	\$187,460
10	DAF#1 Scraper and Skimmer System	\$185,460
11	DAF#1 Clarifier Mixers	\$180,850
12	Smart Hydrant Distribution Monitoring Devices	\$123,100
13	Valve Room - Piping	\$88,530
14	DAF#1 (Formerly Clarifier #2) Blow Down Chamber Rehabilitation	\$73,410
15	Cottam Booster Station PLC Upgrade	\$70,040
16	Albuna Water Tower Upgrades	\$70,000
17	Dissolved Air Flootation (DAF) #1 Rapid Mixer	\$64,860
18	DAF#1 Valves	\$64,770
19	Wastewater Pump - New backup pump	\$62,620
20	Distribution System Components	\$60,600
21	Distribution Water Quality Monitoring Analyzers	\$54,580
22	Low Lift #7 Rehabilitation	\$49,930
23	Treatment Plant Bldg Improvements - Admin Area	\$43,920
24	Valve Room - Valves & Actuators	\$34,580
25	Highlift Pump #9 Major Maintenance	\$30,265
26	Master Water Meters Upgrades	\$24,230
27	Maintenance Building Improvements	\$24,200
28	Clarifiers #3 & #4 Effluent Pipe Rehabilitation	\$20,170
29	Clearwell #1 Inlet Rotork	\$17,260
30	30' Aluminum PRP Series Gantry crane	\$16,960
31	Residuals Pond Effluent Chlorine Analyzer	\$16,230
32	Communication System upgrades	\$13,450
33	Security System Improvements	\$11,710
34	Supply & Install 400AMP Main Breaker	\$8,578
35	2-4" Air relief valves, HL Pump #8 and #9	\$7,651
36	Denso for Raw water pipe protection	\$7,502
37	Spare Reservoir #2 Sump	\$6,996
38	Culvert to Access to South Field, Relocate Reservoir # 2, Raw Water Line Repair	\$6,755
39	10' Aluminum Gantry	\$6,447
40	Post Chlorine chlorinator controller	\$6,053
41	Cathodic protection surveys for water towers and water main	\$6,034

Drinking Water Systems Regulation O. Reg. 170/03

42	Lawnmower bagger	\$5,945
43	Unit Heater Replacement	\$5,934
44	Reservoir #2 Leak repair	\$5,481
45	Floor Scrubber	\$5,181
46	Intake 1 & 2 Inspections	\$5,037
47	Fencing Upgrades - Leamington Water Tower	\$5,010
48	DAF Project Valve Room 30" blank flanges	\$4,948
49	Leamington Tower driveway, Substation ESA deficiency,	\$4,783
50	Elevated Water Tank Survey	\$4,661
51	Chlorine Gas Injection System	\$4,648
52	Paint new washroom; install new countertop	\$4,477
53	Cleaning equipment	\$4,427
54	Clarifier Effluent pipe repair	\$4,353
55	Airwash Valve & Actuator - spare	\$4,312
56	Electrician Van Shelving Package	\$4,208
57	Filter #1 - Waste Valve & Actuator	\$4,187
58	Landscape Trailer	\$4,129
59	Fume Hood - Laboratory	\$4,060
60	Filter inlet channels and filter 1-4 level	\$3,826
61	Install Janitorial closet & drywall	\$3,214
62	Filters 1-4 flooring repair	\$3,155
63	Chlorine Gas Injection System	\$2,517
64	Chlorine Gas Injection System	\$2,517
65	Removal of Electric motor for HLPump #9	\$2,459
66	Filter 5-8 Airwash Valves	\$2,290
67	Roadway maintenance gravel box grater	\$2,227
68	New electrical Van safety lighting	\$2,194
69	Trench box for Clarifier effluent pipe repair.	\$2,171
70	Storage shelving for CO2 room	\$2,098
71	Myers Sewage pump	\$2,050
72	Stainless Steel Pipe tap - Albuna Tower Pipe scan install	\$2,035
73	Cement pad at CBS for VFD Project	\$1,933
74	Repairs to clearwell Wall	\$1,816
75	Spare Clarifier PH Probe	\$1,784
76	Concrete steps for DAF project	\$1,710
77	Reservoir #2 Drain Inspection	\$1,563
78	Leamington Tower Gasket	\$1,516
79	Ford Transit 148" WB ultrafloor	\$1,276
80	Chain Hoist for 30' Gantry crane	\$1,037
81	Storage shelving for CO2 room	\$1,024
82	Filter inlet channels and filter 1-4 level	\$945
83	DAF Project Pipe Restraint	\$894
84	Bollards for Generator panel DAF #1 project	\$825
85	Freight charge for 30' Gantry beam	\$763
	Total	\$8,165,001

Drinking Water Systems Regulation O. Reg. 170/03

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
None					

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 (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	52	2-20	4-214	0	N/A
Treated	52	0 – 0	0 – 0	52	<10 - <100
Distribution	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).				

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

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity	8760	0.01 - 0.76	NTU
Chlorine - Free	8760	0.83 - 2.57	mg/L

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



Drinking Water Systems Regulation O. Reg. 170/03

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

	Parameter	Date Sampled	Result		Average	Unit of Measure
			North	South		
Nov 26, 2021	Suspended Solids	Jan 05/22	3		3	mg/L
	Suspended Solids	Feb 01/22	3		3	mg/L
	Suspended Solids	Mar 15/22	47		47	mg/L
	Suspended Solids	April 06/22	11	3	7	mg/L
	Suspended Solids	May 03/22	3	3	3	mg/L
	Suspended Solids	June 07/22	3	3	3	mg/L
	Suspended Solids	July 05/22	3	3	3	mg/L
	Suspended Solids	Aug 04/22	3	3	3	mg/L
	Suspended Solids	Sept 07/22	3	3	3	mg/L
	Suspended Solids	Oct 04/22	3	3	3	mg/L
	Suspended Solids	Nov 04/22	3	3	3	mg/L
	Suspended Solids	Dec 14/22	3	3	3	mg/L
Annual Average					7.0	mg/L

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit
Nov 26, 2021	Total Chlorine residuals	Jan 04/2022	0.03	mg/L
	Total Chlorine residuals	Feb 03/2022	0.16	mg/L
	Total Chlorine residuals	Mar 07/2022	0.07	mg/L
	Total Chlorine residuals	Apr 05/2022	0.03	mg/L
	Total Chlorine residuals	May 02/2022	0.05	mg/L
	Total Chlorine residuals	June 06/2022	0.08	mg/L
	Total Chlorine residuals	July 04/2022	0.02	mg/L
	Total Chlorine residuals	Aug 02/2022	0.02	mg/L
	Total Chlorine residuals	Sept 06/2022	0.05	mg/L
	Total Chlorine residuals	Oct 03/2022	0.10	mg/L
	Total Chlorine residuals	Nov 07/2022	0.07	mg/L
	Total Chlorine residuals	Dec 06/2022	0.17	mg/L
Annual Average			0.07	mg/L

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

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L)	2022/01/04	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L)	2022/01/04	0.2	10.0	No	No
Barium: Ba (ug/L)	2022/01/04	16.7	1000.0	No	No
Boron: B (ug/L)	2022/01/04	17.0	5000.0	No	No
Cadmium: Cd (ug/L)	2022/01/04	0.008	5.0	No	No
Chromium: Cr (ug/L)	2022/01/04	0.18	50.0	No	No
Mercury: Hg (ug/L)	2022/01/04	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L)	2022/01/04	0.1	50.0	No	No
Uranium: U (ug/L)	2022/01/04	0.088	20.0	No	No
Fluoride (mg/L)	2022/01/04	<MDL 0.06	1.5	No	No

Drinking Water Systems Regulation O. Reg. 170/03

Nitrite (mg/L)	2022/01/10	<MDL 0.1	1.0	No	No
Nitrite (mg/L)	2022/04/06	<MDL 0.1	1.0	No	No
Nitrite (mg/L)	2022/07/06	<MDL 0.1	1.0	No	No
Nitrite (mg/L)	2022/10/03	<MDL 0.1	1.0	No	No
Nitrate (mg/L)	2022/01/10	0.5	10.0	No	No
Nitrate (mg/L)	2022/04/06	0.5	10.0	No	No
Nitrate (mg/L)	2022/07/06	0.3	10.0	No	No
Nitrate (mg/L)	2022/10/03	<MDL 0.1	10.0	No	No
Sodium: Na (mg/L)	2022/01/04	7.14	20*	No	No

***There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should 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.**

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

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	½ MAC
Alachlor (ug/L)	2022/01/04	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L)	2022/01/04	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L)	2022/01/04	<MDL 0.05	20.0	No	No
Benzene (ug/L)	2022/01/04	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L)	2022/01/04	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L)	2022/01/04	<MDL 0.33	5.0	No	No
Carbaryl (ug/L)	2022/01/04	<MDL 0.05	90.0	No	No
Carbofuran (ug/L)	2022/01/04	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L)	2022/01/04	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L)	2022/01/04	<MDL 0.02	90.0	No	No
Diazinon (ug/L)	2022/01/04	<MDL 0.02	20.0	No	No
Dicamba (ug/L)	2022/01/04	<MDL 0.2	120.0	No	No



Drinking Water Systems Regulation O. Reg. 170/03

1,2-Dichlorobenzene (ug/L)	2022/01/04	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L)	2022/01/04	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L)	2022/01/04	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L)	2022/01/04	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L)	2022/01/04	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L)	2022/01/04	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2022/01/04	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L)	2022/01/04	<MDL 0.4	9.0	No	No
Dimethoate (ug/L)	2022/01/04	<MDL 0.06	20.0	No	No
Diquat (ug/L)	2022/01/04	<MDL 1.0	70.0	No	No
Diuron (ug/L)	2022/01/04	<MDL 0.03	150.0	No	No
Glyphosate (ug/L)	2022/01/04	<MDL 1.0	280.0	No	No
Malathion (ug/L)	2022/01/04	<MDL 0.02	190.0	No	No
Metolachlor (ug/L)	2022/01/04	<MDL 0.01	50.0	No	No
Metribuzin (ug/L)	2022/01/04	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)	2022/01/04	<MDL 0.3	80.0	No	No
Paraquat (ug/L)	2022/01/04	<MDL 1.0	10.0	No	No
PCB (ug/L)	2022/01/04	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L)	2022/01/04	<MDL 0.15	60.0	No	No
Phorate (ug/L)	2022/01/04	<MDL 0.01	2.0	No	No
Picloram (ug/L)	2022/01/04	<MDL 1.0	190.0	No	No
Prometryne (ug/L)	2022/01/04	<MDL 0.03	1.0	No	No
Simazine (ug/L)	2022/01/04	<MDL 0.01	10.0	No	No
Terbufos (ug/L)	2022/01/04	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L)	2022/01/04	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	2022/01/04	<MDL 0.2	100.0	No	No
Triallate (ug/L)	2022/01/04	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L)	2022/01/04	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L)	2022/01/04	<MDL 0.25	5.0	No	No
Trifluralin (ug/L)	2022/01/04	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L)	2022/01/04	<MDL 0.17	1.0	No	No
THM (ug/L)	Running Annual Average	11.05	100	No	No
HAA (ug/L)	Running Annual Average	<MDL 5.3	80	No	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/07/23

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

From: Rodney Bouchard, Union Water Manager

Date: February 9, 2023

Re: 2022 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 2022 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 31st 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 31st, 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 Municipality of Lakeshore, Town of Essex, Town of Kingsville and Municipality of Leamington

February 9, 2023 - UW/07/23

Re: 2022 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 2022, except for the noted occurrences in the Summary Report.

Recommendation

That the Board receive the Summary Report for 2022 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
General Manager
Union Water Supply System Joint Board of Management

kmj

Filename: t:\union wtr\reports to board\2023\uw07-23 summary report for 2022 (board report).reviewed.docx

UNION WATER SUPPLY SYSTEM SUMMARY REPORT 2022

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 that is owned by a municipality, municipal board or municipal corporation must provide to its councillors or board members a Summary Report on various aspects of the system before March 31st of the following year. The Union Water Supply System is classed as a large municipal residential drinking-water system and is therefore subject to Schedule 22.

The Summary Report must list the following:

- Any requirements of the Safe Drinking Water Act, 2002 that the system failed to meet during the period covered by the Summary Report
- Any 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 31st 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 2022.

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:

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Union Water common Distribution System that is supplied by Union Water Supply System.

LEAMINGTON WATER DISTRIBUTION SYSTEM***Non-Compliance Item:***

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Leamington Distribution System that is supplied by the Union Water Supply System

KINGSVILLE WATER DISTRIBUTION SYSTEM***Non-Compliance Item:***

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Kingsville Distribution System that is supplied by the Union Water Supply System.

ESSEX WATER DISTRIBUTION SYSTEM***Non-Compliance Item:***

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Essex Distribution System that is supplied by the Union Water Supply System.

LAKESHORE WATER DISTRIBUTION SYSTEM***Non-Compliance Item:***

There were no non-compliance or Adverse Water Quality Incidents (AWQI) identified for the portion of the Lakeshore Distribution System that is supplied by the Union Water Supply System

Summary of the Quantities

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. Information includes the following:

- Flow Rates of Water
- Monthly Average
- Maximum Daily Flows
- Daily Instantaneous Peak Flow Rates

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 2022 (see Table 1 below) are as follows:

- | | |
|--|-------------|
| • Maximum Amount Taken per Minute in 2022 (Litres/Min) | 89,268 |
| • Maximum Amount Taken Per Day in 2022 (Litres/Day) | 103,288,000 |

The system did not exceed the PTTW limits in 2022.

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, 2021 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 99,170m³ (21.81 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
2022 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	34,658	43,388	43,388,000	113,650	37,798
February	163,656	49,472	61,396	61,396,000	113,650	46,650
March	163,656	50,511	60,935	60,935,000	113,650	53,987
April	163,656	56,479	74,094	74,094,000	113,650	59,943
May	163,656	69,848	94,997	94,997,000	113,650	69,900
June	163,656	86,901	103,288	103,288,000	113,650	75,118
July	163,656	84,496	98,554	98,554,000	113,650	74,775
August	163,656	80,493	98,347	98,347,000	113,650	78,988
September	163,656	80,268	101,488	101,488,000	113,650	89,268
October	163,656	57,398	74,718	74,718,000	113,650	64,684
November	163,656	43,994	50,634	50,634,000	113,650	49,688
December	163,656	40,372	46,778	46,778,000	113,650	38,585

Table 1B
2022 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	7.62	9.54	25,000	8,314
February	36.00	10.88	13.51	25,000	10,262
March	36.00	11.11	13.40	25,000	11,875
April	36.00	12.42	16.30	25,000	13,186
May	36.00	15.36	20.90	25,000	15,376
June	36.00	19.12	22.72	25,000	16,524
July	36.00	18.59	21.68	25,000	16,448
August	36.00	17.71	21.63	25,000	17,375
September	36.00	17.66	22.32	25,000	19,636
October	36.00	12.63	16.44	25,000	14,228
November	36.00	9.68	11.14	25,000	10,930
December	36.00	8.88	10.29	25,000	8,488

Table 2A**2022 Treated Water Flow Into Distribution System in Metric Units**

	Maximum Allowed Flow Rate (m ³ /Day)	Average Daily Flow (m ³ /Day)	Maximum Daily Flow (m ³ /Day)	Peak Instantaneous Flow (Litres/ Second)
January	124,588	36,145	44,688	967
February	124,588	41,687	46,418	952
March	124,588	47,266	56,904	1,111
April	124,588	53,599	71,478	1,381
May	124,588	66,542	92,135	1,498
June	124,588	82,088	99,170	1,632
July	124,588	80,042	93,220	1,738
August	124,588	74,141	85,527	1,627
September	124,588	70,201	84,126	1,645
October	124,588	53,367	70,815	1,370
November	124,588	41,243	49,572	1,105
December	124,588	37,264	44,019	904

Table 2B**2022 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	7.95	9.83	213
February	27.4	9.17	10.21	209
March	27.4	10.40	12.52	244
April	27.4	11.79	15.73	304
May	27.4	14.64	20.27	330
June	27.4	18.06	21.82	359
July	27.4	17.61	20.51	382
August	27.4	16.31	18.82	358
September	27.4	15.44	18.51	362
October	27.4	11.74	15.58	301
November	27.4	9.07	10.91	243
December	27.4	8.20	9.68	199

Table 3A
2022 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	600,903	19,384	402,767	12,992	64,599	2,084	51,337	1,656
February	652,384	22,496	414,037	14,277	62,960	2,171	46,049	1,588
March	828,623	26,730	531,390	17,142	67,196	2,168	49,190	1,587
April	876,099	29,203	536,663	17,889	64,544	2,151	52,312	1,744
May	1,213,778	39,154	760,758	24,541	83,012	2,678	59,108	1,907
June	1,401,029	46,701	908,702	30,290	93,402	3,113	67,324	2,244
July	1,321,395	42,626	857,560	27,663	92,477	2,983	67,143	2,166
August	1,374,900	44,352	929,799	29,994	98,340	3,172	70,584	2,277
September	1,151,025	38,368	832,563	27,752	94,511	3,150	62,333	2,078
October	944,134	30,456	590,904	19,061	80,924	2,610	60,290	1,945
November	714,566	23,819	420,828	14,028	66,732	2,224	51,337	1,711
December	633,983	20,451	345,241	11,137	68,900	2,223	78,643	2,537
Total	11,712,819	31,978	7,531,212	20,564	937,597	2,561	715,650	1,953

Table 3A
2022 Treated Flow to Local Municipalities in Imperial Units

	<i><u>Leamington</u></i>		<i><u>Kingsville</u></i>		<i><u>Essex</u></i>		<i><u>Lakeshore</u></i>	
	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	132,180,181	4.26	88,596,354	2.86	14,209,793	0.46	11,292,561	0.36
February	143,504,418	4.95	91,075,408	3.14	13,849,264	0.48	10,129,364	0.35
March	182,271,578	5.88	116,889,459	3.77	14,781,054	0.48	10,820,287	0.35
April	192,714,838	6.42	118,049,357	3.93	14,197,695	0.47	11,507,031	0.38
May	266,993,834	8.61	167,343,365	5.40	18,260,087	0.59	13,001,942	0.42
June	308,183,296	10.27	199,886,496	6.66	20,545,568	0.68	14,809,210	0.49
July	290,666,265	9.38	188,636,829	6.09	20,342,096	0.66	14,769,395	0.48
August	302,435,719	9.76	204,527,187	6.60	21,631,776	0.70	15,526,309	0.50
September	253,190,104	8.44	183,138,257	6.10	20,789,514	0.69	13,711,343	0.46
October	207,680,446	6.70	129,980,709	4.19	17,800,791	0.57	13,261,946	0.43
November	157,182,546	5.24	92,569,219	3.09	14,678,988	0.49	11,292,561	0.38
December	139,456,764	4.50	75,942,403	2.45	15,155,881	0.49	17,299,042	0.56
Total	2,576,459,991	7.03	1,656,635,042	4.52	206,242,507	0.56	157,420,993	0.43

UW/08/23

Report

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

From: Rodney Bouchard, UWSS General Manager

Date: February 10, 2023

Re: Extension of Moratorium on Applications for UWSS Treated
Water Allocations



Recommendation:

That the Union Water Supply Joint Board of Management (UWSS Board) extends the existing moratorium on new requests for treated water allocations from new or existing entities that use more than 50,000 litres per day until such a time that additional water treatment capacity is realized for the Union Water Supply System;

And further, that the moratorium would not apply to any type of residential development.

Background:

At the March 17, 2021 Regular meeting of the UWSS Board, the UWSS Board approved a moratorium on new requests for treated water allocations over 50,000 litres per day. The UWSS Board approved a 12-month extension to the moratorium at the March 16, 2022 UWSS Board meeting. A copy of UWSS report UW07-22 Extension of Moratorium on Applications for UWSS Treated Water Allocations, (Moratorium) dated March 9th, 2022 is attached.

Discussion:

The existing Moratorium on applications/requests for large treated water allocations was put into place because the majority of the UWSS' treatment capacity has already been allocated to existing/approved residential, commercial, industrial and greenhouse developments. The remaining unallocated treatment plant capacity has been reserved for residential development. A secondary reason for the imposition on the moratorium was due to peak daytime demands during the May-July months in 2020 and 2021 that regularly exceeded the output of the treatment plant and was thus placing the UWSS supplied drinking water systems at risk. The existing moratorium is set to expire on March 16, 2023.

February 9, 2023 - UW/08/23

Re: Extension of Moratorium on Applications for UWSS Treated Water Allocations

It should be noted that 2022 total treated water demands were almost 5% higher than 2021 water demands. The 2022 annual treated water output from the plant was the highest ever recorded for UWSS. Although still early in the year, 2023 water demands are currently tracking above 2022 water demands and has been budgeted to be 4.5 % above 2022 demand.

Water demands during peak periods in 2022 have reached 80% of treatment plant capacity, which is a typical industry benchmark for future water demand evaluation and consideration/planning of water treatment capacity expansion. It anticipated that demands will continue to increase until construction projects associated with approved allocations are completed. As such, it is recommended that the Moratorium be extended until such time that additional water treatment capacity is realized for the Union Water Supply System.

The UWSS has been undertaking a number of capital improvements to the treatment system to advance the treatment plant's efficiency and increase the treatment capacity. UWSS is also undertaking a number of studies designed to increase the UWSS' water treatment storage and output capacity. This work includes the following:

- Recently completed Phase 1 Dissolved Air Flotation (DAF) clarification system which is designed to address the existing bottleneck with the treatment plant's clarification process.
- Filter capacity testing scheduled for Spring and Summer 2023. With DAF #1 system in place, filter capacity will be tested to ascertain the potential for increased treatment plant output to accommodate the increased clarification potential.
- On-going engineering and design for expanded water treatment storage at the water treatment plant facility. It is anticipated that construction of a new 40 megalitre water treatment storage reservoir will be initiated in late 2023. This new reservoir would mitigate issues associated with peak hourly water demands during hot summer afternoons;
- Undertaking of Class C Environmental Assessment (EA) for expansion of UWSS water treatment plant capacity. This EA was initiated in January 2023 and is expected to be completed by December 2023. The intent of the EA is to identify best options for expansion of UWSS treatment capacity with the anticipation that this increased treatment plant output would be realized by 2028 or sooner.

Closing Comments and Recommendations:

The proposed indefinite extension to the existing moratorium on new applications/ requests for large treated water allocations will allow the UWSS time to complete studies and upgrades to the water treatment process that are designed to improve treatment plant efficiency and increase treatment plant output capacity.

February 9, 2023 - UW/08/23

Re: Extension of Moratorium on Applications for UWSS Treated Water Allocations

The extension will also allow the UWSS staff time to undertake a review of existing treatment capacity allocation application process and provide recommendations to the UWSS Board for an improved application procedure for allocating future treated water requests.

Respectfully submitted,



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

rb/kmj

Attachments

Filename: t:\union wtr\reports to board\2023\uw08-23 proposed extension of moratorium on applications for uwss treatment capacity allocations.docx

UW/07/22

Report

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

From: Rodney Bouchard, UWSS General Manager

Date: March 9, 2022

Re: Extension of Moratorium on Applications for UWSS Treated Water Allocations



Recommendation:

That the Union Water Supply Joint Board of Management (UWSS Board) extends by 12 months the existing moratorium on new requests for treated water allocations from new or existing entities that use more than 50,000 litres per day;

And further, that the moratorium would not apply to any type of residential development.

Background:

At the March 17, 2021 Regular meeting of the UWSS Board, the UWSS General Manager recommended the imposition of a moratorium on new requests for treated water allocations over 50,000 litres per day. This recommendation was presented in report *UW16-21 Moratorium on Applications for UWSS Treated Water Allocations*, dated March 11, 2021. A copy of report UW16-21 is attached to this report. The recommendation was approved as per the following resolution by the UWSS Board and the moratorium took effect on March 17, 2021.

No. UW-22-21

Moved by: Deputy Mayor Queen

Seconded by: Councillor Walstedt

That the Union Water Supply Joint Board of Management (UWSS Board) implements a moratorium to take effect immediately on new requests for treated water allocations from new or existing entities that use more than 50,000 litres per day;

March 11, 2021 - UW/16/21

Re: Moratorium on Applications for UWSS Treated Water Allocations

And further, that the moratorium would not apply to any type of residential development;

And further, that the moratorium will be in effect for up to 12 months;

And further, that the UWSS Board directs the UWSS General Manager, with support from the UWSS-Municipal Treatment Capacity Allocation Working Group (Working Group), to undertake an evaluation of all approved treated water allocations to identify any discrepancies between approved allocations versus actual water usage;

And further, that the UWSS Board directs the UWSS General Manager to deliver a report to the UWSS Board by October 31st, 2021 that provides the Working Group's conclusions and recommendations in regards to the evaluation of approved treated water allocations.

Carried (UW/16/21)

The UWSS-Municipal Treatment Capacity Allocation Working Group has met a number of times since the imposition of the moratorium on March 17, 2021. These meetings have resulted in improvements with the sharing of information (e.g. subdivision planning and associated water usage, building permit information, etc) between UWSS and owner municipalities in regards to proposed residential developments greenhouse sector growth and construction.

UWSS has also been working to review historical and approved greenhouse treated water allocations with municipal staff and the consultant (Stantec) responsible for water demand modeling and review of applications for greenhouse water allocation applications. Further review of these approved allocations and actual 2021 greenhouse water demand will be completed once this data is consolidated. Subdivision planning information, greenhouse growth information, approved greenhouse allocations and actual 2021 greenhouse water demand data will be used to develop a better system for allocation of treated water and to improve the application process for requests for large treated water allocations. Recommended improvements to the application/approval process will be reported to the Board at a later date in 2022.

Discussion:

The UWSS General Manager proposes an extension of up to one year to the existing moratorium on UWSS allocations of treated water capacity for applications exceeding 50,000 litres per day. The existing moratorium is set to expire on March 17, 2022.

The existing moratorium on applications/requests for large treated water allocations was put into place because most of the UWSS' treatment capacity has already been allocated

March 11, 2021 - UW/16/21

Re: Moratorium on Applications for UWSS Treated Water Allocations

to existing/approved residential, commercial, industrial and greenhouse developments. The remaining unallocated treatment plant capacity has been reserved for residential development. A secondary reason for the imposition on the moratorium was due to peak daytime demands during the June-August 2020 period that regularly exceeded the output of the treatment plant and was thus placing the UWSS supplied drinking water systems at risk.

The UWSS has been undertaking a number of capital improvements to the treatment system to advance the treatment plant's efficiency and increase the treatment capacity. This work includes Phase 1 of the new Dissolved Air Flotation (DAF) clarification system which is designed to address the existing bottleneck with the treatment plant's clarification process. With increased clarification capacity, the UWSS anticipates that it should be able to increase total treated water output. This DAF #1 system is being retrofitted into the existing Clarifier #2 basin.

Phase I of the DAF system is currently underway and was scheduled to be completed in April 2021 and tested for 4 weeks prior to going into service. However, due to COVID related manufacturing and shipping delays, this work is behind schedule. At this time, it is anticipated that the work will be completed by early June 2022 and put into service sometime in July 2022. It will likely take 6 months to fully test the limits of the DAF system at which point UWSS will seek to complete treatment plant capacity re-rating studies. Due to the delays with this project, the UWSS treatment plant is currently operating with reduced clarification capacity since Clarifier #2 is no longer in operation. This may pose a challenge, especially during early summer peak daytime demands, until the DAF #1 system is in operation. Restrictions on drinking water takings may be needed if the UWSS experiences excessive demands during this period.

It should be noted that 2021 total treated water demands were 4% higher than 2020. The 2021 annual treated water output from the plant was the highest ever recorded for UWSS. Although still early in the year, 2022 water demands are currently tracking with 2021 water demands.

Based on the delays with the DAF #1 works and the increased treated water demands in 2021 over 2020, it would be prudent to extend the existing moratorium for up to 1 year to allow UWSS to fully implement DAF #1 system and then complete treatment plant output capacity studies.

Closing Comments and Recommendations:

The proposed 12-month extension to the existing moratorium on new applications/ requests for large treated water allocations will allow the UWSS time to complete improvements to the water treatment process that are designed to improve efficiency with potential to increase treatment plant output capacity.

March 11, 2021 - UW/16/21

Re: Moratorium on Applications for UWSS Treated Water Allocations

The extension will allow the UWSS (in consultation with its owner municipalities) time to complete the evaluations of existing and proposed future treatment capacity allocations and to evaluate actual use versus allocations, especially for large users, so as to develop a more effective process for allocating future treated water requests..

Respectfully submitted,



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

Attachments