Tri-County Water Board of Management Agenda

January 25, 2022, 7:00 p.m.
Electronic Participation Meeting via Zoom

Due to the COVID-19 Pandemic this meeting will be held electronically. Please contact the Clerk's Department if you require an alternate format or accessible communication support or wish to receive the link to the meeting, at 519-785-0560 or by email at clerk@westelgin.net.

Pages

1. Call to Order

2. Adoption of Agenda

   Recommendation:
   That Tri-County Water Board hereby adopts the Agenda for January 25, 2022 as presented.

3. Disclosure of Pecuniary Interest

4. Minutes 1

   Recommendation:
   That minutes of the Tri-County Water Board meeting on December 14, 2021 be adopted as circulated and printed.

5. Business Arising from Minutes

   5.1. OCWA Coloured Water Proposal 7

   5.2. Cyber Insurance 13

6. Staff Reports

Tri-County Water Board of Management

Minutes

Date:December 14, 2021, 7:00 p.m.
Location:West Elgin Community Complex - Hybrid Meeting
160 Main Street
West Lorne
Electronic Hybrid Meeting

Present: Allan Mayhew, Southwest Middlesex
Angela Cammaert, West Elgin
Bonnie Rowe, West Elgin
Doug Bartlett, Southwest Middlesex
Duncan McPhail, West Elgin
Ken Loveland, Dutton Dunwich
Marigay Wilkins, Southwest Middlesex
Taraesa Tellier, West Elgin
Tim Sunderland, Chatham-Kent
Michael Noe, Newbury
Mike Hentz, Dutton Dunwich
Amarilis Drouillard, Dutton Dunwich

Staff Present: Jana Nethercott, Recording Secretary
Magda Badura, CAO/Treasurer
Jill Bellchamber-Glazier, SWM

Also Present: Mark Harris, OCWA
Susan Budden, OCWA
Tracy Johnson, Dutton Dunwich
Kristen McGill, SWM

Due to the COVID-19 Pandemic and physical distancing requirements, this meeting will be held as hybrid with some attendance in person and streamed virtually.

1. Call to Order

Chair D. McPhail called the meeting to order at 7:07 p.m.

3. Adoption of Agenda

Moved: Amarilis Drouillard
Seconded: Angela Cammaert

That Tri-County Water Board hereby adopts the Agenda for December 14, 2021 as presented.

For (12): Allan Mayhew, Angela Cammaert, Bonnie Rowe, Doug Bartlett, Duncan McPhail, Ken Loveland, Marigay Wilkins, Taraesa Tellier, Tim Sunderland, Michael Noe, Mike Hentz, and Amarilis Drouillard

Disposition: Carried (12 to 0)

2. Welcome New Member

Chair McPhail welcome Amarilis Drouillard as a new representative from Dutton Dunwich.

4. Disclosure of Pecuniary Interest

No disclosures

5. Minutes

Moved: Allan Mayhew
Seconded: Bonnie Rowe

That minutes of the Tri-County Water Board meeting on October 26,2021 be adopted as circulated and printed.

For (12): Allan Mayhew, Angela Cammaert, Bonnie Rowe, Doug Bartlett, Duncan McPhail, Ken Loveland, Marigay Wilkins, Taraesa Tellier, Tim Sunderland, Michael Noe, Mike Hentz, and Amarilis Drouillard

Disposition: Carried (12 to 0)

6. Business Arising from Minutes

6.1 Proposal for Coloured Water Review

Chair McPhail reported that in speaking with Elgin County CAO, the County has a concern over the County Engineer reviewing the Tri-County Water Board system.

Board requested that staff return in January with the proposal from OCWA regarding a review of the plant for coloured water issues and that a letter be sent to Brian Lima thanking him for his efforts.

Moved: Allan Mayhew
Seconded: Tim Sunderland

That the proposal from OCWA with regards to reviewing the Tri-County Plant for possible upgrades be reconsidered at the next meeting of the Tri-County Water Board.

For (12): Allan Mayhew, Angela Cammaert, Bonnie Rowe, Doug Bartlett, Duncan McPhail, Ken Loveland, Marigay Wilkins, Taraesa Tellier, Tim Sunderland, Michael Noe, Mike Hentz, and Amarilis Drouillard

Disposition: Carried (12 to 0)

7. Staff Reports

7.1 Expenditure Request to Conduct Inspection of Water Treatment Plant

Moved: Allan Mayhew
Seconded: Doug Bartlett

That the Tri-County Water Board hereby approve the expenditure request of $9,745.93 for the inspection of the Tri-County Water Plant.

For (12): Allan Mayhew, Angela Cammaert, Bonnie Rowe, Doug Bartlett, Duncan McPhail, Ken Loveland, Marigay Wilkins, Taraesa Tellier, Tim Sunderland, Michael Noe, Mike Hentz, and Amarilis Drouillard

Disposition: Carried (12 to 0)

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7.2 Phragmites 2021 Summary Report

Moved: Bonnie Rowe
Seconded: Michael Noe

That the Tri-County Water Board hereby receives and files the 2021 Phragmites summary report.

For (12): Allan Mayhew, Angela Cammaert, Bonnie Rowe, Doug Bartlett, Duncan McPhail, Ken Loveland, Marigay Wilkins, Taraesa Tellier, Tim Sunderland, Michael Noe, Mike Hentz, and Amarilis Drouillard

Disposition: Carried (12 to 0)

7.3 Emergency Plan and Communications Protocol

Moved: Allan Mayhew
Seconded: Marigay Wilkins

That Tri-County Water Board hereby receives the report from Magda Badura, Administrator and Jana Nethercott, Secretary re: Emergency Plan and Communications Protocol for the Tri-County Water System; and

That staff be directed to prepare a communications protocol and unsafe water contingency plan for the Tri-County Water System to be presented no later than the April 26, 2022 meeting.

For (12): Allan Mayhew, Angela Cammaert, Bonnie Rowe, Doug Bartlett, Duncan McPhail, Ken Loveland, Marigay Wilkins, Taraesa Tellier, Tim Sunderland, Michael Noe, Mike Hentz, and Amarilis Drouillard

Disposition: Carried (12 to 0)

8. Financials

Marigay Wilkins inquired when an asset management plan will be ready. Magda Badura stated that they are on track for the deadline. Doug Bartlett inquired if Tri-County has cyber insurance. OCWA staff to check to see if their Cyber Insurance covers Tri-County and report back.

8.1 2022 Budget

Magda Badura went through the Budget and explained this is proposing a rate increase to $1.06 which is a rate of $0.05.

Moved: Marigay Wilkins
Seconded: Taraesa Tellier

That Tri-County Water Board hereby approves the Multi-Year Budget as presented.

For (12): Allan Mayhew, Angela Cammaert, Bonnie Rowe, Doug Bartlett, Duncan McPhail, Ken Loveland, Marigay Wilkins, Taraesa Tellier, Tim Sunderland, Michael Noe, Mike Hentz, and Amarilis Drouillard

Disposition: Carried (12 to 0)

9. 2022 Meeting Dates

Moved: Mike Hentz
Seconded: Michael Noe

That the Tri-County Water Board hereby approve the meeting dates of January 25, April 26, July 26, October 18 and December 13 for the 2022 calendar year.

For (12): Allan Mayhew, Angela Cammaert, Bonnie Rowe, Doug Bartlett, Duncan McPhail, Ken Loveland, Marigay Wilkins, Taraesa Tellier, Tim Sunderland, Michael Noe, Mike Hentz, and Amarilis Drouillard

Disposition: Carried (12 to 0)

10. New Business

Tim Sunderland requested an update on the signing of the Master Agreement. Jana Nethercott stated that the agreement has been signed by 3 parties and will be sent to the 4th shortly and hopefully sent to Chatham-Kent, the final signatory in the new year. Once it has been signed an original will be delivered to each party.

11. Adjournment

Moved: Ken Loveland
Seconded: Bonnie Rowe

That the Tri-County Water Board hereby adjourn at 8:01 p.m. to reconvene on January 25, 2022 at 7:00 p.m. or at the Call of the Chair.

For (12): Allan Mayhew, Angela Cammaert, Bonnie Rowe, Doug Bartlett, Duncan McPhail, Ken Loveland, Marigay Wilkins, Taraesa Tellier, Tim Sunderland, Michael Noe, Mike Hentz, and Amarilis Drouillard

Disposition: Carried (12 to 0)

Duncan McPhail, Chair	Jana Nethercott, Recording Secretary

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Proposal for the Tri-County Drinking Water System – Coloured Water Challenges

SUBMITTED BY:

Ontario Clean Water Agency
2085 Hurontario Street, Suite 500,
Mississauga, ON L5A 4G1

Date: October 15, 2021

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Background

Over the years, the Tri-County Drinking Water System (DWS) has experienced water quality issues. The challenge of elevated colour has previously been attributed to:

- Oxidation downstream the membrane filter;
- Higher than normal algal growth in Lake Erie, due to unusually warmer weather and inhibited lake turnover.
- The presence of elevated dissolved iron and manganese (common metallic elements in the earth's crust and lake beds) due to anoxic conditions in warmer source water during the summer months.

Pleasing aesthetic qualities promotes public trust and confidence in drinking-water systems. While colour does not directly affect the safety of a water supply, it may cause *aesthetically objectionable* effects/render water unsuitable for use (e.g. low appeal, cause staining). Changes in tap water colour should be investigated as it is an indicator of change/degradation in raw water quality and potential public health concern(s).

The Ontario Clean Water Agency's (OCWA) Process Optimization and Technical Services (POTS) team has been asked to investigate the raw and treated water quality issues related to the water discolouration challenges at the Tri-County Drinking Water System (DWS). As part of the work, POTS will evaluate options available to improve the process at the Tri-County DWS and recommend the best solution(s) for dealing with these challenges. Our team has engaged in completing similar assessments for other systems across the province and some of these sites are highlighted in the table below.

Site Name	Region	Water Quality Challenge	Plant Rated Capacity (m^3/d)
Casselman WTP	Eastern	Manganese	3,182
Old Snow Valley WTP	Georgian Bay	Iron and Manganese	200-300
Deep River	Eastern	Corrosion challenges	13,638
Emo WTP	Northwestern	Disinfection-By-Products related raw water organic challenges	950
Verner WTP	Northeastern	Manganese	1,054
Kirkland Lake WTP	Northeastern	Manganese	22,500

Scope and Methodology

This proposal outlines the scope to investigate colour water issues at the Tri-County Drinking Water System (DWS) and to propose options for handling the issues.

The proposed scope includes:

1. **Review Plant Background Information:** A review of the DWS process (and configuration), previous studies and reports, current operations, MDWL/DWWP, historical operating data (including raw and treated water quality and quantity) and comparison to regulatory requirements.
2. **Identify Treatment Options/Modifications:** Research, evaluate and compare methods to respond to colour water issues at the Tri-County DWS. Evaluate the impacts of these options to other treatment challenges such as THMs/HAAs removal.
3. **Costing:** Complete a cost assessment (including high level lifecycle cost analysis) for the various options.
4. **Recommendations:** Provide prioritized recommendations for consideration based on information above and input from Operations staff.

Project Tasks

Task 1: Kick-Off and Information Gathering

Upon project approval, a kick-off call will be organized between the Process Optimization and Technical Services (POTS) group and the Southwest Region staff to confirm project objectives and the deliverables. Following the call, background information, including plant operational data, design documents, engineering studies, etc. will be gathered. The information will be reviewed to determine the site capabilities and requirements.

Task 2: System Evaluation

During this task, the following will be completed:

- An evaluation of the current operation, raw and treated water quality and quantity, inter-process challenges, regulatory review and compliance etc. This will help understand process challenges and establish the requirements for colour removal/reduction.
- Review of options to reduce colour challenges at the DWS. Evaluation of these options to other treatment challenges such as THMs/HAAs removal. Consider health and safety and efficacy of each option. Connect with surrounding communities facing the same challenges to identify the treatment approaches that they are using and the effectiveness of these approaches.
- Request quotations for the shortlisted options. Identify of key operational and maintenance requirements of each system. Explore life expectancy of the systems based on technical specifications and experience of users and suppliers.
- Life cycle cost analysis which includes capital, installation, operation and maintenance costs for each option; and
- Prioritize the technical options based on the analysis.
- Prepare a proactive monitoring program for early detection of the colour water events, and develop a jar testing procedure to optimize chemical dosage based on raw water quality changes.

Task 3 Technical Memorandum

Once the analysis is complete, a Draft Technical Memorandum will be prepared for the review by Regional staff. The memo will outline the results and findings of Task 2. The draft will first be presented

to the Southwest Region for internal OCWA review. After the Hub's comments are integrated, the findings will be presented to the Tri-County Board for their review. Once all parties have reviewed the document and comments are addressed, the memo will be finalized.

Project Team

The following personnel are proposed for this project:

- Senior Water/Wastewater Process Engineer – John Zhang, Ph.D., P.Eng
- Process and Energy Specialist – Scott Stewart, C.Tech
- Engineering Support – Jason Pereira
- QA/QC – Sangeeta Chopra, M.Eng, P.Eng

John Zhang, PhD, P.Eng – Senior Process Engineer

John has over 20 years of experience in water and wastewater engineering, process and hydraulics, and project management. He has worked with numerous municipal and industrial clients in Canada and internationally. In his work, John has evaluated processes, completed energy efficiency reviews and conducted facility optimization studies. John has special expertise in drinking water process optimization and troubleshooting, and had led diverse engineering projects related to treatment plant performance improvement, disinfection by-products reduction, color water treatment optimization, corrosion control, and Arsenic removal. John has more than 30 publications in water & wastewater fields and has held a number of research and consulting positions throughout his career. **John will be the Project Engineer for this assignment.**

Scott Stewart – Process and Energy Operations Specialist

Scott is a seasoned water/wastewater technician with over eight years of experience in the water/wastewater field. Through his career with OCWA, Scott has worked in various roles within the organization as support to compliance, operation, health and safety and maintenance services to water and wastewater facilities in Ontario. Scott brings with him hands-on operational experience that complements the services that POTS currently offers. **Scott will be the Operations Specialist for this** assignment.

Jason Pereira – Process Optimization Assistant

Jason is an engineering intern currently studying Chemical Engineering at the University of Toronto. Jason will be assisting the team for delivering this assignment. **Jason will assist in all aspects of the project, supporting the project team.**

Sangeeta Chopra, M.Eng, P.Eng – Director – Process Optimization and Technical Services

Sangeeta Chopra is a Professional Engineer with 20 years of experience in municipal and industrial water and wastewater planning, engineering, project management and delivery, operations and management. She has collaborated with municipalities, regulators, consultants, contractors, technology providers and stakeholders at all levels. Through her roles in both public and private sectors, she has employed technical knowledge to meet the needs of communities and assist clients with implementing solutions. **Sangeeta will provide QA/QC as required for this work**.

Schedule & Budget

Our estimated fee to complete the proposed evaluation and memorandum is $22,650 exclusive of HST for our professional fees and disbursements. This cost will be considered as an upset limit and will not be exceeded without the written consent of the Tri-County Board. The table below breaks down the hours by task.

1	Kick-Off & Information Gathering	20 hours
1.1	Project setup and initiation	2
1.2	Team Kick-Off Meetings and Client Kick-off	4
1.3	Background Information Investigation	10
1.4	Project Management & Communications	4
2	**System Evaluation**	**90 hours**
2.1	Review of data and current operation practices and inter-process Challenges	20
2.2	Review Options to Handle Water Quality Issues	15
2.3	Request for Quotations for Shortlisted Options	20
2.4	High-Level Cost Analysis	20
2.5	Prioritization of options and Sequencing for Tri-County DWS	15
3	**Technical Memorandum**	**40 hours**
3.1	Draft Tech Memo preparation	20
3.2	Draft Report Review	14
3.3	Tech Memo Revision and Finalization	6

We are ready to start the project immediately upon approval. The full project is expected to take 8-10 weeks complete from the date of approval, if all background information is available.

We appreciate the opportunity to submit this proposal and look forward to working with the Board on this important assignment. Please do not hesitate to contact the undersigned should you have any questions regarding our proposal.

Sincerely,

John Zhang, Ph.D, P.Eng.
Senior Water/Wastewater Process Engineer,
POTS

Sangeeta Chopra, P.Eng.
Director, POTS

From: Susan Budden
To: Jana Nethercott
Cc: Mark Harris; Dale Le Britton
Subject: Cyber Insurance
Date: January 18, 2022 11:27:14 AM

Good morning Jana,

I believe Cyber Insurance was discussed at the last meeting, and we were going to look into this with our Insurance dept. This is the response we received back from our Insurance department;

We (OCWA) have Cyber Liability coverage that covers our own negligence/liability/activities, but this does not extend to cover the Client's liability in the event of an cyber attack. Unfortunately we are not able to provide this to our clients like we do with Property/Boiler Machinery insurance.

It is recommended that Tri-County purchase it's own Cyber insurance.

Hope that clarifies things a little. If you have any question regarding this please let me know.

Take care,

Susan Budden (She/Her)
Business Development Manager | Southwest, Midwest & Essex Regions
Suite 370 – 450 Sunset Drive, St. Thomas, ON N5R 5V1
Cell: 519.318.3271 |
sbudden@ocwa.com

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Tri County Drinking Water System
Operations Report
Fourth Quarter 2021

Ontario Clean Water Agency, Southwest Region
Mark Harris, Sr. Operations Manager, Aylmer Cluster
Date: January 17, 2022

Facility Description

Facility Name:	Tri-County Drinking Water System
Regional Manager:	Dale LeBritton (519) 476-5898
Sr. Operations Manager:	Mark Harris (226) 545-0414
Business Development Manager:	Susan Budden (519) 318-3271
Facility Type:	Municipal
Classification:	Class 2 Water Distribution, Class 2 Water Treatment
Title Holder:	Municipality

Service Information

Area(s) Serviced:	West Elgin, Dutton/Dunwich, Southwest Middlesex, Newbury and Bothwell
Population Serviced:	9,985
No. of Connections:	
Water Meters:	Commercial / Residential
In Service Date:	2009

Capacity Information

Total Design Capacity:	12.160 (1000 m^3/day)
Total Annual Flow:	1,381 (1000 m^3/year)
Average Day Flow:	3.770 (1000 m^3/day)
Maximum Day Flow:	5.380 (1000 m^3/day)

Operational Description

Water treatment with intake in Lake Erie, 4 low lift pumps, lifting up to the treatment plant. Membrane filtration followed by injection with Sodium Hypochlorite for primary disinfection and into the 2 Storage Tanks. Pumping to tower & distribution system with 4 high lift pumps.

SECTION 1: COMPLIANCE SUMMARY

FIRST QUARTER:

There were no compliance issues to report during the first quarter.

SECOND QUARTER:

There were no compliance issues to report during the second quarter.

THIRD QUARTER:

On October 1st, 2021 an AWQI was reported to the MECP and the MOH as the monthly filter performance was not met for the month of September. To ensure inactivation of viruses, bacteria and microorganisms the membrane filtration system is required to meet performance criteria for filtered water turbidity of less than or equal to 0.1 NTU in 99% of the measurements each month. The filter performance was not met due to the coloured water event experienced at the Tri-County WTP during the month of September. The coloured water was produced as a result of elevated levels of iron and manganese in the source water (Lake Erie). The integrity of the membranes were not compromised and the UV disinfection system was in operation for the advance oxidation process during the entirety of the month. No corrective action was required.

FOURTH QUARTER:

There were no compliance issues to report during the fourth quarter.

SECTION 2: INSPECTIONS

FIRST QUARTER:

The report for the MECP inspection that was conducted on December 15th, 2020 was received on February 12th, 2021. The inspection had questions covering the following topics: Source, Capacity Assessment, Treatment Processes, Operations Manuals, Logbooks, Certification and Training, Water Quality Monitoring, Reporting & Corrective Actions, and Treatment Process Monitoring. The inspection rating was 95.44%. There was one non-compliance with regulatory requirements that was identified during the inspection. There was no follow up action required.

SECOND QUARTER:

There was no Ministry of Environment, Conservation and Parks (MECP) or MOL inspections conducted during the second quarter.

THIRD QUARTER:

MECP Inspector Angela Stroyberg was on site on September 9th, 2021 to observe the lake conditions which were causing the Tri-County WTP to produce yellow water. The cause of the yellow water was higher than normal levels of iron and manganese in Lake Erie.

FOURTH QUARTER:

A routine MECP inspection was conducted on December 17th, 2021 by Angela Stroyberg. The inspection report has not yet been received.

SECTION 3: QEMS UPDATE

FIRST QUARTER:

On January 14th, 2021 the thirty-six-month risk assessment was conducted to satisfy the requirements of Element 7 of the Operational Plan.

OCWA has been working on an initiative to modernize and enhance its current hard copy operational logbook practices to ensure compliance with regulatory requirements and to facilitate better record-keeping and communication regarding the operation of the drinking water and wastewater facilities that OCWA operates. This initiative has been accomplished by implementing electronic logbooks using the eRIS Logbook software at the facilities OCWA operates. These electronic logbooks meet the requirements of Ontario Regulations 128 and 129 as well as the Electronic Commerce Act. The MECP have been notified and have acknowledged OCWA's efforts in improving documentation with logbooks.

The implementation of electronic logbooks is expected to result in benefits for OCWA staff, the MECP and the clients in the following ways:

- Improved efficiency by being able to provide logbook records electronically.
- Facilitation of virtual inspections and logbook reviews, now and in the future. With the current ongoing challenges due to the COVID-19 pandemic, adherence to social distancing and other public health measures is critical. The accessibly of electronic logbooks makes it easier for OCWA and Ministry staff to adhere to such measures by reducing/eliminating the need for on-site visits.
- Better quality logbook entries, particularly those documenting unusual or abnormal operating conditions.
- Improved communication and operational oversight as the information is available immediately after entry through both desktop and mobile applications.
- Improved ability to proactively identify and respond to potential process and compliance issues.
- More consistent record-keeping practices

SECOND QUARTER:

There were no QEMS updates this quarter.

THIRD QUARTER:

An Internal Audit was conducted on August 25th, 2021 by Cindy Sigurdson. The audit report identified no non-conformances and eleven opportunities for improvement. These findings will be discussed at the next Management Review meeting, scheduled for November 4th, 2021.

The Essential/Emergency Service and Supply Contact List was updated by the QEMS Representative on August 23rd, 2021 to satisfy the requirements of Element 13 and 18.

FOURTH QUARTER:

On November 4th, 2021 a Management Review was conducted to discuss the standing agenda items and to review the Internal Audit findings in preparation for the re-accreditation audit scheduled for December 3rd, 2021. The annual Risk Assessment review was also conducted on November 4th, 2021.

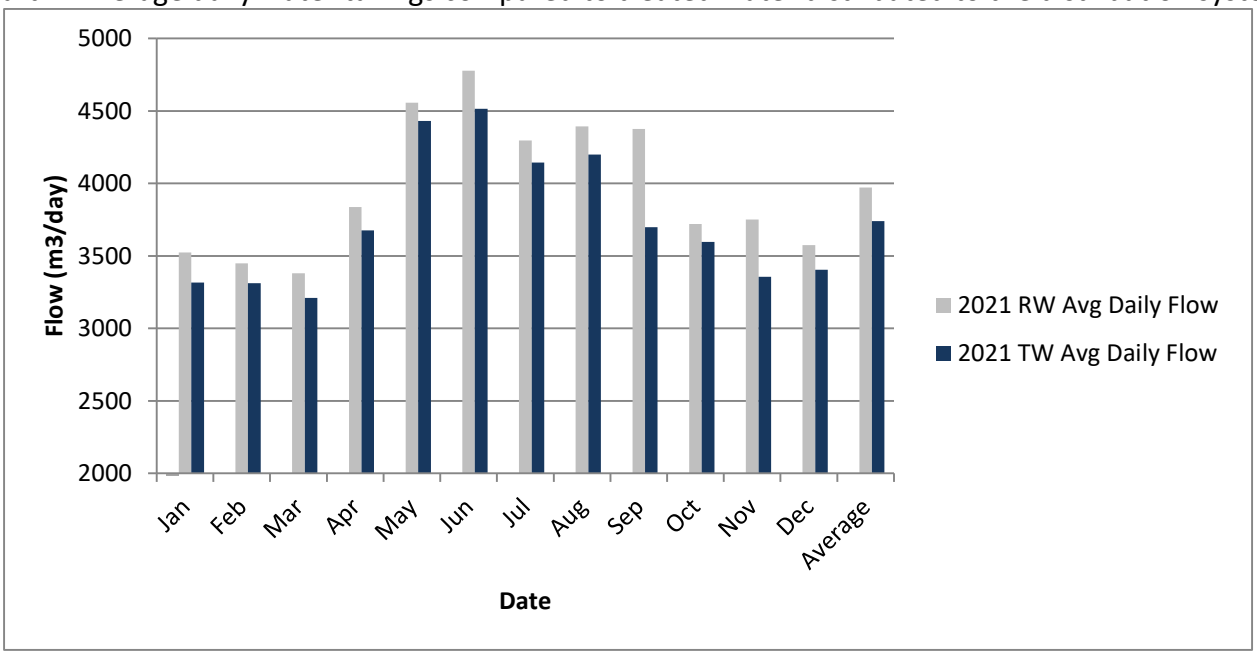
On December 3rd, 2021 Sandra Tavares from SAI Global was on site to conduct a re-accreditation audit. The audit report identified no non-conformances and three opportunities for improvement.

Facility Emergency Plan testing was conducted on December 7th, 2021 to satisfy the requirements of OP-18. Two contingency plans were reviewed and tested.

SECTION 4: PERFORMANCE ASSESSMENT REPORT

The plant is at 94.2% efficiency with the water taken from Lake Erie that is treated and sent to the distribution systems. Chart 1 below shows the raw water takings compared to the treated water distributed to the distribution system in 2021. The treated water average daily flow in September was reduced as the supply to Dutton-Dunwich was temporarily suspended during the yellow water event. The larger difference between raw water volumes and treated water volumes (reduced plant efficiency) is also due to the continuous operation of the water plant during the yellow water event. In November, plant efficiency was also reduced due to maintenance performed on the south storage tank that required the water to be overflowed as part of the disinfection procedure.

Chart 1: Average daily water takings compared to treated water distributed to the distribution system



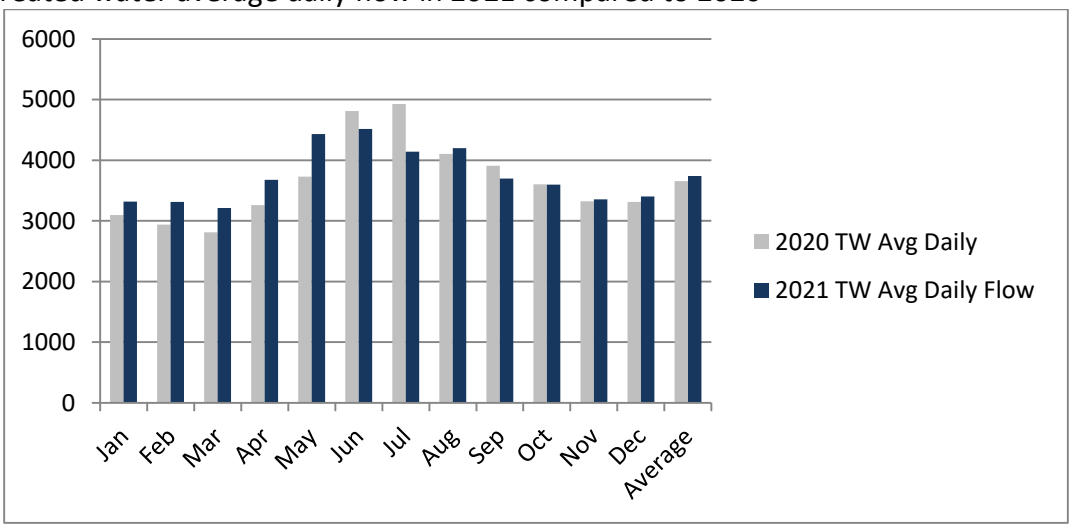
Raw water is sampled on a weekly basis and tested for E. coli and Total coliforms as per regulatory requirements. There are no limits identified in the regulations for E. coli and total coliform found in the raw water source. Table 1 below identifies the sample results for 2021.

Table 1: Raw water sample results 2021

	# Samples	E. Coli Range (cfu/100mL)	Total Coliform Range (cfu/100mL)
January	4	2 – 10	100 – 3300
February	4	0 – 2	2 – 1100
March	5	2 – 10	8 – 330
April	4	2 – 10	1 – 30
May	5	0 – 100	1 – 200
June	4	2 – 10	10 – 360
July	4	2 – 10	2– 300
August	5	0 – 2	2 – 820
September	4	2 – 10	46 – 800
October	4	100 – 100	100 – 500
November	5	2 – 100	2 – 300
December	4	2 – 100	2 – 13400

The raw water is treated through membrane filtration and chlorine disinfection. The treated water is distributed to the systems it serves though the high lift pumps. The average daily treated water sent to the distribution in 2021 was 3,741.03m^3/d. The average treated water flow in 2021 is up 2.3% when compared against the average daily flow in 2020. The Tri-County Drinking Water System is currently at 30.8% of its rated capacity. Chart 2 below depicts the treated water flow for 2021 compared to 2020 average daily flows.

Chart 2: Treated water average daily flow in 2021 compared to 2020



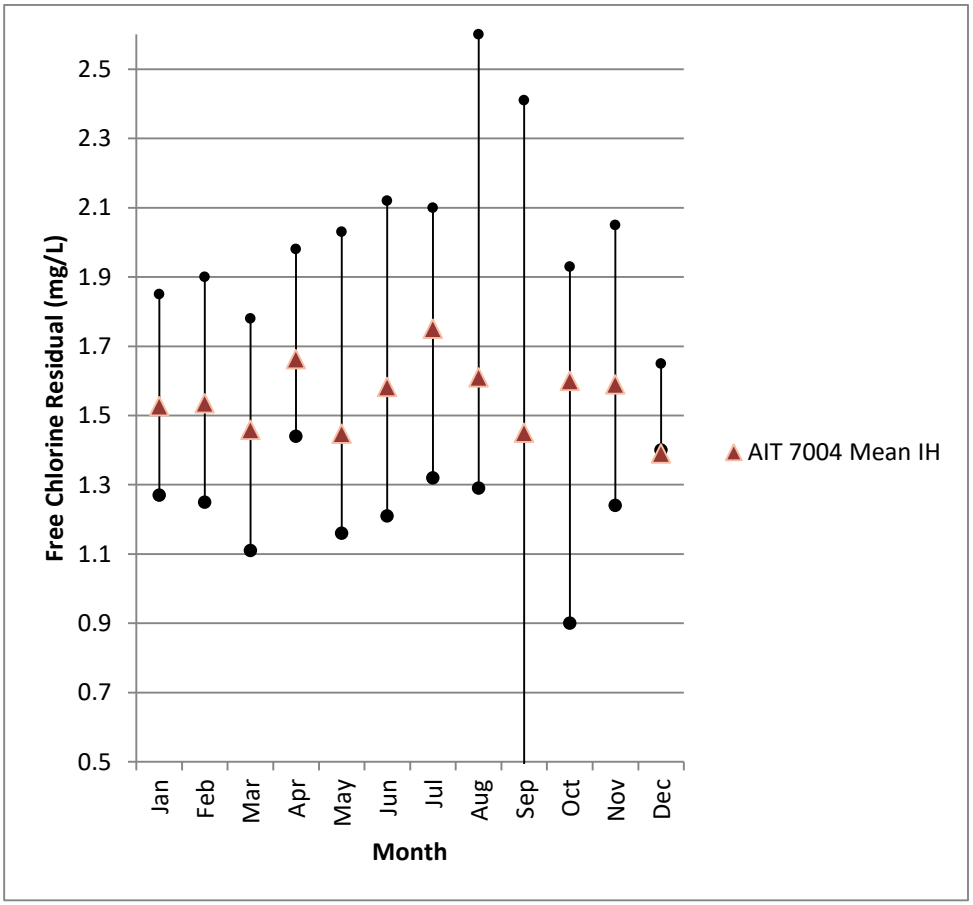
To ensure inactivation of viruses, bacteria and microorganisms the membrane filtration system is required to meet performance criteria for filtered water turbidity of less than or equal to 0.1 NTU in 99% of the measurements each month. The Tri-County Water Treatment Plant did not meet all regulatory requirements for inactivation in 2021. See Compliance Summary for details. Table 2 below shows the performance of each filter rack and the overall filter rack performance.

Table 2: Filter Rack Performance in 2021

	Rack 1 % Readings <0.1ntu	Rack 2 % Readings <0.1ntu	Rack 3 % Readings <0.1ntu	Rack 4 % Readings <0.1ntu	Overall Filter Performance (% readings <0.1ntu)
January	100.00	100.00	100.00	99.90	99.98
February	100.00	100.00	100.00	99.70	99.92
March	100.00	100.00	100.00	99.90	99.98
April	100.00	100.00	100.00	99.7	99.92
May	100.00	100.00	100.00	100.00	100.00
June	100.00	100.00	100.00	99.90	99.98
July	100.00	100.00	99.90	99.90	99.95
August	100.00	100.00	100.00	99.90	99.98
September	97.80	98.40	98.20	97.50	98.00
October	100.00	100.00	100.00	99.90	99.98
November	100.00	100.00	100.00	100.00	100.00
December	100.00	100.00	100.00	99.90	99.98

Along with turbidity, chlorine residuals are monitored throughout the treatment process by continuous online free chlorine analyzers. Residuals are maintained in order to provide adequate primary disinfection to meet inactivation of viruses, bacteria and microorganisms. The chlorine also provides adequate residuals in the distribution systems the treatment plant serves (secondary disinfection). Chart 3 below provides the online minimum, maximum and average readings of free chlorine provided to the distribution systems. All results have met regulatory requirements. The minimum chlorine reading for September was 0.38 ppm. Lower than normal readings were recorded due to the high chlorine demand caused by the high levels of iron and manganese.

Chart 3: Distribution System Free Chlorine Residuals



On a weekly basis the treated water is tested for E. coli, Total Coliforms and heterotrophic plate count (HPC). The limit for Total Coliform and E. coli is zero; heterotrophic plate count (HPC) doesn't have a limit. This is an operational guide to initiate an action plan if HPC results are continuously high. Table 3 below shows the number of samples taken each month along with the range of results. All samples have met regulatory requirements.

Table 3: Treated water sample results for 2021.

	# Samples	Total Coliform Range (cfu/100mL)	E. coli Range (cfu/100mL)	HPC (cfu/100mL)
January	4	0 - 0	0 - 0	<10 – <10
February	4	0 - 0	0 - 0	<10 – <10
March	5	0 - 0	0 - 0	<10 – 40
April	4	0 - 0	0 - 0	<10 – <10
May	5	0 - 0	0 - 0	<10 – <10
June	4	0 - 0	0 - 0	<10 – <20
July	5	0 - 0	0 - 0	<10 – <10
August	5	0 - 0	0 - 0	<10 – <10
September	4	0 - 0	0 - 0	<10 – 40
October	5	0 - 0	0 - 0	<10 – <10
November	5	0 - 0	0 - 0	<10 – <10
December	5	0 - 0	0 - 0	<10 – <10

*additional sample in October for the replacement of parts on PRV-7051 and in December for HLP-7020 return to service

The transmission main (distribution system) is sampled on a weekly basis at two locations for E. coli, Total Coliforms and heterotrophic plate count (HPC) to meet regulatory requirements. As with the treated water the limit for Total Coliform and E. coli is zero, heterotrophic plate count (HPC) doesn't have a limit. This is an operational guide to initiate an action plan if HPC results are continuously high. Table 4 below shows the number of samples taken each month along with the range of results.

Table 4: Distribution system sample results for 2021.

	# Samples	Total Coliform Range (cfu/100mL)	E. coli Range (cfu/100mL)	HPC (cfu/100mL)
January	8	0 - 0	0 - 0	<10 – <10
February	8	0 - 0	0 - 0	<10 – <10
March	10	0 - 0	0 - 0	<10 - <10
April	8	0 - 0	0 - 0	<10 - <10
May	10	0 - 0	0 - 0	<10 - <10
June	8	0 - 0	0 - 0	<10 - <10
July	8	0 - 0	0 - 0	<10 – <10
August	11*	0 - 0	0 - 0	<10 – <10
September	8	0 - 0	0 - 0	<10 - 30
October	8	0 - 0	0 - 0	<10 - <10
November	10	0 - 0	0 - 0	<10 – <10
December	8	0 - 0	0 - 0	<10 – <10

*Additional sample due to stratification testing at the WL standpipe

On a quarterly basis trihalomethanes are tested at two locations in the system. The first location is at the treatment plant prior to the water leaving the facility. The second location is at the end of the system, at the West Lorne Standpipe. Sampling from both locations provides information on how the THMs are forming in the system with retention time. There is an issue with elevated THMs in the distribution systems that the Tri-County Drinking Water System provides water to. Table 5 below provides the running average quarterly results; the running average limit for THMs is 100μg/L. All results are within regulatory requirements. However, THMs increase with increased retention time

therefore THMs in the distribution system the WTP serves can be much higher, even reaching the regulatory limit.

Table 5: Trihalomethane sampling results.

	Limit (µg/L)	Treated Water THM Result (µg/L)	West Lorne Standpipe THM Result (µg/L)
January 2021	-	16	25
April 2021	-	21	31
July 2021	-	31	34
October 2021	-	62	90
Running Average	**100**	**32.5**	**45**

On a quarterly basis Haloacetic Acids (HAAs) are now required to be tested as per regulatory requirements. They are sampled at two locations in the system. The first location is at the treatment plant prior to the water leaving the facility. The second location is at the end of the system, at the West Lorne Standpipe. Sampling from both locations provides information on how the HAAs are forming in the system with retention time. Table 6 below provides the current running average quarterly results; the running average limit for HAAs is 80µg/L. All results are within regulatory requirements.

Table 6: Haloacetic Acid sampling results.

	Limit (µg/L)	Treated Water HAA Result (µg/L)	West Lorne Standpipe HAA Result (µg/L)
January 2021	-	<5.3	12.5
April 2021	-	<5.3	13.5
July 2021	-	15.6	15.9
October 2021	-	27.2	40.3
Running Average	**80**	**13.3**	**20.5**

SECTION 5: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

Due to the on-going COVID-19 pandemic, precautionary protection measures remain in place at all facilities.

There were no additional Health & Safety issues identified during the first quarter.

SECOND QUARTER:

There were no additional Health & Safety issues identified during the second quarter.

THIRD QUARTER:

There were no additional Health & Safety issues identified during the third quarter.

FOURTH QUARTER:

There were no additional Health & Safety issues identified during the fourth quarter.

SECTION 6: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY:

04: Replaced CFP-8030 Cl pump with spare.
06: Koolen Electric on site to finish installing new LED lights in the plant, received new CO2 tank from Air Liquide.
08: Replaced Pneumatics card on rack #4 as old one had failed.
11: Flow control valve on Rack #4 failed closed. Replaced with new valve and actuator.
12: Franklin Empire on site for storage tank milltronics annual calibration.
14: Lakeside on site to complete annual calibration on raw temp. meter TIT-1403.
15: Farmington on site to replace mechanical seal on RFR Pump 4370.
18: Farmington on site to finish replacing mechanical seal on RFRP-4370.
19: VFD Solutions on site to troubleshoot LLP1030 VFD.
21: Received chemical delivery from FloChem: Captor, Citric Acid, Sodium Hydroxide.

FEBRUARY:

01: Changed raw aquarium DO sensor cap.
03: Venture Automations on site to changed air cards and air lines on Rack #2.
05: Contractor on site for compressor servicing.
09: Changed flow meter sensor FSL 4270 on EFM and CIP pump.
10: Air Liquide delivered new CO2 tank.
17: Air Liquide delivered new CO2 tank.
22: Changed pH probe and chlorine cap on AIT-5006.
25: Farmington on site to change PRV on air tank and fix pilot system on altitude valve at standpipe.

MARCH:

03: Air Liquide delivered a new tank of CO2.
09: Gerber Electric on site to install new controller SC 4200 on rack # 3 and 4, Hach also on site to install new turbidimeters (TU5300) on Racks 3 and 4.
11: Dielco on site to discuss plans for Phase 1 of discharge header work.
15: Flowmetrix on site for annual verification on flowmeters and pressure gauges.
17: Flowmetrix returned to complete annual verification of equipment.
17: ASL Roteq on site to remove HLP-7010 for servicing/repair.
23: Fixed the 2" PVC drain line on Rack #3, pre V3331.
23: Gerber Electric on site for HVAC maintenance/servicing.
24: Air Liquide delivered new CO2 tank.

SECOND QUARTER:

APRIL:

01: Eramosa remotely made some programing changes, allowing the high lift pumps to commence normal shutdown after the distribution PRVs reach <2% (original was <1.5%).
07. Air Liquide delivered new CO2 tank.
08: Eramosa on site for communications systems mapping/inspection.
14: Changed Low Lift PLC UPS with new unit.
15: Anchem on site to delivery bulk sodium hypochlorite.
21: Changed LL UPS for the aquarium controller (for pH and DO probes) as the current one has failed. (Used recently changed out low lift PLC UPS).
21: Completed annual maintenance of Kubota lawn mower. Changed air filter, oil filter, and oil.

22. Installed new second sample pump at the low lift.
27: Air Liquide delivered new CO2 tank.
28: Changed segment of 3/4" PVC hypo pipe from the hypo storage tank to the caustic tank due to a small leak.

MAY:
05: Air Liquide delivered new CO2 tank.
12: Repaired 3/4" PVC piping at union post-CFP-8030.
13: Air Liquide delivered new CO2 tank.
18: Chubb on site to work with Gerber on installation of new fire panel.
18: Gerber Electric on site to work with Chubb on installation of new fire panel.
18: Brenntag Canada delivered 8 chlorine gas cylinders to the low lift chemical building, and took back 7 empty cylinders.
19: Chubb on site to finish work on new fire panel.
19: Was performing maintenance on post-strainer turbidimeter AIT-2006. Changed bulb. Tried calibrating unit, but was unsuccessful after many attempts. Spoke with Hach tech. support who had us try making a dilution with our 4000NTU Formazin, which was unsuccessful. Hach tech. support thinks it may be an issue with the detector/sensor. Purchased new sensor and Formazin. Cleaned the lens, calibrated and now it is working properly.
26: Changed leaking 1/4" air hose from V4213 to its pneumatics card in chemical room.
26: Air Liquide delivered new CO2 tank.

JUNE:
02: PALL on site for annual inspection/servicing.
03: PALL on site for annual inspection/servicing.
04: FloChem delivered 2 totes of Captor, and 1 tote of Citric Acid.
04: Ontario Compressor on site for compressor inspection/servicing.
04: Finished maintenance on LL raw turbidimeter, changed bulb.
08: Air Liquide delivered new CO2 tank.
08: Watech on site this morning at 8:30am to prepare and conduct intake inspection.
11: Farmington is on site to test backflow preventers.
16: Changed sump pump float in Eagle East Chamber.
21: Air Liquide delivered new CO2 tank.
22: Changed 3/4" Spears Y-strainer on Captor line in chemical room.
25: Albert's Generators at WTP and Low Lifts performing Annual generator inspections and servicing.
30: Changed LL sediment filter pre-AIT-1401.
30: Gerber Electric on site to troubleshoot HLP-7020, and look at Silver Clay chamber leaking copper pipe.

THIRD QUARTER:
JULY:
07: ASL Roteq on site for HL Pump 1 installation.
12: Invasive Phragmites Control Centre on site for settling ponds phragmites removal.
13: Invasive Phragmites Control Centre on site for settling ponds phragmites removal.
14: Gerber Electric on site for Quarterly HVAC PM/servicing.
14: Metcon on site for Cl gas system maintenance.
15: Anchem arrived to deliver bulk chlorine.
15: Gerber Electric on site to continue Quarterly HVAC system servicing.

15: Gerber Electric repaired the broken copper line on the altitude valve in the Silver Clay chamber.
22: Anchem on site to deliver remainder of bulk Cl order.
23: Air Liquide on site to deliver CO2 tank.
27: PALL called to assist with setup of new PALL computer.
27: ASL Roteq on site to remove HLP-7020 for servicing.
29: Andrew from Metcon arrived to complete work on Cl gas system.
30: Air Liquide delivered new CO2 tank.

AUGUST:
05: Air Liquide delivered new CO2 tank.
06: Gerber Electric on site to replace parts on plant A/C unit of the HVAC system following their Quarterly inspection/servicing last month.
10: AmPro on site to fix mechanical seal on Recycle Pump RFRP-4370.
13: Dielco on site to troubleshoot the 24" shore line valve. We found that while turning the valve wheel, the valve was neither opening nor closing. The Dielco tech said he will look into the drawings of the valve and discuss next steps with Syntec.
13: Changed out control room UPS (back up battery) with new unit.
18: Landmark on site to do stratification test on West Lorne standpipe and install new fall arrest equipment.
19: Dielco on site to inspect shore line valve.
19: Brenntag delivered 8 new Cl cylinders and took back empties.
25: Air Liquide delivered new CO2 tank.

SEPTEMBER:
01: H2Flow on site for Annual inspection/servicing on both UV Reactors. All bulbs were changed, but only 2 quartz sleeves were changed as the technicians told us the other 6 were cleaned and are good to keep using.
02: H2Flow on site to continue Annual inspection/servicing on both UV Reactors.
02: Hach on site to do Annual warranty maintenance/inspection on rack turbidimeters and controllers.
02: Air Liquide delivered new CO2 tank.
15: Gerber on site to replace ballasts in both UV reactors.
17: Trojan on site too work on UV system.
22: Trojan on site to repair UV Reactor 1. Henri replaced the PLC logix card, wiper plunger assembly, and quartz sleeves #1-6. Henri re-enabled the wiper, and set the frequency to 8hrs.
22: Air Liquide delivered new CO2 tank.
23: Dielco on site to look at Low lift long line valve, Eagle east Chamber isolation valve for flow meter, Stand pipe for altitude valve.
23: Flowmetrix on site to replace pressure transmitter.
23: Received bulk Cl delivery from Lavo.
28: Syntec at low lifts to quote long line intake valve replacement.

FOURTH QUARTER:
OCTOBER:
06: Air Liquide delivered new CO2 tank.
06: ASL Roteq on site at low lift building to remove low lift pump LLP-1040 for servicing.
07: ASL Roteq on site at low lift building to remove low lift pump LLP-1040 for servicing.
07: Ampro on site to fix mechanical seal on Revers Filtration Recovery Pump RFRP-4370.

07: Ontario Compressor on site for routine compressor servicing.
08: Farmington inspected and cleaned out the inlet and outlet of the pilot system copper lines. He found some fouling and cleaned it up. He also inspected the suspected failed check valve on the 1" hydraulic check line. He confirmed it is failed and likely not sealing properly. He will get us a quote on a new check valve.
12: Dielco on site to install new ceiling hangers in chemical room.
12: Farmington on site to replace failed 1" check valve on PRV-7051 1" hydraulic check line.
12: Greatario on site to check leaks on South storage tank.
13: Cla Val found that our issue with the Wallacetown Dist. PRV (PRV-7051) Peter also updated the programming on both PRVs with updated software.
14: Dielco on site to continue installing new ceiling hangers in chemical room.
15: Dielco on site to continue installing new ceiling hangers in chemical room.
18: Dielco on site to continue installing new ceiling hangers in chemical room.
19: changed old flow control meter FSL4203 with new TURCK flow control meter.
21: Dielco on site to continue ceiling hanger upgrades in chemical room.
21: Manitoulin delivered 5 Cl gas cylinders (on behalf of Brenntag), and took back 8 empties.
25: Dielco on site to continue chemical room ceiling hanger upgrades.
26: Dielco on site to continue chemical room ceiling hanger upgrades.
26: Darrel and Vince from Elgin Fire Extinguisher on site to examine fire extinguishers.
26: Air Liquide delivered new CO2 tank.
27: Dielco on site to continue chemical room ceiling hanger upgrades.
27: Elgin Fire Extinguishers swapped out the extinguisher in the low lift chemical building with a new one.
28: Gerber on site to replace CP-2000 PLC UPS batteries.
29: Invasive Phragmites Control Centre on site for settling ponds phragmites removal.

NOVEMBER:
01: Ecoflo on site for annual septic system inspection.
01: Gerber Electric on site to change out UV MCP UPS batteries.
08: Greatario on site to repair leaks in storage tank 6020.
17: Air Liquide delivered CO2 tank.
18: Farmington on site to replace storage tank 6020 6" drain valve on front access hatch.
22: K&K locksmiths on site to replace lock on standpipe door.
25: Air Liquide delivered CO2 tank.

DECEMBER:
03: Flowmetrix on site to perform work on acid flow meter and pressure regulator post-Cl pump CFP-8030.
07: Venture Automation delivered new 240-214, G3 4-20mA input module for the acid and NoOH flow meters.
07: Gerber Electric on site to troubleshoot issue with acid flow meter output.
08: Air Liquide delivered CO2 tank.
10: Eramosa called to try and troubleshoot the issue with the acid flow meter reading higher on SCADA after the mA signal rises past 12mA.
13: Eramosa called to continue to try and fix the acid flow meter problem we are having and was successful.
14: ASL Roteq on site to return and install serviced high lift pump HLP-7020.

14: Installed new pressure regulating valve on the Cl board in the chemical room post-CFP-8030 due to a small leak at the back of the old valve. Leak is now gone.
16: Gerber Electric on site to perform annual maintenance on HVAC system.
17: Nevtro on site to replace inlet and outlet 12" gate valves in Eagle East Chamber.
29: Paris from Flowmetrix contacted me about the Wallacetown flow meter. He had me power the unit off and back on. Flow meter is now reading flow and is remaining out of fault.
29: Air Liquide delivered new CO2 tank.

SECTION 7: ALARM SUMMARY

FIRST QUARTER:

JANUARY:

No alarms received this month.

FEBRUARY:

07: Alarm received for Low Lift Pressure Fault. Operator attended site and changed the train at the low lift from East to West. Pressure returned to normal. Cause of the alarm due to cold weather.
20: Alarm received for Filtrate Tank Fault. Operator logged into SCADA and observed the duty storage tank level drop rapidly, caused by ice in the tank.
23: Alarm received for Low Lift Fault and High Lift Fault due to power flicker. Operator reset high lift and low lift pumps.

MARCH:

28: Alarm received for strainer inlet valve fault. Logged into SCADA. Valve MV-2002 was in fault in open position. Reset alarm. Put valve on manual and tried to open and close all was working as intended.

SECOND QUARTER:

APRIL:

09: Received alarm for Wallacetown elevated tank alarm. Logged onto SCADA and observed Wallacetown tower to be at 11.64m, high lift pumps were not running. High lift pumps to Wallacetown had not been running since 01:10. Disabled Wallacetown elevated tank alarm until level in tank drops below hi level to avoid callouts.
13: Got channel 12 alarm, surge relief valve stuck open. Checked SCADA. Low lift was running; PALL system was off. Try to reset PALL system, did not help. Called Pall support to help resolve the problem. Found that issue was in programming. PALL reinstalled the program and after everything returned to normal operation.
16: Received alarm due to Rack #2 failing IT. Checked SCADA and the differential pressure was 5.85 kPa. Found leak at top of one of the membrane cells at the fittings above and below the glass sight. Tightened fittings to resolve issue. Rack #2 underwent IT; passed, 1.26 kPa differential. Put rack back into Forward Flow.

MAY:

11: Received call from spectrum at 20:05 for UV discharge chlorine. Logged onto SCADA and observed chlorine at AIT5006 was 0.03ppm. Reset low lift pumps and system started. Storage tank was at 8.0m. Upon restart chlorine pumps started to inject chlorine and residual at AIT5006 increased. System now making water and dosing chlorine. Storage tank now at 8.4m. Will continue to monitor system remotely.

14: Got alarm for chlorine analyzer 5006 fault. Checked SCADA. pH and chlorine was high. System was off. Level in the tanks was 9.51 m. Reset the system and started to produce water. Everything returned to normal operation. Monitored the system to make sure all system is working normal. Chlorine and pH was high due to system stopped after rack # 2 finished EFM.

JUNE:

06: Received alarm at 14:29 for main generator running. Checked hydro one outage map but there were no recorded outages in the area. Logged onto SCADA and observed PALL system were disabled and from dialer menu, main generator was running. Placed compressor A online, once pressure had built up, PALL system was then placed into auto. High lift pump 3 appeared to be running at time of generator start, placed valve into manual, off and then back into auto. High lift pump 2 then started to send water to West Lorne tower. System currently producing water, high lift pumps currently sending water to both West Lorne and Wallacetown. Generator no longer running. Plant shut down due to power flicker and likely weather related. Will continue to monitor system remotely.
09: Received alarm for generator running and Pall system critical. Logged in on SCADA. Try to load Pall system; unsuccessful. Operator attended site and reset Pall system computer. Reset all systems and started to produce water. Monitored the system for 45 min to make sure everything working properly. Disruption to power due to power flicker.
12: Received alarm for Pall system critical. Logged into SCADA and all systems were off. Tried to reset remotely however could not reset VFD on RFR pumps. Operator attended site and reset VFD on electrical panel. Reset all systems and started to produce water. Monitored the system for 10 min. Thunderstorms in the area and a power flicker occurred.

THIRD QUARTER:

JULY:

03: Received call from Spectrum at 16:28 about civilians stuck in the low lift area. Contacted person who placed the call to Spectrum, then called ORO for directions. Was instructed to call D. LeBritton who then instructed me to go open gates at low lift. Elgin OPP was at low lift and wanted access to fenced area. Granted access to OPP. Boat onshore west of low lift building, civilians had left area upon arrival.
07: Received call from Spectrum at 19:34 for generator running. Logged onto SCADA remotely and observed from dialer both main generator and low lift generator were running. XRP2050 had also tripped and could not be reset from SCADA. Arrived at plant at 20:15, reset low lift pumps and MV7031 from SCADA, high lift pump 4 started up and is now sending water to West Lorne. Placed compressor B into duty and compressor A into standby. Once pressure had built up at PIT4711, placed the PALL system back into auto. The plant then started to produce water. Storage tank is currently at 9.0m, West Lorne is currently at 33.49m and Wallacetown at 10.22m.
Completed plant walk through, no other issues. Currently producing water and sending to West Lorne. Will continue to monitor remotely.

AUGUST:

07: Received alarm call for low D.O (dissolved oxygen). D.O. was 3.99 mg/l. Came to site. D.O. was 4.27 mg/l. Started AOP (advanced oxidation process) system as per SOP. Turned off pre-chlor system. Increased NaOCl set points from 1.75 mg/l to 2.0 mg/l. Changed low lift start set point from 9.0 m. to 9.1 m. Notified PCT and manager.
10: Received alarm for low raw DO. Notified ORO, arrived at low lift at approximately 00:30. Took DO reading from inside aquarium and obtained a reading of 2.34ppm. Took reading from shoreline and

obtained a reading of 7.94ppm. Proceeded to open shoreline valve where DO is reading higher. Notified ORO.
12: Received alarm for low level in wet well. Low lift pumps were off and the wetwell level was 3.53m. Restarted low lift pumps and waited for the system to start. Low lift pump did start, however the level in the wetwell dropped quickly and low lift shut down due to low level alarm. Upon arrival to low lift, it was observed that the wetwell had increased, however, had still not equalized to lake level. No visible structures or blockages near the shoreline intake. Performed a shore line backwash. Observed that the valve was not closing, instead the platform the valve had been bolted to was starting to lift. Spoke with ORO about the situation, he then instructed me to perform a backwash with the valve open, the water circulated through the wetwell but did not flush out the line to the lake. He then instructed me to open the valve and try closing again, however the same issue did arise. Opened the long line 5% to allow more flow into wetwells. Wetwell levels now normal during pump runs.

SEPTEMBER:
01: Received alarm for low lift chlorine analyzer fault. Logged in on SCADA. Checked chlorine at the low lift, it was 4,97 mg/l. Changed speed coefficient for Cl2 from 1.15 to 1.0. Check chlorine analyzer, chlorine is at 1,97 mg/l and going down, everything is back to normal.
02: Received alarm for UV reactor # 1 fault. Logged in on SCADA. Reactor # 1 was in fault. Check to make sure reactor # 2 start and working properly. Disable alarm for reactor # 1. Monitor the system for 30 min to make sure everything is working properly.
07: Received alarm for discharge chlorine analyzer fault. Logged in on SCADA. Checked chlorine it was 0.95 mg/l with no flow to distribution.
Changed chlorine set points from 2.4 mg/l to 2.6 mg/l. Change pre chlor set points residual from 0.4 to 0.5 and speed coefficient from 0.6 to 1.1Came on site. Calibrated discharge chlorine analyzer from 0.95 mg/l to 1.02 mg/l. Check trending chlorine was 0.95 mg/l for 1 hour with no flow. Checked distribution turbidity it was 0.57. Start high lift pump to bring chlorine up. Chlorine is now 1.22 mg/l, turbidity 0.68Came to low lift checked DO was 7.85. pH was lower than normal 7.2. Also pH at chlorine analyzer AIT 7001 and 7004 was lower than normal as well 7.63. Monitor the system to make sure everything is working normal. Chlorine at discharge chlorine analyzer AIT 7004 start to go down. Now it is 1.15 mg/l. Notified Sr. Operations Mgr and closed long line intake and opened shore line 90 %. Changed pre chlor from intake to wet well.
07: Received call from Spectrum for Strainer Raw Water Cl Analyzer AIT-2003 Fault. Looked on SCADA and saw that AIT-2003 was reading 2.55ppm and not in fault. The reading was coming down from a spike to 3.02ppm. Saw that a spike had passed through the Low Lift Raw Water Cl Analyzer AIT-1401 not long before, but was currently reading 0.51ppm. Monitored as AIT-2003 Cl reading dropped to 2.35ppm. Likely due to increasing the Cl gas dosage today. Notified ORO.
08: Received call from Spectrum for All Systems Critical Failure. Looked on SCADA and saw a power flicker had occurred. Both compressors, XRP and RFP pumps were faulted. Put compressor B back online. Could not remotely clear pump faults. Notified ORO and prepared to leave for the TCWTP. Arrived at WTP. Reset breakers on RFP-4320, XRP-2050 and XRP-2060. Started up plant and begun to observe it run. Air Compressor A is faulted out and will not turn back on. The fault is "VSD Fault 12". Looked through the manual and found there may be issues, observed the plant run for 30+ minutes and saw no further issues.
08: Received call from Spectrum for Raw Water Strainer Cl Analyzer fault. Operator reviewed SCADA and saw a spike had already passed by the analyzer, and was now reading 0.31ppm. Notified ORO, and then decreased the Cl gas dosage Speed Coefficient Multiplier down from 1.35 to 1.25. Decreased Cl dosage setpoint down from 2.70 to 2.60 due to rising Cl in distribution.

08: Received call from Spectrum for All Systems Critical Failure. Reviewed SCADA and saw an alarm for Too Few Racks Available. Rack #3 was disabled due to high turbidity. Started the rack up and the turbidity settled <0.1 NTU before the rack started producing water. Notified ORO.
08: Received a call from Spectrum for Distribution Turbidimeter AIT-7003 HI level alarm. Logged onto SCADA and saw that the analyzer was reading 1.02. The high lift pump had just shut down as Operator logged on as West Lorne Standpipe was full. Distribution Turbidimeter AIT-7003 is now reading 0.72 NTU. No alarms are present on the turbidimeter display. Filled PET bottles from the discharge line on AIT-7003, as well as the overflows of each storage tank. The colour seems pretty similar to the PET bottles filled yesterday for the overflow bottles. No noticeable colour change is present. Discussed with ORO, increased the AIT-7003 HI alarm setpoint up from 1.00 to 1.10, and the HIHI up from 1.05 to 1.15.
09: Received alarm call from Spectrum for All Systems Critical Failure. Reviewed SCADA and saw that an alarm was present for "Few Too Racks" alarm. Rack 4 disabled due to "Turbidity insta fail" alarm at 18:10, and Rack 2 disabled due to "Turbidity insta fail" alarm at 18:29. No spikes on trending are present for these two instances because these spikes occur after Air Scrubs and suspect they disable themselves during the delay time before the racks come back into production. Notified ORO and got ready to leave for the WTP. Arrived at WTP to respond to All Systems Critical Failure alarm, and to also watch the plant overnight. Upon arrival, Rack 4 turbidimeter was reading 0.51 NTU, and Rack 2 turbidimeter was reading 0.68 NTU. Put Racks 2 and 4 back into Auto and Forward Filter and the turbidimeters settled below 0.10 NTU by the time they were placed back into production. These spikes are occurring after air scrubs because the racks draw treated water from the storage tanks for back washing, and the treated water has high turbidity currently due to iron and manganese. Rack 3 disabled due to a "Turbidity Insta Fail" alarm. The reading on the Rack 3 turbidimeter is 1.19 NTU. Placed Rack 3 back into Auto and Forward Filter and the turbidimeter settled below 0.10 NTU by the time the rack was placed back into production. This spike occurred after an air scrub because the racks draw treated water from the storage tanks for back washing, and the treated water has high turbidity currently due to Iron and Manganese. No spike for this instance is present on trending likely because it disabled itself after the air scrub before it was put back into production.

FOURTH QUARTER:

OCTOBER:

09: Received call from spectrum at 11:40 for Wallacetown low level. It was observed the high lift pumps starting and then stopping because PRV-7051 would not open. Placed PRV-7051 into manual and open, however was unsuccessful. Placed PRV-7051 back into auto. Spoke with ORO and informed him the plant is unable to fill Wallacetown, and had not sent out water since 16:00 on 10/8/2021. Received call from ORO, who had just spoken with Dutton-Dunwich Operator. Wallacetown tower to be filled from alternate sources over the weekend.
09: Received alarm for discharge chlorine analyzer fault at 14:31. Logged onto SCADA and observed AIT-7004 was 0.98ppm, AIT-7001 had a reading of 1.43ppm. West Lorne Standpipe was at 35.76m, started up the high lift pumps and observed AIT-7004 residual to climb to 1.40ppm Called ORO, who instructed me to go into the plant and take grab samples at each analyzer. Arrived at plant, high lifts had just turned off. Took grab samples at analyzers AIT-7001, AIT-7004 and AIT-5006. All were reading correctly. Changed chlorine setpoint from 2.10ppm to 2.20ppm to increase the residual leaving the storage tanks.
10: Received call from spectrum for Wallacetown tower alarm. Logged onto SCADA and observed Wallacetown tower at 11.96m. Changed hi and hihi setpoints as we are not sending water to Wallacetown tower this weekend. Received call from spectrum for discharge header chlorine. Logged onto SCADA and observed AIT-7004 to be 0.89ppm.

10: Received call from spectrum for Discharge chlorine analyzer, notified ORO. Arrived at West Lorne Standpipe to take a grab sample from the distribution system. Obtained a reading of 0.93ppm, high lifts were not running at the time the sample was taken. Arrived at plant, AIT-7004 was reading 0.80ppm, grab sample was reading 0.83ppm. Notified ORO. Adjusted LO and LOLO setpoints to 0.70ppm and 0.65ppm to avoid future callouts. High lift pumps have started and sending water to West Lorne Standpipe. Residual at AIT-7001 is currently at 1.48ppm, residual at AIT-7004 is currently at 1.52ppm. Upon startup of the high lift pumps, it was observed that the residual at AIT-7004 rose to the current reading of 1.52ppm from 0.80ppm. Will continue to monitor remotely.
11: Received call from spectrum for discharge analyzer fault. Logged onto SCADA and observed AIT-7004 at 0.65ppm, High lift pumps had just turned off. Spoke with ORO and adjusted settings.
29: received call from spectrums for UV reactor 1 faulted.
31: received call from spectrums for UV reactor #2 fault.

NOVEMBER:
18: Received alarm for reactor 2 fault system automatically switched to reactor 1. Disabled reactor 2 alarm for the night will look into the problem the morning.

DECEMBER:
11: Received call from spectrum for low lift intrusion, low lift pump fault and high lift pump fault. Arrived at plant, low lift pumps and high lift pumps were in fault. Reset low lift pumps and high lift pumps. MV-7041 was open, placed in manual, stopped and placed back into auto. Upon reset of high lift pumps, high lift pump 1 started and is now sending water to Wallacetown. West Lorne Standpipe is currently at 34.19m and Wallacetown currently at 8.84m. Storage tanks at 9.56m and 9.67m. Alarms most likely due to power flicker from high winds in the area.
29: Received alarm call from answering service for, "West Elgin Water Treatment Plant, Gateway Net 1, Now Normal". Logged onto SCADA remotely and saw two high lift pumps feeding both dist. trains and one low lift pump on. Saw on the alarm page the alarm was for "Possible Data Historian Failure", but was brief and cleared itself before I logged on. Checked trending and data was still present and looked okay. Monitored for another 15min and everything is working fine. Issue suspected due to power flicker.

SECTION 8: COMMUNITY COMPLAINTS & CONCERNS

FIRST QUARTER:
No complaints or concerns this quarter.

SECOND QUARTER:
No complaints or concerns this quarter.

THIRD QUARTER:
JULY:
02: Received call from Municipality of West Elgin that a customer on Elm Street in West Lorne has lost water pressure. Grant S from West Elgin attending residence; and he will give us a call if there is an issue. Called Sr. Operations Manager for distribution system to notify.

AUGUST:
No complaints or concerns this month.

SEPTEMBER:

On September 8th, 2021 several community complaints were received at the Tri-County WTP from residences concerned about coloured water in their homes. Notification was sent to all Municipalities who receive water from the Tri-County System informing them of the elevated levels of iron and manganese in the source water causing coloured water to be produced at the treatment plant. The Tri-County Water Board also issued a statement informing residents of the reason for the issue and the measures being taken to rectify the situation.

FOURTH QUARTER:

No complaints or concerns this quarter.

Update for the pH Pilot Project at Tri-County Water Treatment Plant

Overview

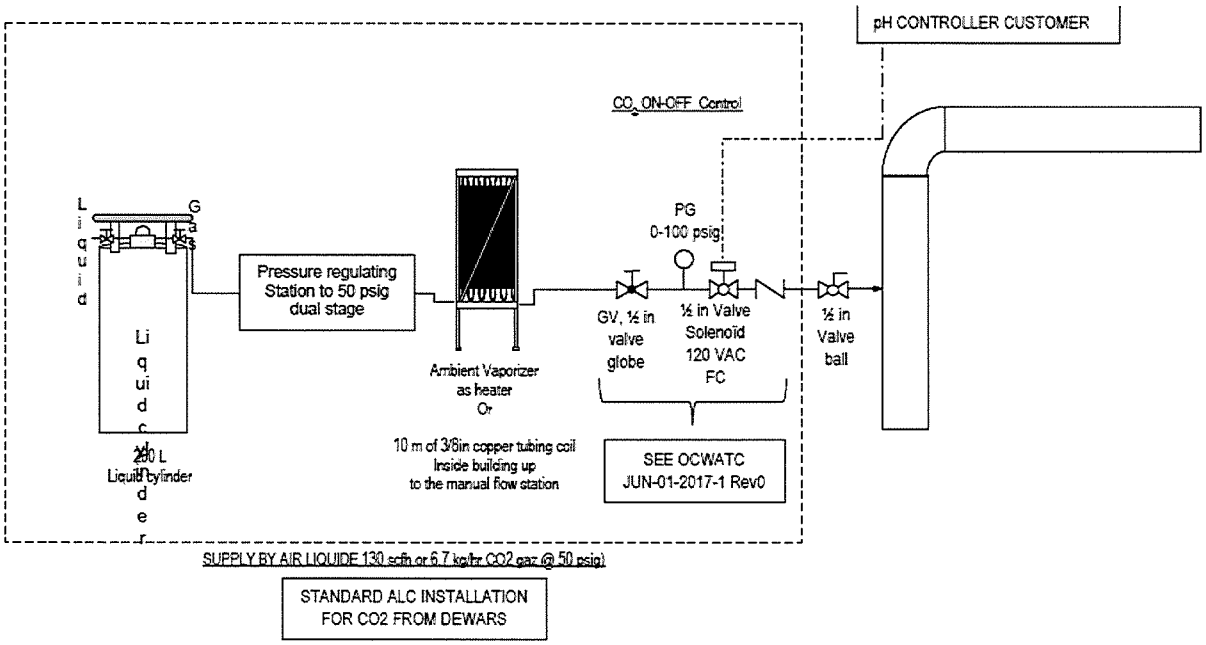
The Tri-County WTP has been experiencing higher pH levels in the raw water supply which can result in potential disinfection issues when the pH rises above 8.5. The only pH control available was to use the gas chlorine system on the raw water intake in order to lower the pH. This was used year round to ensure when using sodium hypochlorite for primary disinfection that the pH levels were maintained below 8.5. This practice was not ideal as the system was designed for zebra mussel control and to supplement for primary disinfection. The current design was not intended for pH control. As well, the Tri-County DWS experiences high total THM concentrations that are further increased when using chlorine on the raw water. In 2010, the decision to use carbon dioxide to reduce the pH was decided when Stantec was consulted in regards to the higher pH values as along with the increase in THM formation since the start-up of the new water treatment plant in 2009. Stantec looked into alternative chemicals to reduce pH however, carbon dioxide was determined to be the most suitable option.

Carbon Dioxide

Carbon dioxide (CO2) was the preferred option for pH control. This is due in part to the ease of operation as well as being safer for handling. CO2 can effectively adjust pH without the consumption of alkalinity and has a high level of process control. As mentioned, it is much safer and easier to handle than bulk liquid acids. Any leaks can be vented to atmosphere without posing a risk to the health and safety of the public/operators. The reaction of CO2 with water produces carbonic acid which further breaks down into carbonates and bicarbonates. This reduces the pH through the hydrogen ions that are produced. Carbon dioxide monitoring equipment was installed to ensure the safety of our workers. The carbon dioxide is purchased through Air Liquide Canada Inc. which is NSF/ANSI 60 certified for drinking water.

Equipment Installation

The manifold is provided by Air Liquide and contains two 240L CO2 cylinders attached to manifolds that automatically switch the cylinder in use based on the cylinder pressure. The manifold has three pressure gauges; one pressure gauge for each cylinder and one pressure gauge for line pressure. When the pressure in the cylinder drops to 200 psig it will automatically switch the feed to the other cylinder and a red light on the manifold will appear indicating a replacement of the cylinder is required. The CO2 is injected based on a feedback loop through the PLC and the SCADA system which operates based on pressure as well as the downstream pH values. The goal of the injection system is to ensure that the pH doesn't drop below 7.5.



SCADA Control

The solenoid valve that controls the feed of the carbon dioxide is controlled by the SCADA system which opens when the pH level is above the user controlled setpoint (value set at 7.5). The system will only feed the carbon dioxide when there is a sufficient flow rate coming from the lowlift pumps. Alarms are initiated should the pH reach the high or low level alarms which are user controlled setpoints. These alarm conditions, if activated will shut down the system to ensure no further water is produced nor pumped to the distribution system. If faults occur on the analyzers that control the opening/closing of the solenoid valve then the valve is defaulted to close.

Process Control

Sufficient continuous monitoring of pH levels already existed at the Tri-County WTP in order to provide the necessary information for alarming and control of the carbon dioxide system. The CO2 system is injected after the strainers at the WTP in the raw water prior to the membrane filters. This allows for sufficient mixing to lower the pH prior to the addition of sodium hypochlorite ito meet primary disinfection.

Additional Monitoring/Testing

Schedule C of the DWWP stipulates additional required monitoring for this pilot project. As specified in the DWWP, quarterly samples are to be collected from two residential plumbing locations and tested for lead and copper, along with additional water quality parameters for LSI calculation. In addition to these requirements, Alkalinity and pH will be monitored more frequently than the regulatory requirements set out in O. Reg. 170/03 Schedule 15.1. Alkalinity is being monitored in the raw water, treated water and at the end of the Tri-County DWS at the West Lorne Standpipe. The system is also being monitored for

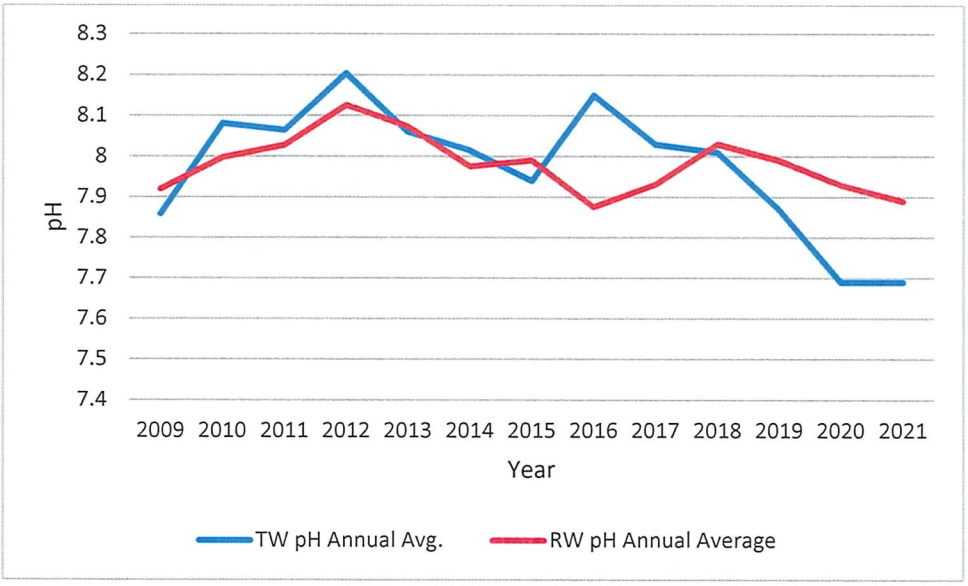
disinfection by-products (THMs and HAAs) in the treated water as well as the distribution water at the West Lorne Standpipe.

Monitoring/Testing Results

The pH adjustment has benefited the disinfection system as optimal disinfection occurs when pH levels are maintained at 7. The higher the pH the more hypochlorite (OCl-) is present which is 100 times less effective as a disinfectant as opposed to hypochlorous acid (HOCl). Therefore, adjusting the pH to below 8.5 is crucial to ensure effective disinfection of the drinking water.

The pH of the treated water is stabilized when using the CO2 system. The annual average pH value in 2020 and 2021 was 7.69, refer to Chart 1 . With this lower pH in the treated water the disinfectant is in the hypochlorous acid form and provides more effective disinfection.

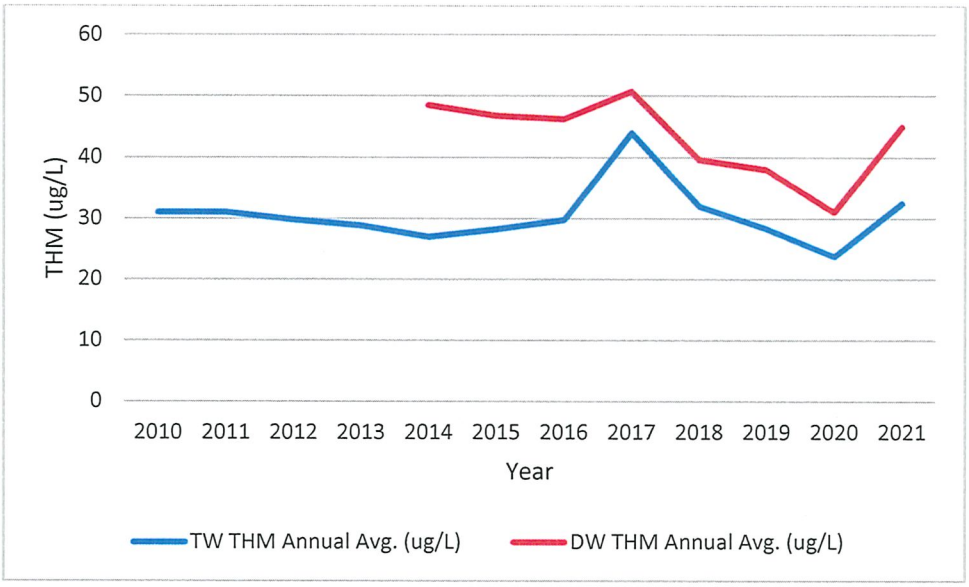
Chart 1. pH of the raw water compared to the treated water.



THMs results have shown a reduction since the CO2 system was installed in 2019, refer to Chart 2. However, the THM average in 2021 showed an increase. There are a variety of factors that contribute to THM formation:

1. Higher pH
2. Higher organic loading
3. Chlorine demand

Chart 2. Annual average THM concentration in treated water and distribution water.



In 2021, Lake Erie experienced a low dissolved oxygen event resulting in a fish kill. This likely had an effect on the THM results due to an increase in organic load and chlorine demand.

Distribution System Sampling Results

Alkalinity monitoring has been conducted to ensure sufficient alkalinity is provided to maintain a stable pH throughout the distribution system. Maintaining a stable pH and sufficient alkalinity in the system is imperative for corrosion control of lead, copper and iron and for the stability of cement-based linings and pipes. For a pH between 7-9.5, optimal alkalinity for lead control is between 30 and 45 mg/L as calcium carbonate. The lowest concentration observed is 88mg/L.

There have been two plumbing test locations sampled on a quarterly basis for alkalinity, copper and lead. These results have indicated no adverse effects.

Cost Summary

We currently operate with two tanks on site at all times and order 1 replacement tank every two weeks subject to raw water flows and pH. A review of life cycle costing took place with the chemical supplier and it appears that the majority of the system has an asset life of 15 years. It is anticipated that annual costs related to pressure relief valve/actuators could average out at around $1,000.00 per year potentially. In 15 years, the gas manifold may require replacement and the current price of that unit is around $6,000.00.

There is a monthly rental invoice which is based on the number of tanks on-site at a given time and the daily rate per tank is $1.47/day. The monthly rental on tanks depending on how many are on site at a given time during the month could range from $140.00 to $170.00 per month. The chemical cost is $310.50 per tank and we would go through around 2 tanks per month. The amount of usage depends on raw water pH and flows.

The following table provides an overview of operating costs which are generally comprised of the tank rentals and carbon dioxide usage.

Year	Costs
2020	$8,744.22
2021	$9,305.86 to date

With respect to costs, it seems to be a very cost effective process in the lowering of pH with low life cycle costs going forward.

Summary

Overall the pH Pilot program has shown to be effective at stabilizing and lowering the pH levels in the treated water for disinfection purposes. There have been no adverse effects to the distribution system by the addition of the CO2. THM results were showing a steady decline, with the exception of 2021. This could be from the poor water quality experienced in the fall of 2021.

At this point, we seek board direction on whether we can continue with this process and seek MECP authorization to incorporate into our Drinking Water Works Permit.

Cindy Sigurdson

Safety, Process and Compliance Manager

Mark Harris

Senior Operations Manager

UNSAFE WATER

TRIGGER

Any instance where unsafe water occurs and affects end users. (i.e., adverse water quality)
Some causes may be attributed to the following;
A contamination of the raw water source that may be beyond the capabilities of the treatment processes.
A confirmed sewage or chemical contamination in the distribution system.

IMMEDIATE ACTIONS

Action Item	Action Description	Responsibility
1.	Tri-County WSS Representative (Rep.) or Designate to work with OCWA to develop appropriate messaging.	Tri-County WSS Rep. or Designate & OCWA
2.	Make phone contact with all mandatory Member Municipality and Customer Emergency Contacts from the Communication Protocol Document. Contact the individual listed as contact, or designate.	Tri-County WSS Rep. or Designate
3.	If contacted by the media, direct them to the Tri-County WSS Rep. or Designate. If the Tri-County WSS Rep. or Designate is not available direct media to the Tri-County WSS Chair. In the event that the Tri-County WSS Chair be unavailable direct media to the OCWA Regional Hub Manager.	Tri-County WSS Rep. or Designate or Chair or OCWA RHM
4.	Once the instance has been rectified, provide updated messaging to all Member Municipalities. Contact the individual listed as contact, or designate.	Tri-County WSS Rep. or Designate

Revision History

Date	Revision #	Reason for Revision
2012-12-14	0	CP issued

EMERGENCY CONTACTS LIST

Emergency Services	
Name	**Contact Number**
Ambulance, Police, Fire	911
OPP General Inquiries(Non-Emergency)	1-888-310-1122
Hospital Four Counties Hospital (Newbury) St. Thomas Elgin General Hospital (St. Thomas)	 519-693-4441 519-631-2030
Coast Guard Marine Pollution and Emergencies	800-265-0237

Notifications ***Note: Requirements for notifications are set out in CPs and SOPs***	
Name	**Contact Number**
Ministry of Environment and Climate Change(MECP) Spills Action Centre (SAC)	Tel: 1-800-268-6060 Fax: 1-800-268-6061
MECP London District Office	Tel: 519-873-5000 Tel: 1-800-265-7672
Local Medical Officer of Health (MOH) (Southwestern Public Health)	Tel: 519-3631-9900 Tel: 1-800-922-0096 After Hrs: 1-800-922-0096
Ministry of Labour (MOL) *In an emergency, always call 911 immediately*	Tel: 1-877-202-0008 Fax: (905) 577-1316
Environment Canada *(Note: immediate verbal notification is through **MECP SAC**)*	e-mail: Ec.FA-LP-On.ec@canada.ca Fax: (819) 420-7382
Electrical Safety Authority (ESA)	Tel: 1-877-372-7233
Downstream WTPs Elgin Area Primary Water Supply System	Tel: 519-782-3101
Source Water Protection Lower Thames Valley Conservation Authority	Tel: 519-354-7310

Fire Departments

Note: To be notified in case of pressure loss or potential loss of service, each member municipality to provide notifications to their Fire Departments

Name	Contact Number
West Elgin Fire Department	Fire Chief Cell: 519-494-0060 Deputy Fire Chief Cell: 519-494-1247
Dutton Dunwich Fire Department	Fire Chief Cell: Deputy Fire Chief Cell:
Southwest Middlesex Fire Department	Fire Chief Cell: Deputy Fire Chief Cell:
Newbury Fire Department	Fire Chief Cell: Deputy Fire Chief Cell:
Chatham Kent Fire Department (Bothwell Station)	Fire Chief Cell: Deputy Fire Chief Cell:

OCWA Contacts

Position	Name	Contact Number
Operations Management		
Vice President - Operations	Terry Bender	Cell: (519) 384-3045
Regional Manager	Dale LeBritton	Cell: (519) 476-5898
OCWA 24/7 Emergency Hotline (Level 3 Emergencies)	If you are unable to make contact with the VP of Operations or Regional Manager, call SAC (1-800-268-6060) and tell them you are contacting the OCWA 24/7 Emergency Hotline	
Senior Operations Manager	Mark Harris	Cell: 226-545-0414
Overall Responsible Operator (ORO)	Mark Harris Vitaliy Talashok	Cell: 226-545-0414 Cell: 226-378-8986
Safety Process and Compliance Manager	Cindy Sigurdson	Cell: 226-377-3563
Operations Staff		
Operator		Tel: 519-768-1820 After Hrs: 519-435-6472
Process and Compliance Technician	Maegan Garber	Cell: 226-374-4349

Owner Contacts		
Position	**Name**	**Contact Number**
West Elgin CAO	Magda Badura	Tel: 519-785-0560 x 221 Cell: 519-319-2312
Tri-County Board Secretary (Alternate contact)	Jana Nethercott	Tel: 519-785-0560 x 222 Cell: 519-878-1178

Mandatory Member Municipality and Customer Emergency Contacts		
Position	**Name**	**Contact Number**
Southwest Middlesex CAO	Jill Belchamber-Glazier	Phone: 519-287-2015 Cell: 519-494-0010
Dutton Dunwich CAO	Heather Bouw	Cell: 519- 857-9601 Alt:
Newbury Clerk-Treasurer	Cathy Case	Cell:519-384-5514 Alt: 519-490-4533
Chatham Kent - PUC General Manager	Tim Sunderland	Cell: 226-229-0094
Chatham Kent – Alternate Contact	Darren Galbraith	Cell: 519-350-1552
Chatham Kent – Alternate Contact	Scott Sparling	Cell: 519-350-0116

Designated Media Spokesperson

In an emergency, the client has directed that: Unless unavailable, the OCWA Regional Manager will be the primary media spokesperson. All statements, updates and releases shall be filtered to the Board thru the Board Secretary on behalf of the Media spokesperson.

Media inquiries shall be handled only by a designated media spokesperson. If you are contacted by a member of the media, do not to attempt to answer media questions. Record the time of the call and the media outlet. Ask for their contact information and advise them that the appropriate spokesperson will return their call. Forward the message to a designated media spokesperson. Regional and national media requests should be directed to the Emergency Information Officer. Local media should be directed to the designated Hub spokesperson named below.

Position	Name	Contact Number
Tri County WSS Representative	Jana Nethercott	Cell: 519-878-1178
Alt Contact: OCWA Regional Hub Manager	Dale LeBritton	Cell: 519-476-5898
2nd Alt Contact OCWA Senior Operations Manager	Mark Harris	Cell: 226-545-0414

ESSENTIAL SUPPLIES & SERVICES

It will be the responsibility of each member municipality to secure essential supplies and services for their respective communities, as part of their individual emergency plans.

Revision History

Date	Revision #	Reason for Revision
2022-01-25	0	Create List

Tri-County Water Board

Income Statement

For the Year Ended December 31, 2021

		2021 Forecast	2021 Actuals	2021 Budget
Revenues				
02-7315-6110	BANK INTEREST - **Note 1**	- 3,017.77	- 3,017.77	- 17,000.00
02-7315-6590	WATER REV - MUNICIPAL - **Note 2**	- 1,332,711.93	- 1,248,301.04	- 1,342,617.49
Expenses				
02-7315-7500	HYDRO - **Note 3**	269,709.31	247,909.31	279,631.29
02-7315-7501	GAS - **Note 4**	24,012.09	20,812.09	23,000.00
02-7315-7510	INSURANCE	19,747.80	19,747.80	19,747.80
02-7315-7511	TAXES	64,911.83	64,911.83	67,357.14
02-7315-7520	Grounds Maintenance - Phragmites Control	19,627.22	19,627.22	18,000.00
02-7315-7529	ADMINISTRATION EXPENSE	7,000.00	7,000.00	7,000.00
02-7315-7532	LICENSES & PERMITS	750.00	750.00	-
02-7315-7601	TELEPHONE & INTERNET	8,547.84	8,547.84	8,600.00
02-7315-7675	LEGAL - **Note 5**	5,322.83	5,322.83	5,000.00
02-7315-7676	AUDIT	3,765.12	3,765.12	3,765.12
02-7315-7680	CONTRACTED SERVICES	440,667.00	440,667.00	440,667.00
02-7315-7681	Asset Management	40,876.00	40,876.00	40,876.00
02-7315-7900	TRANSFER TO RESERVE - **Note 6**		-	-
02-7315-7901	TRANSFER FROM RESERVES	-	-	- 151,476.86
02-7315-8000	CAPITAL OVER $10,0000	205,814.76	205,814.76	597,450.00
		-$ 224,977.90	**-$ 165,567.01**	**$ -**

Notes:

Note 1 **Bank Interest**
Annual interst 0.29%

Note 2 **Water Revenue**
December reads not booked

Note 3 **Hydro**
Billed Jan - Nov

Note 4 **Gas**
Billed Jan- Nov

Note 5 **Legal**
Tri-County Water Board Agreement

Note 6 Transfer to Reserves

Awaiting QTR 4 Invoices from OCWA

Reserves:

Balance at Jan 1, 2021	**$ 1,040,659.58**
Transfer to Reserves	224,977.90
Balance at Dec 31, 2021	**$ 1,265,637.48**