Tri-County Water Board of Management Agenda

May 21, 2024, 7:00 p.m.
Council Chambers
160 Main Street
West Lorne

Pages

1. Call to Order

2. Adoption of Agenda

   Recommendation:
   That Tri-County Water Board hereby adopts the Agenda for May 21, 2024, as presented.

3. Disclosure of Pecuniary Interest

4. Minutes 1

   Recommendation:
   That the Tri-County Water Board hereby adopts the minutes of February 6, 2024, as presented.

5. Business Arising from Minutes

6. Staff Reports

   6.1 Annual Report 2023 6

   Recommendation:
   That the Tri-County Water board hereby acknowledge receipt of the Annual Water Report, 2023, previously received by email, March 18, 2023.

6.2 S. Smith - Operations Report Q1 21

Recommendation:
That the Tri-County Water Board hereby receives the Tri County Drinking Water System Operations Report, First Quarter 2024 dated May 17, 2024, from Sam Smith, Sr. Operations Manager, Ontario Clean Water Agency, Southwest Region

6.3 Financials as of April 30, 2024 29

Recommendation:
That Tri-County Water Board hereby acknowledge receipt of the Financials as of April 30, 2024.

7. Discussion - Servicing Moravian on the Thames

8. Adjournment

Virtual meeting to Approve the Draft Financial Statements - Tuesday, June 11, 2024, 7:00pm.

Regular Meeting, West Elgin Council Chambers, Tuesday, August 20, 2024, 7:00pm.

Recommendation:
That the Tri-County Water Board hereby adjourn at _____ pm, to meet again at 7:00pm, on Tuesday, June 11, 2024, or at the Call of the Chair.

Tri-County Water Board of Management

Minutes

Date: February 6, 2024, 7:00 p.m.
Location: West Elgin Council Chambers
160 Main Street
West Lorne

Present:	**Allan Mayhew, Southwest Middlesex** **Mike Hentz, Dutton Dunwich** **Amarilis Drouillard, Dutton Dunwich** **Bill Denning, West Elgin** **Don McCallum, Southwest Middlesex** **Kevin Derbyshire, Newbury** **Mike Sholdice, Southwest Middlesex** **Ryan Statham, West Elgin** **Darren Galbraith, Chatham-Kent** **Michelle Navackas, West Elgin**
Regrets:	**Taraesa Tellier, West Elgin** **Corey Pemberton, Dutton Dunwich**
Staff Present:	**Magda Badura, CAO/Treasurer** **Cathy Case, Newbury** **Dale Le Britton, OCWA** **Maegan Garber, OCWA** **Robin Trepanier, OCWA** **Sam Smith, OCWA** **Terri Towstiuc, Clerk**
Regrets:	**Tracey Johnson, Dutton Dunwich**

1. Call to Order

Vice Chair Bill Denning called the meeting to order at 7:00 pm.

2. Adoption of Agenda

TCWB 01

Moved: Allan Mayhew, Southwest Middlesex
Seconded: Mike Hentz, Dutton Dunwich

That Tri-County Water Board hereby adopts the Agenda for February 6, 2024, as presented.

Disposition: Carried

3. Disclosure of Pecuniary Interest

No disclosures

4. Minutes

TCWB 02

Moved: Don McCallum, Southwest Middlesex
Seconded: Amarilis Drouillard, Dutton Dunwich

That the Tri-County Water Board hereby adopts the minutes of October 19, 2023, as presented.

Disposition: Carried

5. Business Arising from Minutes

None.

6. Reports

6.1 Tri County Drinking Water System Operations Report, Fourth Quarter

TCWB 03

Moved: Amarilis Drouillard, Dutton Dunwich
Seconded: Mike Hentz, Dutton Dunwich

That the Tri-County Water Board hereby receive the Tri County Drinking Water System Operations Report, Fourth Quarter 2023, presented by Sam Smith, Sr. Operations Manager, OCWA, for information purposes.

Disposition: Carried

6.2 2024 Insurance Renewal

M. Badura reviewed the insurance policy for Tri-County Water, and advised of the mandatory increases, with a total 14% increase in 2024. Members discussed the rising cost of insurance across all Municipalities, and feel additional cyber insurance is worth looking at, with the growing number of cyber attacks everywhere.

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TCWB 04

Moved: Allan Mayhew, Southwest Middlesex
Seconded: Don McCallum, Southwest Middlesex

That the Tri-County Water Board hereby receives the report from M. Badura CAO/Treasurer, re: 2024 Insurance Programs as set out in the renewal documents provided by Intact Public Entity dated December 21, 2023.

Disposition: Carried

7. Financials, as of December 31, 2023

M. Badura, CAO/Treasurer provided the year-to-date Financials for December 31, 2023. Ms. Badura advised that the year has not been closed out due to manual calculations required for West Elgin, however, will be reconciled and brought back for acknowledgement at the next scheduled meeting.

TCWB 05

Moved: Mike Hentz, Dutton Dunwich
Seconded: Darren Galbraith, Chatham-Kent

That Tri-County Water Board acknowledge receipt of the Year-to-Date Financials, dated December 31, 2023.

Disposition: Carried

8. Items Requiring Discussion

8.1 Agreement and Tri-County Background

The board was presented with the current agreement, and discussed the potential to become Incorporated, to allow Tri-County Water Board to exist as a corporate structure, and less as a community board. This will allow the group to apply for government grants to assist with large expenditures and project, which is currently not an option under the existing agreement. The board expressed interest in obtaining a legal opinion and discuss again at the next meeting.

TCWB 06

Moved: Allan Mayhew, Southwest Middlesex
Seconded: Mike Hentz, Dutton Dunwich

WHEREAS West Elgin, Southwest Middlesex, Dutton Dunwich, Chatham-Kent, and Newbury established a joint municipal service board known as

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the Tri-County Water Board to govern the management of the System and oversees the operation of the Tri-County Water System; And

WHEREAS the Tri-County Water Board receives the current agreement dated January 12, 2022 and background history of the Tri-County Water Board for review and discussion;

NOW THEREFORE, in consideration of the current agreement, the Tri-County Water Board direct staff to obtain a legal opinion regarding a revised agreement and bring back to the next Regular Meeting.

Disposition: Carried

9. Correspondence

9.1 Housing Enabling Water Systems Fund

For Information Purposes Only.

9.2 Dillon Consulting letter dated February 1, 2024 Re: Tri-County Water Board Growth and Capacity Assessment

M. Badura presented the board with a proposal from Dillon Consulting regarding a Water Growth and Capacity Assessment, with a purpose of potentially increasing the water usage, and increasing revenue for long-term financial sustainability. The board discussed the need for Economic Development and Marketing strategies, to bring new and large users to the system. OCWA confirmed the capacity is available, to increase new usage.

TCWB 07

Moved: Mike Hentz, Dutton Dunwich
Seconded: Bill Denning, West Elgin

That Tri-County Water Board acknowledge receipt of the letter dated February 1, 2024 from Dillon Consulting Re: Tri-County Water Board Growth and Capacity Assessment; And

That Tri-County Water Board direct staff to schedule a joint meeting to discuss a marketing strategy, including OCWA and both Elgin County and Middlesex Marketing and Economic Development departments, and report back to the board at the next regular meeting.

Disposition: Carried

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10. Adjournment

TCWB 08

Moved: Don McCallum, Southwest Middlesex
Seconded: Darren Galbraith, Chatham-Kent

That the Tri-County Water Board hereby adjourn at 8:15 pm, to meet again at 7:00pm, on Tuesday, May 21, 2024, or at the Call of the Chair.

Disposition: Carried

Bill Denning, Vice-Chair

Terri Towstiuc, Recording Secretary

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Ontario Clean Water Agency
Agence Ontarienne Des Eaux

February 23rd, 2024

Tri-County Water Board

C/O Magda Badura
22413 Hoskins Line
Rodney ON, N0L 2C0

Re: Requirement Under the Safe Drinking Water Act for a Summary Report

Dear Mrs. Badura,

Attached is the 2023 Summary Report for the Tri-County Drinking Water System for January 1st to December 31st, 2023. This report is completed in accordance with Section 11 and Schedule 22 of O. Reg. 170/03, under the Safe Drinking Water Act.

This Summary Report is to be provided to the members of the Southwold Municipal Council. Please ensure this distribution by March 31, 2024.

Section 12 of O. Reg. 170/03, requires the Annual Report required under Section 11 of O. Reg. 170/03 and the Summary Report be made available for inspection by any member of the public during normal business hours, without charge. The reports should be made available for inspection at the office of the municipality, or at a location that is reasonably convenient to the users of the water system.

Please feel free to contact me should you require any additional information regarding these reports. I can be reached at 519-870-7841.

Sincerely,

Matthew Belding
Process and Compliance Technician

c.c. Terri Towstiuc, Municipality of West Elgin's Clerk
Dale LeBritton, OCWA's Regional Hub Manager
Sam Smith, OCWA's Senior Operations Manager
Maegan Garber, OCWA's Safety, Process and Compliance Manager

Tri-County Drinking Water System

Waterworks # 260091117
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The Tri-County Water Board

Reporting Period of January 1st – December 31st 2023

Issued: February 23rd, 2024

Revision: 0

Operating Authority:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

This report has been prepared to satisfy the annual reporting requirements in O.Reg 170/03 Section 11 and Schedule 22.

Table of Contents

Revision History

Date	Revision #	Revision Notes
02/23/2024	0	Report Issued

Report Availability

This system does not serve more than 10,000 residence and the annual reports will be available to residents at the West Elgin Municipal Office. Notification will be at the Municipal Office and copies provided free of charge, if requested. The West Elgin Municipal Office is located at, 22413 Hoskins Line in the Town of Rodney. The Table below lists the Drinking Water Systems, which receive all their drinking water from the Tri-County Drinking Water System:

Drinking Water System Name	Drinking Water System Number	Copy provided
West Elgin Distribution System	260094627	Yes

Compliance Report Card

Compliance Event	Date	# of Events
Ministry of Environment Inspections	January 24th, 2024	1
Ministry of Labour Inspections	N/A	0
QEMS External Audit	December 13th, 2023	1
AWQI's/BWA	N/A	0
Non-Compliance	N/A	0
Community Complaints	N/A	0
Spills	N/A	0
Watermain Breaks	N/A	0

System Process Description

Raw Source

The Tri-County Drinking Water System consists of the Tri-County Water Treatment Plant (WTP) and the

Tri-County Transmission Main. The Tri-County WTP is a membrane filtration surface water treatment facility with a total design capacity of 12,160m^3/day, located at 9210 Graham Road in the Municipality of West Elgin. The low lift pumping station is located south of the WTP at 8662 Graham Road, on the shores of Lake Erie.

The water treatment facility consists of an intake system, a low lift pumping station, a treatment system and distribution pumping system. The Tri-County Drinking Water System serves the following systems: Southwest Middlesex, West Elgin, Dutton-Dunwich, Newbury and Bothwell Distribution Systems. The Southwest Middlesex and West Elgin Distribution Systems receive all their water directly from the Tri-County Drinking Water System. Dutton-Dunwich receives a portion of their water supply from the Tri-County Drinking Water System with the remainder coming from the Southwold Distribution System. Newbury and Bothwell Distribution Systems receive water indirectly from the Tri-County Drinking Water System via the Southwest Middlesex Distribution System.

Intake:

The intake consists of one 700mm diameter polyethylene pipe extending approximately 610m into Lake Erie at a depth of 5.7m. A zebra mussel chemical control system is used seasonally. There is a second intake located at the shoreline, this is used only as a backup if required due to water quality or a blockage. The raw water is screened by two coarse screens.

Low Lift Pumping Station:

Raw water is pumped from the low lift wet wells by four low lift pumps to the Water Treatment Plant.

Treatment

Filtration:

At the water treatment plant the water is pre-filtered by four automatic strainers to protect the filter membranes from coarser particles and algae in the raw water. The raw water pH is lowered if required by the use of carbon dioxide.

After the water has been strained it enters the membrane filtration system which removes fine particles, sediment, algae, protozoa and bacteria. Filtered water can be directed through the UV advanced oxidation process (AOP) unit to the treated water storage tanks.

Disinfection:

Disinfection is achieved by the use of sodium hypochlorite for primary disinfection. Note that UV is intended for use with hydrogen peroxide (AOP) for taste and odor control. The treated water is stored in treated water storage tanks where it is pumped into the distribution network by the high lift pumps. Post chlorination of the treated water is done at two points. The first dosing point is upstream of the treated water storage tanks and the second dosing point is downstream of the four high lift pumps before the distribution header.

Process Drain Water:

Waste water from the floor drains and online analyzers are directed to the process water handling facilities that include a settling basin and constructed wetlands. Flush water that cleans the pre-strainers and the membranes is also sent to the process water handling facilities.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Chlorine Gas	Zebra Mussel Treatment	Lavo
Sodium Hypochlorite 12%	Primary Disinfection	Lavo
Hydrogen Peroxide 50%	Advanced Oxidation	FloChem
Citric Acid 50%*	Cleaning of Membranes	FloChem
Caustic Soda 50%*	Cleaning of Membranes	FloChem
Calcium Thiosulfate (Captor) 30%*	Cleaning of Membranes	FloChem
Carbon Dioxide	pH Control/Adjustment	Air Liquide

*chemicals used in the cleaning process of membranes

Distribution

The Tri-County Drinking Water System consists of the Tri-County Water Treatment Plant (WTP) and the Tri-County Transmission Main. The Tri-County Drinking Water System serves the following systems: Southwest Middlesex, West Elgin, Dutton-Dunwich, Newbury and Bothwell Distribution Systems. The Southwest Middlesex and West Elgin Distribution Systems receive all their water directly from the Tri-County Drinking Water System. Dutton-Dunwich receives a portion of their water supply from the Tri-County Drinking Water System with the remainder coming from the Southwold Distribution System. Newbury and Bothwell Distribution Systems receive water indirectly from the Tri-County Drinking Water System via the Southwest Middlesex Distribution System.

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
There were no adverse water quality incidents reported during the reporting period.						

Non-Compliance

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliance issues reported during the reporting period.				

Non-Compliance Identified in a Ministry Inspection:

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliances identified during this period.				

The Tri-County Drinking Water System was inspected on January 24th, 2024 by Provincial Officer, Meghan Morgan of the Ministry of Environment, Conservation and Parks (MECP). The inspection has not yet been concluded. The previous MECP inspection was completed on March 20th, 2023. This inspection was also completed by Provincial Officer, Meghan Morgan.

The routine MECP inspections have an Inspection Rating Record, which evaluates the system to provide information for the owner/operator on areas that need to be improved. The particular areas that were evaluated for the Tri-county Drinking Water System were: Source, Capacity Assessment, Treatment Process, Treatment Process Monitoring, Operations Manuals, Logbooks, Security, Certification and Training, Water Quality Monitoring, Water Quality Assessment, and Reporting and Corrective Actions. The 2023 inspection report identified no non-compliances and thus received an Inspection Rating Record of 100%.

Flows

The Tri-County Drinking Water System is classified as a Large Municipal Residential System that operates under Municipal Drinking Water License #043-101, Issue 7, Drinking Water Works Permit #043-201, Issue 8, and Permit to Take Water #5062-C4UG4R. The Permit to Take Water (PTTW) specifies flow rates and total water takings permitted from Lake Erie. For the Tri-County DWS, the maximum flow rate limit is 9,400L/min. The total daily water taking is 13,500m^3/day. The rated capacity of the plant, as specified in the MDWL, is 12,160m^3/day of treated water.

Raw Water Flows

The raw water flows are regulated under Permit to Take Water #5062-C4UG4R. 2023 raw flow data was submitted to the Ministry of Environment, Conservation and Parks electronically. The confirmation and a copy of the data that was submitted are attached in Appendix B.

The following table is a summary of the raw flows including total, average, and maximum daily flows, and peak flow rates for the reporting period. As well, a comparison of flows to the Permit to Take Water limits. The overall daily taking of water was not exceeded during the reporting period. The Tri-County DWS is at 31.7% capacity for the average daily water taking limit, which is up by 2.6% from last year.

Month	Total Flow (m^3)	Average Day Flow (m^3/day)	% of PTTW Limit	Max Day Flow (m^3/day)	% of PTTW Limit	Max Day Flow Rates (L/s)	% of PTTW Limit
January	119,119.9	3,842.58	28.5	5,970.50	44.2	124.9	79.7
February	118,759.4	4,241.41	31.4	5,138.60	38.1	122.0	77.9
March	123,343.0	3,978.81	29.5	4,211.00	31.2	126.9	81.0
April	122,500.7	4,083.36	30.2	5,760.10	42.7	128.0	81.7
May	146,196.1	4,716.00	34.9	6,300.70	46.7	133.1	84.9
June	160,889.2	5,362.97	39.7	7,288.70	54.0	137.8	87.9
July	147,730.2	4,765.49	35.3	5,953.20	44.1	138.8	88.6
August	137,142.6	4,423.95	32.8	5,766.40	42.7	138.3	88.3
September	124,744.2	4,158.14	30.8	5,426.80	40.2	140.5	89.7
October	122,278.3	3,944.46	29.2	4,547.50	33.7	139.7	89.2
November	111,596.3	3,719.88	27.6	4,586.70	34.0	136.2	86.9
December	129,537.4	4,178.63	31.0	5,259.90	39.0	131.7	84.0
Total	1,563,837.3						
Average		4,284.49	31.7				
Maximum				7,288.70	54.0	140.5	89.7

Treated Water Flows

The treated water flows are regulated under the Municipal Drinking Water Licence.

The following table is a summary of treated water flows including total, average, and maximum daily flows for the reporting period. As well, a comparison of flows to the Municipal Drinking Water Licence (MDWL) rated capacities is provided. The daily average flow for 2023 was 4,030.72m^3/day, which is an increase by 5.39% from 2022. The maximum daily flow for the reporting period was 7,142.30m^3/day. The plant is operating at 33.1% of its rated capacity; this is up from 2022 by 12.6%. The Tri-County DWS is capable of meeting its current uses for the system. It is operating at well below the limits set out in the Permit to Take Water and the design capacity for the plant specified in the MDWL.

Month	Total Flow (m^3)	Average Day Flow (m^3/day)	% of Rated Capacity	Max Day Flow (m^3/day)	% of Rated Capacity
January	113,492.30	3,661.04	30.1	4,550.60	37.4
February	111,310.80	3,975.39	32.7	4,887.70	40.2
March	110,208.20	3,555.10	29.2	4,244.50	34.9
April	117,272.50	3,909.08	32.1	5,135.20	42.2
May	142,244.30	4,588.53	37.7	6,121.70	50.3
June	149,950.60	4,998.35	41.1	7,142.30	58.7
July	137,940.20	4,449.68	36.6	5,557.60	45.7
August	131,212.10	4,232.65	34.8	5,346.00	44.0
September	114,858.80	3,828.63	31.5	4,645.10	38.2
October	114,215.50	3,684.37	30.3	4,917.70	40.4
November	104,058.20	3,468.61	28.5	4,678.90	38.5
December	124,447.80	4,014.45	33.0	5,183.30	42.6
Total	1,471,211.30				
Average		4,030.72	33.1		
Maximum				7,142.30	58.7

Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E.Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw Water	52	0	<500	0	<15400		
Treated Water	53	0	0	0	0	<10	<30
Distribution Water	104	0	0	0	0	<10	<1000

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity (Rack 1)	8760	0.00	9.68
Turbidity (Rack 2)	8760	0.00	9.99
Turbidity (Rack 3)	8760	0.00	10.00
Turbidity (Rack 4)	8760	0.00	9.80
Free Chlorine (Primary Disinfection)	8760	1.36	3.71
Free Chlorine (Secondary Disinfection)	8760	1.06	2.44
Free Chlorine (Distribution—Grab)	412	0.62	2.17

NOTE: spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O.Reg 170/03.

Inorganic Parameters

These parameters are tested as a requirement under O.Reg. 170/03. Sodium and Fluoride are required to be tested every 60 months. Nitrate and Nitrite's are tested quarterly and the metals are tested annually as required under O.Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O.Reg 169/03
- BDL = Below the laboratory detection level

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2023/01/16	<MDL 0.6	6.0	0	0
Arsenic: As (ug/L) - TW	2023/01/16	0.7	10.0	0	0
Barium: Ba (ug/L) - TW	2023/01/16	25.5	1000.0	0	0
Boron: B (ug/L) - TW	2023/01/16	20	5000.0	0	0
Cadmium: Cd (ug/L) - TW	2023/01/16	0.007	5.0	0	0
Chromium: Cr (ug/L) - TW	2023/01/16	<MDL 0.08	50.0	0	0
Mercury: Hg (ug/L) - TW	2023/01/16	<MDL 0.01	1.0	0	0
Selenium: Se (ug/L) - TW	2023/01/16	0.24	50.0	0	0
Uranium: U (ug/L) - TW	2023/01/16	0.375	20.0	0	0

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Additional Inorganics					
Fluoride (mg/L) - TW	2019/05/06	0.12	1.5	0	0
Nitrite (mg/L) - TW	2023/01/03	<MDL 0.003	1.0	0	0
Nitrite (mg/L) - TW	2023/04/04	<MDL 0.003	1.0	0	0
Nitrite (mg/L) - TW	2023/07/10	<MDL 0.003	1.0	0	0
Nitrite (mg/L) - TW	2023/10/03	<MDL 0.003	1.0	0	0
Nitrate (mg/L) - TW	2023/01/03	0.127	10.0	0	0
Nitrate (mg/L) - TW	2023/04/04	0.391	10.0	0	0
Nitrate (mg/L) - TW	2023/07/10	0.222	10.0	0	0
Nitrate (mg/L) - TW	2023/10/03	0.042	10.0	0	0
Sodium: Na (mg/L) - TW	2019/05/06	9.72	20*	0	0

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L.

Schedule 15 Sampling:

The Schedule 15 sampling is required under O.Reg 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	4	8	92	101	N/A	0
pH	4	8	7.04	7.76	N/A	0
Lead (ug/l)	-	-	-	-	10	-

Organic Parameters

These parameters are tested annually as a requirement under O.Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2023/01/16	<MDL 0.02	5.0	0	0
Atrazine + N-dealkylated metabolites (ug/L) - TW	2023/01/16	0.09	5.0	0	0
Azinphos-methyl (ug/L) - TW	2023/01/16	<MDL 0.05	20.0	0	0
Benzene (ug/L) - TW	2023/01/16	<MDL 0.32	1.0	0	0
Benzo(a)pyrene (ug/L) - TW	2023/01/16	<MDL 0.004	0.01	0	0
Bromoxynil (ug/L) - TW	2023/01/16	<MDL 0.33	5.0	0	0
Carbaryl (ug/L) - TW	2023/01/16	<MDL 0.05	90.0	0	0
Carbofuran (ug/L) - TW	2023/01/16	<MDL 0.01	90.0	0	0
Carbon Tetrachloride (ug/L) - TW	2023/01/16	<MDL 0.17	2.0	0	0
Chlorpyrifos (ug/L) - TW	2023/01/16	<MDL 0.02	90.0	0	0
Diazinon (ug/L) - TW	2023/01/16	<MDL 0.02	20.0	0	0
Dicamba (ug/L) - TW	2023/01/16	<MDL 0.2	120.0	0	0

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
1,2-Dichlorobenzene (ug/L) - TW	2023/01/16	<MDL 0.41	200.0	0	0
1,4-Dichlorobenzene (ug/L) - TW	2023/01/16	<MDL 0.36	5.0	0	0
1,2-Dichloroethane (ug/L) - TW	2023/01/16	<MDL 0.35	5.0	0	0
1,1-Dichloroethylene (ug/L) - TW	2023/01/16	<MDL 0.33	14.0	0	0
Dichloromethane (Methylene Chloride) (ug/L) - TW	2023/01/16	<MDL 0.35	50.0	0	0
2,4-Dichlorophenol (ug/L) - TW	2023/01/16	<MDL 0.15	900.0	0	0
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2023/01/16	<MDL 0.19	100.0	0	0
Diclofop-methyl (ug/L) - TW	2023/01/16	<MDL 0.4	9.0	0	0
Dimethoate (ug/L) - TW	2023/01/16	<MDL 0.06	20.0	0	0
Diquat (ug/L) - TW	2023/01/16	<MDL 1.0	70.0	0	0
Diuron (ug/L) - TW	2023/01/16	<MDL 0.03	150.0	0	0
Glyphosate (ug/L) - TW	2023/01/16	<MDL 1.0	280.0	0	0
Malathion (ug/L) - TW	2023/01/16	<MDL 0.02	190.0	0	0
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2023/01/16	0.02	50.0	0	0
Metolachlor (ug/L) - TW	2023/01/16	<MDL 0.02	80.0	0	0
Metribuzin (ug/L) - TW	2023/01/16	<MDL 0.3	80.0	0	0
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2023/01/16	<MDL 1.0	10.0	0	0
Paraquat (ug/L) - TW	2023/01/16	<MDL 0.04	3.0	0	0
PCB (ug/L) - TW	2023/01/16	<MDL 0.15	60.0	0	0
Pentachlorophenol (ug/L) - TW	2023/01/16	<MDL 0.01	2.0	0	0
Phorate (ug/L) - TW	2023/01/16	<MDL 1.0	190.0	0	0
Picloram (ug/L) - TW	2023/01/16	<MDL 0.03	1.0	0	0
Prometryne (ug/L) - TW	2023/01/16	<MDL 0.01	10.0	0	0
Simazine (ug/L) - TW	2023/01/16	<MDL 0.01	1.0	0	0
Terbufos (ug/L) - TW	2023/01/16	<MDL 0.35	10.0	0	0
Tetrachloroethylene (ug/L) - TW	2023/01/16	<MDL 0.2	100.0	0	0
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2023/01/16	<MDL 0.01	230.0	0	0
Triallate (ug/L) - TW	2023/01/16	<MDL 0.44	5.0	0	0
Trichloroethylene (ug/L) - TW	2023/01/16	<MDL 0.25	5.0	0	0
2,4,6-Trichlorophenol (ug/L) - TW	2023/01/16	<MDL 0.00012	100.0	0	0
Trifluralin (ug/L) - TW	2023/01/16	<MDL 0.02	45.0	0	0
Vinyl Chloride (ug/L) - TW	2023/01/16	<MDL 0.17	1.0	0	0
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2023	48.75	100	0	0
HAA Total (ug/L) Annual Average - DW	2023	20.73	80	0	0

MAC = Maximum Allowable Concentration as per O.Reg 169/03
BDL = Below the laboratory detection level

Additional Legislated Samples

Date of legal instrument issued	Parameter	Date Sampled	Result	Maximum Annual Average	Unit of Measure
2019-07-16	Suspended Solids	2023-01-03 2023-02-06 2023-03-13 2023-04-11 2023-05-01 2023-06-05 2023-07-10 2023-08-08 2023-09-05 2023-10-16 2023-11-14 2023-12-04	6 16 12 13 8 <2 3 4 3 2 4 11 Avg.: 7.00	25	mg/L

Major Maintenance Summary

Details
-Replace block heater on plant generator -Replace actuator position sensor on rack#4 -New space heaters installed in generator -SCADA computer replacement -De-tuning plate added to low lift pump LLP-1040 -Replaced LCD display on raw flow meter -Replaced turbidimeter desiccant cartridges and flow sensors. -Replaced Trojan OptiView lamp -Replaced process drain pump PDP-9020 -Replaced outside lights and clean plant roof gutters -Replaced exhaust cap on lowlife generator -Replaced indoor office lights ballasts -Changed all air lines on all racks. -Repaired sinkhole in driveway to low lift -Replaced 4” butterfly valve on Rack #1 -Replaced UPS battery in low lift -Serviced and repaired SCBA equipment -Hach inspection of rack turbidimeters and controllers -Highlift header replacement -Electrical issue at standpipe. Eramosa remotely reprogrammed PLC. Had to come in after and manually reprogram again. -Installed new UPS at West Lorne standpipe -Upgraded optical fiber media converter in lowlift PLC cabinet -Replaced raw sample pump -Low lift VFD electrical work/replacement -Replaced power supply box at Eagle West

-West Lorne standpipe hydro meter replaced -New battery for entry alarm panel -Rack#3 membrane replacement -HLP-7030 impeller replacement -New Rockwell unit for plant remote SCADA VPN -Change smart positioner on utility airline actuator in mechanical room -New VFD for HLP-7020 and LLP-1020 -Rack#2 feed valve FCV-3201 and smart positioner replaced

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Tri County Drinking Water System
Operations Report
First Quarter 2024

Ontario Clean Water Agency, Southwest Region
Sam Smith, Sr. Operations Manager
Date: May 17, 2024

Facility Description

Facility Name:	Tri-County Drinking Water System
Regional Manager:	Dale LeBritton (519) 476-5898
Sr. Operations Manager:	Sam Smith (226) 377-1540
Business Development Manager:	Robin Trepanier (519) 791-2922
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.

SECTION 2: INSPECTIONS

FIRST QUARTER:

On January 24th, a routine inspection was conducted at the Tri-County Drinking Water System by the MECP. All follow-up questions have been answered. We have not yet received an inspection report or rating.

SECTION 3: QEMS UPDATE

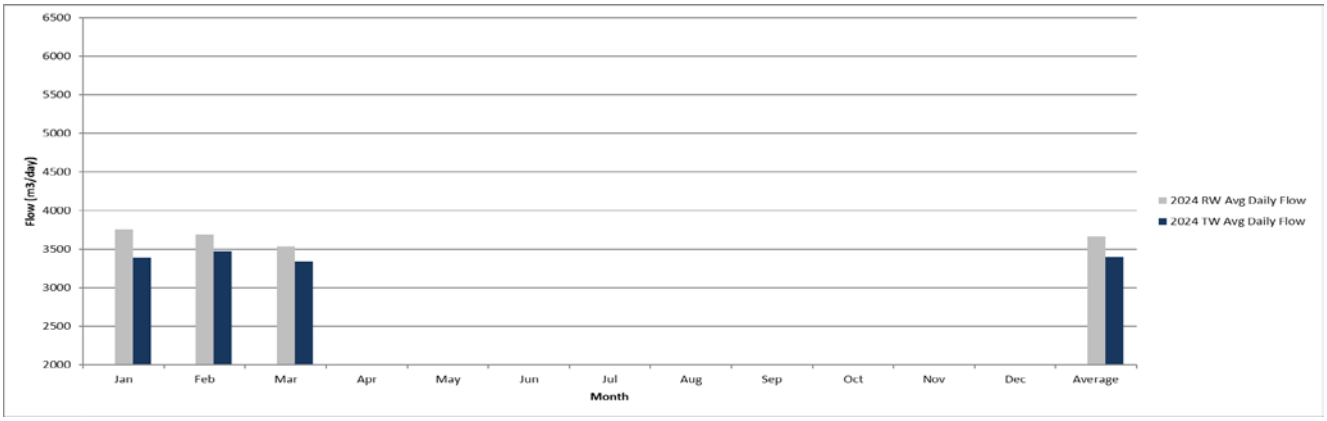
FIRST QUARTER:

There were no QEMS updates to report during the first quarter.

SECTION 4: PERFORMANCE ASSESSMENT REPORT

The Tri-County Drinking Water System is currently operating at 92.95% 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 so far in 2024.

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 the first quarter.

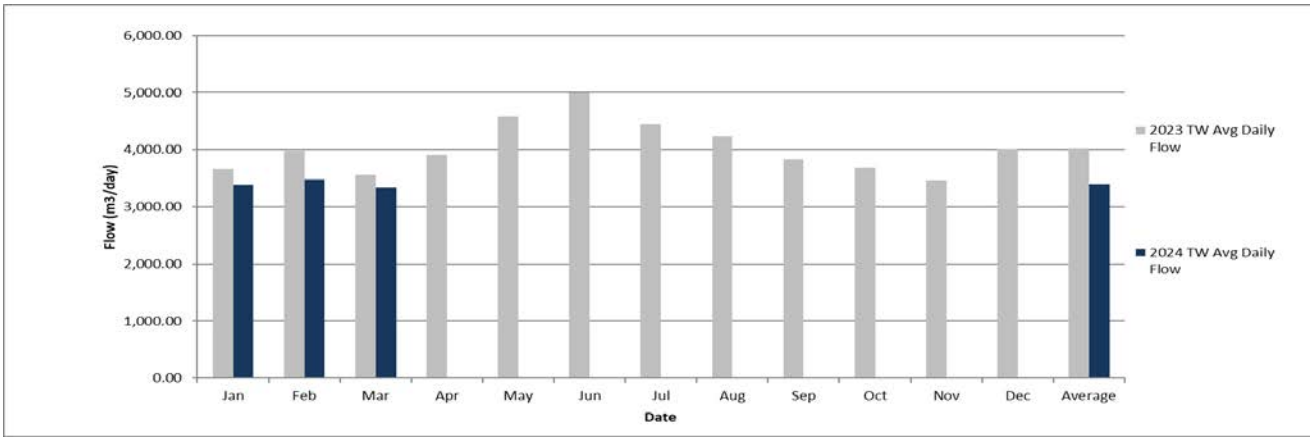
Table 1: Raw water sample results 2024

	# Samples	E. Coli Range (cfu/100mL)	Total Coliform Range (cfu/100mL)
January	5	<4 - <100	280 – 12500
February	4	<2 – <10	260 – 5600
March	4	<2 - <100	12 – 800

The raw water is treated through membrane filtration and chlorine disinfection. The treated water is distributed to the systems it serves through the high lift pumps. The average daily treated water sent to the distribution in 2024 so far is 3,400.6 m^3/d. The average treated water flow in the first quarter of 2024 is down

8.8% when compared against the average daily flow in the first quarter of 2023. The Tri-County Drinking Water System is currently at 28.0% of its rated capacity. Chart 2 below depicts the treated water flow for 2024 compared to 2023 average daily flows.

Chart 2: Treated water average daily flow in 2024 compared to 2023



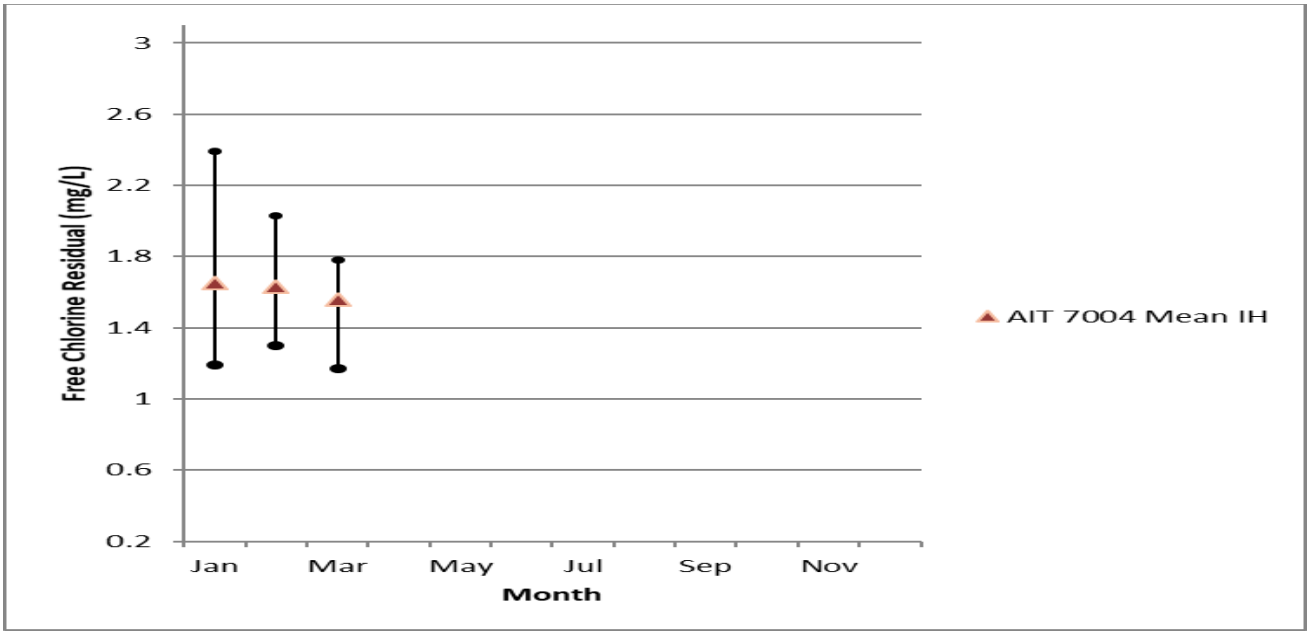
To ensure inactivation of viruses, bacteria and microorganisms the membrane filtration system is required to meet performance criteria for filtered water turbidity of less than or equal to 0.1 NTU in 99% of the measurements each month. The Tri-County Water Treatment Plant has met all regulatory requirements for inactivation in 2024. Table 2 below shows the performance of each filter rack and the overall filter rack performance.

Table 2: Filter Rack Performance in 2024

	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	100.00	100.00
February	100.00	100.00	100.00	100.00	100.00
March	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.

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. There is no limit specified for heterotrophic plate count (HPC) as 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 2024

	# Samples	Total Coliform Range (cfu/100mL)	E. coli Range (cfu/100mL)	HPC (cfu/100mL)
January	5	0 - 0	0 - 0	<10 – <10
February	4	0 - 0	0 - 0	<10 – <10
March	4	0 - 0	0 - 0	<10 – <10

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 2024

	# Samples	Total Coliform Range (cfu/100mL)	E. coli Range (cfu/100mL)	HPC (cfu/100mL)
January	10	0 - 0	0 - 0	<10 – <10
February	8	0 - 0	0 - 0	<10 – <30
March	8	0 - 0	0 - 0	<10 – <30

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)
April 2023		20	30
July 2023		33	54
October 2023		55	82
January 2024		19	32
Running Average	**100**	**31.75**	**49.5**

On a quarterly basis Haloacetic Acids (HAAs) are 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)
April 2023		5.6	15.4
July 2023		16.6	24.2
October 2023		19.4	29.8
January 2024		12.4	18.6

Running Average	80	13.5	22

SECTION 5: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

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

SECTION 6: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY

16: Gerber Electric on-site to train staff on new procedure for generator run tests.
18: Ontario Compressor on-site for routine compressor servicing/inspection.
25: Eramosa on-site to recertify our Microsoft office product key on SCADA computer for excel.
29: Gerber replaced heater in the low lift. Unit is working and on.
31: Nevtro replaced storage tank T-6010 6" drain valve.

FEBRUARY

19: Installed new actuator on flow control valve-3301 due to it failing multiple times over the weekend.
26: While investigating valve 3315 it appears that when the valve is open it takes a while for the system to recognize it's open and sending out an error signal. Replaced actuator position sensor with spare.
27: Gerber on-site to look at faulting drain pump and install new heater in low lift building and chlorine gas building.

MARCH

4: SCG Flowmetrix on-site for annual flow meter calibration and verifications.
5: SCG Flowmetrix on-site for annual flow meter calibration and verifications.
6: SCG Flowmetrix on-site for annual flow meter calibration and verifications.
11: Nevtro on-site to take Process drain pump 9010 out for inspection and possible replacement.
11: Martins Lift Truck on-site for annual forklift inspection and service.
12: Watech on-site at standpipe for graffiti removal.
21: Martins Lift Truck on-site to service forklift.
27: Southwest Mechanical on-site at standpipe to repair leaking copper line for pressure sensor.
28: Gerber on-site for quarterly HVAC inspection.

SECTION 7: ALARM SUMMARY

FIRST QUARTER:

JANUARY

19: Alarm call for Rack 1 HIHI turbidity shut down. Operator arrived on-site and found unit reading okay. Likely due to debris coming loose following an air scrub on rack.
23: Alarm call for storage tank T-6020 LOLO. Due to suspected fog causing false low reading on milltronics.
30: Alarm call for Rodney Tower HIHI Cl. Operator reviewed remotely and saw Cl reading was coming down. Continued to monitor and Cl returned to normal readings.

FEBRUARY

2: Received call from spectrums for suction header chlorine fault, verified analyzer is reading correctly and increased cl dosage set point from 1.85 to 2.00.

4: Received alarm from spectrums for Rodney tower fault. Arrived on-site and found Rodney tower Cl holding a max value of 4.90 and had a signal error alarm active. The system suddenly got connection again and all alarms cleared had SWM operator go to site to verify.

17: Received alarm for PALL system critical failure. Alarm is for too few racks due to rack 2 disabling from high high pressure because of Rack 2 inlet flow control valve-3201 smart positioner failing. Replaced pilot system on smart positioner.

18: Received alarm for PALL system critical failure. Alarm is for too few racks due to rack 3 disabling from high high pressure because of Rack 3 inlet valve flow control valve-3301 smart positioner failing. Performed calibration on rack #3 flow control valve-3301 smart positioner.

26: Received alarm from spectrums for PALL system critical failure. Found that Clean in Place return valve 3315 had failed, placed rack into manual and exercised valve multiple times. Placed valve back into auto and appears to be running normally, will monitor throughout the day.

MARCH

1: Received alarm call for filtrate storage tank fault. Two low lift pumps now running and keeping up with demand.

2: Received alarm call for filtrate storage tank fault. Confirmed with SOP, changed tank 6010 LO set point from 7-6.4.

9: Received alarm call from Spectrum for All Systems Critical Failure. Observed a suspected PLC glitch that disabled the rack, placed back in duty and rack now on and running.

23: Received alarm for PALL critical failure rack 3 had disabled due to high pressure, put rack in manual and opened vent valve which brought pressure down, cleared alarms, placing rack back into forward flow.

30: Received alarm from spectrums for pall system critical failure. Adjusted actuator sensor and rack now running fine.

SECTION 8: COMMUNITY COMPLAINTS & CONCERNS

FIRST QUARTER:

There were no complaints or concerns reported during the first quarter.

Tri-County Water Board

Income Statement

As of April 30, 2024

		2024 Actuals	2024 Budget
Revenue			
02-7315-6110	BANK INTEREST - Note 1	-	(26,504.20)
02-7315-6590	WATER REV - MUNICIPAL - Note 2	(391,639.14)	(1,540,262.20)
02-7315-6591	Municipal Contribution - Capital Replacement - Note 3	-	(150,000.00)
Expenses			
02-7315-7500	HYDRO - Note 4	71,884.66	283,000.00
02-7315-7501	GAS - Note 5	16,024.05	31,000.00
02-7315-7510	INSURANCE	29,500.20	28,000.00
02-7315-7511	TAXES - Note 6	34,931.00	71,961.00
02-7315-7520	Grounds Maintenance - Phragmites Control - Note 7	-	5,000.00
02-7315-7529	ADMINISTRATION EXPENSE - Note 8	-	8,026.20
02-7315-7531	FINANCIAL PLAN	-	10,000.00
02-7315-7532	LICENSES & PERMITS - Note 9	1,410.40	1,000.00
02-7315-7675	LEGAL	-	1,000.00
02-7315-7676	AUDIT	-	5,000.00
02-7315-7679	Chemicals - Note 10	-	65,000.00
02-7315-7680	CONTRACTED SERVICES - Note 11	122,996.25	491,985.00
02-7315-7681	Asset Management - Note 12	-	5,000.00
02-7315-7900	TRANSFER TO RESERVE - Note 13	-	150,000.00
02-7315-7901	TRANSFER FROM RESERVES - Note 14	-	(559,330.80)
02-7315-8000	CAPITAL OVER $10,0000 - Note 15	20,261.26	1,120,125.00
	Net Surplus	**$ (94,631.32)**	**$ -**

Notes:

Note 1 **Bank Interest**

Bank interest is allocated at the end of the year.

Note 2 **Water Revenue - Municipalites**

	YTD Actual Consumption (m^3)	YTD Budget Consumption (m^3)
Dutton/Dunwich	69,074	81,396
Chatham-Kent	28,675	32,046
Newbury	9,448	19,433
Southwest Middlesex	112,416	127,245
West Elgin	115,177	160,716
	334,789	**420,837**

Note 3 **Capital Replacement**

Capital Replacement revenue is billed at the end of the year, based on the following:

Chatham-Kent	8%	$	11,925.00
Dutton-Dunwich	19%	$	28,710.00
Newbury	5%	$	7,425.00
Southwest Middlesex	25%	$	37,080.00
West Elgin	43%	$	64,860.00
	100%	**$**	**150,000.00**

Note 4 **Hydro**

Paid as of March-2024

Note 5 **Gas**

Paid as of March-2024

Note 6 **Property Taxes**

2 installments posted

Note 7 **Grounds Maintenance - Phragmites Control**

Invasive Phragmities Control Center was contacted and awaiting the timeline.

Note 8 **Administration Expense**

allocated at the end of the year

Note 9 **Licenses and Permits**

DWQMS Audit	1,410.40

Note 10 **Chemicals**

As of 2024 cost of the chemicals was removed from the agreement and billed seperately.

Note 11 **Asset Management**

Software License Fees - allocation will be done at the end of the year.