Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Rodney Wastewater Treatment Plant
Operations Report
First Quarter 2024

Ontario Clean Water Agency, Southwest Region
Sam Smith, Senior Operations Manager
Date: May 9, 2024

Facility Information:

Facility Name:	Rodney Wastewater Treatment Plant
Facility Type:	Municipal
Classification:	Class 2 Wastewater Collection, Class 2 Wastewater Treatment

Operational Description:

The collection system consists of sewers and one submersible pumping station. The treatment facility main elements are an extended aeration process designed for combined carbon removal and nitrification. The discharge of secondary clarifier: effluent is filtered and disinfected with ultraviolet light before being re-aerated and discharged to the Sixteen Mile Creek. The waste activated sludge is discharged to a lagoon for storage. Dual-point chemical addition alum: is used for phosphorus removal. Sodium hydroxide is added for control of alkalinity.

Service Information

Areas: Serviced:	Village of Rodney

Design Capacity:

Total Design Capacity:	590 m^3/day
Total Annual Flow (2017 Data):	127,060 m^3/year
Average Day Flow (2017 Data):	348.1 m^3/day
Maximum Day Flow (2017 Data):	588 m^3/day

Treatment Process Features:

Effluent Receiver:	Sixteen Mile Creek to Lake Erie
Major Process:	Extended aeration
Phosphorus Removal:	Continuous, Use of alum
Additional Treatment:	Effluent filtration
Discharge Mode:	Continuous discharge
Effluent Disinfection Practice:	UV Disinfection
Sludge Stabilization:	Lagoon storage

Contacts:

Regional Manager:	Dale LeBritton	519- 476-5898
Sr. Operations Manager:	Sam Smith	226- 377-1540
Business Development Manager:	Robin Trepanier	519- 791-2922

SECTION 1: COMPLIANCE SUMMARY

FIRST QUARTER:

There were no compliance or exceedance issues reported during the first quarter.

SECTION 2: INSPECTIONS

FIRST QUARTER:

There were no MECP or MOL inspections conducted in the first quarter.

SECTION 3: QEMS UPDATE

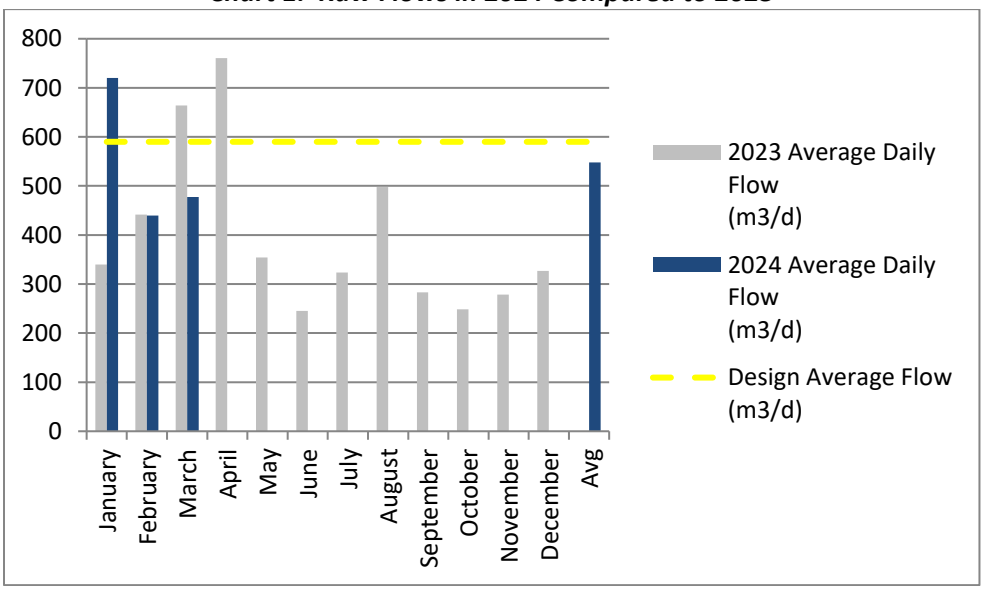
FIRST QUARTER:

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

SECTION 4: PERFORMANCE ASSESSMENT REPORT

The average daily flow recorded at the wastewater treatment plant so far in 2024 was 548.2m^3/d. The average daily flow in 2023 was 396.7 m^3/d, therefore the flow for 2024 is up by 38% when compared to 2023. The plant is currently at 93% of its rated capacity of 590m^3/d.

Chart 1. Raw Flows in 2024 Compared to 2023



Raw samples are taken on a bi-weekly basis following the ECA requirements. The table below shows the raw sample results for 2024.

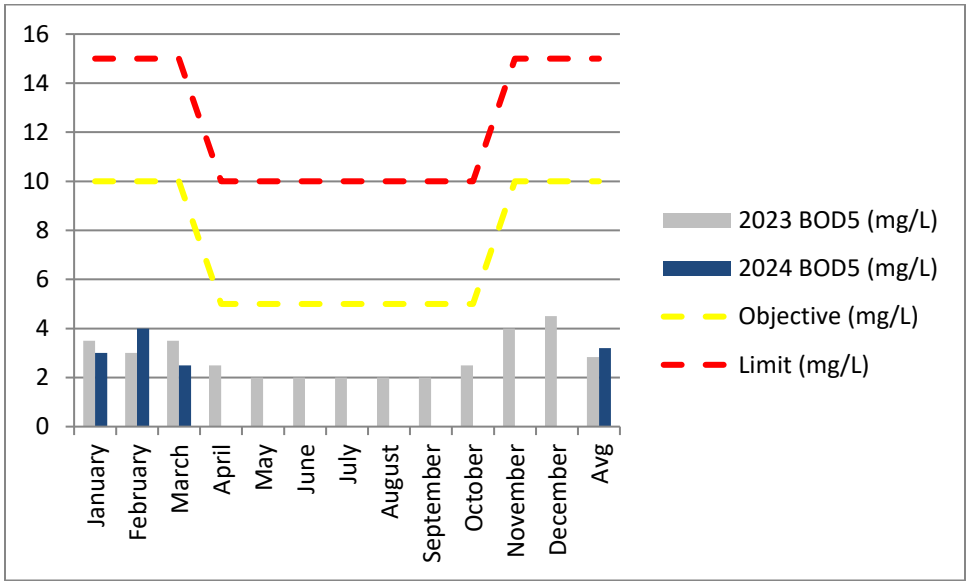
Table 1. Raw water sample results for 2024.

	BOD5 (mg/L)	TSS (mg/L)	TKN (mg/L)	TP (mg/L)
January	84	89.5	31.75	3.17
February	102.5	103.5	32.9	3.23
March	49.5	200	14.4	1.52
April				
May				
June				
July				
August				
Septembe				
October				
November				
December				
Annual Average	78.7	131	26.35	2.64

The effluent is sampled on a bi-weekly basis following the requirements of the ECA.

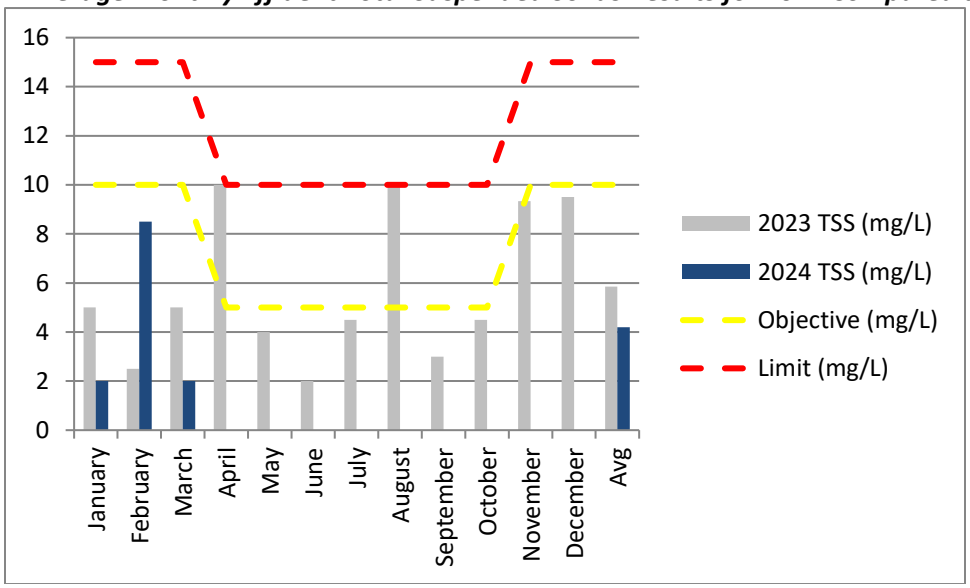
The average effluent BOD5 so far in 2024 was 3.2mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for BOD5 in 2023 was 2.8mg/L, therefore the results for 2024 are up by 12.7% when compared to 2023 (refer to Chart 2).

Chart 2. Average Monthly Effluent BOD5 results for 2024 compared to 2023.



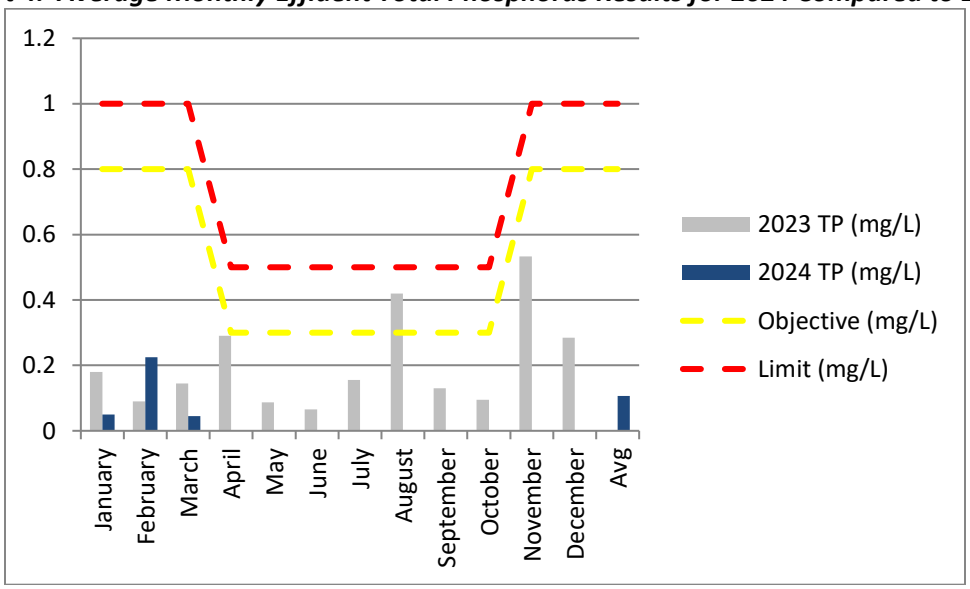
The average effluent TSS so far in 2024 was 4.2 mg/L, meeting both effluent limits and objectives identified in the ECA. The annual average result for TSS in 2023 was 5.9mg/L, therefore the results for 2024 are down by 28% when compared to 2023 (refer to Chart 3).

Chart 3. Average Monthly Effluent Total Suspended Solids Results for 2024 Compared to 2023



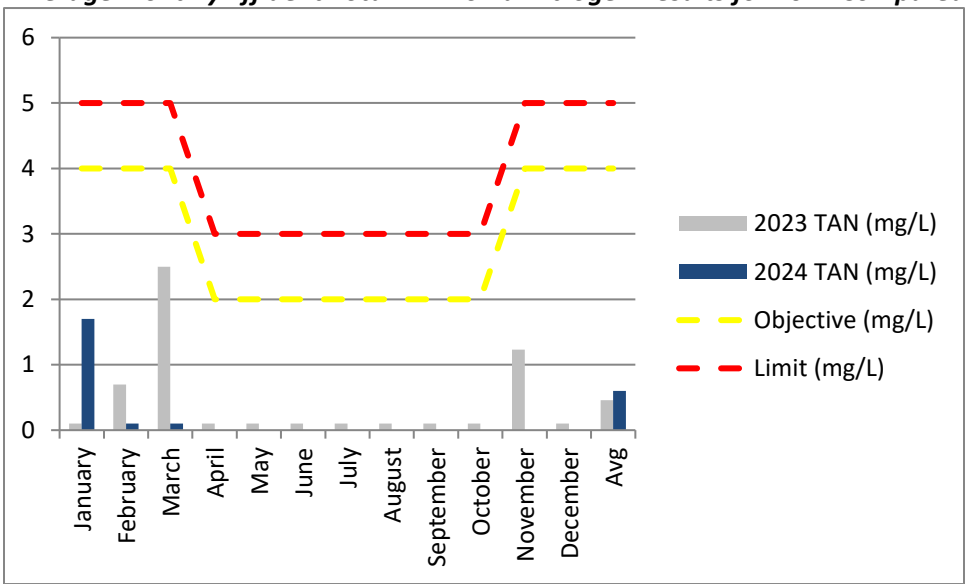
The average effluent TP so far in 2024 was 0.11mg/L, meeting both effluent limits and objectives identified in the ECA. The annual average result for TP in 2023 was 0.21mg/L, therefore the results for 2024 are down 49% when compared to 2023 (refer to Chart 4).

Chart 4. Average Monthly Effluent Total Phosphorus Results for 2024 Compared to 2023



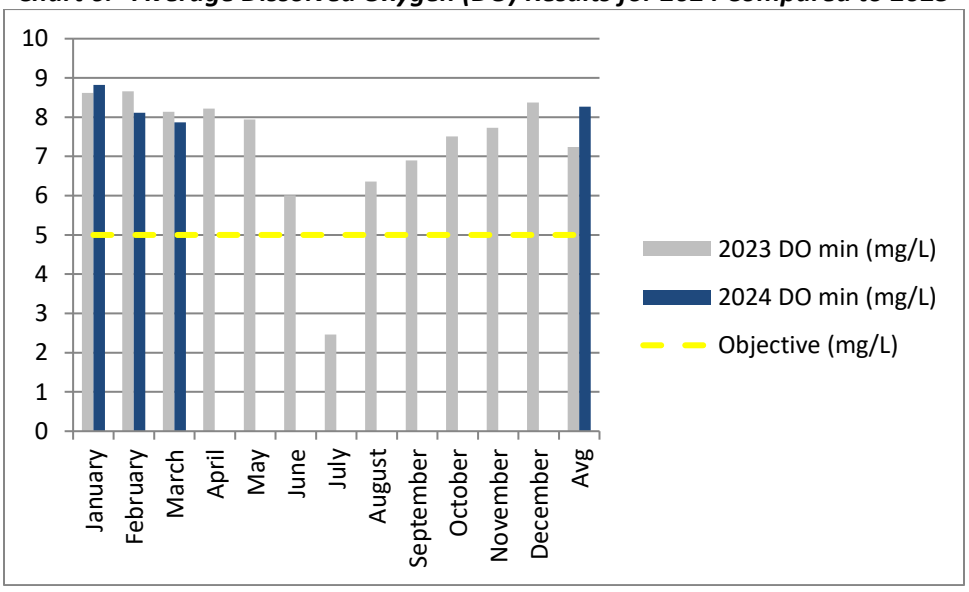
The average effluent TAN so far in 2024 was 0.60 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TAN in 2023 was 0.46mg/L, therefore the results for 2024 are up by 30% when compared to 2023 (refer to Chart 5).

Chart 5. Average monthly Effluent Total Ammonia Nitrogen Results for 2024 Compared to 2023



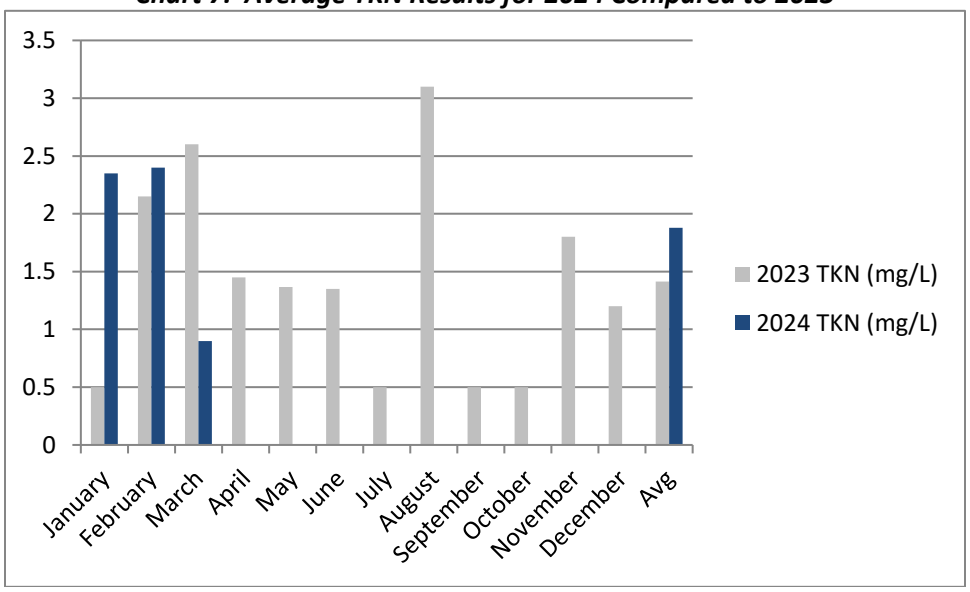
Dissolved oxygen (DO) inthe effluent is monitored on site ; the ECA identifies a minimum level required as an objective. This objective is 5mg/L. The chart below (Chart 6) shows the minimum DO concentrations.

Chart 6. Average Dissolved Oxygen (DO) Results for 2024 Compared to 2023



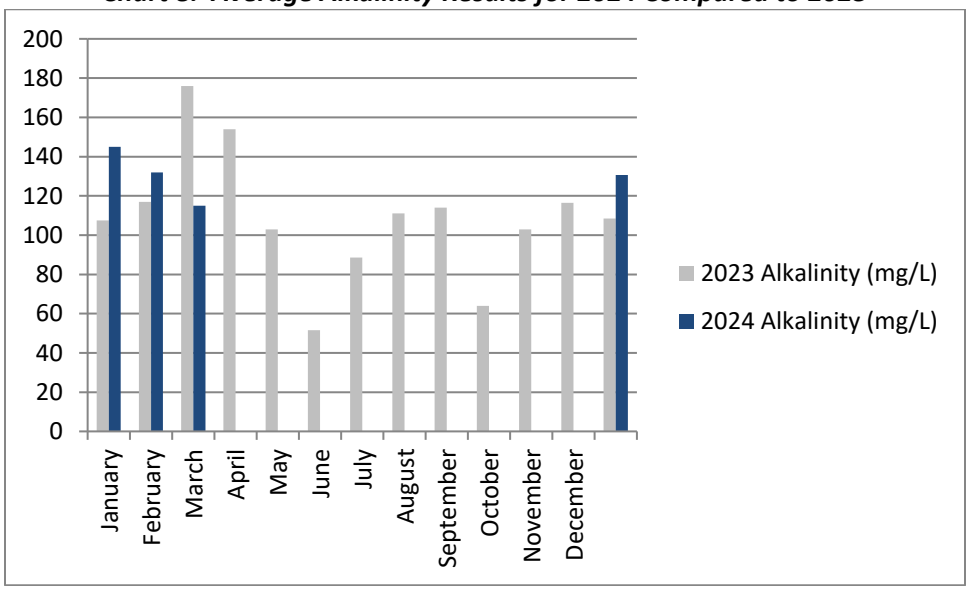
Total Kjeldahl Nitrogen (TKN) is sampled bi-weekly in accordance with ECA requirements; there are no objectives or limits imposed on this parameter. The average effluent TKN so far in 2024 was 1.88 mg/L. The annual average result for TKN in 2023 was 1.41mg/L; therefore, the results for 2024 are up by 33% when compared to 2023 (refer to Chart 7).

Chart 7. Average TKN Results for 2024 Compared to 2023



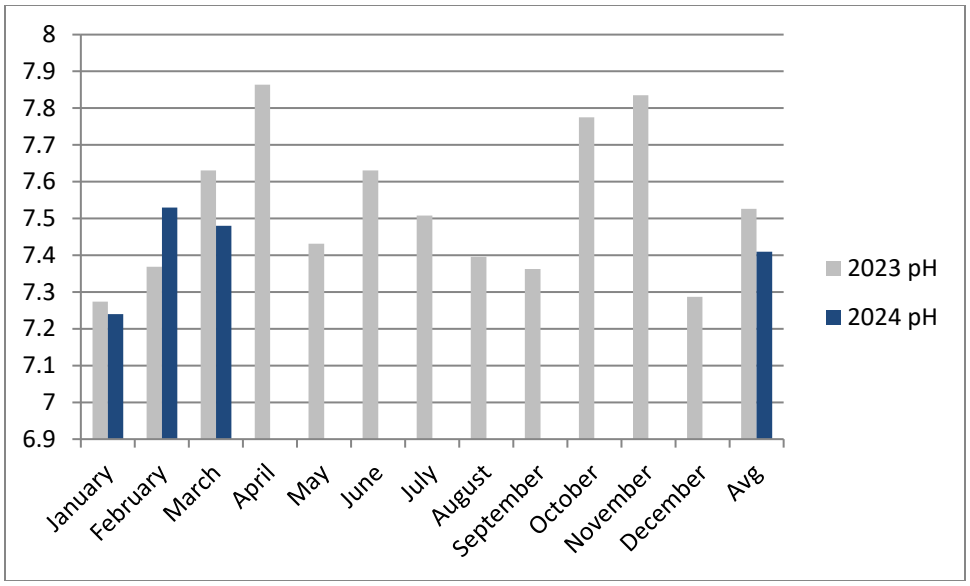
Alkalinity is sampled at least bi-weekly in accordance with ECA requirements; there are no objectives or limits imposed on this parameter. It is recommended that at least 50mg/L is present in the effluent. The average effluent alkalinity so far in 2024 was 130.7mg/L. The annual average result for alkalinity in 2023 was 108.4mg/L, therefore the results for 2024 so far are up by 21% when compared to 2023 (refer to Chart 8).

Chart 8. Average Alkalinity Results for 2024 Compared to 2023



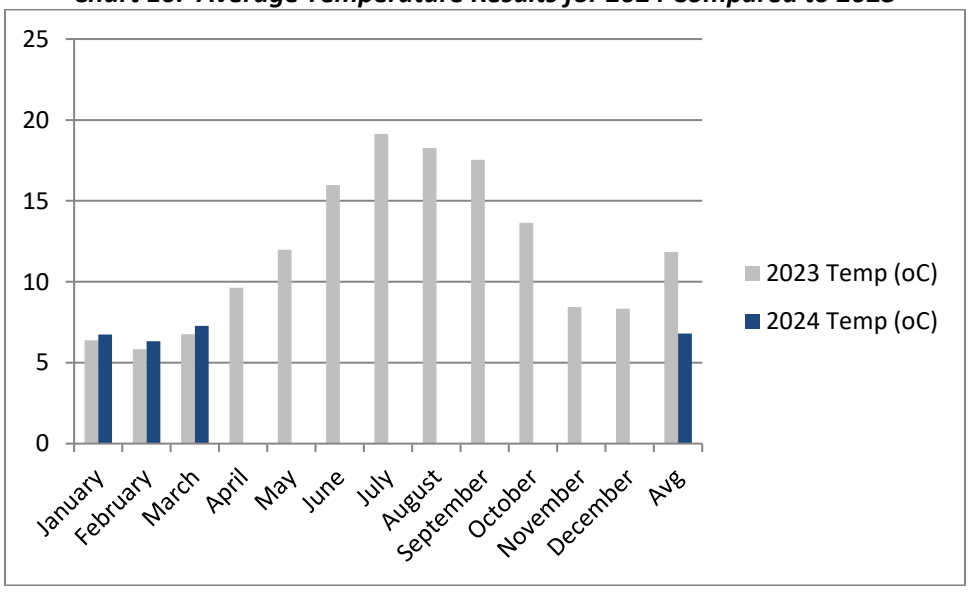
pH is sampled at least bi-weekly in accordance with ECA requirements. There are no objectives or limits imposed on this parameter however, it is recommended that the pH be maintained between 6.5-8.5. The average effluent pH so far in 2024 was 7.41. The annual average result for pH in 2023 was 7.53; therefore, the results for 2024 is down by 1.5% when compared to 2023 (refer to Chart 9).

Chart 9. Average pH Results for 2024 Compared to 2024



Temperature is measured at least bi-weekly in accordance with ECA requirements; there are no objectives or limits imposed on this parameter. The temperature of the effluent fluctuates based on outdoor temperatures. The average effluent temperature so far in 2024 was 6.8°C. The annual average temperature in 2023 was 11.8°C; therefore the results for 2024 are down 42.6% when compared to 2023 (refer to Chart 10).

Chart 10. Average Temperature Results for 2024 Compared to 2023



SECTION 5: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER

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

SECTION 6: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY

03: Rodney Electric on-site to wire in temporary decant pump. Found a bad contact, one to be ordered and replaced the old one.

05: Rodney Electric on-site to finish wiring in temporary decant pump.

11: Nevtro on-site to service mechanical mixers 3 and 5.

18: Received alum delivery from Jutzi.

FEBRUARY

13: Removed both RAS pump impellers from volute to remove build up of rags. Found RAS pump 2 extremely warm and found issues with shaft/bearing on the motor. Notified SOM.

21: Nevtro Mechanical on-site to inspect motor for RAS/WAS pump 2. Motor has been removed to be taken back to their shop for further assessment.

MARCH

14: Waddick Fuels on-site to fill generator with diesel fuel.

19: Konecranes on-site for annual inspection of lifting devices.

21: Received alum delivery.

28: Gerber Electric on-site to install temporary float system due to miltronics failing (Pump station)

SECTION 7: ALARMS

FIRST QUARTER:

JANUARY

25: On-call operator received alarm for Rodney Pump Station. Operator found miltronics alarm, reset miltronics panel and resolved the alarm.

28: On-call operator received alarm for Rodney pump station. Operator found miltronics in alarm. Operator reset miltronics panel, and watched several pump cycles. Appears to be operating normally. Calling out likely due to steam and build up on the level transducer.

FEBRUARY

11: On-call operator received alarm call for power outage at the pump station and the WPCP at 2100. Utility power is restored at 2300. Operator reset the main breaker at the WPCP and utility power is restored.

MARCH

There were no alarms this month.

SECTION 8: COMPLAINTS & CONCERNS

FIRST QUARTER:

There were no alarms in the first quarter.