Ontario Clean Water Agency
Agence Ontarienne Des Eaux

5834 Rodney Wastewater Treatment Plant Operations Report Fourth Quarter 2022

Ontario Clean Water Agency, Southwest Region
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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:

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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 issues to report for the first quarter.

SECOND QUARTER:

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

THIRD QUARTER:

There were no compliance issues to report for the third quarter.

FOURTH QUARTER:

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

SECTION 2: INSPECTIONS

FIRST QUARTER:

There were no MECP or MOL inspections during this quarter.

SECOND QUARTER:

There were no MECP or MOL inspections during this quarter.

THIRD QUARTER:

There were no MECP or MOL inspections during this quarter.

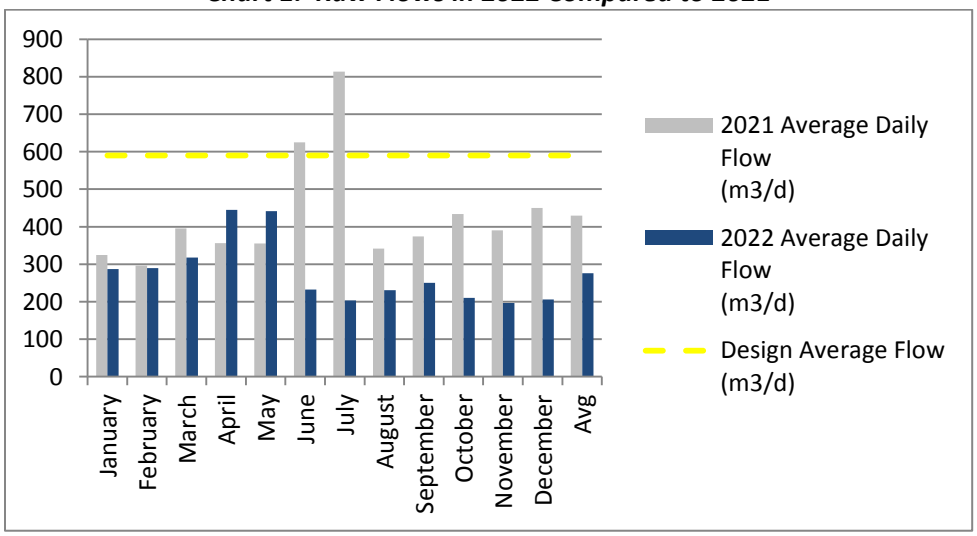
FOURTH QUARTER:

There were no MECP or MOL inspections during this quarter.

SECTION 3: PERFORMANCE ASSESSMENT REPORT

The average daily flow for the wastewater treatment plant in 2022 is 275.92m3/d. The average daily flow in 2021 was 429.71 m3/d, therefore the flow for 2022 is down by 36% when compared to 2021. The plant is currently at 46% of its rated capacity of 590m^3/d.

Chart 1. Raw Flows in 2022 Compared to 2021



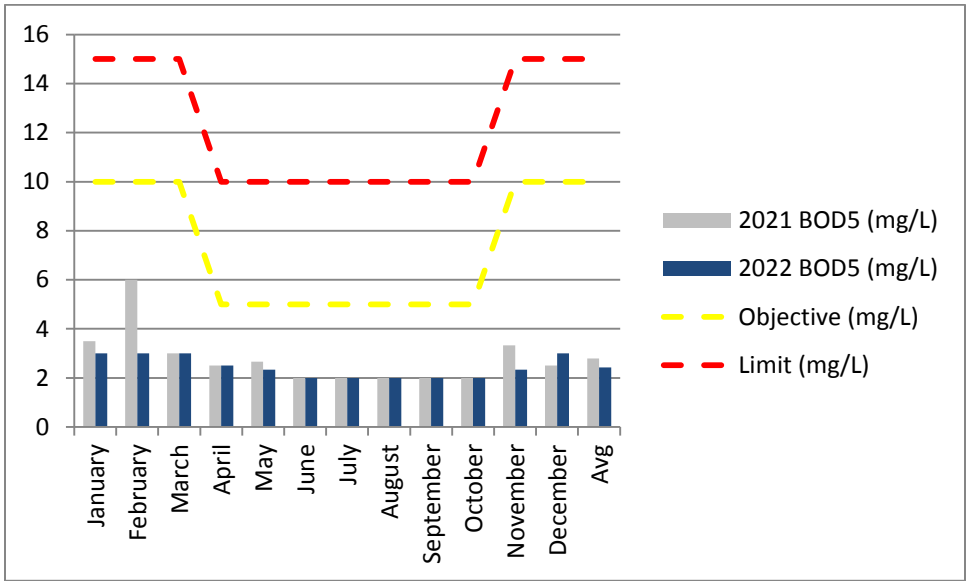
Raw samples are taken on a biweekly basis following the ECA requirements. The table below shows the raw sample results for 2022.

Table 1. Raw water sample results for 2022.

	BOD5 (mg/L)	TKN (mg/L)	TP(mg/L)	TSS (mg/L)
January Results	124	38.55	4.205	113
February Results	201	46.7	6.5	286.5
March Results	125	38.3	4.51	163.5
April Results	114.5	33.2	3.9	124.5
May Results	128.7	41.7	4.3	108
June Results	44.5	17.1	2.2	69
July Results	151.5	44.9	5.935	259.5
August Results	56	28.35	2.72	57
September Results	150.5	56.9	6.54	136.5
October Results	85.5	32.95	3.78	164
November Results	126.7	43.8	4.403	69.667
December Results	134.5	42.25	4.73	90.5
Annual Average	120.8	39.04	4.464	133.115

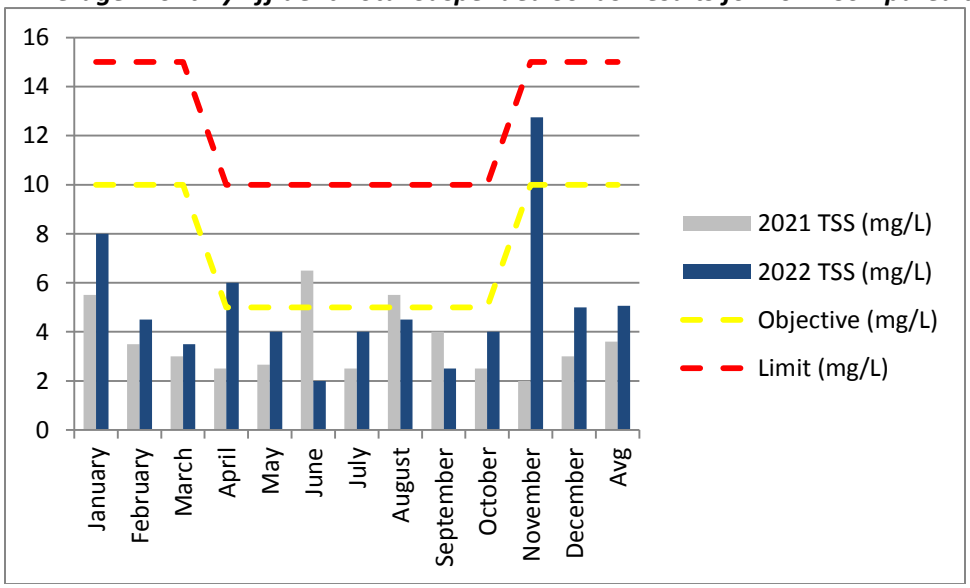
The effluent is sampled on a bi weekly basis following the requirements of the ECA.
The average effluent BOD5 for 2022 is 2.4mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for BOD5 in 2021 was 2.79mg/L, therefore the results for 2022 are down by 13% when compared to 2021 (refer to Chart 2).

Chart 2. Average Monthly Effluent BOD5 results for 2022 compared to 2021.



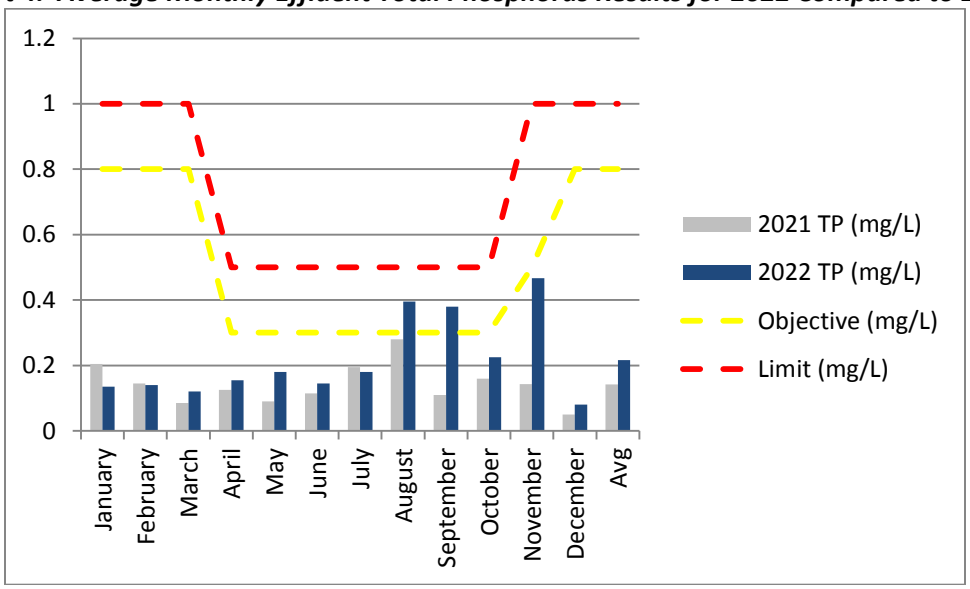
The average effluent TSS for 2022 is 5.06 mg/L, meeting effluent limits identified in the ECA. The objective was exceeded in April and November. The annual average result for TSS in 2021 was 3.6mg/L, therefore the results for 2022 are up by 41% when compared to 2021 (refer to Chart 3).

Chart 3. Average Monthly Effluent Total Suspended Solids Results for 2022 Compared to 2021



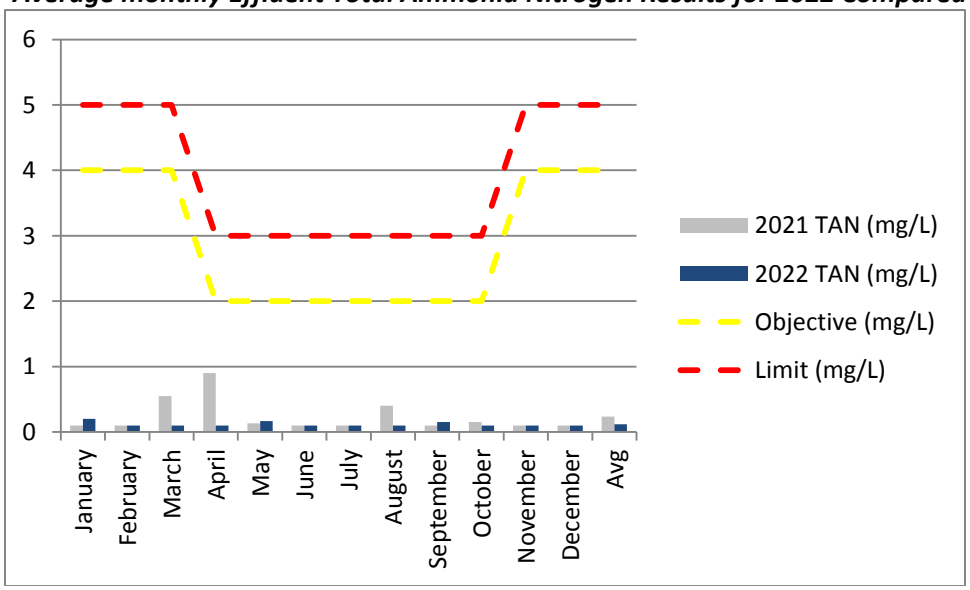
The average effluent TP for 2022 is 0.22mg/L, meeting both effluent limits identified in the ECA but exceeding the objective in August and September. The annual average result for TP in 2021 was 0.14mg/L, therefore the results for 2022 are up 53% when compared to 2021 (refer to Chart 4).

Chart 4. Average Monthly Effluent Total Phosphorus Results for 2022 Compared to 2021



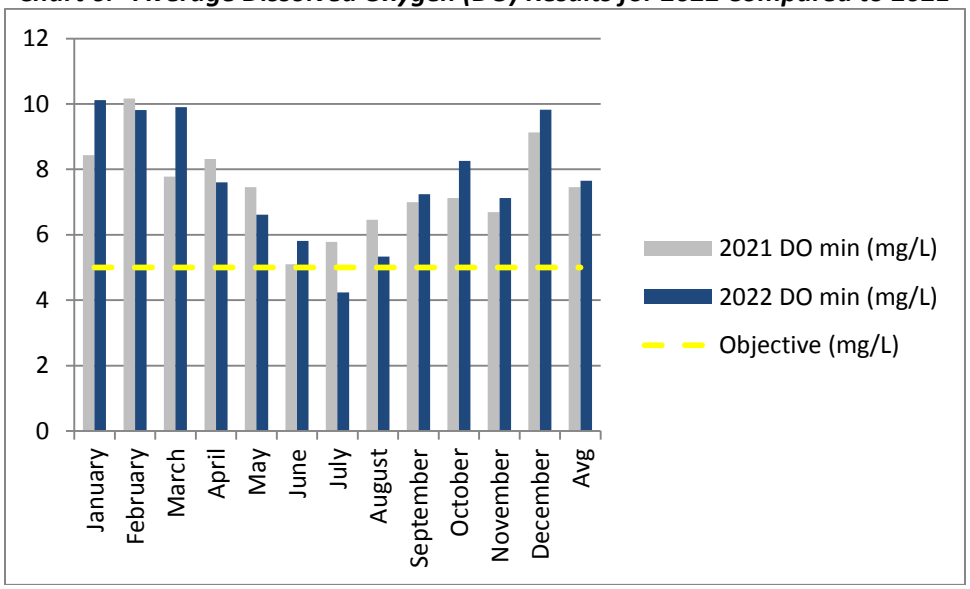
The average effluent TAN for 2022 is 0.12 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TAN in 2021 was 0.24mg/L, therefore the results for 2022 are down by 50% when compared to 2021 (refer to Chart 5).

Chart 5. Average monthly Effluent Total Ammonia Nitrogen Results for 2022 Compared to 2021



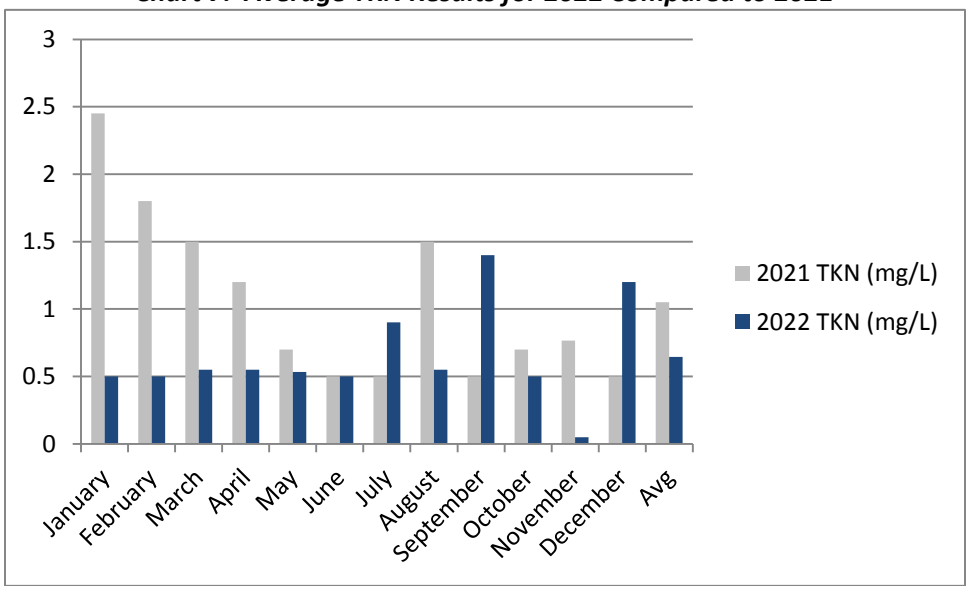
Dissolved oxygen (DO) of the effluent is tested on site at the plant; the ECA identifies a minimum level required as an objective. This objective is 5mg/L. The chart below (Chart 6) shows the minimum DO concentrations, there have been one objective exceedance in July.

Chart 6. Average Dissolved Oxygen (DO) Results for 2022 Compared to 2021



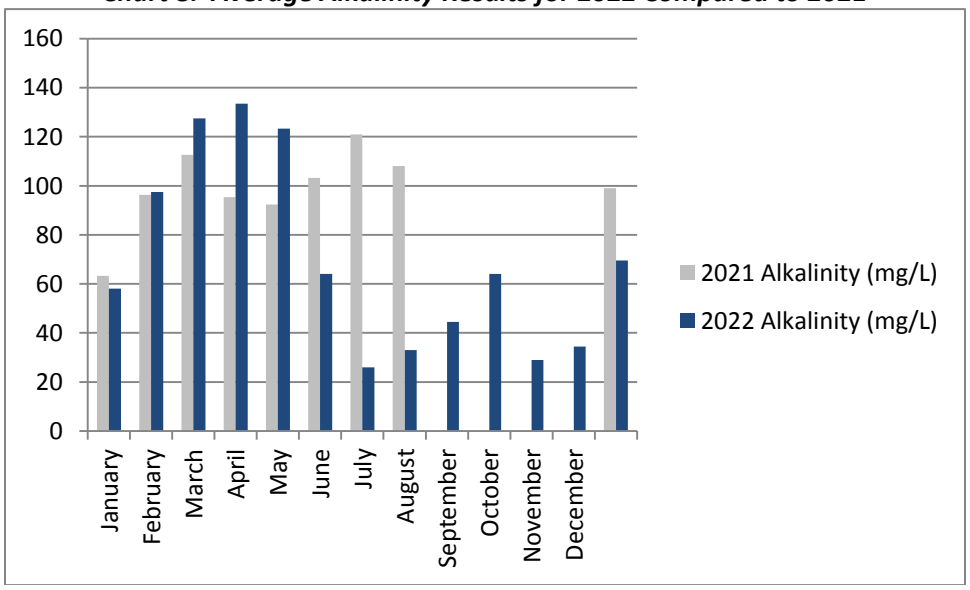
Total Kjeldahl Nitrogen (TKN) is sampled biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. The average effluent TKN for 2022 is 0.64 mg/L. The annual average result for TKN in 2021 was 1.05mg/L; therefore the results for 2022 are down by 39% when compared to 2021 (refer to Chart 7).

Chart 7. Average TKN Results for 2022 Compared to 2021



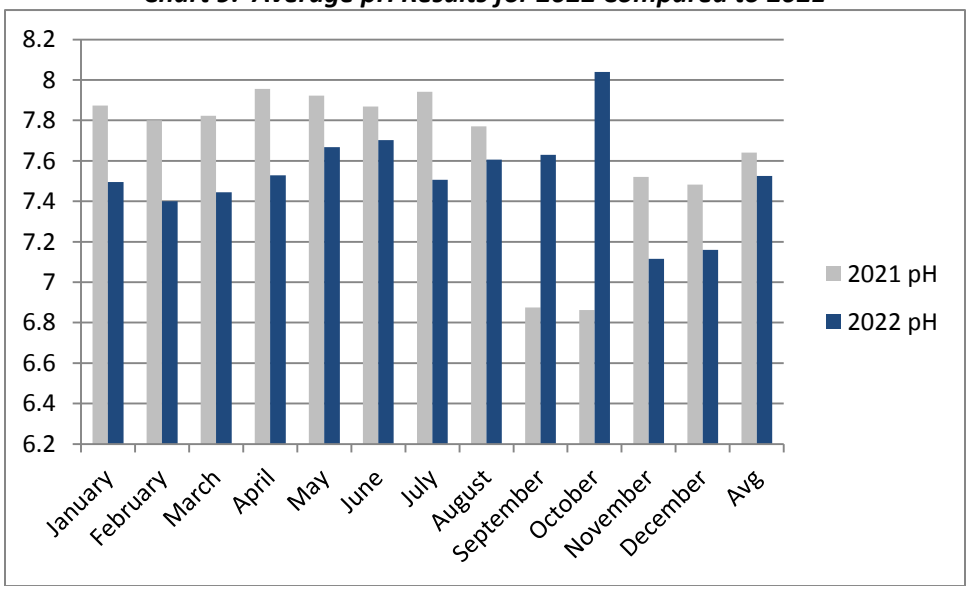
Alkalinity is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that at least 50mg/L is present in the effluent. The average effluent alkalinity for 2022 is 70mg/L. The annual average result for alkalinity in 2021 was 99mg/L, therefore the results for 2022 so far are down by 30% when compared to 2021 (refer to Chart 8). A non compliance was reported in 2021 due to bi weekly samples being missed.

Chart 8. Average Alkalinity Results for 2022 Compared to 2021



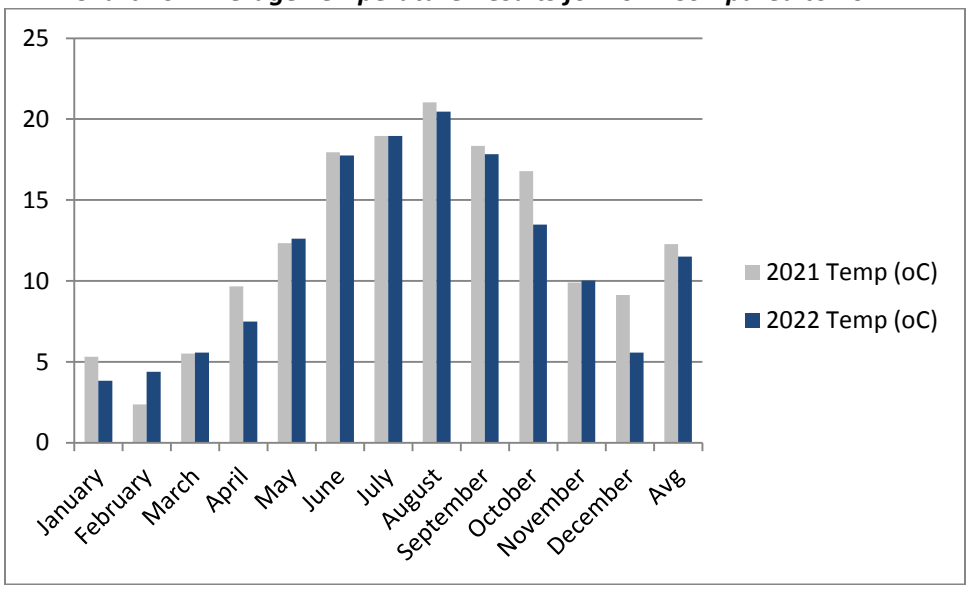
pH is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that the pH is in the range of 6.5-8.5. The average effluent pH for 2022 is 7.52. The annual average result for pH in 2021 was 7.64; therefore the results for 2022 is down by 1.5% when compared to 2021 (refer to Chart 9).

Chart 9. Average pH Results for 2022 Compared to 2021



Temperature is measured at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. The temperature of the effluent fluctuates based on outdoor temperatures. The average effluent temperature for 2022 is 11.5°C. The annual average temperature in 2021 was 12.3°C, therefore the results for 2022 are down 6.4% when compared to 2021 (refer to Chart 10).

Chart 10. Average Temperature Results for 2022 Compared to 2021



SECTION 4: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

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

SECOND QUARTER:

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

THIRD QUARTER:

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

FOURTH QUARTER:

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

SECTION 5: GENERAL MAINTENANCE:

FIRST QUARTER:

JANUARY

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
Third Street and Stinson Street man holes checked weekly for buildup.
05: Sanitary Sewer service on site to clear liquid from scum pit.
05: Gerber Electric on site to scheme scum pump electrical. Found that the MCC needs to be upgraded for size of pump.
05: Gerber Electric on site at pump station to verifiy electrical to Pump 2 as there have been issues with newly installed rebuild pump. No electrical issues found.
24: Alum delivery of 5000L

FEBRUARY

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
Third Street and Stinson Street man holes checked weekly for buildup.
14: Found sand filter plugged; used air lance and hose to backwash sand filter.
22: Completed monthly generator checks and operated generator for 1 hour.
25: Increased alum dosing on pump from 31.7 mL/min to 36.7 mL/min due to increase in flows
25: Completed monthly alarm and dialer checks at Rodney WWTP and Pump Station

MARCH

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
Third Street and Stinson Street man holes checked weekly for buildup.

04: Flushed return activated sludge line and cleared debris from pumps to increase return activated sludge flow rate
23: Pulled sump pump to remove rags from impeller
29: Placed UV system back online as requested by Senior Operations Manager Sam Smith
30: Mike Nagy from Sanitary Sewer on site to clean out scum pit
31: Completed monthly alarm and dialer checks

SECOND QUARTER:

APRIL:

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
Third Street and Stinson Street man holes checked weekly for buildup.
13: Replaced burnt out UV bulbs
20: On site to troubleshoot high level alarm issue with T&T power and Gerber Electric. Discovered that a "second float" high level was causing the alarm. Disabled this alarm as there is a high level alarm triggered by milltronics. Tested alarm to ensure it was working properly.
25: On site with Kone Cranes to do lifting device inspections
27: Flowmetrix on site for flowmeter calibrations

MAY:

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
Third Street and Stinson Street man holes checked weekly for buildup.
12: Pumped down inside sand filters to repair plugged reject pipe
18: On site with Gerber Electric to disconnect wiring from scum pump
19: Kone Cranes on site to repair crane #3
23: Found RAS/WAS pumps had faulted, reset both pumps
25: On site for alum delivery from Chemtrade
25: On site with Nevtro to install pump 2 at Rodney pump station
27: Found pump 2 not operating properly at Rodney pump station; operator turned pump off and notified SOM

JUNE:

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
Third Street and Stinson Street man holes checked weekly for buildup.
20: Operator turned off and isolated RAS/WAS pump #2 due to problems with pump
24: Nevtro on site to remove ras pump 2 for seal repairs

THIRD QUARTER:

JULY

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.

05: On site with Alberts Generator for annual generator inspections at pump station
07: On site with Gerber Electric to investigate issues with pump #2 at Rodney Pump station

AUGUST

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
04: Keith Douglas on site to repair back flow preventers

SEPTEMBER

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
26: Contacted Nevtro to look at mixer #6

FOURTH QUARTER:

OCTOBER

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
07: Attempted to re-set pump 2 at the Rodney Pumpstation due to the pump not operating as intended. Pump still not working properly and operator in contact with Nevtro Mechanical to look further into this.
26: Nevtro Mechanical on site to inspect pull wheel on the wasting valve for RAS pump 1 so we are able to manually waste as it is broken, and give a quote.
28: Temporarily replaced WAS wheel on RAS/WAS pump 1 to waste until the original wheel is fixed.
28: Cleaned UV channel and put away bulbs for the winter months as per the SOP and ORO.

NOVEMBER

Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
07: Hurricane Hydrovac on site to clean out scum pit to install rebuilt scum pump.
16: Installed new scum pump into scum pit, wired by Rodney Electric.
22: Planned power outage from 9am-12pm. On site when power was restored; all was working per usual.
24: Upon arrival found RAS Pump # 1 not pumping anything. Determined pump was broken and needs repairing. Repaired parts as required and put pump back in service.

DECEMBER
Sampled As Per Sampling Calendar
General maintenance as schedule by WMS
Operator manually wastes solids daily to lagoon due to valve and flow meter issues that require upgrades in facility.
05: Cleaned pit between aeration and clarifier due to build up of rags and sludge.
28: Hurricane Hydrovac on site to complete annual wet well cleaning of pump station to remove build up of rags, grease, and other. Alarms received due to false Miltronic readings due to mist.

SECTION 6: ALARMS:

FIRST QUARTER:
There were no alarms this quarter.

SECOND QUARTER:
APRIL:
12: Received alarm for power failure. Operator arrived on site to found no power to site. Reset main breaker on MCC panel and regained power to site. Reset alum pump as it was faulted; reset both mixers as were also faulted. Completed plant walk through to ensure that all systems normal.

MAY:
No alarms reported this month.

JUNE:
01: Received alarm page out for power failure; operator arrived on site and confirmed power out. Reset main breaker on MCC panel, reset alum pump, reset RAS pumps and completed walk through. All systems appeared ok.
20: Received page for channel 7 alarm; operator arrived on site and completed facility walkthrough and checks. Operator found alarm message on SCADA screen in office saying Rodney pump station dialer alarm. Arrived at pump station and found milltronics in alarm for wet well high level. Operator pumped well down in hand, and out of alarm; monitored wet well as it filled and pumps operated properly.

THIRD QUARTER:
JULY
20: On site due to power failure. Operator remained on site to monitor systems until power was restored.
21: Onsite for channel 7 alarm; alarm was normal upon arrival.

AUGUST
04: Received page for Rodney pump station high level. Operator reset both pumps and ensured they were out of alarm
08: Received call for pump station high level. Operator reset both pumps and pumps completed cycle and operated as intended
21: Received call for no power-battery low. Operator reset main breaker and all systems are now okay
22: Received page for power failure. Operator arrived on site and power was restored; reset main breaker, RAS pump, and alum pump

SEPTEMBER
04: Received alarm for Rodney Pump Station: no longer in alarm upon arrival. Checked to see if pumps were

operating properly; pumps completed a cycle as intended.

21: Received alarm for Rodney pump station. Operator reset pump 1; pump was operating properly and no longer in alarm

24: Received channel 7 alarm for Rodney WWTP. Operator found mixer 6 had an uncommand stop. Mixer 5 is now in duty and in manual; mixer 6 no longer operational.

FOURTH QUARTER:

There were no alarms this quarter.

SECTION 7: COMPLAINTS & CONCERNS:

FIRST QUARTER:

There were no complaints or concerns this quarter.

SECOND QUARTER:

There were no complaints or concerns this quarter.

THIRD QUARTER:

There were no complaints or concerns this quarter.

FOURTH QUARTER:

There were no complaints or concerns this quarter.