

Rodney Wastewater Treatment Plant Operations Report Second Quarter 2020

Submitted by:
Ontario Clean Water Agency
Date: August 6, 2020

Rodney Wastewater Treatment Plant

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.

SECTION 2: INSPECTIONS

FIRST QUARTER:

There were no MECP or MOL inspections during this quarter.

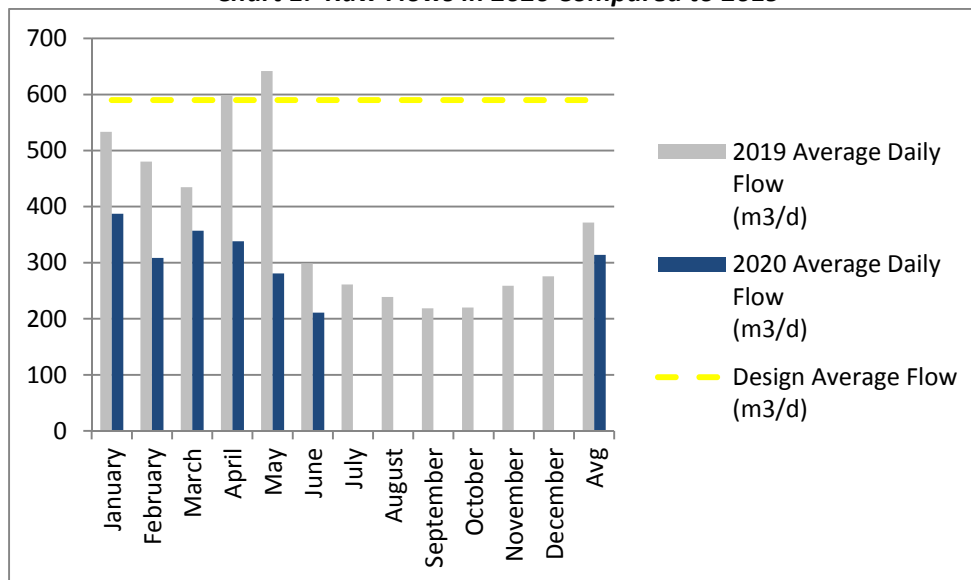
SECOND QUARTER:

There were no MECP or MOL inspections during this quarter.

SECTION 3: PERFORMANCE ASSESSMENT REPORT

The average daily flow for the wastewater treatment plant in 2020 is 313.81m³/d. The average daily flow in 2019 was 371.7 m³/d, therefore the flow for 2020 is down by 15.6% when compared to 2019. The plant is currently at 53% of its rated capacity of 590m³/d.

Chart 1. Raw Flows in 2020 Compared to 2019



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Raw samples are taken on a biweekly basis following the ECA requirements. The table below shows the raw sample results for 2020.

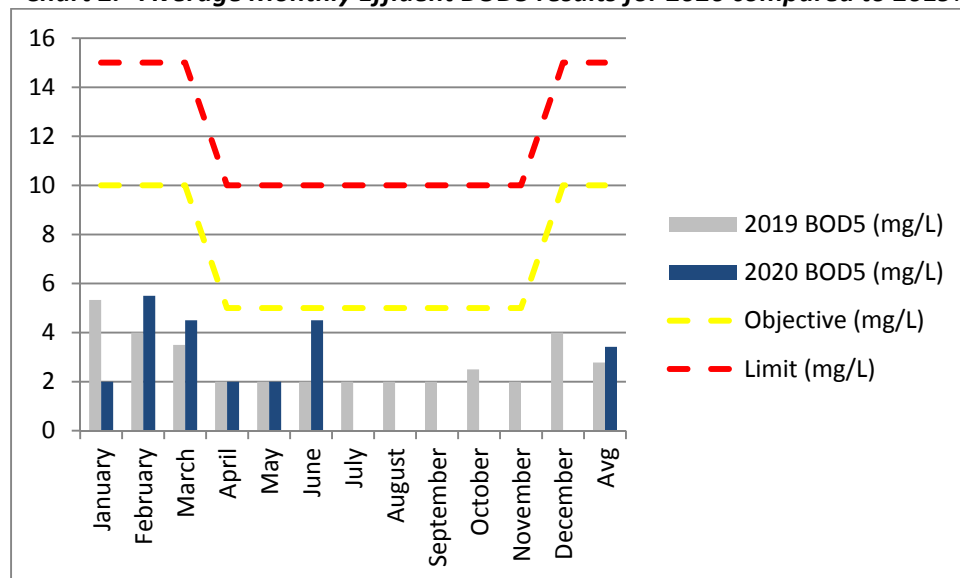
Table 1. Raw water sample results for 2020.

	BOD5 (mg/L)	TKN (mg/L)	TP(mg/L)	TSS (mg/L)
January Results	203.5	34.6	4.455	137.5
February Results	118.5	25.55	3.555	100.5
March Results	100	25.45	2.475	105
April Results	124	31.15	3.34	124.5
May Results	61.5	27.1	2.33	32.5
June Results	132.5	36.9	3.42	109.5
July Results				
August Results				
September Results				
October Results				
November Results				
December Results				
Annual Average	123.33	30.125	3.262	109.5

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

The average effluent BOD5 for 2020 is 3.4mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for BOD5 in 2019 was 2.78mg/L, therefore the results for 2020 so far are up by 23% when compared to 2019 (refer to Chart 2).

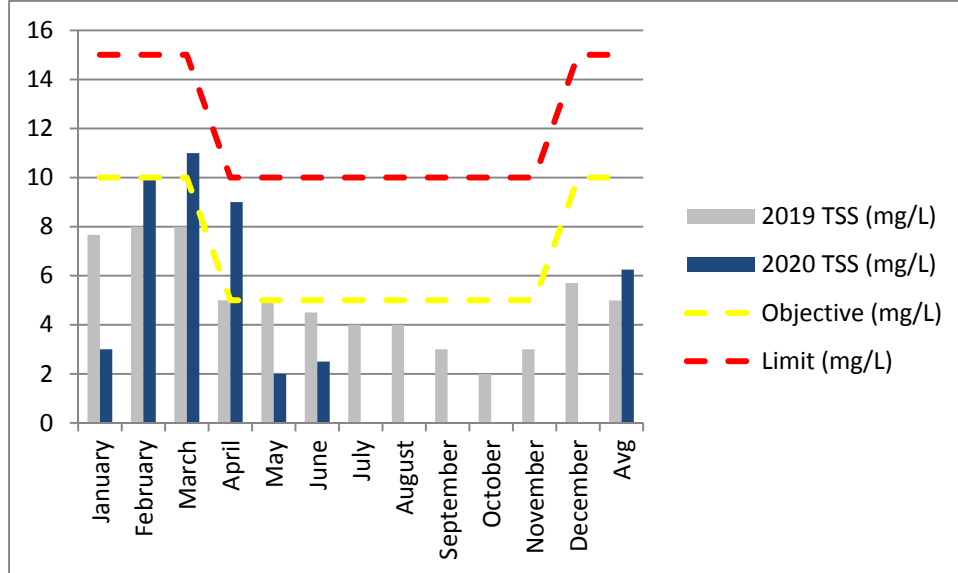
Chart 2. Average Monthly Effluent BOD5 results for 2020 compared to 2019.



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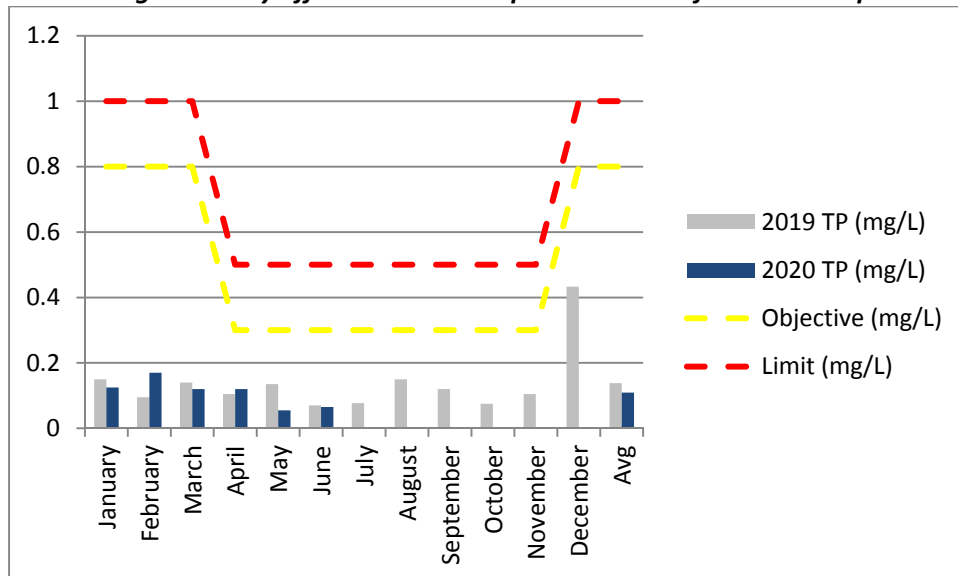
The average effluent TSS for 2020 is 6.25 mg/L, meeting the effluent limit identified in the ECA but exceeding the objective in March and April. The annual average result for TSS in 2019 was 5mg/L, therefore the results for 2020 are up by 25% when compared to 2019 (refer to Chart 3).

Chart 3. Average Monthly Effluent Total Suspended Solids Results for 2020 Compared to 2019



The average effluent TP for 2020 is 0.11 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TP in 2019 was 0.14mg/L, therefore the results for 2020 are down 21% when compared to 2019 (refer to Chart 4).

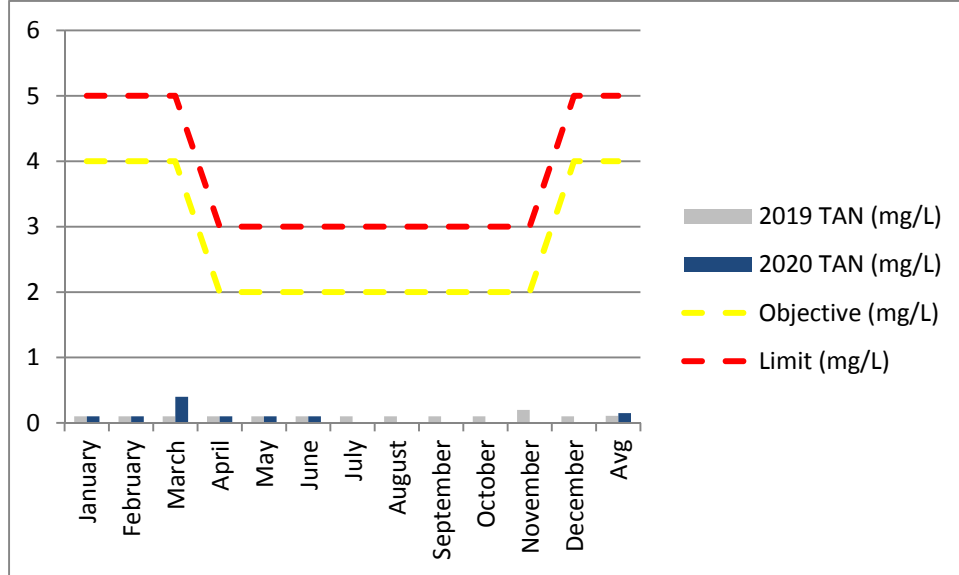
Chart 4. Average Monthly Effluent Total Phosphorus Results for 2020 Compared to 2019



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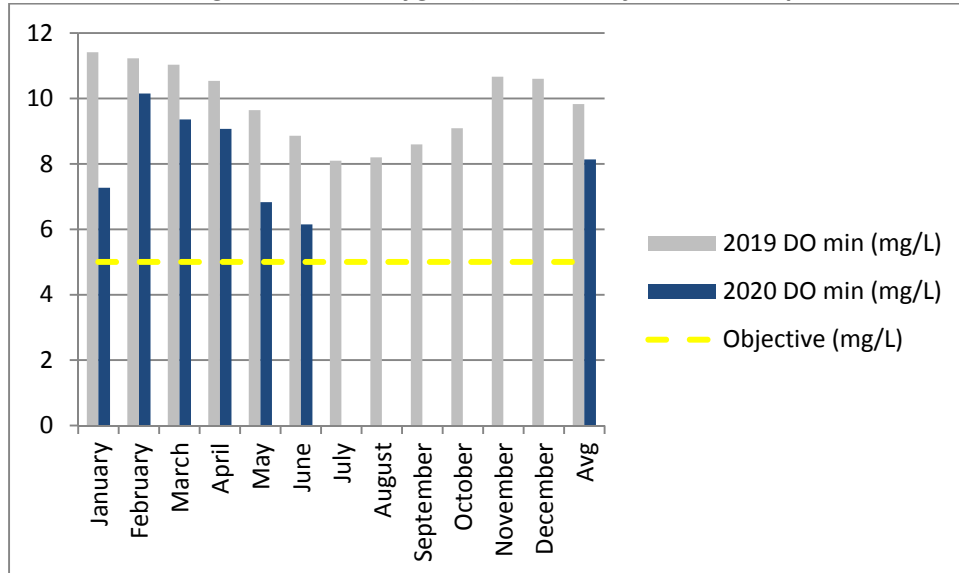
The average effluent TAN for 2020 is 0.15 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TAN in 2019 was 0.11mg/L, therefore the results for 2020 so far are up by 38% when compared to 2019 (refer to Chart 5).

Chart 5. Average monthly Effluent Total Ammonia Nitrogen Results for 2020 Compared to 2019



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 no objective exceedances.

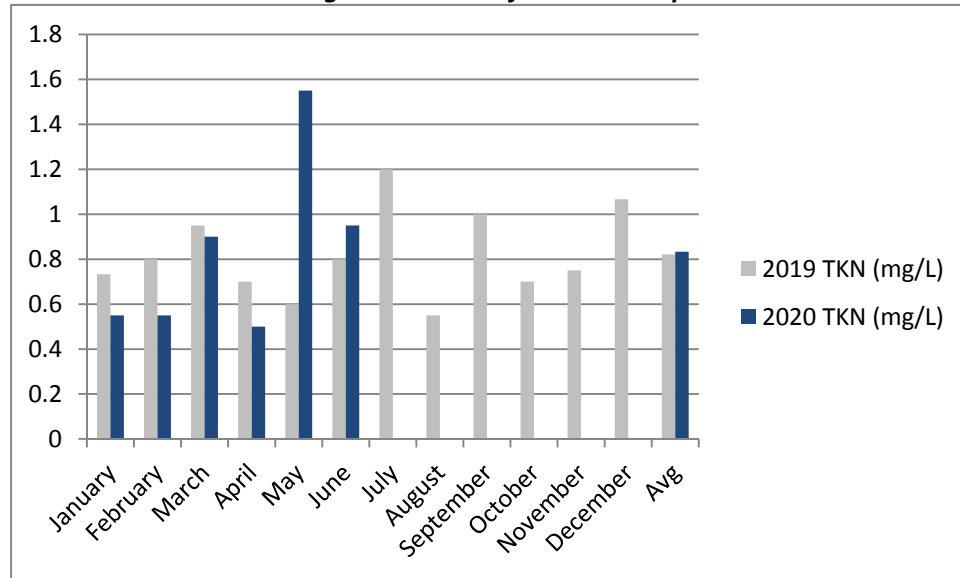
Chart 6. Average Dissolved Oxygen (DO) Results for 2020 Compared to 2019



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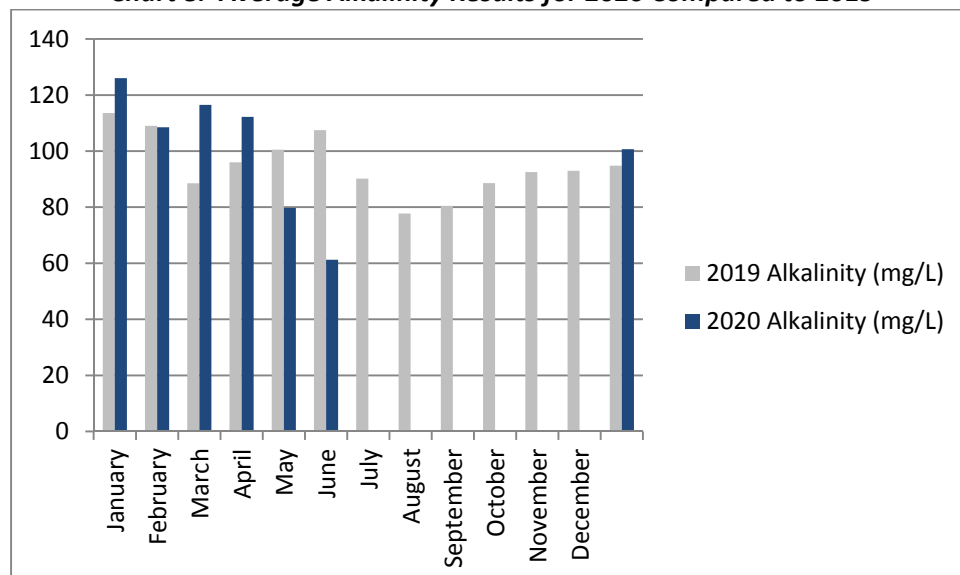
Total Kjeldahl Nitrogen (TKN) is sampled biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. The average effluent TKN for 2020 is 0.83 mg/L. The annual average result for TKN in 2019 was 0.82mg/L; therefore the results for 2020 so far are up by 1.5% when compared to 2019 (refer to Chart 7).

Chart 7. Average TKN Results for 2020 Compared to 2019



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 2020 is 100.7mg/L. The annual average result for alkalinity in 2019 was 94.8mg/L, therefore the results for 2020 so far are up by 6.2% when compared to 2019 (refer to Chart 8).

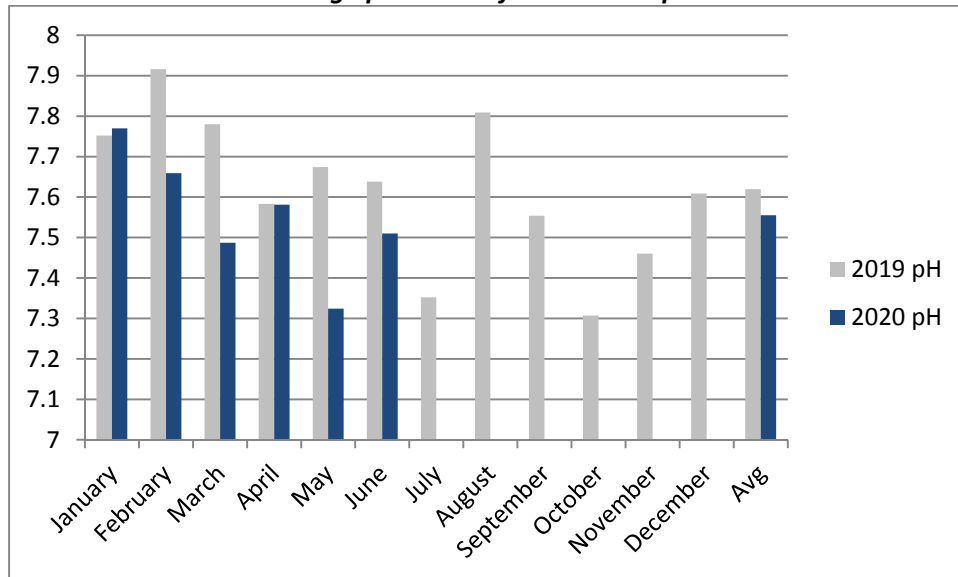
Chart 8. Average Alkalinity Results for 2020 Compared to 2019



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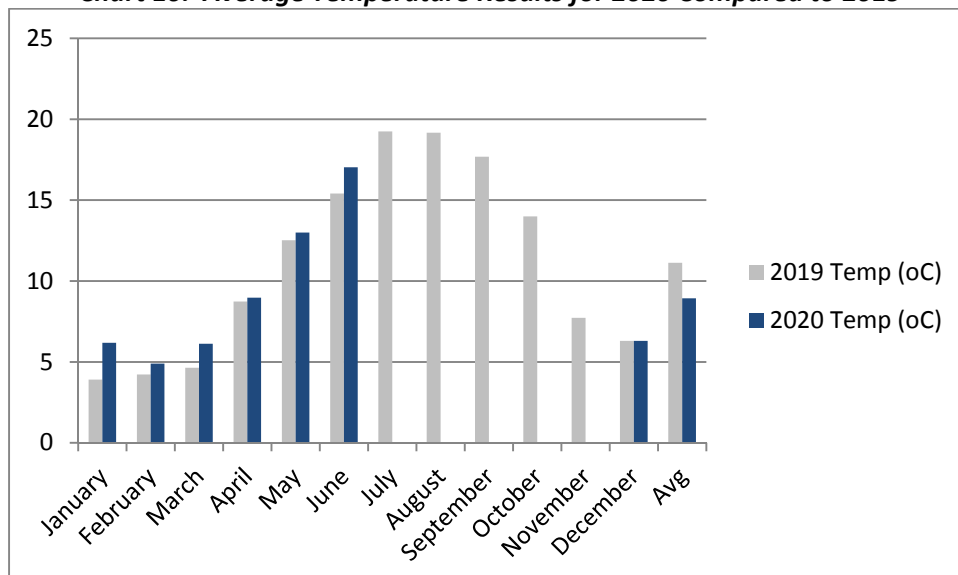
pH is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that the pH is in the range of 6.5-8.5. The average effluent pH for 2020 so far is 7.56. The annual average result for pH in 2019 was 7.62; therefore the results for 2020 is down by 0.84% when compared to 2019 (refer to Chart 10).

Chart 9. Average pH Results for 2020 Compared to 2019



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 2020 is 8.9°C. The annual average temperature in 2019 was 11.1°C, therefore the results for 2020 are down 20% when compared to 2019 (refer to Chart 11).

Chart 10. Average Temperature Results for 2020 Compared to 2019



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SECTION 4: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

Due to the COVID-19 pandemic, which has been brought to the attention of all OCWA staff; precautionary protection measures have been implemented at all facilities. In addition to the mandatory PPE worn by all operational staff, the following additional steps were taken to assure safety:

- Additional PPE and supplies were sourced as applicable.
- The frequency of facility and vehicle cleaning and surface disinfection was increased and documented
- Staff re-organization was implemented to meet social distancing requirements where applicable.
- Facility accesses to essential contractors and/or delivery personnel are closely monitored.

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

SECOND QUARTER:

The Covid-19 precaution's still continue to ensure the protection of all staff and the public.

SECTION 5: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY:

Contractors on site various days for PLC upgrade. Manholes at 231 Stinson Street and at the dead end of Third Street were inspected weekly, the flows were acceptable.

02: Alum system flushed due to airlocks.

15: Alum day tank topped up.

16: Pumped out scum chamber.

24: Flushed alum system with hot water to clear line blockages caused by cold weather.

26: Alum system flushed due to airlocks.

28: Flushed alum system with hot water to clear line blockages caused by cold weather; connected new alum day tank.

29: Alum system flushed due to airlocks.

31: Electricians fixed connection between pump station and sewage plant for alarm dialers.

FEBRUARY:

Manholes at 231 Stinson and at the dead end of Third Street were inspected weekly, the flows were acceptable.

13: Kone Cranes on site to complete lifting device inspections

19: Monitored pump station due to phantom alarms previous night. Miltronics was jumping all over the place; cleaned the face of the transducer off as it was covered in black grime. Large chunk of grease found in pump station, but doesn't seem to be causing an issue. Untangled floats and got them back in the float rings. Alberts Generator was on site to service generator, as the generator had gone into a self-test mode. The self-test mode is was cleared, oil and filter changed and fuel filter changed. Monitored after all work complete and no alarms came out.

20: Municipality completed mowing of lagoon edges

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- 21: Flowmetrix on site to scale new flowmeters to SCADA
- 24: Low Set tests; operator changed WAS cycle from 7 times per day to 5 times per day.
Man holes on Third Street and Stinson checked.

MARCH:

- Contractors on site various days for PLC upgrade. Manholes at 231 Stinson Street and the dead end of Third Street were inspected weekly, flows were acceptable. During each inspection a 20L pail of water was poured down the manhole at the dead end of Third Street to clear debris.
- 02: Alum system flushed due to airlocks.
- 03: Pumped out Rodney PS chamber.
- 04: Topped up alum day tank. Operator mounted new effluent water pump in the filter building.
- 05: Alum system flushed due to airlocks.
- 09: RAS Pump 1 faulted due to a clogged impellor. Operator disconnected pump, cleared out the impellor and returned RAS Pump 1 to service.
- 12: Alum system flushed with hot water to clear blockages. Operator found leak on Pump 1 cartridge. Replaced pump cartridge and returned Pump 1 to service.
- 18: Diverted flow from plant to lagoon. Operator pumped out the clarifier to inspect lower end of the scraper arm. Flowmetrix was on site to calibrate flowmeter.
- 20: Inspection of clarifier lower arm complete; no damage found. Wastewater flow returned to the plant instead of the lagoon.

SECOND QUARTER:

APRIL

- Manholes at 231 Stinson Street and the dead end of Third Street were inspected weekly. Flows were acceptable. During each inspection a 20L pail of water was poured down the manhole at the dead end of Third Street to clear debris.
- 01: UV installed for seasonal use.
- 17: Cleared foam and debris from the aeration v-notches. Operator attempted to clear the pipe from RAS containment pit using a plumbers 'snake'. T&T Power and RVA on site for walkthrough.
- 20: Gerber Electric performed annual maintenance on RAS/WAS pumps.

MAY

- Manholes at 231 Stinson Street and the dead end of Third Street were inspected weekly, flows were acceptable. During each inspection a 20L pail of water was poured down the manhole at the dead end of Third Street to clear debris.
- 06: Gerber electric replaced the GFCI in the raw autosampler cabinet. The old GFCI would trip when the autosampler was turned on.
- 11: Repaired RAS building sump pipe. Patched RAS building sump.
- 12: Gerber Electric on site to investigate clarifier scum pump not working in auto mode. Electrician repaired the switch; the scum pump now works in manual/hand mode. Gerber Electric also investigated the bar screen scraper float which was not activating the bar screen scraper. A faulty relay was found to be the cause. A new relay has been ordered and the bar screen scraper was left running in hand mode.

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- 13: Performed troubleshooting of the WAS flow engineering units in SCADA with T&T technician.
- 15: Installed new 6V battery in the dialer.
- 20: Changed bulb on the UV.
- 26: Changed 2 bulbs on the UV and cleared the UV slot in the effluent channel of sand and debris.
- 28: Performed WAS flow meter/SCADA troubleshooting with Flowmetrix technician.

JUNE

- Manholes at 231 Stinson Street and the dead end of Third Street were inspected weekly, flows were acceptable.
- 03: Added air to 'pipe pig' at the lagoon overflow.
 - 04: Changed light bulbs on the aeration deck. Transferred alum from the large tank to the day tank. At the request of Flow Metrix for WAS flow meter troubleshooting the electronics of the meter was inspected, no signs of water corrosion or loose wires. Inspected and added grease to aeration mixers.
 - 09: Performed trial of SCADA controlled WAS (waste active sludge) cycle. The trial was unsuccessful; the flow meter records faults, likely due to air siphoned from the return line, which makes the total waste volume inaccurate during the SCADA controlled cycle. WAS cycles will continue to be performed manually by the operators.
 - 10: Removed old influent auto sampler and placed new auto sampler in cabinet.
 - 15: Gerber Electric replaced faulty relay on the bar screen scraper. A UV light bulb burnt out and was replaced.
 - 19: A UV light bulb burnt out and was replaced.
 - 22: Gerber Electric was on site to investigate GFCI outlet in the influent auto sampler. A crossed wire in the new auto sampler was causing the GFCI to trip. Gerber's electrician corrected the issue.
 - 23: Flowmetrix technician was on site to investigate the WAS flow meter faults. The technician collected more data on the flow meter; the WAS cycle will continue to be performed manually. Gerber Electric was on site to replace a faulty float to activate the bar screen scraper. Additionally, the counter arm used to control the bar screen scraper had rusted off and was replaced with a piece of plastic. The bar screen scraper will now operate correctly in auto mode. Gerber Electric replaced batteries for the emergency lights in Building B (RAS pump room) and the lime room. The new effluent auto sampler was installed in its permanent location.
 - 24: Removed old effluent auto sampler.
 - 25: Performed trials on new auto samplers; auto sampler operated correctly.
 - 26: Configured the influent and effluent auto samplers with programs for 24hr sampling each day of the week.
 - 29: Nevro technician was on site to evaluate and provide quotes for a replacement filter backwash pump, a mechanical seal rebuild on RAS pump 2 and repair on the aeration mixer 1 coupler.

SECTION 6: ALARM SUMMARY

FIRST QUARTER:

JANUARY:

No alarms to report this month.

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FEBRUARY:

No alarms to report this month.

MARCH:

07: WAS/RAS pump fault. Operator was unable to resolve issues via SCADA. Senior Operations Manager, Sam Smith, repaired later on the following day.

29: Power outage caused alum pumps to fault.

SECOND QUARTER:

APRIL

17: Suspected voltage drop or phase drop caused aeration mixers to turn very slowly and fault. Hydro one was called and tested voltages but did not discover an issue. After Hydro One tested the voltage, the aeration mixers worked normally.

26: Alarm for Rodney Pump Station; Alarm cleared before operator arrived on site.

28: Alarm for Rodney Pump Station; Alarm cleared before operator arrived onsite.

MAY

09: Alarm callout for power outage. Operator on site, reset the main breaker, alum pumps and RAS pumps and performed facility walkthrough to ensure the plant was operating correctly.

JUNE

10: Received alarm at 19:50 that main power was out. This occurred during a severe thunderstorm. Operator arrived on site, reset main breaker and re-started alum pump and RAS pump 1.

25: Power outage occurred at 14:57. Operator diverted flow to the lagoon at 16:37. Power returned at 18:21; restored plant to normal operating condition, restored flow to the plant and stopped diverting to the lagoon.

SECTION 7: COMMUNITY COMPLAINTS & CONCERNS

FIRST QUARTER:

No complaints or concerns to report this quarter.

SECOND QUARTER:

No complaints or concerns to report this quarter.