

Rodney Wastewater Treatment Plant
Operations Report
First Quarter 2019

Submitted by:
Ontario Clean Water Agency
Date: May 2, 2019

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 m³/day
Total Annual Flow (2017 Data): 127,060 m³/year
Average Day Flow (2017 Data): 348.1 m³/day
Maximum Day Flow (2017 Data): 588 m³/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: Susan Budden 519-318-3271

SECTION 1: COMPLIANCE SUMMARY

FIRST QUARTER:

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

SECTION 2: INSPECTIONS

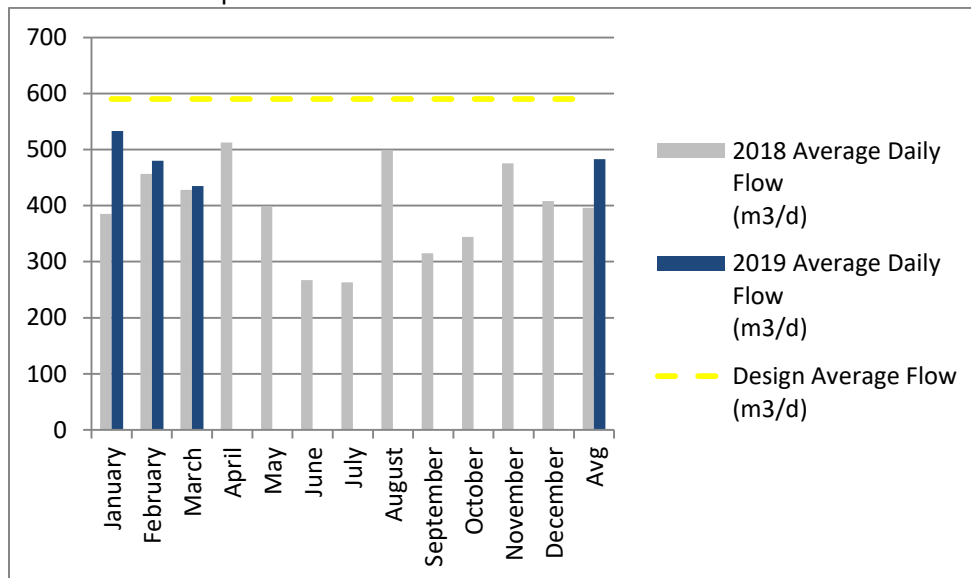
FIRST QUARTER:

There were no MOECC or MOL inspections during this quarter.

SECTION 3: PERFORMANCE ASSESSMENT REPORT

The average daily flow for the wastewater treatment plant so far in 2019 is 482.7 m³/d. The average daily flow in 2018 was 396.1m³/d, therefore the flow for 2019 so far is up by 21.9% when compared to 2018. The plant is currently at 82% of its rated capacity of 590m³/d.

Chart 1. Raw flows in 2019 compared to 2018 flows.



Raw samples are taken on a biweekly basis following the ECA requirements. The table below shows the raw sample results for 2019.

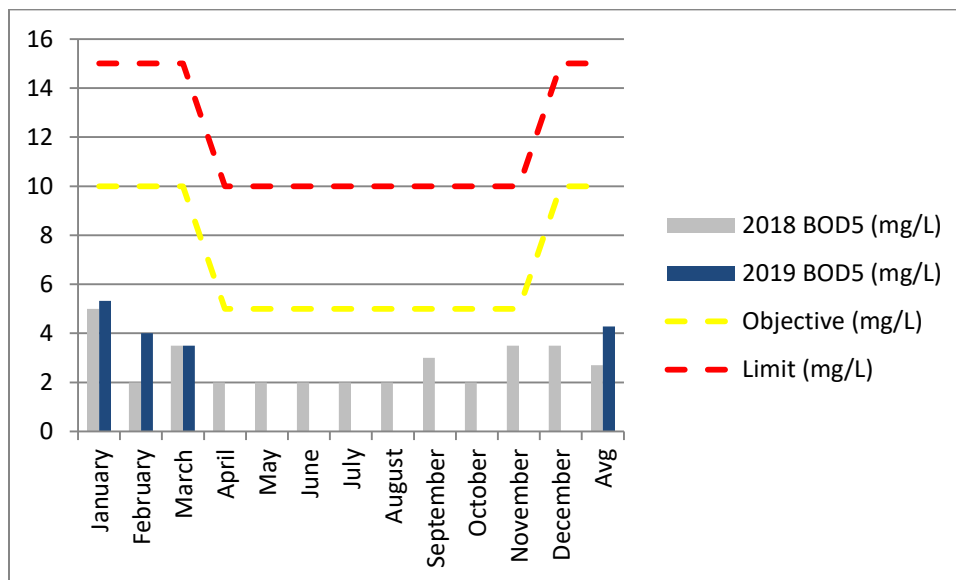
Table 1. Raw water sample results for 2018.

	BOD5 (mg/L)	TKN (mg/L)	TP(mg/L)	TSS (mg/L)
January Results	46	14.467	1.467	58
February Results	91	29.75	3.215	272
March Results	100	25.15	2.845	132.5
April Results	-	-	-	-
May Results	-	-	-	-
June Results	-	-	-	-
July Results	-	-	-	-
August Results	-	-	-	-
September Results	-	-	-	-
October Results	-	-	-	-
November Results	-	-	-	-
December Results	-	-	-	-
Annual Average	74.286	21.886	2.36	140.429

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

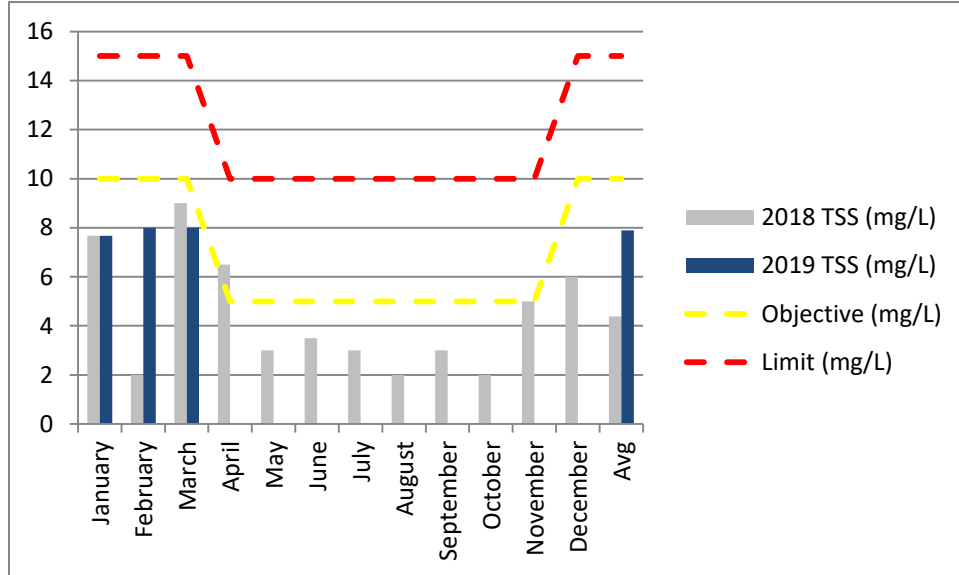
The average effluent BOD5 for 2019 is 4.28mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for BOD5 in 2018 was 2.71mg/L, therefore the results for 2019 so far are up by 58% when compared to 2018 (refer to Chart 2).

Chart 2. Average Monthly Effluent BOD5 results for 2019 compared to 2018.



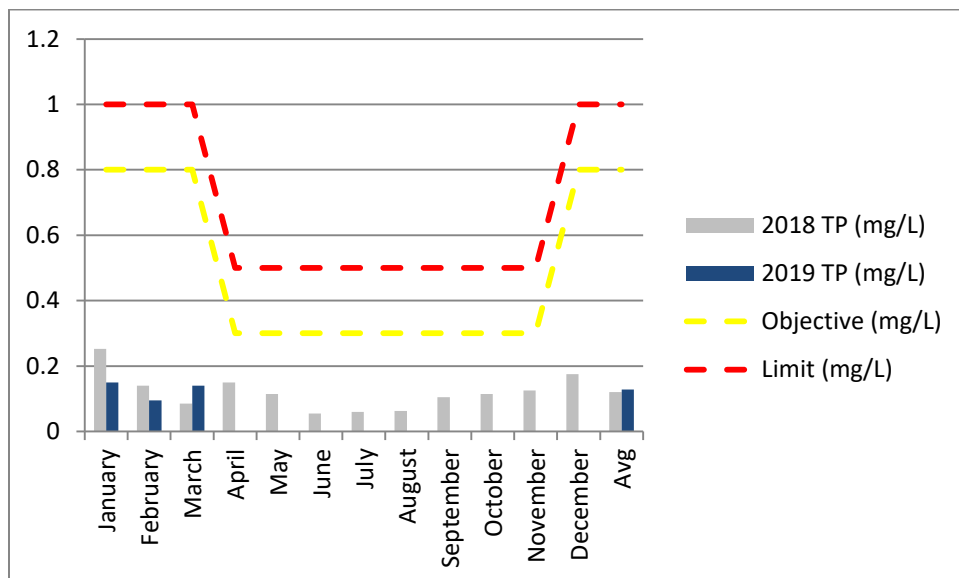
The average effluent TSS so far for 2019 is 7.9 mg/L, meeting effluent limits identified in the ECA. The annual average result for TSS in 2018 was 4.4mg/L, therefore the results for 2019 so far are up by 80% when compared to 2018 (refer to Chart 3).

Chart 3. Average monthly effluent total suspended solids results for 2019 compared to 2018.



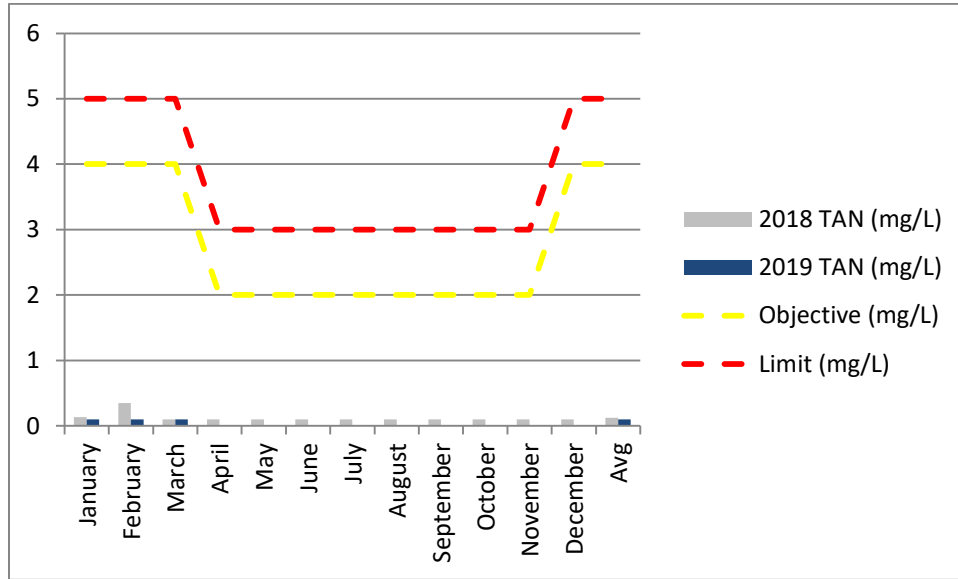
The average effluent TP so far for 2019 is 0.13 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TP in 2018 was 0.12mg/L, therefore the results for 2019 so far are up by 6.9% when compared to 2018 (refer to Chart 4).

Chart 4. Average monthly effluent total phosphorus results for 2019 compared to 2018.



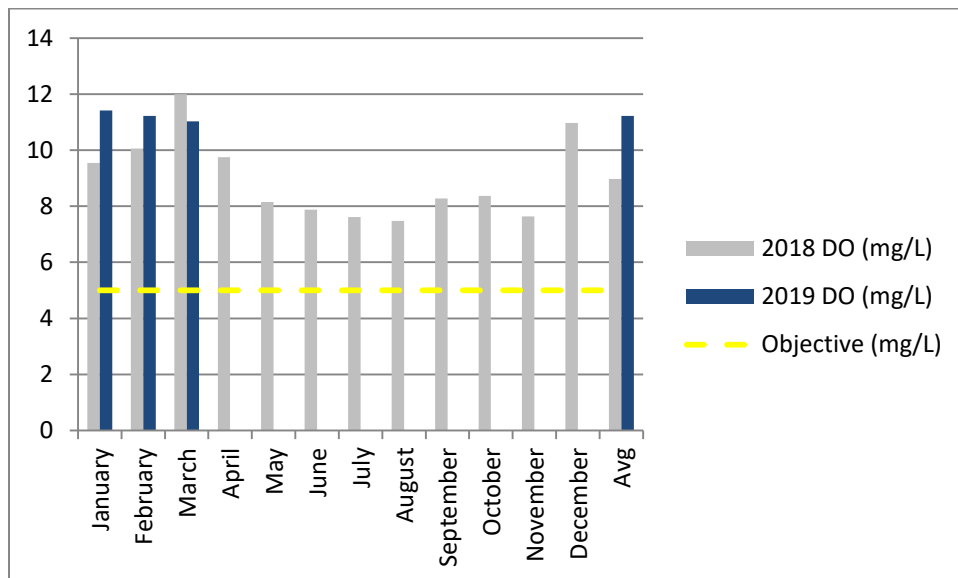
The average effluent TAN for 2019 so far is 0.1 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TAN in 2018 was 0.12mg/L, therefore the results for 2019 so far are down by 19% when compared to 2018 (refer to Chart 5).

Chart 5. Average monthly effluent total ammonia nitrogen results for 2019 compared to 2018.



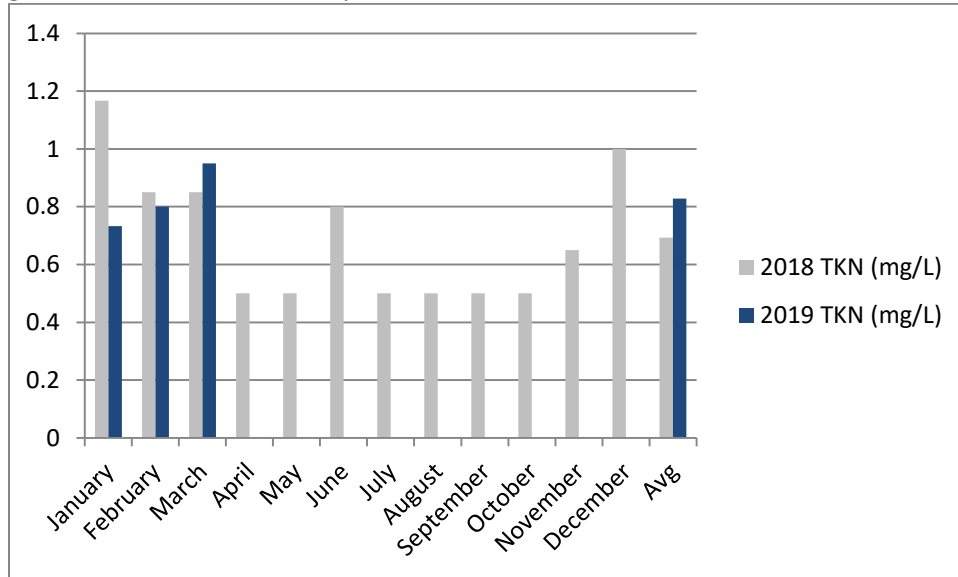
Dissolved oxygen (DO) of the effluent is tested on site at the plant, the ECA identifies a minimum level required as an objective. This objective is 5mg/L. The chart below (chart 7) shows the average DO concentrations, there have been no objective exceedances.

Chart 7. Average Dissolved Oxygen (DO) results for 2019 compared to 2018.



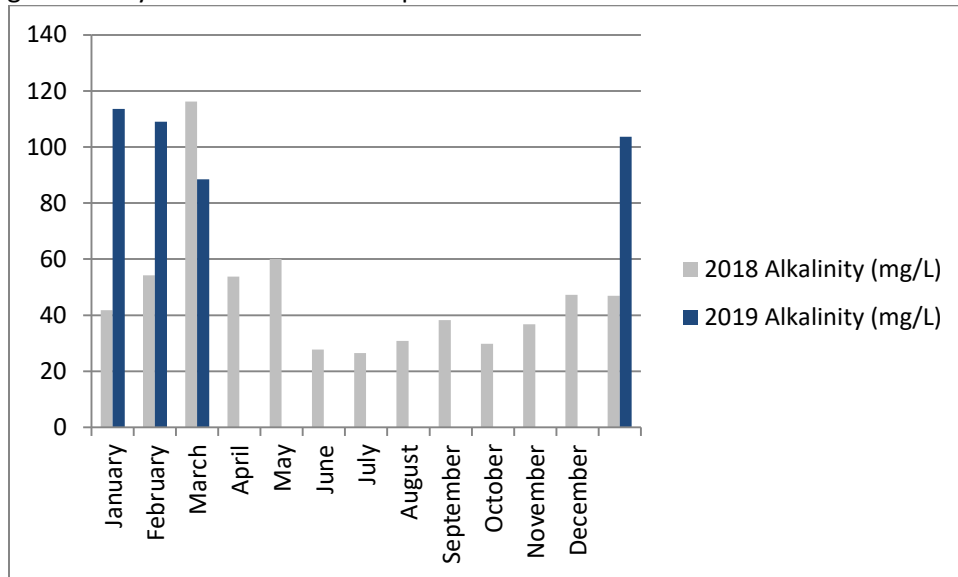
Total Kjeldahl Nitrogen (TKN) is sampled biweekly in accordance with ECA requirements, there are no objective or limits imposed on this parameter. The average effluent TKN for 2019 so far is 0.83 mg/L. The annual average result for TKN in 2018 was 0.69mg/L, therefore the results for 2019 so far are up by 19% when compared to 2018 (refer to Chart 8).

Chart 8. Average TKN results for 2019 compared to 2018.



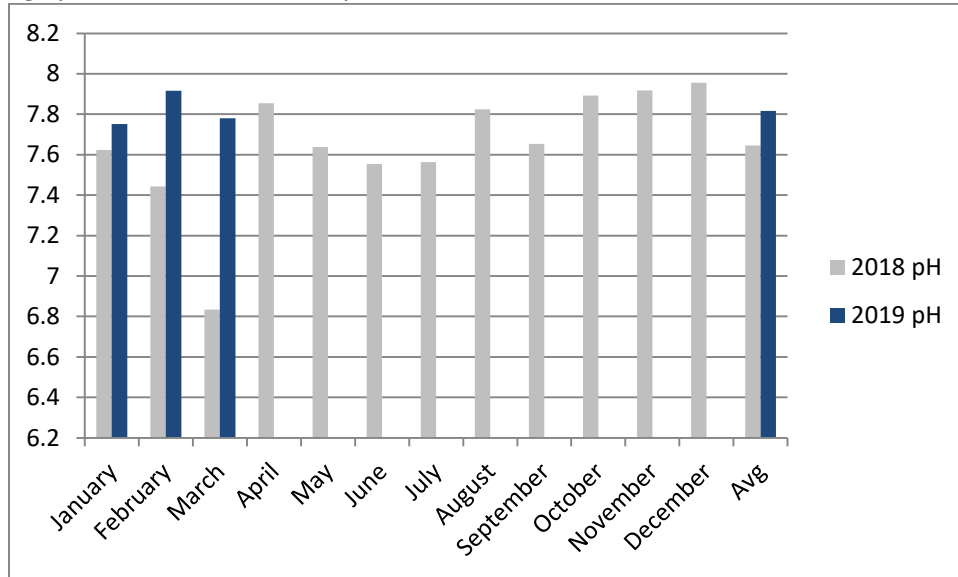
Alkalinity is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that at least 50mg/L is present in the effluent. The average effluent alkalinity for 2019 so far is 103.7mg/L. The annual average result for alkalinity in 2018 was 46.9mg/L, therefore the results for 2019 so far are up by 121% when compared to 2018 (refer to Chart 9).

Chart 9. Average alkalinity results for 2019 compared to 2018.



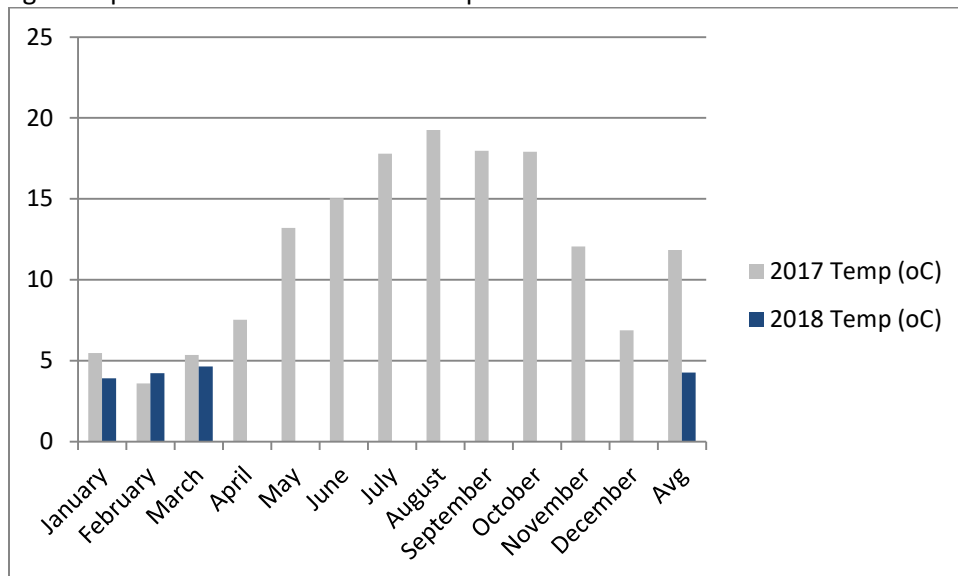
pH is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that the pH is in the range of 6.5-8.5. The average effluent pH for 2019 so far is 7.82. The annual average result for pH in 2018 was 7.64, therefore the results for 2019 so far are up by 2.2% when compared to 2018 (refer to Chart 10).

Chart 10. Average pH results for 2019 compared to 2018.



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 2019 so far is 4.3°C. The annual average temperature in 2018 was 11.8°C, therefore the results for 2019 so far are down 64% when compared to 2018 (refer to Chart 11).

Chart 11. Average Temperature results for 2019 compared to 2018.



SECTION 4: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

There were no Health and Safety issues identified this quarter.

SECTION 5: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY:

- 01: Heavy flows today caused by rainfall & melting conditions.
- 02: Completed cleaning of aeration channels, clarifier & UV channels.
- 14: Cleaned RAS building, RAS pit & effluent channels
- 16: Supersucker onsite today to vac out & clean scum chamber & diagnose inoperable pump. Found that pump had come off mounting flange not allowing pump to work properly. Placed in proper position and is now pumping as designed.
- 16: Gerber electric onsite to repair main power supply to pump station after being drilled thru by Weber contracting. Pump station ran off generator power for 7.5 hours while repairs completed.
- 18: Gerber electric onsite to diagnose / repair pump #2 at pumping station.
- 22: Chemtrade onsite today for alum delivery.
- 23: Heavy flows today caused by rainfall & melting conditions (1972 m/3) causing plant to back up. Operator opened by-pass to lagoons as per facility manager instructions to relieve plant.
- 25: Closed by-pass to lagoon as per facility manager as plant is now back to working as designed.
- 28: Hardie onsite to diagnose why back wash return pumps will not work in auto. Replaced 2 float switches and now working as designed.

FEBRUARY:

- 05: Flow to filter building slow, adjusted operations to allow proper flow, adjust alum dosage as it was low.
- 08: High flows washed out plant; adjusted setting to allow plant to recoup its self.
- 22: Farmington onsite to inspect issues with clarifier arm and operations; suggests the clarifier will need to be drained to better inspect the whole system to find out where the actual noise is coming from.

MARCH:

- 06: Fixed bar screen
- 08: Change bulbs in emergency lights
- 15: Add oil to the gearbox in clarifier

SECTION 6: ALARM SUMMARY

FIRST QUARTER:

JANUARY:

- 23: Received call from facility manager in regards to sewer back up at 145 Moriah Street. Met with W.E operator onsite & investigated issue. Found that sewer was backed up at manhole on Stinson Street causing back up at 145 Moriah. Called Sanitary Sewer Services in, flushed sewer line until plug was broken free, sewer is now unplugged and running as designed. Monitored system & pump station to ensure proper operation and all appears ok now.
- 26: Onsite as per facility managers request to check plant operations. Found filter reject pit was full and required pumping out. Issues caused as back wash pumps are not working in auto & will be repaired on the 28th.

27: Onsite as per facility managers request to check plant operations. Found filter reject pit was full and required pumping out. Issues caused as back wash pumps are not working in auto & will be repaired on the 28th.

FEBRUARY:

No alarms this month.

MARCH:

No alarms this month.

SECTION 7: COMMUNITY COMPLAINTS & CONCERNS

FIRST QUARTER:

JANUARY:

23: Complaint from home owner of 145 Moriah Street in regards to sewer backing up into basement of house.

FEBRUARY:

No complaints or concerns to report this month.

MARCH:

No complaints or concerns to report this month.