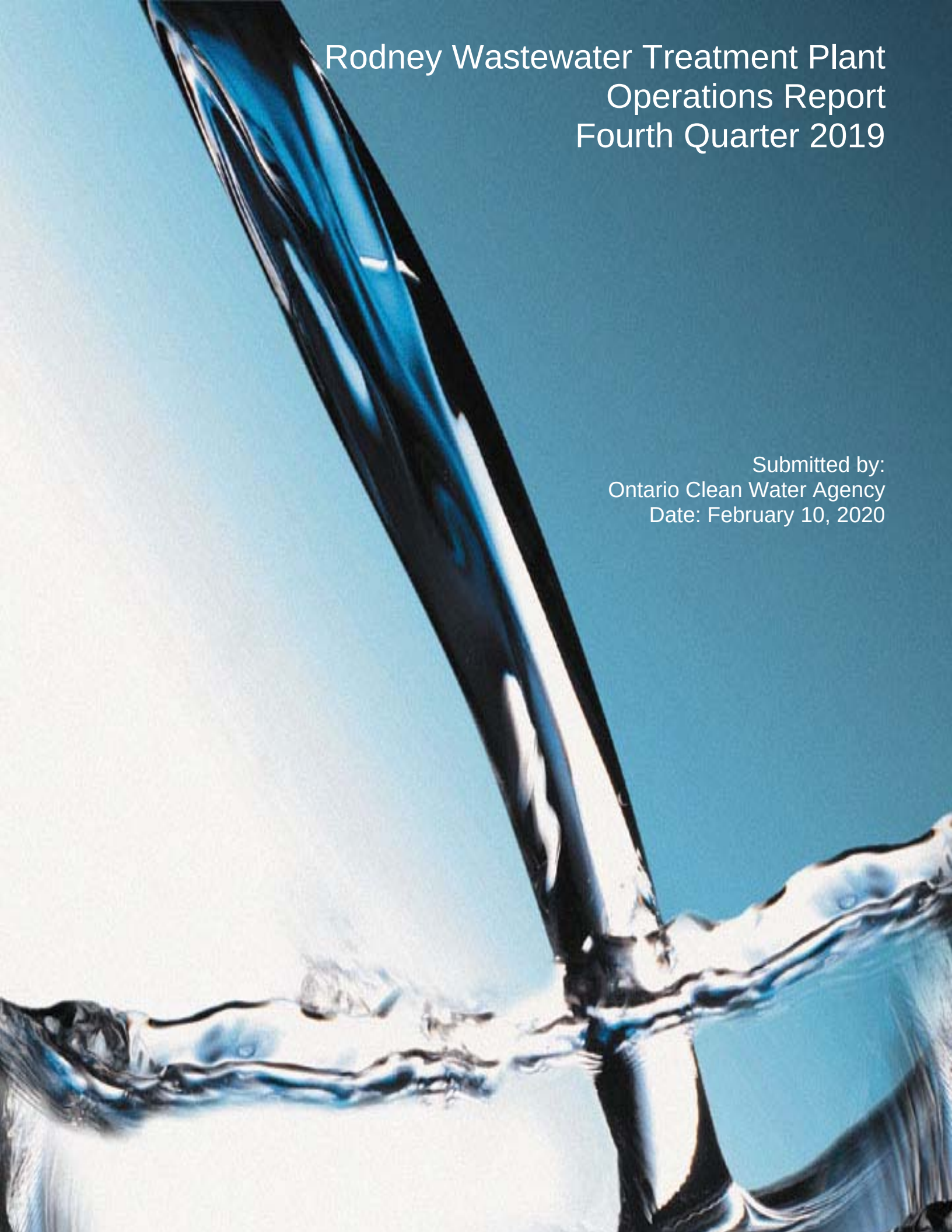


Rodney Wastewater Treatment Plant
Operations Report
Fourth Quarter 2019

Submitted by:
Ontario Clean Water Agency
Date: February 10, 2020

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:	Susan Budden	519-318-3271

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 first quarter.

THIRD QUARTER:

There were no compliance issues to report for this quarter.

FOURTH QUARTER:

There were no compliance issues to report for this 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.

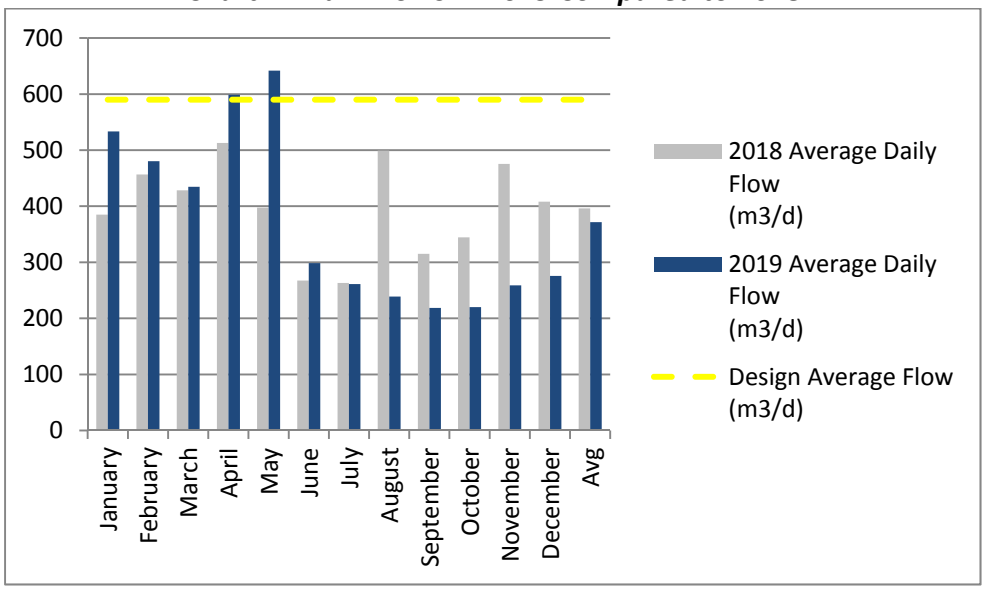
FOURTH QUARTER:

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 2019 is 371.71 m3/d. The average daily flow in 2018 was 396.1 m3/d, therefore the flow for 2019 is down by 6.14% when compared to 2018. The plant is currently at 63% of its rated capacity of 590m^3/d.

Chart 1. Raw Flows in 2019 Compared to 2018



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

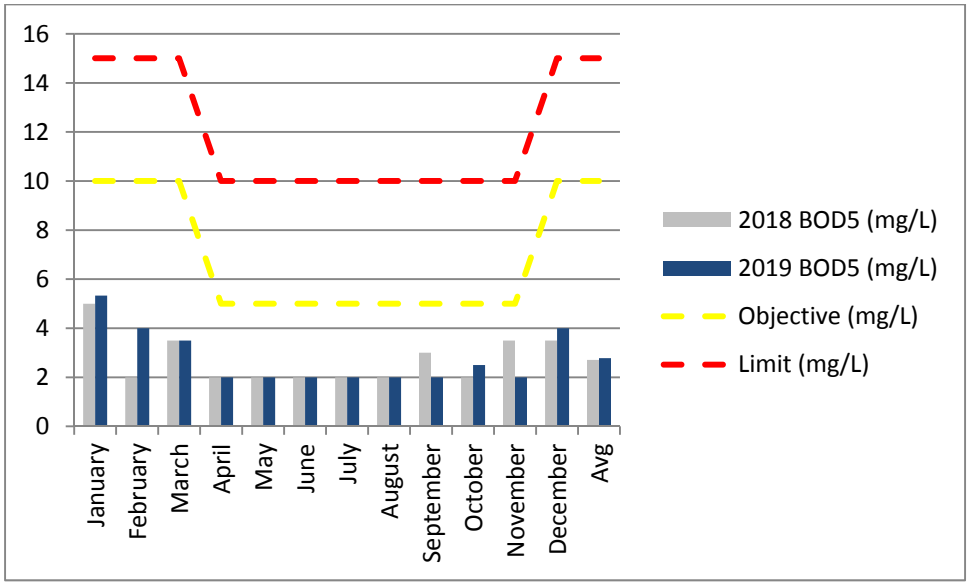
Table 1. Raw water sample results for 2019.

	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	37.5	12.95	1.785	61.5
May Results	82	29.35	2.92	107
June Results	143.5	27.65	2.75	205.5
July Results	60	28.57	2.383	108.3
August Results	62.5	27.45	2.695	86.5
September Results	73.5	36	3.05	54.5
October Results	146	32.55	3.01	104.5
November Results	57.5	33.6	2.82	60
December Results	95.7	30.7	2.71	98.7
Annual Average	81.2	27.04	2.59	109.7

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

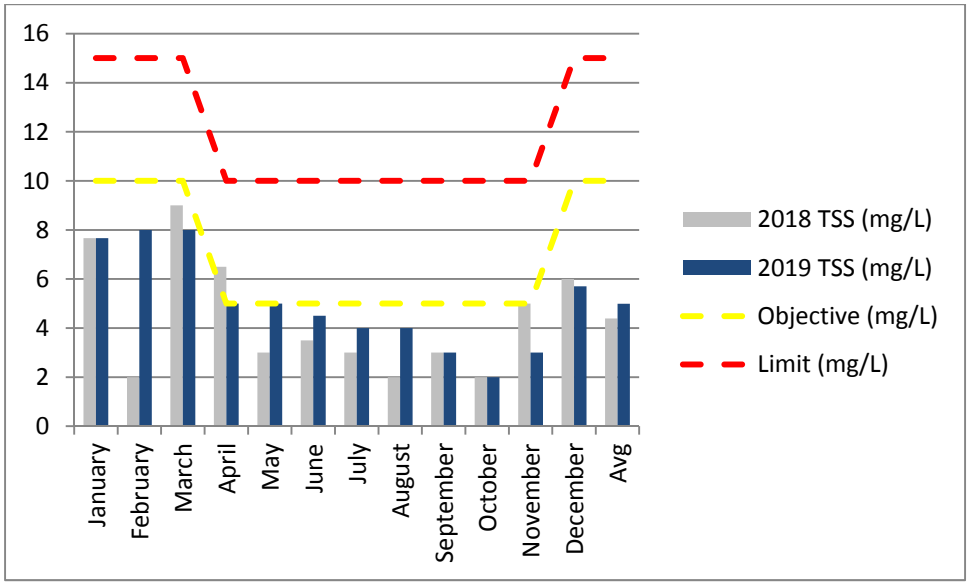
The average effluent BOD5 for 2019 is 2.78mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for BOD5 in 2018 was 2.71mg/L, therefore the results for 2019 so far are up by 2.55% when compared to 2018 (refer to Chart 2).

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



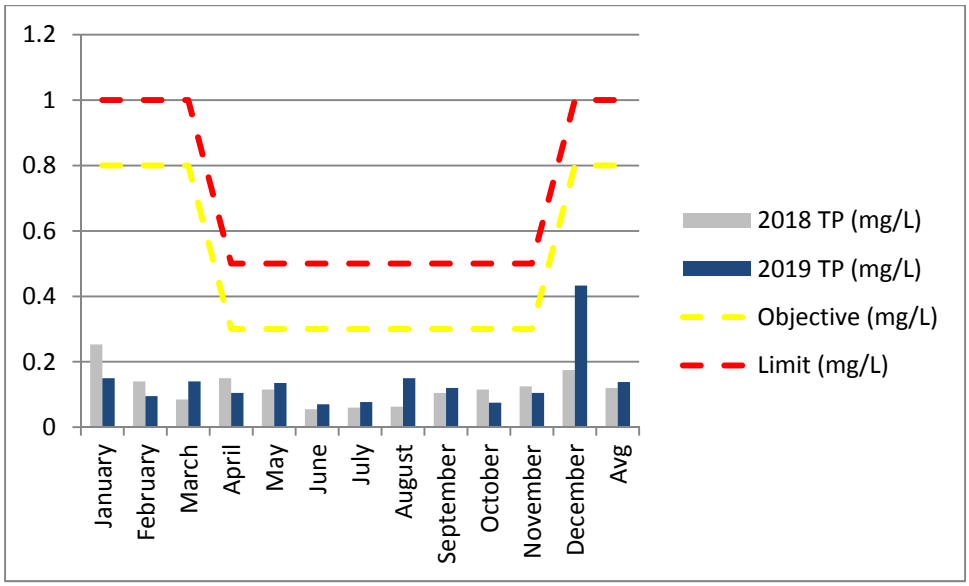
The average effluent TSS for 2019 is 4.99 mg/L, meeting effluent limits identified in the ECA. The annual average result for TSS in 2018 was 4.4mg/L, therefore the results for 2019 are up by 13.8% when compared to 2018 (refer to Chart 3).

Chart 3. Average Monthly Effluent Total Suspended Solids Results for 2019 Compared to 2018



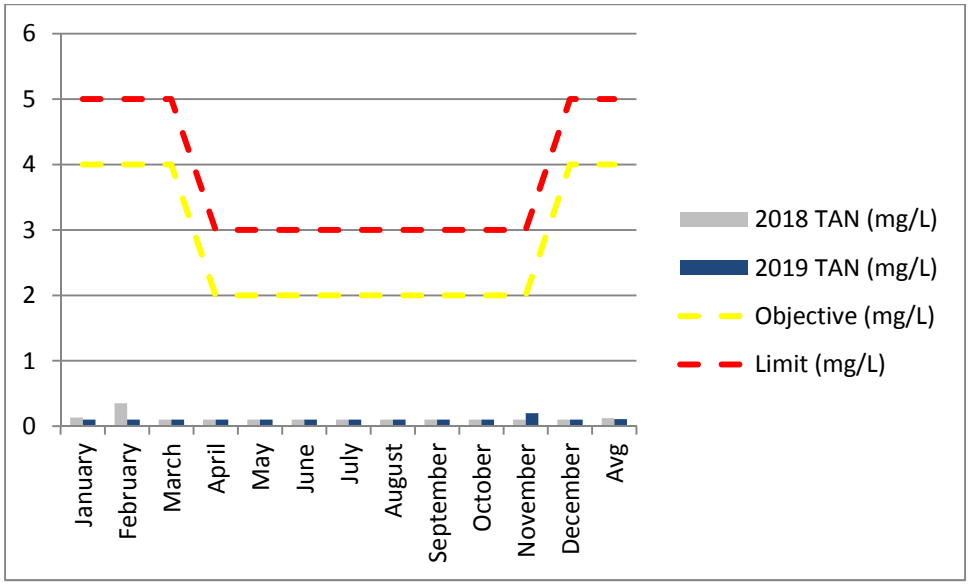
The average effluent TP for 2019 is 0.14 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TP in 2018 was 0.12mg/L, therefore the results for 2019 are up by 14.9% when compared to 2018 (refer to Chart 4).

Chart 4. Average Monthly Effluent Total Phosphorus Results for 2019 Compared to 2018



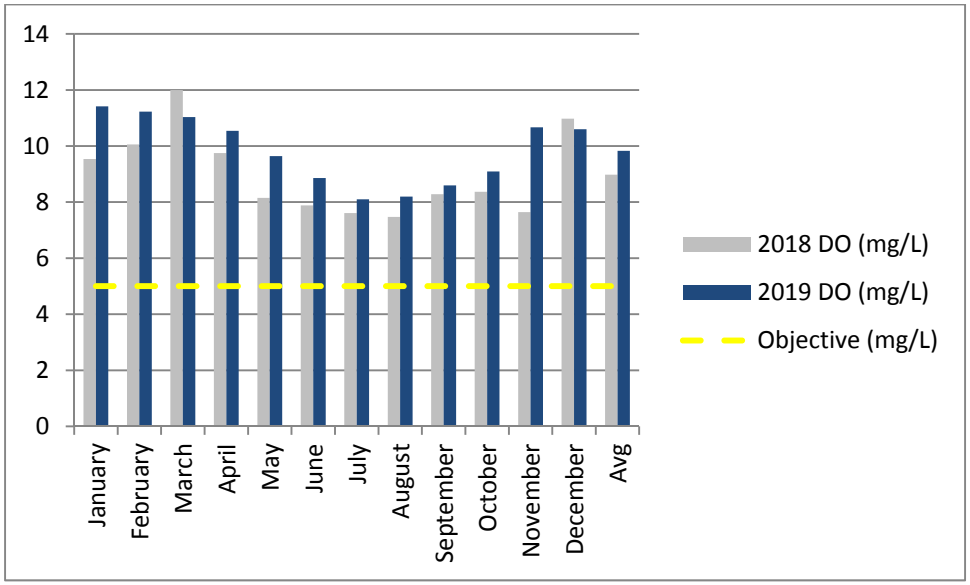
The average effluent TAN for 2019 is 0.1 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TAN in 2018 was 0.12mg/L, therefore the results for 2019 so far are down by 12% when compared to 2018 (refer to Chart 5).

Chart 5. Average monthly Effluent Total Ammonia Nitrogen Results for 2019 Compared to 2018



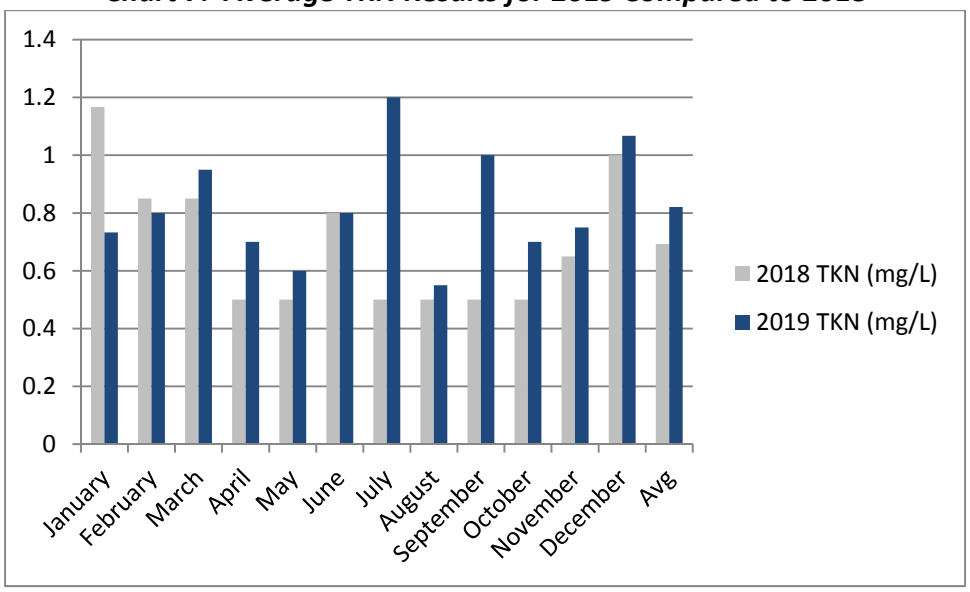
Dissolved oxygen (DO) of the effluent is tested on site at the plant, the ECA identifies a minimum level required as an objective. This objective is 5mg/L. The chart below (chart 6) shows the average DO concentrations; there have been no objective exceedances.

Chart 6. Average Dissolved Oxygen (DO) Results for 2019 Compared to 2018



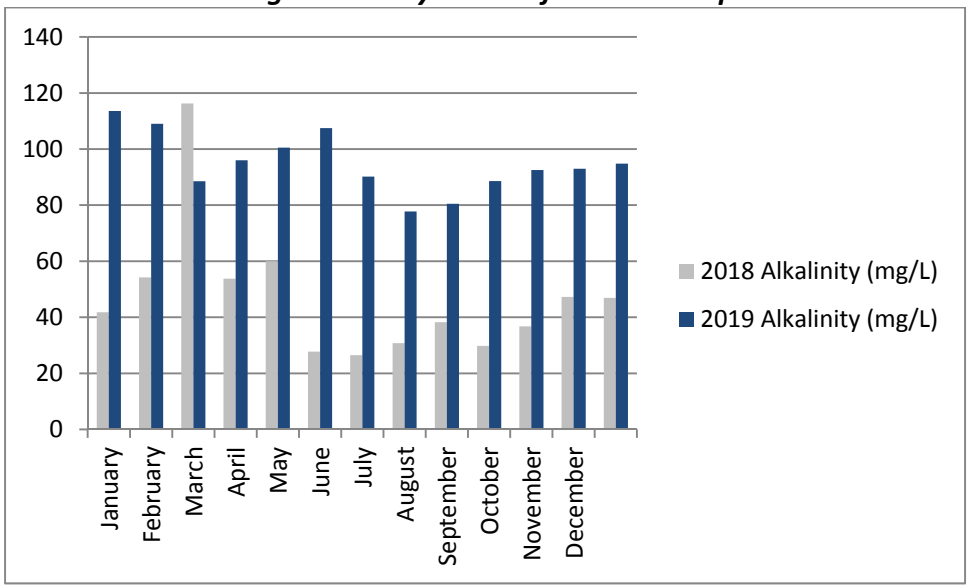
Total Kjeldahl Nitrogen (TKN) is sampled biweekly in accordance with ECA requirements; there are no objectives or limits imposed on this parameter. The average effluent TKN for 2019 is 0.82 mg/L. The annual average result for TKN in 2018 was 0.69mg/L, therefore the results for 2019 so far are up by 18.4% when compared to 2018 (refer to Chart 7).

Chart 7. Average TKN Results for 2019 Compared to 2018



Alkalinity is sampled at least biweekly 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 for 2019 is 94.8mg/L. The annual average result for alkalinity in 2018 was 46.9mg/L, therefore the results for 2019 so far are up by 102% when compared to 2018 (refer to Chart 8).

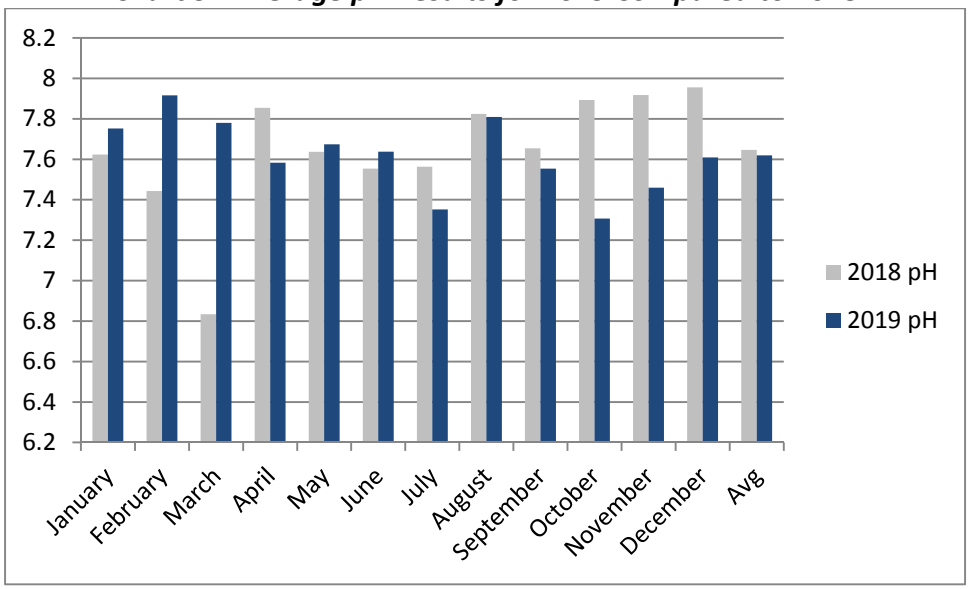
Chart 8. Average Alkalinity Results for 2019 Compared to 2018



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

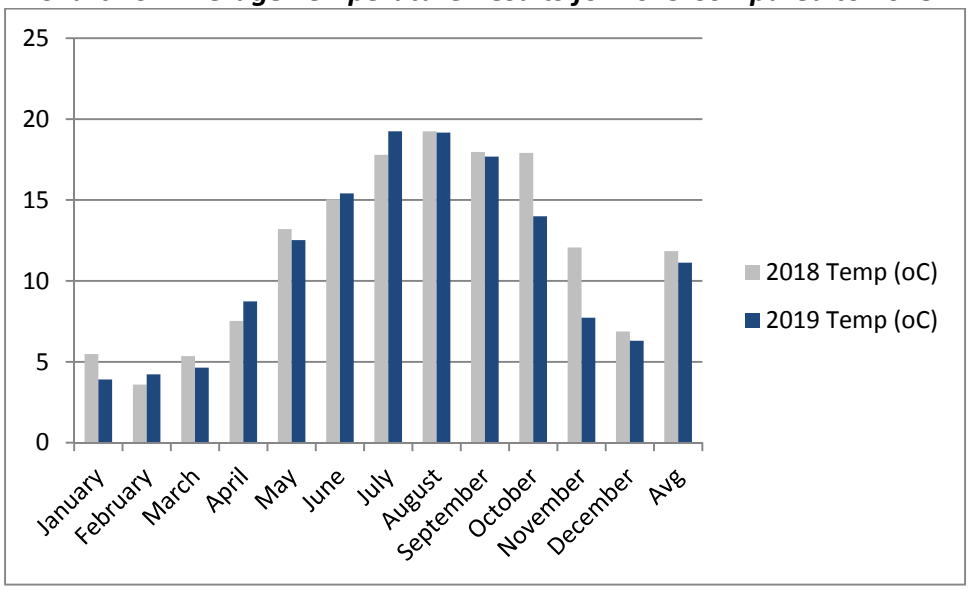
effluent pH for 2019 so far is 7.62. The annual average result for pH in 2018 was 7.64, therefore the results for 2019 is down by 0.35% when compared to 2018 (refer to Chart 10).

Chart 9. Average pH Results for 2019 Compared to 2018



Temperature is measured at least biweekly 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 for 2019 is 11.1^{o}C. The annual average temperature in 2018 was 11.8^{o}C, therefore the results for 2019 are down 6% when compared to 2018 (refer to Chart 11).

Chart 10. 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.

SECOND QUARTER:

There were no Health and Safety issues identified this quarter.

THIRD QUARTER:

There were no Health and Safety issues identified this quarter.

FOURTH QUARTER:

No running water for eyewash stations.

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 on site today to vacuum 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 on site 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 on site to diagnose / repair pump #2 at pumping station.
22: Chemtrade on site 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 on site 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 on site 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

SECOND QUARTER:

APRIL:

05: Installed UV lights in UV channel
17: Switched Alum feed from small tank to main outside tank
25: Flow matrix was on site to calibrate flowmeter

MAY:

23: Installed new fork cleaner on a bar screen
24: Changed UV bulbs in UV system
29: RVA was on site to check PLC
30: Gerber was on site to connect RAS pit pump

JUNE:

04: Cleaner a bar screen container
06: Chemtrade on site to deliver alum
12: Cleaned bar screen container
24: Changed UV bulbs in UV system

THIRD QUARTER:

JULY:

17: Cleaner a bar screen container
31: Changed oil in mixers

AUGUST:

01: Cleaner a bar screen container
08: Gerber was on site to fix mixer # 2
12: Cleaner a bar screen container
19: Changed UV bulbs in UV system

SEPTEMBER:

09: Fixed mixer #3
12: Cleaned a bar screen container
19: Changed UV bulbs in UV system
27: Nevtro was on site to check mixer #1 and return activation sludge pump # 1

FOURTH QUARTER:

OCTOBER:

15: Cleaner a bar screen container
22: Nevtro on site to fix RAS pump and mixer #1
26: Removed UV lights from UV channel

NOVEMBER:
06: Nevtro on site to repair ras pump #1 and surface mixer#1
07: Ship 18m3 of sludge to West Lorne for seeding
14: Flowmetrix installed new RAS flow meter
29: Lagoon crew on site to obtain lagoon samples form septage area, bypass area and waste pipe area. Measurements of sludge depth also obtained

DECEMBER:
10: Connected alum run from day tank. Transfer some alum from big tank to day tank
23: Cleaner a bar screen container
19: Cleaner a bar screen container
30: Curney was on site to test beck flow preventers

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 on site & 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: On site 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: On site 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.

SECOND QUARTER:

APRIL:
28: Operator got alarm for power is off. Operator attends the site. Power was off. Reset main breaker and reset Alum pumps. Start the plant. Everything happened because of storm.

MAY:
No alarms this month.

JUNE:
09: Operator received alarm for power failure. Operator arrived on site to reset main breaker and alum pumps. All system was returned to normal.

THIRD QUARTER:

JULY:
28: Operator got alarm for power off. Operator came on site reset main breaker and alum pumps. All systems were normal when operator left site.

AUGUST:
01: Operator got alarm for power off. Operator came on site reset main breaker and alum pumps. All systems were normal when operator left site.
07: Operator got alarm for power off. Came on site reset main breaker, did not help. Operator called Hydro one and waited for power to be restored. Reset main breaker and alum pumps. All system were running normal when operator left site.
20: Operator got alarm for power off. Operator came on site reset main breaker and alum pumps. Operator completed walk-through of plant and all systems were normal when operator left site.

SEPTEMBER:
No alarms this month.

FOURTH QUARTER:

OCTOBER:
29: Operator on site for power failure. Reset main breaker and alum pumps; checked all system to make sure everything was running properly.

NOVEMBER:
No alarms this month.

DECEMBER:
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.

SECOND QUARTER:
No complaints this quarter.

THIRD QUARTER:
No complaints this quarter.

FOURTH QUARTER:
No complaints this quarter.