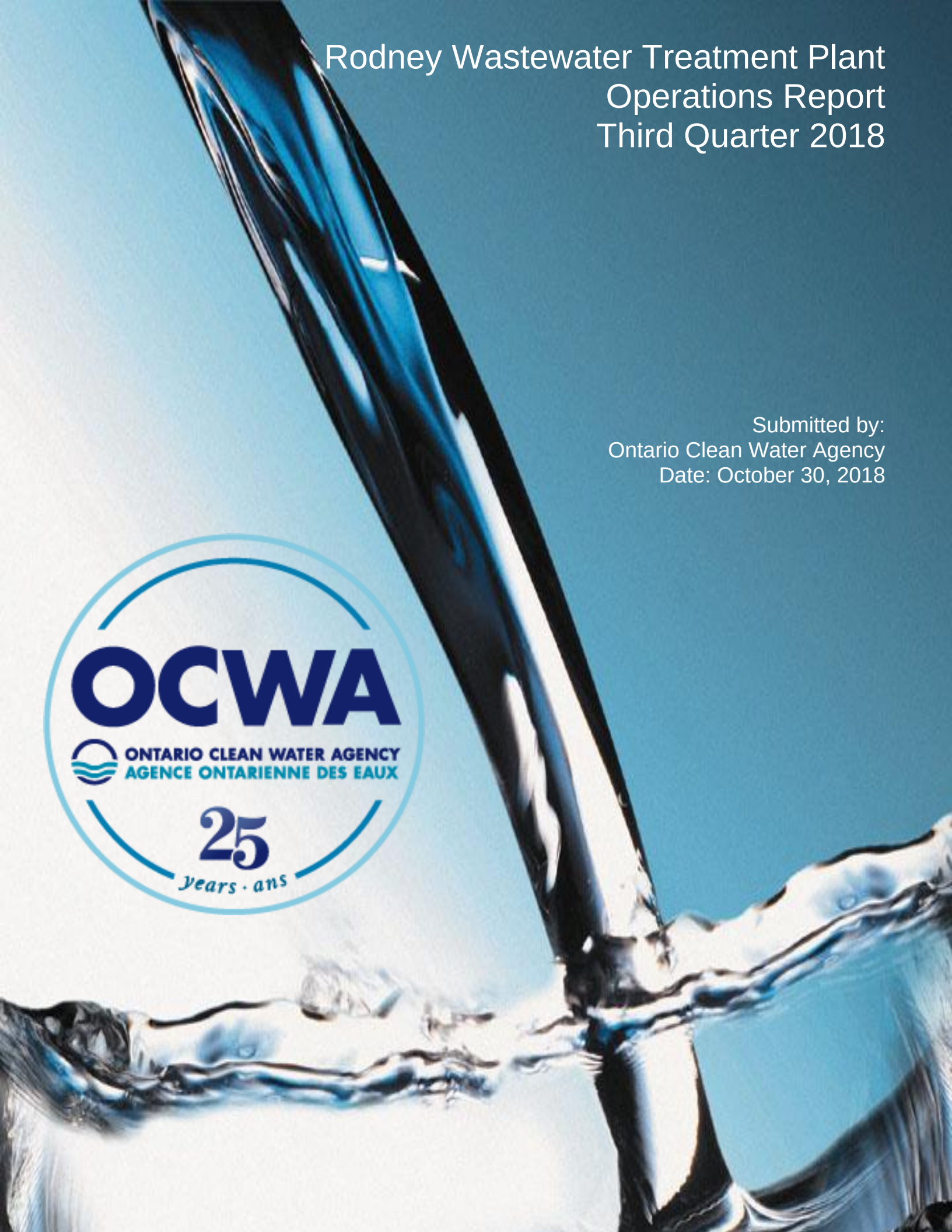
Rodney Wastewater Treatment Plant
Operations Report
Third Quarter 2018

Submitted by:
Ontario Clean Water Agency
Date: October 30, 2018



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:	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 second quarter.

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

SECTION 2: INSPECTIONS

FIRST QUARTER:
There were no MOECC or MOL inspections during this quarter.

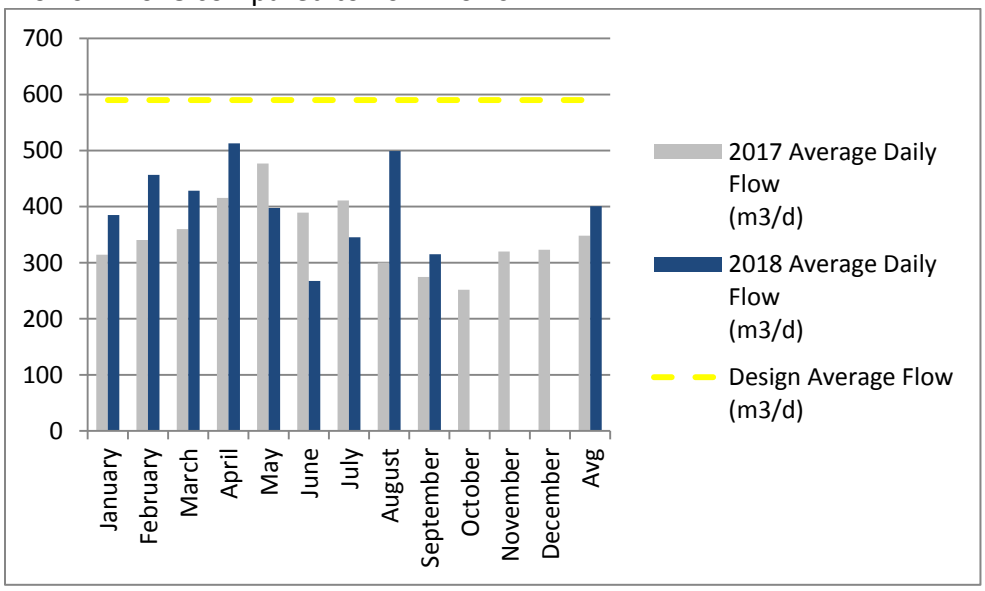
SECOND QUARTER:
There were no MOECC or MOL inspections during this quarter.

THIRD 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 in 2018 so far is 400.8 m3/d. The average daily flow in 2017 was 348.1m3/d, therefore the flow for 2018 so far is up by 15.2% when compared to 2017. The plant is currently at 68% of its rated capacity of 590m^3/d.

Chart 1. Raw flows in 2018 compared to 2017 flows.



Raw samples are taken on a biweekly basis following the ECA requirements. The table below shows the raw sample results for 2018.

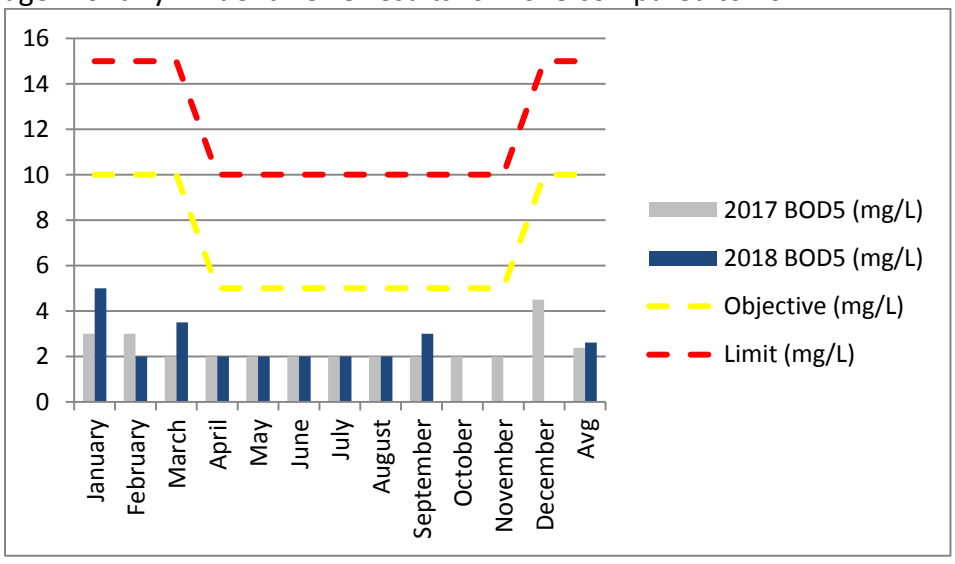
Table 1. Raw water sample results for 2018.

	BOD5 (mg/L)	TKN (mg/L)	TP(mg/L)	TSS (mg/L)
January Results	139.3	36.3	3.97	154
February Results	87	24.9	2.74	94
March Results	96	17.7	2.13	55
April Results	85.5	20.85	2.39	59
May Results	148	35.9	4.305	155.5
June Results	101.5	20.7	2.575	69
July Results	66	45.45	6	421.5
August Results	104.33	26.77	3	80.67
September Results	87	20.3	2.15	84.5
October Results	-	-	-	-
November Results	-	-	-	-
December Results	-	-	-	-
Annual Average	103.65	28.03	3.27	128.95

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

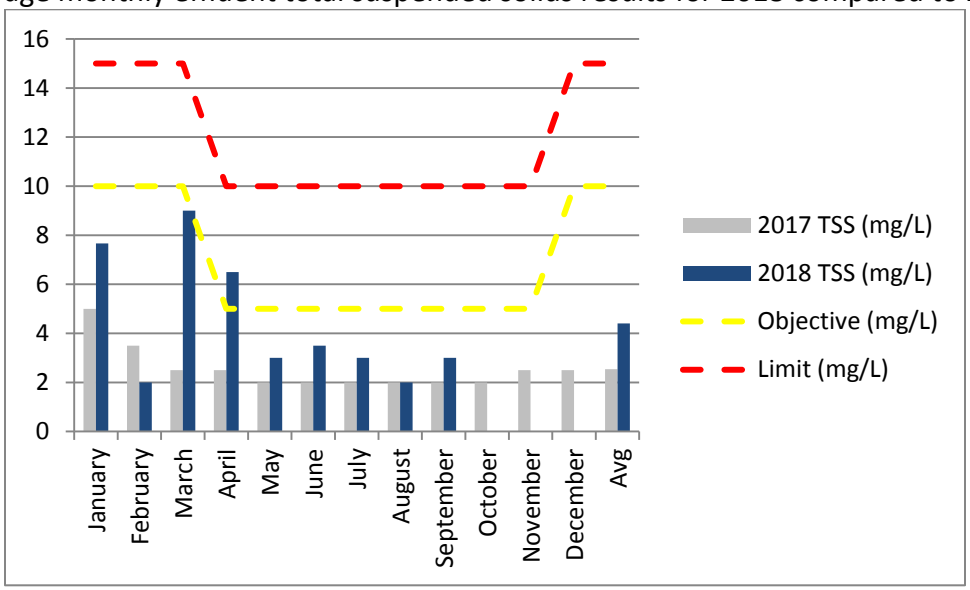
The average effluent BOD5 for 2018 so far is 2.61mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for BOD5 in 2017 was 2.4mg/L, therefore the results for 2018 so far are up by 9.9% when compared to 2017 (refer to Chart 2).

Chart 2. Average Monthly Effluent BOD5 results for 2018 compared to 2017.



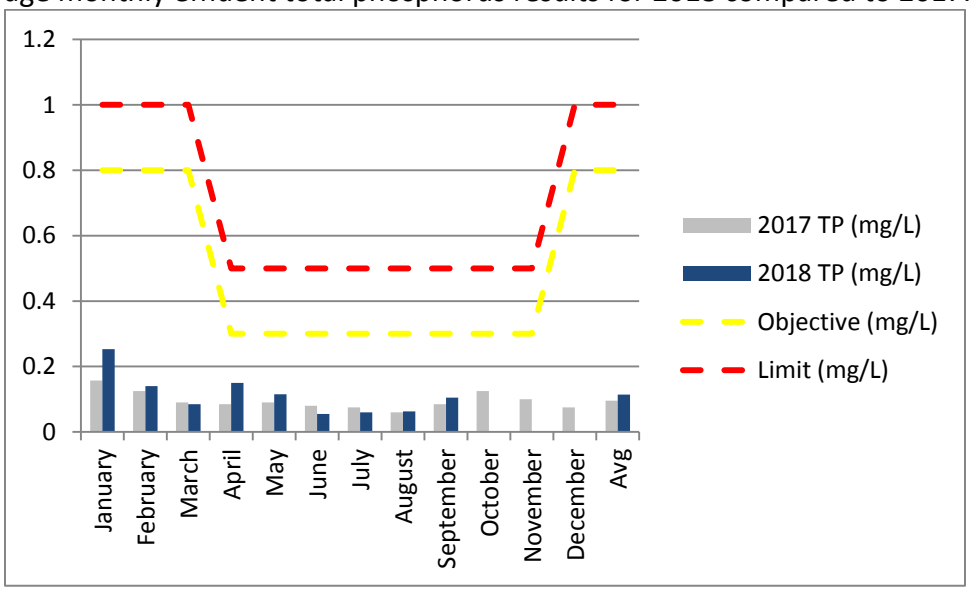
The average effluent TSS for 2018 so far is 4.4 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TSS in 2017 was 2.5mg/L, therefore the results for 2018 so far are up by 73% when compared to 2017 (refer to Chart 3).

Chart 3. Average monthly effluent total suspended solids results for 2018 compared to 2017.



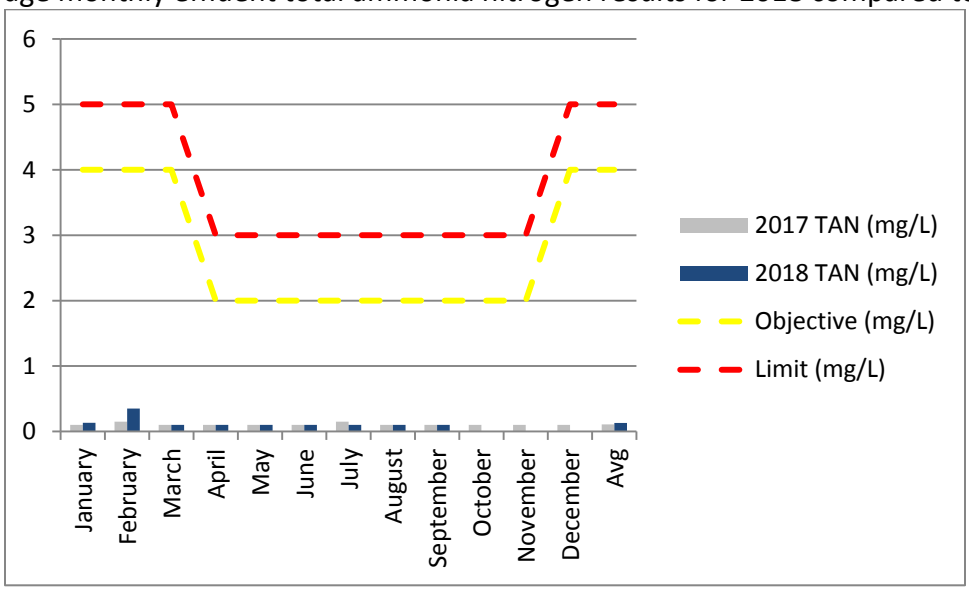
The average effluent TP for 2018 so far is 0.11 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TP in 2017 was 0.1mg/L, therefore the results for 2018 so far are up by 19% when compared to 2017 (refer to Chart 4).

Chart 4. Average monthly effluent total phosphorus results for 2018 compared to 2017.



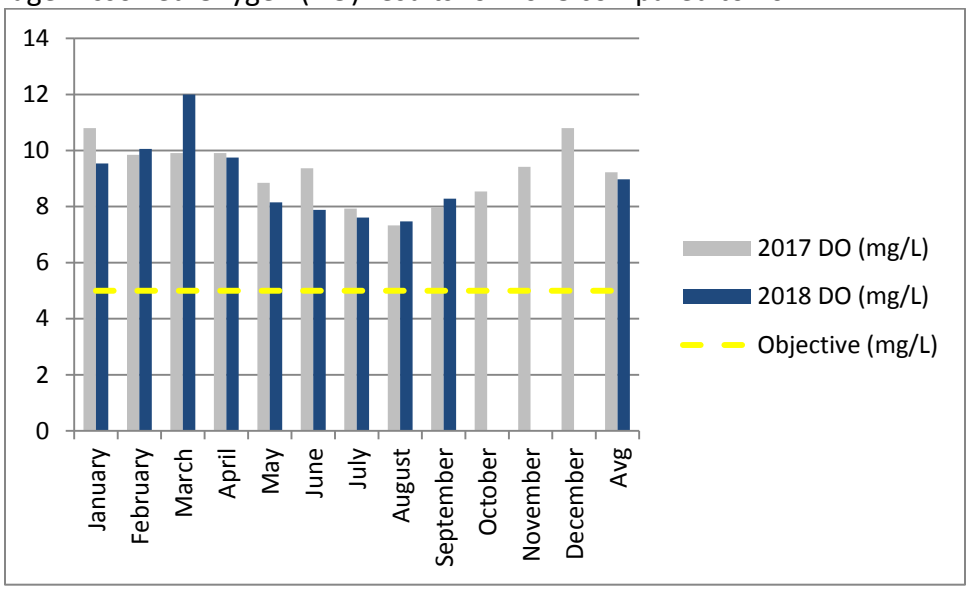
The average effluent TAN for 2018 so far is 0.13 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TAN in 2017 was 0.11mg/L, therefore the results for 2018 so far are up by 21% when compared to 2017 (refer to Chart 5).

Chart 5. Average monthly effluent total ammonia nitrogen results for 2018 compared to 2017.



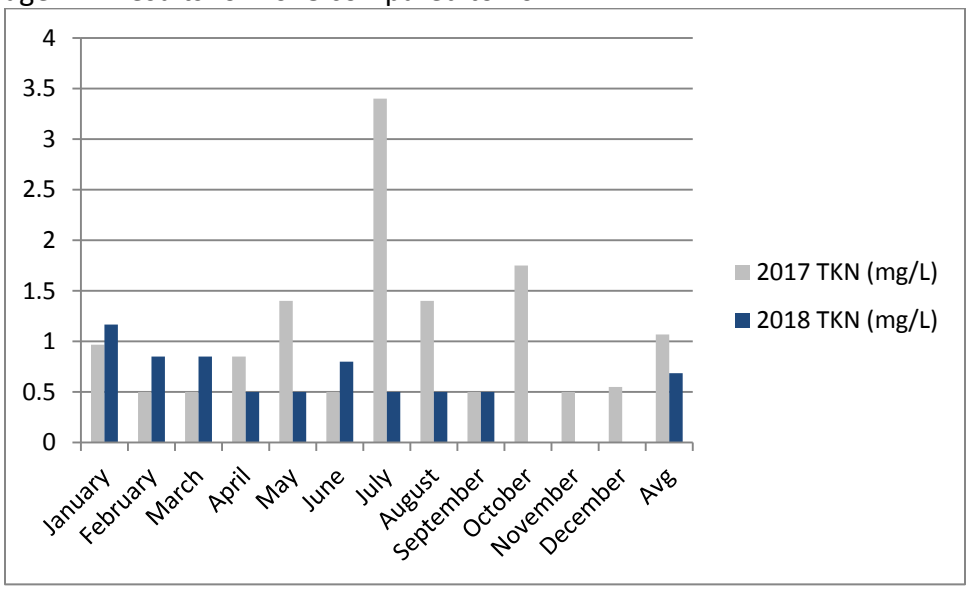
Dissolved oxygen (DO) of the effluent is tested on site at the plant, the ECA identifies a minimum level required as an objective. This objective is 5mg/L. The chart below (chart 7) shows the average DO concentrations, there have been no objective exceedances.

Chart 6. Average Dissolved Oxygen (DO) results for 2018 compared to 2017.



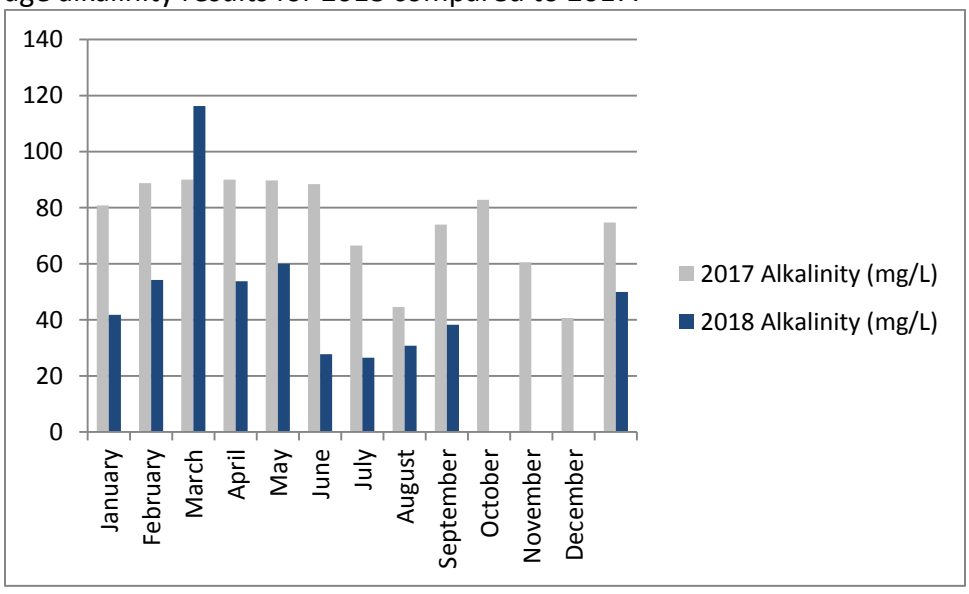
Total Kjeldahl Nitrogen (TKN) is sampled biweekly in accordance with ECA requirements, there are no objective or limits imposed on this parameter. The average effluent TKN for 2018 so far is 0.69 mg/L. The annual average result for TKN in 2017 was 1.1mg/L, therefore the results for 2018 so far are down by 36% when compared to 2017 (refer to Chart 8).

Chart 7. Average TKN results for 2018 compared to 2017.



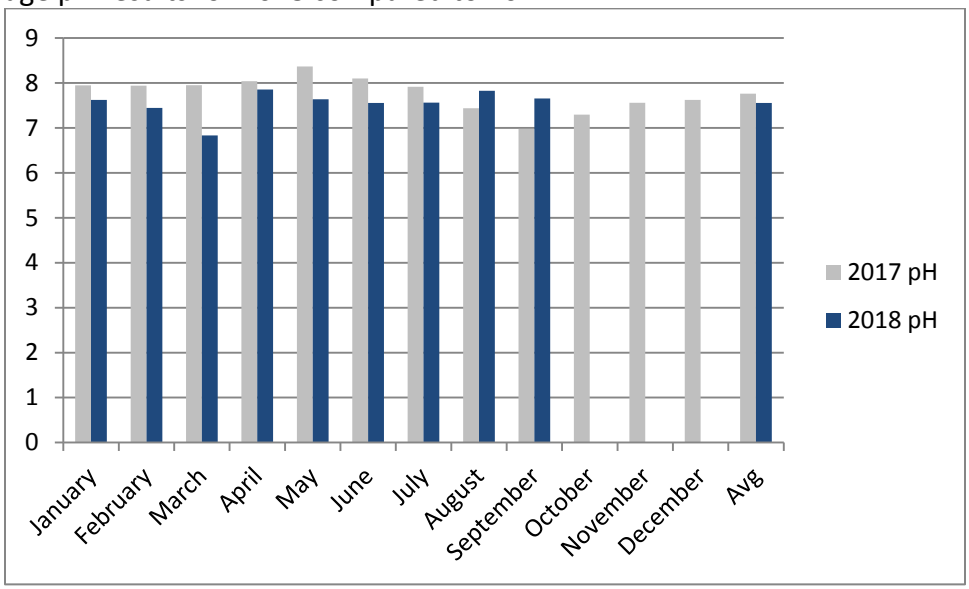
Alkalinity is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that at least 50mg/L is present in the effluent. The average effluent alkalinity for 2018 so far is 49.9mg/L. The annual average result for alkalinity in 2017 was 74.7mg/L, therefore the results for 2017 so far are down by 33% when compared to 2017 (refer to Chart 9).

Chart 8. Average alkalinity results for 2018 compared to 2017.



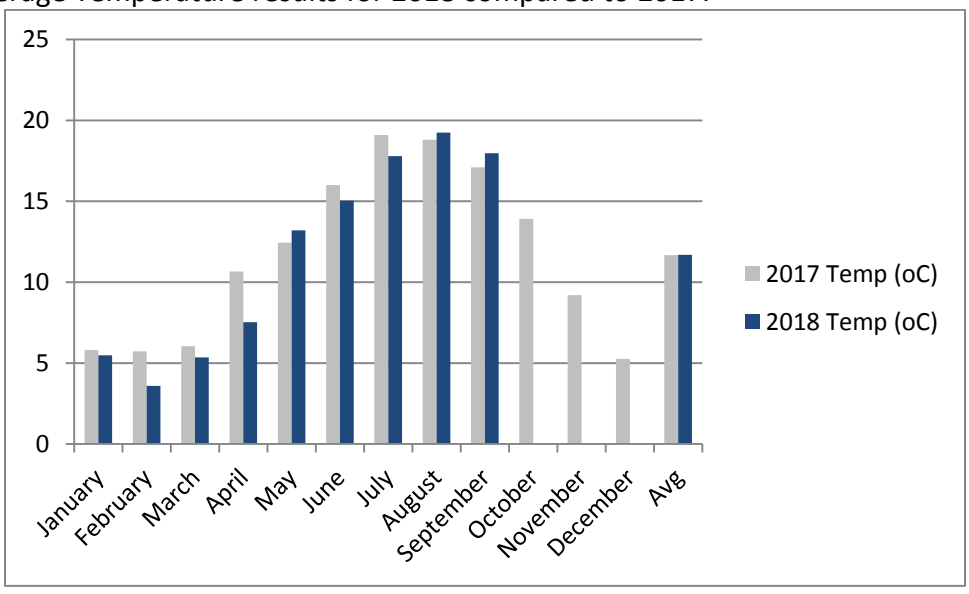
pH is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that the pH is in the range of 6.5-8.5. The average effluent pH for 2018 so far is 7.55. The annual average result for pH in 2017 was 7.77, therefore the results for 2018 so far are down by 2.7% when compared to 2017 (refer to Chart 10).

Chart 9. Average pH results for 2018 compared to 2017.



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 2018 so far is 11.7^{o}C. The annual average temperature in 2017 was 11.6^{o}C, therefore the results for 2018 so far are up 0.14% when compared to 2017 (refer to Chart 11).

Chart 10. Average Temperature results for 2018 compared to 2017.



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.

SECTION 5: GENERAL MAINTENANCE

FIRST QUARTER:
JANUARY:
03: Fixed bar screen motor by replacing worn out gear.
04: Released seized scum arm in clarifier by putting it into reverse and loosening it enough to lift off scum trough
08: Nevtro onsite to replace front casing on RAS pump #1, pump now running normal.
10: Used hot water to thaw frozen alum line.
10: Pressure washed UV channel
19: Replaced lights in clarifier
23: Pulled filters, sprayed out with power washer, found one had a hole patched with titanium putty. All filters are now in good working condition.
24: Inspected UV lights (UV lights are in good working condition and are ready to be put back in service in the spring).

FEBRUARY:
01: Flushed RAS system
05: Flushed RAS system due to blockage
07: Transfer alum to day tank
08: Flushed RAS system
15: Farmington onsite to quote clarifier arm rebuild
20: Divert to lagoon due to high flow
26: Waste valve stuck in open causing low clarifier level
27: Flowmetrix onsite to look at waste flow meter, system shorted out causing failure.

MARCH:
08: Monthly generator inspection and pumping station.
13: Monthly inspection of surface mixers completed.
26: Transferred Alum to day tank.
28: Inspections and tests completed on UV system and Alarm dialer.

SECOND QUARTER:

APRIL:

03: Install UV lights and test operation.
04: Install new tubing in auto sampler.
04: Power flicker caused main breaker to trip operators reset system.
12: Operator removed broken pieces off clarifier arm to prevent damage and started acquiring quotes for rebuild.

MAY:

02: Changed from day tank to big tank for alum system.
07: Engineers onsite at pump station for site review before upgrades to start.
16: K&L contracting on site at pump station to begin upgrades.
18: Effluent pump pulled and sent to Nevtro for quote on repairs.

JUNE:

07: Replace 2 UV bulbs and Quartz tubes on effluent UV system
13: Completed yearly work order for surface mixers 1-6
15: RV Anderson onsite for communication quote for upgrade.
28: Install new sump pump in RAS containment.

THIRD QUARTER:

JULY:

06: Flowmetrix on site to replace WAS flow meter.
09: Pump station monthly generator check.
10: Farmington's on site to quote clarifier arm repair.
12: Pump station pump panel changed over to new building.
18: Farmington's on site for back flow preventer testing.

AUGUST:

07: Higher than average flows due to filter back up giving false readings; cleaned filter and regained partial flow.
09: Cleaned UV system.
28: New generator training for all operators at Rodney Pump Station; Hollen Controls on site, paramount power systems, and RVA engineering. Generator was labeled with new asset ID tags.

SEPTEMBER:

11: Sent samples to have sand filter material tested.
17: Ran the pump station to lagoon by passing plant for clarifier repairs.
18 &19: Cleaned clarifier to prepare for contractor to make repairs.
20: Farmington's on site to repair clarifier arm and sludge scrapers.

SECTION 6: ALARM SUMMARY

FIRST QUARTER:

JANUARY:
No alarms this month.

FEBRUARY:
No alarms this month.

MARCH:
No alarms this month.

SECOND QUARTER:

APRIL:
01: Channel 5 alarm, operator flushed RAS pump due to blockage in system.
04: Power flicker operator reset breaker and checked all systems.

MAY:
15: Call out for High effluent; operator arrived on site and diverted flow to lagoon. Backing up in sand filters until flow was back to normal. Flow meter reading taken prior to starting diversion and after diversion.

JUNE:
04: Channel 5 alarm clarifier was emptied through wasting valve due to communication issue and waiting on parts for WAS flow meter.

THIRD QUARTER:

JULY:
24: Power failure; operator reset main breaker and checked system.

AUGUST:
12: Channel 8 alarm; operator on site to divert to lagoon due to high flows in plant caused by filters being backed up.
16: Channel 8 alarm, high flows, operator diverted to lagoon and inspected sand filter.

SEPTEMBER:
No alarms this month.

SECTION 7: COMMUNITY COMPLAINTS & CONCERNS

FIRST QUARTER:
There were no complaints or concerns for the first quarter.

SECOND QUARTER:
There were no complaints or concerns for the second quarter.

THIRD QUARTER:
There were no complaints or concerns for the third quarter.