Carleton Place Wastewater System

2019 Annual Report

January 1, 2019 – December 31, 2019

Prepared By

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

This report has been prepared to meet the requirements set out in the facility Certificate of Approval #5001-7FZT4A issued October 03, 2008.

Contents

Compliance Report Card

Compliance Event	# of Events	Details
Environment Canada Inspection	0	No Inspections during the reporting period
Ministry of Environment Inspections	1	1 Inspection during the reporting period • Feb 19 2019
Ministry of Labour Inspections	0	No Inspections during the reporting period
Effluent Parameter Exceedances	3	See Parameter Exceedances
Non-Compliance	1	Missed Sample: • April 25, 2019 Daily Phys Chem (Storm Mode) parameters missed were: $CBOD_5$ E.coli Total Phosphorus Total Suspended Solids
Bypass/Overflows	4	See Summary of Bypass/Overflows section
Community Complaints	0	No Community Complaints for the reporting period
Spills	2	See Summary of Spills section

System/Process Description

The Carleton Place Water Pollution Control Plant (WPCP) is a conventional activated sludge plant with anaerobic digestion. Chemicals are added for phosphorus removal and alkalinity adjustment.

Effluent is then UV disinfected prior to discharge to the Mississippi River. Three physical/chemical clarifiers are available and can be brought online during periods of heavy wet weather where flows exceed 10,400 cubic metres per day; when in use, excess flows by-pass the activated sludge process and receive only primary treatment before effluent is combined with secondary treated effluent (normal treatment through the entire WPCP process) and discharged as combined effluent following UV disinfection.

Sludge at the WPCP is co- thickened and stabilized in a two stage digestion process. There is a centrifuge on-site but due to hydrogen sulphide issues the centrifuge is not in operation.

Septage is also received at the plant and passed through the entire treatment process.

The Carleton Place WPCP is equipped with back-up power.

Effluent Quality Assurance or Control Measures

The Town of Carleton Place facilities are part of OCWA's Eastern Regional Hub. The facilities are supported by hub, regional and corporate resources. Operational Services are delivered by OCWA staff that live and work in the community.

OCWA operates facilities in compliance with applicable regulations. The facility has comprehensive manuals detailing operations, maintenance, instrumentation, and emergency procedures. All procedures are treated as active documents, with annual reviews.

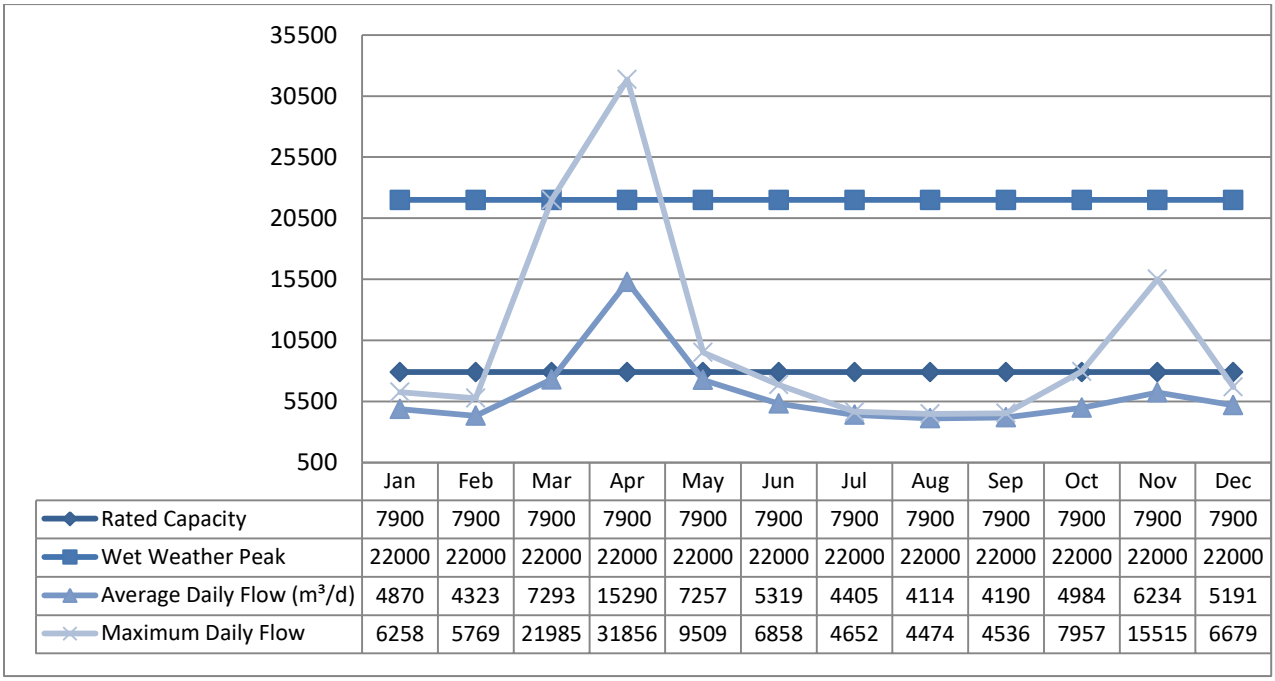
OCWA has additional "Value Added" and operational support services that the Town of Carleton Place benefits from including:

- Access to a network of operational compliance and support experts at the regional and corporate level, as well as affiliated programs that include the following:
    - Quality & Environmental Management System, Occupational Health & Safety System and an internal compliance audit system.
    - Process Data Collection (PDC) facility operating information repository, which consolidates field data, online instrumentation, and electronic receipt of lab test results for reporting, tracking and analysis.
    - Work Management System (WMS) that tracks and reports maintenance activity, and creates predictive and preventative reports.
    - Outpost 5 wide-area SCADA system allows for process optimization and data logging, process trending, remote alarming and optimization of staff time.
- Client reporting which includes operational data, equipment inventory, financial statements, maintenance work orders, and capital status reports
- Site-Specific Contingency Plans and Standard Operating Procedures
- Use of accredited laboratories
- Additional support in response to unusual circumstances, and extra support in an emergency.
- Use of sampling schedules for external laboratory sampling

Treatment Flows

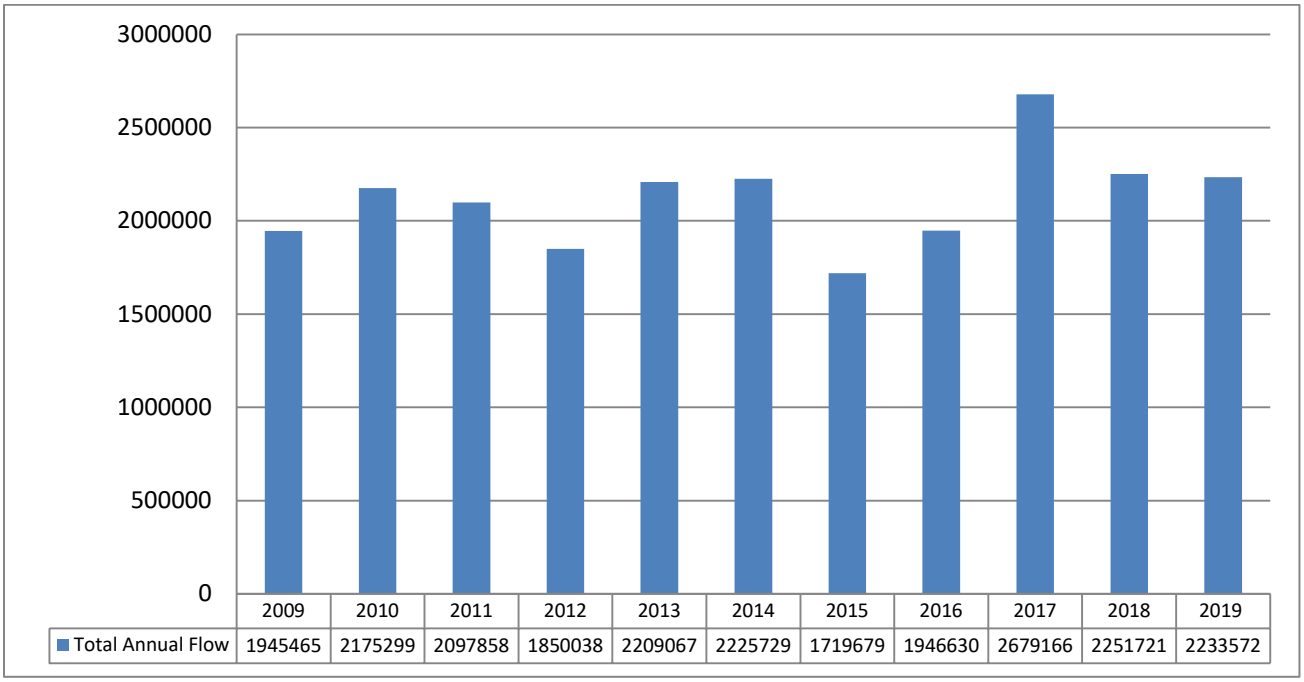
Flow (m^3/d)

Annual average flow for 2019 = 6122.5 m^3/d



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity	7900	7900	7900	7900	7900	7900	7900	7900	7900	7900	7900	7900
Wet Weather Peak	22000	22000	22000	22000	22000	22000	22000	22000	22000	22000	22000	22000
Average Daily Flow (m^3/d)	4870	4323	7293	15290	7257	5319	4405	4114	4190	4984	6234	5191
Maximum Daily Flow	6258	5769	21985	31856	9509	6858	4652	4474	4536	7957	15515	6679

Annual Comparison (m^3)

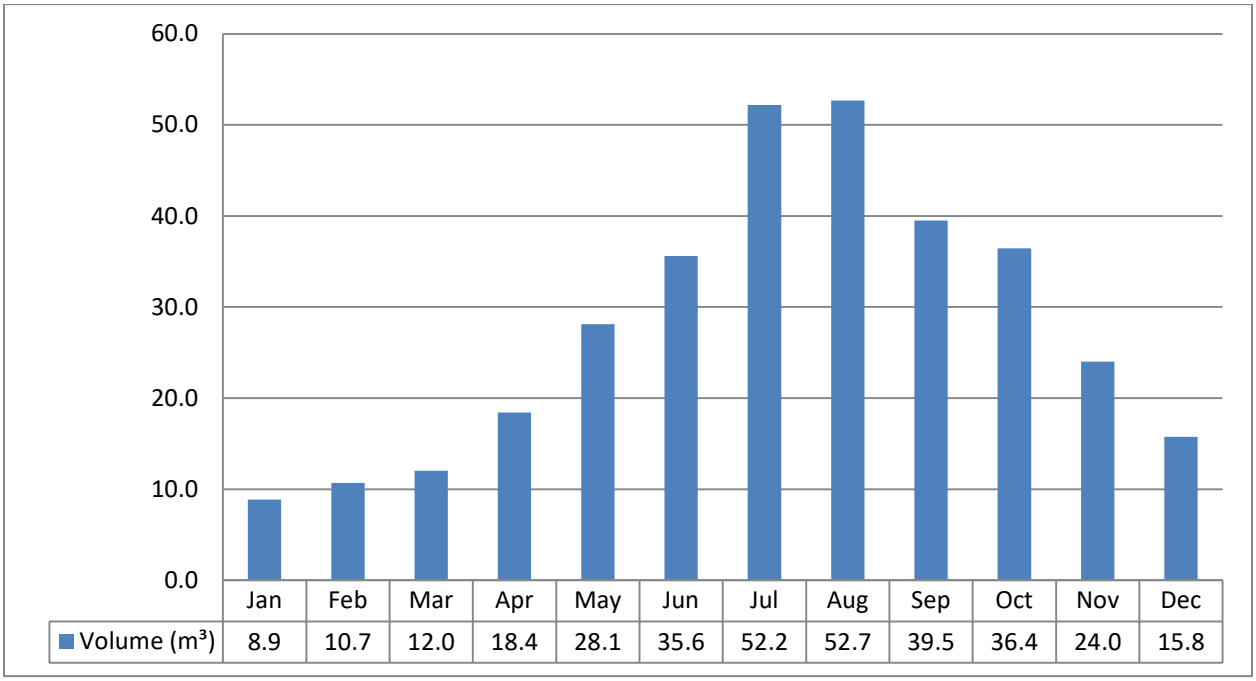


	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Annual Flow	1945465	2175299	2097858	1850038	2209067	2225729	1719679	1946630	2679166	2251721	2233572

Septage Volumes

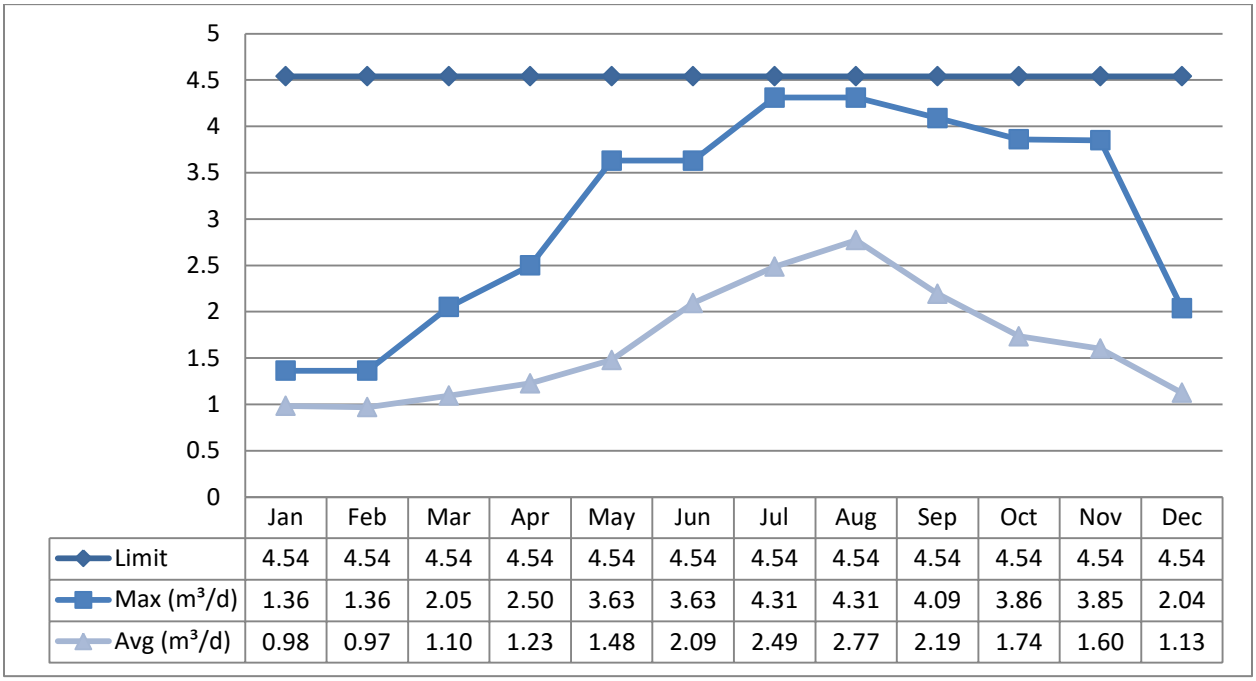
Average daily flow for 2019 = 1.759 m^3/d
Total Flow for 2019 = 334.27 m^3

Monthly Total Volume Received



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Volume (m^3)	8.9	10.7	12.0	18.4	28.1	35.6	52.2	52.7	39.5	36.4	24.0	15.8

Monthly Average Volume Received



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54
Max (m^3/d)	1.36	1.36	2.05	2.50	3.63	3.63	4.31	4.31	4.09	3.86	3.85	2.04
Avg (m^3/d)	0.98	0.97	1.10	1.23	1.48	2.09	2.49	2.77	2.19	1.74	1.60	1.13

Raw Sewage Quality

Results of raw sewage concentrations and loadings are available in the Facility Performance Assessment Report in Appendix A.

Septage Quality and Loadings

Septage was sampled monthly. A summary of the results are attached in Appendix B. The current volume of received septage does not appear to be harmful to the process. Plant removal efficiencies are available in the Facility Performance Assessment Report in Appendix A.

Centrate

The centrifuge was not in operation during the reporting period.

Effluent Quality

The limits are based on current requirements in the facilities Environmental Compliance Approval. Laboratory samples are submitted to an accredited laboratory for regulatory analysis.

The Federal Government also regulates certain sewage effluent parameter under the Federal Fisheries Act. The results are submitted to Environment Canada (WESR) on a quarterly basis.

Effluent Parameter Summary

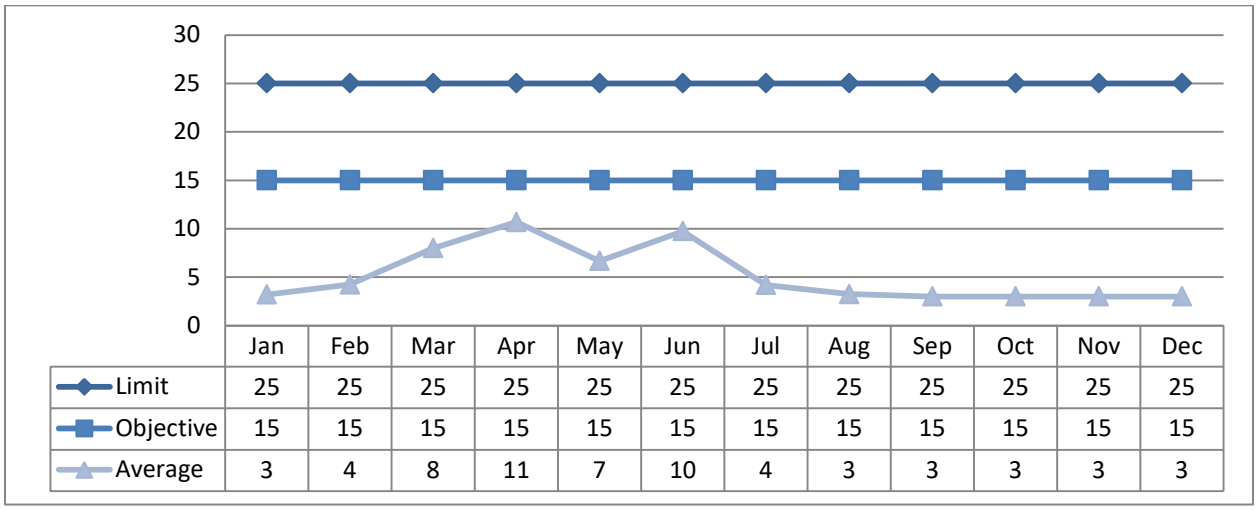
Carbonaceous Biological Oxygen Demand (CBOD5)

Compliance

Compliance is based on an annual average.

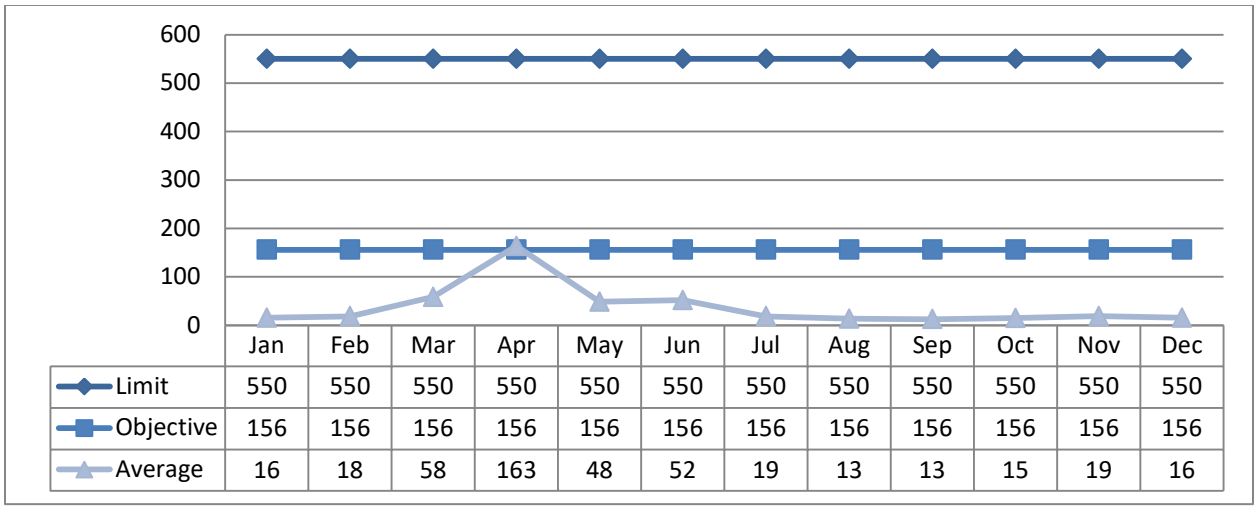
	Concentration (mg/L)			Loading (kg/d)		
	Annual Average	Limit	Objective	Annual Average	Limit	Objective
CBOD	5.2	25.0	15.0	37.5	550	156

Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	25	25	25	25	25	25	25	25	25	25	25	25
Objective	15	15	15	15	15	15	15	15	15	15	15	15
Average	3	4	8	11	7	10	4	3	3	3	3	3

Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	550	550	550	550	550	550	550	550	550	550	550	550
Objective	156	156	156	156	156	156	156	156	156	156	156	156
Average	16	18	58	163	48	52	19	13	13	15	19	16

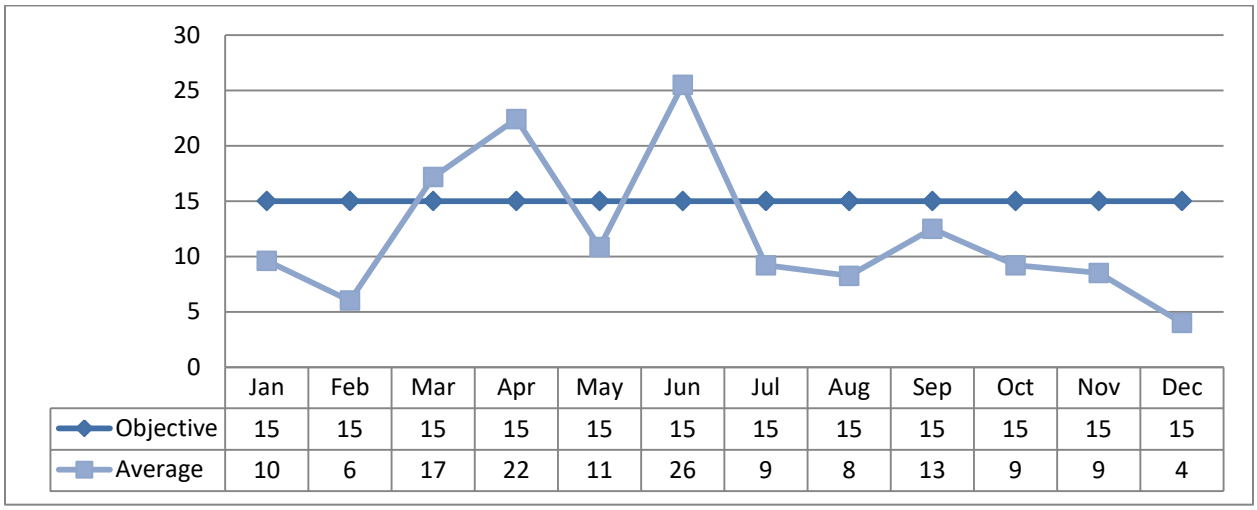
Total Suspended Solids

Compliance

Compliance is based on an annual average.

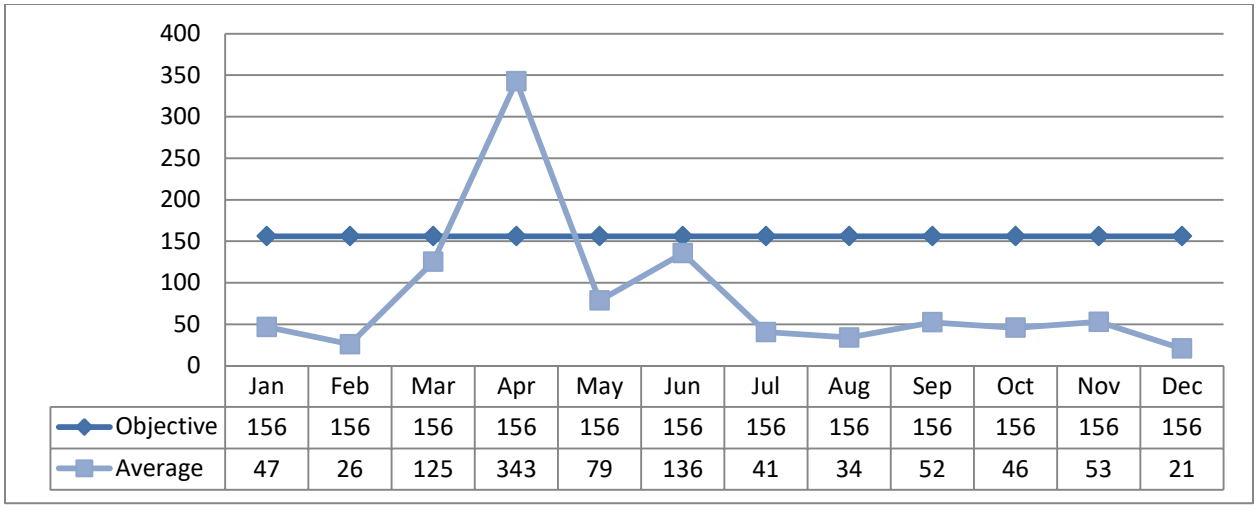
	Concentration (mg/L)			Loading (kg/d)		
	Annual Average	Limit	Objective	Annual Average	Limit	Objective
Total Suspended Solids	11.9	25.0	15.0	83.4	550	156

Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Objective	15	15	15	15	15	15	15	15	15	15	15	15
Average	10	6	17	22	11	26	9	8	13	9	9	4

Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Objective	156	156	156	156	156	156	156	156	156	156	156	156
Average	47	26	125	343	79	136	41	34	52	46	53	21

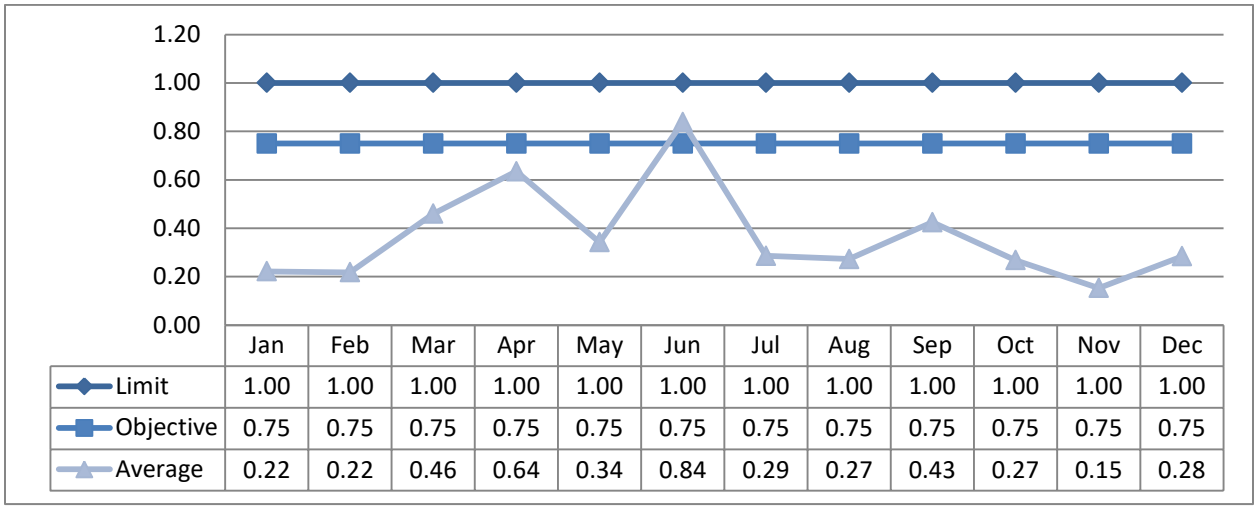
Total Phosphorus

Compliance

Compliance is based on a monthly average.

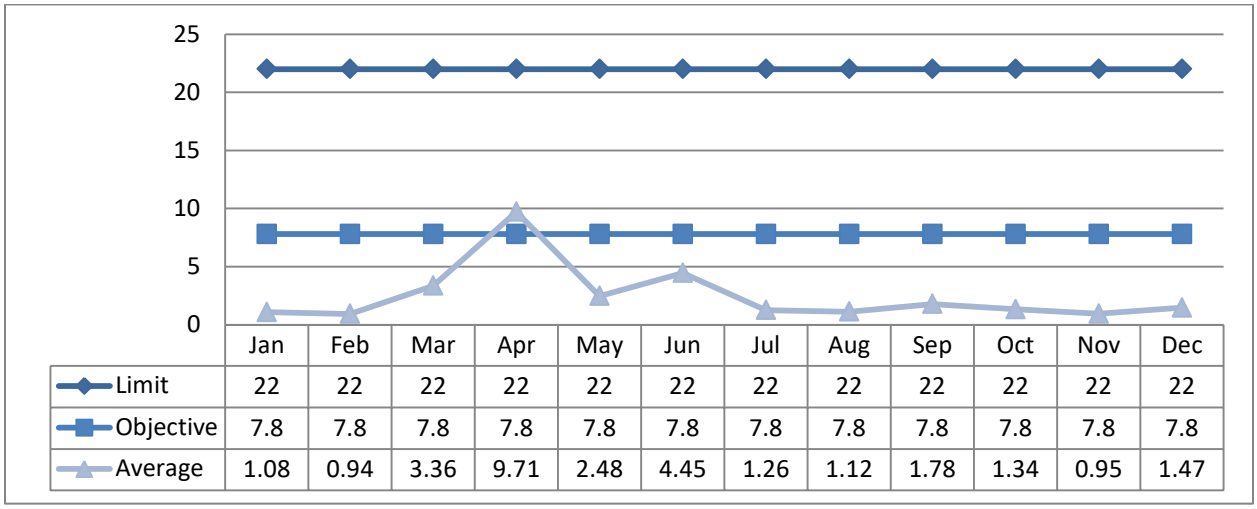
Date	Exceedance of	Limit	Value	Corrective Action
April 2019	ECA Objective	7.8 kg/d	9.71 kg/d	Review of plant operations and data review
June 2019	ECA Objective	0.75 mg/L	0.84 mg/L	Review of plant operations and data review

Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Objective	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Average	0.22	0.22	0.46	0.64	0.34	0.84	0.29	0.27	0.43	0.27	0.15	0.28

Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	22	22	22	22	22	22	22	22	22	22	22	22
Objective	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
Average	1.08	0.94	3.36	9.71	2.48	4.45	1.26	1.12	1.78	1.34	0.95	1.47

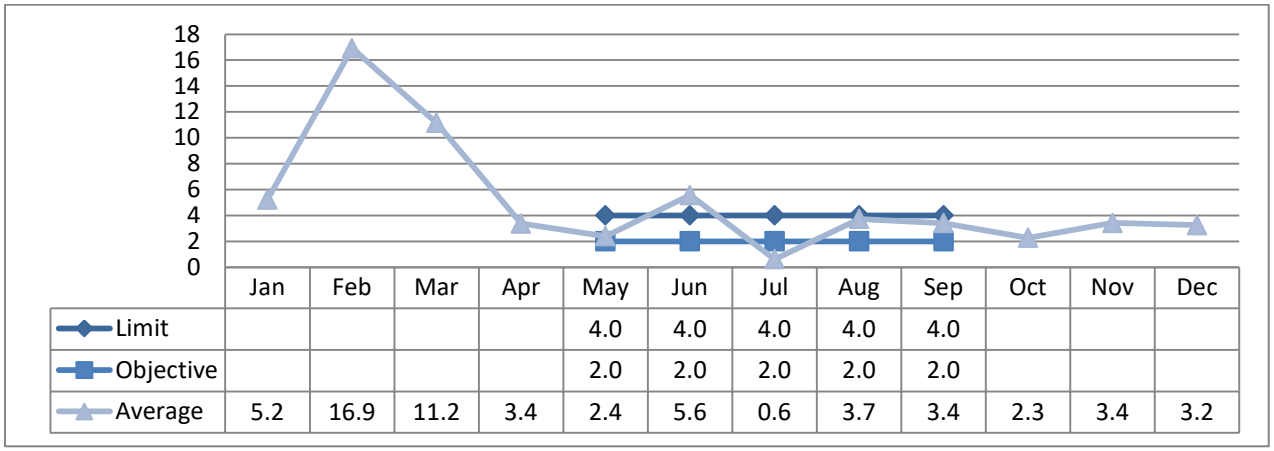
Total Ammonia Nitrogen

Compliance

Compliance is based on a monthly average.

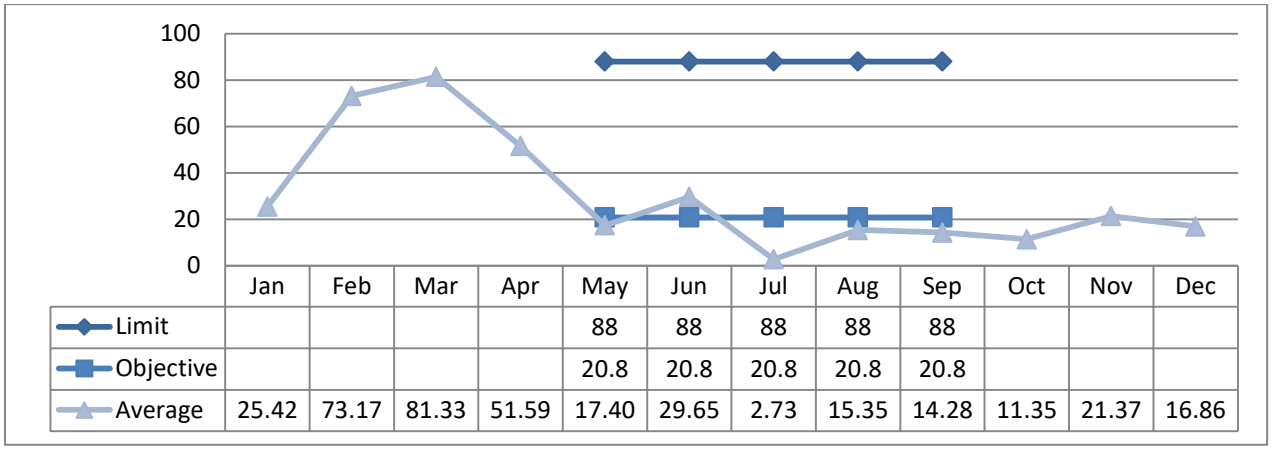
Date	Exceedance of	Limit	Value	Corrective Action
May 2019	ECA Objective	2.0 mg/L	2.4 mg/L	Review of plant operations and data review
June 2019	ECA Limit	4.0 mg/L	5.6mg/L	An Independent Consulting engineer has been contacted to review and determine the cause of the non-conformance control measures.
August 2019	ECA Objective	2.0 mg/L	3.7 mg/L	Review of plant operations and data review
September 2019	ECA Objective	2.0 mg/L	3.4 mg/L	Review of plant operations and data review

Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit					4.0	4.0	4.0	4.0	4.0			
Objective					2.0	2.0	2.0	2.0	2.0			
Average	5.2	16.9	11.2	3.4	2.4	5.6	0.6	3.7	3.4	2.3	3.4	3.2

Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit					88	88	88	88	88			
Objective					20.8	20.8	20.8	20.8	20.8			
Average	25.42	73.17	81.33	51.59	17.40	29.65	2.73	15.35	14.28	11.35	21.37	16.86

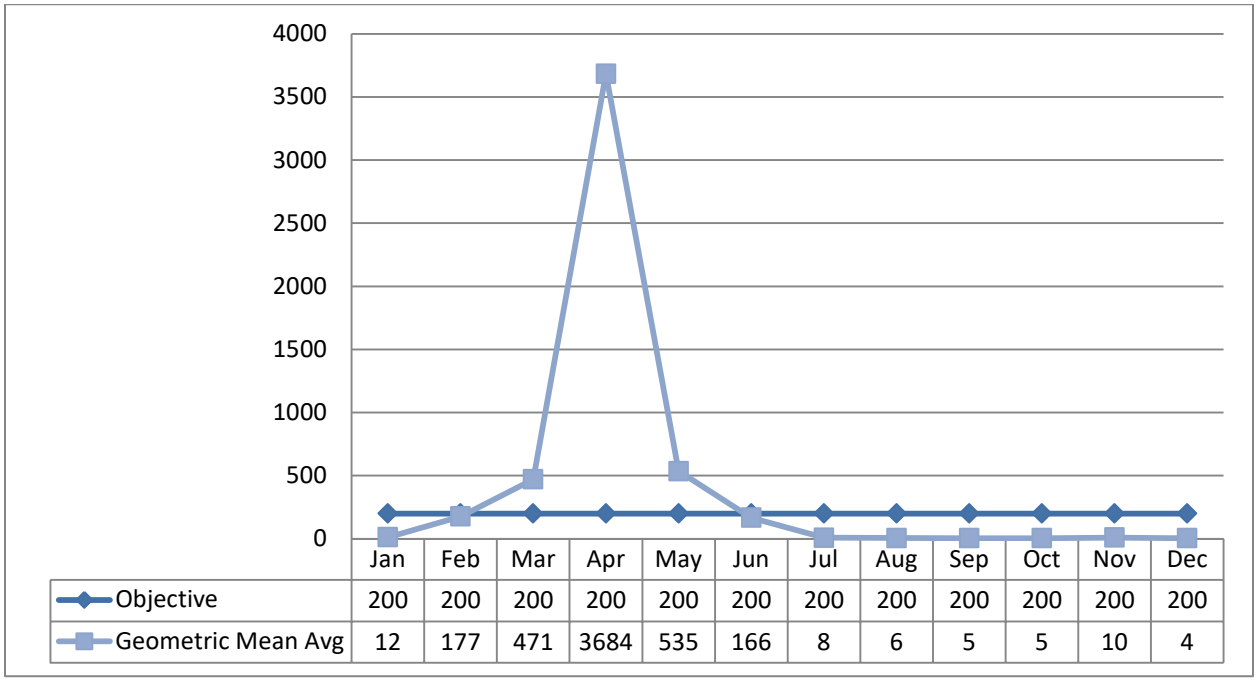
E-coli

Compliance

There is no limit on e-coli in the Environmental Compliance Approval but objective was reported as non-compliances due to the major rain and flooding events of 2019.

Date	Exceedance of	Limit	Value	Corrective Action
March 2019	ECA Objective	200 cfu/100 mL	471 cfu/100 mL	Maintenance activities on Clarifier three (3) which resulted in reduced treatment
April 2019	ECA Objective	200 cfu/100 mL	3684 cfu/100 mL	Major rain and flooding of the UV system during the month of April, resulted in major component failures which require replacement.
May 2019	ECA Objective	200 cfu/100 mL	535 cfu/100 mL	Major rain and flooding events caused flooding of the UV system which resulted in major component failures which require replacement.

Concentration (cfu/100mL)

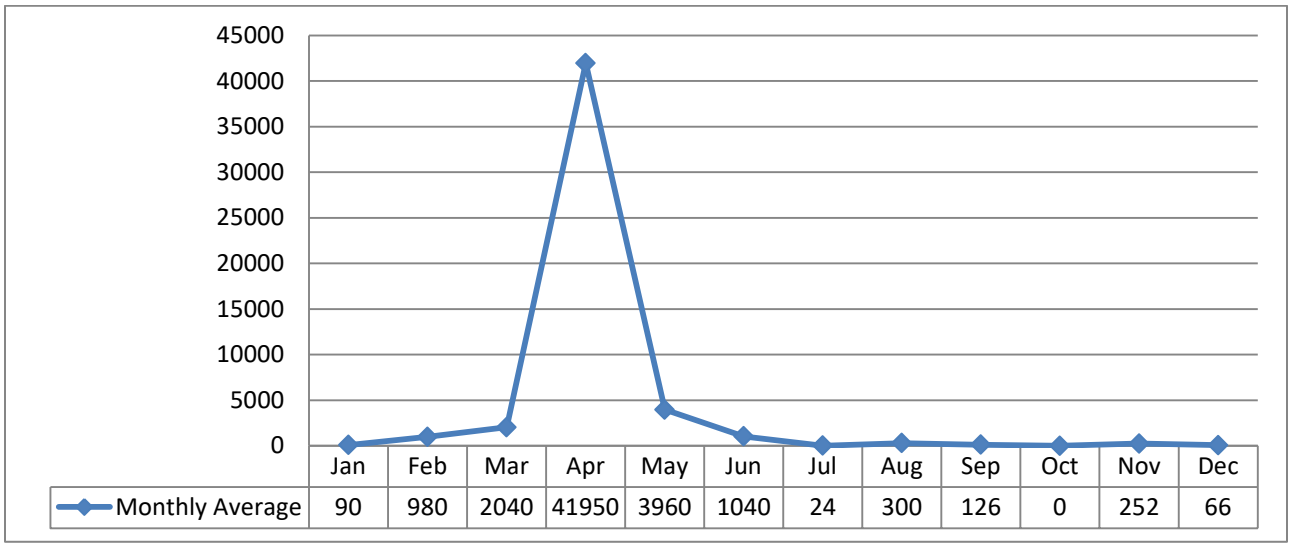


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Objective	200	200	200	200	200	200	200	200	200	200	200	200
Geometric Mean Avg	12	177	471	3684	535	166	8	6	5	5	10	4

Faecal Streptococcus

This parameter is required to be tested in the effluent but there are no limits or objectives established in the Environmental Compliance Approval.

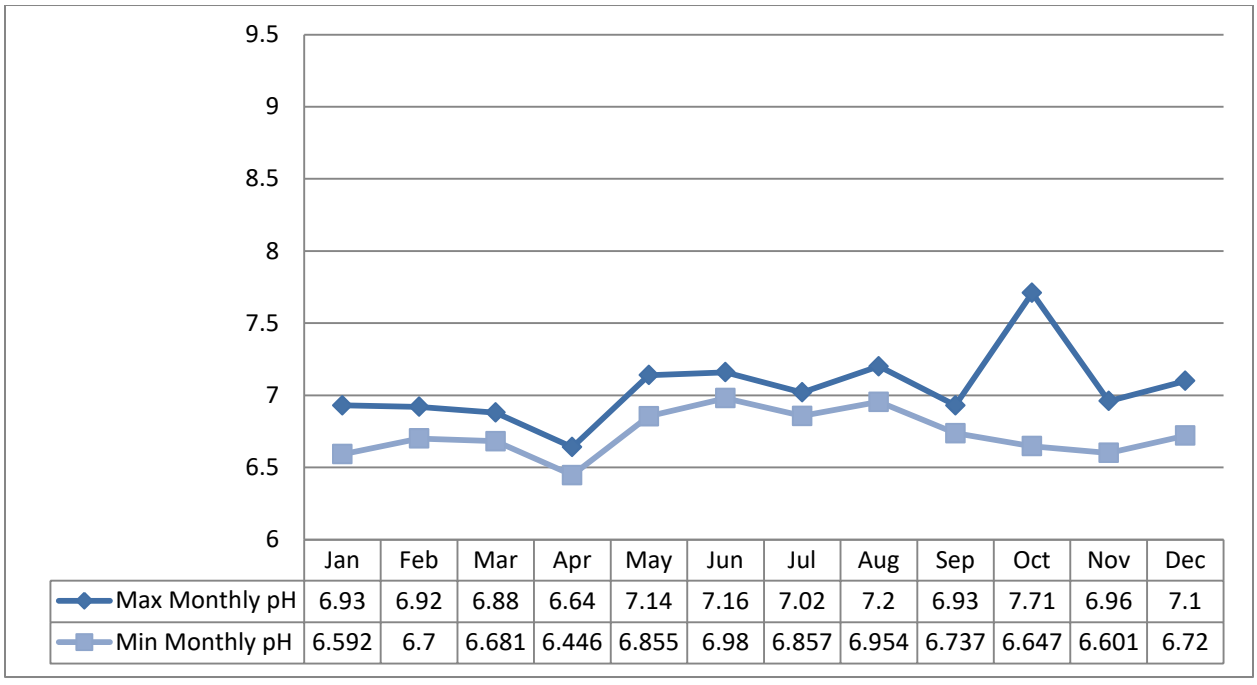
Concentration (cfu/100 mL)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly Average	90	980	2040	41950	3960	1040	24	300	126	0	252	66

pH

This parameter is to be maintained between 6.0 and 9.5 inclusively at all times.

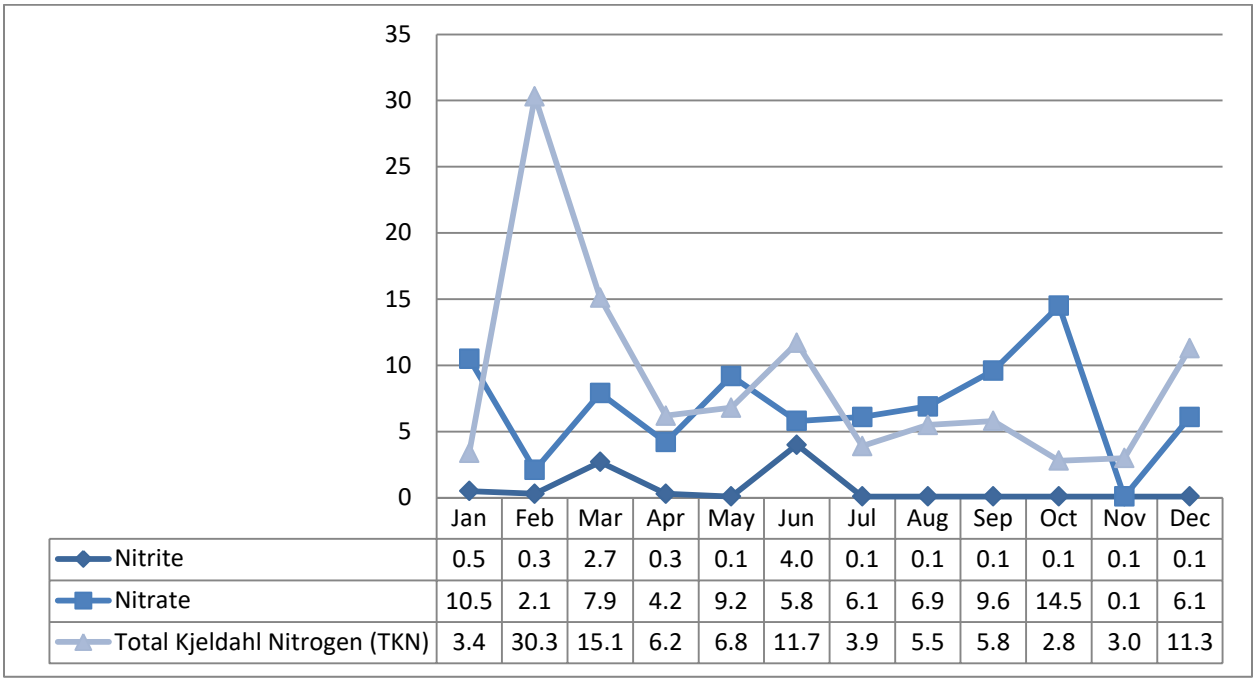


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Monthly pH	6.93	6.92	6.88	6.64	7.14	7.16	7.02	7.2	6.93	7.71	6.96	7.1
Min Monthly pH	6.592	6.7	6.681	6.446	6.855	6.98	6.857	6.954	6.737	6.647	6.601	6.72

Nitrate, Nitrite and Total Kjeldahl Nitrogen (TKN)

These parameters are required to be tested in the effluent but there are no limits or objectives established in the certificate of approval.

Monthly Average Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Nitrite	0.5	0.3	2.7	0.3	0.1	4.0	0.1	0.1	0.1	0.1	0.1	0.1
Nitrate	10.5	2.1	7.9	4.2	9.2	5.8	6.1	6.9	9.6	14.5	0.1	6.1
Total Kjeldahl Nitrogen (TKN)	3.4	30.3	15.1	6.2	6.8	11.7	3.9	5.5	5.8	2.8	3.0	11.3

Acute Lethality

There were four (4) samples collected in 2019 and tested for acute lethality of Rainbow Trout. Results are displayed as % mortality. This sampling is required under the federal fisheries regulations.

Quarter	Rainbow Trout
1st Quarter	0%
2nd Quarter	0%
3rd Quarter	0%
4th Quarter	0%

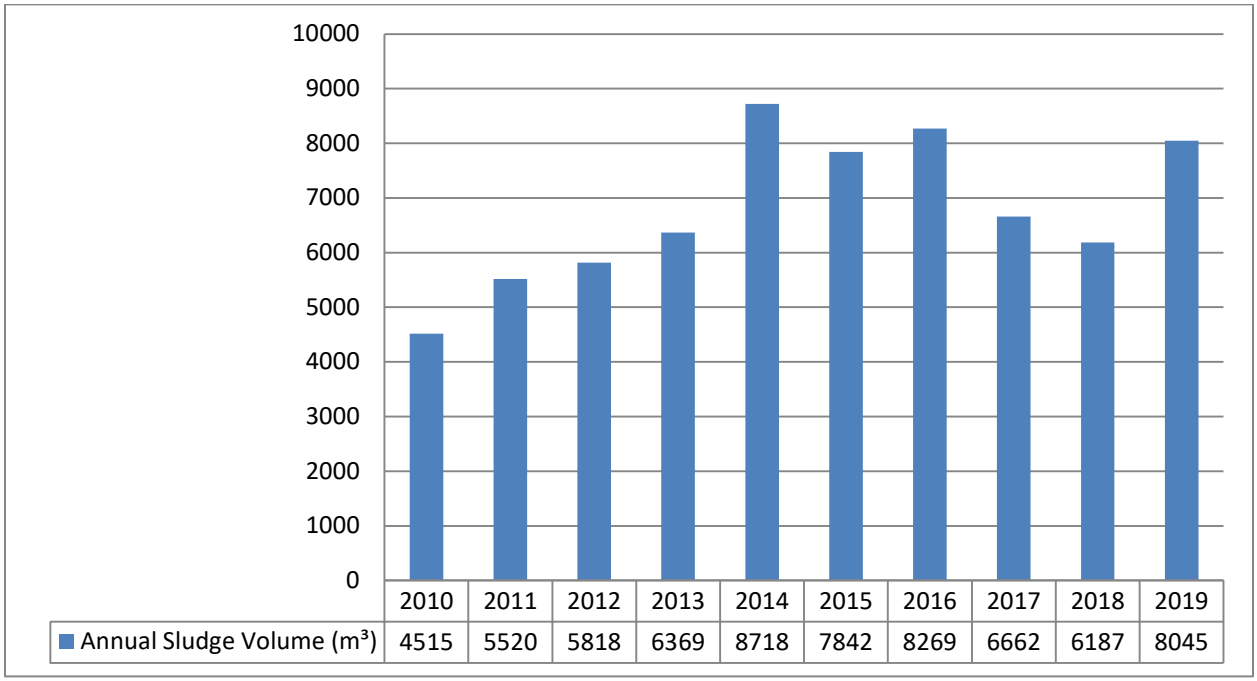
Biosolids

Sludge generated from the treatment plant was spread on agricultural land during the spreading season as per the Nutrient Management Act O.Reg 267/03. During the winter sludge is stored on-site until the Organic Soil Conditioning Sites are available for spreading.

Biosolids Disposal Summary

Date	Site	NASM Plan number	Volume (m^3)
January 2019	Third High Farms Facility	ECA A710174 ECA 5948-7JRMAJ	810
February 2019	Third High Farms Facility	ECA A710174 ECA 5948-7JRMAJ	405
March 2019	Third High Farms Facility	ECA A710174 ECA 5948-7JRMAJ	310
April 2019	Third High Farms Facility	ECA A710174 ECA 5948-7JRMAJ	360
May 14 2019	Terrapure Storage Facility	ECA# S-3708-42	40
May 23 2019	Jockbrae Farms - Marks	23593	1400
May 30 2019	Jockbrae Farms - Marks	22231	600
August 16 2019	Terrapure Storage Facility	ECA# S-3708-42	240
August 29 2019	Sunol Farms - Amanda's	24013	880
September 3 2019	Sunol Farms - Amanda's	24013	1200
November 8 2019	Sunol Farms - James	22416	680
November 2019	Terrapure Storage Facility	ECA# S-3708-42	1120
		Total	8045

Annual Comparison



It is anticipated that sludge volumes will remain constant based on the average treated volumes and past years history.

Quality

The biosolids sampling results are summarized in Appendix C. All results met the established guidelines.

Centrate sampling was not completed as sludge was not de-watered during this reporting period.

Summary of Complaints

The following were received community complaints related to the operations of the Carleton Place WPCP.

Date	Location	Details	Corrective Action Taken
There were no community complaints during the reporting period			

Summary of Bypass, Overflow and Diversions

Details	Category	Volume (m^3)	Start Date and Time	End Date and Time	Discharge Receiver	Disinfection Provided
Carleton Place WPCP – Heavy rains and spring flooding	Diversion (Phys/Chem)	51540	Mar 30 20:18	Apr 4 8:30	Mississippi River	Yes
Carleton Place WPCP – Heavy rains and spring flooding	Bypass	482	Apr 15 02:18	Apr 15 15:57	Mississippi River	Yes
Carleton Place WPCP – Heavy rains and spring flooding	Diversion (Phys/Chem)	121702	Apr 15 02:50	May 2 08:00	Mississippi River	Yes
Carleton Place WPCP – Heavy rains and spring flooding	Bypass	210	Apr 20 09:37	Apr 20 11:50	Mississippi River	Yes

* April 25 2019 - Daily collection of samples while plant was operating in Storm Mode Phys/Chem and Combined Effluent was missed.

Summary of Spills/Abnormal Discharges

Date	Location	Details	Corrective Action Taken
April 15 2019	Carleton Place WPCP	UV channel hydraulically overloaded	UV's were pressured washed to remove debris

Date	Location	Details	Corrective Action Taken
June 18 2019	Carleton Place WPCP	Digester gas flare stack Pilot-light turned off due to a power interruption	Stack Pilot light was then re-ignited and the digester gas system reinitiated

Maintenance

OCWA uses a risk-based preventative maintenance framework that ensures assets are maintained to manufacturer's and/or industry standards. Maintenance is completed using various tools and operational supports. The Eastern Regional Hub has specialized and certified staff such as Millwrights, Electricians and Instrumentation Specialists to name a few.

OCWA uses a Workplace Maintenance System (WMS). WMS is a maintenance tracking system that can generate work orders as well as give summaries of completed and scheduled work. During the year, the operating authority at the facility generates scheduled work orders on a weekly, monthly and annual basis. The service work is recorded in the work order history. This ensures routine and preventive maintenance is carried out. Emergency and capital repair maintenance is completed and added to the system.

Capital projects are listed and provided to the Town of Carleton Place in the form of a "Capital Forecast". This list is developed by facility staff and provides recommendations for facility components requiring upgrading or improvement.

Maintenance Highlights

WO #	Summary
1103763	Capital #1 Blanket Items under $200
1104710	Capital Annual material order
1299078	Capital Rebuild Jet pump
1301044	Capital SCADA/PLC replacement
1378493	Capital Pumping station clean outs
1420407	Capital Fire extinguisher signs
1421066	Capital Sludge pump repair
1421313	Capital Effluent Composite Sampler Pump Motor Fail
1464103	Capital Storm mixer seals
1464266	Capital Scum pump 2 repair
1498002	Capital Power outage pumper truck
1498415	Capital Replace drive screw compactor
1499753	Capital Gas regulator parts
1499813	Capital Princess SPS pump reset re-location
1499859	Capital New 1 1/2 hose
1534883	Capital Aeration tank 2 jet pump inspection
1536174	Capital Heat Exchanger replacement

WO #	Summary
1536427	Capital Boiler 3 repairs
1536845	Capital Pump Findlay Contactor
1017773	Capital Ladder safety cover
1103060	Capital RAW sewage 2 check valve purchase & install
1103758	Capital Pressure washer parts
1103777	Capital Replace # 2 check valve RAW sewage
1103874	Capital Boiler 1&2 air pressure off alarm
1104449	Capital Charles St pump controls
1137234	Capital pH probe failure
1138465	Capital Hot water tank gas leak
1140318	Capital Southeast pump 1 leak
1177212	Capital UV rack main board
1219115	Capital Replace hot water tank
1219240	Capital Kingfish at Bridge SPS due to high flows
1219723	Capital kingfish at Bridge SPS high flows
1258259	Capital Microwave for bench work
1259165	Capital Methane gas PMs
1259375	Capital Boiler repairs
1259411	Capital Hot water tank
1298859	Capital Sludge Transfer Pump 1 Not Pumping
1298925	Capital Boiler parts
1298943	Capital UV parts
1299903	Capital Findlay SPS Pump 1 Not Working CP
1301018	Capital Bridge St. Pumping Station Hi Level
1301021	Capital Replace check valves 1and 2 Raw sewage
1338266	Capital Sim Card subscription for back up alarm system
1338725	Capital Stainless connecting links for submersible pumps
1338726	Capital Sim Card subscription for back up alarm system
1338746	Capital pump replacement Charles SPS
1376234	Capital Jet mixing pump 3 fail
1378766	Capital Replace check valves RAW sewage
1421083	Capital Replace flame arrestor assembly
1421557	Capital Flame arrestor replace
1463104	Capital Findlay alternating relay
743073	Capital Grit removal storm and floc tanks
863591	Capital Gas valve replace

Calibration

The flow meters were calibrated on July 23, 2019. See Appendix D for the calibration reports.

Appendix A

Facility Performance Assessment Report

Ontario Clean Water Agency
Performance Assessment Report Wastewater/Lagoon

From: 01/01/2019 to 31/12/2019

Facility: [5678] MISSISSIPPI MILLS WASTEWATER TREATMENT FACILITY
Works: [110000873]

	01/2019	02/2019	03/2019	04/2019	05/2019	06/2019	07/2019	08/2019	09/2019	10/2019	11/2019	12/2019	<--Total-->	<--Avg.-->	<--Max.-->	<--Criteria-->
Flows:																
Raw Flow: Total - Raw Sewage (m^3)	90595.28	69594.74	176363.33	311286.57	198240.97	157350.13	108146.44	60831.62	64100.55	89822.19	147101.17	93550.28	1566983.27			
Raw Flow: Avg - Raw Sewage (m^3/d)	2922.43	2485.53	5689.14	10376.22	6394.87	5245.00	3488.59	1962.31	2136.69	2897.49	4903.37	3017.75		4293.28		
Raw Flow: Max - Raw Sewage (m^3/d)	4055.77	4266.33	17664.90	19664.73	9949.75	9104.82	5437.45	2548.57	2530.85	6338.31	9881.04	4543.49			19664.73	
Eff. Flow: Total - Final Effluent (m^3)	73374.02	60649.25	118034.12	232321.53	170105.67	109365.25	90469.47	49266.96	47852.67	63759.46	118327.60	90181.61	1223707.61			
Eff. Flow: Avg - Final Effluent (m^3/d)	2366.90	2166.04	3807.55	7744.05	5487.28	3645.51	2918.37	1589.26	1595.09	2056.76	3944.25	2909.08		3352.51		
Eff. Flow: Max - Final Effluent (m^3/d)	3205.41	3665.72	6912.91	10229.06	9575.89	4668.84	4538.70	1886.98	1928.28	3668.42	5334.90	4056.47			10229.06	
Carbonaceous Biochemical Oxygen Demand: CBOD:																
Raw: # of samples of cBOD5 - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	5	53			
Eff: Avg cBOD5 - Final Effluent (mg/L)	< 3.000	< 3.000	< 3.000	< 3.000	< 3.250	< 3.000	< 3.000	< 3.000	< 3.000	< 3.000	< 3.000	< 3.000		< 3.021	< 3.250	25.0
Eff: # of samples of cBOD5 - Final Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	5	5	54			
Loading: cBOD5 - Final Effluent (kg/d)	< 7.101	< 6.498	< 11.423	< 23.232	< 17.834	< 10.937	< 8.755	< 4.768	< 4.785	< 6.170	< 11.833	< 8.727		< 10.172	< 23.232	117.5
Percent Removal: cBOD5 - Raw Sewage (mg/L)	97.751	98.473	97.656	87.603	94.583	95.142	96.894	98.251	98.338	98.469	94.419	96.560			98.473	
Biochemical Oxygen Demand: BOD5:																
Raw: # of samples of BOD5 - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	5	53			
Eff: Avg BOD5 - Final Effluent (mg/L)	< 3.000	< 3.000	< 3.000	< 3.000	< 3.500	< 3.000	< 3.000	< 3.000	< 5.750	< 3.000	< 3.000	< 3.000		< 3.271	< 5.750	25.0
Loading: BOD5 - Final Effluent (kg/d)	< 7.101	< 6.498	< 11.423	< 23.232	< 19.205	< 10.937	< 8.755	< 4.768	< 9.172	< 6.170	< 11.833	< 8.727		< 10.652	< 23.232	
Percent Removal: BOD5 - Raw Sewage (mg/L)	98.387	98.804	97.846	93.902	95.238	95.588	97.159	98.389	96.917	98.978	96.931	98.049			98.978	
Total Suspended Solids: TSS:																
Raw: Avg TSS - Raw Sewage (mg/L)	354.000	387.500	308.750	113.000	60.000	142.500	118.000	315.000	332.500	403.000	209.250	254.000		249.792	403.000	
Raw: # of samples of TSS - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	5	53			
Eff: Avg TSS - Final Effluent (mg/L)	< 4.400	6.250	< 5.000	10.200	9.500	6.500	< 3.800	15.500	17.500	10.667	< 3.800	< 5.200		< 8.193	17.500	15.0
Eff: # of samples of TSS - Final Effluent (mg/L)	5	4	4	5	4	4	5	4	4	6	5	5	55			
Loading: TSS - Final Effluent (kg/d)	< 10.414	13.538	< 19.038	78.989	52.129	23.696	< 11.090	24.633	27.914	21.939	< 14.988	< 15.127		< 26.125	78.989	70.5
Percent Removal: TSS - Raw Sewage (mg/L)	98.757	98.387	98.381	90.973	84.167	95.439	96.780	95.079	94.737	97.353	98.184	97.953			98.757	
Total Phosphorus: TP:																
Raw: Avg TP - Raw Sewage (mg/L)	6.022	6.877	4.443	1.078	4.240	2.125	3.816	7.905	8.028	9.202	3.475	3.940		5.096	9.202	
Raw: # of samples of TP - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	5	53			
Eff: Avg TP - Final Effluent (mg/L)	0.220	0.113	0.080	0.192	0.275	0.060	0.182	0.078	0.135	0.078	0.060	0.042		0.126	0.275	0.2 - 0.3
Eff: # of samples of TP - Final Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	6	5	55			
Loading: TP - Final Effluent (kg/d)	0.521	0.244	0.305	1.487	1.509	0.219	0.531	0.123	0.215	0.160	0.237	0.122		0.473	1.509	1.41
Percent Removal: TP - Raw Sewage (mg/L)	96.347	98.364	98.199	82.189	93.514	97.176	95.231	99.020	98.318	99.152	98.273	98.934			99.152	
Nitrogen Series:																
Raw: Avg TKN - Raw Sewage (mg/L)	38.660	43.650	29.225	7.900	34.700	17.475	34.820	78.450	60.000	54.600	21.725	25.560		37.230	78.450	
Raw: # of samples of TKN - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	5	53			
Eff: Avg TAN - Final Effluent (mg/L)	0.638	0.345	0.053	0.252	0.765	0.265	0.360	0.080	0.035	0.034	0.050	0.044		0.243	0.765	5.0 - 15.0
Eff: # of samples of TAN - Final Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	5	5	54			
Loading: TAN - Final Effluent (kg/d)	1.510	0.747	0.200	1.952	4.198	0.966	1.051	0.127	0.056	0.070	0.197	0.128		0.933	4.198	70.5
Disinfection:																
Eff: GMD E. Coli - Final Effluent (cfu/100mL)	2.000	2.000	2.000	1.741	4.757	3.420	5.675	2.000	1.741	2.000	2.213	2.000		2.629	5.675	200.0
Eff: # of samples of E. Coli - Final Effluent (cfu/100mL)	5	4	4	5	4	3	5	4	5	5	4	5	53			

Appendix B

Septage Quality and Loadings

Ontario Clean Water Agency
Time Series Info Report

From: **01/01/2019 to 31/12/2019**

Facility Org Number: **5672**
Facility Works Number: **110000971**
Facility Name: **CARLETON PLACE WASTEWATER TREATMENT FACILITY**
Facility Owner: **Municipality: Town of Carleton Place**
Facility Classification: **Class 3 Wastewater Treatment**
Receiver: **Mississippi River**
Service Population:
Total Design Capacity: **---**

	01/2019	02/2019	03/2019	04/2019	05/2019	06/2019	07/2019	08/2019	09/2019	10/2019	11/2019	12/2019	Total	Avg	Max	Min
Septage / Biochemical Oxygen Demand: BOD5 - mg/L																
Count Lab	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max Lab	3350	2290	1000	89	4110	5800	3550	2370	3700	902	3230	2370			5800	
Mean Lab	3350	2290	1000	89	4110	5800	3550	2370	3700	902	3230	2370		2730.08		
Min Lab	3350	2290	1000	89	4110	5800	3550	2370	3700	902	3230	2370				89
Septage / Loadings: BOD - kg/d																
Count IH	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max IH	3.296	2.222	1.095	0.109	6.082	12.148	8.823	6.569	8.119	1.565	5.17	2.669			12.148	
Mean IH	3.296	2.222	1.095	0.109	6.082	12.148	8.823	6.569	8.119	1.565	5.17	2.669		4.822		
Min IH	3.296	2.222	1.095	0.109	6.082	12.148	8.823	6.569	8.119	1.565	5.17	2.669				0.109
Total IH	3.296	2.222	1.095	0.109	6.082	12.148	8.823	6.569	8.119	1.565	5.17	2.669	57.868			
Septage / Loadings: TP - kg/d																
Count IH	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max IH	0.206	0.122	0.194	0.01	0.386	0.473	0.348	0.698	0.696	0.155	0.375	0.181			0.698	
Mean IH	0.206	0.122	0.194	0.01	0.386	0.473	0.348	0.698	0.696	0.155	0.375	0.181		0.32		
Min IH	0.206	0.122	0.194	0.01	0.386	0.473	0.348	0.698	0.696	0.155	0.375	0.181				0.01
Total IH	0.206	0.122	0.194	0.01	0.386	0.473	0.348	0.698	0.696	0.155	0.375	0.181	3.844			
Septage / Loadings: TS - kg/d																
Count IH	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max IH	113.16	110.632	126.978	0.969	20.126	24.715	18.939	50.999	36.644	6.281	21.609	94.152			126.978	
Mean IH	113.16	110.632	126.978	0.969	20.126	24.715	18.939	50.999	36.644	6.281	21.609	94.152		52.1		
Min IH	113.16	110.632	126.978	0.969	20.126	24.715	18.939	50.999	36.644	6.281	21.609	94.152				0.969
Total IH	113.16	110.632	126.978	0.969	20.126	24.715	18.939	50.999	36.644	6.281	21.609	94.152	625.204			
Septage / Loadings: TSS - kg/d																
Count IH	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max IH	6.002	3.688	5.178	0.055	5.549	14.452	7.208	24.945	21.065	1.301	12.645	8.221			24.945	
Mean IH	6.002	3.688	5.178	0.055	5.549	14.452	7.208	24.945	21.065	1.301	12.645	8.221		9.193		
Min IH	6.002	3.688	5.178	0.055	5.549	14.452	7.208	24.945	21.065	1.301	12.645	8.221				0.055
Total IH	6.002	3.688	5.178	0.055	5.549	14.452	7.208	24.945	21.065	1.301	12.645	8.221	110.31			
Septage / Loadings:TKN - kg/d																
Count IH	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max IH	2.765	1.533	2.54	0.082	5.831	6.556	4.648	4.74	7.351	3.019	2.817	2.996			7.351	
Mean IH	2.765	1.533	2.54	0.082	5.831	6.556	4.648	4.74	7.351	3.019	2.817	2.996		3.74		
Min IH	2.765	1.533	2.54	0.082	5.831	6.556	4.648	4.74	7.351	3.019	2.817	2.996				0.082
Total IH	2.765	1.533	2.54	0.082	5.831	6.556	4.648	4.74	7.351	3.019	2.817	2.996	44.877			
Septage / Total Kjeldahl Nitrogen: TKN - mg/L																
Count Lab	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max Lab	2810	1580	2320	66.9	3940	3130	1870	1710	3350	1740	1760	2660			3940	
Mean Lab	2810	1580	2320	66.9	3940	3130	1870	1710	3350	1740	1760	2660		2244.74		
Min Lab	2810	1580	2320	66.9	3940	3130	1870	1710	3350	1740	1760	2660				66.9
Septage / Total Phosphorus: TP - mg/L																
Count Lab	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max Lab	209	126	177	8.5	261	226	140	252	317	89.1	234	161			317	
Mean Lab	209	126	177	8.5	261	226	140	252	317	89.1	234	161		183.383		
Min Lab	209	126	177	8.5	261	226	140	252	317	89.1	234	161				8.5
Septage / Total Solids: TS - mg/L																
Count Lab	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max Lab	115000	114000	116000	790	13600	11800	7620	18400	16700	3620	13500	83600			116000	
Mean Lab	115000	114000	116000	790	13600	11800	7620	18400	16700	3620	13500	83600		42885.8		
Min Lab	115000	114000	116000	790	13600	11800	7620	18400	16700	3620	13500	83600				790
Septage / Total Suspended Solids: TSS - mg/L																
Count Lab	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max Lab	6100	3800	4730	45	3750	6900	2900	9000	9600	750	7900	7300			9600	
Mean Lab	6100	3800	4730	45	3750	6900	2900	9000	9600	750	7900	7300		5231.25		
Min Lab	6100	3800	4730	45	3750	6900	2900	9000	9600	750	7900	7300				45

Appendix C

Biosolids Quality Report

Ontario Clean Water Agency
Biosolids Quality Report - Liquid
Digestor Type: ANAEROBIC
Solids and Nutrients

Facility: CARLETON PLACE WASTEWATER TREATMENT FACILITY
Works: 5672
Period: 01/01/2019 to 12/31/2019

Facility Works Number: *1.1000971E7*
Facility Name: *CARLETON PLACE WASTEWATER TREATMENT FACILITY*
Facility Owner: *Municipality: Town of Carleton Place*
Facility Classification: *Class 3 Wastewater Treatment*
Receiver: *Mississippi River*
Service Population:
Total Design Capacity: ---
Period Being Reported: 01/01/2019 12/01/2019

Note: all parameters in this report will be derived from the Bslq Station

Month	Total Sludge Hauled (m3)	Avg. Total Solids (mg/L)	Avg. Volatile Solids (mg/L)	Avg. Total Phosphorus (mg/L)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	TKN (mg/L)	Ammonia + Nitrate (mg/L)	Potassium (mg/L)
Site	**Site Name**									
Station	**Bslq Station only**									
Parameter Short Name	**HauledVol**	**TS**	**VS**	**TP**	**NH3p_NH4p_N**	**NO3-N**	**NO2-N**	**TKN**	**calculation in report - no T/S**	**K**
T/s	**IH Month.Total**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**		**Lab Published Month Mean**
Jan		48,000.000	26,000.000	1,160.000	687.000	0.100	0.100	2,240.000	343.550	54.500
Feb		31,300.000	16,800.000	616.000	658.000	0.500	0.500	1,400.000	329.250	49.300
Mar		35,550.000	17,750.000	748.000	580.500	0.300	0.300	1,535.000	290.400	64.000
Apr		33,000.000	18,500.000	1,465.000	816.000	0.100	0.100	2,705.000	408.050	72.500
May		29,350.000	16,750.000	956.500	693.000	0.550	18.100	1,860.000	346.775	71.750
Jun		31,450.000	16,300.000	1,220.000	684.500	0.350	0.100	1,605.000	342.425	67.250
Jul		46,700.000	24,300.000	1,099.000	641.000	0.100	0.350	1,535.000	320.550	87.000
Aug		53,400.000	27,600.000	1,335.000	710.000	0.100	0.100	1,690.000	355.050	83.000

Sep		31,000.000	15,600.000	987.500	590.000	0.100	0.100	1,570.000	295.050	56.500
Oct		41,300.000	19,800.000	1,405.000	529.250	0.100	0.100	1,900.000	264.675	58.750
Nov		38,250.000	19,800.000	1,590.000	644.500	1.750	0.550	2,060.000	323.125	67.000
Dec		39,950.000	20,200.000	1,850.000	756.000	1.000	1.250	2,705.000	378.500	62.250
Average		38,270.833	19,950.000	1,202.667	665.813	0.421	1.804	1,900.417	333.117	66.150
Total	0.000	459,250.000	239,400.000	14,432.000	7,989.750	5.050	21.650	22,805.000	3,997.400	793.800

Ontario Clean Water Agency
Biosolids Quality Report - Liquid
Digestor Type: ANAEROBIC
Metals and Criteria

Facility: CARLETON PLACE WASTEWATER TREATMENT FACILITY
Works: 5672
Period: 01/01/2019 to 12/31/2019

Note: all parameters in this report will be derived from the Bslq Station

Month	Arsenic (mg/L)	Cadmium (mg/L)	Cobalt (mg/L)	Chromium (mg/L)	Copper (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Lead (mg/L)	Selenium (mg/L)	Zinc (mg/L)
Site	**Site Name**										
Station	**Bslq Station only**										
Parameter Short Name	**As**	**Cd**	**Co**	**Cr**	**Cu**	**Hg**	**Mo**	**Ni**	**Pb**	**Se**	**Zn**
T/s	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**
Jan	0.100	0.030	0.060	0.690	23.100	0.019	0.230	0.450	0.700	0.100	20.900
Feb	0.100	0.030	0.060	0.420	13.300	0.011	0.120	0.280	0.400	0.100	11.800
Mar	0.100	0.030	0.045	0.580	18.700	0.013	0.180	0.390	0.550	0.100	17.300
Apr	0.100	0.045	0.070	0.685	20.750	0.014	0.200	0.440	0.600	0.100	19.200
May	0.100	0.030	0.055	0.625	17.550	0.011	0.185	0.455	0.450	0.100	15.750
Jun	0.100	0.030	0.055	0.560	13.600	0.017	0.075	0.325	0.350	0.100	11.850
Jul	0.100	0.030	0.070	0.845	21.200	0.014	0.215	0.525	0.650	0.100	19.500
Aug	0.100	0.040	0.090	0.945	23.900	0.013	0.195	0.505	0.750	0.100	21.900
Sep	0.100	0.030	0.060	0.925	16.350	0.014	0.180	0.470	0.550	0.100	17.700
Oct	0.100	0.030	0.060	0.790	22.950	0.014	0.190	0.575	1.350	0.100	20.600
Nov	0.100	0.030	0.055	0.685	18.350	0.012	0.185	0.445	0.450	0.100	18.850
Dec	0.100	0.030	0.065	0.605	17.650	0.014	0.165	0.410	0.450	0.100	16.950
Average	0.100	0.032	0.062	0.696	18.950	0.014	0.177	0.439	0.604	0.100	17.692
Min. Acceptable Ammonia + Nitrate Nitrogen to Metal Ratio:	100.000	500.000	50.000	6.000	10.000	1,500.000	180.000	40.000	15.000	500.000	4.000

Ammonia + Nitrate Nitrogen to Metal Ratio in Sludge	3,331.167	10,382.857	5,365.638	478.444	17.579	24,374.390	1,885.566	758.520	551.366	3,331.167	18.829

Ontario Clean Water Agency
Biosolids Quality Report - Liquid - Based on Last 4 Samples
Digestor Type: ANAEROBIC

Facility: CARLETON PLACE WASTEWATER TREATMENT FACILITY
Works: 5672
Period: 01/01/2019 to 12/31/2019

Note: all parameters in this report will be derived from the Bslq Station

Parameter Short Name	Time Series	11/04/2019	11/19/2019	12/03/2019	12/17/2019	Average	Metal Concentrations in Sludge (mg/kg):	Max. Permissible Metal Concentrations (mg/kg of Solids):
As (mg/L)	Lab Published	0.100	0.100	0.100	0.100	0.100	2.558	170
Cd (mg/L)	Lab Published	0.030	0.030	0.030	0.030	0.030	0.767	34
Co (mg/L)	Lab Published	0.040	0.070	0.070	0.060	0.060	1.535	340
Cr (mg/L)	Lab Published	0.490	0.880	0.540	0.670	0.645	16.496	2800
Cu (mg/L)	Lab Published	14.900	21.800	15.800	19.500	18.000	460.358	1700
Hg (mg/L)	Lab Published	0.007	0.016	0.008	0.020	0.013	0.332	11
Mo (mg/L)	Lab Published	0.150	0.220	0.160	0.170	0.175	4.476	94
Ni (mg/L)	Lab Published	0.340	0.550	0.340	0.480	0.428	10.946	420
Pb (mg/L)	Lab Published	0.300	0.600	0.400	0.500	0.450	11.509	1100
Se (mg/L)	Lab Published	0.100	0.100	0.100	0.100	0.100	2.558	34
Zn (mg/L)	Lab Published	14.100	23.600	15.900	18.000	17.900	457.801	4200
E. Coli: Dry Wt (cfu/g)	Lab Published						E.Coli average is the GMD	
TS (mg/L)	Lab Published	34,400.000	42,100.000	38,900.000	41,000.000	39,100.000		
VS (mg/L)	Lab Published	18,000.000	21,600.000	21,000.000	19,400.000	20,000.000		
TP (mg/L)	Lab Published	1,050.000	2,130.000	1,680.000	2,020.000	1,720.000		
NO2-N (mg/L)	Lab Published	0.100	1.000	1.500	1.000	0.900		
TKN (mg/L)	Lab Published	1,690.000	2,430.000	2,450.000	2,960.000	2,382.500		
K (mg/L)	Lab Published	62.500	71.500	58.500	66.000	64.625		
NH3p_NH4p_N (mg/L)	Lab Published	546.000	743.000	844.000	668.000	700.250		
NO3-N (mg/L)	Lab Published	2.500	1.000	1.000	1.000	1.375		

Appendix D

Calibration Records

Franklin Empire
900 Major Bennett Dr.
Peterborough ON K9J 6X6, CANADA

Tel: (705) 745-1626
Fax: (705) 745-3493

Carleton Place WTP

2019 Flow Calibrations

CALIBRATION REPORT

Report No.: OCWA CP 19 FIT

Date: 23-Jul-19

SITE:	Carleton Place WTP
PROCESS AREA:	Treated Water Flow
INSTR. TAG:	FIT
MANUFACTURER:	Endress and Hauser
MODEL:	PMD70
SERIAL No.:	D400011509D
INSTR. RANGE:	0-103.62"H20 for 0-16400m3/d

SERVICE DATE:	July 23, 2019
TECHNICIAN:	M Manley
JOB REFERENCE:	OCWA CP 19

Input	**(Test)**	**Output**	**(Signal)**	**(Process)**
Type:	Inches WC	**Type or EGU:**	4-20Ma	Inches WC
Min:	0.00	**Min:**	4.00	0.00
Max:	103.62	**Max:**	20.00	103.62

			Before Calibration		**After Calibration**	
Input	**Input %**	**Calc. O/P**	**Output**	**%Error**	**Output**	**%Error**
0.00	0.00%	4.00	4.00	0.00%	4.00	0.00%
6.48	25.00%	8.00	8.02	0.50%	8.02	0.50%
25.91	50.00%	12.00	12.01	0.12%	12.01	0.12%
58.29	75.00%	16.00	16.01	0.08%	16.01	0.08%
103.62	100.00%	20.00	20.00	0.00%	20.00	0.00%

Calibration Equipment

Type:	DMM	Pressure Gauge	
Manufacturer:	Fluke	Crystal	
Model:	Model 87	15 PSI	
Serial No.:	134409128	Service, Low Pressure Kit	
Last Cal. Date:	Apr. 2, 2019	Nov. 14, 2018	

Comments:

Bled Transmitter.

Flowmeter Verification Certificate Transmitter

OCWA	Carleton Place WTP
Customer	Plant
ALUM FLOW	--------
Order code	Tag Name
PROMAG 53 P DN25	0.7471 - 0.7471
Device type	K-Factor
M3063016000	2
Serial number	Zero point
V2.03.00	V1.06.00
Software Version Transmitter	Software Version I/O-Module
07/23/2019	11:38
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
550149	8781637
Production number	Production number
1.07.08	1.00.01
Software Version	Software Version
03/2019	03/2019
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

FieldCheck - Result Tab Transmitter

Customer	**OCWA**		Plant	**Carleton Place WTP**
Order code	**ALUM FLOW**		Tag Name	**--------**
Device type	**PROMAG 53 P DN25**		K-Factor	**0.7471 - 0.7471**
Serial number	**M3063016000**		Zero point	**2**
Software Version Transmitter	**V2.03.00**		Software Version I/O-Module	**V1.06.00**
Verification date	**07/23/2019**		Verification time	**11:38**

Verification Flow end value (100 %): 117.810 l/m
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	5.890 l/m (5%)	1.50 %	-0.27 %
✓		11.781 l/m (10.0%)	1.00 %	-0.09 %
✓		58.905 l/m (50.0%)	0.60 %	-0.06 %
✓		117.811 l/m (100%)	0.55 %	-0.06 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.004 mA
✓		4.800 mA (5%)	0.05 mA	0.003 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.012 mA
✓		12.000 mA (50.0%)	0.05 mA	0.005 mA
✓		20.000 mA (100%)	0.05 mA	0.010 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	2.400 ms	0.000..8.750 ms	3.587 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	23.059 mV

Legend of symbols

✓	✘	–	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer	**OCWA**	Plant	**Carleton Place WTP**
Order code	**ALUM FLOW**	Tag Name	**--------**
Device type	**PROMAG 53 P DN25**	K-Factor	**0.7471 - 0.7471**
Serial number	**M3063016000**	Zero point	**2**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.06.00**
Verification date	**07/23/2019**	Verification time	**11:38**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA active	0.0 l/m	2.00 l/m		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.757 l/P	Passive/Positive	100.01 ms		

Actual System Ident. 123.0

VeriMaster - Flow Meter Verification Report

Customer Information	
Customer	OCWA CP
Verification Download	Tue, Jul 23, 2019

Meter Information	
Meter Owner	Carleton Place WTP
Meter Type	WaterMaster
Sensor Size	DN150
Pipe Status	Fluid Present
Sensor Type	Fullbore
Sensor Serial No	3K220000191837
Transmitter Serial No	3K220000191837
Tag	
Location	?

Overall Status: Pass

The flowmeter has passed its internal continuous verification and automatic self calibration. It is working within +/ -1% of its original factory calibration

Summary of Results	
Coil Group	Passed
Electrode Group	Passed
Sensor Group	Passed
Transmitter Signal	Passed
Transmitter Driver	Passed
Output Group	Passed
Configuration	Passed

Verification History	
OIML Accuracy Alarms	0

Totaliser Information	
Forward	1200417.90 m3
Reverse	96.32 m3
Net	1200321.57 m3

Sensor Information	
Q3	15120.00 m3/d
Calibration Accuracy	OIML Class 2
Sensor Calibration Factors	131.9%; -0.66 mm/s; 11
Date of Manufacture	20 Sept 2013
Run Hours	1818days 6hrs 5mins

Sensor Data	
Coil Current	179.9 mA
Coil Inductance	54.5 mH
Coil Inductance Shift	0.2%
Coil / Loop Resistance	30.0 ohm

Transmitter Information	
Application Version	V01.05.00 12/07/12
MSP Version	00.00.04
Date of Manufacture	20 Sept 2013
Run Hours	2086days 21hrs 1mins

Transmitter Data	
Tx Gain - Adjustment	0.1%

VeriMaster Information	
Version	01.00.03
Limit Version	01.00.01

Current Output	
4mA Value	Pass : 4.000 mA ; 0.00%
12mA Value	Pass : 11.988 mA ; 0.10%
20mA Value	Pass : 19.984 mA ; 0.08%

Pulse Output	
Output 1: 100.0Hz	Not tested
Output 1: 50.0Hz	Not tested
Output 2: 100.0Hz	Not tested
Output 2: 50.0Hz	Not tested

Installation Comments / Equipment used:

P1 pass
0-3000m3/d

Configuration Settings	
Mains Frequency	60 Hz
Qmax	3000.00 m3/d
Pulses/Unit	1.000000
Pulses Limit Frequency	100.0 Hz
Sensor User Span/Zero	100.0%; 0.00 mm/s
User Flow Cutoff/Hysterisis	0.00%; 20%
Meter Mode	Normal operation

Date Tue, Jul 23, 2019 Operator Signature Print

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VeriMaster - Flow Meter Verification Report

Customer Information	
Customer	OCWA CP
Verification Download	Tue, Jul 23, 2019

Meter Information	
Meter Owner	Carleton Place WTP
Meter Type	WaterMaster
Sensor Size	DN200
Pipe Status	Fluid Present
Sensor Type	Fullbore
Sensor Serial No	3K220000193823
Transmitter Serial No	3K220000193823
Tag	
Location	?

Overall Status: Pass

The flowmeter has passed its internal continuous verification and automatic self calibration. It is working within +/ -1% of its original factory calibration

Summary of Results	
Coil Group	Passed
Electrode Group	Passed
Sensor Group	Passed
Transmitter Signal	Passed
Transmitter Driver	Passed
Output Group	Passed
Configuration	Passed

Verification History	
OIML Accuracy Alarms	0

Totaliser Information	
Forward	142529.17 m3
Reverse	167.49 m3
Net	142361.68 m3

Sensor Information	
Q3	24000.00 m3/d
Calibration Accuracy	OIML Class 2
Sensor Calibration Factors	120.5%; -0.90 mm/s; 11
Date of Manufacture	24 Sept 2013
Run Hours	1818days 5hrs 30mins

Sensor Data	
Coil Current	179.9 mA
Coil Inductance	100.1 mH
Coil Inductance Shift	-0.4%
Coil / Loop Resistance	32.8 ohm

Transmitter Information	
Application Version	V01.05.00 12/07/12
MSP Version	00.00.04
Date of Manufacture	24 Sept 2013
Run Hours	2192days 2hrs 18mins

Transmitter Data	
Tx Gain - Adjustment	-0.1%

VeriMaster Information	
Version	01.00.03
Limit Version	01.00.01

Current Output	
4mA Value	Pass : 4.000 mA ; 0.00%
12mA Value	Pass : 11.988 mA ; 0.10%
20mA Value	Pass : 19.988 mA ; 0.06%

Pulse Output	
Output 1: 100.0Hz	Not tested
Output 1: 50.0Hz	Not tested
Output 2: 100.0Hz	Not tested
Output 2: 50.0Hz	Not tested

Installation Comments / Equipment used:

LL P2 Pass

Configuration Settings	
Mains Frequency	60 Hz
Qmax	4500.00 m3/d
Pulses/Unit	1.000000
Pulses Limit Frequency	100.0 Hz
Sensor User Span/Zero	100.0%; 0.00 mm/s
User Flow Cutoff/Hysterisis	0.00%; 20%
Meter Mode	Normal operation

Date Tue, Jul 23, 2019 Operator Signature Print

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VeriMaster - Flow Meter Verification Report

Customer Information	
Customer	OCWA CP
Verification Download	Tue, Jul 23, 2019

Meter Information	
Meter Owner	Carleton Place WTP
Meter Type	WaterMaster
Sensor Size	DN250
Pipe Status	Fluid Present
Sensor Type	Fullbore
Sensor Serial No	3K220000197211
Transmitter Serial No	3K220000197211
Tag	
Location	?

Overall Status: Pass

The flowmeter has passed its internal continuous verification and automatic self calibration. It is working within +/ -1% of its original factory calibration

Summary of Results	
Coil Group	Passed
Electrode Group	Passed
Sensor Group	Passed
Transmitter Signal	Passed
Transmitter Driver	Passed
Output Group	Passed
Configuration	Passed

Verification History	
OIML Accuracy Alarms	0

Totaliser Information	
Forward	7649422.29 m3
Reverse	163.40 m3
Net	7649258.89 m3

Sensor Information	
Q3	38400.00 m3/d
Calibration Accuracy	OIML Class 2
Sensor Calibration Factors	-124.4%; -0.49 mm/s; 11
Date of Manufacture	21 Sept 2013
Run Hours	1818days 6hrs 15mins

Sensor Data	
Coil Current	180.0 mA
Coil Inductance	293.3 mH
Coil Inductance Shift	0.6%
Coil / Loop Resistance	30.7 ohm

Transmitter Information	
Application Version	V01.05.00 12/07/12
MSP Version	00.00.04
Date of Manufacture	21 Sept 2013
Run Hours	2188days 13hrs 43mins

Transmitter Data	
Tx Gain - Adjustment	0.0%

VeriMaster Information	
Version	01.00.03
Limit Version	01.00.01

Current Output	
4mA Value	Pass : 4.000 mA ; 0.00%
12mA Value	Pass : 11.992 mA ; 0.07%
20mA Value	Pass : 19.980 mA ; 0.10%

Pulse Output	
Output 1: 100.0Hz	Not tested
Output 1: 50.0Hz	Not tested
Output 2: 100.0Hz	Not tested
Output 2: 50.0Hz	Not tested

Installation Comments / Equipment used:

LLP3 0-9000m3/d

Configuration Settings	
Mains Frequency	60 Hz
Qmax	8000.01 m3/d
Pulses/Unit	1.000000
Pulses Limit Frequency	100.0 Hz
Sensor User Span/Zero	100.0%; 0.00 mm/s
User Flow Cutoff/Hysterisis	0.00%; 20%
Meter Mode	Normal operation

Date Tue, Jul 23, 2019 Operator Signature Print

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VeriMaster - Flow Meter Verification Report

Customer Information	
Customer	OCWA Carleton Place
Verification Download	Tue, Jul 23, 2019

Meter Information	
Meter Owner	Carleton Place WTP
Meter Type	WaterMaster
Sensor Size	DN250
Pipe Status	Fluid Present
Sensor Type	Fullbore
Sensor Serial No	3K220000197213
Transmitter Serial No	3K220000197213
Tag	
Location	?

Overall Status: Pass

The flowmeter has passed its internal continuous verification and automatic self calibration. It is working within +/ -1% of its original factory calibration

Summary of Results	
Coil Group	Passed
Electrode Group	Passed
Sensor Group	Passed
Transmitter Signal	Passed
Transmitter Driver	Passed
Output Group	Passed
Configuration	Passed

Verification History	
OIML Accuracy Alarms	0

Totaliser Information	
Forward	139784.13 m3
Reverse	990.29 m3
Net	138793.84 m3

Sensor Information	
Q3	38400.00 m3/d
Calibration Accuracy	OIML Class 2
Sensor Calibration Factors	-129.4%; 1.03 mm/s; 11
Date of Manufacture	07 Aug 2013
Run Hours	1818days 5hrs 5mins

Sensor Data	
Coil Current	179.9 mA
Coil Inductance	287.2 mH
Coil Inductance Shift	0.4%
Coil / Loop Resistance	30.4 ohm

Transmitter Information	
Application Version	V01.05.00 12/07/12
MSP Version	00.00.04
Date of Manufacture	07 Aug 2013
Run Hours	2335days 0hrs 32mins

Transmitter Data	
Tx Gain - Adjustment	0.0%

VeriMaster Information	
Version	01.00.03
Limit Version	01.00.01

Current Output	
4mA Value	Pass : 4.000 mA ; 0.00%
12mA Value	Pass : 12.000 mA ; 0.00%
20mA Value	Pass : 19.988 mA ; 0.06%

Pulse Output	
Output 1: 100.0Hz	Not tested
Output 1: 50.0Hz	Not tested
Output 2: 100.0Hz	Not tested
Output 2: 50.0Hz	Not tested

Installation Comments / Equipment used:

Low Lift Pump 4

Configuration Settings	
Mains Frequency	60 Hz
Qmax	9000.01 m3/d
Pulses/Unit	1.000000
Pulses Limit Frequency	100.0 Hz
Sensor User Span/Zero	100.0%; 0.00 mm/s
User Flow Cutoff/Hysterisis	0.00%; 20%
Meter Mode	Normal operation

Date Tue, Jul 23, 2019 Operator Signature Print

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Carleton Place WWTP

2019 OCM Calibrations

CALIBRATION REPORT

Report No.: OCWA CP FIT M1

Date: 23-Jul-19

SITE:	Carleton Place WWTP	**SERVICE DATE:**	July 23, 2019
PROCESS AREA:	Bypass Flowmeter		
INSTR. TAG:	FIT M1	**TECHNICIAN:**	Mitch Manley
MANUFACTURER:	Milltronics		
MODEL:	Multiranger Plus	**JOB REFERENCE:**	OCWA CP
SERIAL No.:			
INSTR. RANGE:			

Input	**(Test)**	**Output**	**(Signal)**	**(Process)**	
Type:	Head meters	**Type or EGU:**	mA	m3/day	m3/day
Min:	0.00	**Min:**	4.00	0	0
Max:	0.30	**Max:**	20.00	1515	15150
Weir Width (m)	0.61			X10	
exponent	1.5				
calc constant	9220.00				

			Before Calibration		**After Calibration**	
Input	**Calc flowX10**	**Calc. O/P**	**Output**	**%Error**	**Output**	**%Error**
0.0000	0	4.00	4.00	0.00%	4.00	0.00%
0.1230	398	8.20	8.16	-0.96%	8.16	-0.96%
0.1900	764	12.06	11.97	-1.17%	11.97	-1.17%
0.2430	1104	15.66	15.75	0.74%	15.75	0.74%
0.3030	1538	20.24	20.14	-0.62%	20.14	-0.62%

Calibration Equipment

Type:	Tape Measure / level blocks	DMM	
Manufacturer:		Fluke	
Model:		Model 87	
Serial No.:		134409128	
Last Cal. Date:		Apr. 1, 2019	

Comments: Equation used for calculation is as transmitter was programmed (slightly off ISCO Table)
unable to access confined space to check zero.

CALIBRATION REPORT

Report No.: OCWA CP FIT M3

Date: 23-Jul-19

SITE:	Carleton Place WWTP	**SERVICE DATE:**	July 23, 2019
PROCESS AREA:	BIO Plant Flowmeter		
INSTR. TAG:	FIT M3	**TECHNICIAN:**	Mitch Manley
MANUFACTURER:	Milltronics		
MODEL:	Multiranger Plus	**JOB REFERENCE:**	OCWA CP
SERIAL No.:	100592		
INSTR. RANGE:			

Input	**(Test)**		**Output**	**(Signal)**	**(Process)**	
Type:	Head meters		**Type or EGU:**	mA	m3/day	m3/day
Min:	0.00		**Min:**	4.00	0	0.00
Max:	0.52300		**Max:**	20.00	1100	11000.00
Weir Width	6 inch	Parshall			X10	
exponent	1.55					
calc constant	3004.10					

			Before Calibration		**After Calibration**	
Input	**Calc flow**	**Calc. O/P**	**Output**	**%Error**	**Output**	**%Error**
0.0000	0	4.00				
0.3070	482	11.01	10.93	-1.09%	10.93	-1.09%
0.4550	886	16.89	16.88	-0.10%	16.88	-0.10%

Calibration Equipment			
Type:	Tape Measure / level blocks	DMM	
Manufacturer:		Fluke	
Model:		Model 87	
Serial No.:		134409128	
Last Cal. Date:		Apr. 1, 2019	

Comments: Equation used for calculation is as transmitter was programmed (slightly off ISCO Table)
Please confirm if there is a separate factory calibration records for this flume or if unit should be adjusted to match a standard Parshall flume.

CALIBRATION REPORT

Report No.: OCWA CP FIT M4

Date: 19-Jul-18

SITE:	Carleton Place WWTP	**SERVICE DATE:**	July 19, 2018
PROCESS AREA:	Physical Chemical Flowmeter		
INSTR. TAG:	FIT M4	**TECHNICIAN:**	Mitch Manley
MANUFACTURER:	Milltronics		
MODEL:	Multiranger Plus	**JOB REFERENCE:**	OCWA CP
SERIAL No.:	100292		
INSTR. RANGE:			

Input	**(Test)**		**Output**	**(Signal)**	**(Process)**	
Type:	Head meters		**Type or EGU:**	mA	m3/day	m3/day
Min:	0.00		**Min:**	4.00	0	0
Max:	0.12		**Max:**	20.00	400	4000
Weir Width (m)	0.61	X3			X10	
exponent	1.5					
calc constant	9295.28					

			Before Calibration		**After Calibration**	
Input	**Calc flowX10**	**Calc. O/P**	**Output**	**%Error**	**Output**	**%Error**
0.0000	0	4.00	4.00	0.00%	4.00	0.00%
distance						
0.8700			86.88	distance	86.88	distance

Calibration Equipment			
Type:	Tape Measure / level blocks	DMM	
Manufacturer:		Fluke	
Model:		Model 87	
Serial No.:		134409128	
Last Cal. Date:		Mar. 20, 2018	

Comments: not sure if the meter is actually in service, loop was open 2018. Unsure if zeroes are correct as there are 3 gat valves that have to be set eactly at zero point for meter to have a chance of reading correctly. No water in the channel during my visit.

FRANKLIN EMPIRE

CALIBRATION REPORT

Report No.:	OCWA CP 19	MAG M5 Ras	
Date:	23-Jul-19		

SITE:	Carleton Place WWTP	**SERVICE DATE:**	July 23, 2019
PROCESS AREA:	Meter Flow		
INSTR. TAG:	MAG M5 Ras	**TECHNICIAN:**	M M
MANUFACTURER:	F & P		
MODEL:	G5PDNSPB31AD1C11	**JOB REFERENCE:**	OCWA CP 19
SERIAL No.:	920882054/2/B1		
OCWA No:	0000108193		

Input	**(Test)**
Type:	55XC4310A
Min:	0.00
Max:	2.393
Meter Size (inch)	12
Range Unit	m3/hr
Cal. Factor	2438.160

Output	**(Signal)**	**(Process)**
Type or EGU:	mA	m3/hr
Min:	4.00	0.00
Max:	20.00	583.33

			Before Calibration		**After Calibration**	
Input (Y pos)	**Input %**	**Calc. O/P (mA)**	**Output (mA)**	**%Error**	**Output (mA)**	**%Error**
0.00	0.00%	4.00	3.98	-0.50%	3.98	-0.50%
0.60	25.01%	8.00	7.95	-0.62%	7.95	-0.62%
1.20	50.01%	12.00	11.93	-0.58%	11.93	-0.58%
1.79	75.02%	16.00	15.82	-1.12%	15.82	-1.12%
2.39	100.02%	20.00	19.78	-1.10%	19.78	-1.10%

Calibration Equipment

Type:	Simulator	DMM	
Manufacturer:	F & P	Fluke	
Model:	55XC4130A	Model 87	
Serial No.:	9702N8271/C6	134409128	
Last Cal. Date:	21-May-19	Apr. 1, 2019	

Comments: Total 7077367 m3
Low cutoff 1%

CALIBRATION REPORT

Report No.: OCWA CP 19 MAG M2

Date: 23-Jul-19

SITE:	Carleton Place WWTP	**SERVICE DATE:**	July 23, 2019
PROCESS AREA:	Meter Flow Raw Sewage		
INSTR. TAG:	MAG M2	**TECHNICIAN:**	M M
MANUFACTURER:	F & P		
MODEL:	10D1465QBTD65PD21PM31A	**JOB REFERENCE:**	OCWA CP 19
SERIAL No.:	9208-2054/B1/1C11		
OCWA No:	0000108193		

Input	**(Test)**	**Output**	**(Signal)**	**(Process)**
Type:	55XC4310A	**Type or EGU:**	mA	m3/hr
Min:	0.00	**Min:**	4.00	0.00
Max:	3.788	**Max:**	20.00	1250.00
Meter Size (inch)	14			
Range Unit	m3/hr			
Cal. Factor	3300.000			

			Before Calibration		**After Calibration**	
Input (Y pos)	**Input %**	**Calc. O/P (mA)**	**Output (mA)**	**%Error**	**Output (mA)**	**%Error**
0.00	0.00%	4.00	3.99	-0.25%	3.99	-0.25%
0.95	25.08%	8.01	8.01	0.00%	8.01	0.00%
1.89	49.90%	11.98	12.00	0.17%	12.00	0.17%
2.84	74.98%	16.00	16.03	0.19%	16.03	0.19%
3.79	100.06%	20.01	20.07	0.30%	20.07	0.30%

Calibration Equipment

Type:	Simulator	DMM	
Manufacturer:	F & P	Fluke	
Model:	55XC4130A	Model 87	
Serial No.:	9702N8271/C6	134409128	
Last Cal. Date:	21-May-19	Apr. 1, 2019	

Comments: Total 4514360 m3
Low flow cutoff 1%

FRANKLIN EMPIRE

CALIBRATION REPORT

Report No.: OCWA CP 19 WAS

Date: 7-Nov-18

SITE:	Carleton Place WWTP	**SERVICE DATE:**	November 7, 2018
PROCESS AREA:	Meter Flow WAS		
INSTR. TAG:	WAS	**TECHNICIAN:**	M M
MANUFACTURER:	F & P		
MODEL:	65PD17PB21AD1C11	**JOB REFERENCE:**	OCWA CP 19
SERIAL No.:	920882054/2/B1		
OCWA No:	0000108156		

Input	**(Test)**	**Output**	**(Signal)**	**(Process)**
Type:	55XC4310A	**Type or EGU:**	mA	m3/hr
Min:	0.00	**Min:**	4.00	0.00
Max:	2.461	**Max:**	20.00	150.00
Meter Size (inch)	14			
Range Unit	m3/hr			
Cal. Factor	609.540			

			Before Calibration		**After Calibration**	
Input (Y pos)	**Input %**	**Calc. O/P (mA)**	**Output (mA)**	**%Error**	**Output (mA)**	**%Error**
0.00	0.00%	4.00	3.99	-0.25%	3.99	-0.25%
0.63	25.60%	8.10	8.04	-0.74%	8.04	-0.74%
1.25	50.80%	12.13	12.04	-0.74%	12.04	-0.74%
1.88	76.40%	16.22	16.08	-0.86%	16.08	-0.86%
2.50	101.59%	20.25	20.09	-0.79%	20.09	-0.79%

Calibration Equipment

Type:	Simulator	DMM	
Manufacturer:	F & P	Fluke	
Model:	55XC4130A	Model 87	
Serial No.:	9702N8271/C6	134409128	
Last Cal. Date:	21-May-19	Apr. 1, 2019	

Comments: Total 350864 m3
Low flow cutoff 9% ?? Seems high

Flowmeter Verification Certificate Transmitter

OCWA Carleton Place	Carleton Place WWTP
Customer	Plant
Raw Sludge to Primarys	PRIMARYS
Order code	Tag Name
PROMAG 50 W DN150	1.0797 - 1.0797
Device type	K-Factor
7A0F6319000	0
Serial number	Zero point
V2.01.03	V1.04.00
Software Version Transmitter	Software Version I/O-Module
07/23/2019	14:22
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
550149	8781637
Production number	Production number
1.07.08	1.00.01
Software Version	Software Version
03/2019	03/2019
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

FieldCheck - Result Tab Transmitter

Customer	**OCWA Carleton Place**	Plant	**Carleton Place WWTP**
Order code	**Raw Sludge to Primarys**	Tag Name	**PRIMARYS**
Device type	**PROMAG 50 W DN150**	K-Factor	**1.0797 - 1.0797**
Serial number	**7A0F6319000**	Zero point	**0**
Software Version Transmitter	**V2.01.03**	Software Version I/O-Module	**V1.04.00**
Verification date	**07/23/2019**	Verification time	**14:22**

Verification Flow end value (100 %): 4.241 m3/m
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	0.212 m3/m (5%)	1.50 %	-0.28 %
✓		0.424 m3/m (10.0%)	1.00 %	-0.21 %
✓		2.121 m3/m (50.0%)	0.60 %	-0.10 %
✓		4.241 m3/m (100%)	0.55 %	-0.05 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.000 mA
✓		4.800 mA (5%)	0.05 mA	0.000 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.013 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.001 mA
✓		20.000 mA (100%)	0.05 mA	-0.009 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	9.600 ms	0.000..21.500 ms	12.386 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	68.476 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer	**OCWA Carleton Place**	Plant	**Carleton Place WWTP**
Order code	**Raw Sludge to Primarys**	Tag Name	**PRIMARYS**
Device type	**PROMAG 50 W DN150**	K-Factor	**1.0797 - 1.0797**
Serial number	**7A0F6319000**	Zero point	**0**
Software Version Transmitter	**V2.01.03**	Software Version I/O-Module	**V1.04.00**
Verification date	**07/23/2019**	Verification time	**14:22**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA active	0.0 m3/m	2.28 m3/m		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.019 m3/P	Passive/Positive	100.01 ms		

Actual System Ident. 131.0

Flowmeter Verification Certificate Transmitter

OCWA Carleton Place	Carleton Place WWTP
Customer	Plant
Secondary Sludge TXFR	SLUDMET
Order code	Tag Name
PROMAG 50 W DN150	1.0231 - 1.0231
Device type	K-Factor
43009716000	5
Serial number	Zero point
V2.01.03	V1.04.00
Software Version Transmitter	Software Version I/O-Module
07/23/2019	13:59
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
550149	8781637
Production number	Production number
1.07.08	1.00.01
Software Version	Software Version
03/2019	03/2019
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

FieldCheck - Result Tab Transmitter

Customer	**OCWA Carleton Place**	Plant	**Carleton Place WWTP**
Order code	**Secondary Sludge TXFR**	Tag Name	**SLUDMET**
Device type	**PROMAG 50 W DN150**	K-Factor	**1.0231 - 1.0231**
Serial number	**43009716000**	Zero point	**5**
Software Version Transmitter	**V2.01.03**	Software Version I/O-Module	**V1.04.00**
Verification date	**07/23/2019**	Verification time	**13:59**

Verification Flow end value (100 %): 4.241 m3/m
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	0.212 m3/m (5%)	1.50 %	-0.15 %
✓		0.424 m3/m (10.0%)	1.00 %	0.06 %
✓		2.121 m3/m (50.0%)	0.60 %	0.03 %
✓		4.241 m3/m (100%)	0.55 %	0.09 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.000 mA
✓		4.800 mA (5%)	0.05 mA	-0.000 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.011 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.001 mA
✓		20.000 mA (100%)	0.05 mA	-0.007 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	9.600 ms	0.000..21.500 ms	12.063 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	16.317 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer	**OCWA Carleton Place**	Plant	**Carleton Place WWTP**
Order code	**Secondary Sludge TXFR**	Tag Name	**SLUDMET**
Device type	**PROMAG 50 W DN150**	K-Factor	**1.0231 - 1.0231**
Serial number	**43009716000**	Zero point	**5**
Software Version Transmitter	**V2.01.03**	Software Version I/O-Module	**V1.04.00**
Verification date	**07/23/2019**	Verification time	**13:59**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA active	0.0 m3/m	2.27 m3/m		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.019 m3/P	Passive/Positive	100.01 ms		

Actual System Ident. 131.0