Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Zafar Bhatti
Water Supervisor
Guelph District Office
Ministry of the Environment, Conservation and Parks
4th Floor, One Stone Road West
Guelph, ON N1G 4Y2

March 27th, 2019

Re: 2018 Annual Performance Report for the Airport Sewage Treatment System

Attached is the 2018 Annual Performance Report for the Airport Sewage Treatment System located at 38 Greens Rd. in the County of Brant. This report has been completed in accordance with:

- Condition No. 10(6)(a)-(j) cited in Environmental Compliance Approval #8181-8TXHRN dated July 23, 2012 and issued to the Corporation of the County of Brant.
-

This report was prepared by the Ontario Clean Water Agency on behalf of the County of Brant based on the information we have in our records. The report covers the period from January 1, 2018 to December 31, 2018.

Sincerely,

Sam Sianas
Senior Operations Manager
Ontario Clean Water Agency

Cc.
Matthew D'Hondt – Solid Waste/Wastewater Operations Manager – County of Brant

2018 ANNUAL PERFORMANCE REPORT

AIRPORT SEWAGE TREATMENT SYSTEM

38 GREENS ROAD, BRANT COUNTY

MECP ENVIRONMENTAL COMPLIANCE APPROVAL #8181-8TXHRN

BY THE OPERATING AUTHORITY: ONTARIO CLEAN WATER AGENCY

PREPARED FOR: THE MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

ON BEHALF OF: THE COUNTY OF BRANT

DATE: JANUARY 31, 2019

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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INTRODUCTION

The Airport Sewage Treatment System (Airport STS) located in the County of Brant at 38 Greens Road is a large subsurface sewage disposal system. The Airport STS consists of an Integrated Surge Anoxic Mix (ISAM) sequencing batch reactor (SBR) system with a fixed cloth media filter discharging to a tile bed with a design treatment capacity of $60m^3$/day (phase 1) and consists of the following treatment steps:

Influent: Influent enters the influent pump manhole (MH2A) from the gravity collection system. The influent pumps are controlled by a level probe with a start and stop at predetermined levels into the anaerobic chamber where solids settle. The influent then flows to the ISAM reactor by gravity through a weir. Mixed liquor is maintained in the ISAM reactor to suppress odour and initiate and accelerate carbon and nitrogen reduction.

Fill Phase: When the level in the ISAM reactor reaches a predetermined "control level" based off operational discretion, the Jet/Mix liquid pump is started. The SBR basin is filled, mixed and Alum and Carbon chemical injections occur. A percentage of the pumped flow is returned to the anaerobic chamber where biological solids settle. Settled solids in the anaerobic chamber are digested.

Interact Phase: When the level in the SBR basin reaches the high water level, nitrified mixed liquor overflows a weir and flows back into the ISAM reactor to mix and react with the raw influent. Aeration is cycled on and off to provide the required oxygen. Scum is also removed from the SBR basin.

Settle Phase: When the level in the ISAM reactor again reaches "control level" aeration is discontinued and the SBR basin settles under perfect quiescent conditions under operator discretion.

Decant/Disposal Phase: Under normal flow conditions and high flow conditions there are two settle timers that are controlled by operator discretion. Currently the settle timers are set at 60min and 45min respectively. When the settle times are reached, the decant valve opens and treated effluent is withdrawn from the upper portion of the SBR basin and discharged to a post equalization tank which contains effluent pumps, which are controlled by floats which pump the effluent through a fixed cloth media filter to the disposal effluent pump chamber (PS3A). The disposal effluent pump chamber pumps the liquid through a flow meter, housed in the disposal control building, then distributed to 3 subsurface tile beds which are sequentially dosed.

The Ministry of Environment, Conservation and Parks (MECP) was provided notification from MTE Consultants Ltd. on May 31, 2013 of the Airport STS start as per section 10(1) of ECA# 8181-8TXHRN.

Substantial performance was issued on April 10, 2015 and effluent limits became enforceable October 10, 2015 as outlined in Section 4(1) of ECA# 8181-8TXHRN.

PLANT FACTS

Environmental Compliance Approval (ECA):	8181-8TXHRN (Dated July 23, 2012)
Rated Capacity for Phase 1:	$60m^3$/day
Receiving System:	Effluent discharges to onsite tile beds.

The Ontario Clean Water Agency (OCWA) is pleased to present the Ministry of the Environment, Conservation and Parks (MECP) with the 2018 Annual Performance Report for the Airport STS on behalf of the County of Brant (the County) The following report is presented such that it corresponds with ECA #8181-8TXHRN Section 10(6) (a) through (j).

SECTION A – MONITORING DATA

As outlined in the ECA #8181-8TXHRN Section 10(6) (a) the following is a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Table 1 of this report, including an overview of the success and adequacy of the Airport STS.

(I) EFFLUENT LIMITS

TABLE 1 – EFFLUENT LIMITS

Effluent Parameter	Annual Concentration Limit (mg/L)
$CBOD_5$	10
Total Suspended Solids	10
Total Phosphorus	5
Total Ammonia Nitrogen +Nitrates Nitrogen	10

(II) SAMPLING PROCEDURES

As per ECA#8181-8TXHRN samples are to be collected from the Airport STS in accordance with the tables 2 and 3 below, utilizing a grab sampling procedure. Analysis for these parameters is conducted at SGS Lakefield Analytical (SGS) in Lakefield, Ontario. SGS is a member of the Canadian Association for Laboratory Accreditation Incorporated, certificate # 1999. The Airport STS raw influent and final effluent laboratory sampling frequency has been consistently sampled at one time per week. This has been in excess of what is required by the ECA but was deemed necessary in order to establish a better dataset for the treatment system. Going into 2019, the increased sampling frequency is currently being reviewed and may be decreased to the ECA sampling requirements.

TABLE 2 – INFLUENT MONITORING

Parameters	Sample type	Frequency
BOD_5	Grab	Quarterly
Total Suspended Solids	Grab	Quarterly
Total Phosphorus	Grab	Quarterly
Total Kjeldahl Nitrogen	Grab	Quarterly
Total Petroleum Hydrocarbons	Grab	Quarterly

TABLE 3 - EFFLUENT MONITORING

Parameters	Sample type	Frequency
$CBOD_5$	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Ammonia Nitrogen	Grab	Monthly
Nitrate Nitrogen	Grab	Monthly
Chloride	Grab	Monthly
pH	Grab	Monthly
Total VOCs	Grab	Annually
ICP Scan of Metals	Grab	Annually
Total Petroleum Hydrocarbons	Grab	Annually

(III) PLANT PERFORMANCE

Table 4 and 5 summarizes the 2018 raw influent and final effluent parameters which are required by ECA# 8181-8TXHRN to be sampled, at a minimum, on a quarterly and monthly frequency respectively. In order to build a quality data set and create a better understanding of the facility, the sampling frequency was set at one time per week and all results were used to obtain an annual average. Going into 2019, the increased sampling frequency is currently being reviewed and may be decreased to the ECA sampling requirements.

TABLE 4 – FINAL EFFLUENT AVERAGE MONTHLY CONCENTRATIONS

	$CBOD_5$ (mg/l)	Total Suspended Solids (mg/l)	Total Phosphorus (mg/l)	Total Ammonia Nitrogen (mg/l)	Nitrate Nitrogen (mg/l)	Total Ammonia Nitrogen +Nitrate Nitrogen (mg/l)	Chloride (mg/l)	pH
Limits	**10**	**10**	**5**			**10**		
January	3.0	4.0	0.17	1.2	1.7	2.9	160.0	7.10
February	3.3	5.0	0.17	0.8	1.6	2.4	156.7	6.96
March	3.5	4.3	1.71	0.5	2.6	3.1	125.0	7.05
April	3.0	4.0	1.10	0.5	2.4	2.9	102.0	7.10
May	2.0	5.3	0.70	0.2	0.7	0.9	105.0	7.10
June	2.8	7.2	0.30	0.2	1.0	1.2	116.0	7.15
July	2.8	9.4	0.84	0.2	1.0	0.3	99.8	7.24
August	9.3	11.0	8.40	0.6	10.0	12.2	90.7	6.45
September	7.7	11.7	1.57	2.4	9.8	12.2	101.0	7.38
October	3.6	8.6	0.21	0.1	8.7	8.8	110.0	7.29
November	6.0	8.8	0.28	0.1	5.4	5.5	114.0	7.14
December	3.8	4.0	0.62	0.1	6.9	7.1	105.4	7.17
Average	**4.0**	**7.1**	**1.18**	**0.5**	**4.4**	**6.3**	**111.0**	**7.11**

*The Annual Average values are calculated based on all data collected for the purpose of the ECA for 2018.

TABLE 5 – RAW INFLUENT AVERAGE QUARTERLY CONCENTRATIONS

	BOD^5 (mg/l)	TSS (mg/l)	TP (mg/l)	TKN (mg/l)	CCME F1 (C6-C10) (ug/l)	CCME F2 (C10-C16) (ug/l)	CCME F3 (C16-C34) (ug/l)	CCME F4 (C34-C50) (ug/l)	Oil& Grease (total) (mg/l)
January	153.0	226.0	5.27	42.2	--	--	--	--	---
February	133.3	130.3	6.12	51.85	25	354	1,400	666	38
March	211.5	235.5	7.79	62.10	--	--	--	--	---
April	239.5	545.8	14.45	79.13	--	--	--	--	---
May	253.5	270.8	12.00	83.18	25	4,050	4,390	1,790	58
June	308.2	345.6	10.73	79.78	---	---	---	---	---
July	217.8	147.0	10.76	67.12	---	---	---	---	---
August	99.3	216.5	15.78	39.85	25	590	2540	558	13
September	163.7	188.7	7.07	55.30	---	---	---	---	---
October	178.8	207.2	7.64	59.46	---	---	---	---	---
November	110.0	205.0	7.41	67.42	30	200	567	290	18
December	197.8	158.0	9.64	62.16	---	---	---	---	---
Average	**188.9**	**239.7**	**9.55**	**62.46**	**26**	**1,299**	**2,777**	**1,005**	**36**

Note: Sampling for Oil & Grease and total hydrocarbons are sampled once per quarter as per ECA#8181-8TXHRN

Table 6 encompasses the results from additional aeration mixed liquor suspended solids samples. And Table 7 is the results for the annual final effluent sample for Total VOC's, ICP Scan of Metals and Total Petroleum Hydrocarbons.

TABLE 6- MIXED LIQUOR

Month	Temperature (°C)	Alkalinity (mg/l as $CaCO_3$)	Volatile Suspended Solids (mg/l)	Total Suspended Solids (mg/l)
January	4.5	254	4,000	4,590
February	5.7	227	3,373	3,920
March	4.5	243	3,497	4,112
April	4.8	249	3,543	4,328
May	6.5	280	3,330	3,998
June	9.2	275	3,502	4,219
July	10.6	276	2,958	3,722
August	12.2	181	1,754	2,250
September	11.7	197	1,022	1,480
October	8.6	254	2,006	2,678
November	6.0	259	2,695	3,250
December	8.0	256	3,934	3,200
Average	**7.7**	**246**	**2,968**	**3,479**

TABLE 7- 2018 FINAL EFFLUENT ANNUAL CONCENTRATIONS (ICP, VOC, TOTAL PETROLEUM HYDROCARBONS)

Temperature (°C)	10	**Benzene [ug/L]**	<0.5
Aluminum (total) [mg/l]	0.123	**Bromodichloromethane [ug/L]**	<0.5
Antimony (total) [mg/l]	0.0004	**Bromoform [ug/L]**	<0.5
Arsenic (total) [mg/l]	0.0004	**Bromomethane [ug/L]**	<0.5
Barium (total) [mg/l]	0.0466	**Carbon tetrachloride [ug/L]**	<0.2
Beryllium (total) [mg/l]	<0.000007	**Chlorobenzene [ug/L]**	<0.5
Bismuth (total) [mg/l]	0.000128	**Chloroethane [ug/L]**	<5
Boron (total) [mg/l]	0.125	**Chloroform [ug/L]**	<0.5
Cadmium (total) [mg/l]	76.2	**Chloromethane [ug/L]**	<5
Calcium (total) [mg/l]	0.000272	**Dibromochloromethane [ug/L]**	<0.5
Chromium (total) [mg/l]	0.00081	**1,2-Dichlorobenzene [ug/L]**	<0.5
Cobalt (total) [mg/l]	0.00013	**1,3-Dichlorobenzene [ug/L]**	<0.5
Copper (total) [mg/l]	0.00351	**1,4-Dichlorobenzene [ug/L]**	<0.5
Iron (total) [mg/l]	0.04	**1,1-Dichloroethane [ug/L]**	<0.5
Lead (total) [mg/l]	20.6	**1,2-Dichloroethane [ug/L]**	<0.5
Lithium (total) [mg/l]	0.004	**cis-1,2-Dichloroethene [ug/L]**	<0.5
Magnesium (total) [mg/l]	16.3	**1,1-Dichloroethylene [ug/L]**	<0.5
Manganese (total) [mg/l]	0.0425	**1,2-Dichloropropane [ug/L]**	<0.5
Molybdenum (total) [mg/l]	0.00078	**trans-1,2-Dichloroethene [ug/L]**	<0.5
Nickel (total) [mg/l]	0.0012	**cis-1,3-Dichloropropene [ug/L]**	<0.5
Phosphorus (total) [mg/l]	0.288	**trans-1,3-Dichloropropene [ug/L]**	<0.5
Lead (total) [mg/l]	0.0107	**Ethylbenzene [ug/L]**	<0.5
Selenium (total) [mg/l]	0.00014	**Ethylenedibromide [ug/L]**	<0.2
Silicon (total) [mg/l]	3.49	**1,2 Dibromoethane**	<0.2
Silver (total) [mg/l]	<0.00005	**Dichloromethane [ug/L]**	<0.5
Sodium (total) [mg/l]	265	**2-Hexanone [ug/L]**	<20
Strontium (total) [mg/l]	0.322	**Methyl-t-butyl Ether [ug/L]**	<2
Tellurium (total) [mg/l]	<0.0001	**Methyl ethyl ketone [ug/L]**	<20
Thallium (total) [mg/l]	0.0001	**Methyl Isobutyl ketone [ug/L]**	<20

Thorium (total) [mg/l]	<0.000005	**Styrene [ug/L]**	<0.5
Tin (total) [mg/l]	0.00023	**1,1,1,2-Tetrachloroethane [ug/L]**	<0.5
Titanium (total) [mg/l]	0.00154	**1,1,2,2-Tetrachloroethane [ug/L]**	<0.5
Tungstun (total) [mg/l]	0.00058	**Tetrachloroethylene [ug/L]**	<0.5
Uranium (total) [mg/l]	0.000034	**Toluene [ug/L]**	<0.5
Vanadium (total) [mg/l]	0.00034	**Trichloroethylene [ug/L]**	<0.5
Zinc (total) [mg/l]	0.049	**Vinyl Chloride [ug/L]**	<0.2
Zirconium (total) [mg/l]	<0.002	**Trichlorofluoromethane [ug/L]**	<5
CCME F1 (C6-C10) [ug/L]	<25	**1,1,1-Trichloroethane [ug/L]**	0.5
CCME F2 (C10-C16) [ug/L]	<100	**1,1,2-Trichloroethane [ug/L]**	<0.5
CCME F3 (C16-C34) [ug/L]	<200	**Xylene [ug/L]**	<0.5
CCME F4 (C34-C50) [ug/L]	<200	**o-xylene [ug/L]**	<0.5
Acetone [ug/L]	<30	**m/p-xylene [ug/L]**	<0.5

< represents a non detect lab result

(IV) INTERPRETATION OF MONITORED DATA

This report has been prepared to summarize the parameters listed in section 7 in accordance with section 7(2)(a) of the ECA.

TABLE 8 – INTERPRETATION AND COMPARISON EFFLUENT LIMITS

Parameter	Limit (mg/l)	2017 Annual Average Concentration (mg/l)	2018 Annual Average Concentration (mg/l)	% Change from 2017 - 2018
$CBOD_5$	10.0	2.6	4.0	+53.8
Total Suspended Solids (mg/l)	10.0	5.2	7.1	+36.5
Total Phosphorus (mg/l)	5.0	0.73	1.18	+61.6
Total Ammonia Nitrogen + Nitrate Nitrogen	10.0	0.32	6.3	+1868.8

(V) EFFLUENT QUALITY

Table 4 above, shows the effluent monthly average concentrations for the parameters outlined in Table 1 of ECA #8181-8TXHRN. The system was successful at meeting all annual compliance limits during 2018. There was a significant increase in the 2017 to 2018 annual average for Total Ammonia Nitrogen + Nitrate Nitrogen. This was due to the operating issues experienced by the faulty control floats in August 2018 that resulted in higher than normal Total Ammonia Nitrogen + Nitrate Nitrogen values for the month of August and September 2018. This event is discussed below in Section B – Operating Problems Encountered.

SECTION B - OPERATING PROBLEMS ENCOUNTERED

May 2018 - The anoxic mix pump experienced an upper support bearing failure. The pump supplier was brought to site to review the pumps application and found that the pump was not suitable for the intended application and operation of the pump was well off its design pump curve. A newer version of the original pump was specified and a discharge fitting was fabricated to allow the pump to operate within its curve. The pump was installed May 9, 2018. Refer to Section C (I) for more information.

August 2018 - On August 16, 2018 there was an afterhours ISAM tank high level alarm. The operator reset the alarm, manually pumped down the ISAM tank and checked that the control floats were operational. All appeared ok until the ISAM tank went back into a high level the following day. An electrician was brought in to check the functionality of the control floats and they appeared to be

working ok. The system required manual decanting to bring the high level down. After extensive investigation into the facility the control floats were failing intermittently and not functioning as required and the system was skipping over the decant cycle. Floats were replaced with new in early September which solved the issue. Throughout this issue, the facility was not treating well, causing higher than normal averages for the month of August and September.

SECTION C – MAINTENANCE

(I) UPGRADES

On January 11, 2018, the anoxic mix pump was found to be in fault. Upon further investigation it was determined that the upper support bearing had failed. The root cause of the failure was due to the pump operating too far to the right of its respective pump curve. Since this was a repeat failure, a Flygt representative was brought in to assess the pumps application. In order to bring the pump within the curve an increase in backpressure on the discharge side was required. Since the pump is used for mixing there is no discharge valve that could be throttled back to generate this back pressure. As a result, a newer version of the pump was specified and a discharge fitting was fabricated to allow the pump to operate within its curve. The pump was installed May 9, 2018.

On May 24, 2018, the tile bed was flushed and a squirt test was performed by ESSA. All laterals passed the squirt tests.

On August 16, 2018 an electrician was brought in to evaluate the functionality of the control floats after the system continued to skip over the decant cycle. All control floats were replaced in early September.

On August 20, 2018, the SBR feed pump A failed on temperature and seal leak. Motor tested positive to ground and was sent in for repairs. Motor required dry out and re-winding, new bearings, and mechanical seal were required. Pump was reinstalled on October 11, 2018.

(II) AFTER HOUR ALARMS

The following after hour alarms were responded to at the Airport STS during 2018.

TABLE 9– AFTER HOUR ALARMS

Date	Alarm	Occurrences	Issue/Actions Taken
4-Apr-18	Power outage	1	Power outage. Generator was running when operator arrived. Operator waited until the power was restored, cleared the alarms and checked the facility.
16-Apr-18	Control building PLC alarm	1	Waste sludge valve A failed to close which caused the alarm. Operator reset the alarm and successfully tested the valve.
17-Jun-18	PLC alarm	1	Phone line down, restored upon arrival, Tested alarms
30-Sept-18	Generator start up	1	Fuse blew on hydro pole on road. Energy+ called and corrected the issue
30-Sept-18	Power outage	1	Fuse blew on hydro pole on road. Energy+ called and corrected the issue
06-Nov-18	PLC alarm	1	Power dip, reset alarms and equipment. Verified facility was functioning normally.

SECTION D – EFFLUENT QUALITY CONTROL MEASURES

There were no process changes or adjustments that were out of the ordinary. MicroC2000 is still being batch dosed manually in order to control the denitrification process. Last year the method of sludge removal was modified to include a manual decant of the supernatant prior to sludge removal. This procedural change has resulted in better sludge removal and less TSS and Phosphorous carry over.

SECTION E - CALIBRATIONS

Calibration of the final effluent flow meter was performed on June 20, 2018. This satisfies the annual requirement in ECA#8181-8TXHRN. Calibration Report is in *Appendix A.*

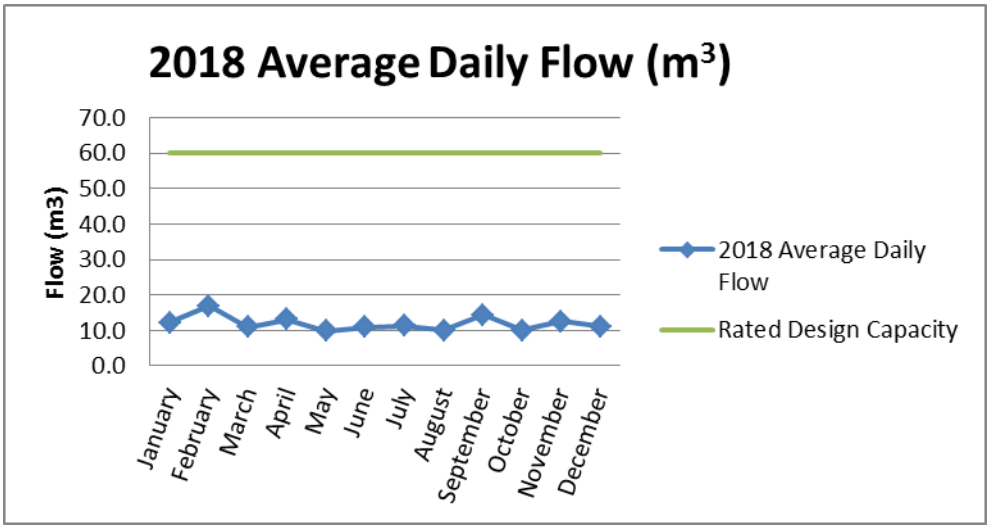
(I) FLOW DATA

The Airport STS provides a rated capacity of 60m^3/day in Phase 1. For the operation of the Airport STS during 2018, the average effluent discharge flow was 12.0m^3/day which is 20.0% of capacity. Treated effluent is withdrawn from the upper portion of the SBR basin and discharged to a media filter to the effluent pump chamber then pumped through a flow meter and distributed to a subsurface tile bed. The following table shows the average effluent discharge flow and the total effluent discharge flow for each month.

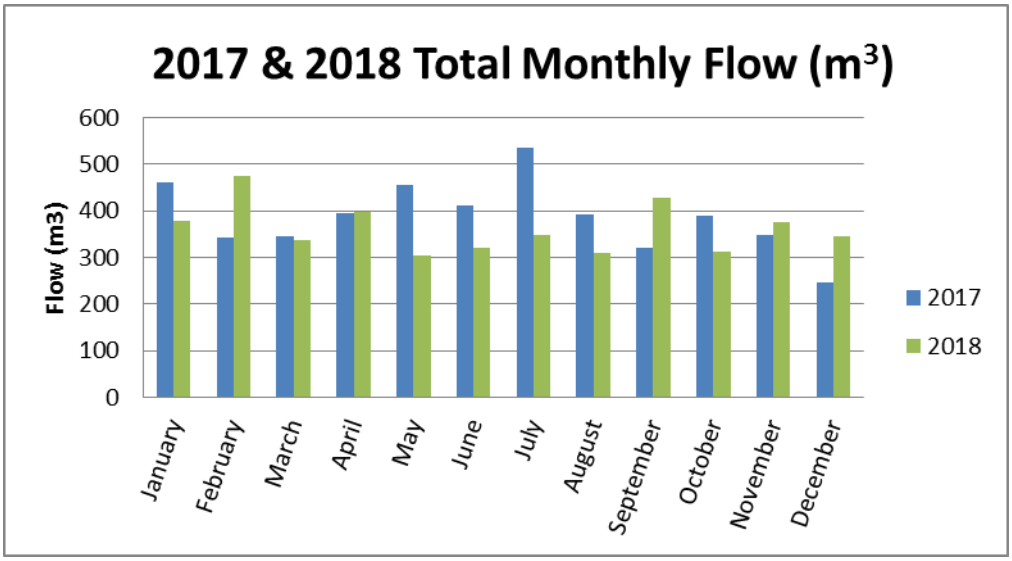
TABLE 10 –INFLUENT FLOW DATA

	Average Daily Flow (m^3)	Total Month Flow (m^3)
January	12.2	379
February	17.0	475
March	10.9	339
April	13.2	397
May	9.8	304
June	11.0	320
July	11.3	349
August	10.0	311
September	14.3	428
October	10.1	314
November	12.5	375
December	11.1	345
TOTAL		**4,236**
AVERAGE	**12.0**	

GRAPH 1 –2018 INFLUENT FLOWS (m^3)



GRAPH 2 –2017 AND 2018 TOTAL MONTHLY FLOW (m^3)



SECTION F - EFFLUENT OBJECTIVES

As shown the Table 11 below, the airport STS was operated such that effluent objectives were met for $CBOD_5$ and Total phosphorus during 2018 but Total Suspended Solids and Total Ammonia Nitrogen + Nitrate Nitrogen were above the annual objectives with a result of 7.1mg/l and 6.3mg/l respectively.

On August 16, 2018 there was an afterhours ISAM tank high level alarm. The operator reset the alarm, manually pumped down the ISAM tank and checked that the control floats were operational. All appeared ok until the ISAM tank went back into a high level the following day. An electrician was brought in to check the functionality of the control floats and they appeared to be working ok. The system required manual decanting to bring the high level down. After extensive investigation into the facility the control floats were failing intermittently and not functioning as required and the system was skipping over the various aeration, decant, and anoxic cycles. Floats were replaced with new in early September which solved the issue. Since cycles were being skipped due to the floats not working consistently, the facility was not treating as well, causing higher than normal averages for the month of August and September which caused the annual average for TSS and TAN + Nitrate Nitrogen to be above the objective.

TABLE 11 –FINAL EFFLUENT CONCENTRATION AND EFFLUENT LIMITS AND OBJECTIVES

Parameter	Limit (mg/l)	Objectives (mg/l)	2018 Annual Average Concentration (mg/l)
$CBOD_5$	10.0	5.0	4.0
Total Suspended Solids (mg/l)	10.0	7.0	**7.1**
Total Phosphorus (mg/l)	5.0	2.0	1.18
Total Ammonia Nitrogen + Nitrate Nitrogen	10.0	5.0	**6.3**

SECTION G – AIRPORT STS LIQUID BIOSOLIDS

The following table shows the amount of liquid biosolids that were removed from the Airport STS in 2018. The biosolids that were removed were sent to the Paris WPCP digester for further treatment. The quantity of biosolids that will be produced for 2019 is expected to be approximately $180m^3$.

TABLE 12 –LIQUID BIOSOLIDS REMOVED

Quarter	Quantity Removed (m^3)
January	14
February	14
March	14
April	14
May	28
June	0
July	14
August	14
September	14
October	0
November	0
December	14
Total for 2018	**140**

SECTION H - SUMMARY OF COMPLAINTS RECEIVED

The Airport STS did not receive any complaints during 2018.

SECTION I - SUMMARY OF BY-PASS EVENTS

The Airport STS was not involved in any by-pass events during 2018.

SECTION J – OTHER INFORMATION

There is no additional information to report to the County for 2018.

APPENDIX A

2018 CALIBRATION RECORDS

Industrial Technical Services

951 Matheson Blvd. East
Mississauga, ON L4W 2R7
Ph: 905-275-2717 Fax: 905-275-2724
www.itsinstruments.com

Certificate No: 28361-001

Certificate Of Calibration

Customer:
Ontario Clean Water Agency
120 Race Street, Paris ON N3L 3X2
Phone: (519) 442-3255
Fax: (519) 442-2616

Cal. Date: June 20, 2018
Due Date: June 20, 2019

Instrument Identification:

Description:	Flow Indicator / Transmitter
Manufacturer:	Krohne
Model No:	IFC100W
Serial No:	C12504886
Range:	0 to 300 LPM / 4 to 20 mA Output
Tolerance:	± 2% FS
Tag No:	0000077034, OCWA#0000248354
Location:	Brantford Airport

Test Report:

AS FOUND				*AS LEFT*			
Reference	***Instrument***		***Error***	***Reference***	***Instrument***		***Error***
Switch Position	LPM	mA	%FS	Switch Position	LPM	mA	%FS
Y=0	0.00	4.00	0.00	Y=0	0.00	4.00	0.00
Y=A	63.88	7.40	-0.06	Y=A	63.88	7.40	-0.06
Y=B	127.73	10.81	0.00	Y=B	127.73	10.81	0.00
Y=C	255.35	17.62	0.00	Y=C	255.35	17.62	0.00

Standards Used:

Asset No	*Manufacturer*	*Calibration Date*	*Due Date*
Coil Simulator	Krohne	February 17, 2018	February 17, 2019

	Yes	*No*		*Yes*	*No*
Passed:	✓		*As found in tolerance:*	✓	
Failed:			*As left in tolerance:*	✓	
Calibration Sticker applied?	✓		*Repair performed:*		✓
Restricted Use:			*Adjustment performed:*		✓

Comments: None.

Performed By: A. Shah, Technician
Issue Date: June 21, 2018

Reviewed By ITS: C. Ramnarine, Service Manager
Date: June 21, 2018

Reviewed By Customer: _____