

Amy Shaw
District Manager
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 Cainsville Lagoon System

Attached is the 2018 Annual Performance Report for the Cainsville Lagoon System located at 30 Shaver Rd. in the County of Brant. This report has been completed in accordance with:

- Condition No. 10(6)(a)-(k) cited in Certificate of Approval #0176-7LSQYG dated September 8, 2009 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
Todd Paylor – Water Inspector – MECP
Zafar Bhatti – Water Supervisor – MECP

2018 ANNUAL PERFORMANCE REPORT

CAINSVILLE LAGOON SYSTEM

30 SHAVER STREET, CAINSVILLE

MECP CERTIFICATE OF APPROVAL #0176-7LSQYG

PREPARED BY: ONTARIO CLEAN WATER AGENCY

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

ON BEHALF OF: THE COUNTY OF BRANT

DATE: MARCH 27, 2019

TABLE OF CONTENTS

INTRODUCTION.....5

SECTION A - MONITORING DATA.....5

 (I) EFFLUENT LIMITS/OBJECTIVES.....6

 TABLE 1 – EFFLUENT LIMITS6

 TABLE 2 – EFFLUENT OBJECTIVES.....6

 (II) LAGOON SAMPLING PROCEDURES6

 TABLE 3 – INFLUENT SAMPLING REQUIREMENTS (FROM THE INLET MANHOLE)6

 TABLE 4 - EFFLUENT SAMPLING REQUIREMENTS (PRIOR TO THE RECEIVING STREAM).....7

 TABLE 5- ADDITIONAL EFFLUENT MONITORING FOR CONTINGENCY (EXTENDED SPRING) DISCHARGES.....7

 (III) PLANT PERFORMANCE7

 TABLE 6 –INFLUENT MONTHLY CONCENTRATIONS7

 (IV) INTERPRETATION OF MONITORED DATA8

 TABLE 7– PER CAPITA FLOWS AND LOADINGS8

 (V) SPRING DISCHARGE8

 TABLE 8 –SPRING 2018 PRE-DISCHARGE RESULTS8

 TABLE 9 –SPRING 2018 DISCHARGE RESULTS TO DATE8

 (VI) FALL DISCHARGE9

 TABLE 10–FALL 2018 PRE-DISCHARGE RESULTS9

 TABLE 11 –FALL 2018 DISCHARGE RESULTS TO DATE.....9

SECTION B – FAIRCHILD CREEK MONITORING10

SECTION C - OPERATING PROBLEMS ENCOUNTERED10

SECTION D - MAINTENANCE10

 (I) UPGRADES.....10

 (II) ALARMS10

 TABLE 12– ALARMS.....11

SECTION E - EFFLUENT QUALITY11

 (I) CHEMICAL DOSING SYSTEM11

 (II) SUBSURFACE AERATOR SYSTEM11

SECTION F - CALIBRATIONS11

 (I) FLOW DATA12

 TABLE 13 – INFLUENT FLOW DATA12

2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS

GRAPH 1 – 2018 AVERAGE DAILY FLOW AND MAXIMUM FLOW	12
GRAPH 2 – 2017 AND 2018 TOTAL MONTHLY FLOWS	13
SECTION G - EFFLUENT OBJECTIVES	13
TABLE 14 - SPRING DISCHARGE OBJECTIVE COMPARISON	13
TABLE 15 - FALL DISCHARGE OBJECTIVE COMPARISON	13
SECTION H – VOLUME OF SLUDGE GENERATED	14
SECTION I - SUMMARY OF COMPLAINTS RECEIVED	14
SECTION J - SUMMARY OF BY-PASS EVENTS	14
SECTION K – OTHER INFORMATION	14
<i>APPENDIX A</i>	15
CALIBRATION RECORDS.....	15

INTRODUCTION

The Cainsville Lagoon System (Lagoons) is located at 30 Shaver Street in Cainsville, Ontario. The Lagoons consist of two primary sewage stabilization treatment lagoon cells. Stabilization Lagoon Cell #1 has a maximum holding capacity of 7,050 m³ and stabilization lagoon cell #2 has a maximum holding capacity is 6,772m³. Raw sewage enters the site through a manhole containing a Palmer Bolus Flume with flow recording and a continuous chemical addition system and then flows to a distribution manhole. Flows can be subdivided to feed cell# 1, cell# 2 or both. Two (2) 5horsepower subsurface aerator units were installed with one unit per primary cell. Flow entering the either primary cell progressively fills and overflows into the effluent polishing lagoon cell # 3. Final effluent is discharge semi-annually (Spring Discharge March 15 to April 30) (Fall Discharge October 15 to December 15) to Fairchild Creek through an effluent outfall consisting of a concrete sewer pipe and a parshall flume equipped with flow measurement device.

PLANT FACTS

Certificate of Approval

0176-7LSQYG (Dated September 8, 2009)

Notice No. 1 issued November 15, 2013

Rated Capacity

250m³/day

Receiving Water

Fairchild Creek (semi-annually)

The Ontario Clean Water Agency (OCWA) is pleased to present the Ministry of the Environment, Conservation and Parks with the 2018 Annual Performance Report for the Cainsville Lagoon System on behalf of the County of Brant (the County). The Lagoon System is operated in accordance with provincial regulations following a detailed sampling schedule as required in the Certificate of Approval (C of A) #0176-7LSQYG dated September 8, 2009. The following report is presented such that it corresponds with C of A #0176-7LSQYG Section 10(6)(a) through (k).

SECTION A - MONITORING DATA

As outlined in the C of A #0176-7LSQYG Section 10(6)(a) the following is a summary and interpretation of all monitoring data and a comparison to the effluent limits and objectives outlined in Table 1 and 2 of this report respectively, including an overview of the success and adequacy of the Cainsville Lagoons.

2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS

(I) EFFLUENT LIMITS/OBJECTIVES

TABLE 1 – EFFLUENT LIMITS

Final Effluent Parameter	Maximum Concentration (mg/l)	Maximum Waste Loading* (kg/d)	Additional Criteria
CBOD ₅	30.0	<u>Spring Discharge:</u> 152.1kg/day (March 15-April 30) <u>Fall Discharge:</u> 12.3kg/day (Oct 15-Nov 30)	Partially or complete ice-free conditions
Total Suspended Solids	40.0	-	
Total Phosphorus	0.80	-	
pH of the effluent to be maintained between 6.0 and 9.5, inclusive, at all times			

*Maximum waste loading includes loading from the contingency discharge as well

TABLE 2 – EFFLUENT OBJECTIVES

Effluent Objectives	
Effluent Parameter	Concentration Objective (mg/L)
CBOD ₅	25.0
Suspended Solids	30.0
Total Phosphorus	0.50
Unionized Ammonia (UA)	0.10
Acute Toxicity (AT)	Non-lethal to rainbow trout and daphnia magna

In Section 8A. Special Operations – Seasonal Discharge it states that the fall discharge will not commence earlier than October 15 and terminate no later than December 15. Spring discharge however, incorporates a contingency measure if discharge cannot be completed within the normal discharge window. Additional monitoring and sampling is required should this contingency be utilized as per Table 5 below.

(II) LAGOON SAMPLING PROCEDURES

Samples are collected from the Lagoons according to the tables outlined below utilizing a grab sampling procedure and a flume reading when required. Analysis for these parameters is conducted at SGS Lakefield Analytical in Lakefield, Ontario. Lakefield Analytical is a member of the Canadian Association for Laboratory Accreditation Incorporated, certificate # 1999.

TABLE 3 – INFLUENT SAMPLING REQUIREMENTS (FROM THE INLET MANHOLE)

Parameters	Sample Type	Frequency
BOD ₅	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly
pH	Grab	Monthly
Temperature	Grab	Monthly

2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS

TABLE 4 - EFFLUENT SAMPLING REQUIREMENTS (PRIOR TO THE RECEIVING STREAM)

Parameters	Sample Type	Frequency
Flow Rate	Flume	Daily during discharge
CBOD ₅	Grab	5 times during discharge
Total Suspended Solids	Grab	5 times during discharge
Total Phosphorus	Grab	5 times during discharge
Total Ammonia Nitrogen	Grab	5 times during discharge
Hydrogen Sulphide	Grab	Once prior to per-discharge
E-coli	Grab	5 times during discharge
Dissolved Oxygen	Grab	5 times during discharge
pH	Grab	5 times during discharge
Temperature	Grab	5 times during discharge

-Samples of final effluent from the Lagoon are collected from the outlet at least 5 times during each seasonal discharge

TABLE 5- ADDITIONAL EFFLUENT MONITORING FOR CONTINGENCY (EXTENDED SPRING) DISCHARGES

Parameters	Sample Type	Frequency
Flow Rate	Flume	Daily During Discharge
CBOD ₅	(Grab)	(2 times per week)
Total Suspended Solids	(Grab)	(2 times per week)
Total Ammonia Nitrogen	(Grab)	(2 times per week)
Total Phosphorus	(Grab)	(2 times per week)
Acute Toxicity (AT)	(Grab)	(1 times per week)
Hydrogen Sulphide	(Grab)	(2 times/week, prior to discharge)
E.Coli	(Grab)	(2 times/week, prior to discharge)

(III) PLANT PERFORMANCE

Table 6 summarizes the raw influent monthly average concentrations for 2018.

TABLE 6 –INFLUENT MONTHLY CONCENTRATIONS

Month	BOD ₅ (mg/l)	Total Suspended Solids (mg/l)	Total Phosphorus (mg/l)	Total Kjeldahl Nitrogen (mg/l)	Field pH	Field Temp (°C)
January	150	54	1.65	20.3	8.31	11.8
February	448	125	5.21	26.6	8.09	11.6
March	173	167	6.40	46.1	7.60	7.8
April	114	347	4.40	36.2	7.72	9.1
May	159	94	3.96	48.5	8.10	18.9
June	102	124	3.60	35.8	8.05	16.8
July	117	160	3.20	29.1	7.80	20.9
August	552	251	6.20	32.4	6.85	23.0
September	43	1,130	0.92	18.6	7.96	20.8
October	159	116	3.40	32.4	8.12	20.1
November	217	621	6.40	50.0	7.82	15.9
December	295	239	2.90	24.9	8.03	14.5
Average Loadings	211	286	4.02	33.4	7.87	15.9

-The sampling program at the lagoons requires a grab sample therefore the sample collected is only representative of what is entering the facility at that moment.

(IV) INTERPRETATION OF MONITORED DATA

Below in Table 7 shows the per Capita Flows and Loadings. These values are used to compare the Cainsville Lagoon System against typical wastewater strength per person.

TABLE 7– PER CAPITA FLOWS AND LOADINGS

Parameter	Units	Value	Typical
Peak Day: Annual Average Flow		3.8	2.4
TSS:BOD ₅	--	1.13	0.80-1.2
TKN:BOD ₅	--	0.13	0.1-0.2

Notes:* Results are for typical residential wastewater and are identified in Metcalf and Eddy, Wastewater Treatment and Reuse (4th Edition)

(V) SPRING DISCHARGE

C of A # 0176-7LSQYG states that the spring discharge of the Lagoons is to commence no earlier than March 15th and terminating no later than April 30th. The 2018 spring discharge began on March 28, 2018 and ended April 26, 2018.

TABLE 8 –SPRING 2018 PRE-DISCHARGE RESULTS

	Date	CBOD ₅ (mg/l)	TSS (mg/l)	TP (mg/l)	H ₂ S (mg/l)	TAN (mg/l)	EColi (cfu/100mL)	pH	Temp (°C)	DO (mg/l)
Cell#1	07-Mar-18	9.0	10	0.1	<0.02	9.9	96	7.34	3.5	8.99
Cell#2	07-Mar-18	42	12	0.08	<0.02	6.9	400	7.4	3.6	9.84
Cell#3	07-Mar-18	5.0	12	0.07	<0.02	2.0	10	6.69	1.8	7.07

TABLE 9 –SPRING 2018 DISCHARGE RESULTS TO DATE

*Sample	Date	Flow (m ³ /d)	Volume Discharged (m ³)	CBOD ₅ (mg/l)	CBOD ₅ (kg/d)	TSS (mg/l)	TSS (kg/d)	TP (mg/l)	TP (kg/d)	TAN (mg/l)	TAN (kg/d)	pH	E.Coli (100ml/ cfu)	DO (mg/l)	Temp (°C)	UA (mg/l)
Discharge Limits				30.0	152.1	40.0		0.80				6.0-9.5				
Discharge Objectives				25.0		30.0		0.50				6.0-8.5				0.1
Start Discharge	28-Mar	656.6	0	10.0	6.57	5.0	3.28	0.10	0.066	8.3	5.45	7.44	<2	8.44	8.5	0.038
Sample #2 (18.7%)	02-Apr	1503.4	7,295	6.0	9.02	4.0	6.01	0.06	0.090	7.4	11.12	7.77	6	8.49	10.6	0.084
Sample #3 (49.9%)	10-Apr	1460.2	19,467	5.0	7.30	2.0	2.92	0.08	0.117	7.4	10.81	7.94	<2	9.15	7.3	0.095
Sample #4 (69.3%)	15-Apr	1563.0	27,023	5.0	7.81	3.0	4.69	0.05	0.078	7.7	12.03	7.69	4	9.24	5.5	0.049
Sample #5 (84.8)	19-Apr	1529.3	33,053	4.0	6.12	6.0	9.18	0.07	0.107	7.1	10.86	8.26	<2	11.28	6.4	0.176
Sample #6 (99.7%)	23-Apr	1356.5	38,869	2.0	2.71	2.0	2.71	0.05	0.068	6.2	8.41	8.33	<2	10.44	12.8	0.292
End Discharge (103%)	26-Apr	1408.3	40,151	2.0	2.82	5.0	7.04	0.04	0.056	3.9	5.49	7.66	2	10.11	11.8	0.038

* At the beginning of the discharge event, a volume is estimated to monitor the percent drawdown during the event. Spring 2018 discharge started at an estimated 39,000m³

2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS

(VI) FALL DISCHARGE

C of A # 0176-7LSQYG states that the fall discharge of the Lagoons is to commence no earlier than October 15th and terminating no later than December 15th. The 2018 fall discharge began on October 18, 2018 and ended on December 4, 2018.

TABLE 10–FALL 2018 PRE-DISCHARGE RESULTS

	Date	CBOD ₅ (mg/l)	TSS (mg/l)	TP (mg/l)	H ₂ S (mg/l)	TAN (mg/l)	EColi (cfu/100mL)	pH	Temp (°C)	DO (mg/l)
Cell#3	05-Oct-18	<4	8	<0.03	<0.02	1.2	22	8.22	15.4	7.71

TABLE 11 –FALL 2018 DISCHARGE RESULTS TO DATE

*Sample	Date	Flow (m ³ /d)	Volume Discharged (m ³)	CBOD ₅ (mg/l)	CBOD ₅ (kg/d)	TSS (mg/l)	TSS (kg/d)	TP (mg/l)	TP (kg/d)	TAN (mg/l)	TAN (kg/d)	pH	E.Coli (100ml/ cfu)	DO (mg/l)	Temp (°C)	UA (mg/l)
Discharge Limits				30.0	152.1	40.0		0.80				6.0-9.5				
Discharge Objectives				25.0		30.0		0.50				6.0-8.5				0.1
Start Discharge	18-Oct	523.7	0	2.0	1.05	6.0	3.14	0.03	0.016	1.5	0.79	8.08	20	10.09	9.7	0.032
Sample #2 (10.3%)	25-Oct	695.52	4,132	4.0	2.78	2.0	1.39	0.03	0.021	1.8	1.25	8.04	12	10.94	9.2	0.034
Sample #3 (23.4%)	31-Oct	880.39	9,348	4.0	3.52	2.0	1.76	0.07	0.062	1.4	1.23	8.06	8	10.94	10.3	0.030
Sample #4 (35.5%)	06-Nov	777.46	14,199	2.0	1.55	2.0	1.55	0.03	0.023	1.5	1.17	7.76	2	10.43	11.1	0.017
Sample #5 (47.7%)	12-Nov	861.24	19,079	4.0	3.44	4.0	3.44	0.04	0.034	1.1	0.95	8.27	2	12.34	4.0	0.023
Sample #6 (61.8%)	19-Nov	773.71	24,711	4.0	3.09	2.0	1.55	0.03	0.023	3.0	2.32	8.14	2	13.02	5.3	0.052
Sample #7 (75.4%)	26-Nov	781.1	30,176	4.0	3.12	3.0	2.34	0.04	0.031	3.5	2.73	8.02	4	12.64	4.7	0.044
Sample #8 (81.1%)	02-Dec	3.16	32,426	4.0	0.01	28.0	0.09	0.03	0.000	3.1	0.01	7.98	13	11.20	6.9	0.042
Final (82.0%)	04-Dec	1.79	32,765	2.0	0.00	13.0	0.02	0.03	0.000	3.0	0.01	8.03	16	11.34	2.3	0.032

* At the beginning of the discharge event, a volume is estimated to monitor the percent drawdown during the event. Fall 2018 discharge started at an estimated 40,000m³

INTERPRETATION OF ALL MONITORED DATA

Influent - The influent parameters that are analyzed on monthly basis shows great variability. The influent sampling program at the lagoons requires a monthly grab sample therefore the sample collected is only representative of what is entering the facility at that moment. Results are within typical municipal characteristics.

Spring Discharge – The spring 2018 discharge event was started on March 28, 2018 and ended on April 26, 2018. 40,915m³ was discharged during this time. At the beginning of the discharge event, a volume is estimated to monitor the percent drawdown during the event. It was determined that there was approximately 39,000m³ in the lagoon. With the constant additional of influent into the lagoon, the system was successful at reaching 103% drawdown with no compliance limit exceedances. There were two objective exceedances for unionized ammonia as highlighted above in bold in Table 9.

Fall Discharge – The 2018 fall discharge began on October 18, 2018 and ended on December 4, 2018. 32,765m³ was discharged during this time. At the beginning of the discharge event, a volume is estimated to monitor the percent drawdown during the event. It was determined that there was approximately 40,000m³ in the lagoon. With the constant additional of influent into the lagoon, the system was successful at reaching 82% drawdown with no compliance limit or objective exceedances.

SECTION B – FAIRCHILD CREEK MONITORING

There was no requirement to monitor Fairchild Creek during the 2018 Spring Discharge event as per section 8(a) Special Operations-Seasonal Discharge of C of A #0176-7LSQYG.

SECTION C - OPERATING PROBLEMS ENCOUNTERED

There were no operating problems to report for the Cainsville Lagoon system for 2018.

SECTION D - MAINTENANCE

(I) UPGRADES

There was no major maintenance, equipment breakdowns or capital repairs required at the Cainsville Lagoon System during 2018.

(II) ALARMS

The following table shows the after hour alarms that were responded to at the Lagoons in 2018.

2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS

TABLE 12– ALARMS

Date	Alarm	Issue/Actions Taken
15-Mar-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset
30-Mar-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset
14-Apr-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset
15-Apr-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset
04-May-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset
10-May-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset
21-May-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset
13-Jun-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset
21-Jun-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset
26-Jul-18	Chemical Pump Fail	Brief power fail in area, chemical pump and aerators required reset

SECTION E - EFFLUENT QUALITY

Two (2) control measures were incorporated at the Cainsville Lagoon System in order to assist with the effluent quality for the discharge events. These control measures are discussed below.

(I) CHEMICAL DOSING SYSTEM

A continuous chemical/alum dosing system is utilized at the lagoon to assist with settling in Cell's 1 and 2 and promote a cleaner effluent from Cell 3. The system was installed in a building that includes 2 chemical storage tanks, chemical delivery pump and associated piping and appurtenances. Alum is dosed to the manhole immediately upstream of the metering chamber and the distribution manhole. The chemical injection is flow paced based on feedback from the lagoon's influent flow meter.

(II) SUBSURFACE AERATOR SYSTEM

Two (2) 5horsepower Subsurface Aerator Units were installed in 2015, one in each of the primary cells. 3 phase power was installed onsite to meet the power demands of the new aerator system. The system was commissioned on July 30, 2015 and training was completed on the system on August 20, 2015. Historically the lagoon cells would require batch dosing of Alum to increase settling and in turn, decrease CBOD₅. Since the aerators have been functional, it is evident that the CBOD₅ concentrations were decreased and the lagoon system has not required batch dosing prior to the spring or fall discharge events since they were installed.

SECTION F - CALIBRATIONS

Bi-Annual calibrations of the influent and effluent flow meters are required at the Cainsville Lagoons. Calibrations are scheduled prior to each discharge event. Calibrations occurred on March 14, 2018 and October 18, 2018. Calibration data can be found in *Appendix A*.

2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS

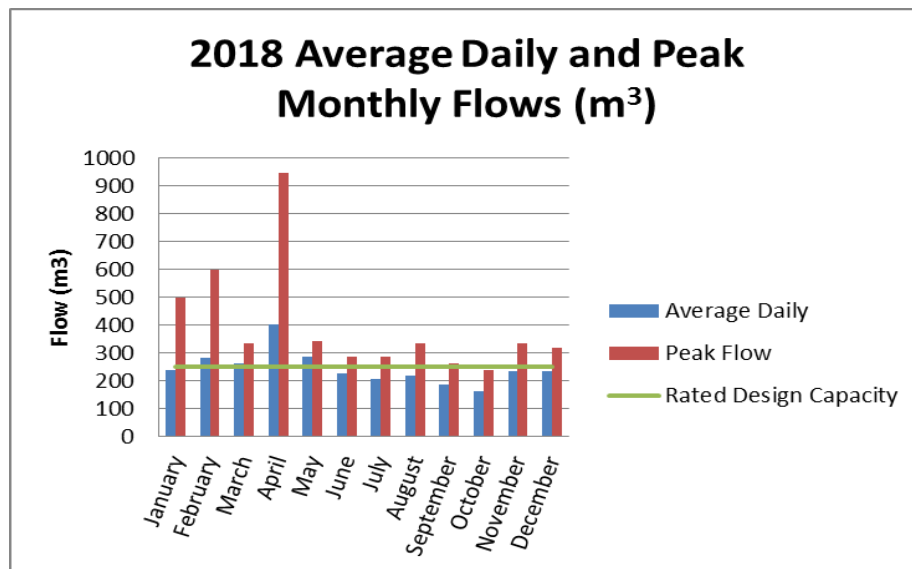
(I) FLOW DATA

Section 8 (2) of C of A #0176-7LSQYG states that the owner shall ensure that the average daily sewage flow into the sewage treatment plant does not exceed 250m³/day for any period of time greater than one (1) calendar year. The average flow for 2018 was 246m³/day which is 98.4% of capacity. This is higher than the 2017 average of 215m³/day (80% capacity). The following Table 13 shows the average daily flow, the maximum daily flow and the total flow for 2018, Graph 1 shows the average daily and maximum monthly flow in comparison to the annual design capacity and Graph 2 shows a comparison of the 2017 and 2018 total monthly flows.

TABLE 13 – INFLUENT FLOW DATA

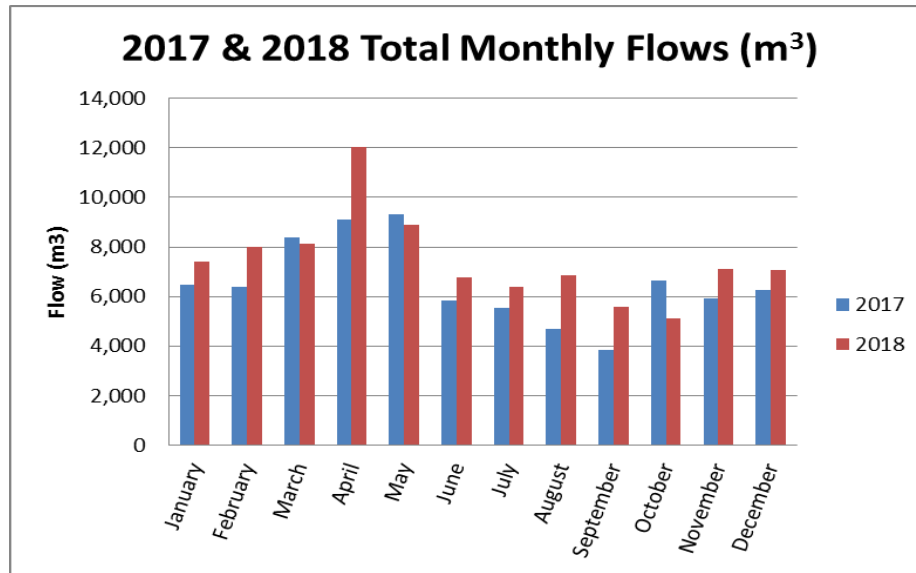
	Average Daily Flow (m ³ /d)	Peak Monthly Flow (m ³ /d)	Total Month Flow (m ³)
January	239	499	7,412
February	285	599	7,992
March	262	336	8,114
April	402	945	12,051
May	287	345	8,891
June	226	286	6,785
July	206	286	6,382
August	221	335	6,858
September	187	262	5,598
October	165	241	5,100
November	236	337	7,092
December	236	320	7,084
TOTAL			89,359
Average	246		

GRAPH 1 – 2018 AVERAGE DAILY FLOW AND MAXIMUM FLOW



2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS

GRAPH 2 – 2017 AND 2018 TOTAL MONTHLY FLOWS



SECTION G - EFFLUENT OBJECTIVES

TABLE 14 - SPRING DISCHARGE OBJECTIVE COMPARISON

% Draw-down	Date	Flow (m ³ /d)	CBOD ₅ (mg/l)	TSS (mg/l)	TP (mg/l)	pH	UA (mg/l)
Discharge Objectives			25.0	30.0	0.50	6.0-8.5	0.1
Start Discharge	28-Mar-18	656.6	10.0	5.0	0.10	7.44	0.038
Sample #2 (18.7%)	02-Apr-18	1503.4	6.0	4.0	0.06	7.77	0.084
Sample #3 (49.9%)	10-Apr-18	1460.2	5.0	2.0	0.08	7.94	0.095
Sample #4 (69.3%)	15-Apr-18	1563.0	5.0	3.0	0.05	7.69	0.049
Sample #5 (84.8%)	19-Apr-18	1529.3	4.0	6.0	0.07	8.26	0.176
Sample #6 (99.7%)	23-Apr-18	1356.5	2.0	2.0	0.05	8.33	0.292
End Discharge (103%)	26-Apr-18	1408.3	2.0	5.0	0.04	7.66	0.038

TABLE 15 - FALL DISCHARGE OBJECTIVE COMPARISON

% Draw-down	Date	Flow (m ³ /d)	CBOD ₅ (mg/l)	TSS (mg/l)	TP (mg/l)	pH	UA (mg/l)
Discharge Objectives			25.0	30.0	0.50	6.0-8.5	0.1
Start Discharge	18-Oct	523.7	2.0	6.0	0.03	8.08	0.032
Sample #2 (10.3%)	25-Oct	695.52	4.0	2.0	0.03	8.04	0.034
Sample #3 (23.4%)	31-Oct	880.39	4.0	2.0	0.07	8.06	0.030
Sample #4 (35.5%)	06-Nov	777.46	2.0	2.0	0.03	7.76	0.017
Sample #5 (47.7%)	12-Nov	861.24	4.0	4.0	0.04	8.27	0.023
Sample #6 (61.8%)	19-Nov	773.71	4.0	2.0	0.03	8.14	0.052
Sample #7 (75.4%)	26-Nov	781.1	4.0	3.0	0.04	8.02	0.044
Sample #8 (81.1%)	02-Dec	3.16	4.0	28.0	0.03	7.98	0.042
Final (82.0%)	04-Dec	1.79	2.0	13.0	0.03	8.03	0.032

2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS

The spring and fall discharge events were successful at not exceeding any compliance limits, however there were two objective exceedances for unionized ammonia during the spring event. These exceedances are identified in bold in the above Table 14. All efforts were made based on the design, construction and operation of the Lagoons to be able to meet these objectives during the 2018 spring discharge event. These best efforts included the following:

- The system is operated to maximize the holding capacity (Hydraulic Retention Time) for the primary lagoon cells before the flow goes into the polishing cell as designed. The aerators were installed and operational in August 2015 in order to increase dissolved oxygen concentrations and subsequently increase treatment in the primary cells especially during the winter months when the cells freeze over.
- Dredging of Cell#2 was completed in November of 2017 which has increased holding capacity and successfully lowered the ammonia results.

SECTION H – VOLUME OF SLUDGE GENERATED

No Lagoon cells were cleaned out during 2018. Cell #1 was dredged in 2012 and Cell#2 was dredged in November 2017 as per C of A #1076-7LSQYG Section 8(4)(f).

SECTION I - SUMMARY OF COMPLAINTS RECEIVED

The Lagoons did not receive any complaints in 2018

SECTION J - SUMMARY OF BY-PASS EVENTS

The Lagoons were not involved in any by-pass events in 2018

SECTION K – OTHER INFORMATION

There is no additional information to report for the Cainsville Lagoon System for 2018.

APPENDIX A

CALIBRATION RECORDS

2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS



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

Certificate No: 27984-001

Certificate Of Calibration

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

Instrument Identification:
Description: Flow Indicator/Transmitter
Manufacturer: Milltronics
Model No: OCMIII
Serial No: N/Av
Range: 0 to 50 l/s
Tolerance: ± 2% FS
Tag No: N/Av
Location: Cainsville Lagoon - Effluent Discharge

Cal. Date: March 14, 2018
Due Date: September 14, 2018

Program Parameters

PAR	Entry	SETTING Description	PAR	Entry	SETTING Description
P0	0	English	P27	10	mA - Damping (Seconds)
P1	0	Centimetres	P28	0	Don't track Emulator
P2	0	Celsius	P29	60	Fail Safe Time (Seconds)
P3	0	Exponential Device	P30	0	Hold Last Value
P4	1	Ratiometric	P32	4	Totalizer Value (x10)
P5	0	liters/second	P33	2	4 Decimal Places
P6	50	Flow@Max Head (l/s)	P34	0	Never Print
P7	27.63999	Maximum Head (cm)	P36	0	1 Sec Measurement Interval
U0	1.58	Parshall Flume	P37	3	Baud 2400
P13	0	Off	P38	0	Site Number (None)
P14	0	Display Lighting (On)	P39	2	15 min - Data Logging rate
P15	0	Relay 1 (Not in service)	P42	0	Head Determine (by OCM III)
P18	0	Relay 2 (Not in service)	P45	0	Low Flow Cut Off (cm)
P21	0	Relay 3 (Not in service)	P46	69.36135	Range at Zero Head (cm)
P24	0	mA Assignment (Flow rate)	P47	39.86	Blanking Distance (cm)
P26	0	mA Span (4 to 20)			

Test Report:

AS FOUND			AS LEFT		
Reference	Instrument	Error	Reference	Instrument	Error
cm	cm	%FS	cm	cm	%FS
0.0	0.22	0.80	0.0	0.22	0.80

Standards Used:

Asset No	Manufacturer	Calibration Date	Due Date
RUL002	Starrett	June 2, 2017	June 2, 2018

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

Comments: No water flow. Calibrated at operating conditions.

Performed By: A. Shah Reviewed By ITS: C. Ramnarine Reviewed By Customer: _____
 Technician Service Manager
 Issue Date: March 15, 2018 Date: March 15, 2018

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2018 ANNUAL PERFORMANCE REPORT CAINSVILLE LAGOONS



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

Certificate No: 27984-002

Certificate Of Calibration

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

Instrument Identification:
Description: Flow Indicator/Transmitter
Manufacturer: Milltronics
Model No: OCMIII
Serial No: PBD/WD040352
Range: 0 to 30.08119 m³/Hr
Tolerance: ± 2% FS
Tag No: N/Av
Location: Cainsville Lagoon - Raw Influent

Cal. Date: March 14, 2018
Due Date: September 14, 2018

Program Parameters

PAR			SETTING			PAR			SETTING		
	Entry	Description		Entry	Description		Entry	Description		Entry	Description
P0	0	English	P27	10	mA - Damping (Seconds)						
P1	0	Centimeters	P28	0	mA Option (No Tracking)						
P2	0	Celsius	P29	60	Fail Safe Time (Seconds)						
P3	10	Palmer Bowlus Flowmeter	P30	0	FS Mode (Hold Last Value)						
P4	1	Ratiometric	P32	6	Totalizer Multiplier (x1.000)						
P5	6	m ³ /hr	P33	4	Flow Display (4 Decimal Places)						
P6	30.0811	Flow@Max Head (m ³ /hr)	P34	0	Print Mode (Never print)						
P7	10.668	Height@Max Head (cm)	P36	0	1 Sec Measurement Interval						
U0	15.000	H_Max	P37	5	Baud 9600						
P13	0	Display Damping (Off)	P38	0	Site Number (None)						
P14	0	Display Lighting (On)	P39	5	5 min - Data Logging rate						
P15	0	Relay 1 (Not in service)	P42	0	Head Determine (by OCM III)						
P18	0	Relay 2 (Not in service)	P45	0	Low Flow Cut Off (cm)						
P21	0	Relay 3 (Not in service)	P46	63.71002	Range at Zero Head (cm)						
P24	0	mA Assignment (Flow rate)	P47	45	Blanking Distance (cm)						
P26	0	mA Span (4 to 20)									

Test Report:

AS FOUND			AS LEFT		
Reference	Instrument	Error	Reference	Instrument	Error
cm	cm	%FS	cm	cm	%FS
5.80	5.71	-0.84	5.80	5.71	-0.84

Standards Used:

Asset No	Manufacturer	Calibration Date	Due Date
RUL002	Starrett	June 2, 2017	June 2, 2018

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

Comments: Flow cannot be controlled. Calibrated at operating conditions.

Performed By: A. Shah Reviewed By ITS: C. Ramnarine Reviewed By Customer: _____
 Technician Service Manager
 Issue Date: March 15, 2018 Date: March 15, 2018

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