

March 28th, 2019

Charlie Primeau
Water Compliance Supervisor
Ministry of Environment and Climate Change
2430 Don Reid Dr, Unit 103
Ottawa, ON K1H 1E1

**RE: Rockland Wastewater Treatment Works
2018 Annual Report**

Dear Mr. Primeau,

This report summarizes various areas of activity and evaluates the performance of the Rockland Wastewater Pollution Control Plant (WPCP) during 2018 in accordance with Condition 15(3) (a) to (g) of the Special Terms and Conditions of the Environmental Compliance Approval (ECA), number 1990-9P3PRG.

a) Executive Summary

The Average Day Flow (ADF) of 4,415m³/day experienced in 2018 represents 64.93% of the 6,800 m³/day ADF Design Criteria. The Rockland WPCP treated effluent met all the ECA effluent concentration limits and loading requirements throughout 2018.

During 2018, approximately 10,100m³ of biosolids was transferred from the WPCP to the on-site drying lagoons, with final disposal of 2,378 m³ of partially dried biosolids to approved NASM farmland. The bottom drains of the east drying lagoon are scheduled to be replaced on January of 2019 to allow better dewatering.

Odour complaints were received from neighboring businesses near the sewage plant on Industrial Street during the summer period of 2018. These odours originated from the biosolids storage lagoons located north of the sewage plant as well as the aerobic digester during maintenance work on the SBRs. In effort to minimize these odors; OCWA continued to add an MOE approved product called Bio-Desolve to the aerobic digester year round and scheduled maintenance work during favorable conditions.

Major maintenance activities during 2018 were:

- Annual inspection of lifting devices, March
- Cleaned out all pumping station wet wells with Aqua Drain
- Cleaned out chlorine contact tank, May 15th
- Cleaned out SBR#2 for annual maintenance, coating was repaired ,May 30th
- Started to schedule the cleaning of the inlet basket at station #1 on a weekly basis from bi-weekly due to excessive fat and wipes June 1st
- City of Clarence Rockland contracted out work in zone 2 to repair infiltration on gravity sewer pipes and manholes
- Cleaned out SBR#3 for annual maintenance, coating was repaired, July 12th
- Sanitary sewer flushing by Aqua Drain started September 20th in zone 2 and 3
- Force main sewer was repaired near 1024 Laviolette street, August 3rd
- Aquadrain in to flush sanitary sewers in basin #2 and #3 from September 20th to October 30th
- Cleaned out SBR#1 for annual maintenance, November 27th
- Hauled 2,378 m³ of biosolids from east lagoon cell to NASM approved fields November 13th to 16th
- Rebuilt the two sodium hypochlorite pumps in December
- Cleaned out all pumping station wet wells, Aquadrain, October

b) Monitoring Program

The facility was monitored according to Section 6 of the ECA. The total suspended solids were slightly above the ECA Effluent objectives for the month of July, August and November due to cleaning and maintenance of the SBR. Ph results were slightly below the objective during the month of July and August due to the warm weather. A summary of the Effluent Compliance Performance is summarized below in Table 1.

Table 1
Effluent Limit and C of A Requirements

Effluent Parameter	C of A Effluent Limit mg/l	Maximum Monthly Average	Annual Average Sample Concentration
CBOD ₅ (mg/L)	15	7.0	4.28
Suspended Solids (mg/L)	15	19.25	14.4
Total Phosphorus	.8	.70	.474
Ph	6.5 – 9.5	NA	6.3 – 7.2

The facility was monitored according to Section 7 of the ECA. The Treated Effluent remained in compliance with all monthly and annual effluent concentration limits and total loadings required by the ECA. Summary of the Effluent Compliance Performance is summarized below in Table 2.

Table 2
Effluent Limit and C of A Requirements

Effluent Parameter	C of A Effluent Limit mg/l	Maximum Monthly Average	Annual Average Sample Concentration
CBOD ₅ (mg/L)	25	7.0	4.28
Suspended Solids (mg/L)	25	19.25	14.4
Total Phosphorus	1.0	.70	.474
Ph	6.0 – 9.5	NA	6.3 – 7.2

As of fall 2018 the City was still in the design process for the installation of preliminary screening at the sewage plant in an effort to reduce process stream blockages and improve process efficiency and effluent quality. Refer to **Appendix I: 2018 Performance Assessment Report** for a summary of the raw and treated wastewater monitoring results and the facility's performance and **Appendix II: 2018 Annual Effluent Quality Report** for a summary of the facility's Compliance. The effluent quality improved in 2018 due to the diligent efforts of operation staff in optimizing the processes.

During 2018, quarterly average effluent monitoring was required to meet the Federal Wastewater Systems Effluent Regulations (WSER). The effluent quality met all WSER criteria for each quarter during the calendar year of 2018. Table 1 below is a summary of the results submitted to the Effluent Regulatory Reporting Information System

Table 1
WSER Effluent Monitoring Data

Effluent Parameter	WSER Effluent Quality Standard	Q1 Jan-March	Q2 April- June	Q3 July- Sept	Q4 Oct – Dec	Number of Samples Above Standard
CBOD ₅ (mg/L)	≤ 25.0	3.12	6.3	4.9	3.1	4.2
Suspended Solids (mg/L)	≤ 25.0	12.1	13.3	18.3	17.5	14.5
Acute Lethality to Rainbow Trout and Daphnia Magna	No sampling due to reduced frequency	No sampling due to reduced frequency	0% Mortality	No sampling due to reduced frequency	No sampling due to reduced frequency	0

c) Hydraulic Flows

The Average Day Flows (ADF) reaching the Wastewater Pollution Control Plant in 2018 was 4,415m³/day. The ADF remained below the 6,800 m³/day Design Value of the facility. It was observed that the 2018 ADF were approximately 14.38 % lower than the 5,050 m³/day experienced in 2017. This is mainly due to the hot summer and lower precipitation. A Maximum Day Flow (MDF) of 8,341m³/day occurred in March during the spring thaw. This MDF represents 48.10 % of the 17,340 m³/d MDF Design Value. The 2018 WPCP flows can be summarized as follows:

	Design Flow	2018 Flow	Percent of Design
Average Day Flow m ³ /day	6,800	4,515	66.39 %
Maximum Day Flow m ³ /day	17,340	8,341	48.10 %

d) Uncommitted Reserve Capacity

Based on the past 3 years of operation, the Rockland Wastewater Pollution Control Plant currently has a Hydraulic Reserve Capacity (Cr) of 2,199 m³/day and an average per capita flow (F) of 0.308 m³/cap/day. The facility currently has an Uncommitted Hydraulic Reserve Capacity (Cu) of 822 m³/day, which can only accommodate an additional 992 equivalent residential units (Lu) in addition to the already committed 1661 Unconnected Approved Lots (L) in 2018. Refer to **Appendix III: 2018 Uncommitted Reserve Capacity - Sewage** for additional information.

e) Bypass and Emergency Conditions

- A raw sewage backup of the collection system occurred on February 27th 2018 on Pouliotte St. Reported to SAC under report # 7146-AWDN9J.
- A contained raw unchlorinated sewage spill occurred on December 5th 2018 at pumping station #7 due to a broken air release valve in the wetwell chamber cause spillage to come out of the wet well covers. Reported to SAC under report #4161-B7MJX

Refer to **Appendix IV: 2018 Notification of Spill Event Reported to SAC**

f) Calibrations

The raw wastewater magnetic flowmeter at the main pumping station (SPS #1) was calibrated on July 20th 2018. Refer to **Appendix V: 2018 Calibration Report**.

g) Biosolids Management

During 2018 approximately 2,378 m³ of biosolids was transferred from the WPCP aerated digester to the 2 on-site drying lagoons. Partially dried biosolids was hauled from the west and east cells during November 13th to 16th. A total of 1,298m³ of partially dried biosolids was hauled to NASM approved site plan # 22007 owned by Pascal Roy which expires December 31st 2019. A total of 1080 m³ was hauled to the NASM approved site plan #22764 owned by Serge Ethier which expires December 31st 2020. For addition information please refer to **Appendix VI: 2018 NASM Annual Summaries** for a summary of the amounts of biosolids utilized on each farm.

The application of Biosolids to Approved Lands and the Landfill will continue in 2019 under the Nutrient Management Act and Certificate of Approval for the Landfill. In order to ensure the availability of Approved Farm Lands, the Ontario Clean Water Agency will re-certify NASM plans in 2019.

If you have any questions with the above information please contact Maurice Benoit at (613)-679-4631.

Yours truly,

Patrick Lalonde
PCT OCWA
Prescott Russell Cluster

Attachments:

- Appendix I: 2018 Performance Assessment Report
- Appendix II: 2018 Annual Effluent Quality Report
- Appendix III: 2018 Uncommitted Reserve Capacity - Sewage
- Appendix IV: 2018 Notification of Spill Event Reported to SAC
- Appendix V: 2018 Calibration Report
- Appendix VI: 2018 NASM Annual Summaries

c.c.: Dave Darch, Director of Infrastructure and Planning, City Clarence-Rockland
Philippe Cormier, Environment Manager, Infrastructure and Engineering City
Clarence-Rockland
Maurice Benoit, Senior Operations Manager, OCWA, Prescott Russell Cluster
Vanessa Greatrix, Safety Process Compliance Manager, OCWA, Eastern Region

Appendix I

Ontario Clean Water Agency
Performance Assessment Report Wastewater/Lagoon
From: 01/01/2018 to 31/12/2018

Facility: [6816] ROCKLAND WASTEWATER TREATMENT FACILITY

Works: [110001159]

	01/2018	02/2018	03/2018	04/2018	05/2018	06/2018	07/2018	08/2018	09/2018	10/2018	11/2018	12/2018	<--Total-->	<--Avg-->	<--Max-->
Flows:															
Raw Flow: Total - Raw Sewage (m³)	125533.00	115650.00	156422.00	179521.00	137584.00	127084.00	120925.00	123956.00	116919.00	118572.00	142658.00	146595.00	1611419.00		
Raw Flow: Avg - Raw Sewage (m³/d)	4049.45	4130.36	5045.87	5984.03	4438.19	4236.13	3900.81	3998.58	3897.30	3824.90	4755.27	4728.87		4415.81	
Raw Flow: Max - Raw Sewage (m³/d)	6542.00	6211.00	8341.00	8018.00	5236.00	5745.00	6087.00	4913.00	4484.00	3906.00	5970.00	6074.00			8341.00
Eff. Flow: Total - WPCP Effluent (m³)	125533.00	115650.00	156422.00	179521.00	137584.00	127084.00	120925.00	123956.00	116919.00	118572.00	142658.00	146595.00	1611419.00		
Eff. Flow: Avg - WPCP Effluent (m³/d)	4049.45	4130.36	5045.87	5984.03	4438.19	4236.13	3900.81	3998.58	3897.30	3824.90	4755.27	4728.87		4415.81	
Eff. Flow: Max - WPCP Effluent (m³/d)	6542.00	6211.00	8341.00	8018.00	5236.00	5745.00	6087.00	4913.00	4484.00	3906.00	5970.00	6074.00			8341.00
Carbonaceous Biochemical Oxygen Demand: CBOD:															
Eff: Avg cBOD5 - WPCP Effluent (mg/L)	< 3.000	< 3.750	< 3.000	< 3.000	< 7.000	< 4.500	< 6.600	< 4.750	< 3.000	< 2.800	< 6.250	< 3.750		<	< 7.000
Loading: cBOD5 - WPCP Effluent (kg/d)	< 12.148	< 15.489	< 15.138	< 17.952	< 31.067	< 19.063	< 25.745	< 18.993	< 11.692	< 10.710	< 29.720	< 17.733		< 18.788	< 31.067
Biochemical Oxygen Demand: BOD5:															
Raw: Avg BOD5 - Raw Sewage (mg/L)	221.600	201.000	151.250	157.400	152.250	173.750	178.000	183.750	124.750	191.400	218.500	154.250		175.658	221.600
Raw: # of samples of BOD5 - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Total Suspended Solids: TSS:															
Raw: Avg TSS - Raw Sewage (mg/L)	542.400	378.000	460.000	428.000	258.500	302.500	284.400	237.500	185.000	308.000	255.000	375.000		334.525	542.400
Raw: # of samples of TSS - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Eff: Avg TSS - WPCP Effluent (mg/L)	11.800	14.250	10.250	12.400	13.250	12.500	18.800	16.750	19.250	13.800	19.250	10.500		14.400	19.250
Eff: # of samples of TSS - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Loading: TSS - WPCP Effluent (kg/d)	47.784	58.858	51.720	74.202	58.806	52.952	73.335	66.976	75.023	52.784	91.539	49.653		62.803	91.539
Percent Removal: TSS - Raw Sewage (mg/L)	97.824	96.230	97.772	97.103	94.874	95.868	93.390	92.947	89.595	95.519	92.451	97.200			97.824
Total Phosphorus: TP:															
Raw: Avg TP - Raw Sewage (mg/L)	8.630	6.193	4.670	5.068	6.140	6.958	6.330	6.493	5.720	6.728	6.588	6.050		6.297	8.630
Raw: # of samples of TP - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Eff: Avg TP - WPCP Effluent (mg/L)	0.320	0.460	0.295	0.388	0.455	0.490	0.700	0.610	0.660	0.488	0.533	0.293		0.474	0.700
Eff: # of samples of TP - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Loading: TP - WPCP Effluent (kg/d)	1.296	1.900	1.489	2.322	2.019	2.076	2.731	2.439	2.572	1.867	2.532	1.383		2.052	2.731
Percent Removal: TP - Raw Sewage (mg/L)	96.292	92.572	93.683	92.344	92.590	92.957	88.942	90.605	88.462	92.747	91.917	95.165			96.292
Nitrogen Series:															
Raw: Avg TKN - Raw Sewage (mg/L)	54.880	49.850	44.700	38.800	52.950	55.100	50.080	50.225	51.150	57.060	54.025	47.650		50.539	57.060
Raw: # of samples of TKN - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Eff: Avg TAN - WPCP Effluent (mg/L)	18.300	19.525	14.550	13.960	18.100	19.125	22.640	17.875	20.075	18.500	17.175	15.775		17.967	22.640
Eff: # of samples of TAN - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Loading: TAN - WPCP Effluent (kg/d)	74.105	80.645	73.417	83.537	80.331	81.016	88.314	71.475	78.238	70.761	81.672	74.598		78.176	88.314
Eff: Avg NO3-N - WPCP Effluent (mg/L)	< 0.160	< 0.175	< 0.250	< 0.460	< 0.100	< 0.100	< 0.100	< 0.125	< 0.100	< 0.100	< 0.100	< 0.475		< 0.187	< 0.475
Eff: # of samples of NO3-N - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Eff: Avg NO2-N - WPCP Effluent (mg/L)	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.125		< 0.102	< 0.125
Eff: # of samples of NO2-N - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Disinfection:															
Eff: GMD E. Coli - WPCP Effluent (cfu/100mL)	2.000	2.000	2.000	2.000	2.000	2.632	6.662	2.632	2.000	2.000	2.632	2.000		2.547	6.662
Eff: # of samples of E. Coli - WPCP Effluent (cfu/100mL)	5	4	4	5	4	4	5	4	4	5	4	4	52		

Appendix II

Rockland WPCP 2018 Annual Effluent Quality Report

	Average Day Flow (ADF) m3/day	Maximum Day Flow (MDF) m3/day	CBOD5		TSS		TP		E. Coli
			Conc. mg/L	Loading Kg	Conc. mg/L	Loading Kg	Conc. mg/L	Loading Kg	Monthly GM org/100 ml
Compliance Limit	6,800	17,340	25	170	25	170	1.00	6.8	--
Objective	6,800	17,340	15	102	15	102	1.00	6.8	200
Actual	4,415	8,341	4.28	18.78	14.40	62.80	0.474	2.05	2.54
Met Limit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Met Objective	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The maximum Monthly E. Coli Geometric Mean was during the month of July 2018 with a 6.662 cfu/100ml.

Appendix III

2018 UNCOMMITTED RESERVE CAPACITY - SEWAGE

MUNICIPALITY: City of Clarence-Rockland

LOCATION IN MUNICIPALITY: Rockland Sewage Works

Uncommitted Hydraulic Reserve Capacity (Cu)

Uncommitted hydraulic reserve capacity for water supply and treatment facilities is based on:

$$C_u = C_r - (P / H) \times F \times L$$

Cr = Hydraulic Reserve Capacity

= Treatment Facility Average Daily Flow Design of 6,800 m³/day less Existing Average Daily Flow of 4,601 m³/day (based on average of past 3 years: 4,337 m³/day in 2016 and 5,050 m³/day in 2017 and 4,415 m³/day in 2018.

$$= 6,800 \text{ m}^3/\text{day} - 4,601 \text{ m}^3/\text{day} = 2,199 \text{ m}^3/\text{day}$$

P = Existing Connected Population

$$= 14,927$$

H = Number of Connected Residential Units

$$= 5,549$$

F = Existing Per Capita Flow

$$= 4,601 \text{ m}^3/\text{day} / 14,927 \text{ Connected Pop} = 0.308 \text{ m}^3/\text{cap}/\text{day}$$

L = Number of Unconnected Approved Lots (equivalent number of residential units). Please refer to the attached 2018 letter from the City of Clarence-Rockland.

- (a) Infilling of vacant lots/units in registered plans of subdivision or created by consent to split existing registered lots in serviced area: (single family, semi-detached, multiple units, condominiums.

= 156 units

- (b) Residential lots/units in draft plans of subdivision.

= 1,485 units

- (c) Proposals with approved zoning for multiple residential development.

= 20 units

- (d) Proposals with approved zoning for institutional, commercial, or industrial which would significantly change the proportion of non residential flow in the total flow.

= 2 units

Total L = (a) + (b) + (c) + (d) = 156+1485+20+ 2 = 1,663

SUMMARY:

$$\begin{aligned} \text{Cu} &= \text{Cr} - (\text{P} / \text{H}) \times \text{F} \times \text{L} \\ &= 2,199 - (14,927/5,549) \times 0.308 \times 1,663 \\ &= 2,199 - (2.69 \times 0.308 \times 1,663) \\ &= 2,199 - 1,377 \\ &= 822 \text{ m}^3/\text{day} \text{ Uncommitted Hydraulic Reserve Capacity for} \\ &\quad \text{Average Daily Flow.} \end{aligned}$$

The Uncommitted Hydraulic Reserve Capacity (Cu) assumes that future daily sewage flows per capita for both existing and future residents will be similar to historical flows.

Compliance with Certificate of Approval:

By-passing: (in collection systems, at pumping stations or at treatment facilities-caused by inflow/infiltration, not be operational resolvable problems)

Historic: High inflows occur at the sewage plant during the spring thaw, flows return to normal once the snow melt ends. These flows often surpass the facility design flow of 6800m3/day.

Projected: No anticipated problems

Effluent Quality: Compliance with Environmental Compliance Approval (ECA)

Historic: The Rockland Wastewater Pollution Plant (WWTP) met all Effluent Quality limits outlined in the ECA over the past 10 years with the exception of a Total Phosphorus exceedance in February of 2015. The Facility met all ECA limits and objectives parameters during 2018. Please refer to the attached Performance Assessment Report for 2018. The effluent improved in 2018 due to the diligent efforts of the operation staff to optimize the process.

Projected: The City of Clarence-Rockland is undertaking upgrades to the Sewage Treatment Plant and Pump Station #1 to improve odor control through increased grit removal and screening, to normalize peak flows from inflow and infiltration through storage equalization, and to increase the pumping and conveyance capacity to the plant. Site Investigations and Preliminary Design have started and will be completed in the fall of 2018. A Public Information Centre (PIC) to present the preliminary preferred alternative was held on November 1st 2018. Tender process and construction is projected for 2019.

Uncommitted Number of Lots (Lu)

The **Cu** indicated sufficient uncommitted hydraulic reserve capacity **without further conservation measures** for an additional

$$\begin{aligned}\text{Lu} &= \text{Cu} / (\text{D} \times \text{F}) \text{ where } \text{D} = \text{P} / \text{H} \\ &= 822 / (2.69 \times 0.308) \\ &= 992\end{aligned}$$

residential unit, or the equivalent, **in addition to the 1661 units already committed.** By-passing and effluent quality non-compliance problems are not expected with full utilization of the **Cu**.

RECOMMENDATIONS

- Continued efforts of conducting camera inspection of the collection system to remediate inflow/infiltration. Resolving the infiltration issues could provide the City with additional capacity to accommodate additional residential units, in addition to those currently committed.
- The City should inquire on the unconnected approved lots which have not been constructed within the last 5 years.

CONCLUSIONS:

- Assuming that the existing per wastewater flows of **0.308 m³/cap/day** (296 L/cap/day) remains constant, there should be sufficient uncommitted reserve capacity at the Rockland WPCP for an additional **992 equivalent residential units** in addition to the 1661 already committed units.

- As part of the Rockland WWTP Review initiated by OCWA's ES in the fall of 2014, process treatment issues have been identified and solutions were recommended to improve the current WWTP performance.
- The City should also consider the 346 committed units that were approved in 2017. The high number of committed unit is decreasing the reserve capacity. The time frame for the building and occupancy of these committed units are for future development and not considered to be fully occupied in 2019.

PREPARED BY: Patrick Lalonde, Process Compliance Technician, OCWA

DATE: March 28th 2019

Attachments: 2018 Performance Assessment Report
Statistiques-Serv-Physiques - Population & Connection

Ontario Clean Water Agency
Performance Assessment Report Wastewater/Lagoon
From: 01/01/2018 to 31/12/2018

Facility: [6816] ROCKLAND WASTEWATER TREATMENT FACILITY

Works: [110001159]

	01/2018	02/2018	03/2018	04/2018	05/2018	06/2018	07/2018	08/2018	09/2018	10/2018	11/2018	12/2018	<--Total-->	<--Avg-->	<--Max-->
Flows:															
Raw Flow: Total - Raw Sewage (m³)	125533.00	115650.00	156422.00	179521.00	137584.00	127084.00	120925.00	123956.00	116919.00	118572.00	142658.00	146595.00	1611419.00		
Raw Flow: Avg - Raw Sewage (m³/d)	4049.45	4130.36	5045.87	5984.03	4438.19	4236.13	3900.81	3998.58	3897.30	3824.90	4755.27	4728.87		4415.81	
Raw Flow: Max - Raw Sewage (m³/d)	6542.00	6211.00	8341.00	8018.00	5236.00	5745.00	6087.00	4913.00	4484.00	3906.00	5970.00	6074.00			8341.00
Eff. Flow: Total - WPCP Effluent (m³)	125533.00	115650.00	156422.00	179521.00	137584.00	127084.00	120925.00	123956.00	116919.00	118572.00	142658.00	146595.00	1611419.00		
Eff. Flow: Avg - WPCP Effluent (m³/d)	4049.45	4130.36	5045.87	5984.03	4438.19	4236.13	3900.81	3998.58	3897.30	3824.90	4755.27	4728.87		4415.81	
Eff. Flow: Max - WPCP Effluent (m³/d)	6542.00	6211.00	8341.00	8018.00	5236.00	5745.00	6087.00	4913.00	4484.00	3906.00	5970.00	6074.00			8341.00
Carbonaceous Biochemical Oxygen Demand: CBOD:															
Eff: Avg cBOD5 - WPCP Effluent (mg/L)	< 3.000	< 3.750	< 3.000	< 3.000	< 7.000	< 4.500	< 6.600	< 4.750	< 3.000	< 2.800	< 6.250	< 3.750		<	< 7.000
Loading: cBOD5 - WPCP Effluent (kg/d)	< 12.148	< 15.489	< 15.138	< 17.952	< 31.067	< 19.063	< 25.745	< 18.993	< 11.692	< 10.710	< 29.720	< 17.733		< 18.788	< 31.067
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Raw: # of samples of BOD5 - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Total Suspended Solids: TSS:															
Raw: Avg TSS - Raw Sewage (mg/L)	542.400	378.000	460.000	428.000	258.500	302.500	284.400	237.500	185.000	308.000	255.000	375.000		334.525	542.400
Raw: # of samples of TSS - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Eff: Avg TSS - WPCP Effluent (mg/L)	11.800	14.250	10.250	12.400	13.250	12.500	18.800	16.750	19.250	13.800	19.250	10.500		14.400	19.250
Eff: # of samples of TSS - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Loading: TSS - WPCP Effluent (kg/d)	47.784	58.858	51.720	74.202	58.806	52.952	73.335	66.976	75.023	52.784	91.539	49.653		62.803	91.539
Percent Removal: TSS - Raw Sewage (mg/L)	97.824	96.230	97.772	97.103	94.874	95.868	93.390	92.947	89.595	95.519	92.451	97.200			97.824
Total Phosphorus: TP:															
Raw: Avg TP - Raw Sewage (mg/L)	8.630	6.193	4.670	5.068	6.140	6.958	6.330	6.493	5.720	6.728	6.588	6.050		6.297	8.630
Raw: # of samples of TP - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Eff: Avg TP - WPCP Effluent (mg/L)	0.320	0.460	0.295	0.388	0.455	0.490	0.700	0.610	0.660	0.488	0.533	0.293		0.474	0.700
Eff: # of samples of TP - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Loading: TP - WPCP Effluent (kg/d)	1.296	1.900	1.489	2.322	2.019	2.076	2.731	2.439	2.572	1.867	2.532	1.383		2.052	2.731
Percent Removal: TP - Raw Sewage (mg/L)	96.292	92.572	93.683	92.344	92.590	92.957	88.942	90.605	88.462	92.747	91.917	95.165			96.292
Nitrogen Series:															
Raw: Avg TKN - Raw Sewage (mg/L)	54.880	49.850	44.700	38.800	52.950	55.100	50.080	50.225	51.150	57.060	54.025	47.650		50.539	57.060
Raw: # of samples of TKN - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Eff: Avg TAN - WPCP Effluent (mg/L)	18.300	19.525	14.550	13.960	18.100	19.125	22.640	17.875	20.075	18.500	17.175	15.775		17.967	22.640
Eff: # of samples of TAN - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Loading: TAN - WPCP Effluent (kg/d)	74.105	80.645	73.417	83.537	80.331	81.016	88.314	71.475	78.238	70.761	81.672	74.598		78.176	88.314
Eff: Avg NO3-N - WPCP Effluent (mg/L)	< 0.160	< 0.175	< 0.250	< 0.460	< 0.100	< 0.100	< 0.100	< 0.125	< 0.100	< 0.100	< 0.100	< 0.475		< 0.187	< 0.475
Eff: # of samples of NO3-N - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Eff: Avg NO2-N - WPCP Effluent (mg/L)	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.125		< 0.102	< 0.125
Eff: # of samples of NO2-N - WPCP Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52		
Disinfection:															
Eff: GMD E. Coli - WPCP Effluent (cfu/100mL)	2.000	2.000	2.000	2.000	2.000	2.632	6.662	2.632	2.000	2.000	2.632	2.000		2.547	6.662
Eff: # of samples of E. Coli - WPCP Effluent (cfu/100mL)	5	4	4	5	4	4	5	4	4	5	4	4	52		

Urban Area Statistiques- Lots approuvés (2018)

P : Population (Urban Area)

	Pers./ménage	Population
Nbre total des ménages en 2004 (voir H = 3586)	2.69	9,646
Nbre total des ménages en 2005 (voir H = 3756)	2.69	10,104
Nbre total des ménages en 2006 (voir H = 3854)	2.69	10,367
Nbre total des ménages en 2007 (voir H= 3983)	2.69	10,714
Nbre total des ménages en 2008 (voir H = 4140)	2.69	11,137
Nbre total des ménages en 2009 (voir H = 4271)	2.69	11,489
Nbre total des ménages en 2010 (voir H = 4561)	2.69	12,269
Nbre total des ménages en 2011 (voir H = 4724)	2.69	12,708
Nbre total des ménages en 2012 (voir H = 4882)	2.69	13,133
Nbre total des ménages en 2013 (voir H = 5007)	2.69	13,469
Nbre total des ménages en 2014 (voir H = 5092)	2.69	13,698
Nbre total des ménages en 2015 (voir H = 5184)	2.69	13,945
Nbre total des ménages en 2016 (voir H = 5229)	2.69	14,066
Nbre total des ménages en 2017 (voir H = 5399)	2.69	14,523
Nbre total des ménages en 2018 (voir H = 5549)	2.69	14,927

H : Existing Connected population :

Année	Nbr d'unités total	Rockland (0,80)	Ménages
2001 (Statistiques Canada)/juin	---	---	2990
2001 – Juin-Dec	174/2	70	70
2002	243	194	194
2003	165	132	132
2004	250	200	200
2005	213	170	170
2006	98		98
2007	129		129
2008	157		157
2009	131		131
2010	290		290
2011	163		163
2012	158		158
2013	125		125
2014	85		85
2015	92		92
2016	45		45

2017	170		170
2018	150		150
Total 2018			5549

*Historically, residential development in urban area represents approximately 80% of growth. Accurate building statistics from 2006 exist and as such reflect the actual number of units created in that year.

L

(a) Terrains vacants dans un lotissement urbain au 31 décembre 2018

	Unités
Rue Yves Phase 1 (M. Chartrand, 50M-268)	22
Regional Group phase 1 (single/town)	27
Spacebuilders Stage 4 (50M-308) – single family/towns	56
Loda Development	20
Regional Group Phase 2 (single)	26
Total	156

(b) Ébauches de plan de lotissement urbain approuvées au 31 décembre 2018

	Unités
Brigil	716
Stage 5 Morris Village	653
CH Clément- Caron	116
Total	1485

(c) Condos et immeubles à appartements urbain approuvés au 31 décembre 2018

	Unités
Masters Condos	8
Marivo appartments	12
Total	20

(d) Bâtiments commerciaux, institutionnel et industriels urbain approuvés/construit au 31 décembre 2018

	Unités
ATG	24,628 sq.ft
Kingdom Hall church building	2640 sq.ft
Total	27,268 sq.ft

Population de Clarence-Rockland

	2001	2002	2003	2004	2005	2006
	19 612* 19 844					20,790
	2007	2008	2009	2010	2011	2012
					23 185	
	2013	2014	2015	2016	2017	2018
				24 512	24 912	25,247

(Stat Can Juin 2001 = 19,612) (Stat Can Feb 2006 = 20,790) (Stat Can Feb 2011 = 23,185)
(Stat Can 2016=24,512)

2001 = 174 unités/2= 87 x 2,67 =232 personnes
 2002 = 243 unités X 2,67 = 649 personnes
 2003 = 165 unités X 2,67 = 441 personnes
 2004 = 250 unités X 2,69 = 673 personnes
 2005 = 213 unités X 2,69 = 573 personnes
 2006 = 156 unités X 2,69 = 420 personnes
 2007 = 177 unités X 2,69 = 476 personnes
 2008 = 210 unités X 2,69 = 565 personnes
 2009 = 172 unités X 2,69 = 463 personnes
 2010 = 339 unités X 2,69 = 912 personnes
 2011 = 214 unités X 2,69 = 576 personnes
 2012 = 190 unités X 1.87 = 355 personnes
 2013 = 158 unités X 1.87 = 295 personnes
 2014 = 123 unités X 1.87 = 230 personnes
 2015 = 104 unités X 1.87 = 194 personnes
 2016 = 136 unités X 1.87 = 254 personnes
 2017 = 214 unités X 1.87 = 400 personnes
 2018 = 179 unités X 1.87 = 335 personnes

Appendix IV

Water Compliance Supervisor
Ministry of Environment and Climate Change
James.Mahoney@Ontario.ca

Date: March 6th 2018

Re: Notification of Spill Rockland WPCP Collection System Feb 27th 2018

This is a written notification of the raw unchlorinated sewage spill on February 27th 2018 with the Rockland Collection System, submitted in accordance with terms and conditions the Ontario Water Resources Act, Environmental Protection Act, and the current Environmental Compliance Approval Number 1990-9P3PRG.

This written notice confirms the verbal notifications provided to Julianna Dominsky at the Spills Action Center on February 27th 2018 under reference # 7146-AWDN9J.

Details:

We received a call from the City on February 27th at 11h36 in regards to sewage seeping out of manhole #930 on Pouliotte St. Arrived onsite at 11h45 and noticed the spill. Contacted Clean Water Works for a Hydrovac truck to cleanup and removed blockage in manhole. A set of samples was collected at 12h26 from manhole spillage. CWW arrived onsite at 12h46 and blockage was removed at 12h52. CWW remained onsite until 14h05 to clean between manhole # 520 to #530, #530 to #940 followed by cleaning the side of the road and ditch area.

Location	Volume (m3)	Start Date and Time	End Date and Time	Duration (h)	Discharge Receiver	Disinfection Provided
Pouliotte St.	5m3	Feb 27 th 11h36	Feb 27 th 12h52	1.25hrs	Side of road & Storm ditch	Clean up of area with VAC truck

Corrective Action Taken, Remedial Measures, Future Prevention:

- Area was flushed from manhole to manhole.
- Collected a set of samples (results attached)
- Schedule a camera inspection of the area to determine the cause of this blockage.
- Operational staff has been instructed to conduct a visual inspection of the manhole over the next few weeks during their pumping station rounds.

If you have any questions or concerns, do not hesitate to contact me at 613-446-5590.

Sincerely,
Pat Lalonde
(A)Process and Compliance Technician
Prescott Russell Cluster

cc: Jean Veilleux Drinking Water Inspector/Provincial Officer, Ottawa District MOECC Office
Denis Longpré, Manager of Environment and Water, Infrastructure and Eng, City Clarence Rockland
Maurice Benoit, Senior Operations Manager, Ontario Clean Water Agency
Andrew Trader, Regional Hub Manager, Ontario Clean Water Agency
Vanessa Greatrix, Safety, Process and Compliance Manager, Ontario Clean Water Agency

C.O.C.: ---

REPORT No. B18-05081

Report To:

Ontario Clean Water Agency - Rockland

125 Edward St.,
Rockland ON K4K 1J1 Canada

Attention: Pat Lalonde

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 27-Feb-18

JOB/PROJECT NO.: Pouliotte Blockage

DATE REPORTED: 06-Mar-18

P.O. NUMBER: 6816

SAMPLE MATRIX: Waste Water

WATERWORKS NO.

			Client I.D.		Pouliotte Blockage			
			Sample I.D.		B18-05081-1			
			Date Collected		27-Feb-18			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Total Suspended Solids	mg/L	3	SM 2540D	28-Feb-18/O	68			
BOD	mg/L	3	SM 5210B	28-Feb-18/O	110			
Nitrite (N)	mg/L	0.1	SM4110C	27-Feb-18/O	< 0.1			
Nitrate (N)	mg/L	0.1	SM4110C	27-Feb-18/O	0.9			
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	01-Mar-18/K	21.5			
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	01-Mar-18/K	3.1			
Phosphorus-Total	mg/L	0.01	E3199A.1	01-Mar-18/K	0.35			
E coli	cfu/100mL	1	MOE E3371	27-Feb-18/O	72000			

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie



Tahir Yapici Ph.D
Lab Supervisor

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

Water Compliance Supervisor
Ministry of Environment and Climate Change
James.Mahoney@Ontario.ca

Date: January 14th 2019

Re: Written Notification of Event Rockland WPCP Collection System as per SAC Report #4161-B76MJX

This is a written notification of the contained raw unchlorinated sewage spill on December 5th 2018 within the Rockland Collection System, submitted in accordance with terms and conditions the Ontario Water Resources Act, Environmental Protection Act, and the current Environmental Compliance Approval Number 1990-9P3PRG.

This written notice confirms the verbal notifications provided to Julianna Dominsky at the Spills Action Center on December 5th 2018 under reference 4161-B7MJX.

Details:

On December 5th 2018 at 10h20 Mathieu Carriere went onsite for a visual inspection of the sewage pumping station #7 located at 871 Sterling Rd in Rockland. Upon his arrival he noticed sewage splashes coming out of the wet well cove when the pumps were running. Pumps were shut off and visual inspection concluded that the air release valve had broken off at the top of the forcemain pipe leaving the pump station. New valve was installed to fix the issue. The contained spillage which was in the parking lot was cleaned up by Aqua Drain with a hydro vac truck. Pumps were back online at 11h30 and area was cleaned and completed at 14h00.

Corrective Action Taken, Remedial Measures, Future Prevention:

- Event was caused by broken valve on the air release valve
- Replaced with a new stainless steel ball valve
- Sewage splashing out of the wet well cover was contained within the facility parking lot and reported to SAC

If you have any questions or concerns, do not hesitate to contact me at 613-446-5590.

Sincerely,
Pat Lalonde
(A)Process and Compliance Technician
Prescott Russell Cluster

cc.. Philippe Cormier, Manager of Environment and Water, Infrastructure and Eng, City Clarence Rockland
Maurice Benoit, Senior Operations Manager, Ontario Clean Water Agency
Vanessa Greatrix, Safety, Process and Compliance Manager, Ontario Clean Water Agency

Appendix V



Work Order #	833170	Meter Flow Route Sewage Calibration (1y) 6816	Status	APPR
Job Plan #	METFLO01-A	METER FLOW ANNUAL GENERIC		
Project	CLAROM6816S-000			
Type	PM		Scheduled Start Date	01-Jul-18
Criticality	3			
Class	Calibration			

Location 6816, Rockland WWTL & CS

Reported By MAXADMIN
Lead
Crew Work Group 1215 Rockland Maintenance

Sequence	Asset		Location		Inspected
1	0000102373	METER FLOW SEWAGE SPS 01	6816-SPS1	6816, Sewage Pumping Stn 01	☒
2	0000102516	METER FLOW SLUDGE PUMP LINE	6816-WLRO-P-PC	6816, Rockland WWTL & CS, Process, Process Control & Monitoring	☒
3	0000175016	METER FLOW SEWAGE SPS 07	6816-SPS7	6816, Sewage Pumping Stn 07	☒

Safety Message

This Work Order (and accompanying Maintenance Procedure) have been developed to aid field personnel in the care and maintenance of the specified equipment. However, maintenance personnel are expected to look for and correct any defects which are not anticipated in the procedure. This document may not provide all the technical information that may be required, and it may be necessary to refer to the manufacturer's manual for further details.

The "As Found" and "As Left" readings, as well as any abnormalities found and any repairs carried out, are to be recorded in the Maximo WMS System.

Isolate and de-energize equipment in accordance with the lock-out procedure.

Take time to identify hazards and plan how each hazard will be eliminated or controlled. Work practices must be in accordance with the Occupational Health & Safety Act and the Ontario Clean Water Agency safety manual.

Ensure direct supervisor or their designate have been notified of entry into the site. This notification should provide approximate time and duration. On completion of duties notification is to be given that site has been vacated and secured.



Task	Description
10	RUNNING CHECKS 1) Verify calibration parameters and programming parameters where applicable. 2) Ensure proper connections and grounding. 3) Check display for any alarm or error codes.
20	HAVE QUALIFIED TECHNICIAN CALIBRATE UNIT 1. Have a qualified technician calibrate the unit, using actual flow method or flow simulator. 2. Calibration records must be kept for a period of five years. 3. Records shall include the level of accuracy of the equipment as found and as left. 4. Calibration test equipment shall be certified annually and certification dates recorded on the calibration record. Some test equipment may not require calibration
30	RECORD ADJUSTMENTS AND VERIFY OUTPUTS 1. Record any adjustments, modifications or replacements made to the equipment during the calibration. 2. Verify accuracy of electronic outputs to the end device as required based on theoretical versus actual values .{Chart recorders, SCADA, Outpost 5}. 3. Ensure all nameplate data is recorded and entered in WMS.
40	COMPLETE A VERIFICATION SHEET FOR EACH FLOW METER, POST IT AND ATTACH TO WORK ORDER Note: Calibration sheet must be signed and original kept on site in the SOP binder.

For Field-Use Only - Completion Elements:

Work Log:

Annual Inspection & Calibration of flow meters

Completed By

Please Print Name

Stéphane Barbaric

Signature

Stéphane Barbaric

Date

July 20, 2018

Appendix VI



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

November 30th, 2018

Serge Ethier

2918 Champlain st.

Bourget, ON K0A-1N0

Re: Annual summary and update for Serge Ethier farm NASM Plan # 22764

During the fall 2018 the biosolids produced by the Rockland sewage plant located at 700 Industrielle st. was hauled and spread on a NASM approved farm owned by Serge Ethier for the first time.

The NASM Plan #22764 was approved October 14th, 2016 and will expire December 31st 2020. The plan includes four fields, #1 (9.2 ha spreading area) - #2 (9.4 ha spreading area)-#3 (9.7 ha spreading area)- #4 (8 ha spreading area) all receiving biosolids for the duration of the plan. From November 13th to 16th 1080m³ of biosolids was spread by Lamoureux Pumping Inc. PMAB16278 on field #4 only with a tanker.

The spreading was as follows:

Field #1 (no biosolids spread)

Field #2 (no biosolids spread)

Field #3 (no biosolids spread)

Field#4 received a spreading rate of 135m³/ha (135m³/ha allowed), total 1080 m³

In 2019 we are planning to continue using this approved farm to spread the Rockland sewage plant biosolids. A meeting with the farmer and his commercial fertilizer supplier is scheduled in the spring 2019 to coordinate nutrients applied.

Regards,

Maurice Benoit, C. Tech, PMP

NASM Plan developer

Cert.# NASM16217



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

November 31st, 2018

Pascal Roy

2694 Champlain st.

Clarence-Creek, ON K0A-1N0

Re: Annual summary and update for Pascal Roy farm NASM Plan # 22007

During the fall 2018 the biosolids produced by the Rockland sewage plant located at 700 Industrielle st. was hauled and spread on a NASM approved farm owned by Pascal Roy.

The NASM Plan #22007 was approved October 22nd, 2014 and will expire December 31st 2019. The plan includes three fields, #1 (6.8 ha spreading area)- #2 (6.0 ha spreading area)-#3 (4.5 ha spreading area, modified in 2017 due to new tile inlets) all receiving biosolids for the duration of the plan. From November 13th to 16th 1,298 m³ of biosolids was spread by Lamoureux Pumping Inc. PMAB16278 on all three fields with a tanker, all went well.

The spreading was as follows:

Field #1 received a spreading rate of 75 m³/ha which is the 75m³ allowed, total (510m³)

Field #2 received a spreading rate of 75 m³/ha which is the 75 m³ allowed, total (450 m³)

Field #3 received a spreading rate of 75 m³/ha which is the 75 m³ allowed, total (338 m³)

In 2019 we are planning to continue using this approved farm to spread the Rockland sewage plant biosolids. A meeting with the farmer and his commercial fertilizer supplier will be scheduled in the spring 2019 to coordinate nutrients applied and discuss possible new operator of the land.

Regards,

Maurice Benoit, C. Tech, PMP

NASM Plan developer

Cert.# NASM16217