Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Fort Frances WPCP
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January 11, 2017

Town of Fort Frances
320 Portage Avenue
Fort Frances Ontario
P9A 3M5

Attention: Mr. Doug Herr
Environmental and Facilities Superintendent

Dear Doug:

Re: Fort Frances Wastewater Treatment Facility
December 2016 Monthly Report

As per the operating agreement, the attached document is the December 2016 monthly report for the Fort Frances Wastewater Treatment Facility.

The report highlights the influent and effluent quality and the process parameters. Additionally, the routine operation and maintenance activities conducted by the operators are summarized.

If you have any questions regarding this report do not hesitate to contact Mr. Larry Wachter – Operations Manager.

Yours truly,

Kelly Cunningham
Senior Operator

For Larry Wachter
Operations Manager

The Corporation of the Town of Fort Frances
Wastewater Treatment Plant
(Sewage Plant)
December 2016 Monthly Operations Report

INTRODUCTION

In accordance with the Agreement between the Ontario Clean Water Agency (Operating Authority) and the Town of Fort Frances, the Fort Frances Sewage Treatment Plant is required to prepare a monthly report. This document covers the reporting month of December 2016; the facility performance report summarizes important information regarding the quality of the effluent, wastewater, analytical test results, maintenance operations, and relevant activities of the WWTP.

DESCRIPTION OF WORKS

Capacity of Works	9000 m^3/day (average flow)
Service Area	Town of Fort Frances and Couchiching Reserve
Service Population	9000
Effluent Receiver	Rainy River
Major Process	Secondary treatment facility complete with a phosphorus removal system; ultra violet disinfection; aerobic sludge stabilization and dewatering

The Fort Frances Sewage Treatment Plant operates under *Environmental Compliance Approval Number 6786-A44PWG*. The ECA outlines the terms and conditions, and the report captures these terms and conditions in the following sections.

LABORATORY

ALS Laboratory Group – Thunder Bay is contracted to conduct the required analytical tests of the influent (raw) and effluent samples; weekly requirement.

DECEMBER 2016 EFFLUENT QUALITY

Parameters	***Monthly Actual Concentration* mg/L**	***Compliance Criteria Concentration* mg/L**	***Performance Objective Concentration* mg/L**	***Monthly Actual Loading, kg/d***	***Compliance Criteria Loading kg/d***	***Performance Objective Loading* kg/d**
$CBOD_5$	2.0 mg/L	25 mg/L	15 mg/L	12.1 kg/d	225 kg/d	135 kg/d
Total Suspended Solids	2.7 mg/L	25 mg/L	15 mg/L	17.0 kg/d	225 kg/d	135 kg/d
Total Phosphorus	0.12 mg/L	1.0 mg/L	0.9 mg/L	0.7 kg/d	9 kg/d	8.1 kg/d
Total Nitrogen Nitrate Nitrogen	8.31 mg/L 6.90 mg/L					
Total Cl_2 Residual		<0.01 mg/L (when in use)				
E-Coli	10.6 count/100 ml (geometric mean)		200 count/100ml (geometric mean)		E-coli not to exceed 150 organisms/100ml (monthly geometric mean density)	
pH			pH range 7.5 to 7.9; average pH was 7.7			
Temperature degrees C			Temperatures ranged from 11.0 to 13.0 C; average temperature of effluent was 11.9 C			

Compliance criteria are mandatory requirements of the ECA and performance objectives are a goal to be achieved using best reasonable efforts.

WASTEWATER LIQUID PROCESS

The average daily flow for December was 6045.4 m^3 /day. This represents 67% of the design average flow. Total treated flow for the month was 187407 m^3.
The Fort Frances WWTP met all effluent compliance criteria for the parameters listed above and additionally was well within the recommended more stringent monthly performance objective levels as outlined in the Environmental Compliance Approval.

INVENTORY

Chemical	End of Month Status	Units
Hypochlorite	1120 +/-@ 8.0% +3x205 L @ 12%	Litres
Alum	19.8 +/- @ 55 %	Cubic meters
Polymer	1x 205 L drums	Litres

MAINTENANCE

The operators performed the routine operations and maintenance at the treatment plant and pumping stations. The activities are highlighted as follows:

Treatment Plant:

- Alternated lead/lag pumps
- Adjusted fluidizing water to head cell and grit snail as needed
- Greased all blowers
- Regular cleaning of head works EW basket strainer
- Greased Grit Snail and lubricated drive chain
- Weekly inspection spiral screen access hatch, removed wrapped debris as required
- Flushed digester level sensor
- Replaced air filter channel blower
- Replaced blower 4 case seal
- Changed oil blower 4
- Changed oil grit pumps gear boxes
- Replaced shear pin clarifier 2 longitudinal drive

Pump Stations:

- Ran gensets
- Changed seal water strainers
- A control relay for the Central Avenue lift station generator transfer switch was replaced by Wajax
- The louvers on the White Pine lift station generator building were adjusted
- Adjusted the radio antenna at the Church St lift station

OPERATIONAL ISSUES

There were no operational issues in the report period.

SLUDGE SUMMARY

Asselin Storage and Transportation Limited hauled a total of 92.6 m3 (11 bins) of thickened digested sludge to the Town of Fort Frances landfill site.

COMPLAINTS

There were no complaints during the report period.

BYPASS REPORT(S)

There were no bypass events during the report period.

COMMENTS

Plant power consumption for the month was 670 (x 180 multiplier) kWh.
Screen and Dewatering Upgrades at the FFWWTP have been under way since May 30, 2016.

REPORTS

ALS – Environmental Analytical Reports (on-file at plant)
Fort Frances WPCP Equipment Run Time Report (on-file at plant)
Bypass Report (on-file at plant as per occurrence)
Incident Report (on-file at plant as per occurrence)

Month	Avg. Day Flow m3	Sewage Flows Year 2016 Max Day Flow m3	Total Treated Volume ML	Total ByPass Volume ML	Total Volume ML	Usage % Plant Capacity	Sludge Volume Hauled M3
January	5668.1	5900	175712		175712	63%	249.9
February	5417.8	5665	157117		157117	60%	251.7
March	7463.4	12988	231365		231365	83%	212.7
April	8462.4	10027	253871		253871	94%	228.3
May	6785.5	8276	210352		210352	75%	241.2
June	9140.5	18874	274216	1306	275522	102%	217.4
July	8142.5	11184	252416		252416	90%	227.5
August	6150.3	7937	190658		190658	68%	130.3
September	6009.5	7299	180285		180285	67%	92.8
October	5845.3	6913	181205		181205	65%	108.0
November	5635.8	6939	169075		169075	63%	92.6
December	6045.4	6556	187407		187407	67%	92.6
Sum				1306	2464985		2145
Average	6731		205307		205415	75%	178.8
Max		18874	274216		275522		
C of A	9000	18000					

Removal Efficiency	
CBOD5	0.969750497
Suspended Solids	0.971246377
Total Phosphorus	0.918215613

	CBOD5			Suspended Solids			Total Phosphorus			Nitrogen		E. Coli
	Avg. Raw	Avg. Eff.	Avg. Load	Avg. Raw	Avg. Eff.	Avg. Load	Avg. Raw	Avg. Eff.	Avg. Load	Avg. Raw	Avg. Eff.	Geo Mean
Month	BOD	CBOD	CBOD	S.S	S.S	S.S	T.P	T.P	T.P	TKN	Total N	Counts
	(mg/L)	(mg/L)	(kg/day)	(mg/L)	(mg/L)	(kg/day)	(mg/L)	(mg/L)	(kg/day)	(mg/L)	(mg/L)	/100ml
January	87.0	2.4	13.5	142.4	6.0	34.7	2.41	0.15	0.83			23.7
February	74.3	3.5	18.5	132.5	4.3	23.2	2.12	0.11	0.57	17.3	8.9	19.3
March	65.2	2.3	16.1	112.4	5.7	47.7	1.87	0.11	0.94	15.1	9.7	21.4
April	57.5	2.4	20.2	110.8	5.6	47.1	1.54	0.13	1.11	12.0	9.7	9.3
May	68.8	2.5	17.2	125.8	4.1	27.8	2.00	0.15	3.19	14.9	10.0	14.4
June	50.5	2.0	18.5	148.1	3.9	40.0	1.40	0.19	1.81	11.8	8.6	19.3
July	49.9	2.0	15.2	124.2	4.0	32.0	1.30	0.18	1.50	11.6	8.4	6.3
August	83.4	2.0	12.2	190.1	2.3	14.3	2.40	0.23	1.40	19.8	10.2	5.8
September	80.5	2.0	12.2	141.8	3.6	21.6	2.00	0.23	1.37	15.9	8.7	11.5
October	105.3	2.3	13.2	160.7	4.6	27.0	2.62	0.21	1.23	17.6	8.5	12.8
November	101.8	2.0	11.3	166.9	2.8	15.8	2.37	0.17	0.94	18.8	9.8	2.2
December	81.6	2.0	12.1	169.3	2.7	17.0	2.18	0.12	0.72	17.2	8.3	10.6
Average	75.5	2.3	15.0	143.8	4.1	29.0	2.0	0.17	1.30	15.6	9.2	13.1
Max	105.3	3.5	20.2	190.1	6	47.7	2.6	0.23	3.19	19.8	10.2	23.7
C of A		25	225		25	225		0.9	8.1	200	6.0	200