



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Fort Frances WPCP
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January 7, 2016

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 2015 Monthly Report**

As per the operating agreement, the attached document is the December 2015 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,

A handwritten signature in black ink, appearing to read "Kelly C." followed by a stylized flourish.

Kelly Cunningham
Senior Operator

For Larry Wachter
Operations Manager

**The Corporation of the Town of Fort Frances
Wastewater Treatment Plant
(Sewage Plant)
December 2015 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 2015; 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 received and operates its operation under *Certificate of Approval Number 3-0049-96-006*, in accordance with Section 53 of the Ontario Water Resources Act. The Certificate of Approval 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 2015 EFFLUENT QUALITY

<i>Parameters</i>	<i>Monthly Actual Concentration mg/L</i>	<i>Compliance Criteria Concentration mg/L</i>	<i>Performance Objective Concentration mg/L</i>	<i>Monthly Actual Loading, kg/d</i>	<i>Compliance Criteria Loading kg/d</i>	<i>Performance Objective Loading kg/d</i>
CBOD ₅	2.3 mg/L	25 mg/L	15 mg/L	14.3 kg/d	225 kg/d	135 kg/d
Suspended Solids	4.8 mg/L	25 mg/L	15 mg/L	30.1 kg/d	225 kg/d	135 kg/d
Total Phosphorus	0.15 mg/L	1.0 mg/L	1.0 mg/L	0.9 kg/d	9 kg/d	9 kg/d
Ammonia as N	0.986 mg/L					
Nitrite as N	0.13 mg/L					
Nitrate as N	6.31 mg/L					
Total Cl ₂ Residual		<0.01 mg/L (when in use)				
E-Coli		14.4 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 7.6 to 8.0; average pH was 7.7			
Temperature degrees C			Temperatures ranged from 10.5 – 12.5 average temperature of effluent at 11.5			

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

WASTEWATER LIQUID PROCESS

The average daily flow for December was 6109.8 m³/day. This represents 68% of the design average flow. Total treated flow for the month was 189403 m³.

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 Certificate of Approval.

INVENTORY

Chemical	End of Month Status	Units
Hypochlorite	940 +/- @ 7.0% + 615 @ 12%	Litres
Alum	19.6 +/- @ 60 %	Cubic meters
Polymer	5 Bags (125 kg)	Bags (25 kg/bag)

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 GBT, mechanical bar screen and grit snail. Lubricated drive chain on grit snail and bar screen
- Regular cleaning of head works EW basket strainer
- Installed a new set of brushes in the polymer mixer motor
- Regular cleaning of seal water strainer TFP 9-5
- UV bank A sensor cable was exchanged
- Replaced UV intensity sensor UV bank C
- Greased all blowers
- Removed debris from grit pump 2 twice
- Replaced belt head works exhaust fan
- Replaced battery in Verbatim auto dialer
- Installed new belts blower 4
- Changed oil in both grit pump gear boxes
- Replaced differential pressure gauge blower 3 and pressure gauges blowers 1 and 3
- Changed filter blower 3
- Removed rag balls from clarifier 2 inlet weir
- Hot water flushed alum lines
- Reversed hose and calibrated influent sampler
- Thawed frozen sludge line to bin

Pump Stations:

- Ran gensets
- Changed seal water strainers
- Cleaned bar screens
- Replaced couplant Boundary Road lift station flow meter transducer
- Tightened loose wire on flow meter circuit at Church street lift station

OPERATIONAL ISSUES

There was an overnight power outage that did not generate a call from the auto dialer. The incident was reported, the battery in the auto dialer has been replaced and a daily automatic SCADA generated test alarm has been programmed.

SLUDGE SUMMARY

The volume directed to the gravity belt thickener totaled 659.8 m³ for the month. Asselin Transportation and Storage Limited hauled a total of 278.6 m³ of thickened digested sludge (average 12.1m³/load) to the Town of Fort Frances landfill site.

COMPLAINTS

There were no complaints during the report period.

BY-PASS REPORT(S)

There were no bypass events in the report period.

COMMENTS

Plant power consumption for the month was 673 (x 180 multiplier) kWh.
A daily automatic SCADA generated test alarm of the auto dialer has been programmed.

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)

Month	Sewage Flows Year 2015					Usage		Removal Efficiency	
	Avg. Day Flow	Max Day Flow	Total Treated	Total ByPass	Total Volume	% Plant Capacity	Sludge Volume	CBOD5	Suspended Solids
	m3	m3	Volume ML	Volume ML	ML		Hauled	Total Phosphorus	
January	5205.2	5615	161362		161362	58%	133.6		0.960104867
February	5008.5	5247	140237		140237	56%	163.2		0.955352275
March	5608.6	6833	173865		173865	62%	244.8		
April	5628.8	5970	168865		168865	63%	239.8		
May	7834.5	15983	242869		242869	87%	240.3		
June	7292.4	10570	218773		218773	81%	217.4		
July	5805.5	6247	179969		179969	65%	242.8		
August	5920.3	6606	183529		183529	66%	217.3		
September	5437.1	5822	163113		163113	60%	239.6		
October	5155.1	6109	159808		159808	57%	119.6		
November	6299.7	9543	188990		188990	70%	121.8		
December	6109.8	6561	189403		189403	68%	278.6		
Sum				0	2170783		2458.8		
Average	5942		180899		180899	66%	204.9		
Max		15983	242869		242869				
C of A	9000	18000							

Month	CBOD5				Suspended Solids				Total Phosphorus				E. Coli		pH	
	Avg Raw CBOD (mg/L)	Avg. Eff. CBOD (mg/L)	Avg. Load CBOD (kg/day)	Avg Raw S.S (mg/L)	Avg. Eff. S.S (mg/L)	Avg. Load S.S (kg/day)	Avg Raw T.P (mg/L)	Avg. Eff. T.P (mg/L)	Avg. Load T.P (kg/day)	Geo Mean Counts /100ml	Monthly Minimum	Monthly Maximum				
January	84.5	2.6	13.6	151.9	6.0	31.0	2.5	0.23	1.18	17.8	6.8	7.6				
February	87.0	3.1	15.3	136.4	6.4	32.1	2.2	0.22	1.12	8.3	6.9	7.5				
March	62.8	3.5	19.6	127.6	8.0	45.1	1.9	0.23	1.29	14.8	6.8	7.5				
April	66.3	4.4	24.7	135.3	7.8	44.2	1.9	0.28	1.57	56.6	6.8	7.2				
May	48.5	3.6	34.9	109.6	5.4	43.4	1.4	0.18	1.40	20.1	6.8	7.3				
June	51.2	2.7	19.8	115.8	4.2	31.7	1.3	0.17	1.30	8.3	7.0	7.5				
July	74.8	2.1	12.4	133.1	3.5	20.6	2.1	0.22	1.30	5.8	7.1	7.7				
August	82.8	2.2	13.1	147.3	6.8	40.6	2.7	0.22	1.30	13.3	7.3	7.9				
September	76.0	4.1	22.2	157.6	10.5	56.6	2.3	0.25	1.34	76.4	7.4	7.8				
October	99.8	2.2	10.8	156.9	6.6	34.5	2.5	0.21	1.08	9.9	7.5	7.8				
November	73.0	2.2	11.9	145.1	3.7	24.8	2.1	0.14	0.91	5.0	7.6	7.9				
December	70.6	2.3	14.3	134.1	4.8	30.1	2.1	0.15	0.87	14.4	7.6	8.0				
Average	73.1	2.9	17.7	137.6	6.1	36.2	2.1	0.21	1.22	20.9	7.1	7.6				
Max	99.8	4.4	34.9	157.6	10.5	56.6	2.7	0.28	1.57	76.4	7.6	8				
C of A		25	225		25	225		1	9	200	6.0	9.5				