

## Quarterly Operations Report

**Reporting Period: Q3 2011**

### 1. Introduction

The Chalk River wastewater system operates in contact stabilization mode, which allows for a system capacity of 545m<sup>3</sup>/d. Flow from 12 km of sewage collection mains empty into two lift stations, one of which pumps the flow to the WWTP.

Large solids are screened; floatable material and excess sludge are removed from the system. Re-aeration is conducted using blowers and air diffusers, and effluent is chlorinated (for disinfection) prior to discharge into Black Duck Creek.

### 2. Regulatory Issues

AW Canada has made every effort during the reporting period to operate this wastewater system in accordance with applicable laws, certificates and regulations. To the best of our knowledge, the following report truthfully and accurately reflects any and all matters of non-compliance regarding the ownership and operation of the wastewater treatment plant during the reporting period.

During this period, the plant was operated in full compliance with applicable laws, regulations and the WWTP's Certificate of Approval, save and except for the following:

<input checked="" type="checkbox"/>	None during this period
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Or

Requirement	Duration of Failure	Measures to Correct the Failure

### 3. Compliance with Quality/Quantity Criteria

#### Condition 1.1 – Quantity Criteria

Month	Average Day	Plant Utilization (based on Avg. Day)	Max. Day
July	566 m <sup>3</sup> /d	104%	656 m <sup>3</sup>
August	419 m <sup>3</sup> /d	76.9%	500 m <sup>3</sup>
Sept.	388 m <sup>3</sup> /d	71.2%	427 m <sup>3</sup>

Plant Average Day Design Capacity is 545 m<sup>3</sup>/d

### Condition 3.1 – Effluent Quality Criteria

In Tables 1 and 2, monitoring data and analytical results are compared to the Effluent Concentration Criteria and Loading Criteria as listed under Section 14 of the Certificate of Approval.

**Table 1 – Q3 2011 Compliance (concentration)**

<i>Effluent Parameter</i>	July Average Concentration (mg/L)	Aug. Avg. Concentration (mg/L)	Sept. Avg. Concentration (mg/L)	C of A Limits (mg/L)	In Compliance (YES OR NO)
<b>BOD<sub>5</sub></b>	6.0	6.3	5.5	25.0	YES
<b>TSS</b>	6.5	17.0	8.0	25.0	YES
<b>TP</b>	0.48	0.47	0.61	1.0	YES

Concentration compliance is determined by annual averages for BOD and TSS; monthly for TP.

<i>Effluent Parameter</i>	July Average Loading (kg/d)	Aug. Average Loading (kg/d)	Sept. Avg. Loading (kg/d)	C of A Limits (kg/d (annual))	In Compliance (YES OR NO)
<b>BOD<sub>5</sub></b>	3.40	2.64	2.13	13.6	YES
<b>TSS</b>	3.68	7.12	3.10	13.6	YES
<b>TP</b>	0.27	0.20	0.24	0.5	YES

Loadings compliance is determined by annual averages  
See attached table for compliance data

## 4. Quality Assurance/Quality Control

Caduceon Environmental Laboratories conducts the required physical, chemical and biological testing of influent and effluent from the WWTP.

## 5. Maintenance Summary

Highlights of maintenance conducted in the reporting period are as follows:

<b>Plant Area/Equipment</b>	<b>Activity</b>
Pump Station	Removed #2 wet well pump. Replaced with backup Cleaning of pump stations
Chemical system	None
Process (clarifiers, aeration, blowers)	Regular blower maintenance conducted
Other	Contingency plans updated Manhole inspections

## **6. Environmental/Operating Problems**

Valve handles from initial contact tank to the settling clarifier are rotted out so there is no way to isolate these tanks if maintenance is required. See recommendation in #7 below.

System is currently operating within capacity.

## **7. Proposed Alterations, Extensions or Replacements**

It is proposed that some camera work be done to determine the extent of infiltration of storm water into the system. Flows into the sewage system are often much higher than the flow being treated by the drinking water system.

It should also be investigated the number of sump pumps that pump directly into the sewage system, as heavier flows are noticed in the system within 24 hours of a heavy rain.

It is recommended that new isolation valves be purchased (4 in total) for various areas of the sewage plant.

## **8. Calibration Procedures**

Certified flow meter calibration conducted in September

## **9. Health & Safety Items**

Quarterly H&S workplace inspection checklists were completed. No issues to report.

## **10. Status of Capital Projects**

No Capital Projects are currently being undertaken.

## **11. Other Items**

It is strongly recommended that the sewage plant settling cells be taken off line, drained, emptied of all accumulated solids, and inspected. This can be done in stages to avoid taking the entire plant down at once.

Chalk River  
Wastewater Operations



Year: 2011

Municipality: Laurentian Hills

Project: Chalk River W.P.C.P.

Design Cap.: 0.363 ML/d in extended aeration mode

0.545 ML/d in contact stabilization mode

Description: -two pumping stations.

- extended aeration/contact stabilization process

Month	FLOWS			BIOCHEMICAL O2 DEMAND			SUSPENDED SOLIDS			PHOSPHORUS		
	Total Flow ML	Avg. Day Flow ML	Max Day Flow ML	Avg. Raw BOD (mg/L)	Avg. Eff. BOD (mg/L)	Avg. Load BOD (kg/day)	Avg. Raw SS (mg/L)	Avg. Eff. SS (mg/L)	Avg. Load SS (kg/day)	Avg. Raw Phos. (mg/L)	Avg. Eff. Phos. (mg/L)	Avg. Load Phos. (kg/day)
January	11.60	0.374	0.548	82.0	10.5	2.36	123.8	9.8	3.67	3.24	0.27	0.10
February	10.20	0.364	0.494	176.0	11.0	4.00	228.0	6.5	2.37	3.93	0.27	0.10
March	12.61	0.407	0.544	53.0	4.3	1.75	174.7	7.3	2.97	3.03	0.45	0.18
April	16.77	0.559	0.718	20.5	7.0	3.91	42.0	4.0	2.24	1.77	0.67	0.37
May	17.32	0.559	0.656	55.0	11.5	6.43	96.5	6.0	3.35	2.53	0.44	0.25
June	16.43	0.548	0.885	34.5	11.0	6.03	96.0	4.0	2.19	2.52	0.31	0.17
July	17.55	0.566	0.656	27.0	6.0	3.40	62.0	6.5	3.68	2.38	0.48	0.27
August	13.00	0.419	0.500	60.3	6.3	2.64	186.7	17.0	7.12	2.75	0.47	0.20
September	11.65	0.388	0.427	12.0	5.5	2.13	94.0	8.0	3.10	3.00	0.61	0.24
October						0.00			0.00			0.00
November						0.00			0.00			0.00
December						0.00			0.00			0.00
<b>AVERAGE</b>	<b>14.13</b>	<b>0.465</b>	<b>0.603</b>	<b>57.8</b>	<b>8.1</b>	<b>2.7</b>	<b>122.6</b>	<b>7.7</b>	<b>2.6</b>	<b>2.79</b>	<b>0.44</b>	<b>0.16</b>
<b>MAXIMUM</b>	17.55		0.885	176.0	11.5		228.0	17.0		3.9	0.67	
<b>% Removal</b>					86.0%			93.7%			84.2%	
<b>CRITERIA</b>					<b>25.00</b>	<b>13.6</b>		<b>25.00</b>	<b>13.6</b>		<b>1.00</b>	<b>0.5</b>
<b>MEETS Concentration Criteria</b>					<b>YES</b>	<b>YES</b>		<b>YES</b>	<b>YES</b>		<b>YES</b>	<b>YES</b>

Reasons for failure / Other Problems:

Remedial Actions:

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