

TOWNSHIP OF BONNECHERE VALLEY  
EGANVILLE SEWAGE TREATMENT PLANT  
BIOSOLIDS / SEPTAGE DEWATERING FACILITY  
GEOTUBE / SEPTAGE PILOT PROJECT

SUPPLEMENTAL REPORT

DECEMBER 2010

Prepared for

OPERATIONS COMMITTEE  
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Appendix 3. Eganville STP Annual Sludge Reports (Revised)

## 1. Introduction

This is a Supplemental Report to the March 2010 Final Report on the Geotube / Septage Pilot Project carried out at the Township of Bonnechere Valley, Eganville Sewage Treatment Plant, Biosolids/Septage Dewatering Facility.

The objective of this report is to identify the final quality and disposition of the dewatered septage and to correct some analysis interpretation relating to metal content.

## 2. Quality

On October 14, 2010 a composite sample of the dewatered septage was collected from Geotube 2B(1) and submitted to Caduceon Environmental Laboratories in Ottawa for analysis.

<b>Parameter</b>	<b>Septage</b>	<b>MOE Table 1</b>
<b>Metals</b>	mg/Kg	mg/Kg
Arsenic	2	170
Cadmium	1.6	34
Chromium	30	2800
Cobalt	3	340
Copper	423	1700
Lead	30	1100
Mercury	0.75	11
Molybdenum	5	94
Nickel	20	420
Selenium	5	34
Zinc	1010	4200
<b>Nutrients</b>		
Total Kjeldahl Nitrogen	27700	
Ammonia (N)- Total	2.69	
Phosphorus - Total	17600	
Phosphorus – Extr.	175	
<b>Physical</b>		
pH	6.9	
Total Solids	12.7 % by wt.	
<b>Microbiological</b>		
e-coli	<1000 cfu/g	

As can be seen the dewatered and stabilized septage easily meets the MOE Table 1 criteria for metals and provides a reasonable nutrient supply of Nitrogen and Phosphorus. Pathogens are significantly reduced and well below the MOE biosolids criteria.

### 3. Volume Reduction

From April 2008 to December 2009 approximately 677 m<sup>3</sup> of raw septage was processed into one Geotube. In October 2010 the Geotube was measured and calculated to contain approximately 35 m<sup>3</sup> of dewatered septage.

### 4. Odour

On October 14, 2010 the Geotube was opened for removal of the contents. A slight musty sewage odour was observed as the front end loader disturbed the dewatered septage but was only evident within a few metres of the operation. No odour was observed during the transportation and utilization of the material.

### 5. Disposition

The dewatered septage was removed from the Geotube and transported to an approved Organic Soil Conditioning Site for utilization. The following pictures indicate the physical condition of the material as it was being removed from the opened Geotube.





## **6. Analysis Interpretation Correction**

In the March 2010 Final Report some analytical lab reports were misinterpreted due to the utilization of wet sample vs. dry sample analysis. This skewed the metal to solids concentration and indicated that some metals were in exceedance of the MOE Table 1 criteria.

The comparison summary for the biosolids generated by the Eganville STP aerobic digester in Section 7.4.2 Analysis, page 23, of the March 2010 Final Report is revised as follows and clearly indicates that the dewatered biosolids meet the MOE Table 1 Criteria.

PARAMETER	BIOSOLIDS		DEWATERED				MOE*
	2008	2009	2008 Sludge		2009 Sludge		
			Geotube 3A(1)	Geotube 2A(1)	Geotube 1A(1)	Geotube 1B(2)	
METALS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	1.1	3.9	1.3	0.9	1.6	1.6	170
Cadmium	1.4	1.4	1.3	0.6	0.7	<0.5	34
Chromium	12	10	14	14	18	27	2800
Cobalt	1.6	1.5	2	2	3	3	340
Copper	351	385	432	432	509	521	1700
Lead	21	11	24	25	45	33	1100
Mercury	1	1	0.9	0.7	0.9	0.9	11
Molybdenum	5	3	3	3	3	4	94
Nickel	10	8	9	9	13	15	420
Selenium	3.0	4.3	1.5	<0.5	0.2	0.4	34
Zinc	341	276	399	409	358	379	4200

\*Table 1: Criteria for Metal Content in Sewage Biosolids

PARAMETER	BIOSOLIDS		DEWATERED			
	2008	2009	2008 Sludge		2009 Sludge	
			Geotube 3A(1)	Geotube 2A(1)	Geotube 1A(1)	Geotube 1B(2)
NUTRIENTS	mg/l	mg/l	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ammonia (N) Total	12	8	2850	3210	13900	15900
Total Phosphorus	682	680	35900	32100	40200	32200
TKN	1200	1000	38500	31000	39100	30000
PHYSICAL						
pH	7.0	7.2	7.0	7.5	7.8	7.9
Total Solids	2%	2%	14%	14%	11%	11%
MICROBIOLOGICAL						
E. coli (cfu/g)			<10000	<10000	<10000	<10000