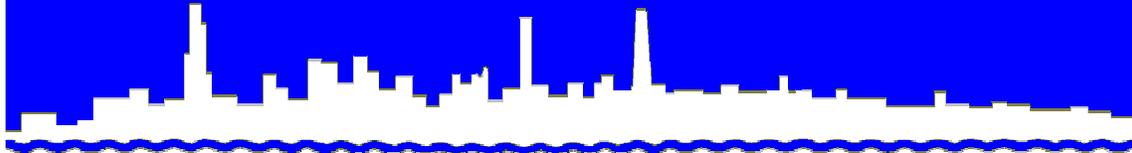


*Protecting Our Water Environment*



***Metropolitan Water Reclamation District of Greater Chicago***

***MONITORING AND RESEARCH  
DEPARTMENT***

***REPORT NO. 12-7***

***CALUMET EAST SOLIDS MANAGEMENT***

***AREA MONITORING REPORT FOR***

***FOURTH QUARTER 2011***

***FEBRUARY 2012***

**Metropolitan Water Reclamation District of Greater Chicago**

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February 22, 2012

Mr. S. Alan Keller, P.E.  
Manager, Permit Section  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794 - 9276

Dear Mr. Keller:

Subject: Calumet East Solids Management Area - Calumet Water Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2010-AO-0265, Monitoring Report for October, November, and December 2011

The attached six tables contain the monitoring data for the Calumet East Solids Management Area for October, November, and December 2011 as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2010-AO-0265.

The data reported are as follows:

- Table 1 Analysis of Water from Lysimeters L-1N Through L-6N at the Calumet East Solids Management Area Sampled on October 12, 2011
- Table 2, Analysis of Monthly Compositated Biosolids Placed in the Calumet East Solids Management Drying Area During October 2011
- Table 3, Analysis of Monthly Compositated Biosolids Placed in the Calumet East Solids Management Drying Area During November 2011
- Table 4, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During October 2011
- Table 5, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During November 2011

Subject: Calumet East Solids Management Area - Calumet Water Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2010-AO-0265, Monitoring Report for October, November, and December 2011

Table 6, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During December 2011

Biosolids were placed in the solids drying area during October and November and removed from the site during October, November, and December 2011.

Very truly yours,

Thomas C. Granato, Ph.D.  
Director  
Monitoring and Research

TCG:PL:cm

Attachments

cc w/att: R. Sulski, IEPA  
Records Unit, IEPA

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS L-1N  
THROUGH L-6N AT THE CALUMET EAST SOLIDS MANAGEMENT  
AREA SAMPLED ON OCTOBER 12, 2011

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH <sup>1</sup>		7.9	8.1	8.1	8.1
EC	mS/m	415	367	293	835
Total Dissolved Solids	mg/L	3,854	3,806	2,976	6,024
Total Dissolved Organic Carbon	"	8	15	7	10
Cl <sup>-</sup>	"	176	139	57	866
SO <sub>4</sub> <sup>=</sup>	"	1,976	1,663	1,308	2,246
TKN	"	9	3	< 0.5	2
NH <sub>3</sub> -N	"	4	2	0.5	2
NO <sub>2</sub> + NO <sub>3</sub> -N	"	0.19	0.10	0.09	0.10
Total P	"	< 0.10	3.5	1.3	0.28
Alkalinity as CaCO <sub>3</sub>	"	531	571	441	618
Al	"	< 1.0	< 1.0	< 1.0	< 1.0
Ca	"	496	538	418	580
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.003	< 0.003	< 0.003	< 0.003
Cu	"	< 0.005	0.011	< 0.005	< 0.005
Fe	"	12	21	12	47
Hg	μg/L	< 0.20	< 0.20	< 0.20	< 0.20
K	mg/L	10	9	6	12
Mg	"	285	249	198	316
Mn	"	0.188	0.666	0.558	0.976
Na	"	187	110	58	684
Ni	"	< 0.008	0.014	< 0.008	< 0.008
Pb	"	< 0.03	< 0.03	< 0.03	< 0.03
Zn	"	< 0.02	0.09	< 0.02	< 0.02

TABLE 1 (Continued): ANALYSIS OF WATER FROM LYSIMETERS L-1N THROUGH L-6N AT THE CALUMET EAST SOLIDS MANAGEMENT AREA SAMPLED ON OCTOBER 12, 2011

Parameter	Unit	Lysimeter No.	
		L-5	L-6N
pH <sup>1</sup>		8.1	8.3
EC	mS/m	199	179
Total Dissolved Solids	mg/L	1,582	1,584
Total Dissolved Organic Carbon	"	< 1	7
Cl <sup>-</sup>	"	221	22
SO <sub>4</sub> <sup>=</sup>	"	527	667
TKN	"	< 0.5	0.6
NH <sub>3</sub> -N	"	< 0.1	0.9
NO <sub>2</sub> + NO <sub>3</sub> -N	"	0.49	0.32
Total P	"	0.20	4.0
Alkalinity as CaCO <sub>3</sub>	"	240	362
Al	"	< 1.0	< 1.0
Ca	"	205	214
Cd	"	< 0.001	< 0.001
Cr	"	< 0.003	< 0.003
Cu	"	< 0.005	< 0.005
Fe	"	< 0.2	3
Hg	μg/L	< 0.20	< 0.20
K	mg/L	4	4
Mg	"	95.3	95.9
Mn	"	0.043	0.251
Na	"	89	78
Ni	"	< 0.008	< 0.008
Pb	"	< 0.03	< 0.03
Zn	"	< 0.02	< 0.02

<sup>1</sup>pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF MONTHLY COMPOSITED BIOSOLIDS  
PLACED IN THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA  
DURING OCTOBER 2011

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Parameter	Unit	Concentration <sup>1</sup>
pH		7.8
Total Solids	%	7.9
Total Volatile Solids <sup>2</sup>	”	45.4

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<sup>1</sup>Values are the means of six samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.

TABLE 3: ANALYSIS OF MONTHLY COMPOSITED BIOSOLIDS  
 PLACED IN THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA  
 DURING NOVEMBER 2011

Parameter	Unit	Concentration <sup>1</sup>
pH		8.0
Total Solids	%	6.2
Total Volatile Solids <sup>2</sup>	”	48.6

<sup>1</sup>Values are the means of four samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING OCTOBER 2011

Parameter	Unit	Concentration <sup>1</sup>
pH		7.8
Total Solids	%	35.8
Total Volatile Solids <sup>2</sup>	"	45.9
TKN	mg/kg	23,183
NH <sub>3</sub> -N	"	6,202
Total P	"	19,731
Al	"	7,398
Ca	"	44,220
Cd	"	2
Cr	"	47
Cu	"	376
Fe	"	20,097
Hg	"	0.94
K	"	3,043
Mg	"	15,334
Mn	"	892
Na	"	2,179
Ni	"	27
Pb	"	75
Zn	"	962

<sup>1</sup>Values are the means of three samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING NOVEMBER 2011

Parameter	Unit	Concentration <sup>1</sup>
pH		6.5
Total Solids	%	69.1
Total Volatile Solids <sup>2</sup>	"	36.5
TKN	mg/kg	11,246
NH <sub>3</sub> -N	"	1,351
Total P	"	14,014
Al	"	9,219
Ca	"	45,754
Cd	"	2
Cr	"	66
Cu	"	404
Fe	"	22,714
Hg	"	1.1
K	"	1,851
Mg	"	17,062
Mn	"	961
Na	"	425
Ni	"	34
Pb	"	92
Zn	"	1,094

<sup>1</sup>Values are the means of two samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.

TABLE 6: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING DECEMBER 2011

Parameter	Unit	Concentration <sup>1</sup>
pH		7.9
Total Solids	%	27.7
Total Volatile Solids <sup>2</sup>	"	45.9
TKN	mg/kg	27,391
NH <sub>3</sub> -N	"	5,713
Total P	"	24,071
Al	"	8,773
Ca	"	45,141
Cd	"	2
Cr	"	56
Cu	"	379
Fe	"	21,033
Hg	"	0.61
K	"	3,036
Mg	"	16,775
Mn	"	937
Na	"	1,729
Ni	"	29
Pb	"	78
Zn	"	976

<sup>1</sup>Values are the means of two samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.