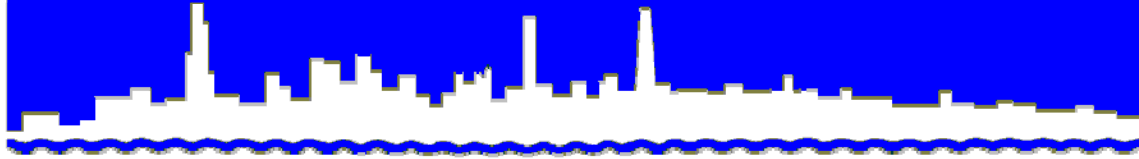


*Protecting Our Water Environment*



**Metropolitan Water Reclamation District of Greater Chicago**

*MONITORING AND RESEARCH  
DEPARTMENT*

**REPORT NO. 13-28**

**CALUMET EAST SOLIDS MANAGEMENT AREA**

**MONITORING REPORT FOR**

**SECOND QUARTER 2013**

**September 2013**

# Protecting Our Water Environment

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August 22, 2013

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 April, May, and June 2013

The attached five tables contain the monitoring data for the Calumet East Solids Management Area for April, May, and June 2013 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 May 8, 2013
- Table 2, Analysis of Monthly Compositated Biosolids Placed in the Calumet East Solids Management Drying Area During May 2013
- Table 3, Analysis of Monthly Compositated Biosolids Placed in the Calumet East Solids Management Drying Area During June 2013
- Table 4, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During May 2013
- Table 5, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During June 2013

Mr. S. Alan Keller

2

August 22, 2013

Subject: Calumet East Solids Management Area - Calumet Water Reclamation  
Plant, Illinois Environmental Protection Agency Permit No. 2010-AO-  
0265, Monitoring Report for April, May, and June 2013

Biosolids were placed in the solids drying area and removed from the site during May  
and June.

Very truly yours,

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

TCG:PL:cm

Attachments

cc w/att: Mr. Patel, 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 MAY 8, 2013

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH <sup>1</sup>		8.0	7.9	8.0	7.8
EC	mS/m	399	361	289	967
Total Dissolved Solids	mg/L	NA <sup>2</sup>	3,742	3,004	6,504
Total Dissolved Organic Carbon	"	8	11	6	10
Cl <sup>-</sup>	"	159	136	46	346
SO <sub>4</sub> <sup>=</sup>	"	2,153	1,794	1,536	2,674
Alkalinity as CaCO <sub>3</sub>	"	446	573	361	625
TKN	"	14	3	< 1	2
NH <sub>3</sub> -N	"	5	2	0.4	1
NO <sub>2</sub> + NO <sub>3</sub> -N	"	< 0.15	< 0.15	< 0.15	< 0.15
Total P	"	< 0.20	2.8	0.75	0.28
Al	"	< 1.0	< 1.0	< 1.0	< 1.0
Ca	"	422	448	370	487
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005	< 0.005	< 0.005
Fe	"	8	19	9	74
Hg	μg/L	< 0.20	< 0.20	< 0.20	< 0.20
K	mg/L	11	11	6	16
Mg	"	297	263	218	347
Mn	"	0.157	0.548	0.459	0.484
Na	"	181	123	67	555
Ni	"	0.009	< 0.005	< 0.005	< 0.005
Pb	"	< 0.02	< 0.02	< 0.02	< 0.02
Zn	"	< 0.01	< 0.01	< 0.01	< 0.01

TABLE 1 (Continued): ANALYSIS OF WATER FROM LYSIMETERS L-1N  
THROUGH L-6N AT THE CALUMET EAST SOLIDS MANAGEMENT  
AREA SAMPLED ON MAY 8, 2013

Parameter	Unit	Lysimeter No.	
		L-5	L-6N
pH <sup>1</sup>		8.1	8.2
EC	mS/m	193	176
Total Dissolved Solids	mg/L	1,652	1,596
Total Dissolved Organic Carbon	"	< 1	7
Cl <sup>-</sup>	"	204	19
SO <sub>4</sub> <sup>=</sup>	"	584	736
Alkalinity as CaCO <sub>3</sub>	"	239	352
TKN	"	< 1	< 1
NH <sub>3</sub> -N	"	< 0.1	0.9
NO <sub>2</sub> + NO <sub>3</sub> -N	"	0.40	0.16
Total P	"	< 0.20	3.3
Al	"	< 1.0	< 1.0
Ca	"	191	199
Cd	"	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005
Fe	"	0.2	3
Hg	μg/L	< 0.20	< 0.20
K	mg/L	4	5
Mg	"	99	103
Mn	"	0.050	0.192
Na	"	96	89
Ni	"	< 0.005	< 0.005
Pb	"	< 0.02	< 0.02
Zn	"	< 0.01	< 0.01

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

<sup>2</sup>No analysis; insufficient sample.

TABLE 2: ANALYSIS OF MONTHLY COMPOSITED BIOSOLIDS  
 PLACED IN THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA  
 DURING MAY 2013

Parameter	Unit	Concentration <sup>1</sup>
pH		7.8
Total Solids	%	6.5
Total Volatile Solids <sup>2</sup>	"	48.5

<sup>1</sup>Values are for one sample.

<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 JUNE 2013

Parameter	Unit	Concentration <sup>1</sup>
pH		7.1
Total Solids	%	24.5
Total Volatile Solids <sup>2</sup>	"	46.9

<sup>1</sup>Values are the means of two 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 MAY 2013

Parameter	Unit	Concentration <sup>1</sup>
pH		7.7
Total Solids	%	22.0
Total Volatile Solids <sup>2</sup>	"	45.3
TKN	mg/kg	35,291
NH <sub>3</sub> -N	"	10,323
Total P	"	26,405
Al	"	11,265
Ca	"	47,636
Cd	"	2
Cr	"	49
Cu	"	379
Fe	"	21,060
Hg	"	2.8
K	"	3,333
Mg	"	16,940
Mn	"	943
Na	"	1,456
Ni	"	26
Pb	"	77
Zn	"	960

<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 JUNE 2013

Parameter	Unit	Concentration <sup>1</sup>
pH		7.8
Total Solids	%	46.3
Total Volatile Solids <sup>2</sup>	"	44.7
TKN	mg/kg	27,725
NH <sub>3</sub> -N	"	4,001
Total P	"	25,917
Al	"	11,914
Ca	"	51,036
Cd	"	2
Cr	"	50
Cu	"	397
Fe	"	21,074
Hg	"	0.81
K	"	2,623
Mg	"	17,118
Mn	"	878
Na	"	650
Ni	"	26
Pb	"	74
Zn	"	1,041

<sup>1</sup>Values are for one sample.

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