

*Protecting Our Water Environment*



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

***MONITORING AND RESEARCH  
DEPARTMENT***

***REPORT NO. 12-8***

***CALUMET WEST 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 West 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 five tables contain the monitoring data for the Calumet West 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-3N at the Calumet West Solids Management Area Sampled on October 12, 2011

Table 2, Analysis of Monthly Compositated Biosolids Placed in the Calumet West Solids Management Drying Area During November 2011

Table 3, Analysis of Monthly Compositated Biosolids Placed in the Calumet West Solids Management Drying Area During December 2011

Table 4, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During November 2011

Table 5, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During December 2011

Mr. S. Alan Keller

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

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-3N AT THE CALUMET WEST SOLIDS MANAGEMENT  
AREA SAMPLED ON OCTOBER 12, 2011

Parameter	Unit	Lysimeter No.		
		L-1N	L-2N	L-3N
pH <sup>1</sup>		8.3	8.9	8.1
EC	mS/m	321	281	374
Total Dissolved Solids	mg/L	3,154	1,652	3,892
Total Dissolved Organic Carbon	"	3	5	2
Cl <sup>-</sup>	"	63	24	53
SO <sub>4</sub> <sup>=</sup>	"	1,653	1,506	1,959
TKN	"	0.7	2	0.8
NH <sub>3</sub> -N	"	0.8	2	1
NO <sub>2</sub> + NO <sub>3</sub> -N	"	0.10	0.11	0.09
Total P	"	< 0.10	< 0.10	< 0.10
Alkalinity as CaCO <sub>3</sub>	"	290	47	250
Al	"	< 1.0	< 1.0	< 1.0
Ca	"	336	513	415
Cd	"	< 0.001	< 0.001	< 0.001
Cr	"	< 0.003	< 0.003	< 0.003
Cu	"	< 0.005	< 0.005	0.006
Fe	"	0.5	< 0.2	4
Hg	μg/L	< 0.20	< 0.20	< 0.20
K	mg/L	13	26	9
Mg	"	218	13.1	263
Mn	"	0.098	0.007	0.259
Na	"	174	199	202
Ni	"	< 0.008	< 0.008	< 0.008
Pb	"	< 0.03	< 0.03	< 0.03
Zn	"	< 0.02	< 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 WEST SOLIDS MANAGEMENT DRYING AREA  
DURING NOVEMBER 2011

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Parameter	Unit	Concentration <sup>1</sup>
pH		8.0
Total Solids	%	4.6
Total Volatile Solids <sup>2</sup>	”	51.8

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

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

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

Parameter	Unit	Concentration <sup>1</sup>
pH		8.1
Total Solids	%	5.2
Total Volatile Solids <sup>2</sup>	”	48.7

<sup>1</sup>Values are the means of five 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 WEST SOLIDS MANAGEMENT DRYING AREA DURING NOVEMBER 2011

Parameter	Unit	Concentration <sup>1</sup>
pH		7.5
Total Solids	%	30.9
Total Volatile Solids <sup>2</sup>	"	44.2
TKN	mg/kg	28,196
NH <sub>3</sub> -N	"	3,681
Total P	"	25,459
Al	"	13,900
Ca	"	44,073
Cd	"	2
Cr	"	60
Cu	"	364
Fe	"	22,631
Hg	"	0.78
K	"	4,233
Mg	"	16,573
Mn	"	934
Na	"	1,433
Ni	"	28
Pb	"	82
Zn	"	989

<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 WEST SOLIDS MANAGEMENT DRYING AREA DURING DECEMBER 2011

Parameter	Unit	Concentration <sup>1</sup>
pH		7.6
Total Solids	%	33.8
Total Volatile Solids <sup>2</sup>	"	41.0
TKN	mg/kg	24,320
NH <sub>3</sub> -N	"	4,010
Total P	"	21,451
Al	"	8,228
Ca	"	48,834
Cd	"	2
Cr	"	64
Cu	"	361
Fe	"	20,733
Hg	"	0.92
K	"	2,236
Mg	"	19,687
Mn	"	893
Na	"	1,020
Ni	"	30
Pb	"	82
Zn	"	934

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

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