

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 10-54

CALUMET WEST SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

THIRD QUARTER 2010

DECEMBER 2010

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street

Chicago, Illinois 60611-3154

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December 1, 2010

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 July, August, and September 2010

The attached seven tables contain the monitoring data for the Calumet West Solids Management Area for July, August, and September 2010 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 July 14, 2010
- Table 2, Analysis of Monthly Compositated Biosolids Placed in the Calumet West Solids Management Drying Area During July 2010
- Table 3, Analysis of Monthly Compositated Biosolids Placed in the Calumet West Solids Management Drying Area During August 2010
- Table 4, Analysis of Monthly Compositated Biosolids Placed in the Calumet West Solids Management Drying Area During September 2010
- Table 5, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During July 2010

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Table 6, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During August 2010

Table 7, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During September 2010

Three new lysimeters, L-1N, L-2N, and L-3N, were installed at this site in September 2008 as replacements for L-1, L-2, and L-3, respectively. In June 2010, the IEPA terminated monitoring of the old lysimeters. Data for these lysimeters will no longer be included in the quarterly report.

Biosolids were placed in and removed from the solids drying area during July, August, and September 2010.

Very truly yours,

Louis Kollias
Director
Monitoring and Research

LK:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Granato/O'Connor

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS L-1N
THROUGH L-3N AT THE CALUMET WEST SOLIDS MANAGEMENT
AREA SAMPLED ON JULY 14, 2010

Parameter	Unit	Lysimeter No.		
		L-1N	L-2N	L-3N
pH ¹		8.0	10.0	
EC	mS/m	304	231	
Total Dissolved Solids	mg/L	2,972	1,998	
Total Dissolved Organic Carbon	"	3	6	
Cl ⁻	"	58	28	
SO ₄ ⁼	"	1,557	1,147	
TKN	"	1	3	
NH ₃ -N	"	0.7	2	L
NO ₂ + NO ₃ -N	"	< 0.04	0.06	Y
Total P	"	0.11	< 0.10	S
Alkalinity as CaCO ₃	"	247	74	I
				M
Al	"	0.070	0.154	E
Ca	"	290	387	T
Cd	"	< 0.003	< 0.003	E
Cr	"	< 0.003	< 0.003	R
Cu	"	< 0.008	< 0.008	
				D
Fe	"	0.515	0.055	R
Hg	μg/L	< 0.20	< 0.20	Y
K	mg/L	13	35	
Mg	"	182	10.6	
Mn	"	0.076	0.005	
Na	"	153	222	
Ni	"	< 0.004	0.009	
Pb	"	< 0.020	< 0.020	
Zn	"	< 0.015	< 0.015	

¹pH 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 JULY 2010

Parameter	Unit	Concentration ¹
pH		7.9
Total Solids	%	12.0
Total Volatile Solids ²	"	44.6

¹Values are for one sample.

²Total 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 AUGUST 2010

Parameter	Unit	Concentration ¹
pH		7.9
Total Solids	%	11.9
Total Volatile Solids ²	"	42.2

¹Values are the means of four samples.

²Total volatile solids as a percentage of total solids.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED BIOSOLIDS
 PLACED IN THE CALUMET WEST SOLIDS MANAGEMENT DRYING AREA
 DURING SEPTEMBER 2010

Parameter	Unit	Concentration ¹
pH		8.1
Total Solids	%	8.1
Total Volatile Solids ²	"	48.0

¹Values are the means of three samples.

²Total 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 JULY 2010

Parameter	Unit	Concentration ¹
pH		6.9
Total Solids	%	77.7
Total Volatile Solids ²	"	36.6
TKN	mg/kg	16,341
NH ₃ -N	"	652
Total P	"	19,609
Al	"	13,244
Ca	"	51,530
Cd	"	4
Cr	"	110
Cu	"	459
Fe	"	27,992
Hg	"	0.99
K	"	2,445
Mg	"	17,314
Mn	"	1,014
Na	"	419
Ni	"	49
Pb	"	118
Zn	"	1,135

¹Values are the means of two samples.

²Total volatile solids as a percentage of total solids.

TABLE 6: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET WEST SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2010

Parameter	Unit	Concentration ¹
pH		6.1
Total Solids	%	64.5
Total Volatile Solids ²	"	34.6
TKN	mg/kg	14,207
NH ₃ -N	"	54
Total P	"	19,101
Al	"	11,577
Ca	"	50,087
Cd	"	4
Cr	"	114
Cu	"	442
Fe	"	27,056
Hg	"	1.3
K	"	1,920
Mg	"	17,180
Mn	"	978
Na	"	555
Ni	"	48
Pb	"	116
Zn	"	1,072

¹Values are for one sample.

²Total volatile solids as a percentage of total solids.

TABLE 7: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET WEST SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2010

Parameter	Unit	Concentration ¹
pH		7.9
Total Solids	%	25.6
Total Volatile Solids ²	"	40.7
TKN	mg/kg	26,131
NH ₃ -N	"	5,108
Total P	"	17,786
Al	"	12,032
Ca	"	52,135
Cd	"	3
Cr	"	88
Cu	"	426
Fe	"	24,665
Hg	"	1.3
K	"	2,822
Mg	"	17,965
Mn	"	923
Na	"	1,218
Ni	"	45
Pb	"	101
Zn	"	1,122

¹Values are the means of four samples.

²Total volatile solids as a percentage of total solids.