

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 14-05

CALUMET WEST SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

FOURTH QUARTER 2013

February 2014

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

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February 20, 2014

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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 2013

The attached five tables contain the monitoring data for the Calumet West Solids Management Area for October, November, and December 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-3N at the Calumet West Solids Management Area Sampled on November 13, 2013

Table 2, Analysis of Monthly Compositated Biosolids Placed in the Calumet West Solids Management Drying Area During October 2013

Table 3, Analysis of Monthly Compositated Biosolids Placed in the Calumet West Solids Management Drying Area During November 2013

Table 4, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During October 2013

Table 5, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During November 2013

Mr. S. Alan Keller

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February 20, 2014

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 2013

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

Very truly yours,

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

TCG:PL:cm

Attachments

cc w/att Mr. J. Patel, 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 NOVEMBER 13, 2013

Parameter	Unit	Lysimeter No.		
		L-1N	L-2N	L-3N
pH ¹		7.9	8.3	7.7
EC	mS/m	323	288	359
Total Dissolved Solids	mg/L	3,346	2,888	3,864
Total Dissolved Organic Carbon	"	2	5	3
Cl ⁻	"	65	24	58
SO ₄ ⁼	"	1,786	1,754	2,121
Alkalinity as CaCO ₃	"	320	33	310
TKN	"	< 1	2	2
NH ₃ -N	"	0.8	1	1
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15	0.23
Total P	"	< 0.20	< 0.20	< 0.20
Al	"	< 1.0	< 1.0	< 1.0
Ca	"	308	479	355
Cd	"	< 0.001	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005	< 0.005
Fe	"	3	< 0.1	5
Hg	μg/L	< 0.20	< 0.20	< 0.20
K	mg/L	13	17	9
Mg	"	241	19	277
Mn	"	0.105	0.008	0.143
Na	"	174	173	180
Ni	"	< 0.005	< 0.005	< 0.005
Pb	"	< 0.02	< 0.02	< 0.02
Zn	"	< 0.01	< 0.01	< 0.01

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 OCTOBER 2013

Parameter	Unit	Concentration ¹
pH		7.6
Total Solids	%	5.8
Total Volatile Solids ²	”	53.4

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 NOVEMBER 2013

Parameter	Unit	Concentration ¹
pH		7.7
Total Solids	%	5.4
Total Volatile Solids ²	”	53.4

¹Values are the means of three samples.

²Total 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 OCTOBER 2013

Parameter	Unit	Concentration ¹
pH		7.2
Total Solids	%	46.8
Total Volatile Solids ²	"	46.6
TKN	mg/kg	30,352
NH ₃ -N	"	3,327
Total P	"	24,611
Al	"	9,520
Ca	"	46,694
Cd	"	2
Cr	"	51
Cu	"	407
Fe	"	22,001
Hg	"	0.84
K	"	2,705
Mg	"	14,954
Mn	"	963
Na	"	1,688
Ni	"	28
Pb	"	82
Zn	"	1,176

¹Values are the means of four 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 NOVEMBER 2013

Parameter	Unit	Concentration ¹
pH		7.0
Total Solids	%	49.7
Total Volatile Solids ²	"	45.4
TKN	mg/kg	27,994
NH ₃ -N	"	2,979
Total P	"	26,494
Al	"	12,111
Ca	"	47,313
Cd	"	2
Cr	"	50
Cu	"	408
Fe	"	22,063
Hg	"	0.59
K	"	3,538
Mg	"	15,713
Mn	"	935
Na	"	1,628
Ni	"	26
Pb	"	78
Zn	"	1,074

¹Values are the means of three samples.

²Total volatile solids as a percentage of total solids.