

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 07-55

CALUMET WEST SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

SECOND QUARTER 2007

AUGUST 2007

Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312-751-5600

Louis Kollias, P.E., BCEE

Director of Research and Development

312-751-5190

August 30, 2007

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 - Stickney WRP, Contract No. 84-270-2P, C175399, IEPA Permit No. 2005-AO-4281-1, Monitoring Report for April, May, and June 2007

The attached four tables contain the monitoring data for the Calumet West Solids Management Area for April, May, and June 2007 as required by IEPA Operating Permit No. 2005-AO-4281-1.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1 through L-3 at the Calumet West Solids Management Area Sampled on April 4, 2007

Table 2, Analysis of Water from Lysimeters L-1 through L-3 at the Calumet West Solids Management Area Sampled on May 2, 2007

Table 3, Analysis of Water from Lysimeters L-1 through L-3 at the Calumet West Solids Management Area Sampled on June 14, 2007

Table 4, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During May 2007

Mr. S. Alan Keller

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August 30, 2007

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No biosolids were placed in the solids drying area during April, May, and June 2007. Biosolids were removed from the solids drying area during May 2007.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:spy
Attachments

cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel

cc wo/att: Sharma/S. Levy/Jamjun/Quintanilla

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-3 AT THE CALUMET WEST
SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 4, 2007

Parameter	Unit	Lysimeter No.		
		L-1	L-2	L-3
pH ¹		7.5	7.5	7.5
EC	mS/m	279	290	269
Total Dissolved Solids	mg/L	2,908	3,258	3,408
Total Diss. Org. Carbon	"	2	3	2
Cl ⁻	"	115	35	28
SO ₄ ⁼	"	1,601	1,880	1,836
TKN	"	0.58	1.2	0.94
NH ₃ -N	"	0.06	<0.02	<0.02
NO ₂ + NO ₃ -N	"	0.25	0.33	0.40
Total P	"	0.06	<0.05	<0.05
Alkalinity as CaCO ₃	"	157	186	139
Al	"	0.054	0.064	0.060
Ca	"	334	367	377
Cd	"	0.0004	<0.0004	<0.0004
Cr	"	<0.0005	<0.0005	<0.0005
Cu	"	<0.002	<0.002	<0.002
Fe	"	1.29	0.894	0.059
Hg	μg/L	<0.05	<0.05	<0.05
K	mg/L	8	8	6
Mg	"	147	187	193
Mn	"	0.1716	0.0505	0.0164
Na	"	214	189	188
Ni	"	<0.0004	0.0058	<0.0004
Pb	"	<0.004	<0.004	<0.004
Zn	"	0.004	0.007	0.004

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-3 AT THE CALUMET WEST
SOLIDS MANAGEMENT AREA SAMPLED ON MAY 2, 2007

Parameter	Unit	Lysimeter No.		
		L-1	L-2	L-3
pH ¹		7.7	7.6	7.6
EC	mS/m	275	289	298
Total Dissolved Solids	mg/L	2,926	3,244	3,400
Total Diss. Org. Carbon	"	2	2	2
Cl ⁻	"	111	35	29
SO ₄ ⁼	"	1,619	1,880	1,984
TKN	"	0.51	0.92	0.76
NH ₃ -N	"	0.05	0.05	0.02
NO ₂ + NO ₃ -N	"	0.32	0.42	0.31
Total P	"	0.05	0.05	<0.05
Alkalinity as CaCO ₃	"	167	190	140
Al	"	0.063	0.070	0.063
Ca	"	312	347	359
Cd	"	<0.0004	<0.0004	0.0004
Cr	"	<0.0005	<0.0005	<0.0005
Cu	"	<0.002	<0.002	<0.002
Fe	"	0.313	0.099	0.024
Hg	μg/L	<0.05	<0.05	<0.05
K	mg/L	7	8	6
Mg	"	143	179	187
Mn	"	0.1271	0.0863	0.0372
Na	"	198	182	183
Ni	"	<0.0004	0.0061	<0.0004
Pb	"	<0.004	<0.004	<0.004
Zn	"	0.007	0.011	0.007

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-3 AT THE CALUMET WEST
SOLIDS MANAGEMENT AREA SAMPLED ON JUNE 14, 2007

Parameter	Unit	Lysimeter No.		
		L-1	L-2	L-3
pH ¹		7.7	7.7	7.6
EC	mS/m	292	311	298
Total Dissolved Solids	mg/L	2,896	3,252	3,384
Total Diss. Org. Carbon	"	1	2	1
Cl ⁻	"	101	32	28
SO ₄ ⁼	"	1,627	1,887	2,006
TKN	"	0.67	0.43	0.40
NH ₃ -N	"	0.22	<0.02	<0.02
NO ₂ + NO ₃ -N	"	0.18	0.27	0.32
Total P	"	<0.05	<0.05	<0.05
Alkalinity as CaCO ₃	"	180	176	143
Al	"	0.075	0.082	0.087
Ca	"	331	357	376
Cd	"	0.0008	0.0007	0.0006
Cr	"	0.0021	0.0019	0.0023
Cu	"	<0.002	<0.002	<0.002
Fe	"	2.27	0.042	0.105
Hg	μg/L	0.11	0.32	0.18
K	mg/L	7	8	6
Mg	"	153	184	193
Mn	"	0.1250	0.1246	0.0134
Na	"	193	185	190
Ni	"	<0.0004	0.0055	<0.0004
Pb	"	<0.004	<0.004	<0.004
Zn	"	0.009	0.014	0.011

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
BIOSOLIDS REMOVED FROM THE CALUMET WEST
SOLIDS MANAGEMENT DRYING AREA DURING MAY 2007

Parameter	Unit	Concentration*
pH		6.9
Total Solids	%	78.1
Total Volatile Solids**	%	19.2
TKN	mg/kg	7,812
NH ₃ -N	”	44
Total P	”	9,714
Al	”	16,155
As	”	7
Ca	”	55,025
Cd	”	7.0
Cr	”	101
Cu	”	213
Fe	”	25,399
Hg	”	0.95
K	”	4,652
Mg	”	23,247
Mn	”	643
Mo	”	5
Na	”	317
Ni	”	35
Pb	”	88
Se	”	7.0
Zn	”	639

*Values are the means of two samples.

**Total volatile solids as a percentage of total solids.