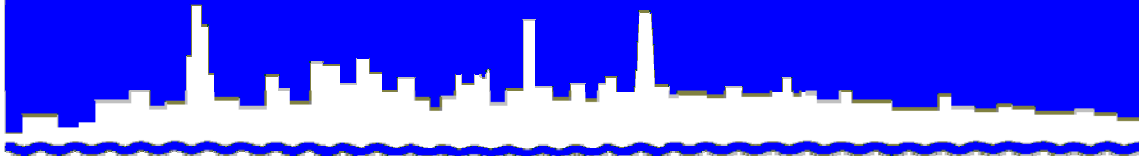


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 07-31

122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

FIRST QUARTER 2007

MAY 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

May 18, 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: 122nd and Stony Island Avenue Solids Management Area - Stickney
WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for January,
February, and March 2007

The attached eight tables contain the monitoring data for the 122nd and Stony Island Avenue Solids Management Area for January, February, and March 2007 as required by IEPA Operating Permit No. 2005-AO-4283.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1 through L-4 at the 122nd and Stony Island Avenue Solids Management Area Sampled on January 10, 2007

Table 2, Analysis of Water from Lysimeters L-1 through L-4 at the 122nd and Stony Island Avenue Solids Management Area Sampled on February 21, 2007

Table 3, Analysis of Water from Lysimeters L-1 through L-4 at the 122nd and Stony Island Avenue Solids Management Area Sampled on March 7, 2007

Table 4, Analysis of Monthly Compositing Digested Biosolids Placed in the 122nd and Stony Island Avenue Solids Management Drying Area During January 2007

Table 5, Analysis of Monthly Compositing Digested Biosolids Placed in the 122nd and Stony Island Avenue Solids Management Drying Area During February 2007

Subject: 122nd and Stony Island Avenue Solids Management Area - Stickney WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for January, February, and March 2007

Table 6, Analysis of Monthly Compositated Digested Biosolids Placed in the 122nd and Stony Island Avenue Solids Management Drying Area During March 2007

Table 7, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the 122nd and Stony Island Avenue Solids Management Drying Area During January 2007

Table 8, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the 122nd and Stony Island Avenue Solids Management Drying Area During February 2007

Biosolids were placed in the solids drying area during January, February, and March 2007. Biosolids were removed from the solids drying area during January and February 2007.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:spy
Attachments

cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Mr. W. Stuba
Dr. T. Granato
Dr. A. Cox
Dr. P. Lindo
Ms. M. Patel

cc wo/att: Ms. M. Sharma
Mr. S. Levy
Mr. O. Jamjun
Mr. A. Quintanilla
Mr. A. Ryzak

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JANUARY 10, 2007

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH ¹		7.5	7.6	7.5	8.0
EC	mS/m	278	288	263	183
Total Dissolved Solids	mg/L	1,954	1,836	2,646	1,232
Total Diss. Org. Carbon	"	37	12	44	18
Cl ⁻	"	221	478	95	288
SO ₄ ⁼	"	203	411	677	15
TKN	"	38	1.7	10	3.6
NH ₃ -N	"	33	0.49	5.9	1.8
NO ₂ + NO ₃ -N	"	0.62	0.06	0.08	1.5
Total P	"	<0.05	<0.05	<0.05	<0.05
Alkalinity as CaCO ₃	"	1,212	344	1,267	599
Al	"	0.038	0.026	0.045	0.018
B	"	4.11	0.940	0.413	1.40
Ca	"	281	141	539	114
Cd	"	<0.0004	0.0010	<0.0004	<0.0004
Cr	"	<0.0005	<0.0005	<0.0005	<0.0005
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	0.548	2.08	3.23	0.059
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	30	42	6	18
Mg	"	131	81.8	168	61.5
Mn	"	0.3123	1.484	0.5254	0.0876
Na	"	161	286	45	213
Ni	"	0.0004	0.0038	0.0005	0.0023
Pb	"	<0.004	<0.004	<0.004	0.004
Zn	"	0.004	0.003	0.005	0.003

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON FEBRUARY 21, 2007

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3*	L-4
pH ¹		7.9	7.7		8.1
EC	mS/m	276	235		187
Total Dissolved Solids	mg/L	1,890	1,724		1,238
Total Diss. Org. Carbon	"	37	11		18
Cl ⁻	"	236	415	L	303
SO ₄ ⁼	"	217	402	Y	20
				S	
TKN	"	37	1.8	I	4.4
NH ₃ -N	"	32	0.51	M	2.4
NO ₂ + NO ₃ -N	"	1.0	0.07	E	0.14
Total P	"	0.10	<0.05	T	<0.05
Alkalinity as CaCO ₃	"	1,219	330	E	656
				R	
Al	"	0.048	0.027		0.025
B	"	4.37	0.850	I	1.47
Ca	"	282	138	N	124
Cd	"	<0.0004	0.0009	A	<0.0004
Cr	"	<0.0005	<0.0005	C	<0.0005
				C	
Cu	"	<0.002	<0.002	E	<0.002
Fe	"	0.112	3.00	S	0.085
Hg	μg/L	<0.05	0.05	S	<0.05
K	mg/L	30	38	I	18
Mg	"	134	78.0	B	65.8
				L	
Mn	"	0.2842	1.407	E	0.1153
Na	"	163	267		210
Ni	"	0.0019	0.0042		0.0023
Pb	"	<0.004	<0.004		<0.004
Zn	"	0.007	0.006		0.005

¹pH analyzed beyond recommended holding time of 15 minutes.

*Access to L-3 blocked by snow.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MARCH 7, 2007

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH ¹		7.5	7.4	7.1	7.8
EC	mS/m	291	224	311	202
Total Dissolved Solids	mg/L	1,964	1,652	2,726	1,256
Total Diss. Org. Carbon	"	34	11	42	18
Cl ⁻	"	237	389	98	288
SO ₄ ⁼	"	236	370	676	18
TKN	"	41	2.2	11	5.7
NH ₃ -N	"	34	0.45	5.7	3.2
NO ₂ + NO ₃ -N	"	0.48	0.18	0.24	0.23
Total P	"	<0.05	0.05	0.05	<0.05
Alkalinity as CaCO ₃	"	1,149	315	1,229	615
Al	"	0.042	0.028	0.071	0.026
B	"	4.18	0.747	0.408	1.37
Ca	"	273	129	521	125
Cd	"	<0.0004	0.0007	<0.0004	<0.0004
Cr	"	<0.0005	<0.0005	<0.0005	<0.0005
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	0.126	1.44	4.91	0.067
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	30	36	5	18
Mg	"	131	74.2	169	67.6
Mn	"	0.2880	1.347	0.5052	0.1363
Na	"	164	257	45	210
Ni	"	0.0005	0.0035	0.0016	0.0018
Pb	"	<0.004	<0.004	<0.004	<0.004
Zn	"	0.002	0.002	0.008	0.002

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED DIGESTED
 BIOSOLIDS PLACED IN THE 122ND AND STONY ISLAND AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING JANUARY 2007

Parameter	Unit	Concentration*
pH		8.1
Total Solids	%	24.4
Total Volatile Solids	%	52.3
TKN	mg/kg	41,952
NH ₃ -N	”	6,194

*Values for one sample only.

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

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE 122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT DRYING AREA DURING FEBRUARY 2007

Parameter	Unit	Concentration*
pH		8.1
Total Solids	%	25.1
Total Volatile Solids	%	55.8
TKN	mg/kg	37,900
NH ₃ -N	”	6,971

*Values for one sample only.

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

TABLE 6: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE 122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT DRYING AREA DURING MARCH 2007

Parameter	Unit	Concentration*
pH		7.6
Total Solids	%	23.1
Total Volatile Solids	%	58.6
TKN	mg/kg	58,169
NH ₃ -N	”	6,609

*Values for one sample only.

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

TABLE 7: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE 122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT DRYING AREA DURING JANUARY 2007

Parameter	Unit	Concentration*
pH		6.6
Total Solids	%	62.2
Total Volatile Solids	%	35.0
TKN	mg/kg	21,801
NH ₃ -N	”	1,966
Total P	”	24,853
Al	”	22,357
As	”	<5
Ca	”	46,478
Cd	”	5
Cr	”	325
Cu	”	467
Fe	”	20,993
Hg	”	1.4
K	”	3,309
Mg	”	20,164
Mn	”	591
Mo	”	23
Na	”	617
Ni	”	60
Pb	”	189
Se	”	<4
Zn	”	971

*Values are the means of four samples.

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

TABLE 8: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE 122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT DRYING AREA DURING FEBRUARY 2007

Parameter	Unit	Concentration*
pH		7.6
Total Solids	%	64.8
Total Volatile Solids	%	36.8
TKN	mg/kg	24,440
NH ₃ -N	”	6,317
Total P	”	22,306
Al	”	20,991
As	”	<5
Ca	”	44,083
Cd	”	5
Cr	”	325
Cu	”	430
Fe	”	20,487
Hg	”	1.7
K	”	3,502
Mg	”	21,683
Mn	”	596
Mo	”	23
Na	”	826
Ni	”	58
Pb	”	172
Se	”	<4
Zn	”	942

*Values are the means of three samples.

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