

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 07-58

RIDGELAND AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

SECOND QUARTER 2007

AUGUST 2007

Metropolitan Water Reclamation District of Greater Chicago

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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: Ridgeland Avenue Solids Management Area - Stickney WRP, Contract No. 89-202-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for April, May, and June 2007

The attached six tables contain the monitoring data for the Ridgeland Avenue Solid Management Area for April, May, and June 2007 as required by IEPA Operating Permit No. 2005-AO-4283. In a letter dated January 19, 2007, the IEPA granted permission to terminate the monitoring of lysimeters L-1, L-2, and L-3. Therefore, monitoring data for these lysimeters will not be included in this and subsequent reports.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on April 11, 2007

Table 2, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on April 25, 2007

Table 3, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on May 9, 2007

Table 4, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on May 23, 2007

Table 5, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on June 6, 2007

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Table 6, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on June 20, 2007

No biosolids were placed in or removed from the solids drying area during April, May, and June 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-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 11, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.4	7.4	7.5	7.8
EC	mS/m	440	248	211	106
Total Dissolved Solids	mg/L	3,974	1,674	1,524	788
Total Diss. Org. Carbon	"	4	7	2	6
Cl ⁻	"	1,023	280	426	117
SO ₄ ⁼	"	868	241	243	295
TKN	"	2.0	41	1.1	1.2
NH ₃ -N	"	0.90	35	0.40	0.49
NO ₂ + NO ₃ -N	"	0.48	0.34	0.50	0.84
Total P	"	0.05	<0.05	0.18	1.3
Alkalinity as CaCO ₃	"	729	938	410	371
Al	"	0.099	0.057	0.052	0.037
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	506	230	182	128
Cd	"	0.0006	0.0004	0.0006	<0.0004
Cr	"	<0.0005	0.0005	<0.0005	0.0009
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	1.90	3.86	0.111	0.133
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	8	12	4	3
Mg	"	277	136	62.5	31.8
Mn	"	0.0924	0.1777	0.2312	0.4757
Na	"	140	87	216	74
Ni	"	<0.0004	<0.0004	0.0011	<0.0004
Pb	"	<0.004	<0.004	<0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.008	0.005	0.011	0.008

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 25, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.2	7.5	7.5	7.8
EC	mS/m	372	218	212	81
Total Dissolved Solids	mg/L	4,566	1,830	1,626	842
Total Diss. Org. Carbon	"	4	7	2	6
Cl ⁻	"	959	272	414	136
SO ₄ ⁼	"	912	216	220	114
TKN	"	2.0	35	1.2	1.2
NH ₃ -N	"	0.88	34	0.42	0.42
NO ₂ + NO ₃ -N	"	0.13	0.05	0.29	0.20
Total P	"	0.05	0.06	0.05	0.50
Alkalinity as CaCO ₃	"	659	873	382	319
Al	"	0.110	0.058	0.047	0.035
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	515	221	177	135
Cd	"	<0.0004	<0.0004	<0.0004	<0.0004
Cr	"	0.0020	0.0012	0.0010	0.0013
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.86	3.25	0.024	0.029
Hg	μg/L	0.10	<0.05	<0.05	<0.05
K	mg/L	8	12	4	3
Mg	"	272	134	58.4	32.0
Mn	"	0.0756	0.1451	0.1702	0.6179
Na	"	138	86	209	73
Ni	"	<0.0004	<0.0004	0.0009	<0.0004
Pb	"	<0.004	<0.004	<0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.009	0.007	0.017	0.008

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MAY 9, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.7	7.6	7.8	7.9
EC	mS/m	450	230	234	135
Total Dissolved Solids	mg/L	5,056	1,954	1,708	1,214
Total Diss. Org. Carbon	"	5	8	2	4
Cl ⁻	"	1,037	288	435	252
SO ₄ ⁼	"	851	258	283	107
TKN	"	2.3	38	0.81	1.2
NH ₃ -N	"	0.98	35	0.24	0.57
NO ₂ + NO ₃ -N	"	<0.04	0.03	0.18	0.16
Total P	"	<0.10	0.05	0.05	1.4
Alkalinity as CaCO ₃	"	726	940	411	319
Al	"	0.128	0.053	0.040	0.042
As	"	<0.02	<0.01	<0.01	<0.01
Ca	"	536	215	174	160
Cd	"	<0.0008	0.0005	0.0005	0.0005
Cr	"	<0.0010	<0.0005	0.0007	0.0007
Cu	"	<0.004	<0.002	<0.002	<0.002
Fe	"	2.51	2.54	0.082	4.76
Hg	μg/L	<0.10	<0.05	<0.05	<0.05
K	mg/L	8	12	4	3
Mg	"	290	136	60.9	39.2
Mn	"	0.1026	0.1520	0.2253	0.8523
Na	"	141	86	214	79
Ni	"	<0.0008	<0.0004	0.0007	<0.0004
Pb	"	<0.008	<0.004	<0.004	<0.004
Se	"	<0.04	<0.02	<0.02	<0.02
Zn	"	0.012	0.006	0.012	0.008

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MAY 23, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.2	7.3	7.6	7.6
EC	mS/m	496	244	236	179
Total Dissolved Solids	mg/L	5,040	1,932	1,736	1,624
Total Diss. Org. Carbon	"	4	8	3	4
Cl ⁻	"	1,022	269	424	368
SO ₄ ⁼	"	898	218	239	128
TKN	"	2.5	37	0.90	1.6
NH ₃ -N	"	0.99	34	0.05	0.53
NO ₂ + NO ₃ -N	"	0.05	<0.02	0.07	0.20
Total P	"	<0.05	0.08	<0.05	0.84
Alkalinity as CaCO ₃	"	682	869	390	332
Al	"	0.101	0.071	0.049	0.048
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	544	210	178	191
Cd	"	<0.0004	<0.0004	<0.0004	<0.0004
Cr	"	0.0013	0.0007	0.0008	0.0012
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	2.32	5.90	0.093	5.28
Hg	μg/L	<0.05	<0.05	0.05	<0.05
K	mg/L	8	12	4	3
Mg	"	285	131	61.5	47.0
Mn	"	0.0906	0.1481	0.2330	0.9761
Na	"	142	85	212	92
Ni	"	<0.0004	<0.0004	0.0018	0.0009
Pb	"	<0.004	<0.004	<0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.010	0.009	0.012	0.008

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 5: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JUNE 6, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.4	7.6	7.6	7.6
EC	mS/m	458	242	242	190
Total Dissolved Solids	mg/L	4,960	1,948	1,760	1,656
Total Diss. Org. Carbon	"	4	8	2	5
Cl ⁻	"	983	274	442	368
SO ₄ ⁼	"	882	218	242	155
TKN	"	2.3	39	1.1	1.7
NH ₃ -N	"	0.89	34	0.19	0.58
NO ₂ + NO ₃ -N	"	0.46	0.03	0.17	0.27
Total P	"	0.06	0.06	0.06	0.32
Alkalinity as CaCO ₃	"	669	901	409	340
Al	"	0.086	0.045	0.037	0.037
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	525	221	186	212
Cd	"	0.0012	0.0009	0.0004	0.0007
Cr	"	0.0016	0.0019	0.0013	0.0013
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.34	5.11	0.092	5.03
Hg	μg/L	0.17	0.14	<0.05	<0.05
K	mg/L	8	12	4	4
Mg	"	275	136	63.7	50.0
Mn	"	0.0876	0.1467	0.2260	1.046
Na	"	141	86	216	111
Ni	"	<0.0004	<0.0004	<0.0004	<0.0004
Pb	"	<0.004	<0.004	0.006	0.007
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.017	0.012	0.011	0.006

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 6: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JUNE 20, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.4	7.6	7.7	7.7
EC	mS/m	441	265	228	197
Total Dissolved Solids	mg/L	6,186	2,448	1,968	1,928
Total Diss. Org. Carbon	"	4	7	2	4
Cl ⁻	"	993	294	447	392
SO ₄ ⁼	"	878	238	244	157
TKN	"	2.1	37	0.50	2.7
NH ₃ -N	"	0.88	34	0.06	1.9
NO ₂ + NO ₃ -N	"	0.40	0.33	0.46	0.72
Total P	"	0.06	0.06	0.06	0.10
Alkalinity as CaCO ₃	"	690	901	407	383
Al	"	0.086	0.054	0.049	0.052
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	543	228	190	219
Cd	"	0.0012	0.0005	0.0005	0.0007
Cr	"	0.0014	0.0013	0.0016	0.0013
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.72	4.81	0.305	4.55
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	8	12	4	4
Mg	"	279	139	64.7	54.3
Mn	"	0.0826	0.1498	0.2576	0.9982
Na	"	142	88	215	123
Ni	"	<0.0004	<0.0004	<0.0004	<0.0004
Pb	"	<0.004	<0.004	0.006	0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.010	0.004	0.008	0.005

¹pH analyzed beyond recommended holding time of 15 minutes.