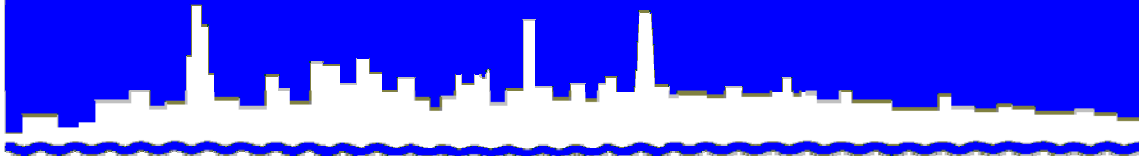


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 08-48

RIDGELAND AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

SECOND QUARTER 2008

AUGUST 2008

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Louis Kollias, P.E., BCEE

August 29, 2008

Director of Research and Development

312-751-5190

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 2008

The attached six tables contain the monitoring data for the Ridgeland Avenue Solids Management Area for April, May, and June 2008 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. Beginning October 2007, they also granted permission to terminate the monitoring of lysimeter L-4. 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 10, 2008

Table 2, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on April 23, 2008

Table 3, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on May 7, 2008

Table 4, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on May 21, 2008

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 2008

Table 5, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on June 5, 2008

Table 6, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on June 18, 2008

No biosolids were placed in or removed from the solids drying area during April, May, and June 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:kq

Attachments

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

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 10, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.5	7.8	7.9	7.9
EC	mS/m	492	231	252	147
Total Dissolved Solids	mg/L	4,724	1,656	1,660	1,036
Total Diss. Org. Carbon	"	3	7	2	5
Cl ⁻	"	1,011	273	402	223
SO ₄ ⁼	"	887	239	351	106
TKN	"	1.9	38	1.5	1.1
NH ₃ -N	"	1.1	35	0.83	0.48
NO ₂ + NO ₃ -N	"	0.24	0.30	0.35	0.48
Total P	"	0.06	0.12	0.06	0.16
Alkalinity as CaCO ₃	"	648	828	411	409
Al	"	0.071	0.040	0.038	0.031
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	535	211	211	129
Cd	"	0.0006	<0.0004	0.0005	0.0006
Cr	"	<0.0005	<0.0005	<0.0005	0.0007
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	5.24	5.40	0.572	0.243
Hg	μg/L	<0.25 ^a	<0.25 ^a	<0.25 ^a	<0.25 ^a
K	mg/L	8	11	4	3
Mg	"	272	130	69.0	30.6
Mn	"	0.0989	0.1417	0.3222	0.5936
Na	"	167	93	219	156
Ni	"	<0.0004	<0.0004	<0.0004	0.0005
Pb	"	<0.004	<0.004	<0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.007	0.006	0.005	0.005

¹pH analyzed beyond recommended holding time of 15 minutes.

^aLimit of quantitation (LOQ) instead of MDL was used as reporting limit.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 23, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.1	7.6	7.6	7.6
EC	mS/m	377	232	180	161
Total Dissolved Solids	mg/L	5,928	2,200	1,896	1,384
Total Diss. Org. Carbon	"	3	7	3	4
Cl ⁻	"	1,049	300	431	354
SO ₄ ⁼	"	942	248	288	100
TKN	"	3.0	37	1.1	0.89
NH ₃ -N	"	2.2	33	0.56	0.46
NO ₂ + NO ₃ -N	"	0.08	0.13	0.38	0.27
Total P	"	0.07	0.10	0.11	0.41
Alkalinity as CaCO ₃	"	655	864	434	406
Al	"	0.086	0.050	0.048	0.037
As	"	<0.01	<0.02	<0.01	<0.01
Ca	"	590	226	200	174
Cd	"	0.0005	0.0012	0.0005	0.0004
Cr	"	<0.0005	<0.0010	0.0005	0.0011
Cu	"	<0.002	<0.004	<0.002	<0.002
Fe	"	4.82	3.86	0.481	4.06
Hg	μg/L	<0.25 ^a	<0.25 ^a	<0.25 ^a	<0.25 ^a
K	mg/L	8	12	4	3
Mg	"	321	139	71.0	42.5
Mn	"	0.0773	0.1504	0.2605	0.8479
Na	"	164	102	225	161
Ni	"	<0.0004	<0.0008	<0.0004	<0.0004
Pb	"	<0.004	<0.008	<0.004	0.004
Se	"	<0.02	<0.04	<0.02	<0.02
Zn	"	0.010	0.010	0.008	0.012

¹pH analyzed beyond recommended holding time of 15 minutes.

^aLimit of quantitation (LOQ) instead of MDL was used as reporting limit.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MAY 7, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.8	7.8	8.0	8.1
EC	mS/m	453	247	226	199
Total Dissolved Solids	mg/L	3,964	1,900	1,572	1,516
Total Diss. Org. Carbon	"	4	7	2	2
Cl ⁻	"	1,023	321	431	484
SO ₄ ⁼	"	927	272	283	102
TKN	"	2.7	36	2.2	0.88
NH ₃ -N	"	1.6	36	1.7	0.49
NO ₂ + NO ₃ -N	"	0.66	0.19	0.15	0.20
Total P	"	0.08	<0.05	<0.05	<0.05
Alkalinity as CaCO ₃	"	491	764	383	271
Al	"	0.087	0.050	0.045	0.033
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	582	255	208	210
Cd	"	0.0005	<0.0004	0.0004	0.0005
Cr	"	<0.0005	<0.0005	<0.0005	<0.0005
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.41	1.14	0.167	1.66
Hg	μg/L	<0.25 ^a	<0.25 ^a	<0.25 ^a	<0.25 ^a
K	mg/L	9	12	5	3
Mg	"	288	148	69.7	50.0
Mn	"	0.1106	0.1357	0.2692	0.8545
Na	"	170	101	231	172
Ni	"	<0.0004	<0.0004	<0.0004	<0.0004
Pb	"	<0.004	<0.004	<0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.009	0.005	0.007	0.007

¹pH analyzed beyond recommended holding time of 15 minutes.

^aLimit of quantitation (LOQ) instead of MDL was used as reporting limit.

TABLE 4: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MAY 21, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.1	7.4	7.4	7.4
EC	mS/m	441	246	204	201
Total Dissolved Solids	mg/L	4,692	2,018	1,662	1,890
Total Diss. Org. Carbon	"	3	6	2	2
Cl ⁻	"	1,171	395	474	NRR
SO ₄ ⁼	"	950	293	267	100
TKN	"	2.1	40	4.3	1.1
NH ₃ -N	"	1.1	34	3.2	0.66
NO ₂ + NO ₃ -N	"	0.18	0.07	0.07	0.15
Total P	"	<0.05	0.06	<0.05	0.36
Alkalinity as CaCO ₃	"	849	963	486	710
Al	"	0.068	0.043	0.042	0.031
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	557	265	216	245
Cd	"	0.0005	<0.0004	0.0006	0.0004
Cr	"	<0.0005	<0.0005	<0.0005	0.0005
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.92	3.25	0.425	6.86
Hg	μg/L	<0.25 ^a	<0.25 ^a	<0.25 ^a	<0.25 ^a
K	mg/L	9	12	5	4
Mg	"	301	158	74.2	58.7
Mn	"	0.0753	0.1214	0.2799	1.069
Na	"	180	107	233	198
Ni	"	<0.0004	<0.0004	0.0010	<0.0004
Pb	"	<0.004	<0.004	<0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.009	0.005	0.009	0.005

¹pH analyzed beyond recommended holding time of 15 minutes.

^aLimit of quantitation (LOQ) instead of MDL was used as reporting limit.

NRR = No reportable result.

TABLE 5: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JUNE 5, 2008

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	511	272	243	212
Total Dissolved Solids	mg/L	5,178	2,180	1,788	2,574
Total Diss. Org. Carbon	"	3	6	2	2
Cl ⁻	"	999	285	431	660
SO ₄ ⁼	"	902	790	300	77
TKN	"	3.0	40	0.62	1.2
NH ₃ -N	"	1.8	37	0.26	0.66
NO ₂ + NO ₃ -N	"	0.71	0.61	0.36	0.83
Total P	"	<0.05	<0.05	<0.05	0.09
Alkalinity as CaCO ₃	"	656	858	389	388
Al	"	0.069	0.039	0.040	0.042
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	552	220	197	257
Cd	"	<0.0004	0.0005	<0.0004	0.0005
Cr	"	<0.0005	<0.0005	<0.0005	<0.0005
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	3.71	2.56	0.529	7.23
Hg	μg/L	<0.25 ^a	<0.25 ^a	<0.25 ^a	<0.25 ^a
K	mg/L	9	12	4	4
Mg	"	282	137	63.9	64.0
Mn	"	0.0762	0.1502	0.2922	1.155
Na	"	170	100	229	202
Ni	"	<0.0004	<0.0004	<0.0004	<0.0004
Pb	"	<0.004	<0.004	<0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.007	0.006	0.006	0.005

¹pH analyzed beyond recommended holding time of 15 minutes.

^aLimit of quantitation (LOQ) instead of MDL was used as reporting limit.

TABLE 6: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JUNE 18, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.2	7.4	7.5	7.3
EC	mS/m	402	171	184	245
Total Dissolved Solids	mg/L	5,844	2,268	1,784	2,600
Total Diss. Org. Carbon	"	3	7	2	2
Cl ⁻	"	1,002	300	422	717
SO ₄ ⁼	"	940	270	288	80
TKN	"	2.2	37	1.6	0.77
NH ₃ -N	"	1.2	36	1.2	0.66
NO ₂ + NO ₃ -N	"	0.03	0.04	0.02	0.22
Total P	"	<0.05	<0.05	<0.05	0.11
Alkalinity as CaCO ₃	"	684	869	401	346
Al	"	0.112	0.049	0.044	0.055
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	537	235	193	256
Cd	"	0.0006	<0.0004	<0.0004	<0.0004
Cr	"	<0.0005	0.0006	0.0006	0.0010
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	5.01	3.37	0.455	7.17
Hg	μg/L	<0.25 ^a	<0.25 ^a	<0.25 ^a	<0.25 ^a
K	mg/L	8	12	4	4
Mg	"	284	140	63.7	60.7
Mn	"	0.0826	0.1391	0.2734	1.164
Na	"	169	97	218	227
Ni	"	<0.0004	<0.0004	<0.0004	<0.0004
Pb	"	0.005	0.007	0.010	0.008
Se	"	0.03	<0.02	<0.02	<0.02
Zn	"	0.006	0.004	0.008	0.005

¹pH analyzed beyond recommended holding time of 15 minutes.

^aLimit of quantitation (LOQ) instead of MDL was used as reporting limit.