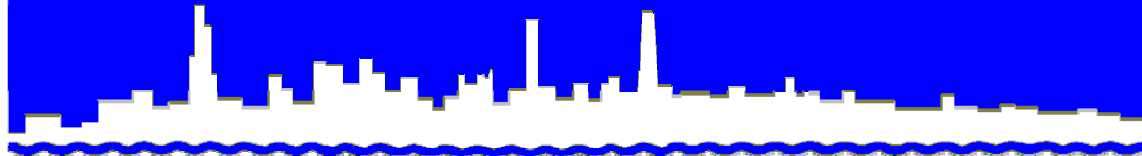


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 07-76

RIDGELAND AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

THIRD QUARTER 2007

NOVEMBER 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

November 29, 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 July, August, and September 2007

The attached seven tables contain the monitoring data for the Ridgeland Avenue Solids Management Area for July, August, and September 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-IN through LAN at the Ridgeland Avenue Solids Management Area Sampled on July 5, 2007

Table 2, Analysis of Water from Lysimeters L-IN through LAN at the Ridgeland Avenue Solids Management Area Sampled on July 18, 2007

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

Table 4, Analysis of Water from Lysimeters L-IN through L-4N at the Ridgeland Avenue Solids Management Area Sampled on August 15, 2007

Table 5, Analysis of Water from Lysimeters L-IN through L-4N at the Ridgeland Avenue Solids Management Area Sampled on August 29, 2007

Subject: Ridgeland Avenue Solids Management Area - Stickney WRP, Contract No. 89-202-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2007

Table 6, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on September 12, 2007

Table 7, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on September 26, 2007

No biosolids were placed in or removed from the solids drying area during July, August, and September 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/Garelli/Jamjun/Conway

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

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.3	7.5	7.8	7.6
EC	mS/m	447	249	230	195
Total Dissolved Solids	mg/L	5,432	2,216	1,810	1,856
Total Diss. Org. Carbon	"	4	7	3	4
Cl ⁻	"	943	294	427	417
SO ₄ ⁼	"	1,003	244	317	146
TKN	"	2.6	35	0.81	1.4
NH ₃ -N	"	1.4	33	<0.02	0.74
NO ₂ + NO ₃ -N	"	0.03	0.03	0.14	0.06
Total P	"	0.10	0.10	0.10	0.29
Alkalinity as CaCO ₃	"	662	860	392	374
Al	"	0.079	0.048	0.040	0.038
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	500	230	196	214
Cd	"	0.0005	0.0004	0.0005	<0.0004
Cr	"	0.0040	0.0028	0.0020	0.0020
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.61	4.53	0.025	6.33
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	8	12	4	4
Mg	"	273	141	67.1	50.7
Mn	"	0.0942	0.1379	0.2324	0.9601
Na	"	142	90	221	136
Ni	"	<0.0004	<0.0004	<0.0004	<0.0004
Pb	"	<0.004	0.005	0.005	0.005
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.011	0.004	0.008	0.004

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 JULY 18, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.3	7.5	7.7	7.7
EC	mS/m	461	237	216	190
Total Dissolved Solids	mg/L	4,780	1,928	1,744	1,712
Total Diss. Org. Carbon	"	3	7	2	4
Cl ⁻	"	918	299	459	443
SO ₄ ⁼	"	784	205	231	112
TKN	"	4.2	37	0.64	1.4
NH ₃ -N	"	3.0	31	0.10	0.63
NO ₂ + NO ₃ -N	"	0.03	0.03	0.11	0.26
Total P	"	<0.05	0.06	<0.05	0.79
Alkalinity as CaCO ₃	"	694	879	408	376
Al	"	0.052	0.026	0.029	0.025
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	516	221	197	211
Cd	"	<0.0004	<0.0004	<0.0004	<0.0004
Cr	"	0.0012	0.0010	0.0010	0.0013
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.96	5.54	0.174	6.63
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	8	12	4	4
Mg	"	265	130	65.9	49.6
Mn	"	0.0935	0.1689	0.2881	0.9572
Na	"	140	100	220	149
Ni	"	<0.0004	<0.0004	0.0019	<0.0004
Pb	"	<0.004	<0.004	<0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.008	0.004	0.010	0.007

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 AUGUST 1, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.3	7.4	7.6	7.6
EC	mS/m	453	241	245	212
Total Dissolved Solids	mg/L	4,426	1,886	1,722	1,560
Total Diss. Org. Carbon	"	4	7	2	4
Cl ⁻	"	939	281	431	431
SO ₄ ⁼	"	786	205	238	107
TKN	"	3.3	39	1.1	1.5
NH ₃ -N	"	2.2	35	0.19	0.71
NO ₂ + NO ₃ -N	"	0.05	0.05	0.08	0.16
Total P	"	<0.05	0.09	0.15	0.39
Alkalinity as CaCO ₃	"	681	867	387	369
Al	"	0.048	0.022	0.026	0.015
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	508	213	190	201
Cd	"	0.0010	0.0009	0.0009	0.0008
Cr	"	<0.0005	0.0009	0.0008	0.0010
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.66	6.11	0.356	5.07
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	8	12	4	4
Mg	"	263	130	64.2	49.0
Mn	"	0.0840	0.1552	0.3087	0.9046
Na	"	139	92	215	154
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	"	0.006	0.005	0.008	0.004

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 AUGUST 15, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.3	7.4	7.6	7.6
EC	mS/m	445	241	214	246
Total Dissolved Solids	mg/L	5,460	2,116	1,816	1,728
Total Diss. Org. Carbon	"	3	7	5	2
Cl ⁻	"	959	284	445	425
SO ₄ ⁼	"	1,016	230	277	108
TKN	"	3.0	37	0.61	1.7
NH ₃ -N	"	2.0	33	0.26	0.88
NO ₂ + NO ₃ -N	"	0.27	0.23	0.44	0.33
Total P	"	<0.05	0.08	<0.05	0.55
Alkalinity as CaCO ₃	"	701	881	398	405
Al	"	0.051	0.029	0.030	0.020
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	511	219	199	203
Cd	"	0.0007	<0.0004	0.0005	<0.0004
Cr	"	<0.0005	<0.0005	<0.0005	0.0006
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	5.17	5.92	0.282	5.97
Hg	μg/L	0.05	<0.05	<0.05	<0.05
K	mg/L	8	12	4	4
Mg	"	261	131	66.1	52.0
Mn	"	0.0859	0.1566	0.3235	0.8622
Na	"	137	92	219	159
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	"	0.008	0.006	0.007	0.006

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 AUGUST 29, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.3	7.4	7.7	7.7
EC	mS/m	454	243	234	214
Total Dissolved Solids	mg/L	5,852	2,208	1,968	1,844
Total Diss. Org. Carbon	"	3	7	2	6
Cl ⁻	"	927	277	438	400
SO ₄ ⁼	"	872	214	259	75
TKN	"	2.6	36	0.75	2.0
NH ₃ -N	"	1.8	36	0.31	1.2
NO ₂ + NO ₃ -N	"	0.21	0.23	0.18	0.22
Total P	"	<0.05	0.08	<0.05	0.62
Alkalinity as CaCO ₃	"	655	853	382	425
Al	"	0.077	0.053	0.048	0.048
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	494	205	189	195
Cd	"	0.0011	<0.0004	0.0005	0.0005
Cr	"	<0.0005	<0.0005	0.0013	0.0013
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.87	5.54	0.535	6.93
Hg	μg/L	<0.05	0.08	0.15	<0.05
K	mg/L	7	11	4	3
Mg	"	259	128	62.8	53.9
Mn	"	0.0770	0.1457	0.3197	0.8232
Na	"	136	90	215	160
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	"	0.017	0.021	0.022	0.027

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 SEPTEMBER 12, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.5	7.5	7.7	7.7
EC	mS/m	452	256	228	199
Total Dissolved Solids	mg/L	4,468	2,240	1,772	1,508
Total Diss. Org. Carbon	"	4	6	2	3
Cl ⁻	"	892	329	446	446
SO ₄ ⁼	"	903	290	288	136
TKN	"	1.8	35	2.9	1.3
NH ₃ -N	"	0.88	34	2.5	0.77
NO ₂ + NO ₃ -N	"	0.18	0.38	0.14	0.28
Total P	"	<0.05	<0.05	<0.05	<0.05
Alkalinity as CaCO ₃	"	680	877	418	361
Al	"	0.077	0.046	0.035	0.037
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	489	245	198	190
Cd	"	0.0005	0.0005	<0.0004	0.0005
Cr	"	<0.0005	<0.0005	0.0007	0.0009
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	0.625	0.148	0.045	0.086
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	8	12	5	4
Mg	"	258	144	69.3	45.9
Mn	"	0.1037	0.1303	0.2668	0.7172
Na	"	152	91	213	179
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	"	0.006	0.004	0.004	0.003

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 7: ANALYSIS OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 26, 2007

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.3	7.4	7.6	7.6
EC	mS/m	441	240	224	205
Total Dissolved Solids	mg/L	4,504	1,752	1,724	1,514
Total Diss. Org. Carbon	"	3	7	2	5
Cl ⁻	"	940	272	449	405
SO ₄ ⁼	"	999	262	286	129
TKN	"	2.8	35	0.70	1.5
NH ₃ -N	"	1.6	35	0.27	0.78
NO ₂ + NO ₃ -N	"	0.25	0.30	0.21	0.66
Total P	"	0.05	0.16	0.05	0.48
Alkalinity as CaCO ₃	"	649	829	373	381
Al	"	0.068	0.037	0.038	0.035
As	"	<0.01	<0.01	<0.01	<0.01
Ca	"	515	216	199	196
Cd	"	0.0005	<0.0004	0.0006	0.0006
Cr	"	<0.0005	0.0146	0.0018	0.0012
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	4.98	5.73	0.627	5.83
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	8	12	4	4
Mg	"	262	131	64.3	49.3
Mn	"	0.0831	0.1509	0.3219	0.8130
Na	"	143	90	223	179
Ni	"	<0.0004	0.0047	<0.0004	<0.0004
Pb	"	<0.004	<0.004	<0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02
Zn	"	0.010	0.011	0.013	0.012

¹pH analyzed beyond recommended holding time of 15 minutes.