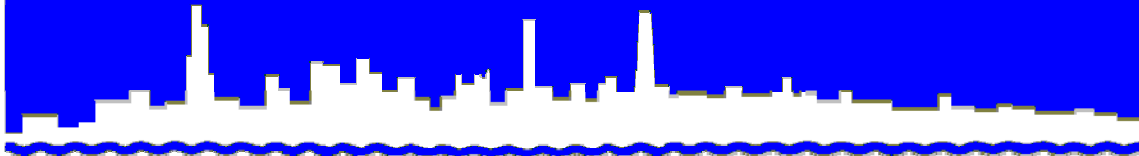


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 09-71

RIDGELAND AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

THIRD QUARTER 2009

DECEMBER 2009

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street

Chicago, Illinois 60611-3154

312.751.5190

Louis Kollias, P.E., BCEE

Director of Monitoring and Research

louis.kollias@mwr.org

December 3, 2009

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 Water Reclamation Plant, Contract No. 89-202-2P, Illinois Environmental Protection Agency Permit No. 2005-AO-4283-2, Monitoring Report for July, August, and September 2009

The attached seven tables contain the monitoring data for the Ridgeland Avenue Solids Management Area for July, August, and September 2009 as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2005-AO-4283-2.

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 July 1, 2009

Table 2, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on July 15, 2009

Table 3, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on July 29, 2009

Table 4, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on August 12, 2009

Table 5, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on August 26, 2009

Subject: Ridgeland Avenue Solids Management Area - Stickney Water Reclamation Plant, Contract No. 89-202-2P, Illinois Environmental Protection Agency Permit No. 2005-AO-4283-2, Monitoring Report for July, August, and September 2009

Table 6, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on September 9, 2009

Table 7, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on September 24, 2009

No biosolids were placed in or removed from the solids drying area during July, August, and September 2009.

Very truly yours,

Louis Kollias
Director
Monitoring and Research

LK:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Granato/O'Connor/Cox/Lindo

TABLE 1: ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 1, 2009

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ²		7.4	7.7	7.7	7.7
EC	mS/m	451	271	209	245
Total Dissolved Solids	mg/L	5,174	2,166	1,598	1,820
Total Diss. Org. Carbon	"	5	8	3	7
Cl ⁻	"	1,195	364	424	364
SO ₄ ⁼	"	1,053	291	268	439
TKN	"	2	40	3	2
NH ₃ -N	"	1	37	2	0.6
NO ₂ + NO ₃ -N	"	<0.04	<0.04	<0.04	0.16
Total P	"	<0.1	<0.1	<0.1	0.2
Alkalinity as CaCO ₃	"	701	930	406	473
Al	"	0.065	0.041	0.037	0.044
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	535	230	184	227
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	5.7	4.5	0.24	6.3
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	9	11	4	3
Mg	"	280	138	63	53
Mn	"	0.065	0.125	0.279	1.10
Na	"	192	102	203	220
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

¹Limit of quantitation (LOQ) instead of MDL was used as reporting limit.

²pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 15, 2009

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ²		7.5	7.7	7.8	7.7
EC	mS/m	524	260	219	230
Total Dissolved Solids	mg/L	6,232	2,272	1,828	1,796
Total Diss. Org. Carbon	"	4	7	3	7
Cl ⁻	"	1,186	321	431	345
SO ₄ ⁼	"	960	254	275	NA
TKN	"	4	40	0.8	1
NH ₃ -N	"	3	37	0.3	0.5
NO ₂ + NO ₃ -N	"	0.14	0.11	0.38	0.19
Total P	"	<0.1	<0.1	<0.1	0.3
Alkalinity as CaCO ₃	"	711	881	397	503
Al	"	0.068	0.040	0.039	0.042
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	572	212	182	221
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	5.8	4.7	0.06	6.8
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	9	11	4	3
Mg	"	299	126	60	54
Mn	"	0.063	0.135	0.290	1.03
Na	"	194	102	205	210
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

¹Limit of quantitation (LOQ) instead of MDL was used as reporting limit.

²pH analyzed beyond recommended holding time of 15 minutes.

NA = No analysis; insufficient sample.

TABLE 3: ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 29, 2009

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ²		7.8	7.9	8.1	8.1
EC	mS/m	566	262	236	233
Total Dissolved Solids	mg/L	4,872	2,140	1,556	1,608
Total Diss. Org. Carbon	"	9	18	7	18
Cl ⁻	"	1,125	294	402	337
SO ₄ ⁼	"	906	241	250	293
TKN	"	2	39	0.7	1
NH ₃ -N	"	1	38	0.4	0.6
NO ₂ + NO ₃ -N	"	0.37	0.08	0.14	0.17
Total P	"	<0.1	<0.1	<0.1	0.4
Alkalinity as CaCO ₃	"	650	840	378	460
Al	"	0.072	0.043	0.040	0.038
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	485	214	174	200
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	5.6	4.6	0.11	6.8
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	8	11	4	3
Mg	"	253	129	57	47
Mn	"	0.058	0.120	0.271	0.979
Na	"	190	98	194	207
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

¹Limit of quantitation (LOQ) instead of MDL was used as reporting limit.

²pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 12, 2009

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ²		7.4	7.7	7.8	7.8
EC	mS/m	554	294	242	176
Total Dissolved Solids	mg/L	6,108	2,610	1,838	1,708
Total Diss. Org. Carbon	"	4	7	2	6
Cl ⁻	"	1,089	338	392	319
SO ₄ ⁼	"	814	247	306	236
TKN	"	2	36	0.6	3
NH ₃ -N	"	1	37	0.4	2
NO ₂ + NO ₃ -N	"	0.05	0.86	<0.04	0.07
Total P	"	<0.1	<0.1	<0.1	0.2
Alkalinity as CaCO ₃	"	652	863	378	453
Al	"	0.127	0.074	0.067	0.097
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	556	254	195	201
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	5.8	4.5	0.45	6.3
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	9	12	4	4
Mg	"	293	151	65	52
Mn	"	0.072	0.128	0.317	0.885
Na	"	204	111	216	204
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	0.04	<0.01	0.02	0.02

¹Limit of quantitation (LOQ) instead of MDL was used as reporting limit.

²pH analyzed beyond recommended holding time of 15 minutes.

TABLE 5: ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 26, 2009

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ²		7.4	7.7	7.8	7.9
EC	mS/m	508	259	220	198
Total Dissolved Solids	mg/L	6,092	2,292	1,664	1,432
Total Diss. Org. Carbon	"	3	6	2	5
Cl ⁻	"	1,099	302	390	296
SO ₄ ⁼	"	946	236	289	232
TKN	"	2	39	0.7	1
NH ₃ -N	"	1	38	0.3	0.5
NO ₂ + NO ₃ -N	"	0.18	0.08	0.07	0.24
Total P	"	<0.1	<0.1	<0.1	0.3
Alkalinity as CaCO ₃	"	639	850	372	406
Al	"	0.064	0.036	0.036	<0.035
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	527	220	178	176
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	5.7	4.6	0.63	5.0
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	8	11	4	3
Mg	"	267	134	59	41
Mn	"	0.060	0.124	0.264	0.792
Na	"	195	101	194	190
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

¹Limit of quantitation (LOQ) instead of MDL was used as reporting limit.

²pH analyzed beyond recommended holding time of 15 minutes.

TABLE 6: ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 9, 2009

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ²		7.5	7.7	7.8	7.9
EC	mS/m	484	272	214	160
Total Dissolved Solids	mg/L	5,196	2,260	1,676	1,428
Total Diss. Org. Carbon	"	4	7	3	7
Cl ⁻	"	1,149	348	394	287
SO ₄ ⁼	"	990	266	320	210
TKN	"	3	37	0.8	1
NH ₃ -N	"	2	38	0.3	0.7
NO ₂ + NO ₃ -N	"	0.59	<0.04	0.16	0.15
Total P	"	<0.1	<0.1	<0.1	0.3
Alkalinity as CaCO ₃	"	692	953	378	461
Al	"	0.118	0.077	0.071	0.055
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	534	227	193	173
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	0.0029	0.0031	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	6.1	4.9	0.13	4.4
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	8	11	4	3
Mg	"	290	130	60	44
Mn	"	0.062	0.131	0.264	0.684
Na	"	192	105	206	178
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

¹Limit of quantitation (LOQ) instead of MDL was used as reporting limit.

²pH analyzed beyond recommended holding time of 15 minutes.

TABLE 7: ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 24, 2009

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ²		7.5	7.6	7.8	7.8
EC	mS/m	518	271	229	192
Total Dissolved Solids	mg/L	5,052	2,072	1,596	1,180
Total Diss. Org. Carbon	"	4	7	2	5
Cl ⁻	"	1,138	307	387	277
SO ₄ ⁼	"	930	241	268	188
TKN	"	2	38	0.5	1
NH ₃ -N	"	1	37	0.3	0.5
NO ₂ + NO ₃ -N	"	0.69	0.80	0.09	0.60
Total P	"	<0.1	<0.1	<0.1	0.2
Alkalinity as CaCO ₃	"	645	823	362	377
Al	"	0.149	0.075	0.067	0.052
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	382	219	186	151
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	0.0032	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	5.5	3.8	0.04	3.2
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	9	11	4	3
Mg	"	212	132	59	35
Mn	"	0.064	0.110	0.243	0.644
Na	"	201	101	202	175
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

¹Limit of quantitation (LOQ) instead of MDL was used as reporting limit.

²pH analyzed beyond recommended holding time of 15 minutes.