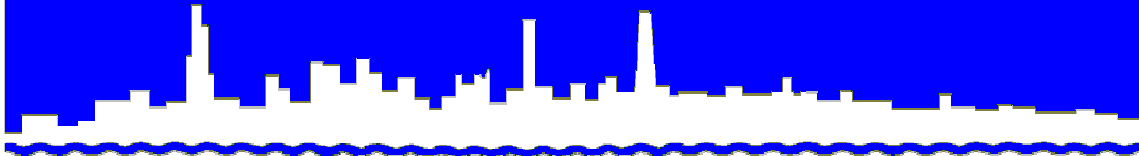


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 09-70

LAWNDALE 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

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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: Lawndale Avenue Solids Management Area - Stickney Water Reclamation Plant, Contract No. 80-159-2P, Illinois Environmental Protection Agency Permit No. 2005-AO-4283-2, Monitoring Report for July, August, and September 2009

The attached ten tables contain the monitoring data for the Lawndale 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 Monitoring Wells M-11 through M-15 at the Lawndale Avenue Solids Management Area Sampled on July 14, 2009

Table 2, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on July 1, 2009

Table 3, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on August 12, 2009

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

Table 5, Analysis of Monthly Compositing Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During July 2009

Table 6, Analysis of Monthly Compositing Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During August 2009

Subject: Lawndale Avenue Solids Management Area - Stickney Water Reclamation Plant, Contract No. 80-159-2P, Illinois Environmental Protection Agency Permit No. 2005-AO-4283-2, Monitoring Report for July, August, and September 2009

Table 7, Analysis of Monthly Composited Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During September 2009

Table 8, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During July 2009

Table 9, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During August 2009

Table 10, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During September 2009

Two new lysimeters, L-1N and L-2N, were installed at this site in September 2008 as replacements for L-1 and L-2, respectively. The new and old lysimeters will be monitored simultaneously for one year. A request will then be submitted to the IEPA to terminate monitoring of the old lysimeters.

Biosolids were placed in and 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
O'Connor/Cox/Lindo

TABLE 1: ANALYSIS¹ OF WATER FROM MONITORING WELLS
M-11 THROUGH M-15 AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 14, 2009

Parameter	Unit	Monitoring Well No.				
		M-11	M-12	M-13	M-14	M-15
pH ²			7.2	7.4	7.5	7.3
EC	mS/m		74	99	63	111
Total Dissolved Solids	mg/L		878	1,360	576	1,690
Total Diss. Org. Carbon	"		2	2	<1	4
Cl ⁻	"		17	11	<10	<10
SO ₄ ⁼	"		343	612	123	837
TKN	"		<0.2	0.3	<0.2	0.6
NH ₃ -N	"		<0.1	0.4	0.2	0.5
NO ₂ + NO ₃ -N	"		0.14	<0.04	<0.04	<0.04
Total P	"	W	<0.1	<0.1	<0.1	<0.1
Alkalinity as CaCO ₃	"	E	330	359	351	381
Al	"	L	<0.035	<0.035	<0.035	0.039
As	"		<0.025	<0.025	<0.025	<0.025
B	"	I	1.8	1.6	1.3	1.2
Ca	"	N	72	142	73	223
Cd	"	A	<0.002	<0.002	<0.002	<0.002
Cr	"	C	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	E	<0.01	<0.01	<0.01	<0.01
Fe	"	S	0.07	0.29	0.07	1.1
Hg	μg/L	S	<0.20	<0.20	<0.20	<0.20
K	mg/L	I	9	10	8	10
Mg	"	B				
Mn	"	L	34	68	40	101
Na	"	E	0.007	0.008	0.005	0.026
Ni	"		127	89	40	61
Pb	"		<0.002	<0.002	<0.002	<0.002
Se	"		<0.02	0.03	<0.02	<0.02
Zn	"		<0.1	<0.1	<0.1	<0.1
			3.5	3.8	0.99	3.4
FC	MPN*		<1	<1	<1	<1
Static H ₂ O Elev.	ft		27	23	18	NA

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

²pH analyzed beyond recommended holding time of 15 minutes.

*MPN = Most probable number per 100 mL.

NA = No analysis; insufficient sample.

TABLE 2: ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 1, 2009

Parameter	Unit	Lysimeter No.				
		L-1	L-1N	L-2	L-2N	L-3N
pH ²		7.3	7.7	7.9	7.8	7.4
EC	mS/m	156	184	214	167	200
Total Dissolved Solids	mg/L	1,504	1,818	946	1,334	1,778
Total Diss. Org. Carbon	"	9	13	2	4	22
Cl ⁻	"	67	40	216	341	134
SO ₄ ⁼	"	525	733	232	165	174
TKN	"	5	6	0.5	0.7	3
NH ₃ -N	"	4	5	<0.1	<0.1	0.7
NO ₂ + NO ₃ -N	"	0.38	<0.04	0.13	0.46	0.31
Total P	"	<0.1	<0.1	<0.1	<0.1	0.2
Alkalinity as CaCO ₃	"	527	587	195	386	1,222
Al	"	0.039	0.038	<0.035	<0.035	0.052
As	"	<0.025	<0.025	<0.025	<0.025	<0.025
B	"	0.49	0.53	0.08	0.12	0.05
Ca	"	217	249	98	112	305
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	"	1.8	1.7	<0.02	<0.02	7.1
Hg	μg/L	<0.20	<0.20	<0.20	<0.20	<0.20
K	mg/L	6	15	<1	2	<1
Mg	"	89	112	43	58	117
Mn	"	0.131	0.069	0.010	0.051	0.624
Na	"	39	38	107	178	69
Ni	"	0.004	<0.002	<0.002	0.003	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE 2 (Continued): ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 1, 2009

Parameter	Unit	Lysimeter No.				
		L-4N	L-5N	L-6	L-6N	L-7N
pH ²		7.4	7.5	8.0	7.4	7.9
EC	mS/m	257	511	142	294	121
Total Dissolved Solids	mg/L	3,078	5,006	NA	2,742	926
Total Diss. Org. Carbon	"	6	4	NA	58	7
Cl ⁻	"	29	1,003	NA	80	123
SO ₄ ⁼	"	1,586	1,828	NA	1,441	136
TKN	"	5	3	0.5	16	1
NH ₃ -N	"	4	2	<0.1	12	0.5
NO ₂ + NO ₃ -N	"	1.5	0.27	0.08	0.14	0.13
Total P	"	<0.1	<0.1	<0.1	<0.1	<0.1
Alkalinity as CaCO ₃	"	673	634	NA	946	398
Al	"	0.058	0.060	NA	0.062	<0.035
As	"	<0.025	<0.025	NA	<0.025	<0.025
B	"	0.11	0.25	NA	0.15	0.22
Ca	"	515	504	NA	589	103
Cd	"	<0.002	<0.002	NA	<0.002	<0.002
Cr	"	<0.0025	<0.0025	NA	<0.0025	<0.0025
Cu	"	<0.01	<0.01	NA	<0.01	<0.01
Fe	"	3.5	8.2	NA	25	0.12
Hg	μg/L	<0.20	<0.20	NA	<0.20	<0.20
K	mg/L	5	17	NA	5	6
Mg	"	119	223	NA	130	60
Mn	"	0.751	0.262	NA	0.640	0.053
Na	"	100	467	NA	69	53
Ni	"	<0.002	0.003	NA	0.004	<0.002
Pb	"	<0.02	<0.02	NA	<0.02	<0.02
Se	"	<0.1	<0.1	NA	<0.1	<0.1
Zn	"	<0.01	<0.01	NA	<0.01	<0.01

TABLE 2 (Continued): ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 1, 2009

Parameter	Unit	Lysimeter No.	
		L-8N	L-9N
pH ²		7.8	7.6
EC	mS/m	198	220
Total Dissolved Solids	mg/L	1,462	1,970
Total Diss. Org. Carbon	"	4	27
Cl ⁻	"	444	222
SO ₄ ⁼	"	158	262
TKN	"	2	3
NH ₃ -N	"	1	0.6
NO ₂ + NO ₃ -N	"	0.18	10
Total P	"	<0.1	<0.1
Alkalinity as CaCO ₃	"	374	978
Al	"	<0.035	0.036
As	"	<0.025	<0.025
B	"	0.17	0.15
Ca	"	121	225
Cd	"	<0.002	<0.002
Cr	"	<0.0025	<0.0025
Cu	"	<0.01	<0.01
Fe	"	0.81	3.7
Hg	µg/L	<0.20	<0.20
K	mg/L	5	5
Mg	"	52	132
Mn	"	0.219	0.391
Na	"	234	150
Ni	"	<0.002	<0.002
Pb	"	<0.02	<0.02
Se	"	<0.1	<0.1
Zn	"	<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-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 12, 2009

Parameter	Unit	Lysimeter No.				
		L-1	L-1N	L-2	L-2N	L-3N
pH ²		7.4	7.7	7.9	8.0	7.3
EC	mS/m	148	199	312	168	266
Total Dissolved Solids	mg/L	1,760	1,960	1,280	1,242	2,212
Total Diss. Org. Carbon	"	10	10	2	4	23
Cl ⁻	"	64	40	248	237	132
SO ₄ ⁼	"	497	612	289	139	241
TKN	"	5	5	0.3	0.6	3
NH ₃ -N	"	5	4	<0.1	<0.1	1
NO ₂ + NO ₃ -N	"	0.11	0.10	0.18	0.23	0.29
Total P	"	<0.1	<0.1	<0.1	<0.1	0.3
Alkalinity as CaCO ₃	"	490	538	209	405	1,212
Al	"	0.070	0.095	0.046	<0.035	0.098
As	"	<0.025	<0.025	<0.025	<0.025	<0.025
B	"	0.50	0.55	0.11	0.14	0.08
Ca	"	230	235	125	108	365
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	"	2.2	1.2	0.12	<0.02	8.5
Hg	μg/L	<0.20	<0.20	<0.20	<0.20	<0.20
K	mg/L	6	16	2	2	2
Mg	"	95	113	55	52	136
Mn	"	0.125	0.035	0.012	0.033	0.714
Na	"	43	44	134	167	81
Ni	"	0.004	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE 3 (Continued): ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 12, 2009

Parameter	Unit	Lysimeter No.				
		L-4N	L-5N	L-6	L-6N	L-7N
pH ²		7.4	7.5	7.9	7.4	7.9
EC	mS/m	308	588	153	355	124
Total Dissolved Solids	mg/L	3,362	5,746	NA	4,052	964
Total Diss. Org. Carbon	"	5	3	NA	55	7
Cl ⁻	"	28	897	NA	96	123
SO ₄ ⁼	"	1,278	1,472	NA	1,200	97
TKN	"	5	3	0.7	14	0.8
NH ₃ -N	"	5	2	0.4	12	0.2
NO ₂ + NO ₃ -N	"	0.52	0.30	0.11	0.25	0.12
Total P	"	<0.1	<0.1	<0.1	<0.1	<0.1
Alkalinity as CaCO ₃	"	628	541	NA	439	369
Al	"	0.120	0.126	NA	0.133	0.040
As	"	<0.025	<0.025	NA	<0.025	<0.025
B	"	0.14	0.27	NA	0.17	0.22
Ca	"	545	531	NA	613	96
Cd	"	<0.002	<0.002	NA	<0.002	<0.002
Cr	"	<0.0025	<0.0025	NA	<0.0025	<0.0025
Cu	"	<0.01	<0.01	NA	<0.01	<0.01
Fe	"	5.0	9.2	NA	32	0.24
Hg	μg/L	<0.20	<0.20	NA	<0.20	<0.20
K	mg/L	6	19	NA	6	5
Mg	"	117	239	NA	145	59
Mn	"	0.751	0.257	NA	0.691	0.066
Na	"	91	447	NA	74	61
Ni	"	<0.002	<0.002	NA	0.006	<0.002
Pb	"	<0.02	<0.02	NA	<0.02	<0.02
Se	"	<0.1	<0.1	NA	<0.1	<0.1
Zn	"	<0.01	0.02	NA	<0.01	<0.01

TABLE 3 (Continued): ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 12, 2009

Parameter	Unit	Lysimeter No.	
		L-8N	L-9N
pH ²		7.9	7.6
EC	mS/m	229	275
Total Dissolved Solids	mg/L	1,612	NA
Total Diss. Org. Carbon	"	7	29
Cl ⁻	"	428	218
SO ₄ ⁼	"	156	247
TKN	"	3	2
NH ₃ -N	"	1	0.6
NO ₂ + NO ₃ -N	"	0.81	0.48
Total P	"	<0.1	<0.1
Alkalinity as CaCO ₃	"	344	1,058
Al	"	0.045	0.075
As	"	<0.025	<0.025
B	"	0.18	0.17
Ca	"	126	261
Cd	"	<0.002	<0.002
Cr	"	<0.0025	<0.0025
Cu	"	<0.01	<0.01
Fe	"	1.3	6.7
Hg	µg/L	<0.20	<0.20
K	mg/L	5	5
Mg	"	55	150
Mn	"	0.225	0.429
Na	"	258	166
Ni	"	<0.002	<0.002
Pb	"	<0.02	<0.02
Se	"	<0.1	<0.1
Zn	"	<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 4: ANALYSIS¹ OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 9, 2009

Parameter	Unit	Lysimeter No.				
		L-1	L-1N	L-2	L-2N	L-3N
pH ²		7.4	7.8	8.0	8.0	7.4
EC	mS/m	143	171	292	188	226
Total Dissolved Solids	mg/L	1,640	1,672	1,248	1,412	2,036
Total Diss. Org. Carbon	"	9	9	NA	4	23
Cl ⁻	"	67	38	264	328	143
SO ₄ ⁼	"	531	653	NA	228	245
TKN	"	5	5	0.4	0.6	3
NH ₃ -N	"	5	4	0.2	<0.1	1
NO ₂ + NO ₃ -N	"	0.06	0.10	0.21	0.09	0.25
Total P	"	<0.1	<0.1	<0.1	<0.1	0.3
Alkalinity as CaCO ₃	"	521	557	213	421	1,294
Al	"	0.078	0.080	0.044	0.043	0.106
As	"	<0.025	<0.025	<0.025	<0.025	<0.025
B	"	0.50	0.57	0.10	0.16	0.06
Ca	"	234	228	134	127	345
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	0.0031	0.0026	<0.0025	<0.0025	0.0035
Cu	"	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	"	2.4	1.1	0.30	0.04	8.4
Hg	μg/L	<0.20	<0.20	<0.20	<0.20	<0.20
K	mg/L	6	15	2	2	<1
Mg	"	92	106	56	67	126
Mn	"	0.123	0.036	0.021	0.044	0.668
Na	"	41	41	137	194	76
Ni	"	<0.002	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01	<0.01

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

Parameter	Unit	Lysimeter No.				
		L-4N	L-5N	L-6	L-6N	L-7N
pH ²		7.5	7.5	NA	7.3	8.0
EC	mS/m	286	539	NA	305	115
Total Dissolved Solids	mg/L	2,976	5,448	1,812	3,660	952
Total Diss. Org. Carbon	"	5	5	NA	60	7
Cl ⁻	"	33	905	96	80	129
SO ₄ ⁼	"	1,449	1,867	NA	1,511	117
TKN	"	5	4	1	16	0.7
NH ₃ -N	"	4	3	0.6	11	0.2
NO ₂ + NO ₃ -N	"	0.73	0.35	0.10	0.25	0.08
Total P	"	<0.1	<0.1	<0.1	<0.1	<0.1
Alkalinity as CaCO ₃	"	672	653	473	1,036	396
Al	"	0.140	0.149	NA	0.164	<0.035
As	"	<0.025	<0.025	NA	<0.025	<0.025
B	"	0.11	0.27	NA	0.12	0.23
Ca	"	553	554	NA	633	99
Cd	"	<0.002	<0.002	NA	<0.002	<0.002
Cr	"	0.0031	0.0042	NA	0.0035	<0.0025
Cu	"	<0.01	<0.01	NA	<0.01	<0.01
Fe	"	7.0	9.4	NA	35	1.7
Hg	μg/L	<0.20	<0.20	NA	<0.20	<0.20
K	mg/L	5	18	NA	5	5
Mg	"	108	231	NA	139	55
Mn	"	0.713	0.278	NA	0.732	0.067
Na	"	90	471	NA	72	58
Ni	"	<0.002	<0.002	NA	0.004	<0.002
Pb	"	<0.02	<0.02	NA	<0.02	<0.02
Se	"	<0.1	<0.1	NA	<0.1	<0.1
Zn	"	<0.01	<0.01	NA	0.02	<0.01

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

Parameter	Unit	Lysimeter No.	
		L-8N	L-9N
pH ²		7.9	7.6
EC	mS/m	195	226
Total Dissolved Solids	mg/L	1,540	2,028
Total Diss. Org. Carbon	"	4	28
Cl ⁻	"	509	226
SO ₄ ⁼	"	188	270
TKN	"	2	2
NH ₃ -N	"	1	0.6
NO ₂ + NO ₃ -N	"	0.21	0.26
Total P	"	<0.1	<0.1
Alkalinity as CaCO ₃	"	348	1,080
Al	"	0.039	0.083
As	"	<0.025	<0.025
B	"	0.19	0.15
Ca	"	127	255
Cd	"	<0.002	<0.002
Cr	"	<0.0025	0.0039
Cu	"	<0.01	<0.01
Fe	"	0.87	6.1
Hg	µg/L	<0.20	<0.20
K	mg/L	5	5
Mg	"	50	141
Mn	"	0.216	0.427
Na	"	263	155
Ni	"	<0.002	<0.002
Pb	"	<0.02	<0.02
Se	"	<0.1	<0.1
Zn	"	<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 5: ANALYSIS¹ OF MONTHLY COMPOSITED DIGESTED
 BIOSOLIDS PLACED IN THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING JULY 2009

Parameter	Unit	Concentration
pH		7.9
Total Solids	%	17.7
Total Volatile Solids ²	%	45.8
TKN	mg/kg	51,064
NH ₃ -N	"	15,357

¹Values are the means of fifteen samples.

²Total volatile solids as a percentage of total solids.

TABLE 6: ANALYSIS¹ OF MONTHLY COMPOSITED DIGESTED
 BIOSOLIDS PLACED IN THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2009

Parameter	Unit	Concentration
pH		8.1
Total Solids	%	19.5
Total Volatile Solids ²	%	42.1
TKN	mg/kg	46,894
NH ₃ -N	"	13,832

¹Values are the means of eight samples.

²Total volatile solids as a percentage of total solids.

TABLE 7: ANALYSIS¹ OF MONTHLY COMPOSITED DIGESTED
 BIOSOLIDS PLACED IN THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2009

Parameter	Unit	Concentration
pH		8.0
Total Solids	%	19.2
Total Volatile Solids ²	%	44.5
TKN	mg/kg	44,596
NH ₃ -N	"	13,382

¹Values are the means of five samples.

²Total volatile solids as a percentage of total solids.

TABLE 8: ANALYSIS¹ OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE LAWNSDALE AVENUE SOLIDS MANAGEMENT DRYING AREA DURING JULY 2009

Parameter	Unit	Concentration
pH		7.0
Total Solids	%	58.4
Total Volatile Solids ²	%	40.5
TKN	mg/kg	26,746
NH ₃ -N	"	4,003
Total P	"	21,335
Al	"	18,251
As	"	<10
Ca	"	39,888
Cd	"	4
Cr	"	170
Cu	"	426
Fe	"	17,608
Hg	"	1.2
K	"	2,427
Mg	"	17,936
Mn	"	579
Mo	"	12
Na	"	<800
Ni	"	45
Pb	"	134
Se	"	<8
Zn	"	917

¹Values are the means of nineteen samples.

²Total volatile solids as a percentage of total solids.

TABLE 9: ANALYSIS¹ OF MONTHLY COMPOSITED PROCESSED DIGESTED
BIOSOLIDS REMOVED FROM THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2009

Parameter	Unit	Concentration
pH		7.2
Total Solids	%	53.9
Total Volatile Solids ²	%	39.3
TKN	mg/kg	33,052
NH ₃ -N	"	6,456
Total P	"	21,821
Al	"	17,542
As	"	<10
Ca	"	39,303
Cd	"	<2
Cr	"	201
Cu	"	401
Fe	"	16,928
Hg	"	1.3
K	"	2,704
Mg	"	17,824
Mn	"	603
Mo	"	12
Na	"	<800
Ni	"	46
Pb	"	131
Se	"	<8
Zn	"	856

¹Values are the means of fifteen samples.

²Total volatile solids as a percentage of total solids.

TABLE 10: ANALYSIS¹ OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE LAWNSDALE AVENUE SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2009

Parameter	Unit	Concentration
pH		7.1
Total Solids	%	48.8
Total Volatile Solids ²	%	38.5
TKN	mg/kg	29,669
NH ₃ -N	”	5,629
Total P	”	20,722
Al	”	16,120
As	”	<10
Ca	”	46,759
Cd	”	6
Cr	”	189
Cu	”	407
Fe	”	16,428
Hg	”	1.0
K	”	2,628
Mg	”	21,633
Mn	”	561
Mo	”	11
Na	”	<800
Ni	”	44
Pb	”	123
Se	”	<8
Zn	”	869

¹Values are the means of twenty samples.

²Total volatile solids as a percentage of total solids.