

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 06-79

LAWNDALE AVENUE SOLIDS MANAGEMENT AREA

MONITORING DATA FOR

THIRD QUARTER 2006

DECEMBER 2006

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

December 22, 2006

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: Lawndale Avenue Solids Management Area - Stickney WRP, Contract No. 80-159-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2006

The attached ten tables contain the monitoring data for the Lawndale Avenue Solids Management Area for July, August, and September 2006 as required by IEPA Operating Permit No. 2005-AO-4283. During the quarter, Lysimeters L-1 and L-6N yielded no samples due to malfunction. Both devices have been serviced and are expected to function during future sampling events. The District has submitted a request to the IEPA for approval to terminate monitoring of the old lysimeters L-7 and L-8.

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 25, 2006

Table 2, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on July 5, 2006

Table 3, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on August 2, 2006

Table 4, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on September 13, 2006

Table 5, Analysis of Monthly Compositing Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During July 2006

Subject: Lawndale Avenue Solids Management Area - Stickney WRP, Contract No. 80-159-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2006

Table 6, Analysis of Monthly Compositated Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During August 2006

Table 7, Analysis of Monthly Compositated Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During September 2006

Table 8, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During July 2006

Table 9, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During August 2006

Table 10, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During September 2006

Biosolids were placed in and removed from the solids drying area during the months of July, August, and September.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:spy
Attachments

cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Mr. S. Levy
Ms. M. Sharma
Mr. W. Stuba
Dr. T. Granato
Dr. A. Cox
Dr. P. Lindo
Ms. M. Patel

TABLE 1: ANALYSIS OF WATER FROM MONITORING WELLS M-11 THROUGH M-15
 AT THE LAWNSDALE AVENUE SOLIDS MANAGEMENT AREA
 SAMPLED ON JULY 25, 2006

Parameter	Unit	Monitoring Well No.				
		W-11	W-12	W-13	W-14	W-15
pH ¹		7.6	7.6	7.5	7.6	7.5
EC	mS/m	34	47	62	41	68
Total Dissolved Solids	mg/L	712	1,008	1,450	552	1,858
Total Dissolved Organic Carbon	"	1	1	1	1	2
Cl ⁻	"	1	16	1	0.9	0.8
SO ₄ ⁼	"	186	347	606	135	812
TKN	"	1.4	0.38	0.54	0.31	0.62
NH ₃ -N	"	1.2	0.22	0.40	0.21	0.45
NO ₂ + NO ₃ -N	"	0.03	0.03	0.02	< 0.02	< 0.02
Total P	"	0.06	0.04	< 0.04	< 0.04	0.06
Alkalinity as CaCO ₃	"	362	306	332	326	351
Al	"	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
As	"	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
B	"	1.32	1.75	1.50	1.30	1.17
Ca	"	92	78	166	74	234
Cd	"	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Cr	"	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cu	"	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Fe	"	0.008	0.012	0.038	0.013	0.348
Hg	μg/L	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
K	mg/L	8	10	10	8	10
Mg	"	43.0	37.7	80.0	40.0	107
Mn	"	0.0545	0.0146	0.0155	0.0066	0.0236
Na	"	62	144	96	49	66
Ni	"	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Pb	"	0.005	< 0.004	0.010	< 0.004	< 0.004
Se	"	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Zn	"	0.411	0.844	1.46	0.805	2.65
Fecal Coliform ²	#/100mL	< 1	< 1	< 1	< 1	< 1

¹pH analyzed beyond recommended holding time of 15 minutes.

²Most probable number/100 mL.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 5, 2006

Parameter	Unit	Lysimeter No.				
		L-1	L-2	L-3	L-3N	L-4
pH ¹			7.7	7.7	7.4	7.1
EC	mS/m		2,840	1,267	2,214	3,597
Total Dissolved Solids	mg/L		2,752	1,074	1,746	4,860
Total Dissolved Organic Carbon	"		3	6	17	15
Cl ⁻	"		459	180	120	53
SO ₄ ⁼	"		411	93	234	1,828
		L				
TKN	"	Y	0.42	4.0	2.7	14
NH ₃ -N	"	S	< 0.04	3.4	1.0	10
NO ₂ + NO ₃ -N	"	I	0.10	< 0.02	0.03	0.08
Total P	"	M	< 0.10	1.6	< 0.05	0.60
Alkalinity as CaCO ₃	"	E	344	280	940	787
		T				
Al	"	E	0.020	0.010	0.033	0.049
As	"	R	< 0.02	< 0.01	< 0.01	< 0.01
B	"		0.244	0.224	0.116	0.200
Ca	"	M	262	118	348	585
Cd	"	A	< 0.0008	< 0.0004	0.0004	< 0.0004
		L				
Cr	"	F	< 0.0010	< 0.0005	< 0.0005	< 0.0005
Cu	"	U	< 0.004	< 0.002	< 0.002	< 0.002
Fe	"	N	0.032	1.65	5.45	14.2
Hg	μg/L	C	< 0.10	< 0.05	< 0.05	< 0.05
K	mg/L	T	3	3	2	8
		I				
Mg	"	O	115	52.0	131	327
Mn	"	N	0.0206	0.1087	1.106	0.7835
Na	"		263	97	76	26
Ni	"		< 0.0008	< 0.0004	< 0.0004	< 0.0004
Pb	"		0.022	0.008	0.008	< 0.004
Se	"		< 0.04	< 0.02	< 0.02	< 0.02
Zn	"		0.008	0.003	0.013	0.019

TABLE 2 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 5, 2006

Parameter	Unit	Lysimeter No.				
		L-4N	L-5	L-5N	L-6	L-6N
pH ¹		7.4	7.7	7.6	8.0	
EC	mS/m	3,304	1,534	4,773	1,607	
Total Dissolved Solids	mg/L	3,602	1,564	5,812	1,720	
Total Dissolved Organic Carbon	"	10	1	4	NA	
Cl ⁻	"	40	43	656	NA	
SO ₄ ⁼	"	1,828	579	1,314	NA	
TKN	"	14	0.16	2.4	0.82	L
NH ₃ -N	"	11	< 0.02	1.4	< 0.04	Y
NO ₂ + NO ₃ -N	"	0.04	0.06	0.20	0.10	S
Total P	"	< 0.05	< 0.05	< 0.05	< 0.10	I
Alkalinity as CaCO ₃	"	676	230	483	NA	M
Al	"	0.049	0.029	0.059	NA	E
As	"	< 0.01	< 0.01	< 0.01	NA	R
B	"	0.151	0.786	0.374	NA	
Ca	"	551	164	531	NA	M
Cd	"	< 0.0004	< 0.0004	0.0011	NA	A
Cr	"	< 0.0005	< 0.0005	< 0.0005	NA	L
Cu	"	< 0.002	< 0.002	< 0.002	NA	F
Fe	"	10.8	0.059	0.171	NA	U
Hg	µg/L	< 0.05	< 0.05	< 0.05	NA	N
K	mg/L	7	3	30	NA	C
Mg	"	210	106	331	NA	T
Mn	"	1.394	0.0273	0.2273	NA	I
Na	"	159	43	315	NA	O
Ni	"	< 0.0004	< 0.0004	0.0019	NA	N
Pb	"	0.004	0.009	0.004	NA	
Se	"	< 0.02	< 0.02	< 0.02	NA	
Zn	"	0.023	0.007	0.010	NA	

TABLE 2 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 5, 2006

Parameter	Unit	Lysimeter No.		
		L-7N	L-8N	L-9N
pH ¹		8.0	7.7	7.5
EC	mS/m	NA	2,223	2,386
Total Dissolved Solids	mg/L	1,140	1,960	1,846
Total Dissolved Organic Carbon	"	8	8	25
Cl ⁻	"	119	337	134
SO ₄ ⁼	"	136	201	276
TKN	"	0.94	3.3	2.6
NH ₃ -N	"	0.18	2.2	0.84
NO ₂ + NO ₃ -N	"	0.10	0.11	0.13
Total P	"	< 0.10	< 0.05	< 0.05
Alkalinity as CaCO ₃	"	328	521	902
Al	"	0.020	0.024	0.024
As	"	< 0.02	< 0.01	< 0.01
B	"	0.242	0.213	0.217
Ca	"	108	205	184
Cd	"	< 0.0008	0.0004	0.0004
Cr	"	< 0.0010	< 0.0005	< 0.0005
Cu	"	< 0.004	< 0.002	< 0.002
Fe	"	0.034	0.097	5.78
Hg	μg/L	< 0.10	< 0.05	< 0.05
K	mg/L	8	6	6
Mg	"	69.7	98.7	97.2
Mn	"	0.0518	0.2764	0.1490
Na	"	52	193	331
Ni	"	0.0012	< 0.0004	0.0011
Pb	"	0.014	0.008	0.010
Se	"	< 0.04	< 0.02	< 0.02
Zn	"	0.008	0.009	0.021

¹pH analyzed beyond recommended holding time of 15 minutes.

NA = No analysis; insufficient sample.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 2, 2006

Parameter	Unit	Lysimeter No.				
		L-1	L-2 ²	L-3	L-3N	L-4
pH ¹			7.6	7.7	7.4	7.1
EC	mS/m		289	125	204	328
Total Dissolved Solids	mg/L		2,864	1,176	1,660	4,514
Total Dissolved Organic Carbon	"		2	6	18	15
Cl ⁻	"		483	173	132	54
SO ₄ ⁼	"		586	146	235	1,679
		L				
TKN	"	Y	0.42	3.6	2.7	14
NH ₃ -N	"	S	< 0.04	3.0	1.1	11
NO ₂ + NO ₃ -N	"	I	0.46	0.16	0.16	0.18
Total P	"	M	0.10	1.2	0.08	0.66
Alkalinity as CaCO ₃	"	E	346	348	921	850
		T				
Al	"	E	0.044	0.019	0.046	0.060
As	"	R	< 0.02	< 0.01	< 0.01	< 0.01
B	"		0.176	0.201	0.098	0.176
Ca	"	M	255	132	339	595
Cd	"	A	0.0010	0.0004	0.0005	< 0.0004
		L				
Cr	"	F	< 0.0010	< 0.0005	< 0.0005	< 0.0005
Cu	"	U	< 0.004	< 0.002	< 0.002	< 0.002
Fe	"	N	0.028	1.78	6.51	18.1
Hg	μg/L	C	< 0.10	< 0.05	< 0.05	< 0.05
K	mg/L	T	3	3	2	9
		I				
Mg	"	O	114	55.9	134	299
Mn	"	N	0.0258	0.1809	1.012	0.9308
Na	"		266	93	80	36
Ni	"		< 0.0008	< 0.0004	0.0017	< 0.0004
Pb	"		< 0.008	< 0.004	< 0.004	< 0.004
Se	"		< 0.04	< 0.02	< 0.02	< 0.02
Zn	"		0.008	0.006	0.015	0.030

TABLE 3 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 2, 2006

Parameter	Unit	Lysimeter No.				
		L-4N	L-5	L-5N	L-6	L-6N
pH ¹		7.4	7.7	7.6	NA	
EC	mS/m	313	133	425	NA	
Total Dissolved Solids	mg/L	3,648	1,460	5,592	NA	
Total Dissolved Organic Carbon	"	10	0.6	4	NA	
Cl ⁻	"	37	42	593	NA	
SO ₄ ⁼	"	1,499	587	1,441	NA	
TKN	"	13	0.20	2.3	0.46	L
NH ₃ -N	"	9.8	< 0.02	1.4	< 0.02	Y
NO ₂ + NO ₃ -N	"	0.52	0.22	1.2	0.10	S
Total P	"	0.05	< 0.05	< 0.05	0.09	I
Alkalinity as CaCO ₃	"	664	220	439	NA	M
Al	"	0.057	0.020	0.068	NA	E
As	"	< 0.01	< 0.01	< 0.01	NA	R
B	"	0.137	0.768	0.345	NA	
Ca	"	534	166	479	NA	M
Cd	"	< 0.0004	< 0.0004	0.0006	NA	A
Cr	"	< 0.0005	< 0.0005	< 0.0005	NA	L
Cu	"	< 0.002	< 0.002	< 0.002	NA	F
Fe	"	10.4	0.011	0.433	NA	U
Hg	µg/L	< 0.05	< 0.05	< 0.05	NA	N
K	mg/L	8	3	28	NA	C
Mg	"	201	105	307	NA	T
Mn	"	1.444	0.0064	0.2585	NA	I
Na	"	151	43	312	NA	O
Ni	"	< 0.0004	< 0.0004	0.0025	NA	N
Pb	"	< 0.004	< 0.004	< 0.004	NA	
Se	"	< 0.02	< 0.02	< 0.02	NA	
Zn	"	0.023	0.007	0.014	NA	

TABLE 3 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 2, 2006

Parameter	Unit	Lysimeter No.		
		L-7N ²	L-8N	L-9N
pH ¹		8.2	8.1	7.6
EC	mS/m	118	186	217
Total Dissolved Solids	mg/L	1,084	1,668	1,892
Total Dissolved Organic Carbon	"	8	NA	27
Cl ⁻	"	104	315	144
SO ₄ ⁼	"	128	NA	278
TKN	"	0.98	3.3	2.7
NH ₃ -N	"	0.12	2.2	0.75
NO ₂ + NO ₃ -N	"	0.24	0.69	1.6
Total P	"	< 0.10	< 0.10	0.06
Alkalinity as CaCO ₃	"	298	514	944
Al	"	0.020	0.024	0.026
As	"	< 0.02	< 0.02	< 0.01
B	"	0.234	0.188	0.207
Ca	"	98	183	175
Cd	"	< 0.0008	< 0.0008	< 0.0004
Cr	"	< 0.0010	< 0.0010	< 0.0005
Cu	"	< 0.004	< 0.004	< 0.002
Fe	"	0.048	0.050	6.08
Hg	μg/L	< 0.10	< 0.10	< 0.05
K	mg/L	7	5	6
Mg	"	63.7	90.5	94.3
Mn	"	0.0388	0.1804	0.1427
Na	"	47	166	335
Ni	"	0.0016	< 0.0008	0.0014
Pb	"	< 0.008	< 0.008	< 0.004
Se	"	< 0.04	< 0.04	< 0.02
Zn	"	0.008	0.010	0.059

¹pH analyzed beyond recommended holding time of 15 minutes.

²Sample inadvertently diluted 1:2 before pH and EC analyzed.

NA = No analysis; insufficient sample.

TABLE 4: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 13, 2006

Parameter	Unit	Lysimeter No.				
		L-1	L-2	L-3	L-3N	L-4
pH ¹			7.8	7.6	7.5	7.2
EC	mS/m		299	147	202	371
Total Dissolved Solids	mg/L		NA	1,166	1,554	4,022
Total Dissolved Organic Carbon	"		5	6	20	17
Cl ⁻	"		560	198	137	55
SO ₄ ⁼	"		720	168	331	1,944
		L				
TKN	"	Y	0.36	3.7	3.1	14
NH ₃ -N	"	S	< 0.04	3.2	1.5	11
NO ₂ + NO ₃ -N	"	I	1.7	0.36	0.92	0.34
Total P	"	M	0.14	1.5	0.27	0.85
Alkalinity as CaCO ₃	"	E	406	319	1,179	924
		T				
Al	"	E	0.052	0.017	0.041	0.057
As	"	R	< 0.02	< 0.01	< 0.01	< 0.01
B	"		0.282	0.244	0.098	0.228
Ca	"	M	279	125	351	602
Cd	"	A	< 0.0008	0.0004	0.0005	< 0.0004
		L				
Cr	"	F	< 0.0010	< 0.0005	< 0.0005	< 0.0005
Cu	"	U	0.010	< 0.002	< 0.002	< 0.002
Fe	"	N	0.150	1.22	9.55	20.5
Hg	μg/L	C	0.26	0.14	0.14	0.14
K	mg/L	T	3	3	2	9
		I				
Mg	"	O	126	54.4	139	296
Mn	"	N	0.0288	0.1019	0.9930	0.8582
Na	"		273	96	80	27
Ni	"		0.0042	< 0.0004	0.0013	< 0.0004
Pb	"		0.015	< 0.004	< 0.004	< 0.004
Se	"		< 0.04	< 0.02	< 0.02	< 0.02
Zn	"		0.043	0.004	0.010	0.021

TABLE 4 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 13, 2006

Parameter	Unit	Lysimeter No.					
		L-4N	L-5	L-5N	L-6	L-6N	
pH ¹		7.6	7.7	7.6	8.1		
EC	mS/m	324	174	473	206		
Total Dissolved Solids	mg/L	3,056	1,476	4,988	NA		
Total Dissolved Organic Carbon	"	11	0.7	5	NA		
Cl ⁻	"	52	75	582	NA		
SO ₄ ⁼	"	1,633	682	1,942	NA		
TKN	"	12	0.05	2.2	NA		L
NH ₃ -N	"	10	0.05	1.4	NA		Y
NO ₂ + NO ₃ -N	"	4.6	0.92	1.3	NA		S
Total P	"	0.41	0.09	0.08	NA		I
Alkalinity as CaCO ₃	"	857	301	519	NA		M
Al	"	0.048	0.020	0.064	NA		E
As	"	< 0.01	< 0.01	< 0.01	NA		R
B	"	0.151	0.781	0.363	NA		
Ca	"	545	175	521	NA		M
Cd	"	< 0.0004	0.0004	0.0007	NA		A
Cr	"	< 0.0005	< 0.0005	< 0.0005	NA		L
Cu	"	< 0.002	< 0.002	< 0.002	NA		F
Fe	"	12.5	0.031	1.92	NA		U
Hg	µg/L	0.15	0.13	0.12	NA		N
K	mg/L	10	4	29	NA		C
Mg	"	200	112	310	NA		T
Mn	"	1.254	0.0298	0.3112	NA		I
Na	"	108	51	326	NA		O
Ni	"	< 0.0004	< 0.0004	0.0017	NA		N
Pb	"	< 0.004	< 0.004	< 0.004	NA		
Se	"	< 0.02	< 0.02	< 0.02	NA		
Zn	"	0.022	0.005	0.008	NA		

TABLE 4 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 13, 2006

Parameter	Unit	Lysimeter No.		
		L-7N	L-8N	L-9N
pH ¹		8.0	7.8	7.6
EC	mS/m	152	228	210
Total Dissolved Solids	mg/L	1,240	1,726	1,690
Total Dissolved Organic Carbon	"	11	10	25
Cl ⁻	"	178	378	162
SO ₄ ⁼	"	206	205	312
TKN	"	1.1	3.5	2.7
NH ₃ -N	"	0.24	2.1	0.84
NO ₂ + NO ₃ -N	"	1.7	1.3	0.74
Total P	"	0.12	0.06	0.11
Alkalinity as CaCO ₃	"	402	636	1,045
Al	"	0.030	0.032	0.018
As	"	< 0.02	< 0.01	< 0.01
B	"	0.278	0.236	0.236
Ca	"	132	206	178
Cd	"	< 0.0008	0.0005	0.0006
Cr	"	< 0.0010	< 0.0005	< 0.0005
Cu	"	< 0.004	< 0.002	< 0.002
Fe	"	0.288	0.159	6.31
Hg	μg/L	0.36	0.08	0.10
K	mg/L	8	6	6
Mg	"	77.0	108	95.7
Mn	"	0.0546	0.2054	0.1370
Na	"	75	182	321
Ni	"	0.0022	0.0008	0.0009
Pb	"	0.011	< 0.004	0.004
Se	"	< 0.04	< 0.02	< 0.02
Zn	"	0.012	0.009	0.015

¹pH analyzed beyond recommended holding time of 15 minutes.

NA = No analysis; insufficient sample.

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED DIGESTED
BIOSOLIDS PLACED IN THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT DRYING AREA DURING JULY 2006

Parameter	Unit	Concentration*
pH		7.6
Total Solids	%	10.2
Total Volatile Solids	%	44.6
TKN	mg/kg	38,676
NH ₃ -N	"	9,130

*Values are the means of eleven samples.

TABLE 6: ANALYSIS OF MONTHLY COMPOSITED DIGESTED
 BIOSOLIDS PLACED IN THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2006

Parameter	Unit	Concentration*
pH		8.0
Total Solids	%	10.5
Total Volatile Solids	%	44.4
TKN	mg/kg	47,237
NH ₃ -N	"	16,123

*Values are the means of eight samples.

TABLE 7: ANALYSIS OF MONTHLY COMPOSITED DIGESTED
BIOSOLIDS PLACED IN THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2006

Parameter	Unit	Concentration*
pH		7.7
Total Solids	%	10.8
Total Volatile Solids	%	43.7
TKN	mg/kg	39,364
NH ₃ -N	"	11,262

*Values are the means of six samples.

TABLE 8: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
 BIOSOLIDS REMOVED FROM THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING JULY 2006

Parameter	Unit	Concentration*
pH		7.3
Total Solids	%	38.7
Total Volatile Solids	%	35.3
TKN	mg/kg	25,243
NH ₃ -N	"	5,191
Total P	"	15,475
Al	"	22,194
As	"	4
Ca	"	45,114
Cd	"	5
Cr	"	198
Cu	"	351
Fe	"	18,909
Hg	"	1.6
K	"	4,926
Mg	"	21,790
Mn	"	471
Mo	"	15
Na	"	1,329
Ni	"	48
Pb	"	118
Se	"	< 0.7
Zn	"	796

*Values are the means of twenty samples.

TABLE 9: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
 BIOSOLIDS REMOVED FROM THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2006

Parameter	Unit	Concentration*
pH		7.6
Total Solids	%	39.8
Total Volatile Solids	%	36.8
TKN	mg/kg	30,995
NH ₃ -N	"	8,804
Total P	"	17,965
Al	"	24,637
As	"	5
Ca	"	45,337
Cd	"	5
Cr	"	205
Cu	"	350
Fe	"	18,984
Hg	"	0.83
K	"	5,653
Mg	"	22,503
Mn	"	477
Mo	"	15
Na	"	1,147
Ni	"	50
Pb	"	127
Se	"	< 0.7
Zn	"	810

*Values are the means of twenty-two samples.

TABLE 10: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
 BIOSOLIDS REMOVED FROM THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2006

Parameter	Unit	Concentration*
pH		7.2
Total Solids	%	61.4
Total Volatile Solids	%	30.0
TKN	mg/kg	18,169
NH ₃ -N	"	3,545
Total P	"	13,620
Al	"	22,945
As	"	4
Ca	"	50,073
Cd	"	5
Cr	"	191
Cu	"	304
Fe	"	19,414
Hg	"	1.0
K	"	5,082
Mg	"	24,959
Mn	"	465
Mo	"	13
Na	"	735
Ni	"	47
Pb	"	110
Se	"	< 0.7
Zn	"	721

*Values are the means of twenty-four samples.