

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 07-57

LAWNDALE AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

SECOND QUARTER 2007

AUGUST 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

August 30, 2007

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 April, May, and June 2007

The attached eight tables contain the monitoring data for the Lawndale Avenue Solids Management Area for April, May, and June 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-7 and L-8. 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 Monitoring Wells M-11 through M-15 at the Lawndale Avenue Solids Management Area Sampled on April 18, 2007

Table 2, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on April 11, 2007

Table 3, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on May 9, 2007

Table 4, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on June 6, 2007

Table 5, Analysis of Monthly Compositing Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During May 2007

Subject: Lawndale Avenue Solids Management Area - Stickney WRP, Contract No. 80-159-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for April, May, and June 2007

Table 6, Analysis of Monthly Compositated Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During June 2007

Table 7, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During May 2007

Table 8, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During June 2007

Biosolids were placed in and removed from the solids drying area during May and June 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/S. Levy/Jamjun/Quintanilla

TABLE 1: ANALYSIS OF WATER FROM MONITORING WELLS
M-11 THROUGH M-15 AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 18, 2007

Parameter	Unit	Monitoring Well No.				
		M-11	M-12	M-13	M-14	M-15
pH ¹		7.5	7.7	7.9	7.5	7.7
EC	mS/m	78	111	140	165	78
Total Diss. Org. Carbon	mg/L	1	1	1	0.7	1
Cl ⁻	"	9	16	11	10	10
SO ₄ ⁼	"	188	346	641	119	820
TKN	"	0.71	0.29	0.38	0.14	0.74
NH ₃ -N	"	0.61	0.25	0.36	0.20	0.44
NO ₂ + NO ₃ -N	"	0.10	0.12	0.05	0.03	0.03
Total P	"	<0.05	0.05	<0.05	0.05	<0.05
Alkalinity as CaCO ₃	"	370	308	339	351	366
Al	"	0.030	0.024	0.046	0.021	0.057
As	"	<0.01	<0.01	<0.01	<0.01	<0.01
B	"	1.31	1.82	1.54	1.33	1.19
Ca	"	91	79	165	75	235
Cd	"	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Cr	"	0.0010	0.0008	0.0013	0.0010	0.0014
Cu	"	<0.002	<0.002	<0.002	<0.002	<0.002
Fe	"	0.009	0.009	0.007	0.043	0.553
Hg	μg/L	0.08	<0.05	<0.05	<0.05	<0.05
K	mg/L	8	10	10	8	10
Mg	"	44.0	37.6	78.8	41.4	106
Mn	"	0.0342	0.0037	0.0095	0.0032	0.0184
Na	"	56	137	90	42	63
Ni	"	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Pb	"	<0.004	0.004	<0.004	0.004	<0.004
Se	"	<0.02	<0.02	<0.02	<0.02	<0.02
Zn	"	0.553	0.567	0.265	0.584	3.10
FC	MPN*	<1	<1	<1	<1	<1

¹pH analyzed beyond recommended holding time of 15 minutes.

*MPN = Most probable number per 100 mL.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 11, 2007

Parameter	Unit	Lysimeter No.				
		L-1	L-2	L-3	L-3N	L-4
pH ¹		7.4	7.9	7.8	7.3	7.1
EC	mS/m	170	287	119	243	347
Total Dissolved Solids	mg/L	1,360	2,208	790	1,914	4,132
Total Diss. Org. Carbon	"	7	4	6	21	12
Cl ⁻	"	54	515	226	150	68
SO ₄ ⁼	"	533	629	49	235	2,120
TKN	"	5.4	1.4	3.8	3.0	9.9
NH ₃ -N	"	4.5	0.36	3.1	1.0	7.6
NO ₂ + NO ₃ -N	"	0.05	0.52	0.03	0.17	0.21
Total P	"	0.05	0.10	2.3	0.05	0.36
Alkalinity as CaCO ₃	"	495	480	367	1,335	833
Al	"	0.047	0.064	0.023	0.078	0.094
As	"	<0.01	<0.02	<0.01	<0.01	<0.01
B	"	0.494	0.210	0.213	0.079	0.199
Ca	"	220	252	99	359	551
Cd	"	<0.0004	<0.0008	0.0004	0.0006	0.0006
Cr	"	0.0006	0.0012	0.0012	0.0010	<0.0005
Cu	"	<0.002	<0.004	<0.002	<0.002	<0.002
Fe	"	4.51	0.286	1.05	11.9	9.44
Hg	μg/L	<0.05	<0.10	<0.05	<0.05	<0.05
K	mg/L	6	3	3	1	7
Mg	"	92.9	108	43.2	138	328
Mn	"	0.0856	0.0150	0.0664	0.8877	0.6192
Na	"	43	267	101	78	28
Ni	"	0.0006	<0.0008	<0.0004	0.0010	<0.0004
Pb	"	<0.004	<0.008	<0.004	<0.004	<0.004
Se	"	<0.02	<0.04	<0.02	<0.02	<0.02
Zn	"	0.008	0.008	0.005	0.010	0.009

TABLE 2 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 11, 2007

Parameter	Unit	Lysimeter No.				
		L-4N	L-5	L-5N	L-6	L-6N
pH ¹		7.4	7.7	7.6	NA	7.3
EC	mS/m	366	148	514	NA	345
Total Dissolved Solids	mg/L	3,672	1,372	4,598	NA	3,348
Total Diss. Org. Carbon	"	8	2	3	NA	56
Cl ⁻	"	41	58	861	NA	86
SO ₄ ⁼	"	1,838	639	1,715	NA	1,497
TKN	"	12	0.47	3.1	1.7	28
NH ₃ -N	"	8.7	<0.02	1.9	<0.02	18
NO ₂ + NO ₃ -N	"	0.14	0.08	0.09	0.11	0.50
Total P	"	0.07	0.07	0.05	0.05	0.06
Alkalinity as CaCO ₃	"	862	291	504	NA	931
Al	"	0.097	0.034	0.098	NA	0.099
As	"	<0.01	<0.01	<0.01	NA	<0.01
B	"	0.129	0.774	0.328	NA	0.208
Ca	"	570	166	459	NA	630
Cd	"	0.0006	0.0005	0.0005	NA	0.0005
Cr	"	0.0007	0.0006	<0.0005	NA	0.0007
Cu	"	<0.002	<0.002	<0.002	NA	<0.002
Fe	"	11.9	0.037	0.777	NA	19.3
Hg	μg/L	<0.05	<0.05	<0.05	NA	<0.05
K	mg/L	7	3	24	NA	10
Mg	"	177	108	273	NA	153
Mn	"	1.281	0.0079	0.2348	NA	0.4449
Na	"	222	42	384	NA	74
Ni	"	<0.0004	<0.0004	0.0009	NA	0.0095
Pb	"	<0.004	<0.004	<0.004	NA	<0.004
Se	"	<0.02	<0.02	<0.02	NA	<0.02
Zn	"	0.017	0.007	0.012	NA	0.014

TABLE 2 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 11, 2007

Parameter	Unit	Lysimeter No.		
		L-7N	L-8N	L-9N
pH ¹		8.1	7.8	7.5
EC	mS/m	132	244	246
Total Dissolved Solids	mg/L	888	1,716	1,872
Total Diss. Org. Carbon	"	9	7	25
Cl ⁻	"	131	498	176
SO ₄ ⁼	"	216	224	281
TKN	"	1.3	3.6	2.4
NH ₃ -N	"	0.18	2.3	0.44
NO ₂ + NO ₃ -N	"	0.51	0.23	0.36
Total P	"	<0.10	0.06	<0.05
Alkalinity as CaCO ₃	"	394	564	1,113
Al	"	0.034	0.046	0.048
As	"	<0.02	<0.01	<0.01
B	"	0.252	0.203	0.212
Ca	"	131	196	198
Cd	"	<0.0008	0.0006	0.0005
Cr	"	0.0010	0.0008	0.0013
Cu	"	<0.004	<0.002	<0.002
Fe	"	0.028	0.802	0.116
Hg	μg/L	<0.10	<0.05	<0.05
K	mg/L	7	5	6
Mg	"	74.0	89.0	105
Mn	"	0.0822	0.2870	0.0796
Na	"	55	226	284
Ni	"	0.0022	0.0006	0.0018
Pb	"	<0.008	<0.004	<0.004
Se	"	<0.04	<0.02	<0.02
Zn	"	0.012	0.010	0.010

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 LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MAY 9, 2007

Parameter	Unit	Lysimeter No.				
		L-1	L-2	L-3	L-3N	L-4
pH ¹		7.4	7.9	7.7	7.4	7.0
EC	mS/m	170	270	279	240	383
Total Dissolved Solids	mg/L	1,408	2,396	846	2,028	4,292
Total Diss. Org. Carbon	"	7	4	6	21	10
Cl ⁻	"	50	529	201	144	77
SO ₄ ⁼	"	505	539	52	290	1,985
TKN	"	4.9	1.0	3.4	3.1	7.0
NH ₃ -N	"	4.1	<0.04	2.6	1.0	4.9
NO ₂ + NO ₃ -N	"	0.06	0.21	<0.02	0.14	0.42
Total P	"	0.05	<0.10	1.6	0.06	0.17
Alkalinity as CaCO ₃	"	476	446	379	1,240	786
Al	"	0.052	0.066	0.028	0.074	0.091
As	"	<0.01	<0.02	<0.01	<0.01	<0.01
B	"	0.505	0.204	0.187	0.067	0.177
Ca	"	210	220	103	358	559
Cd	"	0.0006	<0.0008	0.0004	0.0005	0.0004
Cr	"	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
Cu	"	<0.002	<0.004	<0.002	<0.002	<0.002
Fe	"	4.20	0.072	1.89	8.19	4.76
Hg	μg/L	<0.05	<0.10	<0.05	<0.05	<0.05
K	mg/L	6	3	3	2	6
Mg	"	92.4	104	42.5	145	322
Mn	"	0.0839	0.0126	0.1727	0.8332	0.5673
Na	"	42	259	89	77	28
Ni	"	0.0009	<0.0008	<0.0004	0.0013	<0.0004
Pb	"	<0.004	<0.008	0.004	<0.004	<0.004
Se	"	<0.02	<0.04	<0.02	<0.02	<0.02
Zn	"	0.009	0.018	0.017	0.014	0.007

TABLE 3 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MAY 9, 2007

Parameter	Unit	Lysimeter No.				
		L-4N	L-5	L-5N	L-6N ²	L-7N
pH ¹		7.5	7.7	7.5	-	7.9
EC	mS/m	347	159	520	-	129
Total Dissolved Solids	mg/L	3,758	1,438	5,262	-	1,160
Total Diss. Org. Carbon	"	9	1	3	-	11
Cl ⁻	"	48	60	942	-	159
SO ₄ ⁼	"	1,709	607	1,886	-	173
TKN	"	10	0.30	2.9	-	1.4
NH ₃ -N	"	8.1	0.03	1.8	-	0.18
NO ₂ + NO ₃ -N	"	0.19	0.15	0.12	-	0.10
Total P	"	<0.05	0.05	0.06	-	0.07
Alkalinity as CaCO ₃	"	841	296	538	-	384
Al	"	0.090	0.045	0.089	-	0.033
As	"	<0.01	<0.01	<0.01	-	<0.01
B	"	0.119	0.796	0.304	-	0.211
Ca	"	537	164	507	-	127
Cd	"	0.0009	0.0004	0.0007	-	0.0005
Cr	"	<0.0005	<0.0005	<0.0005	-	0.0013
Cu	"	<0.002	<0.002	<0.002	-	<0.002
Fe	"	9.69	0.024	4.55	-	0.018
Hg	μg/L	<0.05	<0.05	<0.05	-	<0.05
K	mg/L	7	3	23	-	7
Mg	"	169	108	279	-	69.9
Mn	"	1.236	0.0092	0.2525	-	0.0866
Na	"	226	42	415	-	59
Ni	"	<0.0004	<0.0004	0.0017	-	0.0018
Pb	"	<0.004	0.005	<0.004	-	0.004
Se	"	<0.02	<0.02	<0.02	-	<0.02
Zn	"	0.019	0.007	0.012	-	0.029

TABLE 3 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MAY 9, 2007

Parameter	Unit	Lysimeter No.	
		L-8N	L-9N
pH ¹		7.9	7.6
EC	mS/m	244	254
Total Dissolved Solids	mg/L	2,012	1,948
Total Diss. Org. Carbon	"	10	27
Cl ⁻	"	420	184
SO ₄ ⁼	"	189	275
TKN	"	4.5	2.8
NH ₃ -N	"	2.8	0.71
NO ₂ + NO ₃ -N	"	0.62	0.69
Total P	"	<0.05	0.06
Alkalinity as CaCO ₃	"	721	1,144
Al	"	0.050	0.053
As	"	<0.01	<0.01
B	"	0.213	0.174
Ca	"	211	203
Cd	"	0.0005	0.0006
Cr	"	0.0005	0.0010
Cu	"	<0.002	<0.002
Fe	"	0.076	6.73
Hg	μg/L	<0.05	<0.05
K	mg/L	5	6
Mg	"	105	109
Mn	"	0.3363	0.2358
Na	"	187	276
Ni	"	<0.0004	0.0016
Pb	"	0.004	<0.004
Se	"	<0.02	<0.02
Zn	"	0.009	0.015

¹pH analyzed beyond recommended holding time of 15 minutes.

²Water poured into L-6N to flush device. No sample available.

TABLE 4: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JUNE 6, 2007

Parameter	Unit	Lysimeter No.				
		L-1	L-2	L-3	L-3N	L-4
pH ¹		7.6	7.9	7.9	7.5	7.2
EC	mS/m	164	273	133	249	385
Total Dissolved Solids	mg/L	1,440	2,280	956	2,016	4,188
Total Diss. Org. Carbon	"	7	3	6	20	11
Cl ⁻	"	51	438	214	136	75
SO ₄ ⁼	"	526	566	86	294	1,997
TKN	"	4.8	1.5	4.4	3.3	7.4
NH ₃ -N	"	3.8	0.44	3.3	1.2	4.7
NO ₂ + NO ₃ -N	"	0.16	0.76	<0.02	0.29	0.09
Total P	"	0.05	0.12	2.4	0.13	0.20
Alkalinity as CaCO ₃	"	514	414	359	1,206	773
Al	"	0.042	0.050	0.024	0.059	0.078
As	"	<0.01	<0.02	<0.01	<0.01	<0.01
B	"	0.487	0.230	0.212	0.066	0.176
Ca	"	224	229	107	364	569
Cd	"	0.0006	0.0020	0.0009	0.0008	0.0005
Cr	"	0.0014	0.0024	0.0013	0.0024	0.0018
Cu	"	<0.002	<0.004	<0.002	<0.002	<0.002
Fe	"	2.89	0.414	0.895	8.20	4.66
Hg	μg/L	0.05	<0.10	<0.05	<0.05	0.07
K	mg/L	6	3	3	2	6
Mg	"	96.0	104	49.8	138	299
Mn	"	0.1096	0.0150	0.0809	0.8420	0.5877
Na	"	43	235	100	85	26
Ni	"	<0.0004	<0.0008	<0.0004	<0.0004	<0.0004
Pb	"	0.008	0.028	0.006	0.006	<0.004
Se	"	<0.02	<0.04	<0.02	<0.02	<0.02
Zn	"	0.004	0.014	0.003	0.008	0.007

TABLE 4 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JUNE 6, 2007

Parameter	Unit	Lysimeter No.				
		L-4N	L-5	L-5N	L-6N	L-7N
pH ¹		7.6	7.9	7.6	7.5	7.9
EC	mS/m	351	167	521	302	134
Total Dissolved Solids	mg/L	3,480	1,448	5,052	3,032	1,088
Total Diss. Org. Carbon	"	6	0.6	4	49	8
Cl ⁻	"	61	70	898	82	163
SO ₄ ⁼	"	1,646	615	1,770	1,298	144
TKN	"	9.9	0.25	4.4	22	1.3
NH ₃ -N	"	7.5	<0.02	2.7	16	0.32
NO ₂ + NO ₃ -N	"	0.10	0.10	0.05	0.05	0.04
Total P	"	0.18	0.06	0.06	0.05	0.06
Alkalinity as CaCO ₃	"	764	279	549	801	423
Al	"	0.078	0.031	0.104	0.075	0.024
As	"	<0.01	<0.01	<0.01	<0.01	0.01
B	"	0.142	0.752	0.292	0.182	0.219
Ca	"	522	176	518	544	125
Cd	"	0.0010	<0.0004	0.0008	0.0006	<0.0004
Cr	"	0.0018	0.0012	0.0014	0.0017	0.0011
Cu	"	<0.002	<0.002	<0.002	<0.002	<0.002
Fe	"	0.082	0.030	4.77	19.8	0.100
Hg	μg/L	<0.05	<0.05	<0.05	<0.05	<0.05
K	mg/L	7	3	23	9	7
Mg	"	156	110	271	134	68.0
Mn	"	1.085	0.0011	0.2686	0.4248	0.0950
Na	"	224	50	422	65	63
Ni	"	<0.0004	<0.0004	<0.0004	0.0083	0.0005
Pb	"	<0.004	0.004	<0.004	0.006	0.009
Se	"	<0.02	<0.02	<0.02	<0.02	<0.02
Zn	"	0.016	0.004	0.012	0.024	0.013

TABLE 4 (Continued): ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JUNE 6, 2007

Parameter	Unit	Lysimeter No.	
		L-8N	L-9N
pH ¹		7.8	7.8
EC	mS/m	249	248
Total Dissolved Solids	mg/L	1,960	1,808
Total Diss. Org. Carbon	''	12	24
Cl ⁻	''	385	172
SO ₄ ⁼	''	187	326
TKN	''	5.2	2.4
NH ₃ -N	''	3.2	0.61
NO ₂ + NO ₃ -N	''	0.36	0.19
Total P	''	0.07	0.05
Alkalinity as CaCO ₃	''	779	1,041
Al	''	0.044	0.044
As	''	<0.01	<0.01
B	''	0.212	0.217
Ca	''	228	200
Cd	''	0.0008	0.0008
Cr	''	0.0016	0.0019
Cu	''	<0.002	<0.002
Fe	''	1.14	1.48
Hg	μg/L	<0.05	<0.05
K	mg/L	5	6
Mg	''	112	109
Mn	''	0.3380	0.1863
Na	''	182	261
Ni	''	<0.0004	<0.0004
Pb	''	0.009	0.004
Se	''	<0.02	<0.02
Zn	''	0.011	0.005

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED DIGESTED
 BIOSOLIDS PLACED IN THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING MAY 2007

Parameter	Unit	Concentration*
pH		8.1
Total Solids	%	21.6
Total Volatile Solids**	%	44.1
TKN	mg/kg	44,130
NH ₃ -N	”	11,057

*Values for one sample only.

**Total volatile solids as a percentage of total solids.

TABLE 6: ANALYSIS OF MONTHLY COMPOSITED DIGESTED
 BIOSOLIDS PLACED IN THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING JUNE 2007

Parameter	Unit	Concentration*
pH		7.7
Total Solids	%	29.9
Total Volatile Solids**	%	41.4
TKN	mg/kg	34,473
NH ₃ -N	”	10,068

*Values are the means of nine samples.

**Total volatile solids as a percentage of total solids.

TABLE 7: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
 BIOSOLIDS REMOVED FROM THE LAWNSDALE AVENUE
 SOLIDS MANAGEMENT DRYING AREA DURING MAY 2007

Parameter	Unit	Concentration*
pH		7.9
Total Solids	%	25.7
Total Volatile Solids**	%	49.4
TKN	mg/kg	38,604
NH ₃ -N	”	8,587
Total P	”	18,799
Al	”	20,904
As	”	<5
Ca	”	40,112
Cd	”	4
Cr	”	179
Cu	”	372
Fe	”	17,289
Hg	”	0.52
K	”	3,604
Mg	”	19,511
Mn	”	576
Mo	”	15
Na	”	829
Ni	”	51
Pb	”	131
Se	”	5
Zn	”	812

*Values are the means of two samples.

**Total volatile solids as a percentage of total solids.

TABLE 8: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
BIOSOLIDS REMOVED FROM THE LAWNSDALE AVENUE
SOLIDS MANAGEMENT DRYING AREA DURING JUNE 2007

Parameter	Unit	Concentration*
pH		6.3
Total Solids	%	69.0
Total Volatile Solids**	%	32.4
TKN	mg/kg	11,282
NH ₃ -N	”	969
Total P	”	16,638
Al	”	21,365
As	”	<5
Ca	”	50,241
Cd	”	10
Cr	”	356
Cu	”	429
Fe	”	20,237
Hg	”	1.2
K	”	4,218
Mg	”	23,887
Mn	”	549
Mo	”	15
Na	”	<600
Ni	”	58
Pb	”	185
Se	”	<4
Zn	”	1,123

*Values are the means of four samples.

**Total volatile solids as a percentage of total solids.