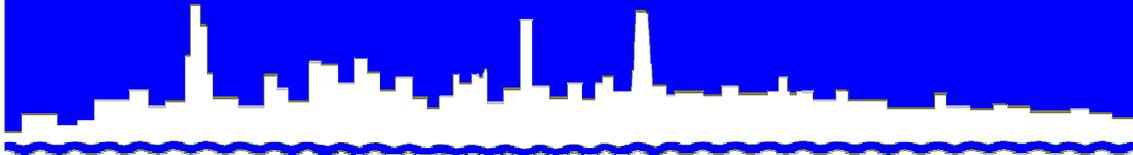


*Protecting Our Water Environment*



*Metropolitan Water Reclamation District of Greater Chicago*

***MONITORING AND RESEARCH  
DEPARTMENT***

*REPORT NO. 10-10*

*HARLEM AVENUE SOLIDS MANAGEMENT AREA*

*MONITORING REPORT FOR*

*FOURTH QUARTER 2009*

*FEBRUARY 2010*

## Protecting Our Water Environment

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### Louis Kollias, P.E., BCEE

Director of Monitoring and Research

[louis.kollias@mwr.org](mailto:louis.kollias@mwr.org)

February 26, 2010

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: Harlem Avenue Solids Management Area - Stickney Water Reclamation Plant Illinois Environmental Protection Agency Permit No. 2009-AO-2715, Monitoring Report for October, November, and December 2009

The attached three tables contain the monitoring data for the Harlem Avenue Solids Management Area for October, November, and December 2009, as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2009-AO-2715 and Supplemental Permit No. 2004-AO-2591-1.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1N-1 through L-3N at the Harlem Avenue Solids Management Area Sampled on October 7, 2009.

Table 2, Analysis of Monthly Compositated Digested Biosolids Placed in the Harlem Avenue Solids Management Drying Area During December 2009

Table 3, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Harlem Avenue Solids Management Drying Area During November 2009

Two new lysimeters, L-2N and L-3N, were installed at this site in September 2008 as replacements for L-2 and L-3, respectively. The old and new lysimeters have been monitored

Mr. S. Alan Keller

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February 26, 2010

Subject: Harlem Avenue Solids Management Area - Stickney Water Reclamation  
Plant Illinois Environmental Protection Agency Permit No. 2009-AO-  
2715, Monitoring Report for October, November, and December 2009

simultaneously. A request has been submitted to the IEPA to terminate monitoring of the old lysimeters. Supplemental Permit No. 2004-AO-2591-1 was issued by the IEPA on July 29, 2009, to modify the monitoring schedule for lysimeters at the HASMA site to once per quarter.

Biosolids were placed in the solids drying area during December 2009 and removed from the site during November 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: ANALYSIS OF WATER FROM LYSIMETERS L-1N-1 THROUGH L-3N AT THE HARLEM AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON OCTOBER 7, 2009

Parameter	Unit	Lysimeter No.				
		L-1N-1	L-2	L-2N	L-3	L-3N
pH <sup>1</sup>		7.7	7.3	7.6	7.6	7.6
EC	mS/m	276	353	405	250	233
Total Dissolved Solids	mg/L	1,954	3,380	4,392	1,766	1,662
Total Diss. Org. Carbon	“	40	5	6	7	14
Cl <sup>-</sup>	“	98	243	56	100	103
SO <sub>4</sub> <sup>=</sup>	“	15	1,437	1,881	196	95
TKN	“	8	0.5	0.7	0.4	2
NH <sub>3</sub> -N	“	6	<0.1	<0.1	<0.1	0.9
NO <sub>2</sub> +NO <sub>3</sub> -N	“	0.02	1.2	16	0.30	0.06
Total P	“	<0.25	<0.25	<0.25	<0.25	<0.25
Alkalinity as CaCO <sub>3</sub>	“	1,495	513	544	1,068	1,123
Al	“	0.084	0.127	0.152	0.080	0.086
Ca	“	310	548	712	287	303
Cd	“	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	“	<0.003	<0.003	<0.003	<0.003	<0.003
Cu	“	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	“	11	<0.02	<0.02	0.13	14
Hg	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
K	mg/L	4	<1	1	1	1
Mg	“	183	136	202	127	117
Mn	“	0.361	0.022	3.63	0.554	0.951
Na	“	48	92	24	54	37
Ni	“	<0.002	<0.002	0.008	<0.002	<0.002
Pb	“	<0.02	<0.02	<0.02	<0.02	<0.02
Zn	“	<0.01	0.01	0.04	<0.01	0.01

<sup>1</sup>pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS  
 PLACED IN THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA  
 DURING DECEMBER 2009

Parameter	Unit	Concentration <sup>1</sup>
pH		8.2
Total Solids	%	22.3
Total Volatile Solids <sup>2</sup>	"	62.8
TKN	mg/kg	39,328
NH <sub>3</sub> -N	"	6,755

<sup>1</sup>Values are the means of five samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS L-1N-1 THROUGH L-3N AT THE HARLEM AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON OCTOBER 7, 2009

Parameter	Unit	Lysimeter No.				
		L-1N-1	L-2	L-2N	L-3	L-3N
pH <sup>1</sup>		7.7	7.3	7.6	7.6	7.6
EC	mS/m	276	353	405	250	233
Total Dissolved Solids	mg/L	1,954	3,380	4,392	1,766	1,662
Total Diss. Org. Carbon	“	40	5	6	7	14
Cl <sup>-</sup>	“	98	243	56	100	103
SO <sub>4</sub> <sup>=</sup>	“	15	1,437	1,881	196	95
TKN	“	8	0.5	0.7	0.4	2
NH <sub>3</sub> -N	“	6	<0.1	<0.1	<0.1	0.9
NO <sub>2</sub> +NO <sub>3</sub> -N	“	0.02	1.2	16	0.30	0.06
Total P	“	<0.25	<0.25	<0.25	<0.25	<0.25
Alkalinity as CaCO <sub>3</sub>	“	1,495	513	544	1,068	1,123
Al	“	0.084	0.127	0.152	0.080	0.086
Ca	“	310	548	712	287	303
Cd	“	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	“	<0.003	<0.003	<0.003	<0.003	<0.003
Cu	“	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	“	11	<0.02	<0.02	0.13	14
Hg	μg/L	<0.20	<0.20	<0.20	<0.20	<0.20
K	mg/L	4	<1	1	1	1
Mg	“	183	136	202	127	117
Mn	“	0.361	0.022	3.63	0.554	0.951
Na	“	48	92	24	54	37
Ni	“	<0.002	<0.002	0.008	<0.002	<0.002
Pb	“	<0.02	<0.02	<0.02	<0.02	<0.02
Zn	“	<0.01	0.01	0.04	<0.01	0.01

<sup>1</sup>pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS  
 PLACED IN THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA  
 DURING DECEMBER 2009

Parameter	Unit	Concentration <sup>1</sup>
pH		8.2
Total Solids	%	22.3
Total Volatile Solids <sup>2</sup>	"	62.8
TKN	mg/kg	39,328
NH <sub>3</sub> -N	"	6,755

<sup>1</sup>Values are the means of five samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.

TABLE 3: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING NOVEMBER 2009

Parameter	Unit	Concentration <sup>1</sup>
pH		6.9
Total Solids	%	37.4
Total Volatile Solids <sup>2</sup>	“	41.8
TKN	mg/kg	29,179
NH <sub>3</sub> -N	“	3,968
Total P	“	23,707
Al	“	19,897
As	“	<10
Ca	“	38,879
Cd	“	4
Cr	“	179
Cu	“	449
Fe	“	17,894
Hg	“	1.3
K	“	2,526
Mg	“	17,246
Mn	“	527
Mo	“	14
Na	“	<800
Ni	“	48
Pb	“	138
Se	“	<8
Zn	“	946

<sup>1</sup>Values are the means of five samples.

<sup>2</sup>Total volatile solids as a percentage of total solids