

Metropolitan Water Reclamation District of Greater Chicago

## MONITORING AND RESEARCH DEPARTMENT

**REPORT NO. 13-12** 

122<sup>ND</sup> AND STONY ISLAND AVENUE SOLIDS MANAGEMENT

AREA MONITORING REPORT FOR

FIRST QUARTER 2013

MAY 2013

## **Protecting Our Water Environment**



Metropolitan Water Reclamation District of Greater Chicago 100 East Erie Street Chicago, Illinois 60611-3154

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May 24, 2013

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:

122<sup>nd</sup> and Stony Island Avenue Solids Management Area - Stickney Water Subject: Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2010-AO-0267, Monitoring Report for January, February, and March 2013

The attached two tables contain the monitoring data for the 122<sup>nd</sup> and Stony Island Avenue Solids Management Area for January, February, and March 2013 as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2010-AO-0267.

The data reported are as follows:

- Table 1, Analysis of Water from Lysimeter L-1 at the 122<sup>nd</sup> and Stony Island Avenue Solids Management Area Sampled During February and March 2013
- Table 2, Analysis of Water from Lysimeters L-2 Through L-4 at the 122<sup>nd</sup> and Stony Island Avenue Solids Management Area Sampled on March 13, 2013

No biosolids were placed in or removed from the solids drying area during January, February, and March 2013.

Very truly yours,

Thomas C. Granato, Ph.D. Director Monitoring and Research

TCG:PL:cm Attachments cc w/att: Mr. Patel, IEPA Records Unit, IEPA

## TABLE 1: ANALYSIS OF WATER FROM LYSIMETER L-1 AT THE 122<sup>ND</sup> AND STONY ISLAND AVENUE SOLIDS MANAGEMENT AREA SAMPLED DURING FEBRUARY AND MARCH 2013

Parameter         Unit         02/07/13         03/13/13 $pH^2$ 7.4         7.7           EC         mS/m         322         307           Total Dissolved Solids         mg/L         2.322         2.248           Total Dissolved Organic Carbon         "         42         39           Cl <sup>-</sup> "         232         209           SO <sub>4</sub> <sup>=</sup> "         201         155           TKN         "         30         31           NH <sub>3</sub> -N         "         30         31           NO <sub>2</sub> + NO <sub>3</sub> -N         "         0.54         < 0.15           Total P         "         < 0.20         < 0.20           Alkalinity as CaCO <sub>3</sub> "         1,364         1,490           Al         "         < 1.0         < 1.0           B         "         11         13           Ca         "         365         325           Cd         "         < 0.005         < 0.005           Cu         "         0.025         < 0.005           Cu         "         0.313         0.363           Na         "         163         151			Date Sa	Date Sampled <sup>1</sup>	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Parameter	Unit	02/07/13	03/13/13	
ECmS/m322307Total Dissolved Solidsmg/L2,3222,248Total Dissolved Organic Carbon"4239Cl <sup>-</sup> "232209SO <sub>4</sub> ="201155TKN"3031NH <sub>3</sub> -N"3031NO <sub>2</sub> + NO <sub>3</sub> -N"0.54<0.15	0		7.4		
Dotal Dissolved Solidsmg/L2,3222,248Total Dissolved Organic Carbon"4239Cl <sup>-</sup> "232209SO <sub>4</sub> <sup>=</sup> "201155TKN"3031NH <sub>3</sub> -N"0.54< 0.15		m C /m			
Total Dissolved Organic Carbon       42       39         Cl <sup>-</sup> "       232       209         SQ <sub>4</sub> <sup>=</sup> "       201       155         TKN       "       30       31         NH <sub>3</sub> -N       "       0.54       < 0.15					
Num Displayed curve"232209 $SO_4^{=}$ "201155TKN"3031 $NH_3$ -N"0.54< 0.15		•			
$SO_4^{=}$ " $201$ $155$ TKN" $30$ $31$ $NH_3$ -N" $30$ $31$ $NO_2 + NO_3$ -N" $0.54$ $< 0.15$ Total P" $< 0.20$ $< 0.20$ Alkalinity as CaCO_3" $1,364$ $1,490$ Al" $< 1.0$ $< 1.0$ B" $11$ $13$ Ca" $365$ $325$ Cd" $< 0.001$ $< 0.001$ Cr" $0.025$ $< 0.005$ Fe" $30$ $29$ Hg $\mu g/L$ $< 0.20$ $< 0.20$ Kmg/L $32$ $38$ Mg" $163$ $151$ Mn" $0.313$ $0.363$ Na" $188$ $223$ Ni" $< 0.005$ $< 0.005$ Pb"" $< 0.02$ $< 0.20$	-				
TKN       " $30$ $31$ NH <sub>3</sub> -N       " $30$ $31$ NO <sub>2</sub> + NO <sub>3</sub> -N       " $0.54$ $< 0.15$ Total P       " $< 0.20$ $< 0.20$ Alkalinity as CaCO <sub>3</sub> " $1,364$ $1,490$ Al       " $< 1.0$ $< 1.0$ B       " $11$ $13$ Ca       " $365$ $325$ Cd       " $< 0.001$ $< 0.001$ Cr       " $0.025$ $< 0.005$ Cu       " $0.025$ $< 0.005$ Fe       " $30$ $29$ Hg $\mu g/L$ $< 0.20$ $< 0.20$ K       mg/L $32$ $38$ Mg       " $163$ $151$ Mn       " $0.313$ $0.363$ Na       " $188$ $223$ Ni       " $< 0.005$ $< 0.005$ Pb       " $< 0.02$ $< 0.02$					
NHA"3031 $NO_2 + NO_3 - N$ "0.54< 0.15	$SO_4$		201	155	
NHA"3031 $NO_2 + NO_3 - N$ "0.54< 0.15	TKN	,,,	30	31	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		,,			
Total P"< 0.20< 0.20Alkalinity as CaCO3"1,3641,490Al"< 1.0	-	13		< 0.15	
Alkalinity as $CaCO_3$ "1,3641,490Al"<1.0		,,			
Al"< 1.0< 1.0B"1113Ca"365325Cd"< 0.001		,,	1,364	1,490	
MN1113B" $365$ $325$ Ca" $365$ $325$ Cd" $<0.001$ $<0.001$ Cr" $<0.005$ $<0.005$ Cu" $0.025$ $<0.005$ Fe" $30$ $29$ Hg $\mu g/L$ $<0.20$ $<0.20$ Kmg/L $32$ $38$ Mg" $163$ $151$ Mn" $0.313$ $0.363$ Na" $188$ $223$ Ni" $<0.005$ $<0.005$ Pb" $<0.02$ $<0.02$					
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Ca" $365$ $325$ Cd" $< 0.001$ $< 0.001$ Cr" $< 0.005$ $< 0.005$ Cu" $0.025$ $< 0.005$ Fe" $30$ $29$ Hg $\mu g/L$ $< 0.20$ $< 0.20$ Kmg/L $32$ $38$ Mg" $163$ $151$ Mn" $0.313$ $0.363$ Na" $188$ $223$ Ni" $< 0.005$ $< 0.005$ Pb" $< 0.02$ $< 0.02$		,,	11	13	
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Cu" $0.025$ $< 0.005$ Fe" $30$ $29$ Hg $\mu g/L$ $< 0.20$ $< 0.20$ Kmg/L $32$ $38$ Mg" $163$ $151$ Mn" $0.313$ $0.363$ Na" $188$ $223$ Ni" $< 0.005$ $< 0.005$ Pb" $< 0.02$ $< 0.02$	Cd	"	< 0.001	< 0.001	
Fe" $30$ $29$ Hg $\mu g/L$ $< 0.20$ $< 0.20$ Kmg/L $32$ $38$ Mg" $163$ $151$ Mn" $0.313$ $0.363$ Na" $188$ $223$ Ni" $< 0.005$ $< 0.005$ Pb" $< 0.02$ $< 0.02$	Cr	;;	< 0.005	< 0.005	
Fe" $30$ $29$ Hg $\mu g/L$ $< 0.20$ $< 0.20$ Kmg/L $32$ $38$ Mg" $163$ $151$ Mn" $0.313$ $0.363$ Na" $188$ $223$ Ni" $< 0.005$ $< 0.005$ Pb" $< 0.02$ $< 0.02$					
Hg $\mu g/L$ < 0.20< 0.20Kmg/L3238Mg"163151Mn"0.3130.363Na"188223Ni"< 0.005	Cu	,,			
Mg     32     38       Mg     "     163     151       Mn     "     0.313     0.363       Na     "     188     223       Ni     "     < 0.005	Fe	,,			
Mg     "     163     151       Mn     "     0.313     0.363       Na     "     188     223       Ni     "     < 0.005	Hg				
Mg" $0.313$ $0.363$ Ma" $188$ $223$ Ni" $< 0.005$ $< 0.005$ Pb" $< 0.02$ $< 0.02$	Κ	mg/L			
Na" $188$ $223$ Ni" $< 0.005$ $< 0.005$ Pb" $< 0.02$ $< 0.02$	Mg	"	163	151	
Na" $188$ $223$ Ni" $< 0.005$ $< 0.005$ Pb" $< 0.02$ $< 0.02$			0.010	0.040	
Ni"< $0.005$ < $0.005$ Pb"< $0.02$ < $0.02$		**			
Pb , $< 0.02 < 0.02$		>>			
		"			
		"			
Zn " 0.04 < 0.01	Zn	"	0.04	< 0.01	

<sup>1</sup>No sample collected in January; lysimeter inaccessible.

<sup>2</sup>pH analyzed beyond recommended holding time of 15 minutes.

## TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS L-2 THROUGH L-4 AT THE 122<sup>ND</sup> AND STONY ISLAND AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON MARCH 13, 2013

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		L	Lysimeter No.		
Parameter	Unit	L-2	L-3	L-4	
$pH^1$		7.7	7.7	8.0	
EC	mS/m	253	278	194	
Total Dissolved Solids	mg/L	1,560	2,490	1,238	
Total Dissolved Organic Carbon	,,	25	40	18	
Cl <sup>-</sup>	"	566	86	271	
$SO_4^{=}$	"	15	543	23	
TKN	11	2	11	5	
NH <sub>3</sub> -N	,,	0.9	8	5	
$NO_2 + NO_3 - N$	,,	0.30	< 0.15	< 0.15	
Total P	,,	0.70	< 0.20	< 0.20	
Alkalinity as CaCO <sub>3</sub>	"	90	1,234	708	
Al	,,	1 < 1.0	< 1.0	< 1.0	
В	3.3	1.6	1.0	2.0	
Ca	"	103	458	129	
Cd	3.3	< 0.001	< 0.001	< 0.001	
Cr	13	< 0.005	< 0.005	< 0.005	
Cu	"	< 0.005	< 0.005	< 0.005	
Fe	"	15	29	3	
Hg	$\mu$ g/L	< 0.20	< 0.20	< 0.20	
ĸ	mg/L	65	8	29	
Mg	"	71	170	75	
Mn	"	0.887	0.390	0.115	
Na	,,	292	69	219	
Ni	,,	< 0.005	< 0.005	< 0.005	
Pb	"	< 0.02	< 0.02	< 0.02	
Zn	"	< 0.01	< 0.01	< 0.01	

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