

Protecting Our Water Environment



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 08-11

***122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT AREA
MONITORING REPORT FOR
FOURTH QUARTER 2007***

MARCH 2008

March 5, 2008

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: 122nd and Stony Island Avenue Solids Management Area - Stickney
WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for October,
November, and December 2007

The attached five tables contain the monitoring data for the 122nd and Stony Island Avenue Solids Management Area for October, November, and December 2007 as required by IEPA Operating Permit No. 2005-AO-4283.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1 through L-4 at the 122nd and Stony Island Avenue Solids Management Area Sampled on October 3, 2007

Table 2, Analysis of Water from Lysimeters L-1 through L-4 at the 122nd and Stony Island Avenue Solids Management Area Sampled on November 14, 2007

Table 3, Analysis of Water from Lysimeters L-1 through L-4 at the 122nd and Stony Island Avenue Solids Management Area Sampled on December 13, 2007

Table 4, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the 122nd and Stony Island Avenue Solids Management Drying Area During October 2007

Table 5, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the 122nd and Stony Island Avenue Solids Management Drying Area During November 2007

Subject: 122nd and Stony Island Avenue Solids Management Area - Stickney
WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for October,
November, and December 2007

No biosolids were placed in the solids drying area during October, November, and December 2007. Biosolids were removed from the solids drying area during October and November 2007.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:TCG:AC:PL:spy

Attachments

cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel

cc wo/att: Jamjun/Sharma/Garelli/Conway

Subject: 122nd and Stony Island Avenue Solids Management Area - Stickney
WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for October,
November, and December 2007

No biosolids were placed in the solids drying area during October, November, and December 2007. Biosolids were removed from the solids drying area during October and November 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: Jamjun/Sharma/Garelli/Conway

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON OCTOBER 3, 2007

| Parameter | Unit | Lysimeter No. | | | |
|--------------------------------------|------|---------------|--------|--------|---------|
| | | L-1 | L-2 | L-3 | L-4 |
| pH ¹ | | 7.8 | 7.8 | 7.6 | 8.0 |
| EC | mS/m | 296 | 251 | 282 | 193 |
| Total Dissolved Solids | mg/L | 2,058 | 1,844 | 2,980 | 1,266 |
| Total Diss. Org. Carbon | " | 33 | 12 | 39 | 17 |
| Cl ⁻ | " | 228 | 445 | 108 | 293 |
| SO ₄ ⁼ | " | 315 | 250 | 780 | 28 |
| TKN | " | 39 | 2.7 | 10 | 4.4 |
| NH ₃ -N | " | 30 | 1.2 | 5.6 | 2.7 |
| NO ₂ + NO ₃ -N | " | 0.24 | 0.13 | 0.20 | 1.4 |
| Total P | " | <0.05 | 0.05 | <0.05 | <0.05 |
| Alkalinity as CaCO ₃ | " | 1,230 | 473 | 1,270 | 659 |
| Al | " | 0.046 | 0.022 | 0.061 | 0.023 |
| B | " | 4.33 | 1.19 | 0.425 | 1.33 |
| Ca | " | 272 | 145 | 497 | 128 |
| Cd | " | <0.0004 | 0.0013 | 0.0004 | <0.0004 |
| Cr | " | 0.0025 | 0.0021 | 0.0023 | 0.0018 |
| Cu | " | <0.002 | <0.002 | <0.002 | <0.002 |
| Fe | " | 1.20 | 1.09 | 4.46 | 0.336 |
| Hg | μg/L | <0.05 | <0.05 | <0.05 | <0.05 |
| K | mg/L | 28 | 39 | 6 | 14 |
| Mg | " | 131 | 77.5 | 158 | 62.8 |
| Mn | " | 0.2964 | 1.327 | 0.5512 | 0.1140 |
| Na | " | 175 | 244 | 50 | 192 |
| Ni | " | 0.0008 | 0.0017 | 0.0006 | 0.0018 |
| Pb | " | <0.004 | <0.004 | <0.004 | <0.004 |
| Zn | " | 0.009 | 0.005 | 0.007 | 0.004 |

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON NOVEMBER 14, 2007

| Parameter | Unit | Lysimeter No. | | | |
|--------------------------------------|------|---------------|--------|---------|---------|
| | | L-1 | L-2 | L-3 | L-4 |
| pH ¹ | | 7.5 | 7.5 | 7.3 | 7.7 |
| EC | mS/m | 301 | 270 | 244 | 209 |
| Total Dissolved Solids | mg/L | 2,172 | 1,800 | 3,084 | 1,288 |
| Total Diss. Org. Carbon | " | 38 | 16 | 48 | 18 |
| Cl ⁻ | " | 239 | 453 | 108 | 290 |
| SO ₄ ⁼ | " | 263 | 179 | 712 | 50 |
| TKN | " | 40 | 4.2 | 10 | 4.4 |
| NH ₃ -N | " | 32 | 2.3 | 5.4 | 2.7 |
| NO ₂ + NO ₃ -N | " | 0.51 | 0.30 | 0.33 | 0.60 |
| Total P | " | <0.05 | 0.35 | <0.05 | <0.05 |
| Alkalinity as CaCO ₃ | " | 1,254 | 563 | 1,238 | 644 |
| Al | " | 0.049 | 0.030 | 0.065 | 0.025 |
| B | " | 4.29 | 1.39 | 0.397 | 1.30 |
| Ca | " | 276 | 145 | 499 | 134 |
| Cd | " | 0.0004 | 0.0041 | <0.0004 | <0.0004 |
| Cr | " | 0.0019 | 0.0017 | 0.0019 | 0.0014 |
| Cu | " | <0.002 | <0.002 | <0.002 | <0.002 |
| Fe | " | 12.5 | 14.8 | 23.7 | 1.74 |
| Hg | μg/L | <0.05 | <0.05 | <0.05 | <0.05 |
| K | mg/L | 31 | 40 | 6 | 14 |
| Mg | " | 130 | 75.4 | 158 | 65.5 |
| Mn | " | 0.3026 | 1.290 | 0.5234 | 0.1185 |
| Na | " | 176 | 258 | 50 | 188 |
| Ni | " | 0.0005 | 0.0021 | 0.0004 | 0.0016 |
| Pb | " | <0.004 | <0.004 | <0.004 | <0.004 |
| Zn | " | 0.007 | 0.005 | 0.006 | 0.004 |

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON DECEMBER 13, 2007

| Parameter | Unit | Lysimeter No. | | | |
|--------------------------------------|------|---------------|--------|---------|--------|
| | | L-1 | L-2 | L-3 | L-4 |
| pH ¹ | | 8.0 | 8.2 | 7.8 | 8.2 |
| EC | mS/m | 275 | 195 | 263 | 164 |
| Total Dissolved Solids | mg/L | 2,148 | 1,528 | 2,780 | 1,292 |
| Total Diss. Org. Carbon | " | 34 | 14 | 42 | 17 |
| Cl ⁻ | " | 232 | 426 | 103 | 294 |
| SO ₄ ⁼ | " | 310 | 94 | 723 | 39 |
| TKN | " | 36 | 2.1 | 8.2 | 4.5 |
| NH ₃ -N | " | 32 | 0.75 | 5.6 | 3.1 |
| NO ₂ + NO ₃ -N | " | 0.43 | 0.06 | 0.09 | 0.34 |
| Total P | " | <0.05 | <0.05 | <0.05 | <0.05 |
| Alkalinity as CaCO ₃ | " | 1,235 | 539 | 1,236 | 638 |
| Al | " | 0.052 | 0.031 | 0.072 | 0.027 |
| B | " | 3.90 | 1.20 | 0.394 | 1.22 |
| Ca | " | 290 | 120 | 492 | 127 |
| Cd | " | 0.0006 | 0.0019 | 0.0006 | 0.0006 |
| Cr | " | 0.0018 | 0.0016 | 0.0016 | 0.0012 |
| Cu | " | <0.002 | <0.002 | <0.002 | <0.002 |
| Fe | " | 0.338 | 0.551 | 4.42 | 0.340 |
| Hg | μg/L | <0.05 | <0.05 | <0.05 | <0.05 |
| K | mg/L | 30 | 38 | 6 | 15 |
| Mg | " | 136 | 63.3 | 158 | 63.7 |
| Mn | " | 0.3118 | 1.161 | 0.5139 | 0.1152 |
| Na | " | 176 | 258 | 46 | 189 |
| Ni | " | <0.0004 | 0.0012 | <0.0004 | 0.0013 |
| Pb | " | <0.004 | <0.004 | <0.004 | 0.005 |
| Zn | " | 0.014 | 0.007 | 0.007 | 0.004 |

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE 122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT DRYING AREA DURING OCTOBER 2007

| Parameter | Unit | Concentration ¹ |
|------------------------------------|-------|----------------------------|
| pH | | 6.4 |
| Total Solids | % | 68.0 |
| Total Volatile Solids ² | % | 29.6 |
| TKN | mg/kg | 12,763 |
| NH ₃ -N | ” | 60 |
| Total P | ” | 21,807 |
| Al | ” | 25,666 |
| As | ” | 12 |
| Ca | ” | 44,951 |
| Cd | ” | 6 |
| Cr | ” | 369 |
| Cu | ” | 526 |
| Fe | ” | 22,241 |
| Hg | ” | 1.8 |
| K | ” | 3,918 |
| Mg | ” | 18,162 |
| Mn | ” | 678 |
| Mo | ” | 20 |
| Na | ” | <171 |
| Ni | ” | 63 |
| Pb | ” | 191 |
| Se | ” | 3.0 |
| Zn | ” | 1,054 |

¹Values for one sample only.

²Total volatile solids as a percentage of total solids.

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE 122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT DRYING AREA DURING NOVEMBER 2007

| Parameter | Unit | Concentration ¹ |
|------------------------------------|-------|----------------------------|
| pH | | 8.3 |
| Total Solids | % | 26.3 |
| Total Volatile Solids ² | % | 44.0 |
| TKN | mg/kg | 35,212 |
| NH ₃ -N | ” | 7,667 |
| Total P | ” | 21,844 |
| Al | ” | 20,786 |
| As | ” | 10 |
| Ca | ” | 38,227 |
| Cd | ” | 4 |
| Cr | ” | 184 |
| Cu | ” | 460 |
| Fe | ” | 18,062 |
| Hg | ” | 0.89 |
| K | ” | 3,558 |
| Mg | ” | 16,620 |
| Mn | ” | 741 |
| Mo | ” | 13 |
| Na | ” | 1,238 |
| Ni | ” | 52 |
| Pb | ” | 122 |
| Se | ” | 4.0 |
| Zn | ” | 885 |

¹Values for one sample only.

²Total volatile solids as a percentage of total solids.