

Metropolitan Water Reclamation District of Greater Chicago

### RESEARCH AND DEVELOPMENT DEPARTMENT

**REPORT NO. 08-13** 

MONTHLY CONTROLLED SOLIDS

DISTRIBUTION REPORT

OCTOBER 2007

FEBRUARY 2008



Metropolitan Water Reclamation District of Greater Chicago100 EAST ERIE STREETCHICAGO, ILLINOIS 60611-3154312:751.5600

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Louis Kollias, P.E., BCEE Director of Research and Development

312.751.5190

February 29, 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: Metropolitan Water Reclamation District of Greater Chicago – Controlled Solids Distribution Program IEPA Permit No. 2005-SC-3793, October 2007

This letter transmits information and data for the Metropolitan Water Reclamation District of Greater Chicago (District) - Controlled Solids Distribution Program for October 2007, as required by Illinois Environmental Protection Agency Permit No. 2005-SC-3793.

Sludge flow schematic diagrams for solids processed during October 2007 are shown in <u>Figure 1</u> - John E. Egan Water Reclamation Plant (WRP), <u>Figure 2</u> - Calumet WRP, and <u>Figure 3</u> - Stickney WRP.

Biosolids were distributed to eight sites in October. The user information report for Arlington Lakes Golf Club, 1211 S. New Wilke Road, Arlington Heights, Illinois, is presented in <u>Table 1</u>, and the analysis of composited biosolids delivered in October to that site is presented in <u>Table 2</u>.

The user information report for Joliet Country Club, 1009 Spencer Road, Joliet, Illinois, is presented in <u>Table 3</u>, and the analysis of composited biosolids delivered in October to that site is presented in <u>Table 4</u>.

The user information report for Veterans Memorial Park located at the corner of Richmond Street and Linden Avenue, Westmont, Illinois, is presented in <u>Table 5</u>, and the analysis of composited biosolids delivered in October to that site is presented in <u>Table 6</u>.

Mr. S. Alan Keller

#### Subject: Metropolitan Water Reclamation District of Greater Chicago – Controlled Solids Distribution Program IEPA Permit No. 2005-SC-3793, October 2007

The user information report for Mertz Memorial Park located at the corner of Wexford Drive and Rumsey Place, Westmont, Illinois, is presented in <u>Table 7</u>, and the analysis of composited biosolids delivered in October to that site is presented in <u>Table 8</u>.

The user information report for Birch Park, 2952 Birch Street, Franklin Park, Illinois, is presented in <u>Table 9</u>, and the analysis of composited biosolids delivered in October to that site is presented in <u>Table 10</u>.

The user information report for Chicago Heights Park District East Golf Course, 315 Glenwood Road, Chicago Heights, Illinois, is presented in <u>Table 11</u>, and the analysis of composited biosolids delivered in October to that site is presented in <u>Table 12</u>.

The user information report for Cinder Ridge Golf Course, 24801 Lakepoint Drive, Wilmington, Illinois, is presented in <u>Table 13</u>, and the analysis of composited biosolids delivered in October to that site is presented in <u>Table 14</u>.

The user information report for Plainfield Central High School, 24120 W. Fort Beggs Drive, Plainfield, Illinois, is presented in <u>Table 15</u>, and the analysis of composited biosolids delivered in October to that site is presented in <u>Table 16</u>.

The user information report for Land of Lincoln Tree Nursery, 2107 River Road, Oregon, Illinois, is presented in <u>Table 17</u>, and the analysis of composited biosolids delivered in October to that site is presented in <u>Table 18</u>.

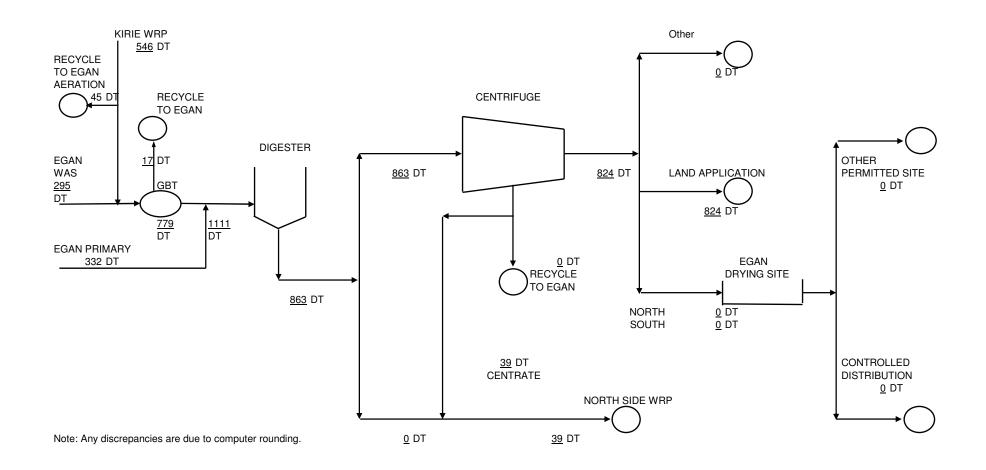
Very truly yours,

Louis Kollias Director Research and Development

LK:TCG:AC:KK:spy Attachments cc w/att.: Aistars (USEPA) Sulski (IEPA) Sobanski Granato/O'Connor/Cox cc wo/att: Garelli/Conway Sharma /Ford Frost/Collins Solids Diagram

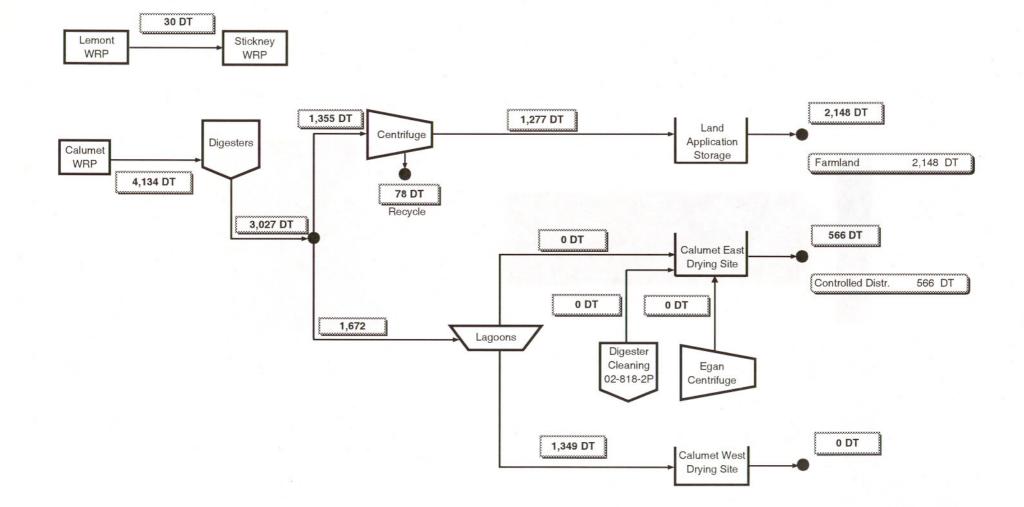
### J.E. EGAN WRP SOLIDS DISTRIBUTION-FIGURE 1

October-07



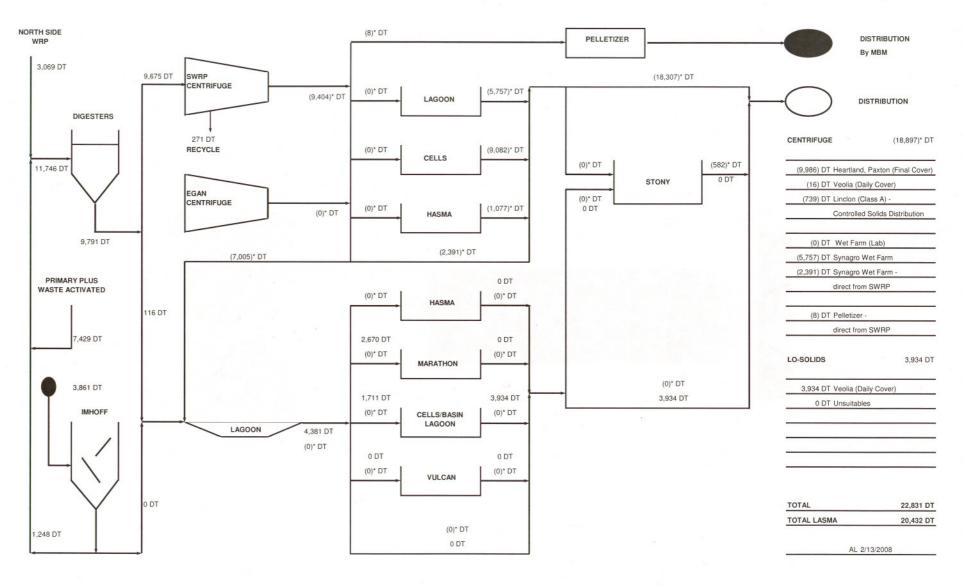
#### CALUMET WRP SOLIDS DISTRIBUTION - October 2007

Figure 2



OCT2007EPA

#### STICKNEY WATER RECLAMATION PLANT SOLIDS DISTRIBUTION FOR OCTOBER 2007



(CENTRIFUGE CAKE)\*

### TABLE 1: CONTROLLED SOLIDS DISTRIBUTION PROGRAMUSER INFORMATION REPORT

| 1. | Name of User:                            | Arlington Heights Park District  |
|----|--|--|
| 2. | Address of User:                         | 1211 S. New Wilke Rd.<br>Arlington Heights, IL 60005   |
| 3. | Type of Solids and Source:               | Agitation dried lagooned anaerobically digested<br>biosolids from the Calumet WRP. Drying was<br>done at the Calumet East solids drying areas. |
| 4. | Quantity Received (October 2007):        | 32.26 dry tons   |
|    | Cumulative Quantity<br>Received in 2007: | 32.26 dry tons   |
| 5. | Date Biosolids Received:                 | October 9, 2007  |
| 6. | Use of Biosolids at Site:                | Used as top dressing of turf on fairways at Arlington Lakes Golf Club, Arlington Heights.  |
| 7. | Size of Application<br>Area:             | 4 acres  |
| 8. | Application Rate:                        | 8.07 tons/acre   |

### TABLE 2: ANALYSIS\* OF DIGESTED BIOSOLIDS APPLIED TO LAND AT ARLINGTON LAKES GOLF CLUB, ARLINGTON HEIGHTS, IL FROM THE CALUMET EAST DRYING AREA DURING OCTOBER 2007

| Constituent                   | Units     | Concentration |
|-------------------------------|-----------|---------------|
| pH                            |           | 6.8           |
| Total Solids                  | %         | 74.6          |
| Total Volatile Solids         | "         | 29.9          |
| Volatile Acids as Acetic Acid | mg/dry kg | 11            |
| Total Kjeldahl-N              | "         | 11,312        |
| NH <sub>3</sub> -N            | "         | 49            |
| Total P                       | "         | 19,871        |
| Κ                             | "         | 3,827         |
| Cd                            | "         | 10.1          |
| Cr                            | "         | 140           |
| Cu                            | "         | 395           |
| Pb                            | "         | 133           |
| Hg                            | "         | 1.07          |
| Mo                            | "         | 12.6          |
| As                            | "         | 10.9          |
| Mn                            | "         | 800           |
| Ni                            | "         | 37.6          |
| Se                            | "         | 8.3           |
| Zn                            | "         | 1,163         |

# TABLE 3: CONTROLLED SOLIDS DISTRIBUTION PROGRAMUSER INFORMATION REPORT

| 1. | Name of User:                            | Joliet Country Club  |
|----|--|--|
| 2. | Address of User:                         | 1009 Spencer Rd.<br>Joliet, IL 60433   |
| 3. | Type of Solids and Source:               | Agitation dried lagooned anaerobically digested<br>biosolids from the Calumet WRP. Drying was<br>done at the Calumet East solids drying areas. |
| 4. | Quantity Received (October 2007):        | 59.21 dry tons   |
|    | Cumulative Quantity<br>Received in 2007: | 59.21 dry tons   |
| 5. | Date Biosolids Received:                 | October 9, and 16, 2007  |
| 6. | Use of Biosolids at Site:                | Used as top dressing of turf on golf course fairways.  |
| 7. | Size of Application<br>Area:             | 2 acres  |
| 8. | Application Rate:                        | 29.6 dry tons/acre   |

### TABLE 4: ANALYSIS\* OF DIGESTED BIOSOLIDS APPLIED TO LAND AT JOLIET COUNTRY CLUB, JOLIET, IL FROM THE CALUMET EAST DRYING AREA DURING OCTOBER 2007

| Constituent                   | Units     | Concentration |
|-------------------------------|-----------|---------------|
| pH                            |           | 6.7           |
| Total Solids                  | %         | 70.9          |
| Total Volatile Solids         | "         | 30.4          |
| Volatile Acids as Acetic Acid | mg/dry kg | 15            |
| Total Kjeldahl-N              | "         | 12,997        |
| NH <sub>3</sub> -N            | "         | 45            |
| Total P                       | "         | 21,188        |
| К                             | "         | 4,116         |
| Cd                            | "         | 9.3           |
| Cr                            | "         | 140           |
| Cu                            | "         | 358           |
| Pb                            | "         | 124           |
| Hg                            | 11        | 1.12          |
| Mo                            | "         | 11.1          |
| As                            | "         | 10.4          |
| Mn                            | "         | 896           |
| Ni                            | "         | 35.0          |
| Se                            | "         | 6.0           |
| Zn                            | "         | 1,055         |

# TABLE 5: CONTROLLED SOLIDS DISTRIBUTION PROGRAMUSER INFORMATION REPORT

| 1. | Name of User:                            | Westmont Park District  |
|----|--|---|
| 2. | Address of User:                         | 350 W. 59 <sup>th</sup> St.<br>Westmont, IL 60554   |
| 3. | Type of Solids and Source:               | Agitation dried lagooned anaerobically digested<br>biosolids from the Calumet WRP. Drying was<br>done at the Calumet East solids drying areas.                        |
| 4. | Quantity Received (October 2007):        | 27.52 dry tons  |
|    | Cumulative Quantity<br>Received in 2007: | 27.52 dry tons  |
| 5. | Date Biosolids Received:                 | October 29, 2007  |
| 6. | Use of Biosolids at Site:                | Used as soil conditioner and nutrient source for<br>enhancing growth on turf areas at Veterans Memorial<br>Park, corner of Richmond St. and Linden Ave.,<br>Westmont. |
| 7. | Size of Application<br>Area:             | 3 acres   |
| 8. | Application Rate:                        | 9.17 dry tons/acre  |

### TABLE 6: ANALYSIS\* OF DIGESTED BIOSOLIDS APPLIED TO LAND AT VETERANS MEMORIAL PARK, WESTMONT, IL FROM THE CALUMET EAST DRYING AREA DURING OCTOBER 2007

| Constituent                   | Units     | Concentration |
|-------------------------------|-----------|---------------|
| pH                            |           | 6.7           |
| Total Solids                  | %         | 65.6          |
| Total Volatile Solids         | "         | 26.7          |
| Volatile Acids as Acetic Acid | mg/dry kg | 20            |
| Total Kjeldahl-N              | "         | 10,744        |
| NH <sub>3</sub> -N            | "         | 30            |
| Total P                       | "         | 18,229        |
| K                             | "         | 4,010         |
| Cd                            | "         | 4,010         |
| Cr                            | "         | 133           |
| Cu                            | "         | 306           |
| DL                            | "         | 112           |
| Pb                            |           | 113           |
| Hg                            |           | 1.19          |
| Mo                            | "         | 9.9           |
| As                            |           | 9.3           |
| Mn                            | "         | 771           |
| Ni                            | "         | 33.5          |
| Se                            | "         | 6.2           |
| Zn                            | "         | 928           |

# TABLE 7: CONTROLLED SOLIDS DISTRIBUTION PROGRAMUSER INFORMATION REPORT

| 1. | Name of User:                            | Westmont Park District   |
|----|--|--|
| 2. | Address of User:                         | 350 W. 59 <sup>th</sup> St.<br>Westmont, IL 60554  |
| 3. | Type of Solids and Source:               | Agitation dried lagooned anaerobically digested<br>biosolids from the Calumet WRP. Drying was<br>done at the Calumet East solids drying areas.                   |
| 4. | Quantity Received (October 2007):        | 14.11 dry tons   |
|    | Cumulative Quantity<br>Received in 2007: | 14.11 dry tons   |
| 5. | Date Biosolids Received:                 | October 30, 2007   |
| 6. | Use of Biosolids at Site:                | Used as soil conditioner and nutrient source for<br>enhancing growth on turf areas at Mertz Memorial<br>Park, corner of Wexford Dr. and Rumsey Pl.,<br>Westmont. |
| 7. | Size of Application<br>Area:             | 2 acres  |
| 8. | Application Rate:                        | 7.06 dry tons/acre   |

### TABLE 8: ANALYSIS\* OF DIGESTED BIOSOLIDS APPLIED TO LAND AT MERTZ MEMORIAL PARK, WESTMONT, IL FROM THE CALUMET EAST DRYING AREA DURING OCTOBER 2007

| Constituent                   | Units     | Concentration |
|-------------------------------|-----------|---------------|
| pH                            |           | 6.7           |
| Total Solids                  | %         | 65.6          |
| Total Volatile Solids         | "         | 26.7          |
| Volatile Acids as Acetic Acid | mg/dry kg | 20            |
| Total Kjeldahl-N              | "         | 10,744        |
| NH <sub>3</sub> -N            | "         | 30            |
| Total P                       | "         | 18,229        |
| K                             |           | 4,010         |
| Cd                            | "         | 4,010         |
| Cr                            | "         | 133           |
| Cu                            | "         | 306           |
| DL                            | "         | 112           |
| Pb                            |           | 113           |
| Hg                            |           | 1.19          |
| Mo                            | "         | 9.9           |
| As                            |           | 9.3           |
| Mn                            | "         | 771           |
| Ni                            | "         | 33.5          |
| Se                            | "         | 6.2           |
| Zn                            | "         | 928           |

# TABLE 9: CONTROLLED SOLIDS DISTRIBUTION PROGRAMUSER INFORMATION REPORT

| 1. | Name of User:                            | Franklin Park District   |
|----|--|--|
| 2. | Address of User:                         | 9560 Franklin Ave.<br>Franklin Park , IL 60131   |
| 3. | Type of Solids and Source:               | Agitation dried lagooned anaerobically digested<br>biosolids from the Calumet WRP. Drying was<br>done at the Calumet East solids drying areas. |
| 4. | Quantity Received (October 2007):        | 119.44 dry tons  |
|    | Cumulative Quantity<br>Received in 2007: | 119.44 dry tons  |
| 5. | Date Biosolids Received:                 | October 30 and 31, 2007  |
| 6. | Use of Biosolids at Site:                | Used as soil amendment to renovate turf<br>in the park areas at Birch Park, 2952 Birch St.,<br>Franklin Park.                                  |
| 7. | Size of Application<br>Area:             | 2 acres  |
| 8. | Application Rate:                        | 59.72 dry tons/acre  |

### TABLE 10: ANALYSIS\* OF DIGESTED BIOSOLIDS APPLIED TO LAND AT BIRCH PARK, FRANKLIN PARK, IL FROM THE CALUMET EAST DRYING AREA DURING OCTOBER 2007

| Constituent                   | Units     | Concentration |
|-------------------------------|-----------|---------------|
| pH                            |           | 6.7           |
| Total Solids                  | %         | 72.0          |
| Total Volatile Solids         | "         | 26.6          |
| Volatile Acids as Acetic Acid | mg/dry kg | 11            |
| Total Kjeldahl-N              | "         | 9,702         |
| NH <sub>3</sub> -N            | "         | 46            |
| Total P                       | "         | 17,253        |
| К                             | "         | 3,518         |
| Cd                            | "         | 9.4           |
| Cr                            | "         | 147           |
| Cu                            | "         | 309           |
| Pb                            | "         | 119           |
| Hg                            | "         | 0.82          |
| Mo                            | "         | 10            |
| As                            | "         | 8.8           |
| Mn                            | "         | 855           |
| Ni                            | "         | 34.3          |
| Se                            | "         | 5.9           |
| Zn                            | u         | 947           |

# TABLE 11: CONTROLLED SOLIDS DISTRIBUTION PROGRAMUSER INFORMATION REPORT

| 1. | Name of User:                            | Chicago Heights Park District  |
|----|--|--|
| 2. | Address of User:                         | 1400 Chicago Rd.<br>Chicago Heights, IL 60411  |
| 3. | Type of Solids and Source:               | Agitation dried lagooned anaerobically digested<br>biosolids from the Calumet WRP. Drying was<br>done at the Calumet East solids drying areas. |
| 4. | Quantity Received (October 2007):        | 14.28 dry tons   |
|    | Cumulative Quantity<br>Received in 2007: | 14.28 dry tons   |
| 5. | Date Biosolids Received:                 | October 30, 2007   |
| 6. | Use of Biosolids at Site:                | Used as soil conditioner and nutrient source for<br>enhancing turf growth on East Golf Course at<br>315 Glenwood Rd., Chicago Heights.         |
| 7. | Size of Application<br>Area:             | 2 acres  |
| 8. | Application Rate:                        | 7.14 dry tons/acre   |

### TABLE 12: ANALYSIS\* OF DIGESTED BIOSOLIDS APPLIED TO LAND AT CHICAGO HEIGHTS PARK DISTRICT EAST GOLF COURSE, CHICAGO HEIGHTS, IL FROM THE CALUMET EAST DRYING AREA DURING OCTOBER 2007

| Constituent                   | Units     | Concentration |
|-------------------------------|-----------|---------------|
| рН                            |           | 6.7           |
| Total Solids                  | %         | 72.0          |
| Total Volatile Solids         | "         | 26.6          |
| Volatile Acids as Acetic Acid | mg/dry kg | 11            |
| Total Kjeldahl-N              | "         | 9,702         |
| NH <sub>3</sub> -N            | "         | 46            |
| Total P                       | "         | 17,253        |
| К                             | "         | 3,518         |
| Cd                            | "         | 9.4           |
| Cr                            | "         | 147           |
| Cu                            | "         | 309           |
| Pb                            |           | 119           |
| Hg                            | "         | 0.82          |
| Mo                            | "         | 10.4          |
| As                            | "         | 8.8           |
| М                             | "         | 055           |
| Mn                            |           | 855           |
| Ni                            |           | 34.3          |
| Se                            |           | 5.9           |
| Zn                            |           | 947           |

# TABLE 13: CONTROLLED SOLIDS DISTRIBUTION PROGRAMUSER INFORMATION REPORT

| 1. | Name of User:                            | Cinder Ridge Golf Course   |
|----|--|--|
| 2. | Address of User:                         | 24801 Lakepoint Dr.<br>Wilmington, IL 60481  |
| 3. | Type of Solids and Source:               | Agitation dried lagooned anaerobically digested<br>biosolids from the Calumet WRP. Drying was<br>done at the Calumet East solids drying areas. |
| 4. | Quantity Received (October 2007):        | 212.22 dry tons  |
|    | Cumulative Quantity<br>Received in 2007: | 212.22 dry tons  |
| 5. | Date Biosolids Received:                 | October 30, 2007   |
| 6. | Use of Biosolids at Site:                | Used as soil conditioner and nutrient source for enhancing growth of turf on golf course.  |
| 7. | Size of Application<br>Area:             | 18 acres   |
| 8. | Application Rate:                        | 11.79 dry tons/acre  |

### TABLE 14: ANALYSIS\* OF DIGESTED BIOSOLIDS APPLIED TO LAND AT CINDER RIDGE GOLF COURSE, WILMINGTON, IL FROM THE CALUMET EAST DRYING AREA DURING OCTOBER 2007

| Constituent                   | Units     | Concentration |
|-------------------------------|-----------|---------------|
| pH                            |           | 6.8           |
| Total Solids                  | %         | 66.3          |
| Total Volatile Solids         | "         | 23.8          |
| Volatile Acids as Acetic Acid | mg/dry kg | 21            |
| Total Kjeldahl-N              | "         | 10,237        |
| NH <sub>3</sub> -N            | "         | 28            |
| Total P                       | "         | 18,916        |
| Κ                             | "         | 3,296         |
| Cd                            | "         | 9.4           |
| Cr                            | "         | 130           |
| Cu                            | "         | 317           |
| Pb                            | "         | 123           |
| Hg                            | "         | 0.98          |
| Mo                            | "         | 10            |
| As                            | "         | 8.5           |
| Mn                            | "         | 744           |
| Ni                            | "         | 34.9          |
| Se                            | "         | 5.6           |
| Zn                            | "         | 978           |

# TABLE 15: CONTROLLED SOLIDS DISTRIBUTION PROGRAMUSER INFORMATION REPORT

| 1. | Name of User:                            | Plainfield Community Consolidated School District 202  |
|----|--|--|
| 2. | Address of User:                         | 15732 Howard St.<br>Plainfield, IL 60544   |
| 3. | Type of Solids and Source:               | Agitation dried lagooned anaerobically digested<br>biosolids from the Calumet WRP. Drying was<br>done at the Calumet East solids drying areas.                             |
| 4. | Quantity Received (October 2007):        | 86.7 dry tons  |
|    | Cumulative Quantity<br>Received in 2007: | 86.7 dry tons  |
| 5. | Date Biosolids<br>Received:              | October 30, 2007   |
| 6. | Use of Biosolids at Site:                | Used as soil conditioner and nutrient source for<br>enhancing turf growth on athletic fields at Plainfield<br>Central High School, 24120 W. Fort Beggs Dr.,<br>Plainfield. |
| 7. | Size of Application<br>Area:             | 13 acres   |
| 8. | Application Rate:                        | 6.67 dry tons/acre   |

#### TABLE 16: ANALYSIS\* OF DIGESTED BIOSOLIDS APPLIED TO LAND AT PLAINFIELD CENTRAL HIGH SCHOOL, 24120 W. FORT BEGGS, PLAINFIELD, IL

| Constituent                   | Units     | Concentration |
|-------------------------------|-----------|---------------|
| рН                            |           | 6.9           |
| Total Solids                  | %         | 69.9          |
| Total Volatile Solids         | "         | 21.5          |
| Volatile Acids as Acetic Acid | mg/dry kg | 11            |
| Total Kjeldahl-N              | "         | 9,161         |
| NH <sub>3</sub> -N            | "         | 28            |
| Total P                       | "         | 15,526        |
| К                             | "         | 4,112         |
| Cd                            | "         | 4.8           |
| Cr                            | "         | 99            |
| Cu                            | "         | 291           |
| Pb                            | "         | 110           |
| Hg                            | "         | 0.81          |
| Mo                            | "         | 10.7          |
| As                            | "         | 10.4          |
| Mn                            | "         | 826           |
| Ni                            | "         | 35.1          |
| Se                            | "         | 2.8           |
| Zn                            | "         | 694           |

#### FROM THE CALUMET EAST DRYING AREA DURING OCTOBER 2007

# TABLE 17: CONTROLLED SOLIDS DISTRIBUTION PROGRAMUSER INFORMATION REPORT

| 1. | Name of User:                            | Land of Lincoln Tree Nursery  |  |
|----|--|---|--|
| 2. | Address of User:                         | 2107 River Rd.<br>Oregon, IL 61061  |  |
| 3. | Type of Solids and Source:               | Agitation dried lagooned anaerobically digested<br>biosolids from the Stickney WRP. Drying was done at<br>the Lawndale Avenue and Marathon solids drying areas. |  |
| 4. | Quantity Received (October 2007):        | 739 dry tons  |  |
|    | Cumulative Quantity<br>Received in 2007: | 739 dry tons  |  |
| 5. | Date Biosolids<br>Received:              | October 4, 5, 10, 11, 24, and 25, 2007  |  |
| 6. | Use of Biosolids at Site:                | Reclamation of nutrient-deficient land on tree nursery.   |  |
| 7. | Size of Application<br>Area:             | 30 acres  |  |
| 8. | Application Rate:                        | 24.63 dry tons/acre   |  |

### TABLE 18: ANALYSIS\* OF DIGESTED BIOSOLIDS APPLIED TO LAND AT LAND OF LINCOLN TREE NURSERY, OREGON, IL FROM THE LAWNDALE AVENUE AND MARATHON DRYING AREAS DURING OCTOBER 2007

| Constituent                   | Units     | Concentration |
|-------------------------------|-----------|---------------|
| рН                            |           | 6.5           |
| Total Solids                  | %         | 71.4          |
| Total Volatile Solids         | "         | 35.4          |
| Volatile Acids as Acetic Acid | mg/dry kg | 682           |
| Total Kjeldahl-N              | "         | 13,434        |
| NH <sub>3</sub> -N            | "         | 949           |
| Total P                       | "         | 15,351        |
| К                             | "         | 4,869.0       |
| Cd                            | "         | 4.8           |
| Cr                            | "         | 260           |
| Cu                            | "         | 402           |
| Pb                            | "         | 134           |
| Hg                            | "         | 0.99          |
| Mo                            | "         | 14.6          |
| As                            | "         | 0.5           |
| Mn                            | "         | 569           |
| Ni                            | "         | 50.1          |
| Se                            | "         | 2.0           |
| Zn                            | "         | 903           |

\*Results based on four samples.