Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 11-06

ANNUAL BIOSOLIDS MANAGEMENT REPORT FOR 2010

FEBRUARY 2011

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street Chicago, Illinois 60611-3154 f: 312.751.5194 312.751.5190

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Acting Director of Monitoring and Research
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February 16, 2011

Mr. Patrick Kuefler
Chief of Enforcement Section 2
USEPA – Region V
Water Enforcement and Compliance
Assurance Branch (WC-15J)
77 West Jackson Boulevard
Chicago, IL 60604-3590

Dear Mr. Kuefler:

Subject: 2010 Reporting Requirements Under the 40 CFR Part 503 Regulations

The Metropolitan Water Reclamation District of Greater Chicago (District) herein submits the 2010 records required under the 40 CFR Part 503 Regulations at Section 503.18, titled "Annual Biosolids Management Report for 2010."

We believe this report satisfies the reporting requirements under the 40 CFR Part 503 Regulations.

Certification Statement Required for Record Keeping

"I certify under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements, Class B pathogen requirements, vector attraction reduction requirements, management practices, site restrictions, and requirements to obtain information as described in Sections 503.32a5, 503.32a6, 503.32a8, 503.32b2, 503.32b3, 503.33b1, 503.33b9, 503.13, 503.14, and 503.16 for the District's land application sites was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

Subject: 2010 Reporting Requirements Under the 40 CFR Part 503 Regulations

If you have any questions, please telephone me at (312) 751-5190.

Very truly yours,

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

TCG:AC:cm
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ANNUAL BIOSOLIDS MANAGEMENT REPORT FOR 2010

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February 2011

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ACKNOWLEDGEMENT

The assistance of the following individuals is greatly appreciated: Mr. Daniel Collins, Supervising Civil Engineer, Lawndale Avenue Solids Management Area; Mr. Raphael Frost, Senior Civil Engineer, Calumet Solids Management Area; Ms. Katarzyna Lai, Assistant Engineer of Treatment Plant Operations I, John E. Egan Water Reclamation Plant (WRP); Robert Podgorny, Engineering Technician V, Hanover Park WRP; Dr. Geeta Rijal, Supervising Environmental Microbiologist, Analytical Microbiology and Biomonitoring Section; Mr. John Chavich, Supervising Environmental Chemist, John E. Egan Analytical Laboratory Section; Mr. Tom Liston, Assistant Director of Monitoring and Research, Analytical Laboratory Division; Ms. Ellice Durham, Supervising Environmental Chemist, Stickney Analytical Laboratory Section; and Dr. Heng Zhang, Environmental Monitoring and Research Manager.

Special thanks are given to Ms. Coleen Maurovich for the typing of this report.

DISCLAIMER

Mention of proprietary equipment and chemicals in this report does not constitute endorsement by the Metropolitan Water Reclamation District of Greater Chicago.

FOREWORD

The data and information in this report fulfill the frequency of monitoring and the reporting requirements for 2010 for Biosolids Management by the Metropolitan Water Reclamation District of Greater Chicago, as specified in the United States Environmental Protection Agency's (USEPA) 40 CFR Part 503 Regulations.

INTRODUCTION

The Metropolitan Water Reclamation District of Greater Chicago (District) herein reports the 2010 records required under the 40 CFR Part 503 Regulations at Section 503.18.

The District has four Illinois Environmental Protection Agency (IEPA) permitted biosolids management programs that must comply with Part 503. These programs are as follows:

1. Fulton County Dedicated Biosolids Application to Land Site (IEPA Permit No. 2005-SC-5073).

2. Hanover Park Fischer Farm Biosolids Application to Land Site (IEPA Permit No. 2007-SC-2951).

3. Controlled Solids Distribution Program (Biosolids Application to Land in the Chicago Area under IEPA Permit No. 2010-SC-0200).

4. Application to Farmland (Application of Biosolids from Calumet, Stickney, and John E. Egan Water Reclamation Plants (WRPs) to Farmland under IEPA Permit Nos. 2009-SC-2056 and 2009-SC-2056-1).

In the following sections, we have prepared a short description of the sludge processing and biosolids management operations at the District's seven water reclamation plants (WRPs). The Lemont, James C. Kirie, and North Side WRPs do not produce a final biosolids product, while the Calumet, Stickney, John E. Egan, and Hanover Park WRPs produced final biosolids products that were used beneficially in 2010. In addition, we discuss the uses for these biosolids, outline the data reporting requirements under the 40 CFR Part 503 Regulations, and present the required monitoring data in summary tables. The 2010 production and final disposition of sludges and biosolids generated by the District are summarized in Table 1. It should be noted that the total biosolids production in any given year may not equal the amount of the final biosolids product distributed, since biosolids may be distributed from production inventory from a previous year, or biosolids produced in a given year may be stored or aged for distribution at a later time.

TABLE 1: 2010 PRODUCTION AND USES OF SLUDGE AND BIOSOLIDS

Production and Use	Water Reclamation Plants						
	Stickney[1]	Calumet[1]	North Side	Egan[1]	Hanover Park[1]	Kirie	Lemont
	Dry Tons						
Production[2]	108,457	23,206	39,052	6,977	801	6,472	301
Land Application	71,641	14,475	-	5,660	807	-	-
Agricultural land	66,938	12,315	-	-	-	-	-
Urban land	4,703	2,160	-	-	-	-	-
Surface Disposal	-	-	-	-	-	-	-
Landfill (Total)	25,244	11,471	-	-	-	-	-
Co-disposal	-	-	-	-	-	-	-
Daily cover	2,361	-	-	-	-	-	-
Final Cover	22,883	11,471	-	-	-	-	-
Incinerated	-	-	-	-	-	-	-
To Other WRPs[3]	-	-	39,052	3,585	-	6,472	301
Temporary storage	-	-	-	524	-	-	-
Other[4]	32,998	-	-	-	-	-	-

[1]Differences between biosolids production and total use or disposal in 2010 were due to a net withdrawal or storage in lagoons or drying areas, and processing of biosolids imported from other WRPs.

[2]Stickney, Calumet, Egan, and Hanover Park produce biosolids while North Side, Kirie, and Lemont produce undigested sludge. Figures represent total solids generated at the end of each plant's processing train including those imported from other plants for further processing.

[3]For further processing.

[4]Sent to pelletizing facility owned and operated by Metropolitan Biosolids Management, LLC, Stickney, Illinois, under Contract No. 98-RFP-10.

LEMONT WATER RECLAMATION PLANT

The Lemont WRP, located in Lemont, Illinois, has a design average flow of 3.4 MGD. Wastewater reclamation processes include both primary (primary settling) and secondary (activated sludge process) treatment. In 2010, the Lemont WRP produced 301 dry tons of solids (Table 1), which were gravity concentrated and transported to the Stickney WRP for further processing.

No final biosolids product is produced at this WRP.

JAMES C. KIRIE WATER RECLAMATION PLANT

The James C. Kirie WRP, located in Des Plaines, Illinois, has a design average flow of 72 MGD. Wastewater reclamation processes include grit tanks, secondary (activated sludge process), and tertiary (sand filtration) treatment. In 2010, the James C. Kirie WRP produced 6,472 dry tons of solids (Table 1), which were sent via force main to the John E. Egan WRP for further processing.

No final biosolids product is produced at this WRP.

NORTH SIDE WATER RECLAMATION PLANT

The North Side WRP, located in Skokie, Illinois, has a design average flow of 333 MGD. Wastewater reclamation processes at the North Side WRP include primary (primary settling) and secondary (activated sludge process) treatment. In 2010, the North Side WRP produced 39,052 dry tons of solids (Table 1), which were sent via pipeline to the Stickney WRP for further treatment. This total includes solids generated from water reclamation at the North Side WRP and biosolids conveyed from the John E. Egan WRP.

No final biosolids product is produced at this WRP.

JOHN E. EGAN WATER RECLAMATION PLANT

Treatment Plant and Biosolids Process Train Description

The John E. Egan WRP, located in Schaumburg, Illinois, has a design average flow of 30 MGD. Wastewater reclamation processes include primary (primary settling), secondary (activated sludge process), and tertiary (sand filtration) treatment. All solids managed at the John E. Egan WRP are anaerobically digested. During some winters or when the centrifuges are not operating, liquid digested biosolids are sent via sewers to the North Side WRP. Centrifuge centrate containing biosolids are also sent via sewers to the North Side WRP.

In 2010, the total biosolids production at the John E. Egan WRP was 6,977 dry tons (Table 1). This total includes biosolids generated from the processing of sludge originating at the John E. Egan WRP as well as the sludge that was imported from the James C. Kirie WRP for further processing.

Summary of Use and Disposal at Landfills

In 2010, none of the biosolids generated at the John E. Egan WRP was sent to landfill.

Biosolids Conveyed to Other Water Reclamation Plants for Further Processing

In 2010, a total of 1,650 dry tons of biosolids was pumped as centrifuge centrate (528 dry tons) and sludge (1,122 dry tons) to the North Side WRP. In addition, 1,935 dry tons of centrifuge cake biosolids were trucked to the Harlem Avenue Solids Management Area, of which 524 dry tons have been temporarily stored until the 2011 land application season.

Land Application of Class B Centrifuge Cake Biosolids

In 2010, the John E. Egan WRP land applied a total of 5,660 dry tons of centrifuge cake biosolids to farmland under IEPA Permit Nos. 2009-SC-2056 and 2009-SC-2056-1 through a contract with Stewart Spreading, Inc. This total consisted of 3,834 dry tons trucked directly from the John E. Egan WRP and 1,826 dry tons stored temporarily (415 dry tons in 2009 and 1,411 dry tons in 2010) at the Harlem Avenue Solids Management Area before being land applied. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is six times per year.

All John E. Egan WRP centrifuge cake biosolids land applied in 2010 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 2), the Class B pathogen anaerobic digester time and temperature requirements of Section 503.32b3 (Table 3), and the vector

TABLE 2: CONCENTRATIONS OF NITROGEN AND METALS IN CENTRIFUGE CAKE BIOSOLIDS GENERATED AT THE JOHN E. EGAN WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/kg										
04/03/10	36,257	9,169	10	3	743	NA[1]	12	64	34	<5	804
04/10/10	18,825	4,203	11	3	693	1.2	10	56	34	<5	759
04/17/10	16,768	3,806	11	3	650	NA	10	50	31	<5	724
05/01/10	46,063	7,918	10	3	673	NA	10	53	39	<5	788
05/15/10	17,682	4,919	<10	3	669	0.87	10	55	40	<5	735
05/22/10	43,508	8,203	17	3	871	NA	12	71	46	<5	891
05/29/10	31,979	6,262	16	3	833	NA	11	64	44	<5	868
06/05/10	42,974	6,990	16	3	757	NA	12	64	42	<5	849
06/19/10	50,314	7,435	13	3	668	1.5	10	58	43	<5	794
06/26/10	30,822	3,758	14	3	697	NA	10	61	42	<5	817
07/10/10	42,123	7,558	12	3	712	1.3	11	62	45	<5	840
07/17/10	41,368	7,997	12	3	687	NA	11	63	51	<5	833
07/24/10	40,613	5,466	12	3	716	NA	13	66	46	<5	871
08/07/10	13,793	3,576	15	3	711	1.5	12	73	59	<5	877
08/14/10	26,732	4,910	15	3	720	NA	12	75	57	<5	904
08/21/10	27,959	4,819	17	3	713	NA	12	72	56	<5	904
08/28/10	20,057	4,773	15	4	675	NA	12	72	55	<5	881
09/04/10	33,294	5,929	15	4	689	NA	12	73	53	<5	888
09/11/10	12,552	3,010	<10	4	760	1.1	14	78	56	<5	959
10/02/10	17,914	2,802	11	3	582	NA	12	58	36	<5	739
10/09/10	29,621	5,712	11	4	773	1.2	18	82	45	<5	993
10/16/10	38,962	5,603	11	4	764	NA	18	78	47	<5	991
10/23/10	13,077	3,149	<10	4	746	NA	17	74	46	<5	958

TABLE 2 (Continued): CONCENTRATIONS OF NITROGEN AND METALS IN CENTRIFUGE CAKE BIOSOLIDS GENERATED AT THE JOHN E. EGAN WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/kg										
10/30/10	33,085	4,516	<10	4	727	NA	17	70	39	<5	897
11/06/10	18,294	3,215	<10	4	780	NA	20	83	43	<5	929
11/13/10	20,981	4,347	<10	4	760	1.1	18	87	47	<5	908
11/20/10	15,086	2,688	<10	4	761	NA	19	68	42	<5	921
11/27/10	49,533	7,411	<10	4	766	NA	17	61	44	<5	887
12/04/10	11,278	3,402	<10	4	788	NA	18	63	39	<5	915
Minimum	11,278	2,688	<10	3	582	0.87	10	50	31	<5	724
Mean[2]	29,018	5,295	13	3	727	1.2	13	67	45	<5	866
Maximum	50,314	9,169	17	4	871	1.5	20	87	59	<5	993
503 Limit	NL[3]	NL	41	39	1,500	17	75	420	300	100	2,800

[1]Not available.
[2]In calculating each mean, any value less than the detection limit was considered the detection limit.
[3]No limit.

TABLE 3: DIGESTER[1] TEMPERATURES AND DETENTION TIMES FOR CENTRIFUGE CAKE BIOSOLIDS GENERATED AT THE JOHN E. EGAN WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Month	Average Temperature	Average Detention Time	Meets Part 503 Class B Requirements	Minimum Detention Time Required by 503.32b3[2]
	------ °F --------	----- days ------		----- days ------
January	97	28.1	yes	15.0
February	97	25.7	yes	15.0
March	97	27.4	yes	15.0
April	97	23.4	yes	15.0
May	97	24.2	yes	15.0
June	97	24.3	yes	15.0
July	98	27.2	yes	15.0
August	97	32.9	yes	15.0
September	98	32.8	yes	15.0
October	98	33.0	yes	15.0
November	97	28.4	yes	15.0
December	97	30.4	yes	15.0

[1]Data are for primary Digesters A and C and do not reflect additional digestion achieved in secondary Digesters B and D.
[2]For anaerobic digestion at average temperature achieved.

attraction reduction requirements of Section 503.33b10. Table 2 also shows the biosolids nitrogen concentrations that were used to compute the agronomic loading rates at the farmland sites.

The John E. Egan WRP did not have any additional requirement for reporting under Part 503 in 2010.

HANOVER PARK WATER RECLAMATION PLANT

Treatment Plant and Biosolids Process Train Description

The Hanover Park WRP, located in Hanover Park, Illinois, has a design average flow of 12 MGD. Wastewater reclamation processes at this WRP include primary (primary settling), secondary (activated sludge process), and tertiary (sand filtration) treatment. All solids produced at the Hanover Park WRP are anaerobically digested and stored in lagoons. The digested biosolids stored in the lagoons are then applied by injection at an on-site farm, formerly the Fischer Farm. All of the biosolids produced by the Hanover Park WRP are land applied at the on-site farm.

In 2010, the total biosolids production at this WRP was 801 dry tons (Table 1).

Land Application of Class B Liquid Biosolids

In 2010, the Hanover Park WRP land applied a total of 807 dry tons of biosolids at the Hanover Park Fischer Farm site under the IEPA Permit No. 2007-SC-2951. This included liquid biosolids and supernatant stored in a lagoon. The quantity of land applied biosolids was higher than the quantity of biosolids produced in 2010 due to net removal of biosolids that were stored in a lagoon. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is once per year.

All Hanover Park WRP lagoon biosolids land applied in 2010 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 4), the Class B pathogen anaerobic digester time and temperature requirements of Section 503.32b3 (Table 5), and the vector attraction reduction requirements of Section 503.33b1 (Table 6). Management practices at this land application site complied with Section 503.14 as previously described in a letter to the USEPA dated January 28, 1994 (Appendix I).

TABLE 4: CONCENTRATIONS OF NITROGEN AND METALS IN BIOSOLIDS[1] GENERATED AT THE HANOVER PARK WATER RECLAMATION PLANT AND APPLIED TO THE FISCHER FARM SITE IN 2010

Sample Date[1]	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/kg										
02/06/10	402,786	384,821	24	1	119	0.19	4	24	14	6	137
03/20/10	255,895	282,947	18	1	361	0.61	5	27	11	3	381
04/03/10	98,290	57,611	13	2	1,149	2.0	13	48	33	7	887
04/10/10	78,222	25,215	13	2	1,171	2.7	12	54	28	5	818
04/17/10	73,113	21,524	13	1	1,211	2.4	13	55	27	5	835
08/28/10	308,692	298,923	32	1	27	0.15	4	16	15	25	38
09/04/10	228,867	224,400	29	1	49	0.13	3	15	13	11	87
09/11/10	176,733	159,900	26	1	47	0.13	5	21	13	7	67
09/18/10	183,750	143,321	24	1	41	0.14	5	21	14	6	59
09/25/10	233,154	192,962	22	1	42	0.15	4	22	15	5	68
10/02/10	212,000	195,679	21	1	35	0.14	4	16	14	12	50
11/13/10	293,458	259,625	22	1	44	0.17	4	22	17	5	63
Minimum	73,113	21,524	13	0.5	27	0.13	3	15	11	3	38
Mean[2]	212,080	187,244	21	1	358	0.78	6	28	18	8	291
Maximum	402,786	384,821	32	2	1,211	2.7	13	55	33	25	887
503 Limit	NL[3]	NL	41	39	1,500	17	75	420	300	100	2,800

[1]Biosolids applied as supernatant during all months except April.
[2]In calculating each mean, any value less than the detection limit was considered the detection limit.
[3]No Limit.

TABLE 5: DIGESTER TEMPERATURES AND DETENTION TIMES FOR BIOSOLIDS GENERATED AT THE HANOVER PARK WATER RECLAMATION PLANT AND APPLIED TO THE FISCHER FARM SITE IN 2010

Month	Average Temperature	Average Detention Time	Meets Part 503 Class B Requirements	Minimum Detention Time Required by 503.32b3[1]
	-------- °F --------	--- days -----		-------- days ----------
January	95	31.2	yes	15.0
February	95	30.8	yes	15.0
March	95	31.4	yes	15.0
April	96	34.0	yes	15.0
May	96	32.3	yes	15.0
June	96	37.3	yes	15.0
July	96	37.9	yes	15.0
August	96	35.0	yes	15.0
September	96	37.2	yes	15.0
October	96	33.3	yes	15.0
November	95	27.1	yes	15.0
December	95	27.5	yes	15.2

[1]For anaerobic digestion at average temperature achieved.

TABLE 6: VOLATILE SOLIDS REDUCTION IN BIOSOLIDS GENERATED AT THE HANOVER PARK WATER RECLAMATION PLANT AND APPLIED TO THE FISCHER FARM SITE IN 2010

Month	Digester Feed	Digester Draw	Lagoon Biosolids[1]	Volatile Solids Reduction[2]
	---------- % Total Volatile Solids ----------			-------- %----------
February	86.9	73.7	61.5	76.0
March	84.7	73.8	62.9	69.4
April	82.6	72.7	68.9	53.3
August	80.9	70.3	48.6	77.7
September	82.7	70.5	55.7	73.8
October	84.4	95.7	56.6	75.9
November	85.9	74.6	50.0	83.6

[1]All biosolids applied as supernatant, except for the month of April.
[2]Volatile solids reduction computed using digester feed and lagoon biosolids data.

CALUMET WATER RECLAMATION PLANT

Treatment Plant and Biosolids Process Train Description

The Calumet WRP, located in Chicago, Illinois, has a design average flow of 354 MGD. Wastewater reclamation processes at this WRP include primary (primary settling) and secondary (activated sludge process) treatment. All solids produced at the Calumet WRP are anaerobically digested. Calumet WRP biosolids are then:

1. Placed into lagoons for dewatering, aging and stabilization, and then transported to paved cells and air-dried prior to:

    a) Application to land as Exceptional Quality (EQ) biosolids under the District's Controlled Solids Distribution Permit.

    b) Use at local municipal solid waste landfills as final landfill cover.

    c) Disposal in local municipal solid waste landfills.

2. Placed into lagoons for dewatering to semi-dried and then applied to farmland by a private contractor as a Class B biosolids or used as daily landfill cover.

3. Centrifuge dewatered to approximately 25 percent solids content, placed into lagoons for aging and stabilization, and transported to paved cells and air-dried prior to:

    a) Application to land as EQ biosolids under the District's Controlled Solids Distribution Permit.

    b) Use at local municipal solid waste landfills as final landfill cover.

In 2010, the total biosolids production at the Calumet WRP was 23,206 dry tons (Table 1). The quantity of biosolids that were beneficially used in 2010 (25,946 dry tons) was higher than the total production for the Calumet WRP due to net removal of biosolids stored in lagoons or on drying cells.

Summary of Use and Disposal at Landfills

In 2010, no biosolids generated at the Calumet WRP were co-disposed with municipal solid wastes in landfills. However, a total of 11,471 dry tons was used as final cover for landfills.

Land Application of Class B Biosolids

In 2010, the Calumet WRP land applied 12,315 dry tons of semi-dried Class B biosolids to farmland under IEPA Permit Nos. 2009-SC-2056 and 2009-SC-2056-1 through a contract with Synagro Midwest, Inc. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is twelve times per year.

All Calumet WRP semi-dried Class B biosolids land applied in 2010 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 7), the Class B pathogen anaerobic digester time and temperature requirements of Section 503.32b3 (Table 8), and the vector attraction reduction requirements of Section 503.33b1 (Table 9). The latter table also contains the biosolids nitrogen concentrations that were utilized to compute the agronomic loading rates to farmland.

Land Application of Exceptional Quality, Air-Dried Biosolids

In 2010, the Calumet WRP land applied a total of 2,160 dry tons of air-dried EQ biosolids through the District's Controlled Solids Distribution Program under IEPA Permit No. 2010-SC-0200 for maintenance of golf courses, recreation fields, landscaping, nurseries, and for the construction of new recreation fields. The sites that utilized these biosolids under the Controlled Solids Distribution Program and how they were used are listed in Table 10. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is six times per year.

The USEPA Region V designated, on a site-specific basis for the Calumet and Stickney WRPs, two of the District's biosolids processing trains as equivalent to a Process to Further Reduce Pathogens (PFRP). The PFRP equivalency commenced on August 1, 2002 (Appendix II), and on this basis, all EQ biosolids produced by the Calumet WRP met the Part 503 Class A pathogen requirements of 503.32a8 in 2010.

All Calumet WRP EQ biosolids that were land applied in 2010 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 9), the Class A pathogen limits of Section 503.32a8 (Table 11), and the vector attraction reduction requirements of Section 503.33b1 (Table 9). Management practices complied with Section 503.14 as previously described in a letter to the USEPA dated January 28, 1994 (Appendix 1).

TABLE 7: CONCENTRATIONS OF NITROGEN AND METALS IN SEMI-DRIED BIOSOLIDS GENERATED AT THE CALUMET WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/kg										
08/24/10	20,016	3,369	11	4	491	1.1	18	46	115	5	1,210
08/24/10	24,347	3,380	11	3	480	1.1	18	44	112	3	1,209
09/02/10	19,171	3,627	9	3	417	1.1	16	43	102	2	1,113
09/02/10	24,977	3,193	9	3	429	1.3	16	40	106	3	1,111
09/08/10	25,565	5,687	9	4	449	0.85	18	46	107	3	1,161
09/15/10	29,048	4,487	8	3	412	2.0	16	46	94	4	1,064
09/15/10	24,967	5,719	9	3	414	1.2	16	44	99	5	1,096
09/15/10	23,833	4,275	8	3	410	1.0	16	40	98	5	1,114
09/22/10	21,599	4,976	8	3	381	1.8	16	39	102	2	1,084
09/22/10	26,730	4,588	8	3	405	0.93	16	39	102	1	1,117
09/22/10	24,944	4,540	9	4	429	1.1	17	42	103	4	1,168
10/06/10	24,306	3,748	8	3	399	1.0	15	36	97	4	1,075
10/06/10	35,286	6,438	8	3	440	0.88	14	34	82	3	1,148
10/06/10	28,338	6,740	8	3	428	1.0	14	33	81	5	1,149
10/12/10	29,550	4,814	9	3	437	1.2	14	34	86	5	1,150
10/12/10	47,030	5,409	9	3	428	0.75	13	34	81	2	1,130
10/12/10	34,037	6,659	7	3	430	0.61	14	34	83	1	1,122
10/20/10	29,096	6,524	9	3	448	1.3	15	38	90	6	1,185
10/20/10	31,921	6,507	9	3	411	1.5	14	35	78	2	1,074
11/02/10	26,111	4,100	9	3	450	1.6	14	36	95	7	1,139

TABLE 7 (Continued): CONCENTRATIONS OF NITROGEN AND METALS IN SEMI-DRIED BIOSOLIDS GENERATED AT THE CALUMET WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/kg										
11/02/10	30,768	7,070	10	3	462	0.89	15	38	84	8	1,139
11/02/10	32,245	6,812	10	3	461	1.1	15	34	104	8	1,148
11/09/10	32,020	6,434	8	3	437	0.86	14	34	77	6	1,064
11/16/10	33,620	7,906	9	3	420	0.87	14	32	75	6	1,073
11/16/10	30,460	7,507	7	2	368	0.85	13	36	70	5	969
Minimum	19,171	3,193	7	2	368	0.61	13	32	70	1	969
Mean[1]	28,399	5,380	9	3	429	1.1	15	38	93	4	1,121
Maximum	47,030	7,906	11	4	491	2.0	18	46	115	8	1,210
503 Limit	NL[2]	NL	41	39	1,500	17	75	420	300	100	2,800

[1]In calculating each mean, any value less than the detection limit was considered the detection limit.
[2]No limit.

TABLE 8: DIGESTER TEMPERATURES AND DETENTION TIMES FOR SEMI-DRIED BIOSOLIDS GENERATED AT THE CALUMET WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Month	Average Temperature	Average Detention Time	Meets Part 503 Class B Requirements	Minimum Detention Time Required by 503.32b3[1]
	---- °F ----	--- days ---		--- days ---
January	96	55.0	yes	15.0
February	96	63.5	yes	15.1
March	96	59.1	yes	15.0
April	97	49.2	yes	15.0
May	97	55.2	yes	15.0
June	97	55.0	yes	15.0
July	97	36.2	yes	15.0
August	97	61.3	yes	15.0
September	97	35.5	yes	15.0
October	96	37.5	yes	15.0
November	96	38.8	yes	15.0
December	97	70.6	yes	15.0

[1]For anaerobic digestion at average temperature achieved.

TABLE 9: CONCENTRATIONS OF NITROGEN AND METALS AND VOLATILE SOLIDS REDUCTION IN AIR-DRIED BIOSOLIDS GENERATED AT THE CALUMET WATER RECLAMATION PLANT AND APPLIED TO LAND IN 2010

Sample Date	TKN	NH_3-N	TVS	TVS[1] Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	-------- mg/kg --------		---------- % ----------		---------- mg/kg ----------								
04/23/10	20,722	548	40	71.9	9	4	471	1.4	17	48	123	5	1,170
05/05-06/10	11,364	812	40	65.5	9	4	462	1.2	16	44	117	5	1,138
05/20/10	18,009	62	39	67.5	9	4	470	1.5	14	42	120	6	1,177
05/27/10	19,756	252	40	66.0	10	4	479	1.3	14	42	127	2	1,198
07/07/10	18,936	229	39	45.8	12	5	489	0.97	16	44	124	5	1,173
07/19/10	17,184	1,411	38	48.4	9	4	490	1.3	15	44	123	3	1,192
08/24/10	11,609	136	36	60.5	10	4	457	1.2	13	56	122	2	1,139
08/26-27/10	22,337	558	41	51.6	10	4	449	1.1	16	42	106	4	1,139
08/30/10	20,227	1,349	40	53.1	10	4	496	0.91	17	46	113	5	1,222
10/01/10	21,964	1,345	36	67.4	10	3	429	1.4	16	38	102	5	1,155
10/04-08/10	22,792	1,469	37	65.3	8	3	433	1.1	16	40	102	3	1,130
10/05-07/10	22,654	1,669	37	65.5	9	3	426	1.5	15	38	101	4	1,147
10/14-15/10	25,474	2,288	34	70.1	9	3	419	1.1	15	37	107	4	1,164
10/18-19/10	23,639	3,183	35	68.5	5	3	449	1.1	15	40	102	1	1,127
Minimum	11,364	62	34	46	5	3	419	0.91	13	37	101	1	1,127
Mean[2]	19,762	1,094	38	62	9	4	459	1.2	15	43	113	4	1,162
Maximum	25,474	3,183	41	72	12	5	496	1.5	17	56	127	6	1,222
503 Limit	NL[3]	NL	NL	38	41	39	1,500	17	75	420	300	100	2,800

[1]Total Volatile Solids.
[2]In calculating each mean, any value less than the detection limit was considered the detection limit.
[3]No Limit.

TABLE 10: SITES THAT UTILIZED CALUMET WATER RECLAMATION PLANT AIR-DRIED BIOSOLIDS UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM IN 2010

User	Location
Coyote Run Golf Course, Flossmoor	Golf Course
University of Illinois, Chicago	Athletic fields
Mount Olive Cemetery, Chicago	Cemetery
Oakwood Cemetery, Chicago	Cemetery
Frankfort Square Park District, Frankfort	Football fields – Union Creek Park
Cinder Ridge Golf Course, Wilmington	Golf Course
Thornton Fractional South High School, Lansing	Athletic fields
Longwood Country Club, Crete	Golf Course
Calumet WRP, Chicago	Landscaping
Blue Island Park District, Blue Island	Athletic fields - Hart and Centennial Parks
Cinder Ridge Golf Course, Wilmington	Golf Course
North Shore Country Club, Glenview	Golf Course
River Forest Park District, River Forest	Athletic fields - Keystone Park
Park District of Tinley Park, Tinley Park	Athletic fields - Freedom Park
Dolton Park District, Dolton	Athletic fields – Main Park
BBJ Group, Blue Island	Topsoil blending
Joliet Township High School, Joliet	Athletic fields

TABLE 11: MICROBIOLOGICAL ANALYSIS OF BIOSOLIDS GENERATED BY COMPLIANT PROCESS TO FURTHER REDUCE PATHOGENS-EQUIVALENT CODIFIED PROCESSING TRAINS AT THE CALUMET WATER RECLAMATION PLANT IN 2010

Sample Date	Lagoon Source	Total Solids	Fecal Coliform
		---- % ----	---- MPN[1]/g ----
04/20/10	18	64.2	15
07/01/10	18	74.8	15
07/13/10	18	71.3	53
08/18/10	18	78.9	64
08/24/10	17	87.4	89
09/29/10	17	78.7	64
10/12/10	17	78.5	86

[1]Most Probable Number.

STICKNEY WATER RECLAMATION PLANT

Treatment Plant and Biosolids Process Train Description

The Stickney WRP, located in Stickney, Illinois, has a design average flow of 1,200 MGD. Wastewater reclamation processes include primary (Imhoff and primary settling) and secondary (activated sludge process) treatment. All solids produced at this WRP are anaerobically digested. Stickney WRP biosolids are then:

1. Placed into lagoons for dewatering, aging, and stabilization, and then transported to paved cells and air-dried prior to:

    a. Application to land as EQ biosolids under the District's Controlled Solids Distribution Permit.

    b. Use at local municipal solid waste landfills as final landfill cover.

    c. Disposal in local municipal solid waste landfills.

2. Centrifuge dewatered to approximately 25 percent solids content, and then applied to land by a private contractor as a Class B cake.

3. Centrifuge dewatered to approximately 25 percent solids content, transported to paved cells, and air-dried prior to use as daily landfill cover.

4. Centrifuge dewatered to approximately 25 percent solids content, and conveyed to Metropolitan Biosolids Management, LLC under Contract 98-RFP-10 for further processing.

5. Centrifuge dewatered to approximately 25 percent solids content, placed into lagoons for aging and stabilization, and transported to paved cells and air-dried prior to:

    a. Application to land as EQ biosolids under the District's Controlled Solids Distribution Permit.

    b. Application to farmland as semi-dried Class B biosolids

    c. Use at local municipal solid waste landfills as final landfill cover.

    d. Disposal in local municipal solid waste landfills.

In 2010, the total biosolids production at the Stickney WRP was 108,457 dry tons (Table 1). This total includes biosolids generated from processing of sludge originating at the Stickney WRP as well as the sludge that was imported from the North Side and Lemont WRPs for further

processing. The quantity of biosolids that was used (129,883 dry tons) was higher than the total 2010 production for the Stickney WRP due to a net removal of biosolids from lagoons and drying cells.

Summary of Use and Disposal at Landfills

In 2010, no biosolids generated at the Stickney WRP were co-disposed with municipal solid wastes in landfills. However, a total of 22,883 dry tons was used as final cover and 2,361 dry tons as daily cover for landfills.

Land Application of Class B Biosolids

In 2010, the Stickney WRP applied a total of 66,938 dry tons of centrifuge cake and semi-dried biosolids to agricultural land under IEPA Permit Nos. 2009-SC-2056 and 2009-SC-2056-1. These quantities were utilized through contracts with Synagro Midwest, Inc. and Stewart Spreading, Inc. The total does not include the centrifuge cake biosolids transported from the John E. Egan WRP to the Harlem Avenue Solids Management Area prior to being applied to farmland by Synagro Midwest, Inc. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is 12 times per year.

All Stickney WRP centrifuge cake and semi-dried biosolids land applied in 2010 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 12), the Class B pathogen anaerobic digester time and temperature requirements of Section 503.32b3 (Table 13), and the vector attraction reduction requirements of Section 503.33b10. Table 12 also contains the biosolids nitrogen concentrations that were used to compute the agronomic loading rates at the farmland sites.

Land Application of Exceptional Quality, Air-Dried Biosolids

In 2010, the Stickney WRP applied a total of 4,703 dry tons of air-dried EQ biosolids through the District's Controlled Solids Distribution Program under IEPA Permit No. 2010-SC-0200, for the construction and maintenance of golf courses and recreation fields. The sites that utilized these biosolids under the program and how they were used are listed in Table 14. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is six times per year.

The air-dried biosolids at the Stickney WRP were not generated by the codified PFRP-equivalent processing train. Therefore, the biosolids were tested for Class A compliance in accordance with Section 503.32a5.

All Stickney EQ biosolids land applied in 2010 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 15), the Class A pathogen limits of Section 503.32a5 (Table 16), and the vector attraction reduction requirements of Section 503.33b1 (Table 15). Management practices complied with Section 503.14 as previously described in a letter to the USEPA dated January 28, 1994 (Appendix I).

TABLE 12: CONCENTRATIONS OF NITROGEN AND METALS IN CENTRIFUGE CAKE AND SEMI-DRIED BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/kg										
01/05/10	53,265	6,493	<10	3	363	0.48	15	40	97	<8	792
02/02/10	62,680	6,476	<10	4	329	0.88	14	37	84	<8	745
02/04/10	43,357	7,835	<10	4	371	0.75	14	39	101	<8	795
03/02/10	59,779	8,904	<10	3	377	0.61	18	37	74	<8	764
03/18/10	57,510	9,629	<10	<2	589	1.3	13	55	38	<8	659
03/23/10	34,513	3,677	<10	3	336	0.76	7	33	95	<8	704
03/31-04/01/10	53,384	8,436	<10	<2	649	1.4	14	63	43	<20	694
04/01-02/10	52,088	9,839	<10	4	401	1.8	15	42	101	<20	849
04/06/10	51,090	6,995	<10	3	348	0.58	14	34	72	<20	801
04/12-17	45,320	8,513	<10	3	363	1.1	13	37	99	<20	771
04/19-23	53,564	12,125	<10	3	397	1.1	13	41	106	<20	849
04/21/10	33,514	6,649	<10	4	425	1.3	13	41	134	<20	921
04/27-30	59,481	16,111	<10	3	395	0.82	17	38	78	<20	899
05/04/10	42,702	6,324	<10	3	407	0.93	13	36	90	6	879
05/05/10	44,688	8,651	<10	3	396	0.86	14	37	85	6	882
05/05/10	54,174	15,947	<10	3	363	0.82	16	35	75	<20	829
05/27-28/10	22,281	2,214	<10	4	441	1.2	10	40	137	<20	940
06/07/10	25,573	3,921	<10	3	385	1.1	10	37	130	<20	841
06/08/10	27,334	3,155	<10	3	364	0.74	11	37	112	5	926
06/28/10	46,758	8,618	<10	3	412	0.70	14	38	86	<4	894
06/28/10	51,815	14,247	<10	3	394	0.72	16	37	82	<4	916
07/01/10	21,274	1,534	<10	4	440	1.1	10	40	135	<4	951
07/06/10	35,708	3,605	<10	3	384	0.85	10	37	124	<4	940
07/07/10	22,745	1,808	<10	3	396	0.68	11	39	104	<4	767

TABLE 12 (Continued): CONCENTRATIONS OF NITROGEN AND METALS IN CENTRIFUGE CAKE AND SEMI-DRIED BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/kg										
07/22-23/10	53,328	15,603	<10	3	436	0.96	13	36	84	<4	877
08/03/10	37,882	5,484	10	3	443	1.4	11	36	133	<4	961
08/03/10	37,882	5,484	10	3	443	1.4	11	36	133	<4	961
08/05/10	37,662	3,462	10	3	411	0.88	10	36	128	<4	877
08/11/10	60,642	19,565	<10	3	404	0.83	16	37	81	<20	959
08/10-13/10	35,968	8,212	<10	3	433	1.0	10	37	134	<20	962
08/12-13/10	43,756	9,783	<10	3	428	1.1	12	38	116	<20	952
08/16-20/10	36,264	9,744	10	3	413	1.1	10	37	131	<20	946
08/23-28/10	45,090	9,242	10	3	425	0.93	10	37	127	<20	936
08/26-27/10	44,726	9,280	<10	3	409	1.1	11	37	113	<20	903
08/27/10	21,368	3,043	10	3	438	1.1	10	39	136	<20	890
08/28/10	45,566	10,969	10	3	413	0.90	11	38	138	<20	933
08/30-31/10	9,948	1,987	10	3	423	1.1	10	39	142	<20	865
09/07/10	39,091	6,092	<10	3	417	1.1	11	39	128	<8	913
09/07-08/10	41,872	9,706	12	3	413	1.1	11	39	141	<8	959
09/07-08/10	25,119	3,515	12	3	438	1.1	11	41	142	<8	919
09/08/10	26,373	4,307	<10	3	403	1.0	13	38	100	<8	893
09/09/10	41,933	11,485	10	3	412	1.0	12	37	107	<8	954
09/10/10	42,674	9,644	<10	3	406	0.98	16	38	85	<8	956
09/13-17/10	45,458	13,054	<10	3	398	1.2	15	39	92	<8	934
09/21-25/10	59,814	16,397	<10	4	414	0.97	16	41	97	<8	1,044
09/23/10	46,784	10,259	10	3	425	0.96	13	37	106	<8	969
09/25/10	40,151	10,853	<10	3	406	0.98	14	39	103	<8	961

TABLE 12 (Continued): CONCENTRATIONS OF NITROGEN AND METALS IN CENTRIFUGE CAKE AND SEMI-DRIED BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/kg										
09/27-30/10	48,130	13,227	11	3	413	0.53	13	38	105	<8	974
10/01/10	39,926	8,550	10	3	425	0.77	13	39	98	<8	903
10/04-05/10	42,663	9,630	10	3	413	1.1	12	36	101	<8	913
10/04-09/10	42,269	11,460	10	3	417	0.83	12	36	103	<8	919
10/05/10	34,783	3,766	<10	3	440	0.99	13	40	118	<8	925
10/08/10	41,195	7,493	<10	4	434	0.84	15	39	92	<8	890
10/08/10	19,769	2,574	10	4	447	1.4	10	38	144	<8	885
10/08/10	14,751	2,674	11	3	444	1.3	11	39	143	<8	885
10/11-16/10	45,396	14,437	10	3	429	1.1	11	38	120	<8	943
10/15/10	33,690	4,012	<10	3	417	1.1	13	37	99	<8	868
10/18/10	39,592	9,653	10	3	427	0.81	14	39	98	<8	909
10/18-19/10	32,985	4,234	10	3	412	0.85	13	37	95	<8	883
10/18-22/10	46,659	13,639	10	3	407	0.99	11	37	111	<8	925
10/25-29/10	44,161	11,571	<10	3	410	0.94	5	40	121	<8	954
10/30/10	40,284	9,238	<10	3	407	1.0	5	39	131	<8	886
11/01-06/10	45,752	9,845	<10	3	435	1.1	8	41	131	<8	912
11/02/10	44,409	4,196	<10	2	389	1.2	11	39	97	<8	733
11/08-09/10	44,825	8,254	<10	3	451	1.2	8	39	130	<8	936
11/08-13/10	46,741	9,351	<10	3	450	1.1	9	40	119	<8	899
11/15-16/10	47,526	8,590	<10	3	415	0.85	11	42	106	<8	811
11/15-17/10	47,224	8,851	<10	3	432	1.2	10	41	103	<8	804
11/16/10	35,470	6,530	<10	3	437	1.0	9	38	110	<8	803

TABLE 12 (Continued): CONCENTRATIONS OF NITROGEN AND METALS IN CENTRIFUGE CAKE AND SEMI-DRIED BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/kg										
11/23/10	48,806	7,639	<10	3	438	0.90	10	41	101	<8	806
11/29/10	55,150	8,288	<10	3	430	0.59	11	42	98	<8	804
12/02/10	40,311	11,576	<10	3	396	1.5	8	40	137	<8	811
12/02/10	45,119	9,060	<10	3	403	1.2	12	41	95	<8	765
12/06-10/10	45,640	14,982	<10	3	405	1.2	10	38	112	<8	781
12/07/10	45,513	3,848	<10	3	408	0.96	9	43	98	<8	753
Minimum	9,948	1,534	<10	2	329	0.5	5	33	38	<4	659
Mean[1]	41,769	8,347	10	3	416	1.0	12	39	108	<10	877
Maximum	62,680	19,565	12	4	649	1.8	18	63	144	6	1,044
503 Limit	NL[2]	NL	41	39	1,500	17	75	420	300	100	2,800

[1]In calculating each mean, any value less than the detection limit was considered the detection limit.
[2]No Limit.

TABLE 13: DIGESTER TEMPERATURES AND DETENTION TIMES FOR CENTRIFUGE CAKE AND SEMI-DRIED BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2010

Month	Average Temperature	Average Detention Time	Meets Part 503 Class B Requirements	Minimum Detention Time Required by 503.32b3[1]
	---- °F ----	--- days ---		--- days ---
January	98	28.0	yes	15.0
February	98	29.9	yes	15.0
March	98	23.4	yes	15.0
April	98	23.0	yes	15.0
May	98	27.6	yes	15.0
June	98	23.5	yes	15.0
July	98	34.8	yes	15.0
August	98	28.3	yes	15.0
September	98	39.9	yes	15.0
October	98	29.7	yes	15.0
November	98	35.0	yes	15.0
December	99	27.5	yes	15.0

[1]For anaerobic digestion at average temperature achieved.

TABLE 14: SITES THAT UTILIZED STICKNEY WATER RECLAMATION PLANT AIR-DRIED BIOSOLIDS UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM IN 2010

User	Location
West Chicago Park District, West Chicago	Athletic fields – Pioneer Park
Coal City High School, Coal City	Athletic fields
Thornton Fractional North High School, Calumet City	Athletic fields
Podmajersky, Inc., Chicago	Landscaping
Village of Manteno	Athletic fields - Heritage Park
Oak Lawn Community High School, Oak Lawn	Athletic fields
Channahon Park District, Channahon	Golf course - Heritage Bluffs
Bloomingdale Park District, Bloomingdale	Athletic fields – Springfield Park
Crossroads Community Church, Naperville	Athletic fields
Plainfield East High School, Plainfield	Athletic fields
Plainfield Central High School, Plainfield	Athletic fields
Plainfield South High School, Plainfield	Athletic fields
Plainfield North High School, Plainfield	Athletic fields
Glenbrook North High School, Northbrook	Athletic fields
Evergreen Cemetery, Evergreen Park	Cemetery
St. Xavier University, Chicago	Athletic fields
Irving Park Cemetery, Irving Park	Cemetery
Lisle Park District, Lisle	Athletic fields - Woodglenn Park
River Forest Park District, River Forest	Athletic fields - Keystone Park
Blue Island Park District, Blue Island	Athletic fields - Centennial Park

TABLE 14 (Continued): SITES THAT UTILIZED STICKNEY WATER RECLAMATION PLANT AIR-DRIED BIOSOLIDS UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM IN 2010

User	Location
BBJ Group, Blue Island	Topsoil blending
Village of Richton Park	Landscaping
Frankfort Square Park District, Frankfort	Athletic fields - Dr. Julian Rogus School Park
Woodridge Park District, Woodridge	Athletic fields - Cypress Cove Park
Morton Grove Park District, Morton Grove	Athletic fields - Frank Hren Park
Stickney WRP, Cicero	Landscaping
Saint Charles Park District, St. Charles	Athletic fields - Campton Hills Park
North Shore Country Club, Glenview	Golf course
YMCA, Chicago	Athletic fields
McNulty Farm, Lemont	Farm
Midlothian Park District, Midlothian	Howie Minas Baseball Field
Posen Park District, Posen	Athletic fields - Memorial Park
Hoffman Estate Park District, Hoffman Estate	Athletic fields – Canterbury fields
Reavis High School, Burbank	Athletic fields
Park District of Franklin Park, Franklin Park	Athletic fields - North Park

TABLE 15: CONCENTRATIONS OF NITROGEN AND METALS AND VOLATILE SOLIDS REDUCTION IN AIR-DRIED BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND APPLIED TO LAND IN 2010

Sample Date	TKN	NH_3-N	TVS	TVS[1] Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	---- mg/dry kg --		--------% ---------		---------- mg/dry kg ----------								
05/06/10	26,678	1,739	41	51.1	<10	5	476	1.5	14	49	146	<20	1,035
05/20/10	21,129	1,479	40	53.7	<10	4	425	1.2	11	44	144	<20	920
05/25-27	23,958	1,486	41	51.9	<10	4	474	1.7	13	48	146	<20	1,007
07/06/10	17,743	238	33	59.7	<10	4	456	1.2	10	43	135	<4	921
07/15/10	22,206	1,399	41	44.6	11	4	469	1.2	10	39	128	<4	907
07/19-20/10	18,297	2,134	41	44.6	11	4	451	0.82	11	39	133	<4	879
07/22/10	18,520	2,822	40	45.4	11	4	458	1.1	11	39	129	<4	895
08/27/10	20,707	1,298	37	52.3	10	3	406	1.2	11	40	126	<20	854
08/31/10	16,245	2,421	37	51.5	10	4	442	1.1	13	45	136	<20	902
09/08-09/10	16,657	2,219	37	58.8	11	4	422	1.3	11	40	149	<8	919
09/09/10	13,031	1,310	34	63.9	12	4	452	1.2	10	40	153	<8	947
10/05-07/10	25,199	4,149	32	71.4	11	4	434	1.5	12	40	144	<8	900
10/07-11/10	22,664	3,391	32	71.8	10	3	425	1.4	11	40	143	<8	892
10/12/10	22,960	3,549	33	70.8	11	3	438	1.4	11	39	143	<8	872
10/12-15/10	26,846	4,904	33	71.2	11	4	428	1.2	11	40	144	<8	881
10/13-15/10	26,403	4,358	32	71.6	10	3	422	1.3	11	39	142	<8	862
10/19/10	18,694	3,803	39	62.3	10	4	414	1.0	11	38	139	<8	855

TABLE 15 (Continued): CONCENTRATIONS OF NITROGEN AND METALS AND VOLATILE SOLIDS REDUCTION IN AIR-DRIED BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND APPLIED TO LAND IN 2010

Sample Date	TKN	NH_3-N	TVS	TVS[1] Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	----mg/dry kg----		---------%---------		----------mg/dry kg ----------								
Minimum	13,031	238	32	45	<10	3	406	0.82	10	38	126	<4	854
Mean[2]	21,055	2,512	37	59	11	4	441	1.3	11	41	140	<8	909
Maximum	26,846	4,904	41	72	12	5	476	1.7	14	49	153	<20	1,035
503 Limit	NL[3]	NL[3]	NL[3]	38	41	39	1,500	17	75	420	300	100	2,800

[1]Total Volatile Solids.
[2]In calculating each mean, any value less than the detection limit was considered the detection limit.
[3]No limit.

TABLE 16: MICROBIOLOGICAL ANALYSIS OF BIOSOLIDS[1] GENERATED BY NON-COMPLIANT PROCESS TO FURTHUR REDUCE PATHOGENS-EQUIVALENT CODIFIED PROCESSING TRAINS AT THE STICKNEY WATER RECLAMATION PLANT IN 2010

Sample Date	Lagoon Source	Total Solids	Fecal Coliform	Helminth Ova	Enteric Virus
		%	----MPN[2]/g----	No./4g	PFU[3]4g
05/04/10	30	64.8	1	<0.0800	<0.8000
05/04/10	30	61.2	16	<0.0800	<0.8000
05/25/10	24	67.4	56	0.0800	<0.8000
05/25/10	26	74.9	510	<0.0800	<0.8000
07/01/10	30	90.5	42	<0.0800	<0.8000
07/13/10	30	66.8	870	<0.0800	<0.8000
07/22/10	30	72.4	14	<0.0800	<0.8000

[1]Biosolids satisfied Part 503 Class A requirements.
[2]Most Probable Number.
[3]Plaque-Forming Unit.

Centrifuge Cake Biosolids to Pelletizing Facility

In 2010, the Stickney WRP sent a total of 32,998 dry tons of centrifuge cake biosolids to the pelletizing facility owned and operated by Metropolitan Biosolids Management, LLC, Stickney, Illinois under Contract No. 98-RFP-10. Metropolitan Biosolids Management is responsible for final utilization and the monitoring and report requirements of these biosolids.

DISTRICT BIOSOLIDS DISTRIBUTED TO LANDFILLS UNDER 40 CFR PARTS 258 AND 261

Biosolids from two of the District's WRPs (Stickney and Calumet) were sent to landfills in 2010 for use as daily and final covers. Biosolids shipped to these landfills are either processed to meet the requirements of AS 95-4, AS 98-5, and AS 03-02 (Adjusted Standards) approved by the Illinois Pollution Control Board for biosolids use as a medium for the establishment of final vegetative cover, or they are centrifuged and air-dried to various end points, and analyzed as specified in 40 CFR Part 261 to establish the nonhazardous nature of this material for use as daily cover and for co-disposal. Analytical results, including TCLP constituents, PCB, cyanide, sulfide, and paint filter test, are submitted to the landfill company to satisfy the requirements of their IEPA permit. District biosolids have always met the requirements of 40 CFR Parts 258 and 261, and the Illinois nonhazardous waste landfill regulations (Title 35, Subtitle G, Chapter I, Subchapter H, Part 810). In 2010, no District biosolids were co-disposed with municipal solid wastes at non-hazardous waste landfills.

APPPENDIX I

BIOSOLIDS MANAGEMENT PROGRAMS OF THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO UNDER 40 CFR PART 503

Metropolitan Water Reclamation District of Greater Chicago
100 EAST ERIE STREET CHICAGO, ILLINOIS 60611 312 / 751-5600

Cecil Lue-Hing
Director of R & D
312 / 751-5190

January 28, 1994

Mr. Michael J. Mikulka
Chief of Compliance Section
United States Environmental
Protection Agency
Region V
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Dear Mr. Mikulka:

Subject: Sludge Management Programs of the Metropolitan Water Reclamation District of Greater Chicago Under 40 CFR Part 503

The Metropolitan Water Reclamation District of Greater Chicago (District) has three sludge management programs that employ sewage sludge applications to land under the 40 CFR Part 503 Regulations. These programs are the Fulton County, Illinois land application site, the Hanover Park Fischer Farm at the Hanover Park Water Reclamation Plant, and the Controlled Solids Distribution Program. The District feels that it is important to define its interpretation of the 40 CFR Part 503 Regulations with respect to each of these programs.

On July 22, 1993, we sent Mr. John Colletti, then Acting Sludge Coordinator, a letter (copy attached) expressing our concerns regarding compliance monitoring, record keeping and reporting under 40 CFR Part 503 for each of these programs.

The District believes that its existing sludge management programs are conservative, and that monitoring and environmental protection measures far exceed the requirements of the Part 503 Regulations. This letter is designed to inform you of the conservative nature of these sludge management programs, and the fact that they are in complete compliance with the spirit and specific language of the Part 503 Regulations.

Subject: Sludge Management Programs of the Metropolitan Water Reclamation District of Greater Chicago Under 40 CFR Part 503

Fulton County Illinois Site

The District considers the application of sewage sludge at its Fulton County, Illinois site to be under "Land Application" section (subpart B) of the Part 503 Regulations. Sewage sludge is applied at rates approved by the Illinois Environmental Protection Agency (IEPA) for reclamation of disturbed strip-mine spoils. Under the current permit with the IEPA (Permit No. 1993-SC-4294 issued December 3, 1993), sewage sludge is being applied at an agronomic rate to supply nutrients for productive crop yields.

Sewage sludge applied at the site will contain metal concentrations below the pollutant limits established in Table 3 of Part 503.13, subsection b(3) of the regulations. As a result, the Part 503 cumulative pollutant limits in Table 4 of Part 503.13 substation b(4) will not apply to future applications of sewage sludge at the Fulton County site.

Sewage sludge applied at the Fulton County site will far exceed the Class B pathogen requirements by conservatively achieving operating temperature and detention times in excess of the Part 503 anaerobic digester operating requirements (§503.32b3).

The Part 503 vector attraction reduction requirements will be easily met since the District consistently reduces the volatile solids content of the Fulton County sludge far greater than the required 38 percent (§503.33b1).

The Part 503 Regulations do not specify what kind of crop can be grown under land application. Crops typically grown at the site are corn, winter wheat, and hay. Corn and winter wheat grown on sludge application fields are sold for ethanol production, and animal feed. Hay grown on application fields receiving supernatant from on-site lagoons containing sewage sludge is currently harvested three times per year, as specified under the existing IEPA permit. This hay is used as animal feed or mulch for project reclamation activities.

Subject: Sludge Management Programs of the Metropolitan Water Reclamation District of Greater Chicago Under 40 CFR Part 503

The Class B pathogen requirements for the supernatant application field where hay is grown will be met by ensuring that supernatant application ceases 30 days before hay crop harvesting.

The Part 503 Regulations do not specify what kind of surface water protection system is required for land application. The permitting authority, on a case-by-case basis, may impose more stringent requirements when necessary to protect the public health and the environment. Sewage sludge application fields at the Fulton County site are bermed, and have runoff retention basins designed to capture all runoff.

Waters released from the 65 retention basins at the site must, and do meet standards specified in the existing IEPA discharge permit for pH, total suspended solids, fecal coliforms, and biochemical oxygen demand. Although not required in the Part 503 Regulations, these restrictions show that District operations at the Fulton County site are designed to minimize contamination of surface waters.

Supernatant application fields at the site are not bermed. However, supernatant application in the fields is controlled so that it does not contaminate indigenous ponds and strip-mined reservoirs. Although such restrictions are not required in the Part 503 Regulations, they prevent contamination of waters used by wildlife and water fowl.

The Class B pathogen requirements in the Part 503 Regulations dictate that public access to application fields be limited. The District will comply with the Class B pathogen requirement for restricted public access by a combination of fencing, posted signs, locked gates, and security guards. These measures are conservative and far exceed the public access requirements in the Part 503 Regulations.

The Part 503 Regulations prohibit the adverse modification or destruction of endangered species or their critical habitat. The District has no evidence to indicate that sludge applications have affected the habitat of wildlife species at the site.

Subject: Sludge Management Programs of the Metropolitan Water Reclamation District of Greater Chicago Under 40 CFR Part 503

The Part 503 Regulations do not specifically prohibit bulk sewage sludge application to flooded, frozen, or snow covered lands. The regulations state, however, that any sludge applied to these lands may not enter surface waters or wet lands. The District does not apply sewage sludge to floodplains, frozen, or snow covered ground at the Fulton County site. The site permit with the IEPA prohibits applying sewage sludge under these conditions.

The Part 503 Regulations state that bulk sewage sludge may not be applied within 10 meters of a surface water body unless authorized by a permit. The District does not apply sewage sludge within 10 meters of the waters of the state. The District's IEPA permit specifies that sludge shall not be applied to land which lies within 200 feet (61 meters) of surface waters.

The Part 503 Regulations require that the land application of bulk sewage sludge may not exceed the agronomic rate for the particular agricultural, forest or public contact site. In some cases the permitting authority may specifically authorize the application of sludge to a reclamation site at an annual rate that exceeds the agronomic rate. The District is currently applying sewage sludge at an application rate of 57 dry tons per acre per year on bermed sludge application fields, and 25 dry tons per acre per year on nonbermed fields. Technical justification for the sludge application rate of 57 dry tons per acre per year is given in the attachment entitled "Fulton County." This application rate is approved under the IEPA permit.

Hanover Park Fischer Farm

The District considers the application of sewage sludge at its Hanover Park Fischer Farm site to fall under the "Land Application" section (subpart B) of the Part 503 Regulations. Sewage sludge is applied at a rate of 20 dry tons per acre per year as specified in the IEPA permit (Permit No. 1992-SC-0942 issued August 18, 1992) for the site.

Sewage sludge applied at the site is far below the pollutant concentration limits established in Table 3 of Part 503.13, subsection b(3) of the regulations for metals.

Subject: Sludge Management Programs of the Metropolitan Water Reclamation District of Greater Chicago Under 40 CFR Part 503

Sewage sludge applied at the Hanover Park Fischer Farm site conservatively meets the Class B pathogen requirements by either fecal coliform analysis (§503.32b2), or by meeting the Part 503 anaerobic digester operating temperature and detention time requirements (§503.32b3).

The District will ensure that the Part 503 vector attraction reduction requirements are met by electing to subsurface inject all sludge applied to the site.

The Part 503 Regulations do not specify what kind of crop can be grown under land application. A straw crop is currently being grown at the site, with the straw removed and the grain left in the field.

The Part 503 Regulations do not state what type of surface and groundwater protection system is required. All fields at the site are bermed and all surface water is collected. The entire site is endowed with an extensive system of drainage tile, which collects all the soil percolate. The runoff and percolate are returned to the water reclamation plant for tertiary treatment.

The District's sludge application to land program at the Hanover Park Water Reclamation Plant far exceed any surface water and groundwater protection requirement specified in the Part 503 Regulations.

The Part 503 Class B pathogen requirements limit public access to the sludge application fields. The District operations at Hanover Park far exceed the Part 503 requirements since the entire site is fenced with locked gates and security guards.

The Part 503 Regulations prohibit the adverse modification or destruction of endangered species or their critical habitat. The District has no evidence that sludge applications have affected the habitat of wildlife species at the site.

The Part 503 Regulations do not prohibit bulk sewage sludge application to flooded, frozen, or snow covered lands.

Subject: Sludge Management Programs of the Metropolitan Water Reclamation District of Greater Chicago Under 40 CFR Part 503

The regulations state, however, that any sludge applied to these lands may not enter surface waters or wetlands. The District does not apply sewage sludge to floodplains, frozen, or snow covered ground at the Hanover Park Fischer Farm. The site IEPA permit prohibits the application of sewage sludge under these conditions.

The Part 503 Regulations state that bulk sewage sludge may not be applied within 10 meters of a surface water body unless authorized by a permit. The District does not apply sewage sludge within 10 meters of the waters of the state. The site application fields are bermed and surface runoff is collected and returned to the plant for tertiary treatment. This management practice far exceeds the Part 503 requirements.

The Part 503 Regulations require that the land application of bulk sewage sludge may not exceed the agronomic rate for the particular agricultural, forest, or public contact site. The District is applying sewage sludge at an annual application rate of 20 dry tons per acre. Technical justification for this application rate is given in the attachment entitled "Hanover Park," and is approved under the IEPA permit.

Controlled Solids Distribution

The District has a sludge management program called the Controlled Solids Distribution Program. Sewage sludge under this program is given away for beneficial use at selected sites for landscaping and soil enrichment. The application of sewage sludge under this program is covered by IEPA Permit No. 1990-SC-1100.

Through the District's efforts to reduce the metals in the sludge with a vigorous industrial waste control program, the District's sewage sludge will be well below the metal limits specified in Part 503.13, subsection b(3), (Table 3). The anaerobic digesters producing sewage sludge for the District's Controlled Solids Distribution Program have detention times and operating temperatures which easily satisfy the Part 503 Class B pathogen requirements. The sewage sludge

Subject: Sludge Management Programs of the Metropolitan Water Reclamation District of Greater Chicago Under 40 CFR Part 503

destined for the Controlled Solids Distribution Program receives extensive treatment to reduce its volatile solids content, which far exceed the 38 percent volatile solids reduction requirement of the Part 503 vector attraction reduction requirements.

The Part 503 Regulations for land application of sewage sludge do not specify what kind of vegetation can be grown at sites receiving sludge. The District requires that only nonfood chain vegetation be grown at all sites receiving sludge under the Controlled Solids Distribution Program. This far exceeds the Part 503 requirements.

The Part 503 Regulations under 503.32(b) for Class B pathogen reduction requires that public access be restricted for one year if the site has a high potential for public exposure, and public access be restricted for 30 days at a site with a low potential for public exposure. The District will post signs and/or other means to restrict public access to these sites.

The Part 503 Regulations prohibit the adverse modification or destruction of endangered species or their critical habitat. The District has no evidence that endangered species are present in areas receiving sewage sludge under the Controlled Solids Distribution Program.

The Part 503 Regulations do not prohibit bulk sewage sludge application to flooded, frozen, or snow covered lands. The regulations state, however, that any sludge application to these lands may not enter surface waters or wetlands. The District does not apply sewage sludge to floodplains, frozen, or snow covered ground at sites receiving sludge under its Controlled Solids Distribution Program. The District's IEPA permit prohibits these activities.

The Part 503 Regulations has a specific management practice that bulk sewage sludge may not be applied within 10 meters of a surface water body unless authorized by a permit. The District does not apply sewage sludge within 10 meters of the waters of the state. The District's IEPA permit is more restrictive in that it specifies that sludge cannot be applied to land which lies within 200 feet (61 meters) of surface waters.

Subject: Sludge Management Programs of the Metropolitan Water Reclamation District of Greater Chicago Under 40 CFR Part 503

The Part 503 Regulations require that the land application of bulk sewage sludge may not exceed the agronomic rate for a particular agricultural, forest, or public contact site. In some instances, the permitting authority for a reclamation site may specifically authorize the application of sludge at an annual rate that exceeds the agronomic rate. At these sites, sewage sludge will either be applied at an agronomic application rate, or a reclamation rate depending upon the needs of the site. The District's current permit with the IEPA allows for a higher application rate related to site needs. Under the Part 503 Regulations, as noted in the attachment entitled "Fulton County," the permitting authority may authorize a variance from the agronomic rate by permit. The District has received this variance from the IEPA in its current permit for the Controlled Solids Distribution Program.

The above mentioned sludge management programs are an important part of the District's operations and planning requirements for future sludge management activities. As described, the District feels that these programs comply with the requirements described in the Part 503 Regulations.

If you require additional information or have questions, don't hesitate to telephone me at (312) 751-5190.

Very truly yours,

Cecil Lue-Hing, D.Sc., P.E.
Director
Research and Development

CLH:RIP:ns
Attachments
cc: Dalton
O'Connor
DiVita
Murray
Alan Keller, IEPA
Tim Kluge, IEPA
Ken Rogers, IEPA
Ash Sajjad, USEPA
Bill Tong, USEPA

APPPENDIX II

DESIGNATION OF SITE-SPECIFIC EQUIVALENCY TO PROCESS TO FURTHER REDUCE PATHOGENS FOR DISTRICT BIOSOLIDS PROCESSING TRAINS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 20 2002

REPLY TO THE ATTENTION OF:

WN-16J

Mr. Jack Farnan
General Superintendent
Metropolitan Water Reclamation
District of Greater Chicago
100 East Erie Street
Chicago, Illinois 60611

REF: Mr. Richard Lanyon's November 30, 2001, Letter Request for Site-specific Equivalency Certification for the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) Biosolids Processing Trains at the Stickney and Calumet Waste Water Treatment Plants.

Dear Mr. Farnan:

We acknowledge receipt of the referenced letter request along with attachments A through I. This request conforms with the requirements of the Federal rules for the use and disposal of biosolids codified at 40 CFR part 503. These rules designate the Regional permitting authority to be responsible for determining equivalency, and require generators of biosolids to formally seek an equivalency certification of their process to further reduce pathogens (PFRP) from the permitting authority. To be equivalent, a treatment process must be able to consistently reduce pathogens to levels comparable to the other PFRP processes listed in part 503, Appendix B.

The granting of a site-specific equivalency designation by the Regional permitting authority--based on a thorough review of the adequacy of the process trains to consistently reduce pathogens in biosolids as indicated by the pathogen data, and in consultation with the Pathogen equivalency Committee (PEC)--certifies the biosolids generated by using a PFRP equivalent process is Class A with respect to pathogens. The pathogen standards are specified in section 503.32(a)(7)(i). However, the granting of a site-specific equivalency is limited to the set of process and operating conditions in use at the Stickney and Calumet waste water treatment plants at the time of the application for equivalency designation (Appendix B of the November 30, 2001, Letter Request), and as described by MWRDGC in its application for equivalency submitted to the PEC. The PEC is an US Environmental Protection Agency resource to provide technical assistance and recommendations to Regional permitting authorities regarding pathogen reduction equivalency in implementing the part 503 standards for use and disposal of biosolids.

We are familiar with the MWRDGC's request for equivalency because our biosolids team members participated in numerous phone conversations and meetings with the PEC and Dr. Prakasam Tata of your staff, and both were extremely helpful in explaining and clarifying various issues related to the subject.

Our review of the MWRDGC's biosolids data submitted for 1994 to 2001 indicates Class A biosolids were produced at the Stickney and Calumet plants as they operated their respective low-and high-solids sludge processing trains (SPTs) according to codified protocols delineated in Attachment B of Mr. Lanyon's letter request, dated November 30, 2001. The part 503 rules for PFRP equivalency require that enteric viruses and viable helminth ova are reduced to below detection level. The pathogen data obtained from actual measurements and the statistical treatment of that data by MWRDGC indicated reductions of greater than two logs. We appreciate the MWRDGC's effort in analyzing 1,400 discreet samples of biosolids for pathogens, and the professionalism and patience displayed by Dr. Prakasam Tata of your staff in responding to our queries pertaining to this matter.

In consideration of the quality of data provided for our review, the consistent achievement of a Class A product, we are pleased to grant a conditional site-specific certification of equivalency to the MWRDGC's SPTs at Stickney and Calumet waste water treatment plants for a period of two years effective August 1, 2002 to July 30, 2004, provided the following conditions are met.

1) The Stickney and Calumet plants must operate at all times according to the codified process and operating protocols referred to in the letter request dated November 30, 2001.

2) Monitor biosolids (treated sludge) at Stickney and Calumet plants once per month for the first year and subsequently, once every other month for enteric viruses and helminth ova, and certify the MWRDGC is in compliance with Class A standards and report the results semi-annually to the attention of Mr. Valdis Aistars, Mail Drop WC-15J, 77 West Jackson, Chicago, Illinois 60604.

We appreciate MWRDGC's ongoing efforts to improve the quality of its biosolids. If you have any further questions about this matter, please contact Ash Sajjad of my staff at 312-886-6112.

Sincerely yours,

Robert D. Harvey
FOR

Jo Lynn Traub
Director, Water Division

cc: Dick Lanyon, MWRDGC
Dr. Prakasam Tata, MWRDGC ✓
Dr. James Smith Jr., ORD, Cincinnati

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 20 2010

REPLY TO THE ATTENTION OF: WN-16J

Mr. Louis Kollias
Director of Monitoring and Research
Metropolitan Water Reclamation
District of Greater Chicago
100 East Erie Street
Chicago, Illinois 60611-3154

Re: May 17 2010, Request for Renewal of Site-specific Equivalency Determination for the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) Biosolids Processing Trains at the Stickney and Calumet Wastewater Treatment Plants.

Dear Mr. Kollias:

We have received the above-referenced request on May 20, 2010, along with microbiological analyses of biosolids generated by MWRDGC between August 2002 and December 2009. We appreciate your interest in seeking renewal of MWRDGC's equivalency certification. You have also requested the sampling frequency for enteric viruses and helminth ova be reduced if your equivalency certification is renewed. The following discussion highlights the regulatory requirements of establishing equivalency, memorializes past Agency decisions, and provides Region 5's decision on your requests.

Biosolids are a product of wastewater treatment and are suitable for beneficial reuse in agriculture and other applications, subject to conformance with the Federal biosolids rules at 40 Code of Federal Regulations Part 503 (503 Rules) addressing disease-causing organisms (pathogens) in biosolids. The 503 Rules establish requirements for classifying biosolids as either a Class A or Class B product with respect to pathogens. Class A requirements are met by treating the sewage sludge to reduce pathogens below detection levels, while the Class B requirements rely on a combination of treatment and site restrictions to reduce pathogens and potential exposure to pathogens. The 503 Rules provide a series of options for meeting the specific requirements for the two classes of biosolids.

One of the Class A options is to treat the sewage sludge by a process equivalent to a process listed in the 503 Rules, Appendix B. To be equivalent, a sewage sludge treatment process must be able to consistently reduce pathogens to levels comparable with the processes listed in Appendix B. Under the 503 Rules, the permitting authority

(in this case, EPA Region 5) is responsible for determining equivalency. MWRDGC's sewage sludge processing trains differ from those listed in Appendix B. In March 1998, MWRDGC submitted an equivalency application to EPA's Pathogen Equivalency Committee (PEC) and the Region for approval. The Region and the PEC reviewed MWRDGC's initial request and granted a site-specific and conditional equivalency in June 2002, for a period of 2 years. Subsequently, the Region granted three 2-year extensions, in effect until July 31, 2010.

We have reviewed your most recent renewal request and request for sampling frequency reduction. Based on the microbiological data provided to us, I am approving your equivalency renewal request for a period of two years, until August 1, 2012. This approval is subject to all conditions that were included in the initial approval and all subsequent extensions except as it relates to sampling frequency. With this approval, the sampling frequency for enteric viruses and helminth ova is reduced to six times per year.

If you have any further questions about this matter, please contact Mr. John Colletti of my staff, at (312) 886-6106.

Sincerely,

for Tinka G. Hyde
Director, Water Division