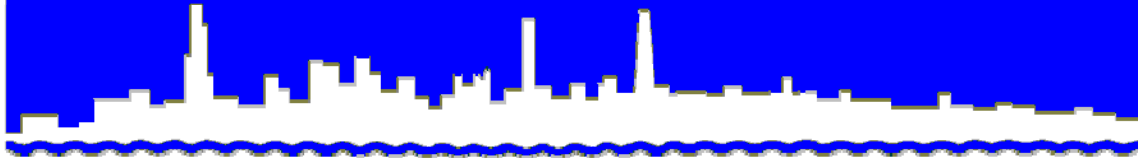


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 14-01

***ANNUAL BIOSOLIDS MANAGEMENT REPORT FOR
2013***

FEBRUARY 2014

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February 14, 2014

Mr. Anthony Petruska
United States Environmental Protection
Agency, Region 7
Biosolids Center
WWPD/WENF
11201 Renner Boulevard
Lenexa, Kansas 66219

Dear Mr. Petruska:

Subject: 2013 Reporting Requirements Under the United States Environmental Protection Agency Code of Federal Regulations Title 40 Part 503

The Metropolitan Water Reclamation District of Greater Chicago (District) herein submits the 2013 records required under the United States Environmental Protection Agency Code of Federal Regulations Title 40 Part 503 (Part 503) at Section 503.18, entitled "Annual Biosolids Management Report for 2013."

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

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 503.32(a)(5), 503.32(a)(6), 503.32(a)(8), 503.32(b)(2), 503.32(b)(3), 503.33(b)(1), 503.33(b)(9), 503.33(b)(10), 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."

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

Very truly yours,

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

TCG:PL:cm

Attachment

cc w/att.: V. Aistars (USEPA)/T. Bramscher (USEPA)

A. Keller (IEPA)/B. Yurdin (IEPA)

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**ANNUAL BIOSOLIDS MANAGEMENT REPORT
FOR 2013**

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Special thanks are given to Ms. Coleen Maurovich for typing 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 2013 for Biosolids Management by the District, as specified in the United States Environmental Protection Agency's (USEPA's) Code of Federal Regulations (CFR) Title 40 Part 503 (Part 503).

INTRODUCTION

This Metropolitan Water Reclamation District of Greater Chicago (District) report presents the 2013 records required under Part 503 at Section 503.18.

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

1. Fulton County Dedicated Biosolids Application to Land (IEPA Permit No. 2013-SC-58146).
2. Hanover Park Fischer Farm Biosolids Application to Land (IEPA Permit No. 2012-SC-2255).
3. Controlled Solids Distribution Program (Biosolids Application to Land in the Chicago Area under IEPA Permit No. 2010-SC-0200).
4. Farmland Application Program (Biosolids Application to Farmland from the Calumet, Stickney, and Egan WRPs 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 WRPs. The Lemont, James C. Kirie (Kirie), and Terrence J. O'Brien (O'Brien) (formerly North Side) WRPs do not produce a final biosolids product, while the Calumet, Stickney, Egan, and Hanover Park WRPs produced final biosolids products that were used beneficially in 2013. In addition, we discuss the uses for these biosolids, outline the data reporting requirements under Part 503, and present the required monitoring data in summary tables. The 2013 production and final disposal 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 for a previous year, or biosolids produced in a given year may be stored or aged for distribution at a later time.

TABLE 1: PRODUCTION AND UTILIZATION OF SLUDGE AND BIOSOLIDS DURING 2013

Production and Utilization	Water Reclamation Plants						
	Stickney ¹	Calumet ¹	O'Brien	Egan ^{1,2}	Hanover Park ¹	Kirie	Lemont
	----- Dry Tons -----						
Production ³	103,467	22,277	33,880	6,663	774	6,153	328
Land Application	41,542	13,531	-	5,747	14	-	-
Agricultural land	36,930	11,818	-	5,747	-	-	-
Urban land	4,612	1,713	-	-	-	-	-
Surface Disposal	-	-	-	-	-	-	-
Landfill (Total)	5,194	5,511	-	-	-	-	-
Co-disposal	1,036	-	-	-	-	-	-
Daily cover	-	-	-	-	-	-	-
Final cover	4,158	5,511	-	-	-	-	-
Incinerated	-	-	-	-	-	-	-
To Other WRPs ⁴	-	-	33,880	296	-	6,153	328
Temporary Storage	-	-	-	1,173	760	-	-
Other ⁵	43,455	-	-	-	-	-	-

¹Differences between biosolids production and total use or disposal in 2013 were due to a net withdrawal or storage in lagoons or drying areas, and processing of biosolids imported from other WRPs.

²Difference between amount produced and amount shipped was due to sampling anomalies.

³Stickney, Calumet, Egan, and Hanover Park WRPs produce biosolids while O'Brien, Kirie, and Lemont WRPs produce undigested sludge. Figures represent total solids generated at the end of each WRP's processing train plus those imported from other WRPs for further processing.

⁴For further processing.

⁵Sent to Stickney WRP pelletizing facility owned and operated by Metropolitan Biosolids Management, LLC, Lyons, Illinois 60534, under Contract No. 98-RFP-10.

LEMONT WATER RECLAMATION PLANT

The Lemont WRP, located in Lemont, Illinois, has a design average flow of 2.3 million gallons per day (MGD). The annual average treated flow in 2013 was 2.24 MGD. Wastewater reclamation processes include both primary (primary settling) and secondary (activated sludge process) treatments. In 2013, the Lemont WRP produced 328 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 Kirie WRP, located in Des Plaines, Illinois, has a design average flow of 52 MGD. The annual average treated flow in 2013 was 38.6 MGD. Wastewater reclamation processes include grit tanks, secondary (activated sludge process), and tertiary (sand filtration) treatments. In 2013, the Kirie WRP produced 6,153 dry tons of solids (Table 1), which were sent via force main to the Egan WRP for further processing.

No final biosolids product is generated at this WRP.

TERRENCE J. O'BRIEN WATER RECLAMATION PLANT

The O'Brien WRP, located in Skokie, Illinois, has a design average flow of 333 MGD. The annual average treated flow in 2013 was 204 MGD. Wastewater reclamation processes at the O'Brien WRP include primary (primary settling) and secondary (activated sludge process) treatments. In 2013, the O'Brien WRP produced 33,880 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 O'Brien WRP and biosolids conveyed from the Egan WRP to the O'Brien WRP via sewer, which is described in detail in the next section.

No final biosolids product is generated at this WRP.

JOHN E. EGAN WATER RECLAMATION PLANT

Treatment Plant and Biosolids Process Train Description

The Egan WRP, located in Schaumburg, Illinois, has a design average flow of 30 MGD. The annual average treated flow in 2013 was 24.9 MGD. Wastewater reclamation processes include primary (primary settling), secondary (activated sludge process), and tertiary (sand filtration) treatments. All solids managed at the Egan WRP are anaerobically digested. During some winters or when the centrifuges are not operating, liquid digested biosolids are sent via sewers to the O'Brien WRP. Centrifuge centrate containing biosolids are also sent via sewers to the O'Brien WRP.

In 2013, the total biosolids production at the Egan WRP was 6,663 dry tons (Table 1). This total includes biosolids generated by the processing of sludge originating at the Egan WRP as well as the sludge imported from the Kirie WRP for further processing. The measured amount of biosolids shipped out during the year was greater than the measured production due to digester draw and centrifuge feed sampling anomalies.

Summary of Biosolids Use and Disposal at Landfills

In 2013, no biosolids generated at the Egan WRP were sent to landfills for co-disposal.

Biosolids Conveyed to Other Water Reclamation Plants for Further Processing

In 2013, a total of 296 dry tons of biosolids was pumped as centrifuge centrate to the O'Brien WRP.

Land Application of Class B Centrifuge Cake Biosolids

In 2013, through a contract with Stewart Spreading, Inc., the Egan WRP applied 5,747 dry tons of centrifuge cake biosolids to agricultural land under IEPA Permit Nos. 2009-SC-2056 and 2009-SC-2056-1. This total consisted of 2,792 dry tons hauled directly from the Egan WRP and 2,955 dry tons that were temporarily stored during the second half of 2012 (381 dry tons) and the first half of 2013 (2,574 dry tons) at the Harlem Avenue Solids Management Area before application. In accordance with Table 1 of Section 503.16, the frequency of monitoring for these biosolids is six times per year.

All Egan WRP centrifuge cake biosolids land applied in 2013 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 2), the anaerobic digestion time and temperature requirements of the Class B pathogen standard of Section 503.32(b)(3) (Table 3), and

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 2013

Sample Date	TKN	NH ₃ -N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
----- mg/dry kg -----											
05/11/13	39,639	8,657	<5	1	594	1.0	6	55	31	<5	614
06/15/13	21,050	3,242	<5	1	594	1.1	8	48	28	<5	629
07/13/13	30,833	6,759	<5	1	522	0.70	4	47	26	<5	581
08/10/13	29,337	6,480	<5	2	582	1.2	5	54	33	<5	706
09/07/13	18,007	3,805	<5	2	636	0.98	7	58	31	<5	800
10/12/13	30,413	5,795	<5	2	657	1.7	7	53	32	<5	786
11/16/13	40,148	7,539	<5	1	647	0.72	7	52	31	<5	737
Minimum	18,007	3,242	<5	1	522	0.70	4	47	26	<5	581
Mean ¹	29,918	6,040	<5	1	605	1.1	6	52	30	<5	693
Maximum	40,148	8,657	<5	2	657	1.7	8	58	33	<5	800
503 Limit	NL ²	NL	41	39	1,500	17	75	420	300	100	2,800

¹In calculating each mean, any value less than the detection limit was considered the detection limit.

²No limit.

TABLE 3: DIGESTER¹ TEMPERATURES AND DETENTION TIMES DURING PROCESSING OF BIOSOLIDS GENERATED AT THE JOHN E. EGAN WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2013

Month	Average Temperature ----- °F -----	Average Detention Time ----- days -----	Meets Part 503 Class B Requirements	Minimum Detention Time Required by 503.32(b)(3) ² ----- days -----
January	98.4	28.4	yes	15.0
February	96.5	25.1	yes	15.0
March	97.0	26.6	yes	15.0
April	96.7	24.4	yes	15.0
May	97.6	25.9	yes	15.0
June	96.9	25.8	yes	15.0
July	97.8	28.8	yes	15.0
August	98.5	29.6	yes	15.0
September	97.3	29.6	yes	15.0
October	97.1	24.1	yes	15.0
November	97.6	27.2	yes	15.0
December	97.3	31.1	yes	15.0

¹Data are for primary Digesters A and C and do not reflect additional digestion achieved in secondary Digesters B and D.

²For anaerobic digestion at average temperature achieved.

the vector attraction reduction requirements of Section 503.33(b)(10) (incorporation in soil within six hours after application). Table 2 also shows the biosolids nitrogen concentrations used to compute the agronomic rates for farmland application of biosolids.

The Egan WRP had no additional requirement for reporting under Part 503 in 2013.

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. The annual average treated flow in 2013 was 8.62 MGD. Wastewater reclamation processes at this WRP include primary (primary settling), secondary (activated sludge process), and tertiary (sand filtration) treatments. All solids produced at the Hanover Park WRP are anaerobically digested and stored in lagoons and later land applied by injection at the on-site Fischer Farm.

In 2013, the total biosolids production at this WRP was 774 dry tons (Table 1).

Land Application of Class B Liquid Biosolids

In 2013, the Hanover Park WRP land applied a total of 14 dry tons of biosolids at the on-site Fischer Farm under IEPA Permit No. 2012-SC-2255. The quantity of land-applied biosolids was much lower than the quantity produced in 2013 due to wet field conditions resulting from excessive rainfall. The supernatant, presently stored in a lagoon, will be injected in early spring 2014 before planting. In accordance with Table 1 of Section 503.16, the frequency of monitoring for these biosolids is once per year.

All Hanover Park WRP lagoon biosolids land applied in 2013 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 4), the anaerobic digestion time and temperature requirements of the Class B pathogen standard of Section 503.32(b)(3) (Table 5), and the vector attraction reduction requirements of Section 503.33(b)(1) (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 BIOSOLIDS¹ GENERATED AT THE HANOVER PARK WATER RECLAMATION PLANT AND APPLIED AT THE FISCHER FARM SITE IN 2013

Sample Date	TKN	NH ₃ -N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
----- mg/dry kg -----											
06/01/13	452,529	403,294	29	<1	150	<0.20	6	16	12	17	222
07/13/13	395,719	360,844	31	<1	55	<0.20	6	16	13	18	86
08/10/13	319,867	277,867	33	<1	29	<0.20	7	18	13	25	55
09/14/13	280,618	229,706	29	<1	58	<0.20	6	19	12	18	91
09/28/13	143,409	117,182	45	<1	20	<0.20	9	23	18	27	20
Minimum	143,409	117,182	29	<1	20	<0.20	6	16	12	17	20
Mean ²	318,428	277,778	34	<1	63	<0.20	7	18	14	21	95
Maximum	452,529	403,294	45	<1	150	<0.20	9	23	18	27	222
503 Limit	NL ³	NL	41	39	1,500	17	75	420	300	100	2,800

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¹Biosolids applied as supernatant 5/30 through 9/26/2013.

²In computing each mean, any value less than the reporting limit was considered the reporting limit.

³No limit.

TABLE 5: DIGESTER TEMPERATURES AND DETENTION TIMES DURING PROCESSING OF BIOSOLIDS GENERATED AT THE HANOVER PARK WATER RECLAMATION PLANT AND APPLIED AT THE FISCHER FARM SITE IN 2013

Month	Average Temperature	Average Detention Time	Meets Part 503 Class B Requirements	Minimum Detention Time Required by 503.32(b)(3) ¹
	----- °F -----	----- days -----		----- days -----
January	94.1	32.0	yes	16.5
February	94.4	32.6	yes	16.0
March	94.7	32.6	yes	15.5
April	94.8	31.0	yes	15.3
May	95.6	31.5	yes	15.0
June	95.8	30.2	yes	15.0
July	95.7	29.7	yes	15.0
August	96.0	30.3	yes	15.0
September	96.4	27.4	yes	15.0
October	95.6	26.6	yes	15.0
November	95.2	27.0	yes	15.0
December	95.2	25.5	yes	15.0

¹For anaerobic digestion at average temperature achieved.

TABLE 6: VOLATILE SOLIDS REDUCTION IN BIOSOLIDS GENERATED
 AT THE HANOVER PARK WATER RECLAMATION PLANT
 AND APPLIED AT THE FISCHER FARM SITE IN 2013

Month	Digester Feed	Digester Draw	Lagoon Biosolids ¹	Volatile Solids Reduction ²
	----- % Total Volatile Solids -----			---- % ----
June	85.3	72.2	59.8	74.4
July	84.4	72.7	60.8	71.3
August	84.3	73.0	63.0	68.4
September	83.7	73.7	62.7	67.3

¹Biosolids applied as supernatant 5/30 through 9/28/2013.

²Volatile solids reduction computed using total volatile solids for digester feed and lagoon biosolids.

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. The annual average treated flow in 2013 was 237 MGD. Wastewater reclamation processes at this WRP include primary settling and secondary activated sludge processes. All solids produced at the Calumet WRP are anaerobically digested. Calumet WRP biosolids are then:

1. Placed in 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 Program.
 - b) Use at local municipal solid waste landfills as final cover.
 - c) Disposal in local municipal solid waste landfills.
2. Placed in lagoons for dewatering, transported to paved cells for air drying, and then applied to farmland as semi-dried Class B biosolids by a private contractor or used as daily landfill cover.

In 2013, a total of 22,277 dry tons of biosolids was produced at the Calumet WRP (Table 1). The quantity of biosolids used (19,042 dry tons) was less than the total 2013 production for the Calumet WRP. Hence, a total of 3,235 dry tons was stored in lagoons or on drying cells for further processing or later use.

Summary of Biosolids Use and Disposal at Landfills

No biosolids generated in 2013 at the Calumet WRP were co-disposed with municipal solid wastes in landfills. A total of 5,511 dry tons was used as final cover, and no biosolids were used as landfill daily cover.

Land Application of Class B Biosolids

In 2013, the Calumet WRP land applied 11,818 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 these biosolids is six times per year.

All Calumet WRP semi-dried Class B biosolids land applied in 2013 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 7), the vector attraction reduction requirements of Section 503.33(b)(10) (by incorporation in soil within six hours after application), and the anaerobic digestion time and temperature requirements of the Class B pathogen standard of Section 503.32(b)(3) (Table 8). Table 7 also shows the biosolids nitrogen concentrations used to compute the agronomic rates for farmland application.

TABLE 7: CONCENTRATIONS OF NITROGEN AND METALS IN BIOSOLIDS GENERATED AT THE CALUMET WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2013

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Sample Date	TKN	NH ₃ -N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	----- mg/dry kg -----										
05/21/13	28,882	3,454	5	2	407	0.78	9	26	75	<5	1,074
06/06/13	27,725	4,001	6	2	397	0.81	9	26	74	<5	1,041
06/06/13	26,353	651	5	2	413	0.94	10	27	77	<5	1,110
08/29/13	31,173	4,633	6	2	397	0.85	13	30	81	<5	1,195
09/05/13	31,375	5,616	<5	2	355	0.82	10	24	77	<5	958
09/17/13	33,255	1,981	7	2	393	0.96	12	28	82	<5	1,171
10/17/13	28,969	5,272	8	2	411	0.86	8	28	82	<5	1,189
10/17/13	31,643	4,246	8	2	409	0.85	10	28	82	<5	1,280
10/29/13	32,422	3,806	6	2	410	0.84	12	28	80	<5	1,234
11/07/13	29,055	5,060	5	2	401	0.95	12	28	81	<5	1,173
11/07/13	31,657	4,281	6	2	415	0.40	14	28	72	<5	1,183
Minimum	26,353	651	<5	2	355	0.40	8	24	72	<5	958
Mean ¹	30,228	3,909	6	2	401	0.82	11	27	78	<5	1,146
Maximum	33,255	5,616	8	2	415	0.96	14	30	82	<5	1,280
503 Limit	NL ²	NL	41	39	1,500	17	75	420	300	100	2,800

¹In calculating each mean, any value less than the reporting limit was considered the reporting limit.

²No Limit.

TABLE 8: DIGESTER¹ TEMPERATURES AND DETENTION TIMES DURING PROCESSING OF BIOSOLIDS GENERATED AT THE CALUMET WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2013

Month	Average Temperature	Average Detention Time	Meets Part 503 Class B Requirements	Minimum Detention Time Required by 503.32(b)(3) ²
	---- °F ----	---- days ----		---- days ----
January	95.6	57.5	yes	15.0
February	95.6	42.7	yes	15.0
March	96.1	46.1	yes	15.0
April	96.3	39.6	yes	15.0
May	97.4	45.8	yes	15.0
June	97.6	51.1	yes	15.0
July	97.6	51.6	yes	15.0
August	97.9	66.2	yes	15.0
September	98.0	60.7	yes	15.0
October	97.7	56.4	yes	15.0
November	96.6	36.6	yes	15.0
December	96.5	31.7	yes	15.0

¹Temperatures and detention times are for primary digesters 1 through 12 at the Calumet WRP.

²For anaerobic digestion at average temperature achieved.

Land Application of Exceptional Quality, Air-Dried Biosolids

In 2013, the Calumet WRP land applied a total of 1,713 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, and for the construction of new recreation fields. The sites and method of utilization of these biosolids under the Controlled Solids Distribution Program are listed in Table 9. In accordance with Table 1 of Section 503.16, the frequency of monitoring for these biosolids is six times per year.

All Calumet WRP air-dried, EQ biosolids land applied in 2013 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 10), the vector attraction reduction requirements of Section 503.33(b)(1) (Table 10), and the Class A pathogen limits of Section 503.32(a)(5) (Tables 11 and 12). Enteric viruses and helminth ova were analyzed before biosolids were dried (Table 11). The fecal coliforms were analyzed after biosolids were dried and prior to utilization on urban land (Table 12). Management practices complied with Section 503.14 as previously described in a letter to the USEPA dated January 28, 1994 (Appendix I).

Site-Specific Process to Further Reduce Pathogens.

The USEPA Region 5 designated, on a site-specific basis for the Calumet and Stickney WRPs, two of the District's biosolids processing trains as equivalent to Process to Further Reduce Pathogens (PFRP) according to Section 503.32(a)(8). The PFRP equivalency commenced on August 1, 2002 (Appendix II). The current renewable certification of the PFRP designation is valid from August 1, 2012, through July 31, 2017, and requires analysis of six samples for helminth ova and enteric viruses annually during this period.

All of the Calumet WRP EQ biosolids generated or utilized in 2013 were not PFRP-compliant with respect to the minimum required duration of lagoon aging (18 months) due to operational constraints. Therefore, no PFRP-compliant biosolids were available for sampling and analysis. All biosolids utilized as EQ material in 2013 were tested for pathogen compliance according to Section 503.32(a)(5).

TABLE 9: SITES THAT UTILIZED CALUMET WATER RECLAMATION PLANT AIR-DRIED BIOSOLIDS UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM IN 2013

User	Use/Location
Alsip Park District, Alsip	Athletic fields - Sears Park
Blue Island Park District, Blue Island	Athletic fields - Centennial Park
Bremen Township, Oak Forest	Athletic fields
Burbank Park District, Burbank	Athletic fields - Newcastle, Fitzgerald, MacArthur, Harr, Michael Looney, Commissioners, and Narragansett Parks
Chicago Park District, Chicago	Athletic fields - Washington Park
Cinder Ridge Golf Course, Wilmington	Golf course
Frankfort Square Park District, Frankfort	Athletic fields - Main Park and Square Links Golf Course
Burbank Park District, Burbank	Athletic fields - Kiwanis, Community, Champion, Hunter Prairie, and Dr. Julian Rogus School Parks
Glenview Park District, Glenview	Athletic fields - Community Park
Hanover Park Park District, Hanover Park	Athletic fields - Heritage Park
Harvey Park District, Harvey	Athletic fields - Holmes, Taylor, and Taft Parks
Midlothian Park District, Midlothian	Athletic fields - Memorial Park
Riverdale Park District, Riverdale	Athletic fields - Franson and Mohawk Parks
Village of Lyons, Lyons	Athletic fields - Smith and Veterans Parks
Village of Romeoville, Romeoville	Athletic fields - Volunteer Park

TABLE 10: 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 2013

Sample Date	TKN	NH ₃ -N	TVS		As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
			TVS ¹	Reduction ²									
----- mg/dry kg -----		-----%-----		----- mg/dry kg -----									
06/24/13	17,743	595	43.0	65.3	5	2	419	0.88	8	26	79	<5	1,096
07/02/13	23,012	894	43.8	64.2	7	2	377	1.1	7	25	73	<5	1,064
07/18/13	22,694	722	43.7	68.8	6	2	395	1.1	7	26	80	<5	1,078
08/23/13	29,459	3,444	45.1	62.2	5	2	390	0.97	12	28	78	<5	1,130
09/05/13	29,335	2,525	44.6	62.9	5	2	401	1.1	13	28	79	<5	1,171
09/26/13	26,731	2,788	43.2	65.0	7	2	407	1.2	11	29	84	<5	1,214
10/10/13	31,021	2,866	45.7	60.2	6	2	388	0.85	12	28	82	<5	1,086
10/24/13	26,323	2,390	44.3	65.8	8	2	422	0.83	12	27	85	<5	1,102
10/29/13	26,934	1,637	44.0	62.9	6	2	402	0.78	10	27	80	<5	1,075
11/07/13	23,643	1,976	43.8	63.2	7	2	404	0.59	11	25	81	<5	1,078
11/14/13	28,683	2,680	43.5	63.7	<5	1	406	0.80	11	25	80	<5	960
Minimum	17,743	595	43.0	60.2	<5	1	377	0.59	7	25	73	<5	960
Mean ³	25,962	2,047	44.1	64.0	6	2	401	0.93	10	27	80	<5	1,096
Maximum	31,021	3,444	45.7	68.8	8	2	422	1.2	13	29	85	<5	1,214
503 Limit	NL ⁴	NL	NL	38	41	39	1,500	17	75	420	300	100	2,800

¹Total volatile solids.

²Total volatile solids for digester feed during August 2011 – December 2012 were used to calculate TVS reductions.

³In calculating each mean, any value less than the reporting limit was considered the reporting limit.

⁴No limit.

TABLE 11: MICROBIOLOGICAL ANALYSIS OF BIOSOLIDS¹ GENERATED BY NON-COMPLIANT PFRP²-EQUIVALENT CODIFIED PROCESSING TRAINS AT THE CALUMET WATER RECLAMATION PLANT DURING AUGUST 2012 THROUGH JULY 2013

Sample Date ³	Helminth Ova	Enteric Virus
	--- No./4g ---	--- PFU ⁴ /4g ---
09/21/12	<0.0800	<0.8000
10/31/12	<0.0800	<0.8000
03/20/13	<0.0133 ⁵	<0.8000
04/17/13	<0.0800	<0.8000
05/28/13	<0.0800	<0.8000
06/07/13	<0.0800	<0.8000

¹All biosolids satisfied Part 503 Class A requirements.

²Process to further reduce pathogens.

³Non-PFRP biosolids sampled before the material was dried and subsequently used in 2013.

⁴Plaque-forming unit.

⁵Sample weight = 300 g; for all others, sample weight = 50 g.

TABLE 12: MICROBIOLOGICAL ANALYSIS OF CLASS A BIOSOLIDS GENERATED AT THE CALUMET WATER RECLAMATION PLANT AND SAMPLED PRIOR TO UTILIZATION ON URBAN LAND IN 2013

Sample Date	Lagoon	Total Solids ----- % -----	Fecal Coliform ----- MPN ¹ /g -----
03/28/12	6	79.9	120
05/16/13	6	67.7	100
05/22/13	6	55.2	7
06/05/13	6	55.8	180
06/20/13	17	73.9	150
06/27/13	17	59.6	110
07/17/13	19	81.4	960
08/14/13	19	73.0	93
08/22/13	19	81.8	610
08/22/13	19	84.4	800
09/25/13	2	76.6	370
10/02/13	2	73.9	51
10/03/13	2	72.0	180
10/16/13	2	64.9	77
10/16/13	2	71.5	530
10/30/13	2	75.6	59

¹Most 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. The annual average treated flow in 2013 was 676 MGD. Wastewater reclamation processes include primary (Imhoff and primary settling) and secondary (activated sludge process) treatments. All solids produced at this WRP and from the O'Brien and Lemont WRPs are anaerobically digested. Stickney WRP biosolids are then:

1. Placed in 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 permitted Controlled Solids Distribution Program.
 - b. Use at local municipal solid waste landfills as final landfill cover.
 - c. Disposal in local municipal solid waste landfills.
2. Dewatered by centrifuging to approximately 25 percent solids content and then applied to farmland as Class B biosolids by a private contractor.
3. Dewatered by centrifuging to approximately 25 percent solids content, transported to paved cells, and air-dried prior to use as daily landfill cover.
4. Dewatered by centrifuging to approximately 25 percent solids content and conveyed to Metropolitan Biosolids Management, LLC, for further processing under Contract 98-RFP-10.
5. Dewatered by centrifuging to approximately 25 percent solids content, placed in 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 permit-required Controlled Solids Distribution Program.
 - 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 2013, the Stickney WRP produced a total of 103,467 dry tons of biosolids ([Table 1](#)). This total included biosolids generated by processing sludge originating at the Stickney WRP as well as the sludge imported from the O'Brien and Lemont WRPs for further processing. The quantity of biosolids used (90,191 dry tons) was lower than the total 2013 production for the Stickney WRP. Hence, 13,276 dry tons were stored in lagoons and on drying cells for later use.

Summary of Biosolids Use and Disposal at Landfills

In 2013, a total of 1,036 dry tons of biosolids generated at the Stickney WRP was co-disposed with municipal solid wastes in landfills. A total of 4,158 dry tons of biosolids was used as final cover, and no biosolids were used as landfill daily cover.

Land Application of Class B Biosolids

In 2013, a total of 36,930 dry tons of centrifuge cake and semi-dried biosolids generated at the Stickney WRP was applied 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 Egan WRP to the Harlem Avenue Solids Management Area prior to farmland application. In accordance with Table 1 of Section 503.16, the frequency of monitoring for these biosolids is 12 times per year.

All Stickney WRP centrifuge cake and semi-dried biosolids land applied in 2013 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 13), the vector attraction reduction requirements of Section 503.33(b)(10) (by incorporation in soil within six hours after application), and the anaerobic digestion time and temperature requirements of the Class B pathogen standard of Section 503.32(b)(3) (Table 14). Table 13 also shows the biosolids nitrogen concentrations used to compute the agronomic rates for farmland application.

Land Application of Exceptional Quality, Air-Dried Biosolids

In 2013, the Stickney WRP applied a total of 4,612 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, recreation fields, and parks. The sites and method of utilization of these biosolids under the program are listed in Table 15. In accordance with Table 1 of Section 503.16, the frequency of monitoring for these biosolids is six times per year.

All Stickney EQ biosolids land applied in 2013 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 16), the vector attraction reduction requirements of Section 503.33(b)(1) (Table 16), and the Class A pathogen limits of Section 503.32(a)(5) (Tables 17 and 18). Management practices complied with Section 503.14, as previously described in a letter to the USEPA dated January 28, 1994 (Appendix I).

TABLE 13: CONCENTRATIONS OF NITROGEN AND METALS IN CENTRIFUGE CAKE AND SEMI-DRIED BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2013

Sample Date	TKN	NH ₃ -N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
----- mg/dry kg -----											
02/26/13	36,635	6,999	<5	3	406	1.1	12	51	83	<5	701
02/26/13	25,964	6,044	8	3	402	1.2	10	41	102	<5	799
03/14/13	19,791	3,267	<5	3	435	1.2	10	43	113	<5	858
03/18/13	23,428	1,517	<5	2	313	1.1	9	33	104	<5	648
04/03/13	44,936	12,839	<5	3	358	1.2	NRR ¹	45	97	<5	745
04/03/13	43,887	10,695	<5	3	423	1.1	14	49	97	<5	812
04/08/13	30,499	3,761	9	3	443	1.1	10	42	129	<5	858
04/16/13	25,471	4,295	<5	3	407	0.95	12	41	106	<5	811
04/25/13	47,868	2,625	<5	2	731	1.4	5	69	32	<5	765
05/08-09/13	48,399	9,071	<5	2	408	1.1	12	48	87	<5	675
05/08/13	25,520	3,431	5	3	425	0.98	10	40	111	<5	803
05/13/13	34,056	6,288	5	3	413	0.63	11	40	103	<5	785
05/15/13	31,168	4,901	5	3	436	0.78	12	42	109	<5	841
15/16-18/13	44,424	12,052	<5	2	402	0.63	23	46	89	<5	713
05/17/13	22,818	5,009	<5	3	425	0.78	12	41	110	<5	819
05/20/13	46,991	11,087	<5	3	369	1.0	22	42	87	<5	664
06/08/13	28,664	5,110	5	3	417	0.78	10	40	105	<5	787
06/08/13	49,517	11,476	<5	3	384	0.94	19	44	86	<5	658
06/11/13	29,450	5,802	7	3	382	1.1	11	38	103	<5	763
06/12/13	19,106	2,749	8	3	449	1.0	9	42	134	<5	870
06/17/13	26,705	4,926	10	3	433	1.2	10	41	129	<5	844

TABLE 13 (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 2013

Sample Date	TKN	NH ₃ -N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
----- mg/dry kg -----											
06/17-18/13	27,042	3,752	9	3	409	1.2	8	39	124	<5	800
06/18/13	38,478	390	<5	2	672	1.1	7	61	47	<5	788
06/18/13	23,038	1,453	10	3	407	0.96	9	37	113	<5	790
06/21/13	27,525	4,159	6	3	397	0.80	9	38	112	<5	758
07/09/13	27,978	4,113	9	3	353	1.1	10	37	97	<5	781
07/09-13/13	51,460	13,902	6	3	372	1.1	12	40	101	<5	833
07/15-20/13	40,929	13,299	5	3	400	0.98	12	43	107	<5	826
07/17/13	23,309	4,772	7	3	393	1.1	11	41	107	<5	823
07/22-27/13	41,896	13,657	6	3	390	1.0	12	42	104	<5	800
07/24-27/13	41,389	11,648	5	3	371	0.89	20	46	86	<5	681
07/29/13	18,442	6,138	5	3	392	0.97	12	41	102	<5	782
07/29/13	30,901	5,344	7	4	424	1.3	9	40	130	<5	773
07/29-30/13	50,760	12,145	5	3	384	0.89	19	46	83	<5	693
08/01-03/13	50,469	13,446	5	3	372	0.92	18	45	81	<5	657
08/05-10/13	54,746	13,043	5	3	365	1.3	16	43	92	<5	673
08/12/13	33,190	6,473	6	3	400	1.2	9	39	123	<5	749
08/12/13	47,960	13,014	6	3	363	1.1	15	43	99	<5	682
08/12-13/13	34,230	5,347	<5	2	663	0.97	5	60	40	<5	768
08/13/13	26,386	5,145	6	3	405	0.95	11	42	110	<5	822
08/14-15/13	32,665	5,781	<5	1	674	1.1	6	67	41	<5	767

TABLE 13 (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 2013

Sample Date	TKN	NH ₃ -N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	----- mg/dry kg -----										
08/14-17/13	31,351	5,054	6	3	382	0.95	11	43	108	<5	786
08/15-16/13	37,423	8,494	<5	1	660	1.5	5	64	45	<5	751
08/16-17/13	27,796	7,843	8	3	405	1.2	11	41	110	<5	821
08/19/13	24,672	6,615	8	3	417	1.1	13	42	106	<5	825
08/19/13	29,963	5,231	6	3	379	1.0	11	39	104	<5	757
08/20/13	29,103	5,264	7	3	402	1.2	12	40	104	<5	795
08/20-21/13	30,647	6,120	5	4	438	1.3	11	41	130	<5	791
08/26-28/13	31,900	6,296	5	4	434	1.2	10	41	130	<5	807
08/29/13	29,600	4,563	5	3	415	1.1	12	44	106	<5	804
08/29/13	31,548	5,062	6	3	406	0.94	12	44	105	<5	805
09/03-05/13	26,299	4,515	7	3	447	0.96	11	48	116	<5	880
09/05/13	24,020	5,829	5	4	527	1.4	9	48	133	<5	898
09/05/13	24,393	7,558	7	4	454	1.1	12	47	117	<5	920
09/05/13	25,494	7,077	9	4	483	1.2	13	46	127	<5	894
09/17/13	30,901	5,982	6	3	433	1.1	13	46	114	<5	874
09/17/13	34,171	5,819	8	3	405	1.3	13	44	109	<5	830
09/20/13	25,668	3,142	8	3	405	0.96	11	42	107	<5	824
09/20/13	16,451	1,713	5	3	325	0.80	9	33	109	<5	701
09/26-27/13	44,028	5,037	6	3	428	1.3	12	45	111	<5	855
10/2/2013	34,861	6,132	6	3	422	1.1	13	44	110	<5	852

TABLE 13 (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 2013

Sample Date	TKN	NH ₃ -N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
----- mg/dry kg -----											
10/03/13	34,092	4,279	6	3	427	1.3	13	46	112	<5	862
10/11-12/13	33,104	4,184	7	3	454	0.96	9	47	104	<5	858
10/14/13	30,886	4,165	8	3	446	1.1	9	45	109	<5	859
10/14/13	32,493	4,448	7	3	425	1.2	10	45	110	<5	840
10/22-25/13	39,120	4,401	7	3	430	1.1	12	45	110	<5	849
10/26-27/13	35,059	4,448	7	3	430	0.90	12	46	109	<5	863
10/28/13	30,889	4,423	7	3	454	1.0	11	44	116	<5	881
11/04/13	35,796	3,458	6	2	429	1.0	12	42	110	<5	798
11/05/13	42,039	4,669	<5	2	443	0.96	12	41	107	<5	787
11/27/13	37,948	4,508	6	3	439	0.92	13	46	114	<5	871
12/02/13	25,015	3,488	7	5	463	1.0	11	43	127	<5	877
12/02/13	23,058	2,948	7	5	451	1.2	12	47	126	<5	853
Minimum	16,451	390	<5	1	313	0.63	5	33	32	<5	648
Mean ²	33,122	6,216	6	3	430	1.1	12	44	104	<5	796
Maximum	54,746	13,902	10	5	731	1.5	23	69	134	<5	920
503 Limit	NL ³	NL	41	39	1,500	17	75	420	300	100	2,800

¹No reportable result.

²In calculating each mean, any value less than the reporting limit was considered the reporting limit.

³No limit.

TABLE 14: DIGESTER TEMPERATURES AND DETENTION TIMES DURING PROCESSING OF BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND APPLIED TO FARMLAND IN 2013

Month	Average Temperature	Average Retention Time	Meets Part 503 Class B Requirements	Minimum Detention Time Required by 503.32(b)(3) ¹
	---- °F ----	--- days ---		--- days ---
January	97.4	43.9	yes	15.0
February	97.6	28.6	yes	15.0
March	96.7	24.3	yes	15.0
April	97.2	27.2	yes	15.0
May	97.9	36.6	yes	15.0
June	97.8	46.3	yes	15.0
July	98.7	47.3	yes	15.0
August	98.1	42.8	yes	15.0
September	98.1	36.1	yes	15.0
October	98.0	40.9	yes	15.0
November	101	38.8	yes	15.0
December	98.3	37.9	yes	15.0

¹For anaerobic digestion at average temperature achieved.

TABLE 15: SITES THAT UTILIZED STICKNEY WATER RECLAMATION PLANT AIR-DRIED BIOSOLIDS UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM IN 2013

User	Use/Location
Bremen Township, Oak Forest Chicago Park District, Chicago	Athletic fields Athletic fields - Midway Plaisance, Washington, Lincoln, Lindblom, Hamilton, W. Chatham, Jackie Robinson, Palmer, Gately, Trumball, and Calumet Parks
Christy Webber Landscaping Company, Chicago	Landscaping
Evanston High School, Evanston	Athletic fields
Evanston-Wilmette Golf Course, Evanston	Golf course
Frankfort Park District, Frankfort	Athletic fields - Willow Trails Park
Hanover Park Park District, Hanover Park	Athletic fields - Community Park
Hinsdale Park District, Hinsdale	Athletic fields - KLM Park
Lisle Park District, Lisle	Athletic fields - Community Park
Lombard Park District, Lombard	Athletic fields - Meadow Park
Midlothian Park District, Midlothian	Athletic fields - Memorial Park
MWRD – Stickney WRP, Cicero	Landscaping
Norridge Park District, Norridge	Athletic fields - Norridge Park
North Shore Country Club, Glenview	Golf course
Oak Lawn High School, Oak Lawn	Athletic fields
Schaumburg Park District, Schaumburg	Athletic fields
St. Benedictine University, Lisle	Athletic fields
Turfcare Landscaping Inc., Evanston	Landscaping
Twin Orchard Golf Club, Long Grove	Golf course
Village of Lyons Park District, Lyons	Athletic fields - Veterans Park
Wauconda High School, Wauconda	Athletic fields
West Chicago Park District, West Chicago	Athletic fields - Pioneer, Reed-Kepler, and Cornerstone Lakes Parks

TABLE 16: 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 2013

Sample Date	TKN	NH ₃ -N	TVS ¹	TVS Reduction ²	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	---- mg/dry kg ----		----- % -----		-----mg/dry kg -----								
06/19-21/13	21,772	1,081	34.9	62.1	8	3	423	0.96	7	39	123	<5	833
06/26-27/13	15,186	382	36.5	59.4	10	3	365	1.1	6	35	116	<5	829
07/02/13	25,913	515	44.4	43.5	9	3	400	1.1	8	39	121	<5	795
07/11/13	23,699	552	34.6	62.7	10	3	391	1.2	7	39	138	<5	894
07/23-24/13	20,537	3,232	43.5	45.6	8	3	414	1.1	11	41	135	<5	857
07/30-31/13	17,548	2,094	45.8	40.3	10	3	413	1.2	10	40	114	<5	794
08/01/13	21,996	1,900	44.2	44.2	9	3	414	0.92	10	41	120	<5	807
08/13-15/13	16,255	1,421	43.1	46.4	9	3	418	0.88	11	41	118	<5	836
08/20/13	20,191	2,009	42.2	48.5	8	3	417	1.1	11	41	114	<5	812
08/20-21/13	26,031	3,626	38.3	56.1	9	3	419	1.2	10	42	136	<5	851
08/21/13	25,232	2,032	44.6	43.2	8	3	426	0.93	11	42	117	<5	825
08/26-27/13	30,588	4,299	40.6	51.6	8	3	428	1.2	11	43	141	<5	864
08/29/13	31,758	2,728	42.2	48.4	8	3	424	1.1	11	42	136	<5	859
08/30/13	15,925	2,325	39.9	53.1	7	3	434	1.2	11	42	138	<5	874
09/04-05/13	19,572	2,753	39.1	54.7	8	3	425	1.2	12	43	139	<5	919
09/09-13/13	18,495	1,854	40.8	51.3	8	4	476	1.2	11	46	153	<5	946

TABLE 16 (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 2013

Sample Date	TKN	NH ₃ -N	TVS ¹	TVS Reduction ²	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	----- mg/dry kg -----		----- % -----		-----mg/dry kg -----								
09/17/13	21,496	1,601	40.2	52.4	10	3	416	1.0	10	41	125	<5	837
09/24/13	37,865	6,058	40.3	40.3	7	3	433	1.2	13	45	110	<5	838
09/25-26/13	23,646	459	38.4	56.0	7	3	441	1.4	11	43	143	<5	931
10/21/13	21,826	275	38.6	55.7	9	4	465	1.2	11	45	150	<5	950
31 Minimum	15,186	275	34.6	40.3	7	3	365	0.88	6	35	110	<5	794
Mean ³	22,777	2,060	40.6	51.4	9	3	422	1.1	10	42	129	<5	858
Maximum	37,865	6,058	45.8	62.7	10	4	476	1.4	13	46	153	<5	950
503 Limit	NL ⁴	NL	NL	38	41	39	1,500	17	75	420	300	100	2,800

¹Total volatile solids.

²Total volatile solids for digester feed during September 2007 – November 2011 were used to calculate TVS reduction.

³In calculating each mean, any value less than the reporting limit was considered the reporting limit.

⁴No limit.

TABLE 17: MICROBIOLOGICAL ANALYSIS OF BIOSOLIDS¹ GENERATED BY NON-COMPLIANT PFRP²-EQUIVALENT CODIFIED PROCESSING TRAINS AT THE STICKNEY WATER RECLAMATION PLANT DURING AUGUST 2012 THROUGH JULY 2013

Sample Date ³	Lagoon	Total Solids	Fecal Coliform	Sample Date ⁴	Helminth Ova	Enteric Virus
		--- % ---	----- MPN ⁵ /g -----		--- No./4g ---	--- PFU ⁶ /4g ---
05/08/13	23	76.3	8	10/30/12	<0.0800	<0.8000
05/16/13	27	56.6	80	11/27/12	<0.0800	<0.8000
05/08/13	25	62.1	150	03/20/13	<0.0800	<0.8000
05/16/13	27	61.8	2	04/17/13	<0.0800	<0.8000
06/05/13	27	60.1	130	05/22/13	<0.0800	<0.8000
05/08/13	25	62.1	81	07/23/13	<0.0133 ⁷	<0.8000

¹All biosolids satisfied Part 503 Class A requirements.

²Process to further reduce pathogens.

³Sample dates apply to FC samples only.

⁴Non-PFRP biosolids sampled before the material was dried and subsequently used in 2013.

⁵Most probable number.

⁶Plaque-forming unit.

⁷Sample weight = 300 g; for all others, sample weight = 50 g.

TABLE 18: MICROBIOLOGICAL ANALYSIS OF CLASS A BIOSOLIDS GENERATED AT THE STICKNEY WATER RECLAMATION PLANT AND SAMPLED PRIOR TO UTILIZATION ON URBAN LAND IN 2013

Sample Date	Lagoon	Total Solids	Fecal Coliform
		----- % -----	----- MPN ¹ /g -----
05/08/13	25	62.1	81
05/08/13	23	76.3	150
05/16/13	27	56.6	51
05/16/13	27	61.8	72
06/05/13	27	53.7	21
06/05/13	27	60.1	63
07/02/13	27	65.2	77
07/17/13	27	75.0	130
08/01/13	25	75.5	4
08/07/13	27	62.8	80
08/14/13	27	74.9	67
09/11/13	27	62.1	5
09/19/13	24	64.9	77

¹Most probable number.

Site-Specific Process to Further Reduce Pathogens

As previously stated, the USEPA Region 5 designated, on a site-specific basis, two of the Stickney WRP biosolids processing trains as PFRP-equivalent. All of the Stickney WRP's biosolids generated or utilized in 2013 were not compliant with the codified operating parameters of the PFRP-equivalent process trains with respect to the minimum required length of time for lagoon aging (18 months). No PFRP-compliant biosolids were available for testing according to the PFRP certification. Therefore, all biosolids generated were tested for pathogen compliance according to Section 503.32(a)(5).

Centrifuge Cake Biosolids to Pelletizing Facility

In 2013, the Stickney WRP shipped a total of 43,455 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, LLC, is responsible for the final utilization, monitoring, and reporting requirements for these biosolids.

**BIOSOLIDS SENT TO LANDFILLS FOR CO-DISPOSAL UNDER 40 CODE OF
FEDERAL REGULATIONS PARTS 258 AND 261**

Some biosolids from the District's Stickney WRP were sent to landfills in 2013 for disposal. All biosolids sent to these landfills were analyzed as specified in 40 CFR Part 261 to establish the nonhazardous nature of these biosolids for co-disposal. In November 2013, samples from the Calumet WRP were submitted for toxicity characterization required for the establishment of a landfill contract to accept their waste streams in 2014. Analytical results, including toxic characteristic leaching procedure constituents, polychlorinated biphenyls, cyanide, sulfide, and paint filter test, were submitted to the landfill company to satisfy the requirements of their IEPA permit. District sludge has 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 2013, a total of 1,036 dry tons of Stickney WRP's sludge was co-disposed with municipal solid wastes at non-hazardous waste landfills.

APPENDIX I

BIOSOLIDS MANAGEMENT PROGRAMS OF THE METROPOLITAN WATER
RECLAMATION DISTRICT OF GREATER CHICAGO UNDER
40 CODE OF FEDERAL REGULATIONS PART 503



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Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611 312/751-5800

Cecil Luo-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.

AI-1



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 subsection 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 sub-surface 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.

Mr. Michael J. Mikulka

-8-

January 28, 1994

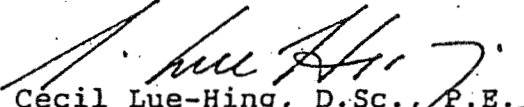
Subject: Sludge Management Programs of the Metropolitan Water Reclamation District of Greater Chicago Under 40 CFR Part 503

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

APPENDIX II

DESIGNATION OF SITE-SPECIFIC EQUIVALENCY TO PROCESS TO FURTHER
REDUCE PATHOGENS FOR METROPOLITAN WATER RECLAMATION
DISTRICT OF GREATER CHICAGO 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.

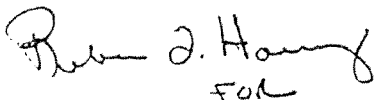
Our review of the MWRDGC's biosolids data submitted for 1994 to 2001 indicates Class A biosolids were produced at the Stickney and Calumet plants as they operated their respective low-and high-solids sludge processing trains (SPTs) according to codified protocols delineated in Attachment B of Mr. Lanyon's 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 discrete 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,



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 30 2012

REPLY TO THE ATTENTION OF.

WN-16J

Thomas C. Granato, Ph.D.
Director of Monitoring and Research
Metropolitan Water Reclamation
District of Greater Chicago
100 East Erie Street
Chicago, Illinois 60611-3154

Re: June 1, 2012, 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 Dr. Granato:

We have received the above-referenced request on June 6, 2012, along with microbiological analyses of biosolids generated by MWRDGC between August 2002 and December 2011. We appreciate your interest in seeking renewal of MWRDGC's equivalency certification. You have also requested that data reporting be reduced and the sampling frequency for enteric viruses and helminth ova be retained at six times per year 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.

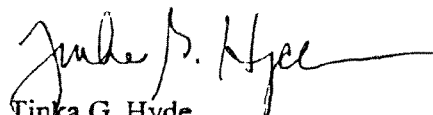
One of the Class A options is to treat the sewage sludge by a process equivalent to a process listed in the 503 Rules, Appendix B. To be equivalent, a sewage sludge treatment process must be able to consistently reduce pathogens to levels comparable with the processes listed in Appendix B. Under the 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 four 2-year extensions, in effect until August 1, 2012.

We have reviewed your most recent renewal request and request for reporting and sampling frequency reduction. Based on the microbiological data provided to us, I am approving your equivalency renewal request for a period of five years, until August 1, 2017. This approval is subject to all conditions that were included in the initial approval and all subsequent extensions except as it relates to reporting. As part of your equivalency approval, you were required to submit semi-annual reports to EPA. Based on your past performance, we agree that annual reporting as required by the Part 503 rules is sufficient and therefore, approve the reduction to annual reporting. Regarding the retention of the reduction in sampling frequency for enteric viruses and helminth ova to six times per year, we would like to provide some clarification. This reduction is only allowed when MWRDGC's sewage sludge processing trains are not meeting the approved conditions for equivalency and you are analyzing the sewage sludge in accordance with 40 CFR 503.32(a)(5)(ii) and (a)(5)(iii) to meet Class A. Monthly sampling for enteric viruses and helminth ova is still required as part of your equivalency approval.

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

Sincerely,



Tinka G. Hyde
Director, Water Division

cc: Albert Cox, MWRDGC
Al Keller, IEPA

Protecting Our Water Environment

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THOMAS C. GRANATO, Ph.D.
Director of Monitoring and Research Department
thomas.granato@mwrdd.org

September 14, 2012

Ms. Tinka Hyde
Director, Water Division
United States Environmental
Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Dear Ms. Hyde:

Subject: Clarification on July 30, 2012, Letter: Renewal of Site-Specific Equivalency to Process to Further Reduce Pathogens Designation of the Metropolitan Water Reclamation District of Greater Chicago's Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants

In a letter dated July 30, 2012 (attached), the United States Environmental Protection Agency (USEPA) notified the Metropolitan Water Reclamation District of Greater Chicago (District) that the site-specific equivalency to process to further reduce pathogens (PFRP) designation of the District's low- and high-solids biosolids processing trains at the Stickney and Calumet Water Reclamation Plants was renewed for a period of five years, until August 1, 2017. Based on a discussion with Mr. John Colletti of your staff, the District will operate as specified in this renewal letter and with the following clarifications:

- Sampling for enteric viruses and helminth ova will be done six times per year as part of the PFRP equivalency as approved in the 2010 renewal (attached) of the two-year certification.
- Since the reporting frequency is changed from semi-annual to annual, and monitoring data will be included in the annual USEPA 40 Code of Federal Regulations Part 503 Rule (Part 503) report to the USEPA, the annual reporting begins with the 2012 calendar year. As such, no more semi-annual reports will be submitted from now onwards. The monitoring data for the period January through July 2012 of the previous certification period (August 2010 to July 2012) will be reported in the 2012 Part 503 report.

Ms. Tinka Hyde

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September 14, 2012

Subject: Clarification on July 30, 2012, Letter: Renewal of Site-Specific Equivalency to Process to Further Reduce Pathogens Designation of the Metropolitan Water Reclamation District of Greater Chicago's Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants

For additional information, please contact Dr. Albert Cox, Supervising Environmental Soil Scientist, at 708.588.4063.

Very truly yours,



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

TCG:AC:cm
Attachment
cc w/att: S. A. Keller, IEPA



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,

A handwritten signature in black ink, appearing to read "Tinka G. Hyde". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

for Tinka G. Hyde
Director, Water Division