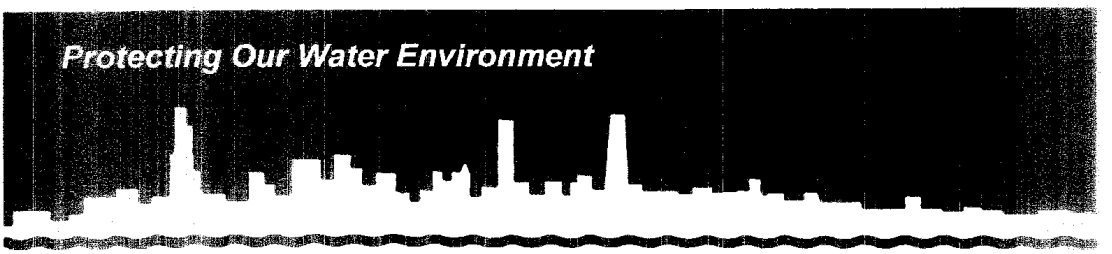

Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 02-8

ANNUAL BIOSOLIDS MANAGEMENT REPORT

FOR 2001

June 2002

Metropolitan Water Reclamation District of Greater Chicago
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ANNUAL BIOSOLIDS MANAGEMENT REPORT FOR 2001

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Special thanks are given to Ms. Joan Scrima 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.

FOREWARD

The data and information in this report fulfill the frequency of monitoring and the reporting requirements for Biosolids Management by the Metropolitan Water Reclamation District of Greater Chicago as specified in the United States Environmental Protection Agency's 40 CFR Part 503 Regulations for 2001.

INTRODUCTION

The Metropolitan Water Reclamation District of Greater Chicago (District) herein reports the 2001 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 Nos. 1999-SC-4219, 1999-SC-4219-1, and 1999-SC-4219-2).
2. Hanover Park Fischer Farm Biosolids Application to Land Site (IEPA Permit Nos. 1997-SC-3840 and 1997-SC-3840-1).
3. Controlled Solids Distribution Program (Biosolids Application to Land in the Chicago Area under IEPA Permit No. 2000-SC-0872).
4. Land Application to Farmland (Application of biosolids from Calumet, Stickney, and John E. Egan Water Reclamation Plants (WRPs) to farmland under IEPA Permit No. 1999-SC-3932).

The 40 CFR Part 503 Regulations require that the District report certain data. In the following sections, we have pre-

pared a short description of the sludge processing and biosolids management operations at the District's seven 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 in 2001. In addition, we also 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 2001 production and uses 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 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 aged for distribution at a later time.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1

2001 PRODUCTION AND USES OF SLUDGE AND BIOSOLIDS

Production And Use	Water Reclamation Plants						
	Stickney*	Calumet*	North Side	Egan	Hanover Park*	Kirie	Lemont
	Dry Tons						
Production**	149,965	28,798	48,976	8,392	886	7,693	302
Land Applied	117,143	34,521	0	0	1,563	0	0
Surface Disposal	0	0	0	0	0	0	0
Landfilled	41,348***	3,575***	0	4,998***	0	0	0
Incinerated	0	0	0	0	0	0	0
To Other WRPs for Further Processing	0	0	48,976	3,394	0	7,693	302
Transported Interstate	43	0	0	0	0	0	0

*Stickney, Calumet, and Hanover Park used and disposed of more biosolids than they produced in 2001 due to withdrawal and procesing of biosolids produced in previous years from storage lagoons.

**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 process train including those generated by water reclamation and those imported from other plants for further processing.

***Co-disposed, used as daily cover with municipal solid waste, or as final vegetative cover.

LEMONT WRP

The Lemont WRP, located in Lemont, Illinois, has a design capacity of 2.3 mgd. Wastewater reclamation processes include both primary (primary settling) and secondary (activated sludge process) treatment. In 2001, the Lemont WRP produced 302 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 WRP

The James C. Kirie WRP, located in Des Plaines, Illinois, has a design capacity of 72 mgd. Wastewater reclamation processes include primary (primary settling), secondary (activated sludge process), and tertiary (sand filtration) treatment. In 2001, the Kirie WRP produced 7,693 dry tons of solids (Table 1) which were sent via force main to the John E. Egan WRP for further treatment.

No final biosolids product is produced at this WRP.

NORTH SIDE WRP

The North Side WRP, located in Skokie, Illinois, has a design capacity of 333 mgd. Wastewater reclamation processes at the North Side WRP include primary (primary settling) and secondary (activated sludge process) treatment. In 2001, the North Side WRP produced 48,976 dry tons of solids (Table 1) that 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 WRP

The John E. Egan WRP, located in Schaumburg, Illinois, has a design 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 winter or when the centrifuges are not operating, liquid digested biosolids are sent via pipeline to the North Side WRP. Centrifuge centrate containing biosolids are also sent via pipeline to the North Side WRP.

In 2001, the total biosolids production at the John E. Egan WRP was 8,392 dry tons (Table 1). This total includes biosolids generated from 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. None of the biosolids produced were land applied, surface disposed, or incinerated in 2001. In 2001, 4,998 dry tons of biosolids were sent to landfills for use as daily cover and for co-disposal with municipal solid waste, practices which are exempt from the Part 503 Regulations. Of this amount, 2,171 dry tons were dried at Calumet WRP and Stickney WRP sites and were then used as daily cover, and 2,827 dry tons were co-disposed

with municipal solid waste. The remaining 3,394 dry tons of biosolids were pumped to North Side WRP. Of this amount, 1,788 dry tons were conveyed to the North Side WRP in centrifuge centrate and 1,606 dry tons were conveyed as liquid digested biosolids.

The John E. Egan WRP did not have any additional requirement for reporting under Part 503 in 2001.

HANOVER PARK WRP

Treatment Plant and Biosolids Process Train Description

The Hanover Park WRP, located in Hanover Park, Illinois, has a design capacity 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. Lagooned, digested biosolids 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 Fischer Farm, which is contained on the plant grounds.

Land Application of Liquid Biosolids

In 2001, the total biosolids production at this WRP was 886 dry tons (Table 1). Land application of liquid biosolids at the Hanover Park Fischer Farm site in 2001 utilized 1,563 dry tons. The quantity of land applied biosolids surpassed the quantity of biosolids produced in 2001 due to land application of additional biosolids that were produced in previous years and stored in a lagoon. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is four times per year. All Hanover Park WRP centri-

fuge cake biosolids that were land applied in 2001 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 attraction reduction requirements of Section 503.33b1 (Table 4). Management practices at this land application site complied with Section 503.14 as previously described in a letter to Mr. Michael J. Mikulka dated January 28, 1994 (Appendix I).

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 2

NITROGEN AND METALS CONCENTRATIONS IN BIOSOLIDS APPLIED TO THE HANOVER PARK FISCHER FARM IN 2001

Composite Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/dry kg										
04/07/01	38,116	18,091	3	4	1,054	2.07	22	51	52	3	832
04/14/01	46,358	18,827	3	4	1,045	2.10	16	54	54	3	836
04/21/01	41,030	20,163	3	4	1,046	2.26	15	54	55	3	810
04/28/01	23,190	20,162	4	6	1,043	2.12	14	51	64	3	800
05/05/01	31,295	NA	4	6	1,083	1.80	13	47	70	2	811
06/26/01	41,768	42,309	2	3	728	0.70	10	35	36	2	574
07/07/01*	383,136	255,132	17	<1	34	0.19	3	16	<2	2	52
07/14/01*	444,381	178,505	23	<1	39	0.07	3	18	<2	<1	61
07/28/01*	418,222	267,900	20	<1	37	0.14	4	20	<2	<2	58
08/18/01*	227,000	157,647	23	<1	38	<0.03	5	24	<2	5	57
08/27/01*	210,714	123,900	31	<1	46	NA	7	27	<3	<2	66
09/08/01*	208,353	94,559	21	<1	33	<0.02	5	19	<2	4	47
09/15/01*	473,000	83,253	24	<1	28	0.04	5	17	<2	8	40
09/22/01*	310,364	9,909	15	<1	40	<0.04	9	24	<3	<2	65
09/29/01*	385,400	254,400	15	<1	76	0.20	12	21	3	<2	105
12/08/01*	516,500	53,508	10	1	150	0.42	6	22	7	<2	172
12/15/01*	423,246	106,977	8	2	124	0.29	4	25	7	<2	161
12/22/01*	353,062	342,838	8	1	110	0.32	5	20	8	2	142
11/24/01	23,769	1,641	2	5	1,122	2.30	15	43	57	2	846

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 2 (Continued)

NITROGEN AND METALS CONCENTRATIONS IN BIOSOLIDS APPLIED TO THE HANOVER PARK FISCHER FARM IN 2001

Composite Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/dry kg										
12/01/01	68,029	12,655	2	5	1,191	1.61	17	50	66	1	875
12/08/01	82,952	12,733	2	5	1,118	2.33	13	46	225	1	832
12/15/01	70,959	42,491	2	4	1,077	0.40	15	50	52	1	812
Minimum	23,190	1,641	2	<1	28	<0.02	3	16	<2	<1	40
Mean**	219,129	100,838	11	3	512	0.93	10	33	35	2	412
Maximum	516,500	342,838	31	6	1,191	2.33	22	54	225	8	875
503 Limit	NL	NL	41	39	1,500	17.0	75	420	300	100	2,800

*Biosolids applied as supernatant.

**In calculating the mean, values less than the detectable level were considered as the detectable level.

NA = No analysis.

NL = No limit; not applicable.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 3

DIGESTER TEMPERATURES AND DETENTION TIMES FOR BIOSOLIDS
FROM THE HANOVER PARK WATER RECLAMATION PLANT
APPLIED AT THE FISCHER FARM IN 2001

Month	Average Temperature	Average Detention Time	Meets Part 503 Class B Requirements	Minimum Required Detention Time*
	°F	days		days
January	95	24.0	yes	15.3
February	95	36.1	yes	15.0
March	95	33.1	yes	15.0
April	95	30.9	yes	15.0
May	95	26.2	yes	15.0
June	95	23.6	yes	15.0
July	95	24.7	yes	15.0
August	96	34.6	yes	15.0
September	95	44.2	yes	15.0
October	95	37.6	yes	15.0
November	95	38.8	yes	15.0
December	95	39.7	yes	15.0

*Miniumum detention time required to meet Part 503 Class B operational requirements at average temperature achieved.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 4

VOLATILE SOLIDS REDUCTION FOR BIOSOLIDS
FROM THE HANOVER PARK WATER RECLAMATION PLANT
APPLIED AT THE FISCHER FARM IN 2001

Date	Digester Feed	Digester Draw	Lagoon Biosolids	Volatile Solids Reduction*
	---- % Total Volatile Solids ---			----- % -----
April	85.55	73.99	69.68	60.49
May	83.77	73.90	68.11	63.04
June	82.66	73.08	67.23	63.44
July	84.52	76.16	66.35	62.91
August	83.32	77.41	66.75	40.13
September	80.72	75.20	69.58	49.09
November	79.62	72.01	67.33	51.18
December	81.50	73.30	61.32	61.06

*Volatile solids reduction computed using digester feed and lagoon biosolids.

CALUMET WRP

Treatment Plant and Biosolids Process Train Description

The Calumet WRP, located in Chicago, Illinois, has a design capacity 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:

a. Placed into lagoons for dewatering, aging and stabilization, and then transported to paved cells and air-dried prior to:
    1. Application to land as Exceptional Quality (EQ) biosolids under the District's Controlled Solids Distribution Permit.
    2. Use at local municipal solid waste landfills as final landfill cover.
    3. Application to land as EQ biosolids at the Fulton County, Illinois dedicated land application site.
    4. Application to farmland as EQ biosolids by a private contractor.

5. Disposal in local municipal solid waste landfills.

b. Dewatered by centrifuging to approximately 25 percent solids content, and then applied to farmland by a private contractor as a Class B cake.

c. Dewatered by centrifuging to approximately 25 percent solids content, and then transported to paved cells and air-dried prior to use as daily landfill cover.

d. Dewatered by centrifuging to approximately 25 percent solids content, placed into lagoons for aging and stabilization, and transported to paved cells and air-dried prior to:

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

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

3. Application to land as EQ biosolids at the Fulton County, Illinois, dedicated land application site.

4. Application to farmland as EQ biosolids by a private contractor.

5. Disposal in local municipal solid waste landfills.

In 2001, the total biosolids production at the Calumet WRP was 28,798 dry tons (Table 1). The quantity of biosolids that were used and disposed of in 2001 exceeded the total production for the Calumet WRP due to processing of biosolids produced in previous years that were stored in lagoons.

Summary of Use and Disposal at Landfills

The Calumet WRP sent 3,575 dry tons of biosolids to landfills in 2001. Of this amount, 2,693 dry tons were used as daily cover, 335 dry tons were used as final cover, and 547 dry tons were co-disposed with municipal solid waste. These practices are exempt from the Part 503 Regulations and require no further reporting.

Land Application of Centrifuge Cake Biosolids

In 2001, the Calumet WRP land applied 10,201 dry tons of centrifuge cake biosolids to farmland under IEPA Permit No. 1999-SC-3932 through a contract with Stanley Rebacz Trucking and Excavating, Inc. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is six times per year. All Calumet WRP centrifuge cake biosolids that were land applied in 2001 met the pollutant con-

centration limits in Table 3 of Section 503.13 (Table 5), the Class B pathogen anaerobic digester time and temperature requirements of Section 503.32b3 (Table 6), and the vector attraction reduction requirements of Section 503.33b10. Table 5 also contains the biosolids nitrogen concentration data that were utilized by the land applier to compute the agronomic loading rates at the farmland sites.

Land Application of Aged, Air-Dried Biosolids

In 2001, the Calumet WRP land applied a total of 24,320 dry tons of air-dried EQ biosolids. Of this amount, 22,000 dry tons were trucked to the District's Fulton County, Illinois, site for land application under IEPA Permit Nos. 1999-SC-4219, 1999-SC-4219-1, and 1999-SC-4219-2, and 2,320 dry tons were land applied under the Controlled Solids Distribution Program under IEPA Permit No. 2000-SC-0872 for maintenance of golf courses, landscaping, nurseries, and construction of recreation fields. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is 12 times per year. An exception to this frequency of monitoring was granted, effective March 1, 2000 by USEPA Region V, for compliance with Class A pathogen standards. The Calumet WRP biosolids that are land applied are required to be

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 5

NITROGEN AND METALS CONCENTRATIONS IN CENTRIFUGE CAKE BIOSOLIDS
FROM THE CALUMET WATER RECLAMATION PLANT APPLIED TO FARMLAND IN 2001

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/dry kg										
01/16/01	54,074	4,655	5	3	289	0.22	9	29	58	11	1,065
01/23/01	54,870	4,892	NA	2	278	0.55	11	27	45	NA	991
01/30/01	60,844	6,166	NA	3	239	0.59	6	25	42	NA	867
02/06/01	51,196	4,826	4	4	347	0.29	9	40	65	16	1,289
02/13/01	46,264	5,622	NA	5	296	0.36	10	26	49	NA	1,074
02/20/01	48,263	4,665	NA	4	252	NA	11	32	64	NA	974
02/27/01	47,631	5,596	NA	5	331	NA	13	41	84	NA	1,191
03/06/01	42,481	5,025	4	4	341	0.51	11	45	85	13	1,154
03/13/01	35,944	4,944	NA	6	362	0.28	12	36	99	NA	1,187
03/20/01	42,909	5,422	NA	4	332	0.25	9	47	82	NA	1,137
03/27/01	41,007	4,763	NA	4	337	NA	7	47	96	NA	1,152
04/03/01	41,250	5,236	13	3	355	0.36	6	38	86	9	1,365
04/10/01	48,256	4,547	NA	5	347	0.65	8	40	123	NA	1,320
04/17/01	39,298	4,131	NA	3	350	NA	4	39	83	NA	1,311
04/24/01	37,304	4,962	NA	4	367	NA	6	33	91	NA	1,472
04/17-21/01	46,837	9,988	4	4	366	0.36	8	47	81	12	1,297
04/24-28/01	46,148	11,766	5	4	366	0.29	12	45	80	12	1,369
04/30/01	46,175	9,668	6	4	379	0.27	7	40	97	12	1,511

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 5 (Continued)

NITROGEN AND METALS CONCENTRATIONS IN CENTRIFUGE CAKE BIOSOLIDS
FROM THE CALUMET WATER RECLAMATION PLANT APPLIED TO FARMLAND IN 2001

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/dry kg										
05/01/01	45,018	4,541	5	3	351	0.13	9	35	90	11	1,527
05/08/01	42,519	5,091	NA	3	374	NA	4	43	91	NA	1,690
05/15/01	40,658	5,160	NA	4	372	NA	<3	38	92	NA	1,724
05/22/01	41,338	4,979	NA	3	353	NA	10	39	97	NA	1,602
05/29/01	44,702	4,753	NA	3	380	NA	7	41	106	NA	1,658
06/05/01	32,776	4,029	5	4	359	0.07	8	50	99	14	1,469
06/19/01	44,282	4,656	NA	3	386	NA	10	39	110	NA	1,392
07/03/01	46,829	4,478	5	3	378	0.48	7	40	99	14	1,299
07/10/01	44,044	5,561	NA	3	372	0.48	6	41	88	NA	1,237
07/17/01	39,961	4,802	NA	4	356	NA	13	45	104	NA	1,188
07/24/01	44,944	4,566	NA	3	381	NA	14	46	85	NA	1,179
07/31/01	40,159	4,812	NA	3	387	NA	11	53	90	NA	1,196
08/07/01	43,404	4,539	6	5	359	0.50	12	59	104	12	1,149
08/14/01	38,769	3,573	NA	4	382	NA	17	39	139	NA	1,197
08/21/01	37,016	2,955	NA	3	375	NA	13	43	113	NA	1,198
08/28/01	37,497	3,638	NA	7	418	NA	17	38	141	NA	1,297
09/04/01	40,136	3,259	4	8	401	0.44	17	46	133	10	1,300
09/11/01	36,587	3,007	NA	9	388	NA	17	42	135	NA	1,226

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 5 (Continued)

NITROGEN AND METALS CONCENTRATIONS IN CENTRIFUGE CAKE BIOSOLIDS
FROM THE CALUMET WATER RECLAMATION PLANT APPLIED TO FARMLAND IN 2001

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/dry kg										
09/18/01	37,646	2,974	NA	5	370	NA	12	39	106	NA	1,186
09/25/01	37,535	3,989	NA	7	402	NA	14	39	122	NA	1,249
10/02/01	37,403	3,304	4	6	291	0.53	10	25	80	10	838
10/09/01	39,237	3,239	NA	7	382	NA	16	35	95	NA	1,172
10/16/01	49,807	3,572	NA	9	444	NA	10	40	107	NA	1,289
10/23/01	42,320	2,821	NA	10	380	NA	16	39	135	NA	1,172
10/30/01	35,210	2,764	NA	12	375	NA	14	35	130	NA	1,190
10/08-09/01	33,358	3,168	6	4	481	0.53	5	35	125	18	1,711
10/18/01	30,324	634	3	5	405	0.60	12	40	109	12	1,381
10/22/01	32,330	1,849	3	4	404	0.44	15	38	95	13	1,282
11/06/01	40,438	2,977	5	13	365	0.34	12	34	122	12	1,248
11/13/01	40,764	3,424	NA	13	386	NA	10	40	120	NA	1,254
11/20/01	40,019	3,058	NA	12	349	NA	13	39	105	NA	1,253
11/27/01	42,096	5,042	NA	13	374	NA	10	39	110	NA	1,307
11/01-02/01	29,061	518	3	5	417	0.81	16	47	103	13	1,351
11/05-10/01	30,679	1,650	3	4	356	0.31	9	35	83	12	1,598
11/12-17/01	26,426	2,722	4	4	368	0.37	6	39	127	15	1,349
11/21-23/01	29,053	4,498	4	4	371	0.40	9	38	113	14	1,331

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 5 (Continued)

NITROGEN AND METALS CONCENTRATIONS IN CENTRIFUGE CAKE BIOSOLIDS
FROM THE CALUMET WATER RECLAMATION PLANT APPLIED TO FARMLAND IN 2001

Sample Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/dry kg										
12/04/01	45,476	4,213	3	14	372	0.33	15	42	107	10	1,324
12/11/01	48,606	4,875	NA	15	378	NA	14	34	114	NA	1,284
12/18/01	42,898	3,912	NA	14	394	NA	15	43	112	NA	1,285
12/25/01	47,268	4,427	NA	15	389	NA	11	38	121	NA	1,250
Minimum	26,426	518	3	2	239	0.07	<3	25	42	9	838
Mean*	41,540	4,395	5	6	365	0.40	11	39	99	12	1,285
Maximum	60,844	11,766	13	15	481	0.81	17	59	141	18	1,724
503 Limit	NL	NL	41	39	1,500	17.0	75	420	300	100	2,800

*In calculating the mean, values less than the detectable level were considered as the detectable level.
NA = No analysis.
NL = No limit; not applicable.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 6

DIGESTER TEMPERATURES AND DETENTION TIMES FOR CENTRIFUGE CAKE BIOSOLIDS FROM THE CALUMET WATER RECLAMATION PLANT APPLIED TO FARMLAND IN 2001

Month	Average Temperature	Average Detention time	Meets Part 503 Class B Requirements	Minimum Required Detention Time*
	°F	days		days
January	96	23.4	yes	15.0
February	94	21.4	yes	16.0
March	96	25.5	yes	15.0
April	96	25.0	yes	15.0
May	97	20.6	yes	15.0
June	97	24.1	yes	15.0
July	97	20.4	yes	15.0
August	97	21.0	yes	15.0
September	97	20.1	yes	15.0
October	97	22.1	yes	15.0
November	97	21.3	yes	15.0
December	97	28.5	yes	15.0

*Miniumum detention time required to meet Part 503 Class B operational requirements at average temperature achieved.

monitored only six times per year for compliance with Class A pathogen standards in Part 503 (Appendix II). All Calumet WRP EQ biosolids that were land applied in 2001 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 7), the Class A pathogen limits of Section 503.32a6 (Table 8), and the vector attraction reduction requirements of Section 503.33b1 (Table 7). Management practices complied with Section 503.14 as previously described in a letter to Mr. Michael J. Mikulka dated January 28, 1994 (Appendix I).

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 7

NITROGEN CONCENTRATIONS, VOLATILE SOLIDS REDUCTION, AND METALS CONCENTRATIONS FOR AIR-DRIED BIOSOLIDS FROM THE CALUMET WATER RECLAMATION PLANT APPLIED TO LAND IN 2001

Sample Date	TKN	NH_3-N	TVS*	TVS* Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	-- mg/dry kg --		%	%	mg/dry kg								
4/18	7,659	8	22.3	88.4	7	16	227	0.44	6	53	154	4	1,150
6/04-08	9,815	63	25.8	84.6	8	14	241	0.12	10	53	164	5	1,209
6/18-23	7,184	21	22.8	87.0	12	17	210	0.51	6	54	172	4	1,084
6/11-16	8,824	21	23.9	86.1	11	15	224	0.43	6	50	159	5	1,154
6/25-26	23,493	25	23.1	86.7	8	16	219	0.46	6	49	166	5	1,125
6/30	13,397	2,584	30.6	80.5	6	9	319	0.33	12	41	146	9	1,227
7/30-31	26,046	2,087	45.3	58.7	5	5	579	1.01	22	51	152	14	1,782
7/27	16,086	2,944	33.1	75.4	7	8	356	0.52	8	45	158	11	1,206
7/30-8/03	20,711	3,914	42.6	63.1	5	6	550	1.05	18	48	156	14	1,700
7/03-05	21,615	4,611	41.5	64.7	6	10	383	0.34	20	36	192	13	1,876
8/06	35,525	5,206	44.4	53.4	4	5	550	0.27	17	47	157	13	1,709
8/06-08	25,420	3,622	44.0	54.2	5	5	465	0.59	17	48	185	16	2,079
8/09-10	15,673	2,324	29.3	75.8	6	9	315	0.37	9	41	190	9	1,289
8/13	5,961	1,589	30.9	73.9	5	9	305	0.49	10	41	187	9	1,241
8/13-14	22,899	4,270	46.4	49.5	4	6	489	0.76	22	43	211	13	2,517

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 7 (Continued)

NITROGEN CONCENTRATIONS, VOLATILE SOLIDS REDUCTION, AND METALS CONCENTRATIONS FOR AIR-DRIED BIOSOLIDS FROM THE CALUMET WATER RECLAMATION PLANT APPLIED TO LAND IN 2001

Sample Date	TKN	NH_3-N	TVS*	TVS* Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	-- mg/dry kg --		%	%	---------- mg/dry kg ----------								
8/13-17	19,902	3,785	35.5	67.9	3	7	433	0.49	15	39	168	13	1,636
8/20-24	17,828	2,766	24.9	80.7	7	8	370	0.32	11	47	143	11	1,292
8/27-28	21,068	4,021	34.1	69.8	7	8	384	0.13	16	55	152	12	1,362
8/29-31	21,047	2,744	29.8	75.2	7	8	335	0.18	9	47	155	12	1,212
7/30-8/03	20,711	3,914	42.6	63.1	5	6	550	1.05	18	48	156	14	1,700
9/04-06	11,950	2,129	32.6	74.9	6	8	346	0.62	8	50	153	9	1,420
9/07	28,772	2,906	45.6	56.5	4	6	446	1.02	27	58	203	13	2,571
9/10-14	20,903	3,812	46.0	55.8	4	7	449	0.76	22	46	214	18	2,514
9/14	19,248	3,945	41.3	63.4	6	6	444	0.57	28	40	223	16	2,474
9/17-18	18,968	323	30.9	76.8	5	9	310	0.20	15	50	155	8	1,160
4/30	10,234	623	46.8	64.4	5	8	373	0.82	15	50	217	11	2,059
5/01	14,676	820	46.5	62.0	5	8	369	0.44	17	47	220	11	2,020
5/01	9,743	571	45.4	63.6	6	8	368	0.86	18	56	234	10	2,066
6/26	14,220	1,366	42.9	66.9	5	10	368	0.80	14	43	203	12	1,924
6/27	12,299	229	42.4	67.5	6	8	370	0.61	20	41	218	11	1,931

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 7 (Continued)

NITROGEN CONCENTRATIONS, VOLATILE SOLIDS REDUCTION, AND METALS CONCENTRATIONS
FOR AIR-DRIED BIOSOLIDS FROM THE CALUMET WATER RECLAMATION PLANT
APPLIED TO LAND IN 2001

Sample Date	TKN	NH_3-N	TVS*	TVS* Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	-- mg/dry kg --		%	%	mg/dry kg								
6/27	10,823	1,558	43.8	65.6	4	9	347	0.80	19	39	173	11	1,932
6/25-29	23,892	2,615	43.8	65.6	4	9	371	1.13	20	55	197	11	1,958
6/19-21	24,502	1,158	44.0	65.3	10	9	345	0.22	17	46	204	10	1,864
7/24-27	18,526	4,164	37.5	70.2	7	9	329	0.93	8	42	185	12	1,682
7/05	33,771	3,219	43.7	61.4	5	10	366	0.60	17	40	233	12	1,900
7/02-06	31,280	5,012	42.7	62.9	5	10	371	0.60	16	39	194	12	1,979
7/02	16,915	3,881	44.6	60.0	5	10	365	0.37	17	45	200	11	1,968
7/10-13	1,775	652	43.4	61.9	5	10	390	1.10	15	43	214	14	2,053
7/10-13	1,110	631	36.3	71.6	7	9	302	0.08	12	40	164	11	1,600
7/09-11	678	502	40.1	66.8	5	10	377	0.31	17	46	206	12	1,968
7/16-19	1,398	330	45.1	59.2	4	8	398	1.06	13	52	181	11	2,123
7/16-20	1,325	441	38.6	68.7	5	6	283	0.51	8	42	130	8	1,486
7/23-24	20,552	3,736	44.8	59.6	7	8	386	0.94	14	46	203	13	2,048
9/11	17,735	92	43.9	59.3	8	5	422	0.76	21	38	183	12	1,954
9/12-13	20,481	47	43.1	60.7	6	3	422	1.14	23	47	166	16	1,842

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 7 (Continued)

NITROGEN CONCENTRATIONS, VOLATILE SOLIDS REDUCTION, AND METALS CONCENTRATIONS FOR AIR-DRIED BIOSOLIDS FROM THE CALUMET WATER RECLAMATION PLANT APPLIED TO LAND IN 2001

Sample Date	TKN	NH_3-N	TVS*	TVS* Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	-- mg/dry kg --		%	%	mg/dry kg								
9/27-28	12,749	17	44.2	58.8	6	7	558	0.79	21	41	219	13	2,225
9/17-19	27,371	96	43.2	60.4	5	5	420	0.71	24	49	173	11	1,968
10/02-03	13,159	26	44.1	58.9	6	6	552	0.61	21	45	207	13	2,127
11/01-02	13,279	5	45.6	60.0	3	4	491	0.60	21	51	154	10	1,554
12/11-12	20,742	8	45.2	67.0	5	4	617	0.79	19	53	137	11	1,481
Minimum	678	5	22.3	49.5	3	3	210	0.08	6	36	130	4	1,084
Mean	16,679	1,909	39.0	67.1	6	8	389	0.61	16	46	182	11	1,748
Maximum	35,525	5,206	46.8	88.4	12	17	617	1.14	28	58	234	18	2,571
503 Limit	NL	NL	NL	38.0	41	39	1,500	17.0	75	420	300	100	2,800

*TVS = Total Volatile Solids.

NL = No limit; not applicable.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 8

CLASS A PATHOGEN STANDARDS ANALYTICAL DATA FOR BIOSOLIDS FROM THE CALUMET WATER RECLAMATION PLANT LAND APPLIED IN 2001

Sample Date	Lagoon Source	% Total Solids	Fecal Coliform No. /g.	Viable Helminth Ova No./4g.	Virus PFU/4g.
04/01/01	7	72.05	<2	<0.1110	<0.2575
04/01/01	14	69.04	1	<0.1159	<0.1954
12/05/00	15	27.63	NA	<0.290	<0.8572
04/26/01	15	88.25	57	NA	NA
12/05/00	15	13.55	NA	0.59	<0.8000
04/26/01	15	91.59	74	NA	NA
06/20/01	15	74.79	170	NA	NA
12/05/00	15	17.71	NA	<0.753	<0.8333
04/26/01	15	91.73	74	NA	NA
06/20/01	15	87.82	68	NA	NA

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 8 (Continued)

CLASS A PATHOGEN STANDARDS ANALYTICAL DATA FOR BIOSOLIDS FROM THE CALUMET WATER RECLAMATION PLANT LAND APPLIED IN 2001

Sample Date	Lagoon Source	% Total Solids	Fecal Coliform No. /g.	Viable Helminth Ova No./4g.	Virus PFU/4g.
12/05/00	15	14.76	NA	<0.542	<0.8000
04/26/01	15	90.53	86	NA	NA
12/05/00	15	17.59	NA	<0.455	<0.8000
04/26/01	15	92.86	44	NA	NA
12/06/00	6	26.98	NA	<0.297	<0.8333
06/12/01	6	72.21	74	NA	NA
12/06/00	6	20.09	NA	<0.066	<0.8000
06/20/01	6	85.20	150	NA	NA
08/28/01	6	82.97	80	NA	NA
12/06/00	6	23.01	NA	<0.348	<0.8148
06/12/01	6	61.15	110	NA	NA

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 8 (Continued)

CLASS A PATHOGEN STANDARDS ANALYTICAL DATA FOR BIOSOLIDS FROM THE CALUMET WATER RECLAMATION PLANT LAND APPLIED IN 2001

Sample Date	Lagoon Source	% Total Solids	Fecal Coliform No. /g.	Viable Helminth Ova No./4g.	Virus PFU/4g.
12/06/00	6	30.20	NA	<0.265	<0.8332
06/12/01	6	63.80	140	NA	NA
12/06/00	6	19.26	NA	<0.415	<0.7999
06/20/01	6	61.94	110	NA	NA
07/17/01	1	21.29	NA	<0.0626	<0.8334
09/05/01	1	82.23	120	NA	NA
07/17/01	1	27.53	NA	<0.2906	<0.8333
08/28/01	1	84.39	600	NA	NA

NA = No analysis.

STICKNEY WRP

Treatment Plant and Biosolids Process Train Description

The Stickney WRP, located in Stickney, Illinois, has a design capacity 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:

a. Placed into lagoons for dewatering, aging, and stabilization, and then transported to paved cells and air-dried prior to:
    1. Application to land as EQ biosolids under the District's Controlled Solids Distribution Permit.
    2. Use at local municipal solid waste landfills as final landfill cover.
    3. Application to land as EQ biosolids at the Fulton County, Illinois, dedicated land application site.
    4. Application to farmland as EQ biosolids by a private contractor.

5. Disposal in local municipal solid waste landfills.

b. Dewatered by centrifuging to approximately 25 percent solids content, and then applied to land by a private contractor as a Class B cake.

c. Dewatered by centrifuging to approximately 25 percent solids content, transported to paved cells, and air-dried prior to use as daily landfill cover.

d. Dewatered by centrifuging to approximately 25 percent solids content, placed into lagoons for aging and stabilization, and transported to paved cells and air-dried prior to:

1. Application to land as EQ biosolids under the District's Controlled Solids Distribution Permit.
2. Use at local municipal solid waste landfills as final landfill cover.
3. Application to land as EQ biosolids at the Fulton County, Illinois, dedicated land application site.
4. Application to farmland as EQ biosolids by a private contractor.

5. Disposal in local municipal solid waste landfills.

In 2001, the total biosolids production at the Stickney WRP was 149,965 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 were used and disposed of in 2001 exceeded the total production for the Stickney WRP due to processing of biosolids produced in previous years that were stored in lagoons.

Summary of Use and Disposal at Landfills

The Stickney WRP sent 41,348 dry tons of biosolids to landfills in 2001. Of this amount, 30,869 dry tons were used as daily cover, 1,155 dry tons were used as final cover, and 9,324 dry tons were co-disposed with municipal solid waste. These practices are exempt from the Part 503 Regulations and require no further reporting.

Land Application of Centrifuge Cake Biosolids

In 2001, the Stickney WRP land applied 40,050 dry tons of centrifuge cake biosolids to farmland under IEPA Permit No. 1999-SC-3932 through a contract with Stanley Rebacz Trucking and

Excavating, 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 biosolids that were land applied in 2001 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 9), the Class B pathogen anaerobic digester time and temperature requirements of Section 503.32b3 (Table 10), and the vector attraction reduction requirements of Section 503.33b10. Table 9 also contains the biosolids nitrogen concentration data that were used by the land applier to compute the agronomic loading rates at the farmland sites.

Land Application of Aged, Air-Dried Biosolids

In 2001, the Stickney WRP land applied a total of 77,093 dry tons of air-dried EQ biosolids. Of this quantity, 76,318 dry tons were applied to farmland under IEPA Permit No. 1999-SC-3932 through a contract with Synagro-WWT, Inc., and 775 dry tons of Stickney WRP biosolids were land applied under the Controlled Solids Distribution Program under IEPA Permit No. 2000-SC-0872 for maintenance of golf courses, landscaping, nurseries, and construction of recreation fields. The controlled solids distributions from the Stickney WRP included 43 dry tons, which were distributed to the Continental Cement

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 9

NITROGEN AND METALS CONCENTRATIONS IN CENTRIFUGE CAKE BIOSOLIDS
FROM THE STICKNEY WATER RECLAMATION PLANT APPLIED TO FARMLAND IN 2001

Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/dry kg										
01/04/01	54,872	3,203	3	4	407	0.50	16	49	97	3	915
01/18/01	67,873	8,252	NA	4	333	NA	12	40	76	NA	747
02/01/01	59,582	4,284	4	5	301	0.79	12	44	87	4	767
03/01/01	49,413	4,128	9	5	388	0.42	14	50	147	2	1,067
03/15/01	49,485	4,258	NA	5	404	NA	18	55	134	NA	955
04/12/01	54,187	4,708	7	5	384	0.39	17	53	174	7	828
04/26/01	55,581	2,090	NA	4	386	NA	14	52	207	NA	948
05/03/01	57,748	2,560	5	4	342	0.71	15	59	178	3	808
05/17/01	42,318	1,849	NA	4	390	NA	14	58	195	NA	1,008
06/07/01	45,550	2,298	7	5	422	0.43	13	68	226	4	1,030
06/21/01	44,368	1,402	NA	6	405	NA	16	51	213	NA	1,017
07/05/01	42,545	2,415	7	5	392	0.58	19	61	36	4	1,034
07/19/01	45,045	1,128	NA	3	386	NA	13	50	161	NA	1,030
08/02/01	42,515	2,094	NA	4	453	NA	24	64	228	NA	1,077
08/16/01	36,975	2,633	5	4	425	0.42	21	62	226	4	1,081
09/06/01	43,815	2,035	9	5	423	0.34	19	56	218	3	1,029
09/20/01	38,439	1,458	NA	15	423	NA	20	66	208	NA	998
10/04/01	46,756	2,945	9	5	385	0.76	19	59	211	5	874
10/18/01	37,121	4,564	NA	5	410	NA	19	78	181	NA	896
11/01/01	41,648	2,177	13	3	417	0.66	16	65	186	4	845
11/15/01	44,449	2,265	NA	7	403	NA	22	68	165	NA	795
12/06/01	56,976	5,510	5	4	415	0.55	18	61	140	4	828

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 9 (Continued)

NITROGEN AND METALS CONCENTRATIONS IN CENTRIFUGE CAKE BIOSOLIDS
FROM THE STICKNEY WATER RECLAMATION PLANT APPLIED TO FARMLAND IN 2001

Date	TKN	NH_3-N	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	mg/dry kg										
12/20/01	54,406	2,913	5	4	414	NA	18	76	141	4	913
03/14/01	55,921	6,653	6	6	447	0.28	17	56	108	2	975
03/29/01	48,777	4,534	11	5	395	0.38	15	56	149	3	909
04/23/01	50,185	5,450	8	5	404	0.73	11	54	174	5	899
05/17/01	43,303	6,870	10	4	396	0.62	11	51	176	4	913
06/20/01	40,449	4,117	10	5	461	0.25	18	59	176	5	1,048
08/20/01	54,145	6,882	4	5	435	0.44	16	59	166	4	1,052
09/06/01	47,694	9,041	3	5	399	0.18	16	52	131	3	852
09/06/01	33,475	3,274	4	5	412	0.54	13	54	204	3	979
10/08/01	52,392	5,059	12	5	440	0.87	21	67	132	3	942
Minimum	33,475	1,128	3	3	301	0.18	11	40	36	2	747
Mean	48,063	3,845	7	5	403	0.52	16	58	164	4	939
Maximum	67,873	9,041	13	15	461	0.87	24	78	228	7	1,081
503 Limit	NL	NL	41	39	1,500	17.0	75	420	300	100	2,800

NA = No analysis.
NL = No limit; not applicable.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 10

DIGESTER TEMPERATURES AND DETENTION TIMES FOR CENTRIFUGE CAKE BIOSOLIDS FROM THE STICKNEY WATER RECLAMATION PLANT APPLIED TO FARMLAND IN 2001

Month	Average Temperature	Average Detention time	Meets Part 503 Class B Requirements	Minimum Required Detention Time*
	°F	days		days
January	97	22.0	yes	15.0
February	97	18.4	yes	15.0
March	97	22.2	yes	15.0
April	97	20.2	yes	15.0
May	97	18.5	yes	15.0
June	98	19.0	yes	15.0
July	98	23.1	yes	15.0
August	97	21.4	yes	15.0
September	97	26.9	yes	15.0
October	97	27.6	yes	15.0
November	97	27.1	yes	15.0
December	97	29.6	yes	15.0

*Miniumum detention time required to meet Part 503 Class B operational requirements at average temperature achieved.

Company of Hannibal, Missouri. In accordance with Table 1 of Section 503.16, the frequency of monitoring for this biosolids product is 12 times per year. An exception to this frequency of monitoring was granted, effective March 1, 2000 by USEPA Region V, for compliance with Class A pathogen standards. The Stickney WRP biosolids that are land applied are required to be monitored only six times per year for compliance with Class A pathogen standards in Part 503 (Appendix II). All Stickney WRP EQ biosolids that were land applied in 2001 met the pollutant concentration limits in Table 3 of Section 503.13 (Table 11), the Class A pathogen limits of Section 503.32a6 (Table 12), and the vector attraction reduction requirements of Section 503.33b1 (Table 11). Table 11 also contains biosolids nitrogen concentration data that were used by the land applier to compute the agronomic loading rates at the farmland sites. Management practices complied with Section 503.14 as previously described in a letter to Mr. Michael J. Mikulka dated January 28, 1994 (Appendix I).

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 11

NITROGEN CONCENTRATIONS, VOLATILE SOLIDS REDUCTION, AND METALS CONCENTRATIONS FOR AIR-DRIED BIOSOLIDS FROM THE STICKNEY WATER RECLAMATION PLANT APPLIED TO LAND IN 2001

Sample Date	TKN	NH_3-N	TVS*	TVS* Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	--- mg/dry kg ---		%	%	---------- mg/dry kg ----------								
6/18-21	16,207	2,438	22.0	79.8	5	6	299	0.32	6	51	118	3	695
8/13	28,760	4,487	31.3	59.1	11	8	379	0.63	14	66	168	3	848
8/13	27,886	4,142	32.2	57.3	12	8	399	0.74	16	68	184	3	877
9/13	18,451	2,945	30.0	64.7	12	10	386	0.74	14	72	173	6	882
9/18	22,528	4,860	28.6	66.9	11	8	332	0.85	10	57	164	4	770
9/25-27	25,175	4,177	30.0	64.6	9	8	306	0.87	12	62	155	4	746
10/01-04	23,003	2,302	31.1	62.7	13	9	609	0.93	11	66	188	3	954
10/20	25,992	3,012	34.5	56.4	11	9	440	0.87	14	70	183	3	992
10/22	22,377	1,271	30.7	63.4	11	9	368	0.70	19	65	176	3	850
11/07	11,054	150	19.1	82.8	5	6	262	0.76	10	54	142	2	653
6/26-29	19,349	2,962	32.5	65.5	1	8	428	0.62	8	62	165	1	1,021
7/02	14,086	3,751	29.3	72.7	14	9	397	0.68	15	61	170	3	866
10/31	20,600	241	31.9	61.2	11	18	476	0.90	12	78	220	3	1,121
11/01	20,041	1,091	35.4	59.8	4	13	512	1.16	19	82	233	3	1,211
11/05	16,647	3,010	34.3	61.8	4	21	540	1.28	19	91	254	3	1,308
11/06-07	22,220	210	36.9	57.1	3	11	492	1.19	21	77	212	4	1,226
11/15-16	21,565	128	35.9	58.9	4	10	488	1.06	19	78	205	4	1,199
4/12-13	23,513	2,814	34.0	68.3	8	8	426	0.92	14	67	178	3	931

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 11 (Continued)

NITROGEN CONCENTRATIONS, VOLATILE SOLIDS REDUCTION, AND METALS CONCENTRATIONS FOR AIR-DRIED BIOSOLIDS FROM THE STICKNEY WATER RECLAMATION PLANT APPLIED TO LAND IN 2001

Sample Date	TKN	NH_3-N	TVS*	TVS* Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	--- mg/dry kg ---		%	%	---------- mg/dry kg ----------								
4/25	20,515	1,308	36.7	64.4	7	8	474	1.10	14	67	188	4	1,036
6/14-15	22,779	4,162	37.9	56.2	1	8	464	0.47	14	63	187	1	1,084
6/25-26	21,897	3,586	31.7	66.8	1	8	400	0.45	7	61	176	1	951
6/21	19,299	1,710	32.9	64.8	1	8	396	0.50	4	60	163	1	944
6/15	14,996	3,120	32.7	65.2	1	8	388	0.60	4	62	164	1	907
8/07-10	22,744	3,448	29.1	63.1	10	9	349	0.65	13	66	162	2	803
9/14	14,699	2,536	33.4	58.7	13	19	519	1.23	17	88	229	6	1,204
9/17	28,898	7,056	42.8	38.4	12	6	420	0.83	16	56	172	7	1,118
10/22	26,922	1,748	36.9	51.7	11	11	469	1.19	11	65	198	4	1,162
10/03	17,771	1,436	21.0	78.0	12	7	251	0.61	7	53	124	2	586
7/12-13	40,300	7,432	42.5	51.2	5	5	541	0.91	21	75	184	2	1,085
7/16-20	34,394	7,421	43.2	49.8	9	5	493	0.50	21	70	180	2	1,062
7/26-27	40,463	7,798	44.7	46.7	9	5	474	0.86	19	70	189	2	1,072
7/30-31	30,142	5,260	45.4	45.1	9	5	465	0.61	20	70	178	3	1,112
8/01-02	35,931	12,159	44.0	29.4**	6	5	463	0.48	16	68	178	3	1,127
8/07-09	33,409	3,602	45.0	26.3**	4	7	487	0.81	16	68	178	3	1,163
8/14-15	33,539	3,198	43.8	29.9**	14	5	475	0.77	19	71	189	4	1,148
10/29	26,383	1,679	37.4	50.6	13	5	442	0.72	11	61	233	4	1,183

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 11 (Continued)

NITROGEN CONCENTRATIONS, VOLATILE SOLIDS REDUCTION, AND METALS CONCENTRATIONS FOR AIR-DRIED BIOSOLIDS FROM THE STICKNEY WATER RECLAMATION PLANT APPLIED TO LAND IN 2001

Sample Date	TKN	NH_3-N	TVS*	TVS* Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	-- mg/dry kg --		%	%	---------- mg/dry kg ----------								
10/31	29,992	7,894	38.0	49.3	5	5	459	1.12	18	72	256	4	1,251
4/09	22,936	5,341	31.8	71.3	8	8	384	1.02	15	66	160	3	802
5/04	20,156	2,713	32.4	66.4	7	6	471	0.80	18	81	173	3	1,001
5/04	33,417	4,560	44.5	43.8	7	9	384	0.75	13	69	172	3	918
5/09	22,339	2,719	40.6	52.2	7	8	488	0.81	17	69	181	3	1,003
5/09	21,012	2,991	36.4	60.0	6	7	370	0.33	11	63	168	2	779
6/20	22,676	860	38.3	55.5	9	12	469	0.39	19	69	209	3	1,053
6/20	23,091	3,090	35.0	61.3	9	8	396	0.11	14	60	170	3	833
6/21	22,817	2,469	42.5	46.9	9	5	422	1.06	14	56	194	5	1,006
6/28	22,093	2,019	37.2	57.5	7	18	491	0.62	17	82	85	4	1,124
7/19	19,205	2,063	34.2	65.8	1	30	474	0.34	12	84	237	1	1,261
7/20	39,704	5,339	45.3	45.4	12	5	425	0.26	18	56	178	<1	1,054
7/27	21,634	2,166	41.9	52.5	7	6	502	0.19	19	65	220	3	1,239
7/27	23,058	779	38.6	58.6	6	6	538	0.64	18	72	210	3	1,093
8/08	32,745	3,690	38.3	44.2	6	9	600	0.97	21	78	226	3	1,237
8/08	20,349	1,080	33.8	54.0	5	6	334	0.79	8	61	153	2	684
8/07	29,640	3,553	40.5	38.8	5	6	458	0.92	15	62	180	3	1,123
8/30	28,745	1,532	39.5	41.2	4	10	461	0.55	20	69	177	4	1,068

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 11 (Continued)

NITROGEN CONCENTRATIONS, VOLATILE SOLIDS REDUCTION, AND METALS CONCENTRATIONS FOR AIR-DRIED BIOSOLIDS FROM THE STICKNEY WATER RECLAMATION PLANT APPLIED TO LAND IN 2001

Sample Date	TKN	NH_3-N	TVS*	TVS* Reduction	As	Cd	Cu	Hg	Mo	Ni	Pb	Se	Zn
	-- mg/dry kg --		%	%	---------- mg/dry kg ----------								
8/30	23,322	1,043	39.5	41.2	4	11	498	0.39	19	69	176	4	1,127
9/13	25,616	13,937	39.2	46.9	9	10	487	0.76	19	72	225	4	1,153
10/02	20,651	953	35.1	55.2	9	14	464	1.24	17	76	225	3	1,132
10/02	31,462	1,966	42.1	39.9	9	5	433	0.80	18	65	210	3	1,103
10/03	24,004	1,449	40.4	44.0	5	7	427	0.93	20	67	168	3	1,002
10/09	13,746	587	18.6	81.1	7	6	219	0.85	7	40	102	2	505
Minimum	11,054	128	18.6	38.4	1	5	219	0.11	4	40	85	<1	505
Mean***	24,316	3,291	35.7	56.2	8	9	436	0.75	15	67	183	3	1,007
Maximum	40,463	13,937	45.4	82.8	14	30	609	1.28	21	91	256	7	1,308
503 Limit	NL	NL	NL	38.0	41	39	1,500	17.0	75	420	300	100	2,800

*TVS = Total Volatile Solids.

**Biosolids did not meet vector attraction reduction requirements in Section 503.33b1, but they were managed in accordance with requirements in 503.33b10.

***In calculating the mean, values less than the detectable level were considered as the detectable level.

NL = No limit; not applicable.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 12

CLASS A PATHOGEN STANDARDS ANALYTICAL DATA FOR BIOSOLIDS FROM THE STICKNEY WATER RECLAMATION PLANT PREPARED FOR LAND APPLICATION IN 2001

Sample Date	Lagoon Source	% Total Solids	Fecal Coliform No. /g.	Viable Helminth Ova No./4g.	Virus PFU/4g.
07/13/00	24	27.56	NA	<0.290	<0.3833
04/09/01	24	71.83	<2	NA	NA
10/13/00	20	40.26	NA	0.199	<0.4444
04/25/01	20	71.15	10	NA	NA
04/23/01	24	46.36	NA	<0.0288	<0.4103
06/28/01	24	86.82	66	NA	NA
04/23/01	23	35.57	NA	<0.2249	<0.4444
07/19/01	23	78.68	44	NA	NA
06/05/01	24	41.06	NA	<0.1948	<0.9998
07/19/01	24	78.75	52	NA	NA
07/02/01	24	43.83	NA	<0.1825	<0.8444
07/19/01	24	91.40	52	NA	NA

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 12 (Continued)

CLASS A PATHOGEN STANDARDS ANALYTICAL DATA FOR BIOSOLIDS FROM THE STICKNEY WATER RECLAMATION PLANT PREPARED FOR LAND APPLICATION IN 2001

Sample Date	Lagoon Source	% Total Solids	Fecal Coliform No. /g.	Viable Helminth Ova No./4g.	Virus PFU/4g.
07/19/01	18	83.28	NA	<0.0961	<0.8571
09/13/01	18	70.83	2	NA	NA
07/26/01	16 & 18	33.19	NA	0.9641	<0.8332
09/13/01	16 & 18	61.30	620	NA	NA
07/26/01	24	37.72	NA	<0.2121	<0.8334
08/08/01	24	82.15	120	NA	NA
09/11/01	24	72.95	4	NA	NA
07/26/01	20	39.26	NA	0.034	<0.8332
09/11/01	20	75.97	38	NA	NA
09/13/01	16	70.98	40	0.3381	<0.8716
09/13/01	23	63.61	1	<0.1258	<0.9093

NA = No analysis.

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

Biosolids from three of the District's WRPs (Stickney, Calumet, and John E. Egan) were sent to landfills in 2001 for co-disposal with municipal solid waste, use as daily cover, and use as final cover. Biosolids going to these landfills are either processed to meet the requirements of AS 95-4 and AS 98-5 (Adjusted Standards) approved by the Illinois Pollution Control Board for biosolids used as a 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 biosolids used as daily cover and co-disposed. 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).

Stickney WRP

A total of 41,348 dry tons of biosolids from the Stickney WRP were co-disposed, used as daily cover with municipal solid

waste, or used as a final vegetative cover at nonhazardous waste landfills. A total of 9,324 dry tons were co-disposed at Land and Lakes River Bend Prairie Landfill at 801 E. 138th St., Dolton, Illinois. A total of 30,869 dry tons were used as daily cover at the Waste Management of North America, Inc., CID Recycling and Disposal Facility in Calumet City, Illinois. A total of 1,155 dry tons were used as a final vegetative cover at the Paxton II Landfill, Chicago, Illinois.

Calumet WRP

A total of 3,575 dry tons of biosolids from the Calumet WRP were co-disposed with municipal solid waste, used as daily cover, or used as a final vegetative cover at nonhazardous waste landfills. A total of 2,693 dry tons were used as daily cover at the Waste Management of North America, Inc., CID recycling and disposal facility in Calumet City, Illinois. A total of 335 dry tons were used as a final vegetative cover at the Paxton II Landfill, Chicago, Illinois. Finally, 547 dry tons were co-disposed at Land and Lakes River Bend Prairie Landfill at 801 E. 138th St., Dolton, Illinois.

John E. Egan WRP

A total of 4,998 dry tons of biosolids from the John E. Egan WRP were co-disposed with municipal solid waste or used

as daily cover at nonhazardous waste landfills. A total of 2,171 dry tons were used as daily cover at the Waste Management of North America, Inc., CID recycling and disposal facility in Calumet City, Illinois. Of this amount, 1,884 dry tons were sent to the Calumet WRP East drying facility and 287 dry tons were sent to the Stickney WRP Stony Island drying facility for air-drying prior to delivery to the landfill. Finally, 2,827 dry tons were co-disposed at Land and Lakes River Bend Prairie Landfill at 801 E. 138th St., Dolton, Illinois.

APPENDIX I

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

Thomas S. Fuller
President
Frank E. Gardner
Vice President
Nancy Drew Sheehan
Chairman, Committee on Fina
Joseph E. Gardner
Gloria Alitto Majewski
Kathleen Therese Meany
Terrence J. O'Brien
Patricia Young
Harry "Bus" Yourell

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.

RECYCLED PAPER
100% RECYCLABLE

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,

Signature on file

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

REDUCTION IN FREQUENCY OF MONITORING FOR PATHOGENS IN BIOSOLIDS

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

RECEIVED CHICAGO LAB
EM & R DIV STROKE / WRP
00 JAN 18 PM 2:20

REPLY TO THE ATTENTION OF:

WN-16J

JAN 12 2000

Dr. Dick Lanyon
Director, Research and Development
Metropolitan Water Reclamation District
of Greater Chicago
100 East Erie Street
Chicago, Illinois 60611-2803

Re: Reduction in Frequency of Monitoring for Pathogens in Biosolids

Dear Dr. Lanyon:

This is in response to verbal and written requests, regarding the referenced matter, that were made by your predecessor Dr. Cecil Lue-Hing, and Dr. Tata Prakasam, the District's Research Manager, to John Colletti and Ash Sajjad of the Regional Biosolids Team. Specifically, the District requested reduction in the frequency of monitoring for pathogens in biosolids generated at the District's Calumet and Stickney waste water treatment plants from 12 times per year to 4 times per year for reporting these data to the U.S. Environmental Protection Agency (U.S. EPA) as required by 40 Code of Federal Regulations (CFR) part 503.

Further, Dr. Lue-Hing in his June 15, 1999, letter to John Colletti referenced the biosolids pathogen data that the District collected from over 1,000 discreet samples. This was done during a period of 4 years from 1994 until 1998, as a part of the District's application to the National Pathogen Equivalency Recommendation Committee (PERC) for certification of the District's biosolids processing trains as equivalent to a Process for further Reduction of Pathogens (PFRP). As you may know, because the District's biosolids process to reduce pathogens is not listed under 40 CFR part 503, the District sought equivalency determination from the PERC. The PERC'S recommendation along with the Region's approval is necessary for the District to obtain PFRP equivalency.

After a review of the District's biosolids data, and in consideration of the District's commendable effort to characterize pathogen quality of more than 1,000 samples, the following is our response to your request.

To provide relief from the analytical burden of analyzing biosolids for pathogens 12 times per year, the U.S. EPA, Region 5, approves reducing the frequency of monitoring to 6 times per year. The reduced frequency of monitoring is effective March 1, 2000, and is renewable on a yearly basis.

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If you have any questions about this matter, please contact Ash Sajjad, Regional Biosolids expert at (312) 886-6112.

Sincerely yours,

Signature on file

FOR

Jo Lynn Traub
Director, Water Division

cc: Dr. Tata Prakasam, MWRDGC