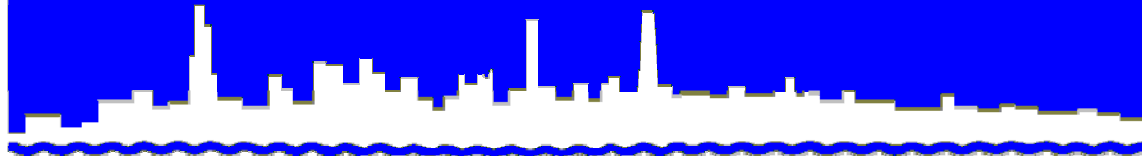


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 07-10

**REPORTING REQUIREMENTS FOR SITE-SPECIFIC EQUIVALENCY
TO PFRP DESIGNATION OF MWRDGC BIOSOLIDS PROCESSING
TRAINS AT THE STICKNEY AND CALUMET WATER
RECLAMATION PLANTS**

MARCH 2007

Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312-751-5600

Louis Kollias, P.E., BCEE

Director of Research and Development

312-751-5190

October 27, 2006

Mr. Valdis Aistars
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Dear Mr. Aistars:

Subject: Letter WN-16J Reporting Requirements For Site-Specific Equivalency to PFRP Designation of MWRDGC Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants

In your letter dated June 20, 2002 (Reference Number WN-16J), you informed us that the low and high solids biosolids processing trains at the Stickney and Calumet Water Reclamation Plants (WRPs) were designated on a site-specific basis as being equivalent to PFRP. In a letter dated August 12, 2004, you informed us that this certification was renewed for another two years, effective August 1, 2004 to July 31, 2006. The terms of the site-specific designation require us to operate the designated biosolids processing trains in full compliance with the codified operating parameters outlined in our approved petition, and to collect and analyze twelve samples for enteric viruses and helminth ova during the first year of operation (August 1, 2004 to July 31, 2005) and six samples during the second year of operation (August 1, 2005 to July 31, 2006).

We are required to submit monitoring data for three samples for the period January 1, 2006 through July 31, 2006, for both the Stickney and Calumet WRPs. Monitoring data for three samples are attached in Table 1 for the Calumet WRP. The last sample was collected on August 8, 2006 and retested on August 18, 2006. This sampling was done beyond the monitoring period, because the short time period within which air-dried biosolids were available for analysis made it difficult to schedule all three samples within the January to July 2006 monitoring period. All of the samples meet the Part 503 analytical standards for the Class A pathogens including those for enteric viruses and helminth ova. For the Stickney WRP, no monitoring data are presented in this report because the biosolids generated during the period were not PFRP-compliant with respect to the digester holding time criteria in the codified operations. Failure to meet the holding time criteria was due to reduction in digester capacity, resulting from digesters being removed from service for repairs. Therefore, all biosolids generated by the Stickney WRP during the period were not utilized as Class A, but were managed as specified in Item 10 of the certification.

Subject: Letter WN-16J Reporting Requirements For Site-Specific Equivalency to PFRP Designation of MWRDGC Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants

We conducted an internal audit of the District's Analytical Microbiology Laboratory on April 6, 2006, and it was found to be in full compliance with all USEPA requirements for analysis to determine compliance with the Part 503 Class A pathogen standards. In addition, the operation of the high and low solids biosolids processing trains were subjected to internal audits on April 5, 2006, at the Calumet WRP, and on April 7, 2006, for the Stickney WRP. Attached is a signed certification that the processing trains were operated in full compliance with the codified parameters.

This is the final data report for the PFRP certification period (August 1, 2004 through July 31, 2006) referenced in letter WN-16J. As you know, we received a two-year PFRP re-certification letter from your office dated September 6, 2006, which covers the period of August 1, 2006 through July 31, 2006. The next report we file will be governed by the conditions outlined in that letter.

If you have any questions, please contact Dr. Thomas Granato, Assistant Director of Research and Development, at 708-588-4059.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:AC:spy

Attachments

cc Lanyon/Jamjun/Levy
Sharma/Quintanilla/Kollias
Granato/O'Connor/Cox/Lindo

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1

MICROBIOLOGICAL ANALYSIS OF BIOSOLIDS GENERATED BY THE CALUMET WRP SOLIDS PROCESSING TRAINS IN COMPLIANCE WITH PART 503 PFRP-EQUIVALENT REQUIREMENTS JANUARY THROUGH JULY 2006 MONITORING PERIOD¹

Date Sampled	Location	Fecal Coliform - No./g -	Viable Helminth Ova - No./4g -	Enteric Virus - PFU/4g -
06/21/06	Calumet East ²	10	<0.0133	<0.08000
07/11/06	Calumet West	7,700 ³	<0.0800	<0.08003
07/18/06	Calumet West	2,800 ³	-	-
07/25/06	Calumet West	660 ⁴	-	-
08/08/06 ⁵	Calumet East	1,100 ³	0.0800	<0.0800
08/15/06 ⁵	Calumet East	720	-	-

¹Results of the three other samples required for the August 1 to December 31, 2005 operating period were submitted in a previous report.

²300-g sample used; 50-g used for other samples.

³Samples exceeded Part 503 requirement of <1,000 MPN/g for fecal coliform.

⁴Originally sampled biosolids were re-sampled and analyzed for fecal coliform prior to shipment to final utilization site. Re-sampled biosolids met the Part 503 fecal coliform requirement.

⁵Samples collected after January-July 2006 monitoring period.

CERTIFICATION

I do hereby certify that for the period from January 1, 2006 through July 31, 2006, the Low Solids Sludge Processing Train (LSSPT) and the High Solids Sludge Processing Train (HSSPT) at the Metropolitan Water Reclamation District of Greater Chicago's Stickney and Calumet Water Reclamation Plants were operated in full compliance with the following codified protocol, as required by the USEPA's site specific designation of equivalency to Procedure to Further Reduce Pathogens (PFRP):

1. An average detention time of 20 days at a temperature of $35 \pm 2^{\circ}\text{C}$ ($95 \pm 3.6^{\circ}\text{F}$) is maintained in the anaerobic digesters.
2. In the case of the HSSPT system, anaerobically digested sludge (at 3 to 5 percent solids), which is withdrawn daily from the digesters, is then dewatered using Sharples Model 76000 centrifuges from 20 to 30 percent solids.
3. In the case of the LSSPT system, digested sludge (at 3 to 5 percent solids) withdrawn daily from the digesters, and which is not subjected to centrifugal dewatering, is pumped into a LSSPT lagoon to achieve further stabilization, dewatering, and inactivation of pathogens.
4. The minimum sludge holding time for both the HSSPT and LSSPT lagoons is 1.5 years to ensure the aging and stabilization of sludge solids, and inactivation of pathogens.
5. Air-drying of sludge solids taken out of the HSSPT and LSSPT lagoons is carried out seasonally from April through November.
6. Air-drying is conducted such that any batch of sludge applied onto the drying areas is held without any further additions of sludge, until 60 percent total solids content is achieved.
7. Loading of drying cells is conducted such that air-drying of the sludge solids taken out of the HSSPT and LSSPT lagoons is done at no more than 410 and 230 dry tons per acre of the paved drying cells, respectively. Sludge solids taken out of the HSSPT and LSSPT lagoons are applied on the drying cells at depths of no more than 18 and 15 inches of sludge, respectively, to be consistent with the loadings of 410 and 230 dry tons per acre.
8. Agitation drying is conducted such that complete turning, aeration, and agitation of solids withdrawn from the LSSPT and HSSPT is accomplished at an average of three times a week using equipment such as a tractor with a horizontal auger or a tiller.

9. The short circuiting of sludge through the SPTs was eliminated by ensuring that,
 - (a) No additional batches of sludge are added to the field lagoons, where sludge is undergoing aging, dewatering, and inactivation, and
 - (b) A batch of sludge undergoing air drying on the paved drying beds is not mixed with any other batches of sludge during the drying process.

10. Sludge generated by unit processes not meeting the PFRP codified parameters listed above was segregated from the certified processing trains and managed according to the appropriate requirements of 40 CFR Parts 503 or 257.

Osoth Jamjun
Chief of Maintenance & Operations

Date