Ohio EPA
40 years and moving forward

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

OHIO E.P.A.

OCT 18 2013

ENTERED DIRECTOR'S JOURNAL

CERTIFIED

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By: _____ Date: 10-18-13

FirstEnergy Corporation
Attn: Mr. Todd A. Koget
800 Cabin Hill Drive
Greensburg, PA 15601

Re: Permit for Land Application Management Plan to Use FGD Gypsum as an Agricultural Soil Amendment for the Sammis Power Station

Application Received: April 1, 2013

Issuance Date: October 18, 2013

Effective Date: October 18, 2013

Expiration Date: October 17, 2018

Dear Mr. Koget:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the land application management plan (LAMP) permit application dated September 18, 2013 (FirstEnergy Application) submitted by FirstEnergy Corporation (FirstEnergy) pursuant to Chapter 6111 of the Ohio Revised Code (ORC) for the proposed beneficial use of flue gas desulfurization (FGD) gypsum generated by Sammis Power Station in Stratton, Ohio (Facility). The submitted LAMP permit application proposes to beneficially use FGD gypsum, which consists of calcium sulfate dehydrate from flue gas desulfurization generated by the Sammis Power Station, as an agricultural soil amendment that will be applied directly to agricultural lands in the state of Ohio as a result of agreements entered into by First Energy.

Pursuant to the authority of the Director of Ohio EPA (Director) under ORC Chapter 6111, the LAMP permit application for FirstEnergy dated September 18, 2013 is approved subject to compliance with all of the conditions below. Further, I have determined that granting an exemption from the applicable solid waste provisions of ORC Chapter 3734 to use FGD gypsum, in the quantities and under the circumstances specifically authorized in this LAMP permit, is unlikely to adversely affect the public health or safety or the environment. Therefore, pursuant to ORC Section 3734.02(G), FirstEnergy and any recipient of FGD gypsum under this LAMP permit are hereby exempted from the applicable solid waste provisions of ORC Chapter 3734 and rules adopted thereunder specific to the land application of FGD gypsum as authorized in this LAMP permit.

CONDITIONS

1. The FirstEnergy LAMP permit is approved for the beneficial use of FGD gypsum generated by the Facility as an agricultural soil amendment to serve as a source of calcium and sulfur in accordance with the LAMP permit dated September 18, 2013, which is attached and incorporated herein. All other beneficial uses must be separately approved by Ohio EPA. Only FGD gypsum from the Facility, as identified in this LAMP permit, is eligible for beneficial use under this permit.

2. The Director, or his authorized representative(s), may enter upon the Facility at any reasonable time for the purpose of conducting inspections, collecting samples of FGD gypsum, conducting tests, or examining records or reports pertaining to the generation or beneficial use of FGD gypsum from the Facility as an agricultural soil amendment.

3. Issuance of this LAMP permit does not relieve FirstEnergy of the duty to comply with all applicable federal, state, and local laws, ordinances, and regulations except as authorized herein.

4. FirstEnergy shall notify Ohio EPA if FirstEnergy anticipates a substantial change in, or does substantially change, the generating process or the raw materials used in the generating process of the FGD gypsum. This LAMP permit does not authorize beneficial use of FGD gypsum generated by the substantially changed process or raw materials unless authorized by Ohio EPA based on review of characterization data of FGD gypsum generated under the changed process or raw materials. Under such circumstances, the Director may request that FirstEnergy submit a revised LAMP permit application for approval. For the purposes of this LAMP permit, a substantial change in the raw materials is a change to a lower quality fuel or a lower quality limestone which results in FGD gypsum with additional pollutants or a higher concentration of pollutants.

5. The following shall be maintained by FirstEnergy for a minimum of five years after the beneficial use of the FGD gypsum and made available to Ohio EPA upon request:

    a. Records of the annual volume of FGD gypsum that is beneficially used;

    b. Records identifying the recipients or distributors of FGD gypsum and the volume provided to each recipient or distributor during the previous year;

    c. A sampling plan detailing where samples of FGD gypsum are to be collected, how those samples are to be collected, how frequently those samples are to be collected, and a list of parameters that are used to characterize the samples, as required in Conditions 6 through 9;

d. All laboratory reports of all characterizations of the FGD gypsum.

6. FirstEnergy shall collect and analyze at least one sample per year of the FGD gypsum intended for beneficial use and FirstEnergy shall collect and analyze additional samples if there are substantial changes in the generation process or the raw materials used.

   a. The samples collected shall be representative of the FGD gypsum beneficially used for the calendar year.

   b. FirstEnergy shall have the sample(s) analyzed for the pollutants listed in the table in Condition 7.

   c. The reported detection limit for the analysis shall be below the limit specified for each pollutant in the table in Condition 7.

   d. FirstEnergy shall employ analytical methods that generate pollutant results in units consistent with the units in the table in Condition 7.

7. At a minimum, the FGD gypsum intended for beneficial use shall be analyzed for the pollutants specified in the following table. FirstEnergy shall not designate, make available, or distribute for beneficial use any FGD gypsum that exceeds any pollutant(s) specified in the following table.

Total Limits (dry weight basis)	
Pollutant	**Beneficial Use Limit (mg/kg)**
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	10
Molybdenum	75
Nickel	420
Selenium	100
Zinc	2,800
Barium	15,000
Beryllium	160
Chromium, Total	180,000
Thallium	0.78
Boron	16,000

8. Ohio EPA reserves the right to add pollutants to this list as it deems necessary.

9. FirstEnergy shall analyze the FGD gypsum for the parameters necessary for users to determine the appropriate maximum agronomic application rate as determined by a qualified agronomist and/or soil test analysis.

10. Each year FirstEnergy shall submit a report regarding the beneficial use of the FGD gypsum for the previous calendar year. The annual report shall include the total amount, in tons, of FGD gypsum sold or distributed for beneficial use and the analytical results for any analysis(es) performed pursuant to Condition 6.

11. FirstEnergy shall include in the annual report required in Condition 10 the following:

"I certify, under penalty of law, that the information used to determine compliance with the requirements contained in Chapters 3734. and 6111. of the Ohio Revised Code, and all rules thereunder, for the period beginning (insert date of last certification statement) and ending (insert current certification statement date) was prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

12. The certification statement shall be signed by one of the following persons: In the case of a corporation, by a principal executive officer of at least the level of vice president or the principal executive officer's duly authorized representative, if such representative is responsible for the overall operation of the facility. In the case of a partnership, a general partner. In the case of a sole proprietorship, the proprietor. The signature shall constitute personal affirmation that all statements or assertions of fact in the records are true and complete and comply fully with applicable state requirements and shall subject the signatory to liability under ORC Section 2921.13.

13. The annual report shall be sent to the following address:

Ohio EPA
Division of Materials & Waste Management - AAEU
P.O. Box 1049
Columbus, OH 43216-1049

14. Storage and beneficial use of the FGD gypsum shall not create a nuisance and shall not adversely affect public health or safety or the environment. Should a nuisance condition develop, or a determination be made by Ohio EPA that storage or land application of FGD gypsum is a threat to public health or safety or the environment, this LAMP permit to beneficially use the FGD gypsum may be revoked upon written notification from the Director. Immediately upon the effective date of any such revocation, FirstEnergy shall cease distribution of the FGD gypsum for beneficial use under this LAMP permit. Furthermore, storage or

beneficial use of FGD gypsum that creates a nuisance or adversely affects public health or safety or the environment may subject FirstEnergy and/or the user to enforcement by Ohio EPA.

15. FirstEnergy shall notify Ohio EPA in writing not later than seven days after discovering noncompliance with this LAMP permit.

16. FirstEnergy shall supply distributors and end users with a copy of this LAMP permit approval.

17. The Director may add, delete, or change any conditions of this LAMP permit to protect public health or safety or the environment.

18. This permit to beneficially use FGD gypsum shall expire at midnight on the expiration date shown above. In order to renew the permit to beneficially use FGD gypsum beyond the above date of expiration, FirstEnergy shall submit such information and forms as are required by Ohio EPA not later than 90 days prior to the above date of expiration.

The FGD gypsum shall be beneficially used in strict accordance with the conditions of this LAMP permit and as outlined in the LAMP permit application submitted for this approval to the Director. Approval of this LAMP permit does not constitute an assurance that use of the FGD gypsum in accordance with the approved LAMP permit will be in compliance with all Ohio laws and regulations.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to ORC Section 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to "Treasurer, State of Ohio." The Commission, in its discretion, may reduce the fee if by affidavit it is demonstrated that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, Ohio 43215

Sincerely,

Scott J. Nally
Director

PF

Attachment: LAMP
cc: Jeff Hurdley, Legal, CO
Bill Fischbein, Legal, CO
Rich Fox, DMWM, SEDO

Permit-to-Install/Plan Approval Application

FOR AGENCY USE ONLY		
Date Received: / /	Application/Revenue ID:	Organization ID:
Document ID:	Place ID:	Check ID:
Check Date: / /	Check Number:	Check Amount:

APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
OCT 18 2013
AS EVIDENCED BY COPY OF LETTER OF APPROVAL HERETO ATTACHED

1. **Project Name:** Land Application of Sammis' Synthetic Gypsum

2. **Applicant** (see note after signature)

Name: WH Sammis Power Station
Mailing Address: State Route 7 (PO Box 176)
City: Stratton State: OH Zip: 43961
Contact Name: David A. Erwin
Title: Manager, Technical Services
Phone: (740) 537-6322 Fax: (330) 374-6224 E-mail : derwin@firstenergycorp.com

3. **Application/Plans Prepared by:**

Name: FirstEnergy Generation LLC
Mailing Address: 800 Cabin Hill Drive
City: Greensburg State: PA Zip: 15601
Contact Name: Todd Koget
Title: Engineer IV
Phone: (724) 838-6574 Fax: (234) 678-2384 E-mail : tkoget@firstenergycorp.com

4. **Billing Address** (if different than Applicant)

Name:
Mailing Address:
City: State: Zip:
Contact Name:
Title:
Phone: ( ) - Fax: ( ) - E-mail :

5. **Future Owner** (if different than Applicant)

Name:
Mailing Address:
City: State: Zip:
Contact Name:
Title:
Phone: ( ) - Fax: ( ) - E-mail :

6. Project Location

Street Address or Location Description: Statewide land application

County: _____ Township: _____

Municipality: _____ Latitude: _____ Longitude: _____

Method of Determination: _____

7. Brief Project Description: The land application of synthetic gypsum as a pre-approved beneficial use.

8. Will one or more acres be disturbed during construction of this project? ☐ Yes ☒ No

If **Yes**, enter the date the NOI for coverage under the construction storm water NPDES permit was submitted: / / and the date coverage was granted: / /

9. Will wetlands be disturbed during construction of this project? ☐ Yes ☒ No

If **Yes**, enter the date the 401/404 permit application was submitted: _____

10 a. Is this application part of a combined permit-to-install application? (for example air + water) ☐ Yes ☒ No

b. Has an application for a Class V injection well permit been submitted? ☐ Yes ☐ No ☒ N/A

If **Yes**, date submitted: / /

11. Compliance Status

a. Will this project connect to a collection/treatment system that has a NPDES permit? ☒ Yes ☐ No

If **Yes**, list federal and state permit numbers:

OH 0IB00010*MD

b. Is this application filed in compliance with findings and orders, a consent decree, and/or NPDES permit schedule? ☐ Yes ☒ No

If **Yes**, effective date of the document containing the schedule: / /

12. Compliance with 208 plan

Does the project conform to the 208/201 plan for the area? ☐ Yes ☐ No ☒ N/A

If **Yes**, has the engineer submitted supporting documentation? ☐ Yes ☐ No

13. Designated Ohio, Wild, Scenic, & Recreational Rivers

Is this project located within 1000 feet of a designated wild, scenic, and recreational river? ☐ Yes ☒ No

See http://ohiodnr.com/?TabId=985 for additional information

14. Estimated Project Schedule:

Beginning construction date: / / Ending construction date: / / Beginning operation date: / /

15. Project Cost:

*Installation/Construction Cost: $ N/A (Mark one): ☐ Actual ☐ Bid ☐ Estimate

Annual Operation/Maintenance Cost (if applicable - this project only): $

Are Water Pollution Control Loan Funds going to be used for this project? ☐ Yes ☐ No

If **No**, Funding Source: _____

**This is costs of the treatment/dispersal/collection system that will serve the project*

16. Attachments

The following are included in this application package (check appropriate box(es) and indicate how many copies of each are provided):

- ☐ Detail Plans _____
- ☐ Soil Evaluation Form _____
- ☐ Hydrogeologic Site Investigation Report _____
- ☐ Site Evaluation Form _____
- ☐ Other (describe): _____
- ☐ Narrative Plans (LTCP, GP, etc.)
- ☒ Management Plan 4 copies
- ☐ Engineering Report _____
- ☐ Engineering Specifications _____
- ☐ Sewer Authority Letter _____
- ☒ Antidegradation Addendum 2 copies

17. Form B / C Submission (check all that apply):

- ☐ Sewer and Pump Station Construction – Form B1
- ☐ Onsite Sewage Treatment Systems – Form B2
- ☐ Wastewater Treatment Plants Less Than 100,000 GPD – Form B3
- ☐ Wastewater Treatment Plants Greater Than or Equal to 100,000 GPD and all Pond Systems – Form B4
- ☐ Industrial Direct Discharge Facility – Form B5
- ☐ Industrial Indirect Discharge Facility – Form B6
- ☐ Underground Storage Tank Remediation – Form B7
- ☐ Holding Tanks – Form B8
- ☐ Industrial Impoundment Ponds – Form B9
- ☒ Land Application Management Plan for Sludge or Waste other than Treated Sewage – Form C1
- ☐ Treated Sewage Land Application Management Plan – Form C2
- ☐ Sewage Holding Tank Management Plan – Form C3

18. Fee Calculations:

Permit-to-Install (maximum total fee $15,100)

a. Application fee:	$ 100.00
b. Plan review fee:	$ 100.00
c. Plan review fee (installation/construction cost x .0065):	$ _____
d. Total Fee (a + b + c):	$ _____

Sludge Management Plan Approval*

a. Application fee:	$ 100.00
b. Plan review fee:	$ 100.00
c. Total fee (a + b):	$ 200.00

** No separate fee is needed for land application*

19. Antidegradation

Is this project subject to the Antidegradation Rule (OAC 3745-1-05)? ☒ Yes ☐ No

*If **Yes**, an antidegradation addendum must be submitted (Note: It applies even if an exclusion and/or waiver is met)*

*If **No**, check all that apply:*

- ☐ Application with no direct surface water discharge (Projects that do not meet the applicability section of 3745-1-05 (B)1, i.e., onsite sewage treatment systems, sanitary sewer extensions, indirect discharger to POTW, etc.).
- ☐ Renewal NPDES application or PTI application with no requested increase in loading of currently permitted pollutants.
- ☐ Narrative Plans (Examples: LTCP, Land Application, General Plans, etc.)

20. Submittals:

To be considered complete, this application must include the following unless otherwise directed by Ohio EPA:

- ☐ Four copies of the detail plans including profile and plan views of all sewers (shown on the same sheet), existing (as applicable) and proposed pump station facilities, incorporating all of the details outlined in Section 20.1, 20.2 and 20.3 of *Recommended Standards for Wastewater Facilities.*
- ☐ Two copies of complete technical specifications.
- ☒ Two copies of the Permit-to-Install Application including Form A, pertinent B & C form(s), and the antidegradation addendum *(if applicable)*
- ☒ Fee check payable to "Treasurer, State of Ohio."

21. Signature of the Applicant: (see Ohio Administrative Code 3745-42-03)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision and that all the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are substantial penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Typed name: Raymond L. Evans Title: VP, Environmental

Signature: Raymond L. Evans Date: 09/09/2013

NOTE (Who Must Sign):
The person signing as AApplicant@ is not the applicant=s engineer or architect or any other person submitting the Permit-to-Install Application on behalf of the owner. The AApplicant@ should be owner of the facility, business, corporation, company, etc. or the legal responsibly entity. It is not the engineer who prepared the plans.

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OCT 16 2013
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Plan Approval - Management Plan For Sludge or Industrial Byproducts other than Treated Sewage

Note: This form, with the attachments indicated, is intended to serve as the main substance of the management plan. If you prefer to submit a separate and complete document to serve as your management plan, then to respond to a question where a description or calculation is requested (such as Items C.1 through C.4), simply enter the page numbers of the submitted plan where the information requested can be found. Please respond on this form when just a check mark or brief statement is requested.

FOR AGENCY USE ONLY	
Application Number:	Date Received: / /

Applicant:	WH Sammis Power Station
Facility Owner:	FirstEnergy Generation LLC
Application/Plans Prepared by:	Todd Koget
Project Name:	Land Application of Sammis' Synthetic Gypsum

A. Background Information

a. Briefly describe type and source of material to be land applied: The synthetic gypsum is a dewatered product of the flue gas desulfurization (FGD) scrubbers used at Sammis Power Station.

b. Briefly describe proposed uses of materials (agronomic uses, soil blends, structural fill, etc.): The proposed use is only for the land application of synthetic gypsum as a pre-approved beneficial use.

c. Existing Plan Approval number: 5MP00002*AD ☐ N/A

B. Generating Facility ☐ N/A

a. Amount of sludge/byproduct generated	600,000	dry tons/year
b. Amount proposed for beneficial use	Varies	dry tons/year
c. Disposal method for amount not used	Landfill	
d. Storage capacity at facility:	4	days

C. Land Application *(If N/A, Skip to D)* ☒ N/A

a. Use category of land application area (check all that apply): ☐ Unrestricted Access site ☐ Restricted Access site

b. Quantity of material to be land applied:

_____ Inches/acre/year (annual average-liquid) _____ Dry tons/acre/year (annual average-sludge)

c. Does the land application area have subsurface drains/tiles located less than 24 inches below natural grade?
☐ Yes ☐ No ☐ Unknown at this time

d. Amount of land area available for land application if known (do not include buffer zones in the figure) _____ acres

e. Maximum slope of land to be used for land application = _____ %

f. Type(s) of crops or vegetation to be grown on land application area:

C.1 Describe the method or methods used for the storage and land application of sludge/other byproducts (including detailed information about the distribution system):

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C.2 State what the maximum land application rate(s) are proposed to be and the total acres required and available for land application. Attach calculations and references showing how the application rates and acreage needs were determined.

C.3 Describe the monitoring of the material to be land applied and the soils in the land application area(s), including frequency, methods and parameters that will be measured in each:

C.4 Describe the appropriate weather conditions required for the land application of sludge/other byproducts and how they will be determined and documented:

C.5 Check which land application activities listed below are proposed. If yes, please explain how runoff, ponding or discharges to waters of the state will be prevented (attach separate pages as needed).

Do you propose to land apply during precipitation events? If **yes**, please explain:	☐ Yes	☐ No
Do you propose to spray irrigate when instantaneous wind speeds exceed 20 miles per hour? If **yes**, please explain:	☐ Yes	☐ No
Do you propose to land apply within 10-year floodplain? If **yes**, please explain:	☐ Yes	☐ No
Do you propose to land apply in wetlands? If **yes**, please explain:	☐ Yes	☐ No
Do you propose to land apply where the land application contract is expired or void? If **yes**, please explain:	☐ Yes	☐ No
Do you propose to land apply when the ground is saturated at or near the surface? If **yes**, please explain:	☐ Yes	☐ No
Do you propose to land apply where there is at less than 12 inches between final grade and bedrock, sand or gravel lenses, compacted glacial till, and/or normal ground water elevation? If **yes**, please explain:	☐ Yes	☐ No

C.6 List setback distances that will be observed for all of the following:

Ditches/Streams/Waterways:	_____ feet	Private Water Supply Well:	_____ feet
Residences/Business:	_____ feet	Public Water Supply Well:	_____ feet
Sinkholes:	_____ feet	Public Surface Drinking Water Intake:	_____ feet
Pond or Lake:	_____ feet	Other:	_____ feet

Attach additional pages if different setbacks are proposed for different methods of application (e.g. greater setbacks should be observed for surface application than injection).

C.7 Land application on frozen/snow-covered ground is not recommended. If land application on frozen/snow-covered ground is proposed, please indicate which of the following practices will be used to minimize pollutant discharges or nuisances:

- ☐ Application rate is limited to 10 wet tons/acre for solid materials (50% moisture or more) and 5 wet tons/acre for material less than 50% moisture. For liquids the application rate is limited to 5,000 gallons/acre.
- ☐ Applications will be made on land with at least 90% surface residue cover.
- ☐ Material shall not be land applied on more than 20 contiguous acres, separated by breaks of at least 200 feet.
- ☐ Application setbacks shall be increased to at least 200 feet from all grassed waterways, drainage ditches, streams, surface inlets, and water bodies.
- ☐ The rate of application will not exceed: _____lbs Nitrogen/acre or _____ lbs Phosphorus/acre
- ☐ Application will not take place on slopes greater than 6% unless material is applied in alternating strips less than 200' wide generally on the contour, or in the case of contour strips, on alternating strips.

If any of these practices are not proposed to be followed, please attach a description of how pollutant discharges will be minimized during application on frozen/snow covered ground.

C.8 Describe or list any other practices that will be used to minimize pollutant discharges or nuisances:

C.9 Land Application Records

How will land application information be recorded? :

☐ Ohio EPA's Land Application Record Form ☐ Our Own Land Application Record Form (attached)

Where will the records be kept? :

C.10 Application Site Map *(If known)*

a. A map locating each land application site shall be attached. Each site shall be labeled "Restricted access site" or "Unrestricted access site". The map(s) should show the following items and are considered part of this plan:

- ☐ All present and known proposed occupied buildings within 300 feet of the land application area.
- ☐ All present and known proposed non occupied buildings within 300 feet of the land application area.
- ☐ All present and known proposed public and private water supply wells within 1,000 feet of the land application area.
- ☐ All sinkholes and waters of the state (including ditches, grass waterways, streams and rivers) within 200 feet of the land application area.
- ☐ All public surface drinking water supply intakes within 1500' of the land application area.
- ☐ All present and known proposed developments and public access areas within 300 feet of the land application area.

b. If the land application site(s) are not known, will site maps be submitted before land application starts? ☐ Yes ☐ No

D. Other Beneficial Uses

1. Is this material one of the following:
   - ☐ Spent Foundry Sand
   - ☐ Bottom Ash From Coal Combustion
   - ☐ Fly Ash
   - ☐ Steel Slag
   - ☐ Sludge
   - ☐ Other:
2. If the material is "Other", have you contacted Ohio EPA to discuss the applicable regulations? ☐ Yes ☐ No
3. Is a comprehensive management plan attached for uses other than land application? ☐ Yes ☐ No

E. **Miscellaneous Information:**

The following items shall be included with this land application management plan:

☒ Two copies of the Permit-to-Install/Plan Approval Application Form A or the NPDES Permit Application.

☐ If applicable, two copies of the site and soil evaluation(s) (For renewal applications, this is only needed if additional or different areas)

☒ One copy of the sampling results for the material to be beneficially used (the most recent, but no older than one year).

☒ Four copies of this management plan and any attachments or ☐ Four copies of a separate/complete management plan.

☒ Fee check payable to "Treasurer, State of Ohio."

The following additional information is included with this form:

F. **The foregoing data is a true statement of facts pertaining to this proposed management plan.**

Printed (Person Preparing Plan): TODD A. KOGET Title: Engineer IV

Signed: Todd A. Koget Date: 09 / 09 / 2013

APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
OCT 18 2013
AS EVIDENCED BY COPY OF LETTER OF APPROVAL HERETO ATTACHED

State of Ohio Environmental Protection Agency

DIVISION OF SURFACE WATER

Antidegradation Addendum

In accordance with Ohio Administrative Code 3745-1-05 (Antidegradation), additional information may be required to complete your application for a permit to install or NPDES permit. For any application that may result in an increase in the level of pollutants being discharged (NPDES and/or PTI)or for which there might be activity taking place within a stream bed, the processing of the permit(s) may be required to go through procedures as outlined in the antidegradation rule. The rule outlines procedures for public notification and participation as well as procedures pertaining to the levels of review necessary. The levels of review necessary depend on the degradation being considered/requested. The rule also outlines exclusions from portions of the application and review requirements and waivers that the Director may grant as specified in Section 3745-1-05(D) of the rule. Please complete the following questions. The answers provided will allow the Ohio EPA to determine if additional information is needed. **All projects that require both an NPDES and PTI should submit both applications simultaneously to avoid going through the antidegradation process separately for each permit.**

A. Applicant: WH Sammis Power Station

Facility Owner: FirstEnergy Generation LLC

Facility Location (city and county): Stratton, OH (Jefferson County)

Application or Plans Prepared By: Todd A. Koget

Project Name: Land Application of Sammis Synthetic Gypsum

NPDES Permit Number (if applicable): OH0IB00010*MD

B. Antidegradation Applicability

Is the application for? (check as many as apply):

X Application with no direct surface water discharge (Projects that do not meet the applicability section of 3745-1-05(B)1, i.e., on-site disposal, extensions of sanitary sewers, spray irrigation, indirect discharger to POTW, etc.). (Complete Section E)

_____ Renewal NPDES application or PTI application with no requested increase in loading of currently permitted pollutants. (Complete Section E, Do not complete Sections C or D).

_____ PTI and NPDES application for a new wastewater treatment works that will discharge to a surface water. (Complete Sections C and E)

_____ An expansion/modification of an existing wastewater treatment works discharging to a surface water that will result in any of the following (PTI and NPDES):(Complete Sections C and E)

- addition of any pollutant not currently in the discharge, or
- an increase in mass or concentration of any pollutant currently in the discharge, or
- an increase in any current pollutant limitation in terms of mass or concentration.

Click to clear all entered information (on all 4 pages of this form) CLEAR

_____ PTI that involves placement of fill or installation of any portion of a sewerage system (i.e., sanitary sewers, pump stations, WWTP, etc.) within 150 feet of a stream bed. Please provide information requested on the stream evaluation addendum (i.e., number of stream crossings, fill placement, etc.) and complete Section E.

_____ Initial NPDES permit for an existing treatment works with a wastewater discharge prior to October 1, 1996. (Complete Sections D and E)

_____ Renewal NPDES permit or modification to an effective NPDES permit that will result in any of the following: (Complete Sections C and E)

- a new permit limitation for a pollutant that previously had no limitation, or
- an increase in any mass or concentration limitation of any pollutant that currently has a limitation.

C. Antidegradation Information

1. Does the PTI and/or NPDES permit application meet an exclusion as outlined by OAC 3745-1-05(D)(1) of the Antidegradation rule?

   _____ Yes (Complete Question C.2)

   _____ No (Complete Questions C.3 and C.4)

2. For projects that would be eligible for exclusions provide the following information:

   a. Provide justification for the exclusion.

   b. Identify the substances to be discharged, including the amount of regulated pollutants to be discharged in terms of mass and concentration.

   c. A description of any construction work, fill or other structures to occur or be placed in or near a stream bed.

3. Are you requesting a waiver as outlined by OAC 3745-1-05(D)(2-7) of the Antidegradation rule?

   _____ No

   _____ Yes

   If you wish to pursue one of the waivers, please identify the waiver and submit the necessary information to support the request. Depending on the waiver requested, the information required under question C.4 may be required to complete the application.

4. For all projects that do **not** qualify for an exclusion a report must accompany this application evaluating the preferred design alternative, non-degradation alternatives, minimal degradation alternatives, and mitigative techniques/measures for the design and operation of the activity. The information outlined below should be addressed in this report. If a waiver is requested, this section is still required.

   a. Describe the availability, cost effectiveness and technical feasibility of connecting to existing central or regional sewage collection and treatment facilities, including long range plans for

sewer service outlined in state or local water quality management planning documents and applicable facility planning documents.

b. List and describe all government and/or privately sponsored conservation projects that may have been or will be specifically targeted to improve water quality or enhance recreational opportunities on the affected water resource.

c. Provide a brief description below of all treatment/disposal alternatives evaluated for this application and their respective operational and maintenance needs. (If additional space is needed please attach additional sheets to the end of this addendum).

Preferred design alternative:

Non-degradation alternative(s):

Minimal degradation alternative(s):

Mitigative technique/measure(s):

At a minimum, the following information must be included in the report for each alternative evaluated.

d. Outline of the treatment/disposal system evaluated, including the costs associated with the equipment, installation, and continued operation and maintenance.

e. Identify the substances to be discharged, including the amount of regulated pollutants to be discharged in terms of mass and concentration.

f. Describe the reliability of the treatment/disposal system, including but not limited to the possibility of recurring operation and maintenance difficulties that would lead to increased degradation.

g. Describe any impacts to human health and the overall quality and value of the water resource.

h. Describe and provide an estimate of the important social and economic benefits to be realized through this proposed project. Include the number and types of jobs created and tax revenues generated.

i. Describe environmental benefits to be realized through this proposed project.

j. Describe and provide an estimate of the social and economic benefits that may be lost as a result of this project. Include the impacts on commercial and recreational use of the water resource.

k. Describe the environmental benefits lost as a result of this project. Include the impact on the aquatic life, wildlife, threatened or endangered species.

l. A description of any construction work, fill or other structures to occur or be placed in or near a stream bed.

m. Provide any other information that may be useful in evaluating this application.

D. Discharge Information

1. For treatment/disposal systems constructed pursuant to a previously issued Ohio EPA PTI, provide the following information:

PTI Number _____
PTI Issuance Date _____
Initial Date of Discharge _____

2. Has the appropriate NPDES permit application form been submitted including representative effluent data?

_____ Yes (go to E)

_____ No (see below)

If **no**, submit the information as applicable under **a OR b** as follows:

a. For entities discharging process wastewater attach a completed 2C form.

b. For entities discharging wastewater of domestic origin attach the results of at least one chemical analysis of the wastestream for all pollutants for which authorization to discharge is being requested and a measurement of the daily volume (gallons per day) of wastewaters being discharged.

E. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete.

This section must be signed by the same responsible person who signed the accompanying permit application or certification as per 40 CFR 122.22.

Signature Raymond L. Ewen

Date 09/11/2013

MANAGEMENT PLAN
FOR THE
LAND APPLICATION OF SYNTHETIC GYPSUM

FOR

FIRSTENERGY GENERATION LLC
WH SAMMIS POWER STATION
STATE ROUTE 7
STRATTON, OH 43961

SEPTEMBER 2013

INTRODUCTION

WH Sammis Power Station is an electric power generating plant located in the village of Stratton along the Ohio River in Jefferson County, Ohio. It is about fourteen miles north of the city of Steubenville, Ohio, and is accessed by Ohio State Route 7. Since the plant is coal-fired with scrubbers, synthetic gypsum is produced as a by-product of the flue gas scrubber. The synthetic gypsum is an excellent resource for agricultural applications.

Sammis Power Station proposes to beneficially use this material through agricultural land application in the State of Ohio. Power plant gypsum in Ohio is permitted as a fertilizer material through the Ohio Environmental Protection Agency (OEPA) and is monitored by the Ohio Department of Agriculture (ODA) (Attachment A). The gypsum will be stored at the Sammis Power Station site while awaiting distribution. The responsible person for Sammis Power Station gypsum is David Erwin, Manager, Technical Services. He can be reached at (740) 537-6322.

Currently, the Sammis Power Station does not have the network to distribute the material. Either third-party agreements will be signed for the purpose of transporting and distributing the material to end users or the end users may transport the material themselves. FirstEnergy Generation LLC will be responsible for recordkeeping, reporting, compliance response and ensuring all conditions of the management plan and pre-approval criteria are met. The responsible person at FirstEnergy Generation LLC for implementation of the Management Plan is also David Erwin, Manager, Technical Services. He can be reached at (740) 537-6322.

MATERIAL INFORMATION

Synthetic gypsum is produced as a by-product of pollution control measures. When coal containing sulfur is burned, the sulfur-bearing gases formed are removed by reaction with a chemical scrubber process known as flue gas desulphurization (FGD). A description of this process is shown in Attachment B. Analytical results (Attachment C) show that the material is extremely low in heavy metals. There are a number of potential benefits of applying synthetic gypsum to agricultural soils. These can be either chemical or physical.

Chemical benefits result from supplying essential plant nutrients calcium and sulfur for crop production or by modifying the subsoil to create a more favorable medium for plant root development (e.g., decreasing aluminum toxicity, promoting clay flocculation, enhancing root penetration, increasing water extraction from subsoil layers, etc.).

The physical benefits include the promotion of clay flocculation and aggregation of the soil, reduction of surface crusting which leads to increased water infiltration. These changes result in reduced runoff and erosion. Improved soil aggregation leads to improved soil aeration and reduced bulk density.

SITE INFORMATION

Synthetic gypsum will be used on various agricultural lands throughout Ohio. Specific sites cannot be identified in this management plan due to the variability of farmers' needs and market considerations.

METHOD OF OPERATION

The synthetic gypsum will be stored at the Sammis Power Station and the material will be managed in a way to prevent fugitive dust and the discharge of contaminants to ground or surface water. When requested by the end user, gypsum will be loaded into trucks and delivered to the application site. Trucks will be tarped prior to departing the Sammis Power Station.

Only enough material for the current planting/crop season will be transported to the end user. Each end user will be provided with the following information:

- a notice that the gypsum is an industrial byproduct,
- the chemical composition of the synthetic gypsum,
- approved uses,
- application rate,
- storage considerations, and
- source contact information.

The application rate will be determined by a qualified agronomist. Various factors that may influence the application rates include soil pH, soil type, and crop to be planted. Storage considerations include restricting the placement of the material within: 300 feet of surface waters or residences, 200 feet of potable water wells, and 50 feet of property lines. In the unlikely event that run-off would occur, it will be treated as an emergency spill. At that time, the end user will contain the run-off, clean up the material, and either immediately spread the gypsum or place it in a more isolated area.

The synthetic gypsum can be applied directly to the soil using conventional dry material spreaders. All spreading will be accomplished by personnel experienced in land application management practices and procedures. All applications will adhere to the predetermined application rates (specific to each site).

MONITORING INFORMATION

Initial characterization of the synthetic gypsum included analysis of the following pollutants: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, thallium, zinc, and pH.

Sammis Power Station will continue to characterize the synthetic gypsum (Attachment D) in accordance with the standards established by the OEPA. In addition, any reporting requirements will be completed in a timely manner.

CONCLUSION

Studies have shown that the addition of synthetic gypsum to soils will improve the land and provide long term benefits. Instead of disposing of the synthetic gypsum and using valuable landfill space, it's important to find uses for products generated from burning coal that are not only cost effective but also continue to encourage environmental stewardship. When applied in a responsible manner, synthetic gypsum would not pose any threats to human health or the environment.

ATTACHMENT A

PRINT

Ohio Department of Agriculture
Plant Health - Pesticide and Fertilizer Regulation Section
8995 East Main Street, Reynoldsburg, OH 43068-3399
Telephone: (614) 728-6987 Fax: (614) 728-4235
www.agri.ohio.gov mail: pesticides@agri.ohio.gov

APPLICATION FOR COMMERCIAL FERTILIZER LICENSE

In accordance with the provisions of Section 905.32 of the Ohio Revised Code, application is made for a license to manufacture or distribute commercial fertilizer in Ohio for the year beginning **DECEMBER 1, 2012 AND ENDING NOVEMBER 30, 2013 .**

Submitted By:
Company Name: _FirstEnergy Generation LLC
Contact Name: _Todd A Koget
Location Address: _State Route 7
Location City: _Stratton
Loc State & Zip: _OH 43961
Location County: _Jefferson

Submitted For:
Company Name: _WH Sammis Power Station
Mailing Address: _800 Cabin Hill Drive
Mailing City: _Greensburg
Mailing State: _PA
Mailing Zip Code: _15601
Phone Number: _(724) 838-6574

Signature: Todd A. Koget **Date:** 09/09/13

I certify that the name and address shown on the license shall be on all the labels, pertinent invoices, and bulk storage for fertilizers distributed in Ohio.

PAYMENT REQUIRED:
Remittance of $5.00 to cover the license fee for the above location payable to the Ohio Department of Agriculture must be enclosed. Payment can be made by check, money order, or credit card: (Please check one)

Payment Method: ☒ Check or ☐ Money Order # 235 ☐ Visa ☐ Mastercard **Amount $** 5.00

If paying by credit card, the following information is required before payment can be processed:

Cardholder Name on Credit Card:

Credit Card Number: | | | | | | | | | | | | | | | | **Expiration Date:** | | | | | | | CVV

Signature:

********** FOR INSTRUCTIONAL USE ONLY **********

READ BEFORE COMPLETING YOUR DMA FORM

Forms not conforming to the specifications listed below or not submitted to the appropriate agency or office will not be processed.

- To complete this form, you will need a copy of the Terrorist Exclusion List for reference. The Terrorist Exclusion List can be found on the Ohio Homeland Security Web site at the following address:

  http://www.homelandsecurity.ohio.gov/dma/dma.asp

- Be sure you have the correct DMA form. If you are applying for a state issued license, permit, certification or registration, the "State Issued License" DMA form must be completed (HLS 0036). If you are applying for employment with a government entity, the "Public Employment" DMA form must be completed (HLS 0037). If you are obtaining a contract to conduct business with or receive funding from a government entity, the "Government Business and Funding Contracts" DMA form must be completed (HLS 0038).

- Your DMA form is to be submitted to the issuing agency or entity. "Issuing agency or entity" means the government agency or office that has requested the form from you or the government agency or office to which you are applying for a license, employment or a business contract. For example, if you are seeking a business contract with the Ohio Department of Commerce's Division of Financial Institutions, then the form needs to be submitted to the Department of Commerce's Division of Financial Institutions. Do NOT send the form to the Ohio Department of Public Safety UNLESS you are seeking a license from or employment or business contract with one of its eight divisions listed below.

- Department of Public Safety Divisions:
  - Administration
  - Ohio Bureau of Motor Vehicles
  - Ohio Emergency Management Agency
  - Ohio Emergency Medical Services
  - Ohio Homeland Security*
  - Ohio Investigative Unit
  - Ohio Criminal Justice Services
  - Ohio State Highway Patrol

- * DO **NOT** SEND THE FORM TO OHIO HOMELAND SECURITY UNLESS OTHERWISE DIRECTED. FORMS SENT TO THE WRONG AGENCY OR ENTITY WILL NOT BE PROCESSED.

********** FOR INSTRUCTIONAL USE ONLY **********

OHIO DEPARTMENT OF PUBLIC SAFETY
EDUCATION · SERVICE · PROTECTION

OHIO HOMELAND SECURITY
http://www.homelandsecurity.ohio.gov

STATE ISSUED LICENSE

In accordance with section 2909.32 (A)(2)(a) of the Ohio Revised Code

DECLARATION REGARDING MATERIAL ASSISTANCE/NON-ASSISTANCE TO A TERRORIST ORGANIZATION

This form serves as a declaration by an applicant for a license of material assistance/non assistance to an organization on the U.S. Department of State Terrorist Exclusion List ("TEL"). Please see the Ohio Homeland Security Division Web site for a copy of the TEL.

Any answer of "yes" to any question, or the failure to answer "no" to any question on this declaration shall serve as a disclosure that material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List has been provided. Failure to disclose the provision of material assistance to such an organization or knowingly making false statements regarding material assistance to such an organization is a felony of the fifth degree.

For the purposes of this declaration, "material support or resources" means currency, payment instruments, other financial securities, funds, transfer of funds, financial services, communications, lodging, training, safe houses, false documentation or identification, communications equipment, facilities, weapons, lethal substances, explosives, personnel, transportation, and other physical assets, except medicine or religious materials.

LAST NAME	FIRST NAME		MI
HOME ADDRESS			
CITY	STATE	ZIP	COUNTY
HOME PHONE		WORK PHONE	

COMPLETE THIS SECTION ONLY IF YOU ARE A COMPANY, BUSINESS OR ORGANIZATION

BUSINESS/ORGANIZATION NAME		PHONE	
FIRSTENERGY GENERATION LLC (WH SAMMIS POWER STATION)		(740) 537-1546	
BUSINESS ADDRESS			
STATE ROUTE 7 (PO BOX 176)			
CITY	STATE	ZIP	COUNTY
STRATTON	OH	43961	JEFFERSON
BUSINESS/ORGANIZATION REPRESENTATIVE NAME		TITLE	
TODD KOGET		ENGINEER IV	

DECLARATION

In accordance with section 2909.32 (A)(2)(b) of the Ohio Revised Code

For each question, indicate either "yes" or "no" in the space provided. Responses must be truthful to the best of your knowledge.

1. Are you a member of an organization on the U.S. Department of State Terrorist Exclusion List? ☐ Yes ☒ No
2. Have you used any position of prominence you have with any country to persuade others to support an organization on the U.S. Department of State Terrorist Exclusion List? ☐ Yes ☒ No
3. Have you knowingly solicited funds or other things of value for an organization on the U.S. Department of State Terrorist Exclusion List? ☐ Yes ☒ No
4. Have you solicited any individual for membership on an organization on the U.S. Department of State Terrorist Exclusion List? ☐ Yes ☒ No
5. Have you committed an act that you know, or reasonably should have known, affords "material support or resources" to an organization on the U.S. Department of State Terrorist Exclusion List? ☐ Yes ☒ No
6. Have you hired or compensated a person you know to be a member of an organization on the U.S. Department of State Terrorist Exclusion List, or a person you knew to be engaged in planning, assisting, or carrying out an act of terrorism? ☐ Yes ☒ No

If an applicant's license is denied due to a positive indication on this form, the applicant may request the Ohio Department of Public Safety to review the denial. Please see the Ohio Homeland Security Web site for information on how to file a request for review.

CERTIFICATION

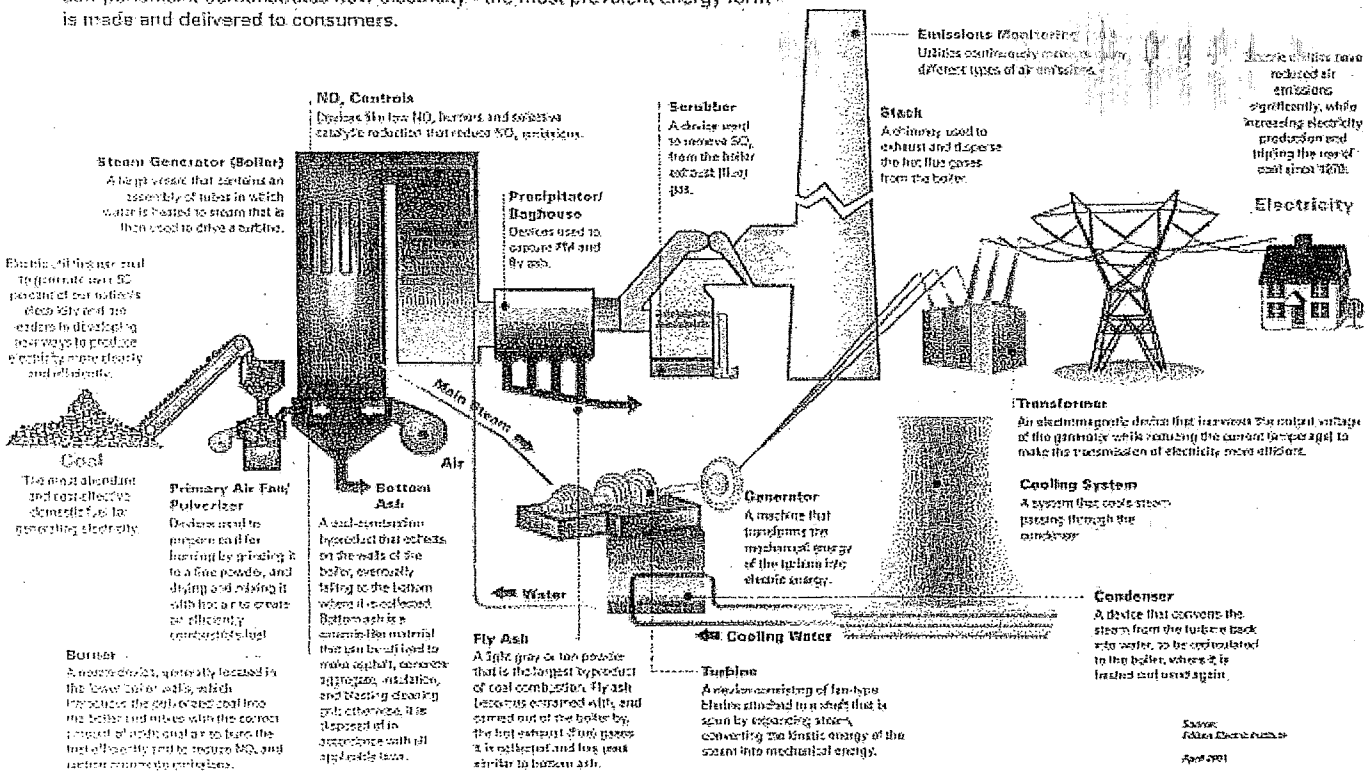
I hereby certify that the answers I have made to all of the questions on this declaration are true to the best of my knowledge. I understand that if this declaration is not completed in its entirety, it will not be processed and I will be automatically disqualified. I understand that I am responsible for the correctness of this declaration. I understand that failure to disclose the provision of material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List, or knowingly making false statements regarding material assistance to such an organization is a felony of the fifth degree. I understand that any answer of "yes" to any question, or the failure to answer "no" to any question on this declaration shall serve as a disclosure that material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List has been provided by myself or my organization. If I am signing this on behalf of a company, business or organization, I hereby acknowledge that I have the authority to make this certification on behalf of the company, business or organization referenced above.

APPLICANT SIGNATURE	DATE
X Todd A. Koget	09/09/13

ATTACHMENT B

Electric Coal-Based Power Generation

This simplified diagram illustrates the operation of a "typical" large coal-based electric power plant and explains the different functions of the plant's major components. It demonstrates how electricity - the most prevalent energy form - is made and delivered to consumers.



ATTACHMENT C

Report Number: 12-205-2107v5
Account: 19400
Page: 1 of 2

Midwest Laboratories, Inc.®

13611 B Street • Omaha, Nebraska 68144-3693 • (402) 334-7770 • FAX (402) 334-9121 • www.midwestlabs.com

Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/08/12

This report supersedes all prior reports for the following reason(s): Sulfur reanalysis.

BENEFICIAL REUSE MANAGEMENT
ANDREA ROSS
212 WEST SUPERIOR ST STE 402
CHICAGO IL 60654

W.H. SAMMIS PLANT

Lab number: 2006826 Sample ID: SA-1

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Acidity	n.d.	n.d.	mg/kg CaCO3	25	EPA 305.1(MO	dmg/07-11	cmw/07-23
Alkalinity	8361	9202	mg/kg	1250	EPA 310.1(MO	jdb/07-05	cmw/07-23
Aluminum (total)	137	150	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Antimony (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Beryllium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Biochemical oxygen demand	n.d.		mg/L	20	SM 5210B	elt/07-05	cmw/07-23
Boron (total)	24	27	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Chemical oxygen demand	3633		mg/L	125	ASTM D 1252-	dmg/07-06	cmw/07-23
Chloride	797	877	mg/kg	100	SM 4500 - CL	gjj/07-06	cmw/07-23
Cobalt (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-09	kkh/07-09
Conductance	2630		uS/cm	2	SM 2510 B	jdb/07-06	cmw/07-23
Cyanide (Total)	n.d.	n.d.	mg/kg	0.2	EPA 9010 B	dmg/07-03	cmw/07-23
Hexane extractable materials	125	138	mg/Kg	100	EPA 1664A/90	sdj/07-12	cmw/07-23
Hexavalent chromium	n.d.	n.d.	mg/kg	1	EPA 3060A/71	cmw/06-19	cmw/07-23
Percent volatile solids		0.68	%	0.01	SM 2540 G	jsa/07-09	cmw/07-23
Phenols	n.d.	n.d.	mg/kg	2.5	EPA 9065A (M	dmg/07-11	cmw/07-23
Sulfate	44,453	544,192	mg/kg	10,000	EPA 9056	jdb/07-06	cmw/07-23
Sulfite	n.d.	n.d.	mg/L	200	SM 4500 SO3	lkm/07-09	cmw/07-23
Thallium (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Total Organic Carbon	0.81	0.89	%	0.01	C ANALYZER	jjb/07-11	mjs/07-11
Vanadium (total)	2	2	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Free Moisture	9.14		%	0.01	ASTM C471-91	acm/06-27	mjs/06-27
Total Kjeldahl nitrogen (TKN)	63.1	69.4	mg/kg	10	PAI - DK 01	lkd/06-28	cmw/06-29
Phosphorus (total)	46.6	51.2	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Potassium (total)	84.7	93.2	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Sulfur (total)	155,604	171,257	mg/kg	25	EPA 6010	rrd/07-02	kkh/07-09
Calcium (total)	207,421	228,286	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Magnesium (total)	1202	1323	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Sodium (total)	50.6	55.7	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Iron (total)	507	558	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Manganese (total)	10.4	11.4	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Copper (total)	1.7	1.9	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Zinc (total)	6.0	6.6	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Ammoniacal Nitrogen	n.d.	n.d.	mg/kg	10	SM 4500-NH3	lkd/06-28	cmw/06-29

Report Number: 12-205-2107v5
Account: 19400
Page: 2 of 2

Midwest Laboratories, Inc.®

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Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/08/12

This report supersedes all prior reports for the following reason(s): Sulfur reanalysis.

Lab number: 2006826 Sample ID: SA-1

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Nitrate/Nitrite Nitrogen	4.8	5.2	mg/kg	1.4954	EPA 353.2	jjd/06-27	cmw/06-29
Arsenic (total)	0.52	0.57	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Barium (total)	1.68	1.85	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Cadmium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Chromium (total)	1.6	1.8	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Lead (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Mercury (total)	0.42	0.46	mg/kg	0.05	EPA 7471	cjm/07-02	kkh/07-09
Molybdenum (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Nickel (total)	1.2	1.3	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Selenium (total)	2.78	3.06	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Silver (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Percent solids	90.86		%	0.01	SM 2540 G	raf/06-26	cmw/06-29
pH	7.7		S.U.		EPA 9045	jdb/06-26	cmw/06-29
Organic nitrogen	63.0	69.3	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Phosphate P2O5	107	117	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Potash K2O	102	112	mg/Kg		CALC	cmw/06-22	aut/06-22

COMMENTS

Sulfur calculated as CaSO4 2(H2O) =83.55% (as received basis).
Percent Solids calculated from Free Moisture value.

For questions contact

Rob Ferris
Client Service Representative
rob@midwestlabs.com (402)829-9871

Report Number: 12-205-2108v3
Account: 19400
Page: 1 of 2

Midwest Laboratories, Inc.®

13611 B Street • Omaha, Nebraska 68144-3693 • (402) 334-7770 • FAX (402) 334-9121 • www.midwestlabs.com

Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/08/12

This report supersedes all prior reports for the following reason(s): Sulfur reanalysis.

BENEFICIAL REUSE MANAGEMENT
ANDREA ROSS
212 WEST SUPERIOR ST STE 402
CHICAGO IL 60654

W.H. SAMMIS PLANT

Lab number: 2006827 Sample ID: SA-2

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Acidity	n.d.	n.d.	mg/kg CaCO3	25	EPA 305.1(MO	dmg/07-11	cmw/07-23
Alkalinity	9330	10,244	mg/kg	1250	EPA 310.1(MO	jdb/07-05	cmw/07-23
Aluminum (total)	150	165	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Antimony (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Beryllium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Biochemical oxygen demand	n.d.		mg/L	20	SM 5210B	elt/07-05	cmw/07-23
Boron (total)	23	25	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Chemical oxygen demand	3551		mg/L	125	ASTM D 1252-	dmg/07-06	cmw/07-23
Chloride	751	825	mg/kg	100	SM 4500 - CL	gjj/07-06	cmw/07-23
Cobalt (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-09	kkh/07-09
Conductance	2550		uS/cm	2	SM 2510 B	jdb/07-06	cmw/07-23
Cyanide (Total)	n.d.	n.d.	mg/kg	0.2	EPA 9010 B	dmg/07-03	cmw/07-23
Hexane extractable materials	315	346	mg/Kg	100	EPA 1664A/90	sdj/07-12	cmw/07-23
Hexavalent chromium	n.d.	n.d.	mg/kg	1	EPA 3060A/71	cmw/06-19	cmw/07-23
Percent volatile solids		1.52	%	0.01	SM 2540 G	jsa/07-09	cmw/07-23
Phenols	n.d.	n.d.	mg/kg	2.5	EPA 9065A (M	dmg/07-11	cmw/07-23
Sulfate	504,578	553,994	mg/kg	10,000	EPA 9056	jdb/07-06	cmw/07-23
Sulfite	n.d.	n.d.	mg/L	200	SM 4500 SO3	lkm/07-09	cmw/07-23
Thallium (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Total Organic Carbon	0.85	0.93	%	0.01	C ANALYZER	jjb/07-11	mjs/07-11
Vanadium (total)	2	2	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Free Moisture	8.92		%	0.01	ASTM C471-91	acm/06-27	mjs/06-27
Total Kjeldahl nitrogen (TKN)	52.9	58.1	mg/kg	10	PAI - DK 01	lkd/06-28	cmw/06-29
Phosphorus (total)	45.1	49.6	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Potassium (total)	88.2	96.9	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Sulfur (total)	155,201	170,401	mg/kg	25	EPA 6010	rrd/07-02	kkh/07-09
Calcium (total)	208,229	228,622	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Magnesium (total)	1164	1278	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Sodium (total)	46.7	51.3	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Iron (total)	528	580	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Manganese (total)	9.9	10.9	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Copper (total)	1.3	1.5	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Zinc (total)	27.6	30.3	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Ammoniacal Nitrogen	n.d.	n.d.	mg/kg	10	SM 4500-NH3	lkd/06-28	cmw/06-29

Report Number:
12-205-2108v3
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19400
Page: 2 of 2

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Date Reported:
02/15/13
Date Received:
06/22/12
Date Sampled:
06/08/12

This report supersedes all prior reports for the following reason(s): Sulfur reanalysis.

Lab number: 2006827 Sample ID: SA-2

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Nitrate/Nitrite Nitrogen	4.1	4.5	mg/kg	1.502	EPA 353.2	jjd/06-27	cmw/06-29
Arsenic (total)	0.54	0.59	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Barium (total)	1.72	1.89	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Cadmium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Chromium (total)	1.6	1.8	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Lead (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Mercury (total)	0.51	0.56	mg/kg	0.05	EPA 7471	cjm/07-02	kkh/07-09
Molybdenum (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Nickel (total)	1.6	1.7	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Selenium (total)	2.65	2.91	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Silver (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Percent solids	91.08		%	0.01	SM 2540 G	raf/06-26	cmw/06-29
pH	7.7		S.U.		EPA 9045	jdb/06-26	cmw/06-29
Organic nitrogen	53.0	58.2	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Phosphate P2O5	103	113	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Potash K2O	106	117	mg/Kg		CALC	cmw/06-22	aut/06-22

COMMENTS

Sulfur calculated as CaSO4 2(H2O) =83.34% (as received basis).
Percent Solids calculated from Free Moisture value.

For questions contact

Rob Ferris
Client Service Representative
rob@midwestlabs.com (402)829-9871

Report Number: 12-205-2109v3
Account: 19400
Page: 1 of 2

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Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/11/12

This report supersedes all prior reports for the following reason(s): Calcium and sulfur reanalysis.

BENEFICIAL REUSE MANAGEMENT
ANDREA ROSS
212 WEST SUPERIOR ST STE 402
CHICAGO IL 60654

W.H. SAMMIS PLANT

Lab number: 2006828 Sample ID: SA-3

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Acidity	n.d.	n.d.	mg/kg CaCO3	25	EPA 305.1(MO	dmg/07-11	cmw/07-23
Alkalinity	n.d.	n.d.	mg/kg	1250	EPA 310.1(MO	jdb/07-05	cmw/07-23
Aluminum (total)	105	117	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Antimony (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Beryllium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Biochemical oxygen demand	n.d.		mg/L	20	SM 5210B	elt/07-05	cmw/07-23
Boron (total)	25	28	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Chemical oxygen demand	2774		mg/L	125	ASTM D 1252-	dmg/07-06	cmw/07-23
Chloride	1014	1132	mg/kg	100	SM 4500 - CL	gjj/07-06	cmw/07-23
Cobalt (total)	1.96	2.19	mg/kg	1	EPA 6010	rrd/07-09	kkh/07-09
Conductance	3060		uS/cm	2	SM 2510 B	jdb/07-06	cmw/07-23
Cyanide (Total)	n.d.	n.d.	mg/kg	0.2	EPA 9010 B	dmg/07-09	cmw/07-23
Hexane extractable materials	n.d.	n.d.	mg/Kg	100	EPA 1664A/90	sdj/07-12	cmw/07-23
Hexavalent chromium	n.d.	n.d.	mg/kg	1	EPA 3060A/71	cmw/06-19	cmw/07-23
Percent volatile solids		1.75	%	0.01	SM 2540 G	jsa/07-09	cmw/07-23
Phenols	n.d.	n.d.	mg/kg	2.5	EPA 9065A (M	dmg/07-11	cmw/07-23
Sulfate	499,628	557,683	mg/kg	10,000	EPA 9056	jdb/07-06	cmw/07-23
Sulfite	n.d.	n.d.	mg/L	200	SM 4500 SO3	lkm/07-09	cmw/07-23
Thallium (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Total Organic Carbon	0.77	0.86	%	0.01	C ANALYZER	jjb/07-11	mjs/07-11
Vanadium (total)	1	1	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Free Moisture	10.41		%	0.01	ASTM C471-91	acm/06-27	mjs/06-27
Total Kjeldahl nitrogen (TKN)	44.8	50.0	mg/kg	10	PAI - DK 01	lkd/06-28	cmw/06-29
Phosphorus (total)	37.1	41.4	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Potassium (total)	65.4	73.0	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Sulfur (total)	157,292	175,569	mg/kg	25	EPA 6010	rrd/07-02	kkh/07-09
Calcium (total)	204,449	228,205	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Magnesium (total)	819	914	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Sodium (total)	48.2	53.8	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Iron (total)	381	426	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Manganese (total)	7.6	8.5	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Copper (total)	1.1	1.2	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Zinc (total)	4.9	5.5	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Ammoniacal Nitrogen	n.d.	n.d.	mg/kg	10	SM 4500-NH3	lkd/06-28	cmw/06-29

Report Number:
12-205-2109v3
Account:
19400
Page: 2 of 2

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Date Reported:
02/15/13
Date Received:
06/22/12
Date Sampled:
06/11/12

This report supersedes all prior reports for the following reason(s): Calcium and sulfur reanalysis.

Lab number: 2006828 Sample ID: SA-3

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Nitrate/Nitrite Nitrogen	5.8	6.5	mg/kg	1.4704	EPA 353.2	jjd/06-27	cmw/06-29
Arsenic (total)	n.d.	n.d.	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Barium (total)	1.25	1.39	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Cadmium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Chromium (total)	1.1	1.2	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Lead (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Mercury (total)	0.39	0.44	mg/kg	0.05	EPA 7471	cjm/07-02	kkh/07-09
Molybdenum (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Nickel (total)	1.0	1.2	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Selenium (total)	2.84	3.17	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Silver (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Percent solids	89.59		%	0.01	SM 2540 G	raf/06-26	cmw/06-29
pH	7.7		S.U.		EPA 9045	jdb/06-26	cmw/06-29
Organic nitrogen	45.0	50.2	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Phosphate P2O5	85	95	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Potash K2O	79	88	mg/Kg		CALC	cmw/06-22	aut/06-22

COMMENTS

Sulfur calculated as CaSO4 2(H2O) =84.42% (as received basis).
Percent Solids calculated from Free Moisture value.

For questions contact

Rob Ferris
Client Service Representative
rob@midwestlabs.com (402)829-9871

Report Number: 12-205-2110v2
Account: 19400
Page: 1 of 2

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Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/11/12

This report supersedes all prior reports for the following reason(s): Reanalysis.

BENEFICIAL REUSE MANAGEMENT
ANDREA ROSS
212 WEST SUPERIOR ST STE 402
CHICAGO IL 60654

W.H. SAMMIS PLANT

Lab number: 2006829 Sample ID: SA-4

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Acidity	n.d.	n.d.	mg/kg CaCO3	25	EPA 305.1(MO	dmg/07-11	cmw/07-23
Alkalinity	n.d.	n.d.	mg/kg	1250	EPA 310.1(MO	jdb/07-05	cmw/07-23
Aluminum (total)	91	101	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Antimony (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Beryllium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Biochemical oxygen demand	n.d.		mg/L	20	SM 5210B	elt/07-05	cmw/07-23
Boron (total)	23	25	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Chemical oxygen demand	2578		mg/L	125	ASTM D 1252-	dmg/07-06	cmw/07-23
Chloride	1107	1236	mg/kg	200	SM 4500 - CL	gjj/07-06	cmw/07-23
Cobalt (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-09	kkh/07-09
Conductance	3040		uS/cm	2	SM 2510 B	jdb/07-06	cmw/07-23
Cyanide (Total)	n.d.	n.d.	mg/kg	0.2	EPA 9010 B	dmg/07-09	cmw/07-23
Hexane extractable materials	n.d.	n.d.	mg/Kg	100	EPA 1664A/90	sdj/07-12	cmw/07-23
Hexavalent chromium	n.d.	n.d.	mg/kg	1	EPA 3060A/71	cmw/06-19	cmw/07-23
Percent volatile solids		1.91	%	0.01	SM 2540 G	jsa/07-09	cmw/07-23
Phenols	n.d.	n.d.	mg/kg	2.5	EPA 9065A (M	dmg/07-11	cmw/07-23
Sulfate	492,910	550,430	mg/kg	10,000	EPA 9056	jdb/07-06	cmw/07-23
Sulfite	n.d.	n.d.	mg/L	200	SM 4500 SO3	lkm/07-09	cmw/07-23
Thallium (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Total Organic Carbon	0.76	0.85	%	0.01	C ANALYZER	jjb/07-11	mjs/07-11
Vanadium (total)	1	1	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Free Moisture	10.45		%	0.01	ASTM C471-91	acm/06-27	mjs/06-27
Total Kjeldahl nitrogen (TKN)	36.0	40.2	mg/kg	10	PAI - DK 01	lkd/06-28	cmw/06-29
Phosphorus (total)	27.7	30.9	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Potassium (total)	49.8	55.6	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Sulfur (total)	154,707	172,760	mg/kg	25	EPA 6010	rrd/07-02	kkh/07-09
Calcium (total)	201,560	225,081	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Magnesium (total)	867	968	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Sodium (total)	41.7	46.5	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Iron (total)	330	369	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Manganese (total)	6.8	7.6	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Copper (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Zinc (total)	4.1	4.6	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Ammoniacal Nitrogen	n.d.	n.d.	mg/kg	10	SM 4500-NH3	lkd/06-28	cmw/06-29

Report Number: 12-205-2110v2
Account: 19400
Page: 2 of 2

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Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/11/12

This report supersedes all prior reports for the following reason(s): Reanalysis.

Lab number: 2006829 Sample ID: SA-4

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Nitrate/Nitrite Nitrogen	5.1	5.7	mg/kg	1.4652	EPA 353.2	jjd/06-27	cmw/06-29
Arsenic (total)	0.54	0.61	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Barium (total)	1.06	1.19	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Cadmium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Chromium (total)	1.1	1.2	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Lead (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Mercury (total)	0.38	0.42	mg/kg	0.05	EPA 7471	cjm/07-02	kkh/07-09
Molybdenum (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Nickel (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Selenium (total)	2.86	3.19	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Silver (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Percent solids	89.55		%	0.01	SM 2540 G	raf/06-26	cmw/06-29
pH	7.7		S.U.		EPA 9045	jdb/06-26	cmw/06-29
Organic nitrogen	36.0	40.2	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Phosphate P2O5	63	71	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Potash K2O	60	67	mg/Kg		CALC	cmw/06-22	aut/06-22

COMMENTS

Sulfur calculated as CaSO4 2(H2O) = 83.1% (as received basis).
Percent Solids calculated from Free Moisture value.

For questions contact

Rob Ferris
Client Service Representative
rob@midwestlabs.com (402)829-9871

Report Number: 12-205-2111v2
Account: 19400
Page: 1 of 2

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Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/11/12

This report supersedes all prior reports for the following reason(s): Calcium and sulfur reanalysis.

BENEFICIAL REUSE MANAGEMENT
ANDREA ROSS
212 WEST SUPERIOR ST STE 402
CHICAGO IL 60654

W.H. SAMMIS PLANT

Lab number: 2006830 Sample ID: SA-5

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Acidity	n.d.	n.d.	mg/Kg CaCO3	25	EPA 305.1(MO	dmg/07-11	cmw/07-23
Alkalinity	n.d.	n.d.	mg/L	1250	EPA 310.1(MO	jdb/07-05	cmw/07-23
Aluminum (total)	127	141	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Antimony (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Beryllium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Biochemical oxygen demand	n.d.		mg/L	20	SM 5210B	elt/07-05	cmw/07-23
Boron (total)	34	37	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Chemical oxygen demand	2840		mg/L	125	ASTM D 1252-	dmg/07-06	cmw/07-23
Chloride	1043	1152	mg/kg	200	SM 4500 - CL	gjj/07-06	cmw/07-23
Cobalt (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-09	kkh/07-09
Conductance	3330		uS/cm	2	SM 2510 B	jdb/07-06	cmw/07-23
Cyanide (Total)	n.d.	n.d.	mg/kg	0.2	EPA 9010 B	dmg/07-09	cmw/07-23
Hexane extractable materials	100	110	mg/Kg	100	EPA 1664A/90	sdj/07-12	cmw/07-23
Hexavalent chromium	n.d.	n.d.	mg/kg	1	EPA 3060A/71	cmw/06-19	cmw/07-23
Percent volatile solids		1.54	%	0.01	SM 2540 G	jsa/07-09	cmw/07-23
Phenols	n.d.	n.d.	mg/kg	2.5	EPA 9065A (M	dmg/07-11	cmw/07-23
Sulfate	510,115	563,476	mg/kg	10,000	EPA 9056	jdb/07-06	cmw/07-23
Sulfite	n.d.	n.d.	mg/L	200	SM 4500 SO3	lkm/07-09	cmw/07-23
Thallium (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Total Organic Carbon	0.74	0.82	%	0.01	C ANALYZER	jjb/07-11	mjs/07-11
Vanadium (total)	2	2	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Free Moisture	9.47		%	0.01	ASTM C471-91	acm/06-27	mjs/06-27
Total Kjeldahl nitrogen (TKN)	40.8	45.1	mg/kg	10	PAI - DK 01	lkd/06-28	cmw/06-29
Phosphorus (total)	39.7	43.8	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Potassium (total)	68.5	75.7	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Sulfur (total)	164,362	181,555	mg/kg	25	EPA 6010	rrd/07-02	kkh/07-09
Calcium (total)	213,798	236,163	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Magnesium (total)	828	915	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Sodium (total)	61.8	68.2	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Iron (total)	428	473	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Manganese (total)	9.1	10.1	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Copper (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Zinc (total)	4.6	5.1	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Ammoniacal Nitrogen	n.d.	n.d.	mg/kg	10	SM 4500-NH3	lkd/06-28	cmw/06-29

Report Number: 12-205-2111v2
Account: 19400
Page: 2 of 2

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Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/11/12

This report supersedes all prior reports for the following reason(s): Calcium and sulfur reanalysis.

Lab number: 2006830 Sample ID: SA-5

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Nitrate/Nitrite Nitrogen	6.0	6.6	mg/kg	1.502	EPA 353.2	jjd/06-27	cmw/06-29
Arsenic (total)	0.64	0.71	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Barium (total)	1.54	1.70	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Cadmium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Chromium (total)	1.4	1.6	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Lead (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Mercury (total)	0.46	0.50	mg/kg	0.05	EPA 7471	cjm/07-02	kkh/07-09
Molybdenum (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Nickel (total)	1.5	1.6	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Selenium (total)	3.34	3.69	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Silver (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Percent solids	90.53		%	0.01	SM 2540 G	raf/06-26	cmw/06-29
pH	7.7		S.U.		EPA 9045	jdb/06-26	cmw/06-29
Organic nitrogen	41.0	45.3	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Phosphate P2O5	91	100	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Potash K2O	82	91	mg/Kg		CALC	cmw/06-22	aut/06-22

COMMENTS

Sulfur calculated as CaSO4 2(H2O) =88.3% (as received basis).
Percent Solids calculated from Free Moisture value.

For questions contact

Rob Ferris
Client Service Representative
rob@midwestlabs.com (402)829-9871

Report Number: 12-205-2112v2
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Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/13/12

This report supersedes all prior reports for the following reason(s): Reanalysis.

BENEFICIAL REUSE MANAGEMENT
ANDREA ROSS
212 WEST SUPERIOR ST STE 402
CHICAGO IL 60654

W.H. SAMMIS PLANT

Lab number: 2006831 Sample ID: SA-6

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Acidity	n.d.	n.d.	mg/kg CaCO3	25	EPA 305.1(MO	dmg/07-1	cmw/07-23
Alkalinity	n.d.	n.d.	mg/kg	1250	EPA 310.1(MO	jdb/07-05	cmw/07-23
Aluminum (total)	123	135	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Antimony (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Beryllium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Biochemical oxygen demand	n.d.		mg/L	20	SM 5210B	elt/07-05	cmw/07-23
Boron (total)	31	35	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Chemical oxygen demand	2815		mg/L	125	ASTM D 1252-	dmg/07-06	cmw/07-23
Chloride	997	1095	mg/kg	200	SM 4500 - CL	gjj/07-06	cmw/07-23
Cobalt (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-09	kkh/07-09
Conductance	3180		uS/cm	2	SM 2510 B	jdb/07-06	cmw/07-23
Cyanide (Total)	n.d.	n.d.	mg/kg	0.2	EPA 9010 B	dmg/07-09	cmw/07-23
Hexane extractable materials	n.d.	n.d.	mg/Kg	100	EPA 1664A/90	sdj/07-12	cmw/07-23
Hexavalent chromium	n.d.	n.d.	mg/kg	1	EPA 3060A/71	cmw/06-19	cmw/07-23
Percent volatile solids		1.75	%	0.01	SM 2540 G	jsa/07-09	cmw/07-23
Phenols	n.d.	n.d.	mg/kg	2.5	EPA 9065A (M	dmg/07-11	cmw/07-23
Sulfate	506,478	556,203	mg/kg	10,000	EPA 9056	jdb/07-06	cmw/07-23
Sulfite	n.d.	n.d.	mg/L	200	SM 4500 SO3	lkm/07-09	cmw/07-23
Thallium (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Total Organic Carbon	0.81	0.89	%	0.01	C ANALYZER	jjb/07-11	mjs/07-11
Vanadium (total)	1	2	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Free Moisture	8.94		%	0.01	ASTM C471-91	acm/06-27	mjs/06-27
Total Kjeldahl nitrogen (TKN)	47.0	51.6	mg/kg	10	PAI - DK 01	lkd/06-28	cmw/06-29
Phosphorus (total)	37.2	40.9	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Potassium (total)	66.6	73.1	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Sulfur (total)	158,312	173,855	mg/kg	25	EPA 6010	rrd/07-02	kkh/07-09
Calcium (total)	206,850	227,158	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Magnesium (total)	787	864	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Sodium (total)	53.4	58.7	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Iron (total)	439	482	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Manganese (total)	8.9	9.8	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Copper (total)	1.1	1.2	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Zinc (total)	5.0	5.5	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Ammoniacal Nitrogen	n.d.	n.d.	mg/kg	10	SM 4500-NH3	lkd/06-28	cmw/06-29

Report Number:
12-205-2112v2
Account:
19400
Page: 2 of 2

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Date Reported:
02/15/13
Date Received:
06/22/12
Date Sampled:
06/13/12

This report supersedes all prior reports for the following reason(s): Reanalysis.

Lab number: 2006831 Sample ID: SA-6

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Nitrate/Nitrite Nitrogen	4.6	5.1	mg/kg	1.5008	EPA 353.2	jjd/06-27	cmw/06-29
Arsenic (total)	0.57	0.63	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Barium (total)	1.55	1.70	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Cadmium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Chromium (total)	1.5	1.7	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Lead (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Mercury (total)	0.46	0.51	mg/kg	0.05	EPA 7471	cjm/07-02	kkh/07-09
Molybdenum (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Nickel (total)	1.0	1.2	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Selenium (total)	3.41	3.74	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Silver (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Percent solids	91.06		%	0.01	SM 2540 G	raf/06-26	cmw/06-29
pH	7.7		S.U.		EPA 9045	jdb/06-26	cmw/06-29
Organic nitrogen	47.0	51.6	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Phosphate P2O5	85	94	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Potash K2O	80	88	mg/Kg		CALC	cmw/06-22	aut/06-22

COMMENTS

Sulfur calculated as CaSO4 2(H2O) =85.7% (as received basis).
Percent Solids calculated from Free Moisture value.

For questions contact

Rob Ferris
Client Service Representative
rob@midwestlabs.com (402)829-9871

Report Number:
12-205-2113v2
Account:
19400
Page: 1 of 2

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Date Reported:
02/15/13
Date Received:
06/22/12
Date Sampled:
06/13/12

This report supersedes all prior reports for the following reason(s): Reanalysis.

BENEFICIAL REUSE MANAGEMENT
ANDREA ROSS
212 WEST SUPERIOR ST STE 402
CHICAGO IL 60654

W.H. SAMMIS PLANT

Lab number: 2006832 Sample ID: SA-7

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Acidity	n.d.	n.d.	mg/kg CaCO3	25	EPA 305.1(MO	dmg/07-11	cmw/07-23
Alkalinity	n.d.	n.d.	mg/kg	1250	EPA 310.1(MO	jdb/07-05	cmw/07-23
Aluminum (total)	119	132	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Antimony (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Beryllium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Biochemical oxygen demand	n.d.		mg/L	20	SM 5210B	elt/07-05	cmw/07-23
Boron (total)	32	36	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Chemical oxygen demand	2848		mg/L	125	ASTM D 1252-	dmg/07-06	cmw/07-23
Chloride	989	1092	mg/kg	200	SM 4500 - CL	gjj/07-06	cmw/07-23
Cobalt (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-09	kkh/07-09
Conductance	3250		uS/cm	2	SM 2510 B	jdb/07-06	cmw/07-23
Cyanide (Total)	n.d.	n.d.	mg/kg	0.2	EPA 9010 B	dmg/07-09	cmw/07-23
Hexane extractable materials	n.d.	n.d.	mg/Kg	100	EPA 1664A/90	sdj/07-12	cmw/07-23
Hexavalent chromium	n.d.	n.d.	mg/kg	1	EPA 3060A/71	cmw/06-19	cmw/07-23
Percent volatile solids		2.52	%	0.01	SM 2540 G	jsa/07-09	cmw/07-23
Phenols	n.d.	n.d.	mg/kg	2.5	EPA 9065A (M	dmg/07-11	cmw/07-23
Sulfate	489,535	540,326	mg/kg	10,000	EPA 9056	jdb/07-06	cmw/07-23
Sulfite	n.d.	n.d.	mg/L	200	SM 4500 SO3	lkm/07-09	cmw/07-23
Thallium (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-09	kkh/07-09
Total Organic Carbon	0.78	0.86	%	0.01	C ANALYZER	jjb/07-11	mjs/07-11
Vanadium (total)	1	2	mg/kg	0.5	EPA 6010	rrd/07-09	kkh/07-09
Free Moisture	9.40		%	0.01	ASTM C471-91	acm/06-27	mjs/06-27
Total Kjeldahl nitrogen (TKN)	43.9	48.5	mg/kg	10	PAI - DK 01	lkd/06-28	cmw/06-29
Phosphorus (total)	37.4	41.3	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Potassium (total)	63.2	69.8	mg/kg	10	EPA 6010	rrd/07-02	kkh/07-09
Sulfur (total)	160,794	177,477	mg/kg	25	EPA 6010	rrd/07-02	kkh/07-09
Calcium (total)	210,977	232,866	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Magnesium (total)	840	927	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Sodium (total)	54.1	59.8	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Iron (total)	427	472	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Manganese (total)	9.1	10.1	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Copper (total)	1.1	1.2	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Zinc (total)	5.0	5.5	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Ammoniacal Nitrogen	n.d.	n.d.	mg/kg	10	SM 4500-NH3	lkd/06-28	cmw/06-29

Report Number: 12-205-2113v2
Account: 19400
Page: 2 of 2

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Date Reported: 02/15/13
Date Received: 06/22/12
Date Sampled: 06/13/12

This report supersedes all prior reports for the following reason(s): Reanalysis.

Lab number: 2006832 Sample ID: SA-7

Analysis Performed	As Received	Dry Weight Basis	Units	Detection Limit	Method	Analyst Date	Verifier Date
Nitrate/Nitrite Nitrogen	4.7	5.2	mg/kg	1.5004	EPA 353.2	jjd/06-27	cmw/06-29
Arsenic (total)	0.51	0.57	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Barium (total)	1.54	1.69	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Cadmium (total)	n.d.	n.d.	mg/kg	0.5	EPA 6010	rrd/07-02	kkh/07-09
Chromium (total)	1.6	1.7	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Lead (total)	n.d.	n.d.	mg/kg	5	EPA 6010	rrd/07-02	kkh/07-09
Mercury (total)	0.46	0.51	mg/kg	0.05	EPA 7471	cjm/07-02	kkh/07-09
Molybdenum (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Nickel (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Selenium (total)	3.15	3.48	mg/kg	0.5	EPA 6020	akj/07-02	kkh/07-09
Silver (total)	n.d.	n.d.	mg/kg	1	EPA 6010	rrd/07-02	kkh/07-09
Percent solids	90.60		%	0.01	SM 2540 G	raf/06-26	cmw/06-29
pH	7.7		S.U.		EPA 9045	jdb/06-26	cmw/06-29
Organic nitrogen	44.0	48.6	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Phosphate P2O5	86	95	mg/Kg		CALC	cmw/06-22	aut/06-22
Calculated Potash K2O	76	84	mg/Kg		CALC	cmw/06-22	aut/06-22

COMMENTS

Sulfur calculated as CaSO4 2(H2O) =86.34% (as received basis).
Percent Solids calculated from Free Moisture value.

For questions contact

Rob Ferris
Client Service Representative
rob@midwestlabs.com (402)829-9871

ATTACHMENT D

Sammis Synthetic Gypsum Sampling Plan

Scope and Application: A simple random sampling method is suitable for the sampling of gypsum generated at the Sammis Power Station.

Summary of Method: Gypsum will be sampled manually from the gypsum production belts until at least six representative grab samples are obtained. There is only one process train that produces gypsum. Simple random sampling should provide sufficient accuracy and precision for the grab samples required for the certification.

In order to comply with the guidelines set for the beneficial use program, the analytical results will be submitted to the Ohio EPA once a year. Grab samples will be composited into one (composite) sample by laboratory personnel.

Apparatus and Materials: Shovel, 16 oz. plastic-coated sample jar, sample labels, and chain of custody forms.

Procedure for Sample Collection, Preservation, and Handling: The gypsum is sampled manually from the gypsum production belts. Once the sample has been collected, it is placed in a pre-labeled sampling jar and shipped directly to the laboratory. No preservation is necessary for the solid samples.

Sampling Performance and Reference: Past experience has shown a high consistency in the physical and chemical properties of the gypsum byproduct. Field observations and conversations with plant personnel also suggest good performance in the sampling and handling plan.

Sample Analysis: Sammis' gypsum is intended for pre-approved uses in accordance with rule 3745-525-807 of the Ohio Administrative Code and will be analyzed for the pollutants listed in Table 3 contained in rule 3745-525-806 of the Ohio Administrative Code.