Mosaic

October 21, 2009

Mr. Syed Arif, P.E.
Air Resources Management
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Air Construction Permit Application
Multifos C Kiln – Add Methods of Operation
Mosaic Fertilizer, LLC - New Wales Plant
Facility ID No. 1050059

Dear Mr. Arif:

Enclosed are four copies of an air construction permit application to incorporate methods of operation for the existing Multifos C Kiln located at Mosaic Fertilizer, LLC's New Wales Plant in Polk County, Florida.

Waivers of the 30-day and 90-day application review periods are attached, per previous discussions on this matter.

If you have any questions, please do not hesitate to contact Rama Iyer at 863-428-6526.

Sincerely,

T. W. Fuchs
Plant Manager
New Wales

enclosures

C: Cindy Zhang-Torres, FDEP Tampa
Dean Ahrens, Mosaic
Rama Iyer, Mosaic
Pradeep Raval, Koogler and Associates, Inc.

nw_c kiln_102109

Department of Environmental Protection

Division of Air Resource Management

RECEIVED
OCT 27 2009
BUREAU OF AIR REGULATION

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Mosaic Fertilizer LLC**	
2. Site Name: **New Wales Plant**	
3. Facility Identification Number: **1050059**	
4. Facility Location... Street Address or Other Locator: **3095 Highway 640** City: **Mulberry** County: **Polk** Zip Code: **33860**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Rama Iyer, Permitting Engineer**
2. Application Contact Mailing Address... Organization/Firm: **Mosaic Fertilizer, LLC** Street Address: **5000 Old Highway 37 South (P.O. Box 2000)** City: **Mulberry** State: **FL** Zip Code: **33860**
3. Application Contact Telephone Numbers... Telephone: **(863) 428-6526** Fax: **(863) 428-2676**
4. Application Contact E-mail Address: **rama.iyer@mosaicco.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 10/27/09	3. PSD Number (if applicable):
2. Project Number(s): 1050059-066-AC	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

☐ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☒ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☒ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This application is submitted to incorporate two methods of operation for Multifos C Kiln and address the emissions of nitrogen oxides. Other pollutants are not addressed herein as no increases are expected as a result of the alternate methods of operation.

The air permits related to this application are 1050059-044-AC and 1050059-045-AV.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
074	Multifos C Kiln	ACM1	NA

Application Processing Fee

Check one: ☐ Attached - Amount: $_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
2. Owner/Authorized Representative Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Owner/Authorized Representative Telephone Numbers... Telephone: Fax:
4. Owner/Authorized Representative E-mail Address:
5. Owner/Authorized Representative Statement: *I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.* _____ _____ Signature Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: **Mr. Thomas W. Fuchs, Plant Manager**

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

   [x] For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

   [ ] For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

   [ ] For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

   [ ] The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.

3. Application Responsible Official Mailing Address...
   Organization/Firm: **Mosaic Fertilizer, LLC**
   Street Address: **P. O. Box 2000**
   City: **Mulberry** State: **FL** Zip Code: **33860-1100**

4. Application Responsible Official Telephone Numbers...
   Telephone: **(863) 844-5089** Fax: **(863) 844-5450**

5. Application Responsible Official E-mail Address: **Tom.Fuchs@mosaicco.com**

6. Application Responsible Official Certification:

   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

   Thomas W. Fuchs — Signature

   October 22, 2009 — Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **John B. Koogler, Ph.D., P.E.**
   Registration Number: **12925**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Koogler & Associates**
   Street Address: **4014 NW 13th Street**
   City: **Gainesville** State: **FL** Zip Code: **32609**
3. Professional Engineer Telephone Numbers...
   Telephone: (**352**) **377** - **5822** Fax: (**352**) **377** - **7158**
4. Professional Engineer E-mail Address: **jkoogler@kooglerassociates.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☐, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☒, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature 10/21/2009
Date

(seal)

* Attach any exception to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone East (km) **396.6** North (km) **3078.9**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
3. Governmental Facility Code: **0**	4. Facility Status Code: **A**	5. Facility Major Group SIC Code: **28**	6. Facility SIC(s): **2874**
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: **J. Dean Ahrens, Environmental Superintendent**
2. Facility Contact Mailing Address... Organization/Firm: **Mosaic Fertilizer LLC** Street Address: **P.O. Box 2000** City: **Mulberry** State: **FL** Zip Code: **33860**
3. Facility Contact Telephone Numbers: Telephone: **(863) 844- 5021** Fax: **(863) 844-5450**
4. Facility Contact E-mail Address: **Dean.Ahrens@mosaicco.com**

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
4. Facility Primary Responsible Official E-mail Address:

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☐ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☒ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☒ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM/PM10	**A**	**N**
SO2	**A**	**N**
NOX	**A**	**N**
SAM	**A**	**N**
FL	**A**	**N**
HF	**A**	**N**
CO	**A**	**N**

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps NA

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date:_____
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date:_____
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID:____ ☒ Previously Submitted, Date:_____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: ☐ Attached, Document ID:_____ ☒ Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): ☒ Attached, Document ID: **Attachment 1**
3. Rule Applicability Analysis: ☒ Attached, Document ID: **Application**
4. List of Exempt Emissions Units: ☒ Attached, Document ID: **Application** ☐ Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification: ☐ Attached, Document ID:_____ ☒ Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications NA

1. List of Exempt Emissions Units:
   ☐ Attached, Document ID:_____ ☐ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☒ Not Applicable (revision application)

2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)
   ☒ Attached, Document ID: **Application**
   ☐ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)
   ☒ Attached, Document ID: **Application**
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities Onsite but Not Required to be Individually Listed
   ☒ Not Applicable

5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☒ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☒ Attached, Document ID: **Application** ☐ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

1. Acid Rain Program Forms:

   Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable (not an Acid Rain source)

   Phase II NO_X Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable

   New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable (not a CAIR source)

3. Hg Budget Part (DEP Form No. 62-210.900(1)(c)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable (not a Hg Budget unit)

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION
Section [1] of [1]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   [X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   [ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   [X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: **Multifos C Kiln**

3. Emissions Unit Identification Number: **074**

4. Emissions Unit Status Code: **A**	5. Commence Construction Date: **NA**	6. Initial Startup Date: **NA**	7. Emissions Unit Major Group SIC Code: **28**

8. Federal Program Applicability: (Check all that apply)

   [ ] Acid Rain Unit

   [ ] CAIR Unit

   [ ] Hg Budget Unit

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION
Section [1] of [1]

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description: **wet scrubbers**
2. Control Device or Method Code: **013**

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **17 tph**	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: **56** million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8760** hours/year
6. Operating Capacity/Schedule Comment:	

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **Multifos C Kiln**	2. Emission Point Type Code: **1**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **172** feet	7. Exit Diameter: **3** feet
8. Exit Temperature: **105** °F	9. Actual Volumetric Flow Rate: **12,000** acfm	10. Water Vapor: **10** %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 3

1. Segment Description (Process/Fuel Type): **Material processing**		
2. Source Classification Code (SCC): **3-99-999-99**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **17**	5. Maximum Annual Rate: **149,000**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment 2 of 3

1. Segment Description (Process/Fuel Type): **Natural gas burning**		
2. Source Classification Code (SCC): **3-90-006-99**	3. SCC Units: **MMCF**	
4. Maximum Hourly Rate: **0.055**	5. Maximum Annual Rate: **481**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1025**
10. Segment Comment:		

EMISSIONS UNIT INFORMATION
Section [1] of [1]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 3

1. Segment Description (Process/Fuel Type): **#2 fuel oil burning**		
2. Source Classification Code (SCC): **3-90-004-99**	3. SCC Units: **1000 gals burned**	
4. Maximum Hourly Rate: **0.4**	5. Maximum Annual Rate: **490**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.5**	8. Maximum % Ash:	9. Million Btu per SCC Unit: ***140***
10. Segment Comment:		

Segment Description and Rate: Segment _ of _

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
FL	**000**	**013**	**EL**
PM/PM10	**000**	**013**	**EL**
SO2	**000**	**013**	**EL**
NOX	**000**	**000**	**EL**
CO	**000**	**000**	**NS**
VOC	**000**	**000**	**NS**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **NOX**	2. Total Percent Efficiency of Control: **NA**
3. Potential Emissions: * lb/hour * tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): **NA** to tons/year	
6.Emission Factor: **see below** Reference: **see below**	7. Emissions Method Code: **1**
8.a. Baseline Actual Emissions (if required): **NA** tons/year	8.b. Baseline 24-month Period: **NA** From: To:
9.a. Projected Actual Emissions (if required): **NA** tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

NOX, dump chute = 15 lb/hr x 500 hrs x *ton*/2000 lbs = 3.8 tpy

NOX, normal = 8.74 lb/hr x (8760-500) hrs x ton/2000 lbs = 36.1 tpy

Total NOx = (3.8 + 36.1) tpy = 39.9 tpy

11. Potential, Fugitive, and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions: **NA**
3. Allowable Emissions and Units: *	4. Equivalent Allowable Emissions: * lb/hour **39.9** tons/year
5. Method of Compliance: **EPA Method 7E**	
6. Allowable Emissions Comment (Description of Operating Method): *** see notes on previous page.**	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE15**	2. Basis for Allowable Opacity: [x] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: **15 %** Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Method 9**	
5. Visible Emissions Comment: **BACT**	

Visible Emissions Limitation: Visible Emissions Limitation __ of ___

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor _ of _ **NA**

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☒ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date _____

2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date _____

3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ___ ☒ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable (construction application)

5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records:
   ☐ Attached, Document ID: ___
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☒ Previously Submitted, Date: **9-09**
   Test Date(s)/Pollutant(s) Tested: **NOx, 8-12-09**
   _____
   ☐ To be Submitted, Date (if known):_____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☒ Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:
   ☒ Attached, Document ID: **Att. 1** ☐ Not Applicable

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☒ Attached, Document ID: **Att. 1**
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation: ☒ Attached, Document ID: **Att. 1** ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements Comment

ATTACHMENT 1

PROJECT DESCRIPTION

Proposed Project

This application is submitted to incorporate two methods of operation for Multifos C Kiln, address the emissions of nitrogen oxides, and make a provision in the permit for parametric monitoring to provide reasonable assurance of compliance with the nitrogen oxides limitations. Other pollutants are not addressed as they are not expected to increase due to these two methods of operation.

The two methods of operation sought to be incorporated into the Multifos C Kiln permit are (1) the "dump chute" method of operation and (2) hot/cold startup method of operation. The kiln is not operating under normal conditions of at least around 10 tons per hour, during these two methods of operation. Nevertheless, based on the significant frequency of past occurrence of these two methods of operation that Mosaic anticipates will continue, we believe it is appropriate to address them specifically in the permit.

1. Dump Chute Method of Operation

The Multifos C Kiln has a "dump chute" the operators insert into the kiln's discharge stream to divert off-spec product from the kiln into a "dump box." This method of operation is used when the multifos product becomes agglomerated rather than maintaining a finer grain, or when other mechanical/operational failure disrupts the operation of the kiln. Mosaic reprocesses the off-spec dump chute material through the kiln when it is operating normally. In the dump chute method of operation, Mosaic operates the kiln at lower production rates to avoid damage to the kiln shell and refractory from abrupt changes in temperature that would otherwise result from a sudden shut down.

The kiln normally processes phosphate material at the rate of at least around 10 tons per hour. During normal operation, the multifos product flows from the kiln discharge into the cooler and other sections. In the dump chute method of operation, the material processing rate is reduced to around 4 tons per hour. Mosaic's past experience is that the kiln operates in the dump chute method of operation an average of 2 to 4 hours per day, 1 to 3 days a week, 2 to 4 times a month, and around 400 hours per year.

2. Kiln C Hot/Cold Startup Method of Operation

The Multifos C Kiln has a startup method of operation that varies from 8 to 48 hours, depending on whether it is a hot or cold startup. During the startup method of operation, it is necessary to introduce ambient air into the scrubbing system downstream of the kiln in order to maintain the proper flow in the scrubbing system and to remain compliant with the CAM parameter ranges in the permit.

Emissions of Nitrogen Oxides

Through engineering studies conducted on the Multifos C Kiln, Mosaic determined that emissions of nitrogen oxides may increase during the dump chute method of operation. Mosaic believes that the likely cause is the disruption in fuel and steam flows when the production rate is reduced. Recent compliance tests and engineering measurements indicate that NOx emissions during normal operations average around 5 pounds per hour, subject to a permit limit of 9.11 pounds per hour. Engineering study measurements during the dump chute method of operation indicate NOx emissions range from 0.7 to 12.3 pounds per hour. Mosaic expects the NOx emissions during hot/cold startup method of operation to be lower than during normal operation, because the feed and fuel firing rates and temperatures are lower, and in compliance with the current 9.11 pounds per hour emissions limit. On this basis, Mosaic does not believe it is necessary to address NOx emissions for the hot/cold startup method of operation.

The actual NOx emissions associated with the dump chute method of operation are estimated as follows:

NOx = 12.3 lb/hr x 400 hr/yr x ton/2000 lbs
= 2.5 tpy

For compliance with the permit limit, a back-calculated value for the NOx emissions during normal operations is estimated as follows:

NOx = (39.9 – 2.5) tpy x 2000 lb/ton x 1/ (8760-400) hours/yr
= 8.9 lb/hr

A more conservative projection of NOx emissions associated with the dump chute method of operation is estimated as follows:

NOx = 15 lb/hr x 500 hr/yr x ton/2000 lbs
= 3.8 tpy

For compliance with the permit limit, a back-calculated value for the NOx emissions during normal operations, based on the conservative estimate above, is estimated as follows:

NOx = (39.9 – 3.8) tpy x 2000 lb/ton x 1/ (8760-500) hours/yr
= 8.74 lb/hr

Rule Applicability

Both the dump chute and hot/cold startup methods of operation may be subject to review pursuant to Chapters 120 and 403 of the Florida Statutes and Rules 62-4, -210, -212, -213 and -297 of the Florida Administrative Code. Mosaic necessarily has utilized the dump chute method of operation since the initial operation of the C kiln. In view of Mosaic's

identification of the potential for higher emissions during this dump chute method of operation, it is appropriate to address it in the permit. Based on the engineering study of the dump chute method of operation, the Multifos C Kiln's annual NOx emissions would have been, and are expected to continue to be, less than the permit limitation of 39.9 tpy.

The emissions of other pollutants are expected to be less during the hot/cold startup method of operation and dump chute method of operation than during normal operation since the kiln would be operating at much lower fuel input and material processing rates.

Compliance Assurance

Based on Mosaic's engineering study, the key parameters that appear to affect NOx emissions are steam flow (in pounds per hour) and fuel flow (in cfm for natural gas and gallons per hour for fuel oil). The ratio of these two parameters appears to provide a basis for predicting NOx emissions. Mosaic proposes to monitor and record these parameters. Mosaic has determined an initial minimum steam to fuel ratio with natural gas as fuel for normal as well as dump chute method of operation and requests that this initial minimum steam to fuel ratio be incorporated into the permit. Mosaic requests a similar provision be provided for hot/cold startup method of operation. Mosaic requests that the FDEP allow the flexibility to revise this initial ratio based on future testing without permit revision, similar to the notification format currently implemented under the facility's CAM plan, as discussed in more detail below. Please note that the approach used in establishing this NOx compliance assurance follows in principle what is delineated in 40 C.F.R. § 63.625 (f) (2), with a *minimum* value used instead of the allowable range.

Monitoring Requirement

E.U. ID No. 074	Indicator
A. Indicator	Minimum Steam To Fuel Ratio
Measurement Approach	Flow Meters
B. Indicator	Ratio of Steam to Fuel 1. Normal Operation: Minimum 7.2:1 2. Dump Chute Method of Operation: Minimum 3.6:1 3. Hot/Cold Startup Method of Operation: TBD Units are in lbs/hr per cfm (or equivalent for oil).
	The indicator value is established based on measurements. An 'excursion' is defined as operation below the indicator value. Excursions trigger an inspection, corrective action, and a reporting requirement.
C. Performance Criteria 1. Representative Data	The minimum accuracy of the device is ±5 percent.
2. Verification of Operational Status	Operator check
3. QA/QC Practices and Criteria	The flow meters are calibrated at least annually.
4.a. Monitoring Frequency	The steam and fuel rates are monitored continuously.
b. Data Collection Procedures	The steam and fuel rates are electronically recorded at least every 15 minutes. Averages are computed using 15-minute block averages of the flow indicator readings.
c. Averaging Period	24-hour (daily) block average of the 15-minute readings.

Establishment & Re-establishment of Indicator Value

Minimum steam to fuel ratio shall be established and re-established as discussed below.

Indicator Value Defined

1. The indicator value is defined in accordance with this procedure.

The permittee shall follow the specific procedures herein. The initial indicator (minimum steam to fuel ratio) is established based on the completed compliance test results and engineering test results for the emission unit provided by the applicant.

a. The indicator consists of a minimum value. The minimum value is the lowest test value from the historical data set of acceptable indicator values. It is understood that minimum values will thus be established for normal operation, dump chute method of operation and hot/cold startup method of operation.

b. The initial minimum value(s) must be submitted to the Department for review and approval.

Re-establishment of Indicator Value

2. The indicator value is re-established in accordance with this procedure. The permittee shall follow the specific procedures herein to re-establish the indicator value.

The indicator value shall be re-established in accordance with the following conditions:

a. Upon successful completion of each required annual compliance test, the indicator values during testing shall be used to re-establish the minimum indicator value(s);

b. The indicator value(s) from testing shall be added into the individual emission unit compliance test results historical data set and a new indicator value as defined in l.a. above shall be established;

c. Updated spreadsheets shall be submitted with each compliance test result. The permittee shall indicate whether or not the indicator value has changed as a result of the annual compliance testing. The re-established minimum value of the indicator shall be clearly shown in the spreadsheets submitted; and,

d. Upon establishment of a new indicator value(s) the permittee shall operate under the new indicator value(s).

Additional Requirements

3. The following additional requirements apply:

a. No changes shall be made to the indicator, indicator value setting methodology or the averaging periods specified;

b. No changes shall be made to the historical test result data set. The Department will reevaluate the historical test result data set used to establish the indicator value during renewal of the air permit;

c. All tests must comply with the notification, testing and reporting requirements in Rule 62-297, F.A.C.;

d. If the compliance authority has reason to believe a test was not done in accordance with regulatory requirements applicable to a test then the compliance authority shall require a special compliance test pursuant to Rule 62-297.310(7)(b), F.A.C.;

e. The owner/operator shall certify that the control devices and processes have not been modified subsequent to the testing upon which the data used to establish the minimum value(s) was obtained.

Justification

A. Rationale for Selection of Performance Indicator

The performance indicator, steam to fuel ratio, was selected based on an engineering study. The use of steam injection to control NOx emissions from combustion sources has been widely accepted by the Department to provide reasonable assurance of proper NOx emission control.

B. Rationale for Defining Performance Indicator Value

An "indicator value" is similar to a MACT "allowable range" for an air pollution control operating parameter. Under MACT, the "allowable range" is established based on compliance tests and applicant proposes to establish the minimum steam to fuel ratio as an indicator value via engineering studies and compliance tests.

The indicator value herein is based on the MACT format. The indicator value(s) is established based on completed compliance test results and engineering test results as described above.

This methodology requires the minimum indicator value data set to be submitted to the Department for review and approval. A minimum ratio value may thus be based upon steam to fuel ratios recorded during previous tests. As an alternative, the owner/operator can establish the minimum ratio value(s) using the results of performance tests conducted specifically for the purposes of this paragraph. As part of this methodology the owner/operator is required to certify – "that the control processes have not been modified subsequent to the testing upon which the data used to establish the allowable range was obtained." The applicant requests that this procedure be patterned after the MACT methodology in principle.

C. Rationale for Re-establishment of Indicator Value

The procedure developed to change an indicator value as outlined above was modeled after the EPA regulations for phosphate fertilizer plants, contained in 40 CFR 63 Subpart BB. The specific procedures requiring changes to a "baseline average" and the "allowable range" under Subpart BB are found at 40 CFR 63.625(f)(1) & (2) and along these lines, the applicant requests that the minimum indicator value(s) be re-established when retested following the procedures described in the foregoing paragraphs.

D. Rationale for Selection of Averaging Periods

EPA suggests data be averaged "consistent with the characteristics and typical variability of the pollutant-specific emissions unit ..." (see 40 CFR 64.3(b)(4)(i)). The averaging period could be based on the size of the PSEU (pollutant specific emissions unit) (see 40 CFR 64.3(b)(4)(ii) & (iii)). Also, at 40 CFR 64.3(c) "the level of actual emissions relative to the compliance limitation" could be considered in the monitoring design, e.g., averaging period. The CAM regulation implies a minimum averaging period of daily (24-hours) at 40 CFR 64.3(b)(4)(iii). The MACT at 40 CFR 63.624 specifies an averaging period of daily (24-hours). Accordingly, a 24-hour (daily) block average period was selected as appropriate in this case.

ATTACHMENT 2

NOX EMISSIONS MEASUREMENTS

Miltifos C Kiln - Nox Measurements During Dump Chute Activity								
run	1	2	3	4	5	6	7	8
date	06/26/08	06/26/08	06/26/08	06/26/08	06/26/08	06/26/08	06/26/08	06/26/08
start	800	845	935	1030	1115	1200	1300	1425
end	830	915	1005	1100	1145	1230	1330	1455
	8:00	8:45	9:35	10:30	11:15	12:00	13:00	14:25
	8:30	9:15	10:05	11:00	11:45	12:30	13:30	14:55
C Scrubber Tower Inlet Temp	166.2	166.0	166.0	166.1	166.2	164.8	165.9	156.6
C Scrubber Crossflow Inlet Temp	115.1	114.5	114.7	115.5	113.5	114.4	111.3	106.3
C Scrubber Crossflow Exit Temp	103.2	103.1	103.1	103.0	103.2	103.7	102.7	100.2
C Kiln Plenum Inlet Temp	1246	1246	1246	1246	1246	1246	1246	1246
C Kiln Oxygen Analyzer	7.0	1.8	1.8	1.5	1.4	2.6	12.0	17.6
C Kiln Natural Gas Flow Control	770	770	770	770	769	770	385	138
C Kiln Primary Air Flow	693	691	694	691	693	693	692	-6
C OTW to Transition Duct	106.1	106.1	106.1	106.1	106.1	106.1	106.1	106.1
C Kiln Steam Flow	5620	5118	5005	5544	2771	2773	2772	1003
C Kiln Feed Belt	10.0	10.0	10.0	10.0	10.0	4.0	4.0	4.0
Sulfite Sump Level Control	64.3	64.7	64.2	64.5	64.4	64.4	64.5	64.5
C KILN SCRUBBER FAN	120	121	121	120	120	120	119	120
C Kiln SO2 Scrubber PH	7.6	7.7	7.7	7.9	7.9	7.9	8.1	9.2
Sulfite Sump PH	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
C Scrubber Pack Section DP	3.1	3.2	3.2	3.2	3.1	3.1	3.1	3.1
C SO2 Scrubber Diff Press	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
C Crossflow Scrubber Demist DP	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
C Fresh Pond Water to Pack Section	518	518	517	516	511	502	480	480
venturi dp	19.2	19.1	19.1	19.1	19.1	19.1	18.8	19.0
venturi gpm	55.4	55.6	55.6	55.7	55.4	55.9	56.0	55.8
C Fresh PW to Scrubber Flow	345	342	343	341	341	339	337	337
C Hot PW to Quench Tower	1171	1164	1161	1154	1151	1147	1130	1125
C Scrubber Tower Inlet Temp	166	166	166	166	166	165	166	157
C Scrubber Crossflow Inlet Temp	115	114	115	116	113	114	111	106
C SO2 Scrubber Recirc Flow	245	245	245	246	245	246	249	247
C Kiln SO2 to Sulfite Sump	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Caustic to C Scrubber Flow	20.3	20.3	20.3	20.2	20.2	20.1	20.0	6.9
NOx lb/hr	5.9	8.7	7.4	4.5	12.3	12.2	2.7	0.7
ppm	86	125	106	66	185	180	39	11
steam to gas ratio	7.3	6.6	6.5	7.2	3.6	3.6	7.2	7.3

TABLE 1. NITROGEN OXIDES EMISSIONS TEST SUMMARY

Company: **MOSAIC FERTILIZER, LLC - New Wales Facility**
Source: **Multifos C Kiln**

	Run 1	Run 2	Run 3	
Date of Run	5/9/2008	5/9/2008	5/9/2008	
Process Rate (tons/hr)	9.5	9.5	9.5	
Start Time (24-hr. clock)	0900	1020	1150	
End Time (24-hr. clock)	1000	1120	1250	
Barometric Pressure at Barom. (in. Hg.)	29.96	29.96	29.96	
Elev. Diff. Manom. to Barom. (ft.)	60	60	60	
Moisture in Stack Gas (% Vol.)	6.5	7.0	7.9	
Molecular Weight Dry Stack Gas	30.00	30.00	30.00	
Molecular Weight Wet Stack Gas	29.22	29.16	29.05	
Stack Gas Static Press. (in. H2O gauge)	-0.18	-0.18	-0.20	
Stack Gas Static Press. (in. Hg. abs.)	29.89	29.89	29.89	
Average Square Root Velocity Head	0.538	0.595	0.563	
Average Stack Gas Temperature (`F)	109.2	115.7	119.3	
Pitot Tube Coefficient	0.81	0.81	0.81	
Stack Gas Vel. Stack Cond. (ft./sec.)	30.10	33.49	31.87	
Effective Stack Area (sq. ft.)	7.07	7.07	7.07	
Stack Gas Flow Rate Std. Cond. (DSCFM)	11,064	12,105	11,336	
Stack Gas Flow Rate Stack Cond. (ACFM)	12,770	14,208	13,519	
				Average
NOx Concentration (PPM)	**68.8**	**63.1**	**67.5**	**66.5**
NOx Emissions (lbs/hr)	**5.45**	**5.47**	**5.48**	**5.5**
Allowable NOx Emissions (lbs/hr)				**9.1**

Note: Standard conditions 68°F, 29.92 in. Hg

REGULATORY SUMMARY
MOSAIC FERTILIZER LLC
NEW WALES OPERATION
MULTIFOS C KILN
AUGUST 12, 2009

PERMIT NO. NEDS NO. ID #	EPA METHOD	METHOD DESCRIPTION	ACTUAL EMISSION RATE	ALLOWABLE EMISSION RATE	PROCESS RATE P_2O_5 TONS PER HOUR	
					ACTUAL	PERMIT
1050059-045-AV					4.10	11.35
	13b	PM				
0059						
		lbs/hour	0.98	5.68		
074						
	13b	FLUORIDE				
		lbs/hour	0.23	0.66		
		lbs/ton P_2O_5	0.06	0.37		
	6	SO_2				
		lbs/hour	3.28	9.11		
	7E	NOx				
		lbs/hour	3.74	9.11		
	9	VISIBLE EMISSIONS				
		% Opacity	2	15		
COOLER		% Opacity	0	5	10.5	

Mosaic Fertilizer LLC

Process Information

Project: Multifos C Kiln
Facility: New Wales Operations
Point ID: 074
AIRS: 1050059
Permit Number: 1050059-045-AV

Test Runs	1	2	3
Date:	8/12/2009	8/12/2009	8/12/2009
Start:	9:27	11:12	14:14
End:	10:28	12:14	15:15

Kiln Feed Process Rate and Fuel Usage Rate

P2O5 = Feed x (1 - Moisture/100) x P/100 / 0.43646
Heat Input = scfm x 60 x 1013 / 1000000

Run	Feed tph	Moisture %	P %	P2O5 tph	Fuel type	Flow scfm	Input mmBtu/hr	Steam lb/hr	Stm/Gas lb/hr/cfm
1	10.5	3.7	17.5	4.1	Nat Gas	735.2	44.7	5527	7.5
2	10.5	Composite		4.1	Nat Gas	734.7	44.7	5526	7.5
3	10.5			4.1	Nat Gas	715.3	43.5	5370	7.5
Average:	10.5			4.1			44.3	5474	7.5

Scrubber Parameters during Test Periods

	Crossflow Scrubber		Venturi Section		Caustic Scrubber				
Run	Liquid Flow gpm	Pressue Drop in H2O	Liquid Flow gpm	Pressue Drop in H2O	Liquid Flow gpm	Pressue Drop in H2O	50% Caustic Flow gph	Scrubber pH	Fan amps
1	2065	4.7	74.4	17.8	176	1.4	12.0	8.0	124
2	2057	4.7	74.5	17.8	176	1.4	12.3	8.0	125
3	1996	4.2	73.2	16.5	176	1.3	11.3	8.1	116
Average:	2039	4.5	74.0	17.3	176	1.3	11.8	8.0	121

Data averaged from plant digital control computer records for test run time periods noted.

Process Statement:
I certify that the above statements are true and correct to the best of my knowledge.

Signature: Jackie Bledsoe
Title: Production Coordinator
Date: 8-18-09

ATTACHMENT 3

WAIVER OF 30-DAY AND 90-DAY PERIODS

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

WAIVER OF 30 DAY TIME LIMIT
UNDER SECTIONS 120.60(1) AND 403.0876, FLORIDA STATUTES

Applicant: Mosaic Fertilizer, LLC, New Wales Plant - Facility ID. No.1050059

DEP File No.: Construction Permit Application To Incorporate Methods of Operation for Multifos C Kiln

With regard to the above referenced application, the applicant hereby with full knowledge and understanding of applicant's rights under Sections 120.60(1) and 403.0876, Florida Statutes, waives the right to have the application reviewed by the Florida Department of Environmental Protection within the 30-day time period prescribed by law. Said waiver is made freely and voluntarily by the applicant, with full knowledge, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Protection.

This Waiver shall expire on the 26th day of February, 2010.

The undersigned is authorized to make this waiver on behalf of the applicant.

Signature

10/26/09
Date

John B. Koogler, Ph.D., P.E.
Engineer of Record
(Name/Title)

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

WAIVER OF 90 DAY TIME LIMIT FOR ISSUANCE OF PERMIT
UNDER SECTIONS 120.60(1) and 403.0876, FLORIDA STATUES

Applicant: Mosaic Fertilizer, LLC, New Wales Plant - Facility ID. No.1050059

DEP File No.: Construction Permit Application To Incorporate Methods of Operation for Multifos C Kiln

The undersigned has read Sections 120.60(1) and 403.0876, Florida Statutes (F.S.), and fully understands the applicant's rights under those sections.

With regard to the above referenced permit application, the applicant hereby, with full knowledge and understanding of its rights under Sections 120.60(1) and 403.0876, F.S., waives the right under those statutes to have the application for a permit issued or denied by the State of Florida Department of Environmental Protection within the ninety day time period proscribed in those sections. Said waiver is made freely and voluntarily by the applicant, is in its self-interest, and is made without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Protection.

This waiver shall expire on April 30, 2010.

The undersigned is authorized to make this waiver on behalf of the applicant.

Signature

10/26/09
Date

John B. Koogler, Ph.D., P.E.
Engineer of Record
(Name/Title)