TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Mosaic Fertilizer, LLC
13830 Circa Crossing Drive
Lithia, FL 33547

New Wales Facility

Facility ID No. 1050059

PROJECT

Project No. 1050059-078-AC
Application for Minor Air Construction Permit
Project Name: Changes to Molten Sulfur Pit Vents

COUNTY

Polk County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Air Resource Management
Southwest District Office
Temple Terrace, Florida 33637-7600

09/27/2012

Prepared by Quaid Noor

GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

I. Facility Description:

This facility is a phosphate fertilizer manufacturing complex. The fertilizer complex processes phosphate rock into several different fertilizer products and animal feed ingredients. This is accomplished by reacting phosphate rock with sulfuric acid to produce phosphoric acid and then converting the phosphoric acid to fertilizer and animal feed ingredient products. This facility consists of five double absorption sulfuric acid plants; three phosphoric acid plants; a phosphoric acid clarification and storage area; three diammonium phosphate (DAP) plants; a monoammonium phosphate (MAP) plant; a granular monoammonium phosphate (GMAP) plant; an animal feed ingredients (AFI) plant; a molten sulfur storage & handling system; a limestone storage silo/rock grinding operation; and a phosphogypsum stack.

II. Project Description:

A. Applicant:
Ghani Baig, Environmental Manager
Mosaic Fertilizer, LLC – New Wales Facility
13830 Circa Crossing Drive
Lithia, FL 33547

B. Professional Engineer:
Rama Iyer, P.E.
Mosaic Fertilizer, LLC

13830 Circa Crossing Drive
Lithia, FL 33547

C. Project Location:
3095 Highway 640
Mulberry, FL 33680

D. Project Summary:

This project is to make changes to the vents on the existing molten sulfur storage pits. The applicant proposes to install exhaust fans (Fan Eductors) on three existing molten sulfur pits to improve worker comfort by exhausting the vapors away from the work area. The following is proposed:

EU 063, 1,500 Ton Truck Unloading Pit – 2 Fan Eductors
EU 064, 350 Ton Truck Unloading Pit – 1 Fan Eductor
EU 065, 800 Ton Railcar Unloading Pit – 2 Fan Eductors

These three molten sulfur pits (EU Nos. 063, 064 and 065) currently have vents that exhaust the vapors through natural ventilation. The proposed project is to exhaust these pits by forced ventilation using fan eductors.

The existing EU Nos. 067, 068 and 069, assigned to pit vents, will be deleted since these are not independent emission units and are currently used for natural ventilation of the molten sulfur pits. These will be replaced by the above-mentioned fan eductors.

E. Application Information:
Application Received on: August 20, 2012
Application Complete on: August 20, 2012

II. Rule Applicability

This project is subject to the preconstruction review requirements of Chapter 403, Florida Statutes and Chapters 62-204 through 62-297, Florida Administrative Code (F.A.C.), as indicated below.

Subject to:	Y/N	Comments
Rule 62-210.300, F.A.C. – Permits Required	Y	Subject to general permitting requirements
Rule 62-212.400, F.A.C. - Prevention of Significant Deterioration	N	Facility is a PSD major source but this project does not trigger a PSD review
Rule 62-296.320(4), F.A.C. - General Particulate Emission Limiting Standards	Y	Molten sulfur storage and handling system is a source of particulate matter (PM) emissions
Rules 62-296.320(1) and (2), F.A.C. - General Pollutant Emission Limiting Standards (VOCs and Odor)	Y	Molten sulfur storage and handling system is not a major source of VOC but could be a source of odors

Subject to:	Y/N	Comments
Rule 62-296.401-418, F.A.C. - Stationary Source Emission Standards	N	Rule 62-296.411, F.A.C. – Sulfur Storage and Handling Facilities rule repealed on 2/16/2012.
Rule 62-296.500, F.A.C. - Reasonably Available Control Technology (VOC)	N	Polk County is not an air quality maintenance area for ozone
Rule 62-296.700, F.A.C. - Reasonably Available Control Technology (PM)	Y	This facility is within the area of influence of an air quality maintenance area located in Hillsborough County. Per Rule 62-296.700(2)(a), F.A.C., the facility is exempt from the provisions of the PM RACT rule.
Rule 62-204.800, F.A.C. - Standards of Performance for New Stationary Sources (NSPS)	N	There is no applicable source category
Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants (NESHAPS – 40 CFR 61)	N	There is no applicable source category
Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants for Source Categories a.k.a. MACT (NESHAPS –40 CFR 63)	N	There is no applicable source category
Chapter 62-213, F.A.C. - Operation Permits for Major Sources of Air Pollution	Y	Facility is a Title V source
Rule 62-297.310, F.A.C. - General Compliance Test Requirements, F.A.C.	N	Testing is not required for EU No. 063, 064 and 065, since Rule 62-296.411, F.A.C. was repealed on 2/16/2012.

III. Summary of Emissions Inventory

Pollutant	EU No. and brief description	Existing Emissions * (lbs/hr., tpy)	Proposed Emissions * (lbs/hr., tpy)
PM/PM10	063-1500-ton truck pit 064-350-ton truck pit 065-800-ton railcar pit	0.2 lbs/hr & 0.8 tpy 0.1 lb/hr & 0.3 tpy 0.2 lb/hr, 0.8 tpy	0.7 lbs/hr & 3.0 tpy 0.004 lb/hr, 0.02 tpy 0.0005 lb/hr, 0.002 tpy
SO2	063-1500-ton truck pit 064-350-ton truck pit 065-800-ton railcar pit	0.3 lbs/hr & 1.2 tpy 0.1 lb/hr & 0.5 tpy 0.3 lb/hr, 1.2 tpy	1.7 lbs/hr & 7.5 tpy 0.01 lb/hr & 0.04 tpy 0.001 lb/hr, 0.005 tpy
TRS/H_2S	063-1500-ton truck pit 064-350-ton truck pit 065-800-ton railcar pit	0.1 lbs/hr & 0.6 tpy 0.1 lb/hr & 0.2 tpy 0.1 lb/hr, 0.6 tpy	0.8 lbs/hr & 3.6 tpy 0.005 lb/hr & 0.02 tpy 0.0006 lb/hr, 0.002 tpy
VOC	063-1500-ton truck pit 064-350-ton truck pit 065-800-ton railcar pit	0.2 lbs/hr & 0.7 tpy 0.1 lb/hr & 0.3 tpy 0.2 lb/hr, 0.7 tpy	1.2 lbs/hr & 5.4 tpy 0.007, lb/hr & 0.03 tpy 0.0008 lb/hr, 0.004 tpy

* Emission factors for molten sulfur system were developed by Koogler and Associates during the initial permitting of molten sulfur system in Florida (attached with the application) and are used here for emissions inventory and PSD purposes.

PSD Applicability Analysis

Pollutant	Baseline Actual Emissions (TPY)	Projected Actual Emissions (TPY)	Projected Actual Minus Baseline Actual Emissions (TPY)	Significant Emissions Rate (TPY)	PSD Required? Y/N
PM/PM_{10}	1.9	3.0	1.1	25/15	N
SO_2	2.9	7.5	4.6	40	N
TRS/H_2S	1.4	3.6	2.2	10	N
VOC	1.7	5.4	3.7	40	N

IV. Conclusions

The emission limits proposed by the applicant will meet all the requirements of Chapters 62-204 through 297, F.A.C.

The General and Specific Conditions listed in the proposed permit (attached) will assure compliance with all the applicable requirements of Chapters 62-204 through 297, F.A.C.

V. Preliminary Determination

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Additional details of this analysis may be obtained by contacting the project engineer at the Florida Department of Environmental Protection Air Resource Management, Southwest District 13051 North Telecom Parkway, Temple Terrace, Florida 33637-7600.

Pursuant to Section 403.087, Florida Statutes and Section 62-4.070, Florida Administrative Code, the Department hereby gives notice of its intent to issue a permit to construct the aforementioned air pollution source in accordance with the draft permit and its conditions as stipulated (see attached).