TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT
Mosaic Fertilizer, LLC
13830 Circa Cross Drive
Lithia, Florida 33547

Central Florida Mining Operations

Facility ID No. 1050034

PROJECT

Project No. 1050034-026-AC
Application for Minor Air Construction Permit
Project Name: Construction Permit Modification

COUNTY

Hillsborough & Manatee Counties, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Air Resource Management
Southwest District Office
Temple Terrace, Florida 33637-0926

December 12, 2013

Prepared by Richard Spaulding, PE

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:

Mosaic Fertilizer LLC - Central Florida Minerals Operations facility is located on contiguous property within four adjacent counties (Hillsborough, Manatee, Polk, and Hardee). The permitted emission units are located at five sites: Fort Green, Four Corners, Kingsford, Lonesome and Noralyn.

There is no mining at Noralyn and Kingsford but Mosaic still has reclamation liability at these sites. Fort Green has a mini-washer and material mined from Fort Green and Payne Creek is processed through Four Corners, Wingate or Hookers Prairie. Lonesome is an active mine but the material mined is processed through Four Corners. Four Corners is an active mine with washer and float units.

Also included in this facility are five exempt sites; Agrock, Clear Springs, Payne Creek, Phosphoria and Pierce where Mosaic has varying degrees of reclamation liability, clay ponds and outfalls.

II. Project Description:

A. Applicant:

Mr. Scott Lehr, Environmental Superintendent, Minerals
Mosaic Fertilizer, LLC
13830 Circa Crossing Drive
Lithia, Florida 33547

B. Professional Engineer:

Mr. Rama Iyer, P.E.
Mosaic Fertilizer, LLC
13830 Circa Crossing Drive
Lithia, Florida 33547

C. Project Location:

The main facility is located in Manatee County at 11200 State Road 37 South in Bradley, Florida. The two unloading processes are located in Hillsborough County, the "Rail Car Dump Inside Building" located approximately 700 ft north of Four Corners Mine Road and 2.1 miles west of State Road 37 and the "Truck Dump Inside Building" located approximately 200 ft north of Four Corners Mine Road and 1.8 miles west of State Road 37.

D. Project Summary:

Construction Permit 1050034-026-AC is for the modification of 1050034-023-AC to reflect the as-built construction changes and subsequently revise 1050034-020-AO. The description of the phosphate unloading process is changed as follows:

From:

This project is for the construction of one railcar unloading process and two truck unloading processes that will be used to unload dry phosphate rock at the Mosaic Fertilizer, Inc., Four Corners Mine facility. The proposed project will allow the facility to unload dry phosphate rock from railcars and/or trucks, mix it with wet phosphate rock produced at the facility, and load out the resultant phosphate rock mixture using the facility's existing rail car loadout equipment. The three unloading processes are briefly described below:

<u>Unloading Process 1 - Rail Car Dump Inside Building</u>:
Rail cars containing dry phosphate rock will enter the facility and proceed to a new railcar unloading building located near the railroad loadout in the northeastern section of the facility's property. The railcar unloading building will contain a hopper, conveyor, elevator arrangement and a baghouse to control particulate matter emissions. The dry phosphate rock will be bottom discharged from the railcar inside building onto a conveyor which will discharge to an elevator. The elevator will discharge to a conveyor which will exit the building and discharge into a new 3500 ton hopper. The 3500 ton hopper will discharge on to a new conveyor that will discharge to one of the two existing 1500 ton railcars loadout bins. Dry phosphate rock from the conveyor will be mixed with incoming wet rock from the facilities wet rock pile. The mixed wet rock will then be loaded out via railcars. A 15,000 ACFM Pulse Jet baghouse will be used to control particulate matter emissions from the building and water sprays will be used to control particulate matter emissions from the outdoor drop points in the process. This operation will be located approximately 700 ft north of Four Corners Mine Road and 2.1 miles west of State Road 37 in Hillsborough County.

<u>Unloading Process 2 - Truck Dump Inside Building:</u>
Dump trucks containing dry phosphate rock will enter the facility from State Road 37 and proceed west along the paved facility road to the new truck unloading building located to the east of the washer structure and to the north of the product storage pile area. The building will contain a hopper, conveyor, elevator arrangement and a baghouse to control particulate matter emissions. The building's truck ingress and egress will be equipped with polyethylene curtains to provide additional dust control. Dry phosphate rock will be discharged from the truck inside building onto a conveyor which will discharge to an elevator. The elevator will discharge to a new covered conveyor outside the building which will convey the dry phosphate rock to a new 3,500 ton hopper (as in Unloading Process 1). The dry phosphate rock will then be conveyed via a new covered conveyor to either one of the existing 1,500 ton railcar loadout bins to mix with incoming wet rock from the product wet rock pile. The mixed wet rock will then be loaded out via railcars. The process uses the same existing railcar loadout bins used in Unloading Process 1. A 15,000 ACFM Pulse Jet baghouse will be used to control particulate matter emissions from the building and water sprays will be used to control particulate matter emissions from the outdoor drop

points in the process. This operation will be located approximately 200 ft north of Four Corners Mine Road and 1.8 miles west of State Road 37 in Hillsborough County.

Unloading Process 3 - Truck Dump to Product Storage Pile:
Dump trucks containing dry phosphate rock will enter the facility from State Road 37 and proceed west along the paved facility road to the product storage pile in the south west section of the facility property. Dump trucks will enter the pile area and will back into a 3 sided enclosure consisting of a 2 shrouds (or screens) located near the sides of the truck and the pile acting as the third side. The three sided enclosure will reduce the wind speed blowing across the material as it is discharged from the truck. Additionally, dry phosphate rock discharged from the truck will be sprayed with water to minimize particulate matter emissions. Wetted rock will be mixed with other phosphate rock and transferred via the existing conveyor to the rail car loadout station. This operation will be located approximately 1,100 ft south of Four Corners Mine Road and 1.7 miles west of State Road 37 in Manatee County.

To:

This emissions unit consists of two dry phosphate rock unloading processes. These unloading processes allow the facility to receive and unload dry phosphate rock from railcars and/or trucks, mix it with wet phosphate rock produced at the facility, and load out the resultant wet phosphate rock mixture using the facility's railcar loadout equipment. The unloading processes and particulate control devices are briefly described below:

(1) Unloading Process 1 - Rail Car Dump Inside Building: Rail cars containing dry phosphate rock enter the facility and proceed to a railcar unloading building located near the railroad loadout in the northeastern section of the facility's property. The railcar unloading building contains receiving pits and inclined conveyors.. The dry phosphate rock is bottom discharged from the railcar inside the building into the receiving pits and inclined conveyors move the dry rock to a transfer point outside the building. From the transfer point outside the building, a conveyor runs a short length before turning 90 degrees at a second transfer point. This transfer point and the short length of the conveyor have hoods that evacuate to the baghouses at the railcar unloading building. From the second transfer point the dry rock is moved via a covered conveyor to another 90 degree third transfer point with a baghouse and then on to the 3,500 ton hopper. The 3,500 ton hopper discharges onto a conveyor that discharges to one of two 1,500 ton railcars loadout bins. Dry phosphate rock from the conveyor is mixed with incoming wet rock from the facilities wet rock pile. The mixed wet rock is then loaded out via railcars. Particulate emissions are controlled by a 47,550 ACFM baghouse with pick-up points in the railcar unloading building, pit to conveyor and conveyor transition point, exhausting to a single stack in the railcar unloading building area; a 4,250 ACFM baghouse at the railcar conveyor transfer point; a 2,000 ACFM baghouse atop the 3,500 ton silo; a 1,750 ACFM baghouse at the conveyor at the bottom of the 3,500 ton silo and a 6,100 ACFM baghouse at the two 1,500 ton silos. This operation is located approximately 700 ft north of Four Corners Mine Road and 2.1 miles west of State Road 37 in Hillsborough County.

(2) Unloading Process 2 - Truck Dump Inside Building: Dump trucks containing dry phosphate rock enter the facility from State Road 37 and proceed west along the paved facility road to the truck unloading building located to the east of the washer structure and to the north of the product storage pile area. The building contains a receiving pit and inclined conveyor. Dry phosphate rock is discharged from the truck inside the building into the receiving pit and an inclined conveyor than transfers the dry rock to a transfer point from which a covered conveyor moves the dry rock to a 3,500 ton hopper (as in Unloading Process 1). The dry phosphate rock is then conveyed via a covered conveyor to either one of the 1,500 ton railcar loadout bins to mix with incoming wet rock from the product wet rock pile. The mixed wet rock is then loaded out via railcars. The process uses the same railcar loadout bins used in Unloading Process 1. Particulate emissions are controlled by a 29,000 ACFM baghouse with pick-

up points in the truck unloading building, pit to conveyor and conveyor transition point, exhausting to a single stack in the truck unloading building area; a 2,000 ACFM baghouse atop the 3,500 ton silo; a 1,750 ACFM baghouse at the conveyor at the bottom of the 3,500 ton silo and a 6,100 ACFM baghouse at the two 1,500 ton silos. The truck unloading building's truck ingress and egress is equipped with polyethylene curtains to provide additional dust control. This operation will be located approximately 200 ft north of Four Corners Mine Road and 1.8 miles west of State Road 37 in Hillsborough County.

E. Application Information:

Application Received on: 1050034-026-AC – 11/14/2013

Application Complete on: 1050034-026-AC – 11/15/2013

III. Applicable State and Federal Regulations

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 not a PSD major source

Subject to:	Y/N	Comments
Rule 62-296.320(4), F.A.C. - General Particulate Emission Limiting Standards	Y	facility is a source of unconfined particulate matter emissions
Rules 62-296.320(1) and (2), F.A.C. - General Pollutant Emission Limiting Standards (VOCs and Odor)	N	facility is not a source of VOC's
Rule 62-296.401-418, F.A.C. - Stationary Source Emission Standards	N	there is no applicable source category
Rule 62-296.500, F.A.C. - Reasonably Available Control Technology (VOC)	N	facility is not a VOC-emitting
Rule 62-296.700, F.A.C. - Reasonably Available Control Technology (PM)	Y	emissions unit E.U. No. 031 is located within the area of influence for the air pollutant, particulate matter and is more than five kilometers outside the boundary of a particulate matter air quality maintenance area. *Hillsborough County Note:* *EPC Rule 1-3.51 and 1-3.52 applies to E.U. No. 031 because it is located in Hillsborough County.* Rule 62-296.711 is applicable through EPC Rule 1-3.51
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	N	facility is a synthetic non-Title V
Rule 62-297.310, F.A.C. - General Compliance Test Requirements, F.A.C.	Y	VE testing is required for EU No. 031

IV. Summary of Emissions

Pollutant	**EU No. and brief description**	**Potential Emissions** (tpy)	**Allowable Emissions (**tpy)
PM	008 – Boiler (Exempt)	0.24	
	029 - Flocculation System-Four Corners Mine	0.61	
	031 - Unloading Process 1: Rail Car Dump Inside Building	0.084	
	031 - Unloading Process 2: Truck Dump Inside Building	7.986	
	Total	8.92	
VE Limitation			
VE	031		5% Opacity (Hillsborough County) *EPC Rules 1-3.51 and 1-3.52 apply in Hillsborough County.*

V. Conclusions

The emission limits proposed by the applicant will meet all of 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.

VI. 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).