Title V Air Operation Permit Revision
Permit No. 0570008-076-AV
Revision to Title V Air Operation No. 0570008-066-AV

APPLICANT

The applicant for this project is Mosaic Fertilizer, LLC. The applicant's responsible official and mailing address are: Larry Simpson, Plant Manager, Mosaic Fertilizer, LLC, Riverview Facility, 13830 Circa Crossing Drive, Lithia, FL 33547.

FACILITY DESCRIPTION

The applicant operates the Mosaic Riverview Facility, which is located in Hillsborough County at 8813 US Highway 41 South, Riverview, Florida.

This facility consists of several industrial processes that convert insoluble rock containing phosphorus ore into a soluble form suitable for agricultural use. The processes consist of one phosphoric acid plant (two trains), two ammoniated phosphate (AP) plants, three sulfuric acid plants, one material handling system, one auxiliary boiler, two animal feed plants, a molten sulfur storage and handling system, ~~and~~ emergency compression ignition (CI) reciprocating internal combustion engines (RICE) and non-emergency CI internal combustion engines (ICE).

Molten sulfur is the feed for the double absorption sulfuric acid plants. Natural gas or No. 2 fuel oil is used for the cold start-up of the plants. These emission units are regulated under NSPS - 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid, adopted and incorporated by reference in Rule 62-204.800(8)(b)10., F.A.C.; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD); Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards; and Rule 296.402, F.A.C., Sulfuric Acid Plants. Sulfur dioxide from each sulfuric acid plant is controlled by a dual absorption tower, and acid mist is controlled by mist eliminator. These units utilize continuous emission monitors (CEMs) for sulfur dioxide (SO_2) emissions monitoring.

Phosphate rock and sulfuric acid are the primary feed for the phosphoric acid plant. This emission unit is regulated under National Emission Standards for Hazardous Air Pollutants (NESHAP) - 40 CFR 63, Subpart A – General Provisions; 40 CFR 63, Subpart AA - NESHAP From Phosphoric Acid Manufacturing Plants, adopted and incorporated by reference in Rule 62-204.800, F.A.C.; Administrative Order No. 03-C-AP for alternative MACT monitoring plan; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD); and Rule 62-296.403, F.A.C., Phosphate Processing. Fluoride emissions from this source are controlled by scrubbers.

Phosphoric acid is the feed for the Fertilizer (AP) Plants. Each of these emission units consists of a reactor, granulator, dryer, cooler, mills, screens and ancillary equipment. The dryer is fired with natural gas with No. 2 fuel oil as a backup. These emission units are regulated under New Source Performance Standard (NSPS) - 40 CFR 60, Subpart V, Standards of Performance of Phosphate Fertilizer Industry: Diammonium Phosphate Plants; and NESHAP – 40 CFR 63, Subpart A – General Provisions; 40 CFR 63, Subpart BB – NESHAP From Phosphate Fertilizers Production Plants, adopted and incorporated by reference in Rule 62-204.800, F.A.C.; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD); Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards; Rule 62-296.403, F.A.C., Phosphate Processing. Emissions from this source are controlled by the scrubbers.

The Animal Feed Ingredient (AFI) facility consists of defluorinated acid batch tanks (3) and granulation system along with diatomaceous earth and limestone unloading systems, and the AFI loadout system. Emissions from loading and unloading activities are controlled by baghouses.

The material handling system transfers MAP, DAP, calcium phosphate animal feed, and phosphate rock from the storage buildings or rail cars to marine vessels and from the storage buildings to railcars, truck and container loadouts.

Particulate matter emissions generated during the transfer of materials are controlled by baghouses and are minimized through: a) partial enclosures, covered conveyors and equipment enclosures, b) the use of a telescopic chute during ship loading, c) minimize the drop height as much as practicable during ship loading, d) using a skirt or equivalent at the bottom end of the telescopic chute to provide cover during the unloading of fertilizer product into the ship cargo hold, e) coating products with dust suppressants, and f) restricting operating hours. A revised Operation and Maintenance (O & M) plan for the new baghouses are included in the permit.

The facility has existing emergency compression ignition reciprocating internal combustion engines (CI RICE) that are subject to 40 CFR 63, Subpart A – General Provisions and Subpart ZZZZ - NESHAP for Stationary RICE. The facility added five new compression ignition (CI) internal combustion engines (ICE) that are subject to 40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary CI ICE.

Also included in this permit are miscellaneous unregulated and insignificant emissions units and/or activities.

PROJECT DESCRIPTION

The purpose of this permitting project is to revise the existing Title V air operation permit for the above referenced facility.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Processing Schedule and related documents:
Initial Title V Air Operation Permit issued: 04/28/1999
Renewal Title V Air Operation Permit issued: 05/31/2006
Title V Air Operation Permits issued 10/27/2008, 10/13/2010 and 10/31/2011
Application for a Title V Air Operation Permit Revision received 03/22/2013
Additional Information Request dated 04/16/2013
Additional Information Response received 04/30/2013
Notice of Intent to Issue Air Permit issued xx/xx/xxxx
Public Notice for Draft/Proposed Permit Published xx/xx/xxxx

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility does operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility does operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

CAIR: The facility is not subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

SITING: No Unit was originally certified pursuant to the power plant siting provisions of Chapter 62-17, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) applies to the applicable emission units at the facility, described as follows:

EU ID No.	Brief Description	Pollutants subject to CAM	Control Device subject to CAM
-007	No. 6 AP Plant	PM	Cooler venturi & tailgas scrubbers

PROJECT REVIEW

The purpose of this project is to incorporate the provisions of Construction Permit No. 0570008-061-AC (BART Escape Permit). A brief description of the requirements of the construction permit project is summarized below:

(1) federally enforceable reductions of sulfur dioxide (SO_2) and sulfuric acid mist (SAM) emissions to bring this facility's visibility impact to below the 0.5 deciview (dv) threshold allowing the facility to escape a Best Available Retrofit Technology (BART) determination pursuant to Rule 62-296.340(5)(c), Florida Administrative Code (F.A.C.) {A total of 948 tons per year (TPY) of SO_2 and 96 TPY of SAM emissions are being reduced from the 3 sulfuric acid plants (SAPs). SO_2 emission limits from SAP Nos. 7, 8 & 9 are being reduced to equivalent 3.0 lb SO_2/ton 100% H_2SO_4, 2.8 lb SO_2/ton 100% H_2SO_4, and, 3.0 lb SO_2/ton 100% H_2SO_4, respectively. SAM emission limits from SAP Nos. 7, 8 & 9 are being reduced to equivalent 0.05 lb SAM/ton 100% H_2SO_4};

(2) each sulfuric acid plant (SAP) to demonstrate compliance with the SO_2 standards and limitations on a continuous basis using continuous emissions monitoring system (CEMS) data on a 24-hour (daily) block average;

(3) the use of the existing control technology - the double absorption system with increased catalyst loading, replacement of indicated process equipment, and the use of existing acid mist demister pads for SAP Nos. 7, 8 & 9; and,

(4) the permittee to follow best operational practices to minimize excess emissions from each SAP.

In addition to the following changes were made to the Title V permit as part of this revision:

(1) Added a Section N to add five new compression ignition (CI) internal combustion engines (ICE), (EU No. 113). These engines are subject to New Source Performance Standard (NSPS), 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

(2) Added a test method 6 or 6C for the determination of SO_2 from stationary sources in Section III, Subsection A, SAPs 7, 8 and 9.

(3) ~~Deleted NSPS - 40 CFR 60, Subpart V, Standards of Performance of Phosphate Fertilizer Industry: Diammonium Phosphate Plants from E.U. Nos. 007 and 055~~ as these are superseded by 40 CFR 63, Subpart BB - NESHAP for Phosphate Fertilizer Production Plants.

(4) ~~Deleted the reference/specific conditions associated with the Rule 62-296.411, F.A.C. – Sulfur Storage and Handling Facilities~~, as this rule has been repealed.

(5) Revised the Auxiliary Steam Generator (E.U. No. 043) to include applicable requirements of 40 CFR 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.

(6) Revised Emergency Diesel Engines (E.U. 111) in Section L to include the applicable requirements of 40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. In Title V Permit No. 0570008-066-AV, these requirements were only contained in "Appendix NESHAP – 40 CFR 63, Subpart ZZZZ – Summary of Requirements.

CONCLUSION

This project revises Title V air operation permit No. 0570008-066-AV, which was issued on 10/31/2011. This Title V air operation permit renewal is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.