# TECHNICAL EVALUATION
# &
# PRELIMINARY DETERMINATION

## APPLICANT

White Springs Agricultural Chemicals, Inc
P. O. Box 300
White Springs, Florida 32096

Suwannee River/Swift Creek Complex
Facility ID No. 0470002

## PROJECT

Project No. 0470002-086-AC
Y and Z Trains Micronutrient Project

## COUNTY

Hamilton, Florida

## PERMITTING AUTHORITY

Florida Department of Environmental Protection
Northeast District Office
Waste and Air Resource Management Program
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

## COMPLIANCE AUTHORITY

Florida Department of Environmental Protection
Northeast District Office
Compliance Assurance
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

**Revised: August 15, 2013**

## 1. 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:

**Table 1 - Applicable Rules from the F.A.C.**

| Chapter | Description |
|---|---|
| 62-4 | Permits |
| 62-204 | Air Pollution Control – General Provisions |
| 62-210 | Stationary Sources of Air Pollution – General Requirements |
| 62-212 | Stationary Sources – Preconstruction Review |
| 62-213 | Operation Permits for Major Sources (Title V) of Air Pollution |
| 62-296 | Stationary Sources – Emission Standards |
| 62-297 | Stationary Sources – Emissions Monitoring |

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 activities. 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.

Federal regulations adopted by reference are given in Rule 62-204.800, F.A.C. State regulations approved by EPA are given in 40 CFR 52, Subpart K – Florida, also known as the State Implementation Plan (SIP) for Florida.

### 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.

### Facility Process Description and Location

White Springs Agricultural Chemicals, Inc., is an existing phosphate mining and chemical production facility, which is categorized under Standard Industrial Classification Code No. 2874. The facility is located in Hamilton County at 15843 SE 78$^{th}$ Street, White Springs, Florida. The UTM coordinates of the existing facility are Zone 17, 328.3 km East and 3368.8 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

This facility processes phosphate rock to produce several products at the Suwannee River/Swift Creek Complex (two plants). The facility consists of one rock grinder, two phosphoric acid plants, two defluorinated phosphate (DFP) plants, one monocal/dical process, two monoammonium/diammonium phosphate (MAP/DAP) plants, one Storage and Shipping building, one screening/shipping building, four sulfuric acid plants, two phosphoric acid

filters, three superphosphoric acid plants, one green superphosphoric plant, the Swift Creek Mine (SCM) rock dryer, and one acid clarification plant. The facility also has storage silos associated with the Swift Creek Mine and the DFP plant.

**Facility Regulatory Categories**

- The facility is a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- This facility has one or more emissions units subject to NSPS (40 CFR 60).
- This facility has one or more emissions units subject to NESHAP (40 CFR 61 or Part 63)

**Processing Schedule**

| | |
|---|---|
| 06/12/13 | Department received the Application for Air Permit – Long Form |
| 07/16/13 | Additional Information received |
| 07/19/13 | Additional Information received |
| 08/05/13 | Draft permit issued |
| 08/06/13 | Comments on draft permit received from applicant |
| 08/13/13 | Additional information received |
| 08/15/13 | New Draft permit issued |

**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 the draft permit distributed with this evaluation.

## 2. PSD APPLICABILITY

### General PSD Applicability

For areas currently in attainment with the state and federal AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28

PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, Portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides ($NO_X$); sulfur dioxide ($SO_2$); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less ($PM_{10}$); volatile organic compounds (VOC); lead (Pb); fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide ($H_2S$); total reduced sulfur (TRS), including $H_2S$; reduced sulfur compounds, including $H_2S$; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as $SO_2$ and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the potential emission exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

**Comments and Revisions to August 5, 2013 draft permit package:**

On August 6, 2013, comments were received from the applicant on the August 5, 2013 draft permit package. The comments are stated below with the Department response:

**1. Section 4 on page 6. I would like to discuss taking out the first sentence because we would like the flexibility to transfer the product in ways other than pneumatically (screw conveyer, etc.). Also, 25 tons per hour is a very slow rate to transfer from a truck and since we will design the dust collection system to handle whatever rate we set, we should be able to handle higher flows without any dust issues.**

*Response:* Based on these comments and the additional information received August 13, 2013, the permit is changed as follows:

Subsection A, Condition:

**1.** The permittee is authorized to install <u>at the facility</u> as a part of this project:

- One storage silo for the receipt and storage of zinc (zinc oxide or zinc sulfate) to be delivered by rail or truck.
- One associated dust collector to control particulate matter emissions
- ~~Pneumatic~~ conveying system <u>(pneumatic, screw-conveyor, etc.)</u> from delivery vehicle to storage silo
- Weighing system at the storage silo discharge

- Conveyance system and piping for connection to the acid tanks

The implementation period of this task, along with the initial trial period, may last up to a maximum of 2 years from the issuance of this construction permit.

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Subsection A, Condition 4 is changed as follows:

**4.** Capacity. The zinc (zinc oxide or zinc sulfate) shall be ~~pneumatically~~ transferred from a railcar or truck at a maximum rate of approximately ~~25~~ 100 tons per hour. A maximum total annual quantity of approximately 40, 291 tons of zinc sulfate (approximately 20,313 ~~20,000~~ tons zinc oxide) shall be used in the Y and Z trains (Emissions Unit Nos. 008 and 032), i.e. approximately 1% by weight of the product.

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Emission Unit 008 and 032 Descriptions are changed as follows:

Mode 6: MAP/DAP by 40% $P_2O_5$ acid with the addition of micronutrients**.**

Subsection B, Condition 4 is changed as follows:

**4.** Capacity- Zinc. A maximum total annual quantity of ~~20,000~~ approximately 40,291 tons of zinc sulfate (approximately 20,313 tons of zinc ~~(zinc~~ oxide ~~or zinc sulfate)~~ shall be used in the Y and Z trains (Emissions Unit Nos. 008 and 032) combined, i.e. approximately 1% by weight of the product at each emissions unit.

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Subsection C, Condition 4 is changed as follows:

**4.** Capacity- Zinc. A maximum total annual quantity of ~~20,000~~ approximately 40,291 tons of zinc sulfate (approximately 20,313 tons of zinc ~~(zinc~~ oxide ~~or zinc sulfate)~~ shall be used in the Y and Z trains (Emissions Unit Nos. 008 and 032) combined, i.e. approximately 1% by weight of the product at each emissions unit.

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**2. Pg. 7 section 5. Remove after "...at all times" the comment "when transferring material to/from storage vessel".**

*Response:* Based on the comment, Subsection A., Condition 5. is changed as follows:

**5.** Control Device. To control particulate matter emissions, the permittee shall operate a dust collector at the storage silo. The dust collector shall be in operation ~~at all times~~ when transferring material to/from the storage silo.

[Application No. 0470002-086-AC; Rule 62-4.070, F.A.C.]

**3. Page 9 section 5. Remove "...to the Y-Train preneutralizer and replace with "...to the process" We may wish to add the sulfuric acid at a different location in the permanent process.**

*Response:* Based on the comment, Subsection B., Condition Nos. 2 and 5. are changed as follows:

**2.** The permittee is authorized to conduct this project for Emission Unit No. 008 as follows:

- Upgrade the existing sulfuric acid pump and piping such that the feed rate to the Y Train ~~preneutralizer~~ process is increased from less than 5 gpm to a maximum of 25 gpm.

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**5.** Capacity- Sulfuric Acid. A maximum feed rate of 98% Sulfuric Acid ($H_2SO_4$) while in Mode 6 shall not exceed 25 gallons per minute to the Y Train ~~preneutralizer~~ process.

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**4. Page 11 section 2. Increase maximum sulfuric flow in Z-Train to 30 GPM. 28 GPM would correspond to a product rate comparable to our current limit of 75 TPH and I rounded up from there.**

*Response:* Based on the comment, Subsection C., Condition Nos. 2. and 5. are changed as follows:

**2.** The permittee is authorized to conduct this project for Emission Unit No. 032 as follows:

- Upgrade the existing sulfuric acid pump and piping such that the feed rate to the Z Train preneutralizer is increased from less than 5 gpm to a maximum of ~~25~~ 30 gpm.

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**5.** Capacity- Sulfuric Acid. A maximum feed rate of 98% Sulfuric Acid ($H_2SO_4$) while in Mode 6 shall not exceed ~~25~~ 30 gallons per minute to the Z Train preneutralizer.

[Application No. 0470002-086-AC]

**5. Page 11 section 2. Remove "...to the Z-Train preneutralizer and replace with "...to the process" We may wish to add the sulfuric acid at a different location in the permanent process.**

*Response:* Based on the comment, Subsection C., Condition Nos. 2. and 5. are changed as follows:

**2.** The permittee is authorized to conduct this project for Emission Unit No. 032 as follows:

- Upgrade the existing sulfuric acid pump and piping such that the feed rate to the Z Train ~~preneutralizer~~ process is increased from less than 5 gpm to a maximum of 30 gpm.

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**5.** Capacity- Sulfuric Acid. A maximum feed rate of 98% Sulfuric Acid ($H_2SO_4$) while in Mode 6 shall not exceed 30 gallons per minute to the Z Train ~~preneutralizer~~ process.

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**On August 7, 2013, additional verbal comments were received from the applicant on the August 5, 2013 draft permit package. The comments are summarized below with the Department response:**

**1. The facility is requesting additional operational flexibility in the draft permit namely the permit conditions that limit the usage rates of sulfuric acid for both Y and Z Trains.**

*Response:* Based on the comment, Subsection B., Condition Nos. 2., and 5. are changed as follows:

**2.** The permittee is authorized to conduct this project for Emission Unit No. 008 as follows:

- Upgrade the existing sulfuric acid pump and piping such that the feed rate to the Y Train process is increased from less than 5 gpm to an estimated maximum of 25 gpm.

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**5.** Capacity- Sulfuric Acid. A maximum feed rate of 98% Sulfuric Acid ($H_2SO_4$) while in Mode 6 ~~shall not exceed~~ is estimated to be 25 gallons per minute to the Y Train process.

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*Response:* Based on the comment, Subsection C., Condition Nos. 2., and 5. are changed as follows:

**2.** The permittee is authorized to conduct this project for Emission Unit No. 032 as follows:

- Upgrade the existing sulfuric acid pump and piping such that the feed rate to the Z Train process is increased from less than 5 gpm to an estimated maximum of 30 gpm.

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**5.** Capacity- Sulfuric Acid. A maximum feed rate of 98% Sulfuric Acid ($H_2SO_4$) while in Mode 6 ~~shall not exceed~~ is estimated to be 30 gallons per minute to the Z Train process.

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**The Department made the following change to the language in Subsection A, Condition 6:**

**6.** Equipment Information Submittal. ~~Within 15 days of installation of the dust collector~~ At least 30 days prior to commencement of construction, the permittee shall submit the specific vendor information for the dust collector to the Department in a written or electronic format: Manufacturer's name, model no., control efficiency, size of storage silo, etc. for all installed equipment, and a written description and a flow diagram of the final designed transfer system.

[Rule 62-4.070(3), F.A.C.]

## Project Description

White Springs Agricultural Chemicals, Inc. proposes install a micronutrient storage and handling system at the facility. The facility will install a storage silo, with an associated dust collector to receive zinc (zinc oxide or zinc sulfate) that is delivered by rail or truck. The zinc will be pneumatically transferred from railcar or truck at a rate of approximately 25 tons per hour.

The facility also proposes to add the production of MAP/DAP with added micronutrients as an additional Method of Operation for both the Y and Z MAP/DAP Trains.

The process change will require the increase in the present usage rate of sulfuric acid to up to a maximum of 25 gallons per minute, and the addition of zinc to the process. A total of 20,000 tons of zinc will be utilized by the Y and Z MAP/DAP Trains (Emissions Unit Nos. 008 and 032) annually, i.e. approximately 1% by weight of the product.

There will be an initial trial arrangement for the introduction of zinc (zinc oxide or zinc sulfate) to both emissions units by bags followed by the permanent arrangement by rail or truck. The trial period is estimated as being anywhere from 6 months to a year depending upon the timing of final process design, equipment purchase, delivery, set up and plant down-time schedules in order to make the necessary process changes.

**Proposed Work**

The permittee is authorized to construct, install, modify, and operate the following equipment:

- Necessary appurtenances to upgrade the sulfuric acid pump to increase the feed rate from the existing less than 5 gpm to up to an estimated maximum of 25 gpm to the existing Y Train process and an estimated 30 gpm to the Z Train process;
- Associated components including but not limited to piping, ductwork, connections, flow meters, etc.
- The permit restricts the operation of these units as mentioned above in the Project Description to comply with permit conditions.
- A storage silo, with associated dust collector to receive Zinc (zinc oxide or zinc sulfate) to be delivered to the complex by rail or truck.
- Conveying system from delivery vehicle to storage silo
- Weighing system at the storage silo discharge
- Conveyance system and piping for connection to the acid tanks

For the proposed project, the baseline actual emissions from the project, the projected actual emissions of project, and the demand growth excludable emissions have been documented.

**PSD Applicability for Project**

The applicant states that no other emissions units at the facility will be affected by the proposed project. There will be no increase in emissions from other emissions units as a result of the increased sulfuric acid input for each of the Y and Z Trains (EUs 008 and 032).

The following tables summarize the net increases in emissions attributable to the project based on the submitted application:

TABLE 1 - BASELINE ACTUAL EMISSIONS

WHITE SPRINGS AGRICULTURAL CHEMICALS, INC.

| UNIT | YEAR | TOTAL Y-TRAIN TPY P2O5 in | PM (1) (lbs/ton P205 in) 5-yr Avg. | F(1) (lbs/ton P205 in) 5-yr Avg. | PM (TPY) | F (TPY) |
|---|---|---|---|---|---|---|
| Y-TRAIN | 2011 | 136049 | | | | |
| | 2012 | 160316 | | | | |
| | 2-yr Avg. | 148182 | 0.194 | 0.020 | 14.4 | 1.5 |
| Z-TRAIN | 2011 | 220216 | | | | |
| | 2012 | 167885 | | | | |
| | 2-yr Avg. | 194050 | 0.119 | 0.007 | 11.5 | 0.7 |
| Y & Z Total | | | | | 25.9 | 2.2 |

Notes:

1. Based on stack test results previously submitted to FDEP.
2. PM and F emissions calculated based on 2011-2012 production data.
3. Emissions of other pollutants were not evaluated as they are fuel related, which are not expected to increase as a result of the proposed project.

TABLE 2 - PROJECTED ACTUAL EMISSIONS
WHITE SPRINGS AGRICULTURAL CHEMICALS, INC.

| EMISSIONS DESCRIPTION | F | PM/PM10 |
|---|---|---|
| | TPY | TPY |
| Future Actual Emissions (1)(3)(4) | | |
| Year 2014 | 3.4 | 81.6 |
| Year 2015 | 3.4 | 81.6 |
| Year 2016 | 3.4 | 81.6 |
| Year 2017 | 3.4 | 81.6 |
| Year 2018 | 3.4 | 81.6 |
| Exclusion for Demand Growth and Unit Capable of Accomodating (3)(4)(6) | 1.2 | 55.7 |
| Projected Actual Emissions (2)(3)(4)(5) | | |
| Year 2014 | 2.2 | 25.9 |
| Year 2015 | 2.2 | 25.9 |
| Year 2016 | 2.2 | 25.9 |
| Year 2017 | 2.2 | 25.9 |
| Year 2018 | 2.2 | 25.9 |
| Baseline Actual Emissions (5) | 2.2 | 25.9 |
| Net Emissions Increase From Project (2) | 0 | 0 |
| PSD Significant Level | 3 | 25/15 |
| PSD Review Required? | NO | NO |

NOTES:

(1) Future actual emissions include Items (2) and (3), FAE = EU 008 (Prdn x EF /2000) + EU 032 (Prdn x EF/2000)

(2) The proposed project itself is not expected to result in an increase in production or emissions.

(3) Demand growth - not known, assume 20 percent increase over highest production, same for next 5 years.

For EU 008, this corresponds to 160316 tpy x 1.2 = 192379.2 tpy P2O5

For EU 032, this corresponds to 220216 tpy x 1.2 = 264259.2 tpy P2O5

(4) Unit capable of accomodating emissions - assume the highest emission factor observed during the baseline period.

For EU 008, this corresponds to 0.523 and 0.024 lb/ton P2O5 for PM and F, respectively.

For EU 032, this corresponds to 0.237 and 0.008 lb/ton P2O5 for PM and F, respectively.

(5) Baseline emissions based on operations for 2011-2012 (2-yr average).

(6) The emissions excluded are those not associated with the proposed project; equal to the difference in FAE and BAE .

TABLE 3 -STACK TEST DATA

WHITE SPRINGS AGRICULTURAL CHEMICALS, INC.

EU 008, Y-TRAIN

| Date | Test Rate (TPH Product) | Test Rate (TPH P205 in) | PM (lbs/hr) | F (lbs/hr) | PM (lbs/ton P205 in) | F (lbs/ton P205 in) | PM, 5-year Avg. | F, 5-year Avg. |
|---|---|---|---|---|---|---|---|---|
| 03/17/06 | 53.4 | 29.2 | 3.79 | 0.39 | 0.130 | 0.013 | | |
| 04/19/06 | 54.6 | 26.4 | 3.35 | 0.45 | 0.127 | 0.017 | | |
| 02/09/07 | 31.4 | 17.2 | 1.78 | 0.58 | 0.104 | 0.034 | | |
| 01/31/08 | 54.4 | 29.8 | 4.25 | 0.35 | 0.143 | 0.012 | | |
| 06/04/09 | 59.0 | 32.3 | 7.57 | 0.68 | 0.234 | 0.021 | | |
| 11/18/09 | 61.9 | 30.0 | 2.91 | 0.65 | 0.097 | 0.022 | | |
| 12/15/10 | 61.9 | 33.9 | 2.10 | 0.32 | 0.062 | 0.009 | 0.128 | 0.018 |
| 01/18/12 | 61.6 | 33.7 | 17.63 | 0.82 | 0.523 | 0.024 | 0.194 | 0.020 |

EU 032, Z-TRAIN

| Date | Test Rate (TPH Product) | Test Rate (TPH P205 in) | PM (lbs/hr) | F (lbs/hr) | PM (lbs/ton P205 in) | F (lbs/ton P205 in) | PM, 5-year Avg. | F, 5-year Avg. |
|---|---|---|---|---|---|---|---|---|
| 04/06/06 | 65.9 | 31.9 | 2.81 | 0.35 | 0.088 | 0.011 | | |
| 05/05/06 | 67.3 | 32.6 | 3.17 | 0.15 | 0.097 | 0.005 | | |
| 06/09/06 | 69.3 | 33.6 | 2.37 | 0.12 | 0.071 | 0.004 | | |
| 05/03/07 | 77.2 | 37.4 | 5.95 | 0.49 | 0.159 | 0.013 | | |
| 05/29/08 | 76.8 | 37.2 | 4.77 | 0.35 | 0.128 | 0.009 | | |
| 08/28/08 | 40.1 | 21.9 | 1.40 | 0.31 | 0.064 | 0.014 | | |
| 07/09/09 | 68.2 | 37.3 | 3.14 | 0.23 | 0.084 | 0.006 | | |
| 08/06/10 | 75.5 | 41.3 | 6.34 | 0.31 | 0.153 | 0.008 | | |
| 10/06/10 | 73.9 | 40.4 | 1.85 | 0.18 | 0.046 | 0.004 | 0.099 | 0.008 |
| 01/18/11 | 69.4 | 38.0 | 8.99 | 0.32 | 0.237 | 0.008 | | |
| 07/20/11 | 70.4 | 38.5 | 7.69 | 0.13 | 0.200 | 0.003 | | |
| 08/10/11 | 72.6 | 39.7 | 2.59 | 0.06 | 0.065 | 0.002 | 0.126 | 0.008 |
| 01/11/12 | 71.3 | 39.0 | 3.77 | 0.32 | 0.097 | 0.008 | 0.119 | 0.007 |

TABLE 4 - PRODUCTION DATA

WHITE SPRINGS AGRICULTURAL CHEMICALS, INC.

| Year | YMAP TPY Product | YMAP TPY P2O5 in | YDAP TPY Product | YDAP TPY P2O5 in | TOTAL Y TPY P2O5 in | 2-yr avg TPY P2O5 in |
|---|---|---|---|---|---|---|
| 2002 | 0 | 0 | 6020 | 2915 | 2915 | |
| 2003 | 3834 | 2099 | 281090 | 136108 | 138206 | 70561 |
| 2004 | 100701 | 55118 | 178081 | 86229 | 141348 | 139777 |
| 2005 | 190637 | 104344 | 107382 | 51996 | 156340 | 148844 |
| 2006 | 167244 | 91540 | 96722 | 46834 | 138374 | 147357 |
| 2007 | 314107 | 171925 | 0 | 0 | 171925 | 155150 |
| 2008 | 227566 | 124557 | 0 | 0 | 124557 | 148241 |
| 2009 | 184621 | 101051 | 0 | 0 | 101051 | 112804 |
| 2010 | 16825 | 9209 | 0 | 0 | 9209 | 55130 |
| 2011 | 248561 | 136049 | 0 | 0 | 136049 | 72629 |
| 2012 | 292897 | 160316 | 0 | 0 | 160316 | 148182 |

| Year | ZMAP TPY Product | ZMAP TPY P2O5 in | ZDAP TPY Product | ZDAP TPY P2O5 in | TOTAL Z TPY P2O5 in | 2-yr avg TPY P2O5 in |
|---|---|---|---|---|---|---|
| 2002 | 0 | 0 | 24432 | 11830 | 11830 | |
| 2003 | 0 | 0 | 404751 | 195986 | 195986 | 103908 |
| 2004 | 0 | 0 | 455834 | 220721 | 220721 | 208354 |
| 2005 | 0 | 0 | 417935 | 202370 | 202370 | 211546 |
| 2006 | 0 | 0 | 429934 | 208180 | 208180 | 205275 |
| 2007 | 0 | 0 | 413021 | 199991 | 199991 | 204086 |
| 2008 | 0 | 0 | 248598 | 120375 | 120375 | 160183 |
| 2009 | 18404 | 10073 | 0 | 0 | 10073 | 65224 |
| 2010 | 395585 | 216522 | 0 | 0 | 216522 | 113297 |
| 2011 | 402334 | 220216 | 0 | 0 | 220216 | 218369 |
| 2012 | 306726 | 167885 | 0 | 0 | 167885 | 194050 |

## 3. FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) REVIEW

### Brief Discussion of Emissions and PSD Applicability

Because the project involved a modification at an existing emissions unit as well as the addition of a new emissions unit, pursuant to Rule 62-212.400(2)(a), F.A.C., the review procedure used to determine whether a significant emission increase will occur as a result of this project is the Hybrid Test for Multiple Types of Emissions Units.

Project pollutant increases were determined by summing the difference between the baseline actual emissions and the projected actual emissions for the Y and Z Trains, and the baseline actual emissions and the potential emissions for the new zinc storage silo.

Department Review of PSD Applicability:

| Emissions Unit | Pollutant | Baseline Actual Emissions TPY[1] | Projected Actual Emissions TPY [2,3] | Potential Emissions TPY | Projected Emissions Increase [4] | PSD Significant Level | PSD Review? |
|---|---|---|---|---|---|---|---|
| Y-Train | $PM/PM_{10}/PM_{2.5}$ | 14.4 | (160316*1.2*0.194)/2000 = **18.7** | --- | 18.7-14.4 = 4.3 | | |
| Z-Train | $PM/PM_{10}/PM_{2.5}$ | 11.5 | (220216*1.2*0.119)/2000= **15.7** | --- | 15.7-11.5 = 4.2 | | |
| Zinc Storage Silo | $PM/PM_{10}/PM_{2.5}$ | 0.0 | --- | 0.20[5] | 0.20[6] | | |
| **Total** | | **25.9** | **34.4** | | **8.7** | **25/15/10** | **N** |
| Y-Train | F | 1.5 | (160316*1.2*0.020)/2000= **1.9** | --- | 1.9-1.5 = 0.4 | | |
| Z-Train | F | 0.7 | (220216*1.2*0.007)/2000= **0.9** | --- | 0.9-0.7=0.2 | | |
| **Total** | | **2.2** | **2.8** | | **0.6** | **3** | **N** |

[1] The Baseline Actual Emissions provided from applicant. BAE calculated based on 2011-2012 production data. PM and F emission factors determined by applicant from previously submitted stack test results.

[2] Sources: Projected Actual Emissions determined from applicant supplied assumption of 20 percent increase above highest production, and remains the same for next 5 years after implementation of project

EU 008: this corresponds to 160316 tpy x 1.2 = 192379.2 tpy $P_2O_5$

EU 032: this corresponds to 220216 tpy x 1.2 = 264259.2 tpy $P_2O_5$

[3] The same PM and F emission factors used to establish the BAE were used in this calculation

[4] The projected emissions = (Projected Actual Emissions – Baseline Actual Emissions). When determining projected actual emissions, Rule 62-210.200(250), F.A.C. states that the Department … "… Shall exclude that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project including any increased utilization due to product demand growth."

[5] Sources: Applicant provided permitted $P_2O_5$ rate of 652,849 TPY, 40% $P_2O_5$ by weight, 1% Zinc product, and AP-42 emission factor from Table 11.19.2 for total PM.

[6] The Project emissions = (Potential emissions – Baseline Actual Emissions).

The analysis avoided the requirements of subsection 62-212.400(4) through (12), F.A.C. for several pollutants. Therefore, pursuant to Rule 62-212.300(1)(e), F.A.C., the permittee is subject to the following monitoring, reporting and recordkeeping provisions.

a. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change. Emissions shall be computed in accordance with the provisions in Rule 62-210.370, F.A.C.

b. The permittee shall report to the Department within 60 days after the end of each calendar year during the 5-year period setting out the unit's annual emissions during the calendar year that preceded submission of the report. The report shall contain the following:

   (1) The name, address and telephone number of the owner or operator of the major stationary source;

   (2) The annual emissions as calculated pursuant to the provisions of 62-210.370, F.A.C.;

   (3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

   (4) Any other information that the owner or operator wishes to include in the report.

c. The information required to be documented and maintained pursuant to subparagraphs 62-212.300(1)(e)1 and 2, F.A.C., shall be submitted to the Department, which shall make it available for review to the general public.

d. The permittee shall compute and report annual emissions in accordance with Rule 62-210.370(2), F.A.C. For this project, the permittee shall use the following methods in reporting the actual annual emissions for the following **pollutants** emitted from the Y MAP/DAP Train (identified as Emission Unit No. 008) and the Z MAP/DAP Train (identified as Emissions Unit No. 032):

   (1) The permittee shall use the data collected from the required stack tests to determine and report the actual annual emissions of **PM**, and **F.** The methodology for calculating the actual annual emissions of **$PM_{10}$ and $PM_{2.5}$**, shall be the same as was used to calculate the **$PM_{10}$ and $PM_{2.5}$** baseline emissions. The permittee shall follow the stack test methods, test procedures and test frequencies specified in the current Title V air operation permit.

f. As defined in Rule 62-210.370(2), F.A.C., the permittee shall use a more accurate methodology if it becomes available.

Based on the projections, supporting information provided by the applicant, conclusions presented by the applicant, and the emissions summary presented in the above tables, the Department agrees that the project does not trigger PSD preconstruction review.

Therefore, the project requires a minor air construction permit.

### Rule Applicability

### State Requirements

Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; 62-212.400, F.A.C., Prevention of Significant Deterioration; Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards; and Rule 62-296.403, F.A.C., Phosphate Processing.

### NESHAP Applicability

No additional NESHAP regulations are applicable to these emission units due to this project.

40 CFR 63, Subpart A - General Provisions; 40 CFR 63, Subpart BB - National Emission Standards for Hazardous Air Pollutants From Phosphate Fertilizers Production Plants.

### NSPS Applicability

No additional NESHAP regulations are applicable to these emission units due to this project.

NSPS- 40 CFR 60, Subpart V, Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants, adopted and incorporated by reference in Rule 62-204.800(7)(b)28., F.A.C.

### Applicability of Previous Permits

Existing Permits and Regulations: The conditions of this permit supplements all other previously issued air construction and operation permits for this emissions unit. These conditions are in addition to all other applicable permit conditions and regulatory requirements. The Permittee shall continue to comply with the conditions of those permits, which include restrictions and standards regarding capacities, production, operation, fuels, emissions, monitoring, recordkeeping, reporting and the like.

## 4. 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. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Rita Felton-Smith is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Florida Department of Environmental Protection, Northeast District Office, 8800 Baymeadows Way West, Suite 100, Jacksonville, FL 32256, Phone: 904/256-1700.