Florida Department of Environmental Protection

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

DRAFT PERMIT

PERMITTEE

JDC Development, LLC
3200 CR 630 West
Ft. Meade, FL 33841

Authorized Representative:
Mr. Theodore P. Fowler, President

Air Permit No. 1050435-001-AC
Permit Expires: 12/31/2013
Site Name : Ft. Meade
Minor Air Construction Permit
Project Name: Construction of a phosphoric acid production facility

This is the final air construction, which authorizes the construction of a facility that will utilize improved hard process (IHP) for the production of phosphoric acid. The proposed work will be conducted at the Ft. Meade (Standard Industrial Classification No. 2874).

The proposed facility will be located in Polk County at 3200 CR 630 West in Ft. Meade, Florida. The UTM coordinates are Zone 17, 416.6 km East, and 3069.6 km North. As noted in the Final Determination provided with this final permit, no changes or only minor changes and clarifications were made to the draft permit.

This final permit is organized by the following sections:

Section 1. General Information

Section 2. Administrative Requirements and Facility-wide Specific Conditions

Section 3. Emissions Unit Specific Conditions

Section 4. Appendices

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

This air pollution permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard,

Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Hillsborough County, Florida

DRAFT

_____ _____

Cindy Zhang-Torres, P.E. Effective Date
Air Permitting Manager
Southwest District

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination, the Final Permit and the Appendices) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on _____ to the persons listed below.

Theodore P. Fowler, JDC Development, LLC (tipfowler@aol.com)
Mark Vignovic, JDC Development, LLC (vig86@comcast.net)
Lawrence M. Handman, P.E., HTH Inc. (lhandman@hthinc.com)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

DRAFT

_____ _____

(Clerk) (Date)

FACILITY AND PROJECT DESCRIPTION

Project Description and Affected/Proposed Emission Units

This project is for the construction of a brand new facility that will utilize Improved Hard Process (IHP) for the production of phosphoric acid. The proposed facility will include raw material drying with rotary feed dryer, raw material grinding and mixing, balling circuit with a low temperature travelling-grate dryer and phosphoric acid production. The proposed IHP phosphoric acid facility will be a semi-commercial plant that will make technical grade phosphoric acid. Unlike the wet-process phosphoric acid process line, the proposed facility will not produce phosphogypsum as a by-product. Instead, a light weight co-product pellet (aggregate) will be produced and marketed for various use. The proposed facility will utilize a ported, rotary kiln to produce gaseous phosphorus pentoxide from a mix of phosphate ore, petroleum coke and clay. The gaseous phosphorous pentoxide will then be hydrated with water and dilute phosphoric acid to make phosphoric acid at a maximum concentration of about 70-76% (by weight) P_2O_5 content.

In the event power is lost or interrupted to the facility, operations related to raw material drying (EU 001), raw material grinding and mixing (EU 002) and balling circuit (EU 003) is halted. Emergency back-up power is provided for a controlled shut down of the rotary kiln (EU 004) to control the release of emissions. Back up natural gas fired generators will provide power to maintain kiln rotation, maintain instrumentation for monitoring and system control, operate one hydrator spray pump, run the aggregate removal conveyor from the quench tank and start a spare blower that will be used to exhaust kiln off gas from the cyclone scrubber through a power loss stack.

This project will create the following emissions units:

Facility ID No. 1050435	
ID No.	Emission Unit Description
001	Raw Material Drying
002	Raw Material Grinding & Mixing
003	Balling Circuit
004	Phosphoric Acid Preparation

NOTE: *Please reference the Permit No., Facility ID, and Emission Unit ID in all correspondence, test report submittals, applications, etc.*

Exempt Emission Units/Activities

Four (4) process burners fired with only natural gas, which are used as indirect heat sources for Emission Unit Nos. 001 – Raw Material Drying, 003 – Balling Circuit, and 004 – Acid Production. The rotary dryer (EU 001) will be heated with natural gas and combustion air. The dryer will be running 50% of the time that the rest of the plant operates. The burner for EU 001 has a maximum heat input of 15 MMBtu/hr. The grate dryer (EU 003) will be heated with natural gas and combustion air. The grate dryer will have two burners at 3 MMBtu/hr (each) totaling 6 MMBtu/hr. The kiln (E.U. 004) is initially heated with natural gas. During start-up, testing and commissioning of the kiln (E.U. 004), the feed to the kiln will not include

pet coke. Instead, natural gas at approximately 31 mmBtu/hr will be used. Once the kiln is cleared for acid production, natural gas will only be used for temperature control at approximately 1 mmBtu/hr. The maximum rate of coke used in the kiln will be approximately 30 mmBtu/hr. Thus, the facility will have a total combined maximum heat input rate of approximately 52 mmBtu/hr from natural gas.
[Rule 62-210.300(3)(a)34.g., F.A.C. – Fossil fuel steam generators, hot water generators, and other external combustion heating units with heat input capacity less than 100 mmBtu/hr.]

- Raw material unloading and storage. The moisture content of the raw material ranges between 6 – 25%. Phosphate materials (containing silica, phosphate pebble, clay settling pond delta material and tailings and some clay), phosphatic clay and petroleum coke delivered to the facility by rail or truck and are stored at designated storage areas.
[Rule 62-210.300(3)(b)1., F.A.C.]

- Raw material Handling. A wheel loader transfers the phosphate ore and coke from the storage area into raw material processing area and dump the material into the dump hoppers. The dump hoppers are equipped with a series of belt conveyor feeders that will transfer the material to feed hoppers. Clay is dumped directly into a feed hopper. Phosphate ore, coke and clay are proportioned by means of weigh belts and are transferred to main cross belt which will carry the combined material stream to the rotary dryer.
[Rule 62-210.300(3)(b)1., F.A.C.]

- Aggregate Cooling and Handling activity that involves water quenching of hot solid agglomerates (primarily calcium silicate) that exits the rotary kiln and storing the cooled agglomerate on asphalt and concrete pavement to be sold as lightweight aggregate. The aggregate will be loaded into dump trailer or rail cars.
[Rule 62-210.300(3)(b)1., F.A.C.]

- Truck Traffic and Storage Pile Erosion.
[Rule 62-210.300(3)(b)1., F.A.C.]

- One 100-kW emergency generator fired with only natural gas and subject to requirements of 40 CFR 60, Subpart JJJJ – Standards of performance for Spark Ignition of Internal Combustion Engines.
[Rule 62-210.300(3)(a)35., F.A.C. – Stationary Reciprocating Internal Combustion Engines]

FACILITY REGULATORY CLASSIFICATION

– The facility is not a major source of hazardous air pollutants (HAP).

– The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).

– The facility is not a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.

– The facility is not a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

– This facility is a synthetic non-PSD major and synthetic non-Title V source for NO_x.

PERMIT HISTORY/AFFECTED PERMITS

No previous permits. This is a brand new facility.

1. Permitting Authority: The permitting authority for this project is the Florida Department of Environmental Protection (Department), Southwest District's Air Resource Management Section. The Southwest District's mailing address and phone number is:

   Florida Department of Environmental Protection
   Southwest District Office
   Air Resource Management Section
   13051 North Telecom Parkway
   Temple Terrace, Florida 33637-0926
   Telephone: 813-632-7600

   All documents related to applications for permits shall be submitted to the above address.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Southwest District Office's Air Resource Management Section (see above mailing address and phone number).

3. Appendices: The following Appendices are attached as part of this permit:

   a. Appendix A. Citation Formats and Glossary of Common Terms;
   b. Appendix B. General Conditions;
   c. Appendix C. Common Conditions; and
   d. Appendix D. Common Testing Requirements.
   e. Appendix E. NSPS Subpart A – General provisions
   f. Appendix F. NSPS Subpart NN
   g. Appendix G. NSPS Subpart UUU

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: Unless otherwise exempt by rule, the permittee shall not initiate any construction, reconstruction, or modification at the facility and shall not install/modify any pollution control device at the facility without obtaining prior authorization from the Department. Modification is defined as: Any physical change or changes in the method of operations or addition to a facility that would result in an increase in the actual emissions of any air pollutant subject to air regulations, including any not previously emitted, from any emission unit or facility. [Rules 62-210.200 - Definition of "Modification" and 62-210.300(1)(a), F.A.C.]

7. Annual Operating Report: On or before **April 1** of each year, the permittee shall submit a completed DEP Form 62-210.900(5), "Annual Operating Report for Air Pollutant Emitting Facility" (AOR) for the preceding calendar year. The report may be submitted electronically in accordance with the instructions received with the AOR package sent by the Department, or a hardcopy may be sent to the Compliance Authority.
   [Rule 62-210.370(3), F.A.C.]

8. Application for Non-Title V Air Operation Permit: This permit authorizes construction of the permitted emissions unit(s) and initial operation to determine compliance with Department rules. A Non-Title V air operation permit is required for continued operation of the permitted emissions units. The permittee shall apply for a Non-Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. Commencing operation means setting into operation of any emissions unit for any purpose. To apply for a Non-Title V air operation permit, the applicant shall submit the following:

   a. the appropriate permit application form *(see current version of Rule 62-210.900, F.A.C. (Forms and Instructions), and/or FDEP Division of Air Resource Management website at: http://www.dep.state.fl.us/air/)*;

   b. the appropriate operation permit application fee from Rule 62-4.050(4)(a), F.A.C.;

   c. a copy of the initial compliance test report(s) for tests required by Specific Condition No. E.2., if not previously submitted;

   d. copies of the most recent two months of records/logs specified in Specific Condition Nos. A.10., B.8., C.10., and D.13.

   The application shall be submitted to the Permitting Authority.

   [Rules 62-4.030, 62-4.050, and 62-4.220 F.A.C.]

A. Emission Unit No. 001: Raw Material Drying

This section of the permit addresses the following emissions units.

ID No.	Emission Unit Description
001	Raw Material Drying. After weighing and initial processing, the phosphate ore, petroleum coke and clay will be conveyed into a rotary feed dryer (DR-201). The rotary feed dryer will be heated with natural gas and combustion air. The heat input rate for the rotary feed dryer is 15 MMBtu/hr. A cyclone and a wet scrubber will be used to control PM emissions from the rotary feed dryer. Exhaust gas will exit the wet scrubber via a stack (EP-001). The processing equipment in this area is located under a roof so as not to be affected by rain.

PERFORMANCE RESTRICTIONS

A.1. Federal Regulatory Requirements: This emission unit is subject to 40 CFR 60 , Subpart UUU – Standards of Performance for Calciners and Dryers in Mineral Industries and 40 CFR 60, Subpart NN – Standards of Performance for Phosphate Rock Plants which are adopted by reference in Rule 62-204.800, F.A.C.
[Rule 62-204.800(8), F.A.C.]

A.2. Permitted Capacity: The maximum raw material input rate to the rotary feed dryer shall not exceed 27.5 tons/hr, daily average, and 103,956 tons per any consecutive 12-month period.
[Permit Application dated 04/09/2010, revised dated 04/04/2011; Rule 62-210.200(PTE), F.A.C.]
{Note: Also see Specific Condition No. D.2.b.}

A.3. Authorized Fuel: The rotary feed dryer shall be fired with only natural gas. The natural gas usage shall not exceed 39 mmscf per any consecutive 12-month period.
[Permit Application dated 04/09/2010, revised dated 04/04/2011; Rule 62-210.200(PTE), F.A.C.]

A.4. Restricted Operation: The hours of operation for the rotary feed dryer are limited to 3,780 hours per any consecutive 12-month period.
[Permit Application dated 04/09/2010, revised dated 04/04/2011; Rule 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

A.5. Visible Emissions (VE): Visible emissions from the rotary feed dryer exhaust stack shall not exhibit greater than 10% opacity.
[40 CFR 60.402(a)(1)(ii)]

A.6. Particulate Matter (PM) Emissions: Particulate Matter (PM) emissions from the rotary feed dryer exhaust stack shall not exceed 0.06 lb/ton of raw material input and 0. 025 gr/dscf. [40 CFR 60.402(a)(1)(i) and 40 CFR 60.732(a)]
{Note: The 0.06 lb/ton limit is the more stringent limit, which is equivalent to 3.1 tons per any consecutive 12-month period PM emissions at the maximum raw material input rate.}

A.7. Fluoride (F) Emissions: Fluoride (F) emissions from the rotary feed dryer exhaust stack shall not exceed 0.05 lb per ton of phosphate material input expressed as tons of P_2O_5. [Rule 62-296.403(1)(g), F.A.C.]
{Note: This is equivalent to 0.28 ton of F emissions based on 11,340 tons of P_2O_5 input per any consecutive 12-month period}

MONITORING OF EMISSIONS AND OPERATIONS

A.8. Wet Scrubbing Emission Control Device Monitoring: The permittee shall install, calibrate, maintain, and operate the following monitoring devices:

(1) A monitoring device that continuously measures and records pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within ± 250 pascals (±1 inch water) gauge pressure and within 5 percent of water column gauge pressure at the level of operation.
(2) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control device. The monitoring device must be accurate within ± 5% of design liquid supply pressure.
(3) A monitoring device that continuously measures and records the scrubbing liquid flow rate to the scrubber. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.

[40 CFR 60.403(c), 40 CFR 60.734(d)]

TESTING REQUIREMENTS

A.9. Test Method(s): Required tests shall be performed in accordance with the following reference method(s).

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Determination of Particulate Matter Emissions from stationary sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
13A	Determination of Total Fluoride Emissions from Stationary Sources – SPADNS – Zirconium Lake Method – 40 CFR 60, Appendix A
13B	Determination of Total Fluoride Emissions from Stationary Sources – Specific Ion Electrode Method – 40 CFR 60, Appendix A

The above method(s) are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. The sampling time and volume for each Method 5 test run shall be at least 2 hours and 1.70 dscm (60 dscf). The average of the three runs shall be used as the baseline average. No other method(s) may be used unless prior written approval is received from the Department.

[Rules 62-204.800 and 62-297.100, F.A.C., 40 CFR 60.736, and Appendix A of 40 CFR 60]

RECORDS AND REPORTS

A.10. Recordkeeping: In order to document compliance with the specific conditions A.2., A.3. and A.4., the permittee shall maintain the records of the following information:

a. Facility Name, Facility ID No. (1050435), EU ID No. (001) & Description;
b. When operating, Daily, record the hours of operation of the rotary feed dryer;
c. When operating, Daily, record the raw material input, tons;
d. When operating, Daily, record the raw material input rate, tons/hour (daily average);
e. When operating, Daily, record the natural gas usage, mmscf;
f. Monthly, calculate the quantity, in tons, of raw material input (12-month rolling total);
g. Monthly, calculate the natural gas usage, in mmscf (12-month rolling total).
h. Monthly, calculate the hours of operation of the rotary feed dryer (12-month rolling total).
i. When operating, Daily, record once each day, from the recordings of the monitoring devices an arithmetic average over a 2-hour period of the change in pressure of the gas stream across the scrubber, scrubbing liquid supply pressure and the flown rate of the scrubbing liquid.

The daily logs must be completed within 5 business days and monthly records shall be completed within 15 days of the end of the current month and shall be retained by the facility for a minimum of three (3) years and shall be available to the Department upon request.

[Rule 62-4.070(3), F.A.C.; 40 CFR 60.735(b)]

A.11. Semi-Annual Reporting: The permittee shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by 40 CFR §60.403(c) and §60.734(d). For the purpose of these reports, exceedances are defined as follows:

(1) all measurement results that are less than 90 percent of the average levels maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the standard under § 60.402.
(2) Any daily 2-hour average of the wet scrubber pressure drop determined as described in §60.735(b) that is less than 90 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particular matter standard; or

(3) Each daily wet scrubber liquid flow rate recorded as described in §60.735(b) that is less than 80 percent or greater than 120 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particular matter standard.

[40 CFR 60.403(f) and 40 CFR 60.735(c)(2) and (3)]

B. EU No. 002: Raw Material Grinding and Mixing

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
002	Raw Material Grinding and Mixing. Material will be discharged from the rotary feed dryer (DR-201) to a screw conveyor and then to a screen for transfer of dried material to the ball mill (BM-220). The ball mill will be used to grind the phosphate ore, clay and petroleum coke mixture. Oversized material from the screen will be collected in a dump hopper equipped with a dust sock. Ground material exiting the ball mill will be conveyed via chute to the bottom of an enclosed bucket elevator that transfers the ground material to one of the two storage tanks. One storage tank is for the high phosphate materials and the other is for low phosphate material. Material will be transferred from the bottom of each storage tank via screw conveyor that empties onto a covered conveyor belt with scale. Provisions to add bentonite clay from bulk bags to the conveyor belt will also be provided. The conveyor belt will empty into a paddle or ribbon mixer (MX-340). The mixer will mix bentonite and ground phosphate ore, clay and petroleum coke with water. Fugitive dust emissions from the ball mill, transfer chutes, bucket elevator, storage tanks, conveyor belt and mixer inlet will be collected via a bin vent and blower system located on top of the ground high phosphate material storage tank (TK-221). This unit will exhaust via an exhaust stack (EP-002). The process equipment in this area will be located under a roof.

PERFORMANCE RESTRICTIONS

B.1. Federal Regulatory Requirements: This emission unit is subject to 40 CFR 60, Subpart NN – Standards of Performance for Phosphate Rock Plants, which is adopted by reference in Rule 62-204.800, F.A.C.
[Rule 62-204.800(8), F.A.C.]

B.2. Permitted Capacity: The maximum material input rate to the ball mill shall not exceed 25.8 tons/hr, daily average, and 97,401 tons per any consecutive 12-month period.
[Rule 62-210.200(PTE), F.A.C; Permit Application dated 04/09/2010, revised dated 04/04/2011]

B.3. Restricted Operation: The hours of operation for this emissions unit are limited to 3,780 hours per any consecutive 12-month period.
[Rule 62-210.200(PTE), F.A.C; Permit Application dated 04/09/2010, revised dated 04/04/2011]

B. EU No. 002: Raw Material Grinding and Mixing

EMISSIONS STANDARDS

B.4. Visible Emissions (VE): Visible Emissions from the bin vent exhaust stack shall not exhibit greater than zero-percent opacity.
[40 CFR 60.402(a)(4)(ii)]

B.5. Particulate Matter (PM) Emissions: Particulate Matter (PM) emissions from the bin vent exhaust stack shall not exceed 0.012 lb per ton of material input.
[40 CFR 60.402(a)(4)(i)]
{Note: This is equivalent to 0.58 tons per any consecutive 12-month period, based on the maximum material input rate.}

MONITORING OF EMISSIONS AND OPERATIONS

B.6. Continuous Opacity Monitoring: The permittee shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the opacity of the gases discharged into the atmosphere from the phosphate rock grinder. The span of the system shall be set at 40-percent opacity.
[40 CFR 60.403(a)]

TESTING REQUIREMENTS

B.7. Test Method(s): Required tests shall be performed in accordance with the following reference method(s).

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Determination of Particulate Matter Emissions from stationary sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources

The above method(s) are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other method(s) may be used unless prior written approval is received from the Department.

[Rules 62-204.800 and 62-297.100, F.A.C.; and Appendix A of 40 CFR 60]

RECORDS AND REPORTS

B.8 . Recordkeeping: In order to document compliance with the specific conditions B.2. and B.3., the permittee shall maintain the records of the following information:

a. Facility Name, Facility ID No. (1050435), EU ID No. (002) & Description;
b. When operating, Daily, record the hours of operation of the ball mill;

c. When operating, Daily, record the material input to the ball mill, tons;
d. When operating, Daily, record the material input rate to the ball mill, tons/hour (daily average);
e. Monthly, calculate the quantity, in tons, of material input to the ball mill (12-month rolling total); and,
f. Monthly, calculate the hours of operation of the ball mill (12-month rolling total).

The daily logs must be completed within 5 business days and monthly records shall be completed within 15 days of the end of the current month and shall be retained by the facility for a minimum of three (3) years and shall be available to the Department upon request.

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

B.9. Semi-Annual Reporting: The permittee shall submit written reports semiannually of excess emissions, which are defined as all 6-minute periods during which the average opacity from the bin vent exhaust is greater than zero percent.
[40 CFR 60.403(e)]

C. EU 003: Balling Circuit

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
003	Balling Circuit. Homogenized, wet material will exit the mixer via a belt conveyor that will empty into a balling drum. Additional water will be added to the balling drum. Moist agglomerates will exit the balling drum via a conveyor system equipped with a roller screen. Mid cut agglomerates will then pass along a low-temperature travelling-grate dryer (DR-320). The grate dryer will be heated with natural gas and combustion air. The heat input rate for the grate dryer is 6 MMBtu/hr. Undersized agglomerates will be returned to the balling drum and the oversized ones will be returned to the mixer. A dust collector (DC-320) will be used to control dust emissions from the grate dryer. The dust collector exhaust will be vented through an exhaust stack (EP-003). The processing equipment in this area will be located under a roof.

PERFORMANCE RESTRICTIONS

C.1. Federal Regulatory Requirements: This emission unit is subject to 40 CFR 60 , Subpart UUU – Standards of Performance for Calciners and Dryers in Mineral Industries and 40 CFR 60, Subpart NN – Standards of Performance for Phosphate Rock Plants which are adopted by reference in Rule 62-204.800, F.A.C.
[Rule 62-204.800(8), F.A.C.]

C.2. Permitted Capacity: The maximum feed material input rate to the grate dryer shall not exceed 14.3 tons/hr, daily average, and 107,950 tons per any consecutive 12-month period.
[Rule 62-210.200(PTE), F.A.C ; Permit Application dated 04/09/2010, revised dated 04/04/2011]

C.3. Authorized Fuel: The grate dryer shall be fired with only natural gas. The natural gas usage shall not exceed 44 mmscf per any consecutive 12-month period.
[Rule 62-210.200(PTE), F.A.C ; Permit Application dated 04/09/2010, revised dated 04/04/2011]

C.4. Restricted Operation: The hours of operation for the grate dryer are limited to 7,560 hours per any consecutive 12-month period.
[Rule 62-210.200(PTE), F.A.C ; Permit Application dated 04/09/2010, revised dated 04/04/2011]

EMISSIONS STANDARDS

C.5. Visible Emissions (VE): Visible emissions from the grate dryer exhaust stack shall not exceed 10% opacity.
[40 CFR 60.402(a)(1)(ii) and 40 CFR 60.732(b)]

C.6. Particulate Matter (PM) Emissions: Particulate Matter (PM) emissions from the grate dryer exhaust stack shall not exceed 0.06 lb/ton of feed material and 0. 025 gr/dscf.
[40 CFR 60.402(a)(1)(i) and 40 CFR 60.732(a)]
{Note: The 0.06 lb/ton limit is the more stringent limit, which is equivalent to 3.2 tons per any consecutive 12-month period PM emissions at the maximum feed material input rate.}

C.7. Fluoride (F) Emissions: Fluoride (F) emissions from the grate dryer exhaust stack shall not exceed 0.05 lb per ton of feed material input expressed as tons of P_2O_5.
[Rule 62-296.403(1)(g), F.A.C.]
{Note: This is equivalent to 0.28 tons of F emissions based on 11,340 tons of P_2O_5 input per any consecutive 12-month period}

MONITORING OF EMISSIONS AND OPERATIONS

C.8. Continuous Opacity Monitoring: The permittee shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the opacity of the gases discharged into the atmosphere from the grate dryer. The span of the system shall be set at 40-percent opacity.
[40 CFR 60.403(a) and 40 CFR 60.734(a)]

TESTING REQUIREMENTS

C.9. Test Method(s): Required tests shall be performed in accordance with the following reference method(s).

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Determination of Particulate Matter Emissions from stationary sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
13A	Determination of Total Fluoride Emissions from Stationary Sources – SPADNS – Zirconium Lake Method – 40 CFR 60, Appendix A
13B	Determination of Total Fluoride Emissions from Stationary Sources – Specific Ion Electrode Method – 40 CFR 60, Appendix A

The above method(s) are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. The sampling time and volume for each Method 5 test run shall be at least 2 hours and 1.70 dscm (60 dscf). The average of the three runs shall be used as the baseline average. No other method(s) may be used unless prior written approval is received from the Department.

[Rules 62-204.800 and 62-297.100, F.A.C., 40 CFR 60.736, and Appendix A of 40 CFR 60]

RECORDS AND REPORTS

C.10. Recordkeeping: In order to document compliance with the specific conditions C.2., C.3. and, C.4., the permittee shall maintain the records of the following information:

a. Facility Name, Facility ID No. (1050435), EU ID No. (003) & Description;
b. When operating, Daily, record the hours of operation of the grate dryer;
c. When operating, Daily, record the feed material input to the grate dryer, tons;
d. When operating, Daily, record the feed material input rate to the grate dryer, tons/hour (daily average);
e. When operating, Daily, record the natural gas usage in the grate dryer, mmscf;
f. Monthly, calculate the quantity, in tons, of feed material input to the grate dryer (12-month rolling total);
g. Monthly, calculate the natural gas usage in the grate dryer, in mmscf (12-month rolling total).
h. Monthly, calculate the hours of operation of the grate dryer (12-month rolling total).

The daily logs must be completed within 5 business days and monthly records shall be Completed within 15 days of the end of the current month and shall be retained by the facility For a minimum of three (3) years and shall be available to the Department upon request.

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

C.11. Semi-Annual Reporting: Each owner or operator shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by 40 CFR §60.403(a) and §60.734(a). For the purpose of these reports, exceedances are defined as all 6-minute periods during which the average opacity from dry control devices is greater than 10 percent.
[40 CFR 40.403(e) and 60.735(c)(1)]

D. EU 004: Phosphoric Acid Production

This section of the permit addresses the following emissions unit/units.

ID No.	Emission Unit Description
004	Phosphoric Acid Production. The dried and hardened agglomerates from the grate dryer will be fed into kiln (KN-330) which will have an operating temperature of 1320 ^{0}C with a solids residence time of 1.4 hours. A small kiln burner fed by natural gas will be required for startup and stability control. The petroleum coke will supply all the necessary heat required in the kiln. The heat input rate for the kiln will be 30 MMBtu/hr. The kiln off-gas will contain carbon monoxide, nitrogen oxide (NO_x), sulfur dioxide (SO_2), oxygen and gaseous phosphorous pentoxide (P_2O_5) which will be hydrated with water and weak phosphoric acid to make strong phosphoric acid of about 70 – 76% (by weight) P_2O_5 content. The hydrator off-gas will be further scrubbed in a venturi followed by a cyclone/scrubber. A high efficiency candle filter mist eliminator will remove and recover phosphoric acid mist from the effluent gas. The hydrator, venturi, cyclone/scrubber and mist eliminators will be integral to the phosphoric acid production process and therefore, not control devices. Product acid will be cooled via non-contact cooling water in heat exchangers and a cooling tower before it will be collected in two storage tanks. A flue gas desulfurization (FGD) scrubber (DS-450) will use lime slurry to remove SO_2 before the combustion gas stream will be released to the atmosphere via the flue gas stack (EP-004). A NO_x continuous emissions monitor (CEM) will monitor kiln exhaust to quantify NO_x emission from the rotary improved hard process (IHP) kiln. Emergency backup power will provide for a controlled shut down of the rotary kiln to control the release of emissions. It will start a spare blower that will be used to exhaust kiln off-gas from the cyclone scrubber through a power loss stack (EP-004A).

PERFORMANCE RESTRICTIONS

D.1. Federal Regulatory Requirements: This emission unit is subject to 40 CFR 60 , Subpart UUU – Standards of Performance for Calciners and Dryers in Mineral Industries and 40 CFR 60, Subpart NN – Standards of Performance for Phosphate Rock Plants which are adopted by reference in Rule 62-204.800, F.A.C.
[Rule 62-204.800(8), F.A.C.]

D.2. Permitted Capacity:
a. The maximum feed input rate to the kiln shall not exceed 12.9 tons/hr, daily average, and 97,206 tons per any consecutive 12-month period.
b. The maximum phosphoric acid production rate shall not exceed 1.5 tons per hour, daily average, and 11,340 tons per any consecutive 12-month period, as P_2O_5.

[Rule 62-210.200(PTE), F.A.C ; Permit Application dated 04/09/2010, revised dated 04/04/2011]
{Note: The specific condition No. D.2.(b) essentially limits the material input rate to 11,340 tons per any consecutive 12-month period, as tons of P_2O_5.}

D.3. Authorized Fuel: The kiln burner shall be fired with only natural gas for startup and stability control. The natural gas usage shall not exceed 30.00 mmscf per any consecutive 12-month period.
[Rule 62-210.200(PTE), F.A.C.; Permit Application dated 04/09/2010, revised dated 04/04/2011]

D.4. Restricted Operation: The hours of operation for the kiln are limited to 7,560 hours per any consecutive 12-month period.
[Rule 62-210.200(PTE), F.A.C; Permit Application dated 04/09/2010, revised dated 04/04/2011]

EMISSIONS STANDARDS

D.5. Visible Emissions (VE): Visible emissions from the flue gas stack shall not exceed 10% opacity.
[40 CFR 60.402(a)(3)(ii)]

D.6. Nitrogen Oxide (NO_x) Emissions: Nitrogen Oxide (NO_x) emissions from the flue gas stack shall not exceed 23.4 lb/hour, which is equivalent to 88.5 tons per year.
[Rule 62-210.200(PTE), F.A.C.; Permit Application dated 04/09/2010, revised dated 04/04/2011]

D.7. Particulate Matter (PM) Emissions:

a. Particulate Matter (PM) emissions from the flue gas stack shall not exceed 0.23 lb/ton of feed material (*for processing unbeneficiated phosphate rock or blends of beneficiated and unbeneficiated phosphate rock).*
b. Particulate Matter (PM) emissions from the flue gas stack shall not exceed 0.11 lb/ton of feed material (*for processing beneficiated phosphate rock).*
c. Particulate Matter (PM) emissions from the flue gas stack shall not exceed 0.04 gr/dscf.

[40 CFR 60.402(a)(2)(i), 40 CFR 60.402(a)(3)(i) and 40 CFR 60.732(a)]
{Note: The 0.23 lb/ton limit, more stringent than the 0.04 gr/dscf limit, is equivalent to 11.2 tons per any consecutive 12-month period PM emissions at the maximum hourly feed material input rate.}

D.8. Fluoride (F) Emissions: Fluoride (F) emissions from the flue gas stack shall not exceed 0.37 lb per ton of phosphate materials input expressed as tons of P_2O_5.
[Rule 62-296.403(1)(h), F.A.C.]
{Note: This is equivalent to 2.1 tons of F emissions based on 11,340 tons of P_2O_5 input per any consecutive 12-month period}

TESTING REQUIREMENTS

D.9. Test Method(s): Required tests shall be performed in accordance with the following reference method(s).

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Determination of Particulate Matter Emissions from stationary sources
8	Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
13A	Determination of Total Fluoride Emissions from Stationary Sources – SPADNS – Zirconium Lake Method – 40 CFR 60, Appendix A
13B	Determination of Total Fluoride Emissions from Stationary Sources – Specific Ion Electrode Method – 40 CFR 60, Appendix A

The above method(s) are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm (60 dscf). The average of the three runs shall be used as the baseline average. No other method(s) may be used unless prior written approval is received from the Department.

[Rules 62-204.800 and 62-297.100, F.A.C., 40 CFR 60.736, and Appendix A of 40 CFR 60]

MONITORING OF EMISSIONS AND OPERATIONS

D.10. Wet Scrubbing Emission Control Device Monitoring: The permittee shall install, calibrate, maintain, and operate the following monitoring devices:

(1) A monitoring device that continuously measures and records pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within ± 250 pascals (±1 inch water) gauge pressure and within 5 percent of water column gauge pressure at the level of operation.
(2) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control device. The monitoring device must be accurate within ± 5% of design liquid supply pressure.
(3) A monitoring device that continuously measures and records the scrubbing liquid flow rate to the scrubber. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.

[40 CFR 60.403(c), 40 CFR 60.734(d)]

D.11. Continuous Emissions Monitoring (CEM) System: The permittee shall install, calibrate, operate and maintain continuous emissions monitoring system (CEM) to measure and record concentrations of NO_x in the kiln system exhaust stack in a manner sufficient to demonstrate continuous compliance with the emission standard specified above. The permittee shall provide the Department information regarding the NO_x CEM within 90

days of the final permit issuance. The continuous emission monitoring system shall be installed and functioning within the required performance specifications stated in the information submittal.

NO_x Monitor: The NO_x shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 2. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F. The required RATA tests shall be performed using EPA Method 7E in Appendix A of 40 CFR 60. The NO_x monitor span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

[Rule 62-297.520, F.A.C.]

D.12. CEMS Certification and Initial Startup: The NO_x CEMS required by this permit shall be installed prior to startup of the kiln. Within 60 calendar days of achieving an average daily phosphoric acid production rate of 1.5 tons per hour, as P_2O_5, but no later than 180 calendar days after initial startup, the owner or operator shall certify the CEMS. Upon certification of the CEMS, the owner or operator shall demonstrate compliance with NO_x emissions standard of this emission unit.
[40 CFR 60.7(a), 60.13(b) and Appendix B; 62-297.520, F.A.C.]

RECORDS AND REPORTS

D.13. Recordkeeping: In order to document compliance with the specific conditions D.2., D.3. and D.4., the permittee shall maintain the records of the following information:

a. Facility Name, Facility ID No. (1050435), EU ID No. (004) & Description;
b. When operating, Daily, record the hours of operation of the kiln;
c. When operating, Daily, record the feed material input, tons;
d. When operating, Daily, record the feed material input rate, tons/hour (daily average);
e. When operating, Daily, record the natural gas usage in the rotary kiln, mmscf;
f. When operating, Daily, record the phosphoric acid production as P_2O_5, tons;
g. When operating, Daily, record the phosphoric acid production rate, tons/hour (daily average);
h. Monthly, calculate the quantity, in tons, of feed material input (12-month rolling total);
i. Monthly, calculate the natural gas usage in the rotary kiln, in mmscf (12-month rolling total);
j. Monthly, calcuate the quantity, in tons, of phosphoric acid as P_2O_5 (12-month rolling total);
k. Monthly, calculate the hours of operation of the kiln (12-month rolling total).
l. When operating, Daily, record once each day, from the recordings of the monitoring devices an arithmetic average over a 2-hour period of the change in pressure of the gas stream across the scrubber, scrubbing liquid supply pressure and the flown rate of the scrubbing liquid.

The daily logs must be completed within 5 business days and monthly records shall be Completed within 15 days of the end of the current month and shall be retained by the facility

for a minimum of three (3) years and shall be available to the Department upon request.

[Rule 62-4.070(3), F.A.C.; 40 CFR 60.735(b)]

D.14. Semi-Annual Reporting: The permittee shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by 40 CFR §60.403(c) and §60.734(d). For the purpose of these reports, exceedances are defined as follows:

(1) all measurement results that are less than 90 percent of the average levels maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the standard under § 60.402.
(2) Any daily 2-hour average of the wet scrubber pressure drop determined as described in §60.735(b) that is less than 90 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particular matter standard; or
(3) Each daily wet scrubber liquid flow rate recorded as described in §60.735(b) that is less than 80 percent or greater than 120 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particular matter standard.

[40 CFR 60.403(f) and 40 CFR 60.735(c)(2) and (3)]

E. Emission Units Common Conditions

The following conditions apply to Emission Units 001-004.

PERFORMANCE RESTRICTIONS

E.1. Federal Regulatory Requirements: Emissions Units 001 through 004 are subject to the requirements of 40 CFR 60, Subpart A – Standards of Performance for New Stationary Sources, General Provisions, which is adopted by reference in Rule 62-204.800, F.A.C.
[Rule 62-204.800(8), F.A.C.]

TESTING REQUIREMENTS

E.2. Initial Compliance Tests: Each emission unit shall be tested to demonstrate initial compliance with the emissions standards specified in Subsections A-D. Initial SO_2 testing for the kiln (EU No. 004) shall also be conducted to verify SO_2 potential emissions.

The initial tests shall be conducted within 60 days after achieving the maximum production rate at which the emission unit will be operated, but no later than 180 days after initial startup of the emission unit.
[Rule 62-4.070(3), F.A.C.; 40 CFR 60.8(a)]

E.3. Compliance Tests After Initial Testing: During each federal fiscal year (October 1st to September 30th), each emission unit shall be tested to demonstrate compliance with the applicable emissions standards for PM, F and VE. Additional SO_2 emissions testing may not be required depending on the initial test results.
[Rules 62-297.310 and 62-4.070(3), F.A.C.]

E.4. Test Requirements: Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rule 62-297.310, F.A.C.]

MONITORING OF EMISSIONS AND OPERATIONS

E.5. 40 CFR 60, Subpart NN Monitoring Requirements: For the purpose of conducting a performance test under § 60.8, the owner or operator of any phosphate rock plant subject to the provisions of 40 CFR 60, Subpart NN, shall install, calibrate, maintain, and operate a device for measuring the phosphate rock feed to any affected dryer, calciner, or grinder. The measuring device used must be accurate to within ±5 percent of the mass rate over its operating range.
[40 CFR 60.403(d)]

NOTIFICATION REQUIREMENTS

E.6. Test Notification: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests except that notifications for the initial PM and VE tests (i.e., NSPS required tests) shall be postmarked no later than 30 days prior to tests. The notification must include the following information: the date, time, and location of each test; the name and

telephone number of the facility's contact person who will be responsible for coordinating the test; and the name, company, and the telephone number of the person conducting the test.
[40 CFR 60.7; Rule 62-297.310(7)(a)9., F.A.C.]
{*Permitting Note: The notification should also include the relevant emission unit ID No(s)., test method(s) to be used, and pollutants to be tested.*}

E.7. Notification of Operation Commencement: The permittee shall notify the Compliance Authority in writing of the date of commencing operation of each emission unit, no later than fifteen (15) business days after that date. Commencing operation means setting into operation of any emissions unit for any purpose.
[Rule 62-4.070, F.A.C., and Rule 62-210.200, F.A.C., (Definition of Commence Operation)]

RECORDS AND REPORTS

E.8. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rule 62-297.310(8), F.A.C.]