STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

MEMORANDUM

TO: J. J. Lewis, AMAX Phosphate, Inc.
David R. Nederveld, Case Engineering, Inc.
Dan Williams, FDER, Southwest District
Hooshang Boostani, Hillsborough Co. Environmental Protection Commission

FROM: C. H. Fancy, Deputy Chief, Bureau of Air Quality Management

DATE: March 22, 1982

SUBJ: Preliminary Determination - AMAX Phosphate, Inc. Baghouse Installation (AC 29-52245)

Attached is one copy of the application, Technical Evaluation and Preliminary Determination, and proposed permit to construct a 7500 CFM Bahouse to replace an existing unit in Plant City, Hillsborough County.

Please submit any comments which you wish to have considered concerning this action, in writing, to Bill Thomas of the Bureau of Air Quality Management.

CHF/bjm

Attachment

Preliminary Determination

and

Technical Evaluation

AMAX PHOSPHATE, INC.

7,500 CFM Baghouse

Plant City, Florida

State Permit Number

AC 29-52245

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

March 19, 1982

PUBLIC NOTICE

Modification of an air pollution source located at Coronet Road, in Plant City, Florida is being proposed by AMAX Phosphate, Inc. The proposed project is the construction of a 7500 CFM Baghouse to replace an existing unit. The construction will produce emissions of particulate matter by 4.6 tons per year.

The proposed project has been reviewed by the Florida Department of Environmental Regulation (FDER) under Chapter 403, Florida Statutes. The Department has made a preliminary determination that the project can be approved provided certain conditions are met. A summary of the basis for the determination and the application for state permit submitted by AMAX Phosphate, Inc. are available for public review at the following FDER offices:

Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32301

Southwest District Office
Department of Environmental Regulation
7601 Highway 301 North
Tampa, FL 33601

Any person may submit written comments to FDER regarding the proposed project. All comments, postmarked not later than 30 days from the date of this notice, will be considered by FDER in making a final determination regarding approval for construction of this source. Those comments will be made available for public review on request. Furthermore, an administrative hearing on the proposed project can be requested by any person by filing a petition for hearing as set forth in Section 28-5, 15 F.A.C. (copy attached). Such petition must be filed within 14 days of the date of this notice. Letters should be addressed to:

Mr. C. H. Fancy
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

TABLE OF CONTENTS

I. SNYOPSIS OF APPLICATION

A. Name and Address of Applicant

AMAX Phosphate, Inc.
P. O. Box 790
Plant City, FL 33566

B. Source Location

The proposes source is located at Coronet Road in Plant City, Hillsborough County, Florida. The UTM coordinates are Zone 17-393.8 Km East and 3096.3 Km North.

C. Project Description

The applicant proposes to install a 7500 CFM Baghouse to replace the present unit (Mikro-Pulsaire 25-8-100 FDER Permit Number AO 29-6318) at the feed preparation facility.

Background Information

The present feed preparation dust control units are being operated under the collective FDER Permit No. AO 29-6318 which was issued on behalf of Borden Chemical, Inc. Since September 12, 1980, Borden, Inc. sold this facility along with Borden's other active mining and processing operations to AMAX Phosphate, Inc.

Basically, the overall proposed modification includes three changes. The first change (Permit No. AC 29-46069 issued by our Southwest District Office) consisted of the replacement of dust collectors No. 1, 2 and 3 (Mikro-Pulsaire, Model 37-8-100) with a new 24,300 CFM baghouse and several new collection points. This modification involves the separation of a portion of the process area.

The second change is the installation of a new 7500 CFM baghouse (Permit No. 29-52245). This baghouse will control the portion of the feed Preparation System that is not included with the 24,300 CFM baghouse system. The reason for the separation of the two systems was to improve the fugitive dust capture, to design for the loss of air flow from duct wall build-up, and to allow (in plant) operations the flexibility of being able to operate either system independently of the other.

The third change involves keeping and renovating the Mikro-Pulsaire baghouse, model 16-8-100. This renovation work will be handled as maintenance of the existing unit. A new operating permit will be submitted for this baghouse within sixty (60) days prior to the completion of the renovation work to the Southwest District Office.

III. SOURCE IMPACT ANALYSIS

A. Emissions Limitations

The installation of the proposed 7500 CFM Baghouse will produce emissions of particulate matter (PM) to the atmosphere. The potential emission from this source are:

Pollutant	Potential Emission Rates	
	lb/hr	ton/yr
PM	1.30	4.60

B. Air Quality Analysis

No air quality analysis is required for this project since particulate matter emissions increase is under the PSD significance level.

IV. CONCLUSIONS

Based on review of the data submitted by AMAX Phosphates, Inc, the FDER concludes that compliance with all applicable state air quality regulations will be achieved provided certain specific conditions are met. The impact of the emissions from this source will not cause or contribute to a violation of any ambient air quality standard.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICANT: AMAX Phosphate, Inc.
P. O. Box 790
Plant City, FL 33566

PERMIT/CERTIFICATION
NO. AC 29-52245

COUNTY: Hillsborough

PROJECT:
7500 CFM
Dry dust Collector

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of a 7500 CFM dry dust collector (baghouse) at AMAX Phosphate, Inc. located at Coronet Road in Plant City, Florida. The UTM coordinates are 393.8 Km East and 3096.3 Km North respectively.

Construction shall be in accordance with the attached permit application and plans, documents, and drawings except as otherwise noted on page 3 - "Specific Conditions".

Attachment:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16)

PERMIT NO.: AC 29-52245
APPLICANT: AMAX Phosphate, Inc.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations indicated in the attached drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit shall constitute grounds for revocation and enforcement action by the department.

3. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

13. This permit also constitutes:

[ ] Determination of Best Available Control Technology (BACT)
[ ] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 29-52245
APPLICANT: AMAX Phosphate, Inc.

SPECIFIC CONDITIONS:

1. Construction should reasonably conform to the plans submitted in the application.

2. The unit shall be allowed to operate continuously (8736 hours per year).

3. Before this construction permit expires, the unit will be tested for visible emission. Visible emission as described in Chapter 17-2.700, DER method 9, shall not exceed 5% opacity during any 6 minutes period.

   The Department will be notified 30 days in advance of the compliance test. The test will be conducted at 90 to 100% capacity.

4. Reasonable precautions to prevent fugitive particulate emissions during construction such as coating or spraying roads and construction sites used by contractors will be taken by the applicant.

5. The applicant shall report any delays in construction and completion of this unit to the Department's Southwest District Office.

6. The applicant will demonstrate compliance with the conditions of the construction permit, and submit a complete application for an operating permit to the Department's Southwest District Office prior to 90 days of the expiration date of the construction permit. The applicant may continue to operate in compliance with all terms of the construction permit until its expiration date or issuance of an operating permit.

7. Upon obtaining an operating permit, the applicant will be required to submit periodic test reports on the actual operation and emissions of the facility.

8. This permit replaces part of operating permit NO AO 29-6318. The applicant shall return this operating permit to the Southwest District office within three (3) months of start-up of the new unit.

9. The source shall comply with the provisions and requirements of the attached general conditions.

Expiration Date: January 30, 1983

Issued this _____ day of _____, 19____.

_____ Pages Attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
Signature

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

FEB 4 1982
SOUTHWEST DISTRICT
TAMPA

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Point Source (Air Pollution) [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [X] Modification

COMPANY NAME: AMAX Phosphate, Inc. COUNTY: Hillsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Phosphate Feed Preparation

SOURCE LOCATION: Street Coronet Road (7500 CFM Baghouse) City Plant City

UTM: East 17-393.8 North 3096.3

Latitude ____ ° ____ ' ____ "N Longitude ____ ° ____ ' ____ "W

APPLICANT NAME AND TITLE: J. J. Lewis, Plant Manager

APPLICANT ADDRESS: P. O. Box 790, Plant City, FL 33566

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of AMAX Phosphate, Inc.

I certify that the statements made in this application for a Modification (Construction) permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: J. J. Lewis

J. J. Lewis, Plant Manager
Name and Title (Please Type)

Date: 2/4/82 Telephone No. (813) 752-1161

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: David L. Nederveld

David L. Nederveld
Name (Please Type)

(Affix Seal)

Case Engineering, Inc.
Company Name (Please Type)

P. O. Box 6039, Lakeland, FL
Mailing Address (Please Type)

Florida Registration No. 16820 Date: ____ Telephone No. (813) 644-7580

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Project consists of the installation of a 7,500 CFM (Air Flow Capacity) pulsaire dry dust collector (baghouse) with a cloth area of 1070 ft^2 (or more), and the necessary pickup points and duct work to capture fugitive particulate. The air to cloth ratio of dust collector will be approximately 7 CFM/1 ft^2 of cloth.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction February, 1982 Completion of Construction July, 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Dust Collector and Ductwork: $82,000

Total Cost including Engineering & Labor: $276,000

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

The present feed preparation dust control units are being operated under the collective FDER Permit No. A029-6318 which was issued on May 9, 1979 and expires May 5, 1983.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 20*; days/wk 7*; wks/yr 52*; if power plant, hrs/yr N/A; if seasonal, describe: *Operating time may vary due to production problems and market demand.

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? — No
   a. If yes, has "offset" been applied? — N/A
   b. If yes, has "Lowest Achievable Emission Rate" been applied? — N/A
   c. If yes, list non-attainment pollutants. N/A
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. — No
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. — No
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? — No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? — No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Phosphate Rock	Particulate	100%	97,200	See Attachment D
Phosphate Rock	Fluoride	3.5%	97,200	See Attachment D
Phosphoric Acid	Fluoride	1.0%	27,700	
Caustic Soda	N/A	N/A	21,200	

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 147,000

2. Product Weight (lbs/hr): 120,000

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	1.30	4.6	Ch. 17-2.05 (2)	34.42	370	1,296	Attach. D
Fluoride	Covered by FDER Permit			No. AO 29-63315			
Sulfur Dioxide	Covered by FDER Permit			No. AO 29-63315			

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Seneca Model	Particulate	99.65%	1.3 - ≥ 13.7 μ	Manufacturers Guarantee
100 - ZMY - 10		@ 7 gr/SCF		
Dry, Dust Collector				
(or Equivalent)				

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels *All emissions vented through scrubber covered in FDER Permit No. AO 29-6315.

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	38.5 MMCF	40.8 MMCF	42 MMBTU/Hr.
*#5 Fuel Oil	6.37 BBL	6.94 BBL	42 MMBTU/Hr.

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: 2.08% Percent Ash: N/A

Density: 7.563 lbs/gal Typical Percent Nitrogen: N/A

Heat Capacity: 19,040 BTU/lb 144,000 BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating. Annual Average N/A Maximum N/A

G. Indicate liquid or solid wastes generated and method of disposal.

N/A

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 107 ft. Stack Diameter: 17 1/8" X 17 1/8" (2.04 Ft.^{2}) ft.

Gas Flow Rate: 7,500 ACFM Gas Exit Temperature: 110 °F.

Water Vapor Content: N/A % Velocity: 61.4 FPS

*Note: Fuel oil is used only during periods of natural gas curtailment.

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Not Applicable

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation. See Attachment A

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See Attachment B

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). See Attachment C-1

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). See Attachment C-2

6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment D

7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment E

8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Phosphate Rock Dust	.02 Grains/SCF

D. Describe the existing control and treatment technology (if any).

1. Control Device/System: Cloth Filter (Baghouse), 2,000 CFM
2. Operating Principles: Filtration
3. Efficiency:* 99 + %
4. Capital Costs: Not Available
5. Useful Life: 20 Years
6. Operating Costs: $5,400 Per Annum (Fan)
7. Energy: Not Available
8. Maintenance Cost: $905 Per Annum (Bag Replacement & Other)
9. Emissions: .02 Grains/SCF

Contaminant	Rate or Concentration
Phosphate Rock Dust	.02 Grains/SCF

*Explain method of determining D 3 above.

Engineering Determination

10. Stack Parameters

a. Height: 203 ft. b. Diameter: 8 3/8" X 10 1/8" (0.59 ft^2) ft.

c. Flow Rate: 2,050 ACFM d. Temperature: 110°F

e. Velocity: 57.9 FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device: Dust Collector (Baghouse)

b. Operating Principles: Filtration, Dry Cloth

c. Efficiency*: 99.65% d. Capital Cost: $82,000

e. Useful Life: 20 Years f. Operating Cost: $12,000 Per Annum (Fans & Preheater)

g. Energy*: Not Available h. Maintenance Cost: $2,000 Per Annum (Bag Replacement & Othe

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above. Engineering Determination

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device: Dust Collector (Baghouse)

2. Efficiency*: 99.65%

3. Capital Cost: $82,000

4. Life: 20 Years

5. Operating Cost: $12,000 Per Annum (Fans & Preheater)

6. Energy: Not Available

7. Maintenance Cost: $2,000 Per Annum (Bag Replacement & Other)

8. Manufacturer: Seneca Environment Products, Inc.

9. Other locations where employed on similar processes:

a.

(1) Company: International Minerals & Chemical Corp.

(2) Mailing Address: P. O. Box 1035

(3) City: Mulberry (4) State: Florida

(5) Environmental Manager: Gerry Geradin

(6) Telephone No.: (813) 428-2531

*Explain method of determining efficiency above. Engineering Determination

(7) Emissions*: .02 Grains/SCF

Contaminant	Rate or Concentration
Phosphate Rock Dust	.02 Grains/SCF

(8) Process Rate*: 97,200 Lbs./Hour

b.

(1) Company:

(2) Mailing Address:

(3) City: (4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data Not Applicable

1. _____ no sites _____ TSP _____ ( ) SO^2* _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. ____ Year(s) of data from ___/___/___ to ___/___/___
month day year month day year

2. Surface data obtained from (location) _____

3. Upper air (mixing height) data obtained from (location) _____

4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO^2	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT A

TOTAL PROCESS INPUT RATE

97,200 lb/hr Phosphate Rock Total Process Input Rate.

PRODUCT WEIGHT

97,200 lb/hr Total Process Input Rate

2.25 lbs/hr Particulate Loss to Atmosphere.

97,198 lbs/hr Product Weight.

ATTACHMENT B

EMMISSIONS ESTIMATE

Estimated baghouse loading: 5.76 grains/ft^3

100% - 99.65% (baghouse efficiency) = 0.35% discharge

5.76 grains/ft^3 x 7,500 SCFM airflow through the baghouse

= 43,200 grains/min. X 60 min./hour =

2,592,000 grains/hour ÷ 7,000 grains/lb =

370 lbs/hour actual loading to the baghouse

370 lbs/hour loading X 0.35% discharge =

1.30 lbs/hour emissions

1.30 lbs/hour emissions X 7,008 hours annual operating time

= 9,110 lbs/year emissions ÷ 2,000 lbs/ton =

4.6 tons/year emissions

POTENTIAL EMISSIONS

370 lbs/hour baghouse loading

370 lbs/hour X 7,008 hours annual operating time

= 2,593,000 lbs/year ÷ 2,000 lbs/ton =

1,296 tons/year potential emissions

ATTACHMENT C-1

The Baghouse to be installed is a reverse pulse jet bag collector with a cloth area of 1070 ft^2 (or more) and an air flow of 7500 CFM. The resulting air to cloth ratio is 7.0 CFM/ft^2 cloth (or less). The material collected by this baghouse will be returned to the process.

Baghouses are considered to be the best available control technology by the U.S. Environmental Protection Agency when used to control nuisance particulate. Baghouses are considered to be 99%+ efficient, and this installation will meet or exceed this level.

ATTACHMENT C-2

seneca environmental products, inc.

82 NORTH WASHINGTON STREET • TIFFIN, OHIO 44883 • (419) 447-1282

DECEMBER 4, 1981

AMAX PHOSPHATE, INC.
POST OFFICE BOX 790
PLANT CITY, FLORIDA 33566

ATTN: JAMES WHITTUM

REFERENCE:
400-T-10 DUST COLLECTOR
100-IMT-10 DUST COLLECTOR

AS PER OUR DISCUSSIONS, PLEASE BE ADVISED THAT EQUIPMENT EFFICIENCY OF THE EQUIPMENT WILL APPROACH 99.99% BASED ON THE ANTICIPATED PARTICULATE SIZE AND DISTRIBUTION OF YOUR PHOSPHATE DUST.

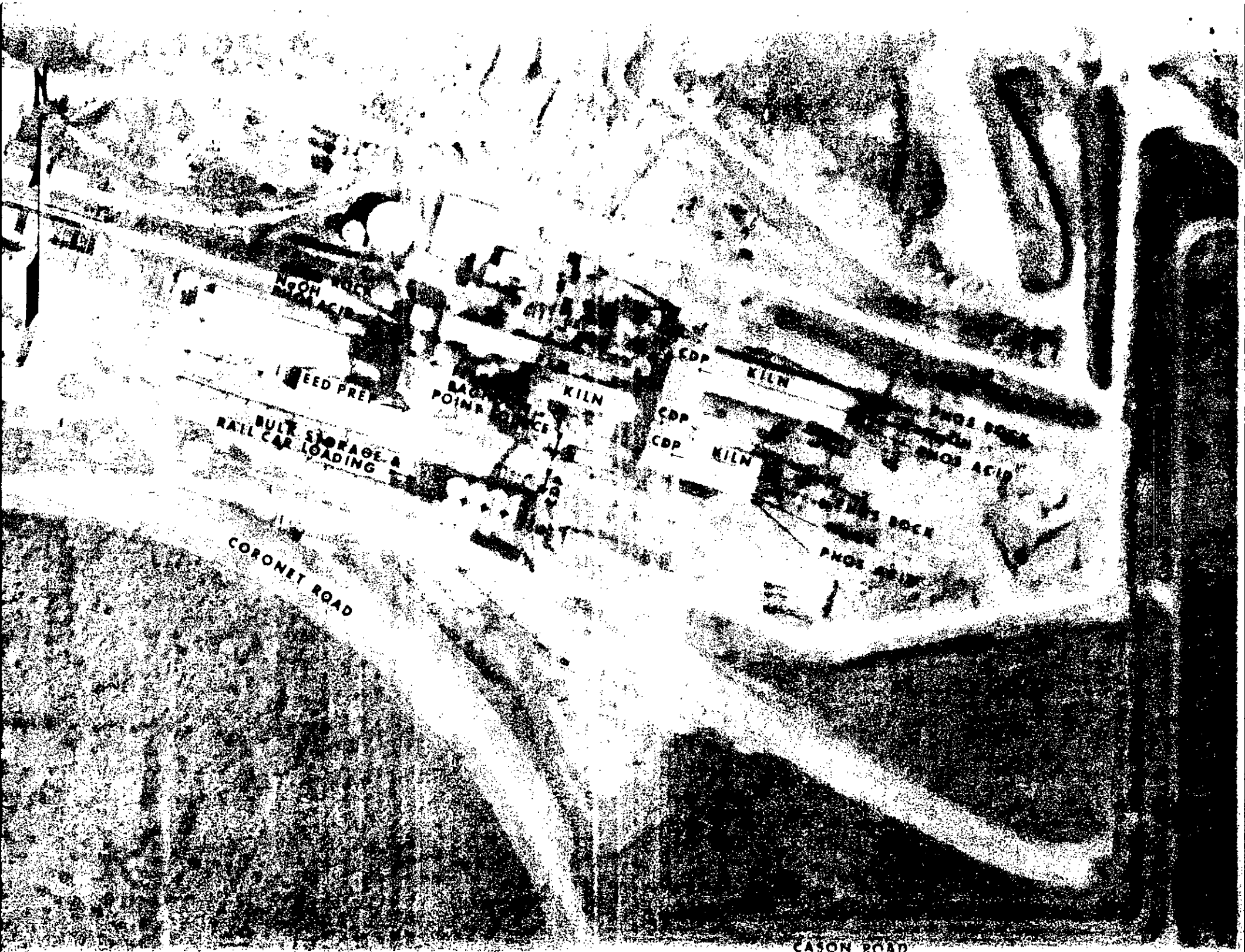
YOURS TRULY,

SENECA ENVIRONMENTAL PRODUCTS, INC.

TERRENCE E. DORNAN
VICE PRESIDENT-ENGINEERING

TED:AMC
CC:FILE
JOE FLOYD

ATTACHMENT D


KILN
CDP
KILN
CDP
CDP
KILN
CORONET ROAD
CASON ROAD

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

File Cy

TAMPA TRIBUNE
BOX 191
TAMPA, FL 33601

3/19/82

Dear Sir:

We are forwarding to you a legal/~~classified~~ advertisement to be published:

ASAP - ONE TIME ONLY
(PREFER THURS MARCH 25, 1982)

Subject: CONSTRUCTION PERMIT

To ensure prompt payment, please send an invoice and proof of publication for legal ads to the address below:

Department of Environmental Regulation
PURCHASING OFFICE
2600 Blair Stone Road
Tallahassee, FL 32301

If you have any questions, please contact us at 904/488/0870.

Sincerely,

William H. Wallace
Purchasing Office

DER
MAR 22 1982
BAQM

Enclosure: (1)

The Florida Department of Environmental Regulation (DER) has received an application from and intends to issue a construction permit to AMAX Phosphate, Inc. for the replacement of air pollution control equipment for an existing phosphate rock processing facility located at Coronet Road, Plant City, Hillsborough County. A determination of Best Available Control Technology was not required. Copies of the application, technical evaluation, and Departmental intent are available for inspection at the following offices:

DER Southwest District Office
7601 Highway 301 North
Tampa

DER Bureau of Air Qual. Mgt.
2600 Blair Stone Road
Tallahassee, FL 32301

Hillsborough Co. Environmental Protection Comm.
1900 Ninth Ave.
Tampa

Comments on this action shall be submitted in writing to C. H. Fancy of the Tallahassee Office, within 30 days of this notice.

To appear in the Tampa Tribune
on March 25, 1982

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO.

ACTION DUE DATE

	INITIAL	DATE
1. TO: (NAME, OFFICE, LOCATION) Ms. Teresa Heron		
2. BAQM		
3.		
4. RE: AMAX Phosphates		

REMARKS:

attached is the information you requested 2/23/82.

If this isn't what you need give me a call and we will try to get it for you.

INFORMATION
- REVIEW & RETURN
- REVIEW & FILE
- INITIAL & FORWARD

DISPOSITION
- REVIEW & RESPOND
- PREPARE RESPONSE
- FOR MY SIGNATURE
- FOR YOUR SIGNATURE
- LET'S DISCUSS
- SET UP MEETING
- INVESTIGATE & REPT
- INITIAL & FORWARD
- DISTRIBUTE
- CONCURRENCE
- FOR PROCESSING
- INITIAL & RETURN

FROM: Don A. Williams

DATE 2-24-82

PHONE 552-7270

(21)

DER

FEB 26 1982

BAQM

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION FOR TRANSFER OF PERMIT

NOTIFICATION OF SALE OR LEGAL TRANSFER

Permit No. AO 29-29736 Date Issued: ?/ ?/80 Date Expires: (?)

Source Name: Craneway Baghouse County: Hillsborough

Permit No. AO 29-29108 Date Issued: 5/30/80 Date Expires: 5/1/85

Source Name: Kewanee Boiler County: Hillsborough

Permit No. AO 29-6314 Date Issued: 3/8/78 Date Expires: 12/15/82

Source Name: Dikal County: Hillsborough

Permit No. AO 29-6315 Date Issued: 3/8/78 Date Expires: 12/15/82

Source Name: Feed Prep. County: Hillsborough

Permit No. AO 29-6316 Date Issued: 3/8/78 Date Expires: 12/15/82

Source Name: No. 6 & 7 Kiln County: Hillsborough

Permit No. AO 29-6317 Date Issued: 5/9/78 Date Expires: 5/5/83

Source Name: Baghouse Dust Collectors County: Hillsborough

Permit No. AO 29-6318 Date Issued: 5/9/78 Date Expires: 5/5/83

Source Name: Dust Collectors-Feed Prep. County: Hillsborough

Permit No. AO 29-6778 Date Issued: 6/16/78 Date Expires: 5/31/83

Source Name: Ionizing Wet Scrubber (Deflourinating Unit - Reactors 1 and 2) County: Hillsborough

Permit No. AO 29-21152 Date Issued: 8/6/79 Date Expires: 7/15/84

Source Name: Kilns 3, 4 & 5 County: Hillsborough

Permit No. AO 29-21693 Date Issued: 8/16/79 Date Expires: 8/1/84

Source Name: 200 HP Boiler County: Hillsborough

Permit No. AC 29-29095 Date Issued: Date Expires:

Source Name: Deflourinating Kiln County: Hillsborough

Source Location: Coronet City: N/A

Permittee Name: Borden, Inc. Div. Borden Chemical Title: N/A

Mailing Address: Post Office Box 790, Plant City, FL 33566

The undersigned hereby notifies the department of the sale or legal transfer of this pollution source. He further agrees to assign his rights as permittee to the applicant in the event the department agrees to the transfer of permit.

BORDEN, INC.

8/20/80 BLK

Signature of Permittee
Robert W. Gutheil
Executive Vice President
Title

Sworn to and subscribed before me at Franklin County, Ohio, this 22 day of August, 1980.

Dawn L. Foster
Notary Public
My Commission Expires:

Date: August 22, 1980

DAWN L. FOSTER, Notary Public
State of Ohio
My commission expires Jan. 18, 1983

REQUEST FOR TRANSFER OF PERMIT

Source Name: Coronet - Craneway Baghouse; Kewanee Boiler; Dikal; Feed Prep.; No. 6 & 7 Kiln; Baghouse Dust Collectors; Dust Collectors - Feed Prep.; Ionizing Wet Scrubber (Deflourinating Unit - Reactors 1 and 2; Kilns 3, 4 & 5; 200 HP Boiler; and Deflourinating Kiln.

Applicant Name: AMAX Phosphate, Inc. Title: N/A

Mailing Address: 402 S. Kentucky Avenue, Suite 600, Lakeland, FL 33801

Telephone: (813) 687-2561

Project Engineer: Name: Bruce Galloway
Mailing Address: P.O. Drawer 790 Plant City, Fla. 33566
Telephone: (813) 752-1161

The undersigned hereby notifies the department of his having acquired title to this pollution source. He further states that he has examined the application and documents submitted by the current permittee, the basis on which Permit Nos. AO 29-29736; AO 29-29108; AO 29-6314; and AO 29-6314; AO 29-6316; AO 29-6317; AO 29-6318; AO 29-6778; AO 29-21152; AO 29-21693; and AC 29-29095 were issued by the department, and states that they accurately and completely describe the permitted activity or project. He further states that he is familiar with the permits, agrees to comply with their terms and conditions, and agrees to assume the rights and liabilities contained therein. He also agrees to promptly notify the department of any future change in ownership of, or responsibility for, the permitted activity or project.

Signature of Applicant*

President
Title

Sworn to and subscribed before me at Polk County, Florida, this 12 day of Sept., 1980.

Norma B. Fortes
Notary Public
My Commission Expires:
Notary Public, State of Florida at Large
My Commission Expires March 8, 1981

Date: September 12, 1980

*Attach letter of authorization if other than owner or corporate officer.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT
7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610

BOB GRAHAM
GOVERNOR

~~XXXXXXXXX~~
SECRETARY
Vicki Tschinkel
WILLIAM K. HENNESSEY
DISTRICT MANAGER

Hillsborough County AP

Mr. J.J. Lewis, Plt. Mgr.
AMAX Phosphate, Inc.
P.O. Box 790
Plant City, Fla. 33566

Dear Mr. Lewis:

Enclosed is Permit Number AC29-46069, dated October 19, 1981 to construct the subject air pollution source issued pursuant to Section 403, Florida Statutes.

Should you object to this permit, including any and all of the conditions contained therein, you may file an appropriate petition for administrative hearing. This petition must be filed within fourteen (14) days of the receipt of this letter. Further, the petition must conform to the requirements of Section 28-5.201, Florida Administrative Code, (see reverse side of this letter). The petition must be filed with the Office of General Counsel, Department of Environmental Regulation, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, Florida 32301.

If no petition is filed within the prescribed time, you will be deemed to have accepted this permit and waived your right to request an administrative hearing on this matter.

Acceptance of the permit constitutes notice and agreement that the Department will periodically review this permit for compliance, including site inspections where applicable, and may initiate enforcement action for violation of the conditions and requirements thereof.

Sincerely,

W.K. Hennessey
District Manager

cc: HCEPC
Richard W. Vanhorn, P.E.

Enclosure

DER Form 17-1.122(66) 1/2

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT

7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610

APPLICANT:

Mr. J. J. Lewis
AMAX Phosphate, Inc.
P.O. Box 790
Plant City, Fla. 33566

PERMIT/CERTIFICATION NO. AC29-46069

COUNTY: Hillsborough

PROJECT: Feed Prep Plant Baghouse

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of a Mikro-Pulsaire, Model 380S-10-TR, baghouse for the feed preparation area as a fugitive dust control for the pneumatically loaded silos. This construction replaces dust collectors no. 1, 2, and 3.

Located at Coronet Road, Plant City, Hillsborough County.

UTM: 17-393.8E and 3096.3 N

Replaces Part of AO29-6318 NEDS NO: 0075 Point ID: 06

Expires: July 15, 1982

PERMIT NO.: AC29-46069
APPLICANT: AMAX Phosphate, Inc.

SPECIFIC CONDITIONS:

1. The construction of this facility shall be completed by 4/15/82. An application to operate this installation shall be submitted to the Department 60 days prior to expiration date of this permit.

2. This construction permit expires on 7/15/82 following an initial period of operation for appropriate testing to determine compliance with the Rules of the Florida Department of Environmental Regulation Commission. (Chapter 17-4.07(7) F.A.C.)

3. All applicable rules of the Department including design discharge limitations specified in the application shall be adhered to. The permit holder may also need to comply with county, municipal, federal, or other state regulations prior to construction. (Chapter 17-4.07(1), F.A.C.)

4. Test for particulates per FAC 17-2.23 at an operating rate of approximately 45 TPH. Maximum emissions of 32 lbs/hr may be modified under RACT regulations, FAC 17-2.13 depending upon its impact on the Hillsborough County non-attainment area at time of application for an operating permit.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT
7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610

August 17, 1981

Mr. J.J. Lewis, Plt. Mgr.
AMAX Phosphate, Inc.
P.O. Box 790
Plant City, Fla. 33566

Dear Mr. Lewis:

This Department has received a permit application for a replacement baghouse to your Feed Preparation Plant. The application is complete except for some detailed, historical information to classify it for permitting purposes.

Our question is what were the emissions from the specific (3) baghouses to be replaced? Permit A029-6318 is an old "catch-all" permit covering a variety of activities and we realize that opacity tests would not give us firm emission data in terms of lbs/hr of particulates emitted. However, we will accept your engineering staff estimates of these emissions such that we can judge whether the new system will, in fact, reduce emissions.

We appreciate your efforts to improve the fugitive dust situation at your Plant City Plant, and we will cooperate to expedite the permit process as required.

Sincerely,

Robert R. Garrett

Robert R. Garrett, P.E.
Air Engineer

RRG/rkt

cc: Fred Mullins

Garrett 1/4

AMAX Phosphate, Inc.
A SUBSIDIARY OF AMAX INC.
402 SOUTH KENTUCKY AVENUE • SUITE 600 • LAKELAND, FLORIDA 33801 • (813) 687-2581

August 31, 1981

Mr. Robert R. Garrett, P.E.
Air Engineer
Department of Environmental Regulation
7601 Highway 301 North
Tampa, Florida 33610

Dear Mr. Garrett:

In a letter, recently received from you, addressed to Mr. Jack Lewis, you requested additional information concerning the permit application for the AMAX Plant City Feed Preparation Plant modification.

The emissions from the three baghouses to be replaced by this modification have never been quantified. The existing operating permit (AO 29-6318) for the sources required only semi-annual visible emission tests, and for this reason no total particulate tests have been taken.

Since all the Mikro-Pulsaire bag type dust collectors are considered to have efficiencies of +99% when operated within the manufacturer's design loadings, it is unlikely that a significant improvement in point source emissions will result from the replacement. However, due to the increased airflow and additional dust collection points, the modification will lower the net particulate emissions by substantially reducing the fugitive dust escaping from this operation. If, after reviewing the above information you feel that source testing of the three existing baghouses is necessary, AMAX will sample those units and forward the results to your office.

If you have any additional questions or need any additional information, please let me know.

Yours very truly,

F. G. Mullins
Manager Regulatory Compliance

FGM:st

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT
7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610

September 28, 1981

Mr. F. G. Mullins
Manager, Regulatory Compliance
AMAX Phosphate, Inc.
402 South Kentucky Ave., Suite 600
Lakeland, Fla. 33801

Dear Mr. Mullins:

In response to your letter of 9/21/81 with modeling results showing the impact of particulates on the Hillsborough non-attainment boundaries, we are concerned that the omission of the baghouses presently on permits AO29-6317 and 6318 will affect these results. Please have Dr. Koogler rerun the CRSTER model to include an estimate of these allowable emissions. Baghouse efficiencies of 99.9% removal of estimated uncontrolled emissions backed up by the several stack tests you have run for calibration will allow you room to voluntarily reduce the process weight tabularized emission limits to meet the deminimus level of impact.

I want to thank you and Mr. Joe Floyd for clarifying these nests of existing baghouses and your future plans to rectify these permits. It is also of interest to note your four elaborate ambient air stations. You may wish to include some of these sampling results as backup information to the model. The permit for the 3 baghouse replacement (AC29-46069) is being processed. You may wish to reduce the allowable limits on this permit to enhance the forthcoming model results.

Sincerely,

Robert R. Garrett

Robert R. Garrett, P.E.
Air Engineer

RRG/rkt

cc: Hooshang Boostani, HCEPC

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee

To: _____ Loctn.: _____
To: _____ Loctn.: _____
To: _____ Loctn.: _____
From: _____ Date: _____
Reply Optional [ ] Reply Required [ ] Info. Only [ ]
Date Due: _____ Date Due: _____

TO: The Files

THRU: Dan Williams

FROM: Bob Garrett

DATE: September 28, 1981

SUBJECT: AMAX Phosphate, Inc.; Application for a Modification Permit to Construct a Fugitive Dust Collection System Baghouse for Feed Prep. Plant, Hillsborough County AP

AMAX has applied for a construction permit to replace 3 baghouses under permit AO29-6318 with a single new baghouse for an improved fugitive dust control system on their feed preparation plant operations. The locations of these baghouses are 1,2, & 3, on the aerial placement photo in permit folder 6318. Loading of ground phosphate rock is now done pneumatically in two silos (soda ash is no longer used) and the new bag collector will control these and one transfer point for particulate emissions.

I recommend we issue permit AC29-46069 as a maintenance replacement for Items 1, 2, & 3 (3 baghouses) on permit AO29-6318, testing for particulates once only. If the results of this test are below estimated limits, the operate permit will require periodic opacity tests only. Gradually, as these 13 baghouses are replaced or modernized, separate operate permits will be issued.

RRG/rkt

ATT: BOB GARRETT

PAID JUL 31 1981

Lakeland Office 687-2561 Fred Mueller

D.E.R.

JUL 31 1981

SOUTHWEST DISTRICT TAMPA

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Point Source (Air Pollution) [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [X] Modification

COMPANY NAME: AMAX Phosphate, Inc. COUNTY: Hillsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Phosphate Feed Preparation Plant

SOURCE LOCATION: Street Coronet Road City Plant City

UTM: East 17-393.8 North 3096.3

Latitude ____ ° ____ ' ____ "N Longitude ____ ° ____ ' ____ "W

APPLICANT NAME AND TITLE: J. J. Lewis, Plant Manager

APPLICANT ADDRESS: P. O. Box 790, Plant City, Florida 33566

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of AMAX Phosphate, Inc.

I certify that the statements made in this application for a Modification (Construction) permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: J. J. Lewis

J. J. Lewis, Plant Manager
Name and Title (Please Type)

Date: 7/28/81 Telephone No. (813) 752-1161

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

(Affix Seal)

Signed: Richard W. VanHorn

Richard W. VanHorn
Name (Please Type)

Jacobs Engineering Group
Company Name (Please Type)

Lakeland, Florida
Mailing Address (Please Type)

Florida Registration No. 23419 Date: 7-24-81 Telephone No. (813) 665-1511

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Three existing dust collectors (Mikro 37-8-100, 25-8-100, and 16-8-100) have a combined airflow of 6,600 CFM and a cloth area of 725 ft.^{2} which will be replaced by one Mikro-Pulsaire dry collector with an airflow of 24,300 CFM and a cloth area of 4,476 ft.^{2}. Several dust collection points will be added along with the supporting air ducts.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction November 1981 Completion of Construction April 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Mikro Pulsaire Dust Collector and duct work: $187,000

Total cost including Engineering and Labor: $629,200

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

The present Feed Preparation dust control units are being operated under the collective FDER Permit # AO 29-6318 which was issued on May 9, 1979 and expires May 5, 1983.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes __X__ No

F. Normal equipment operating time: hrs/day 20*; days/wk 7*; wks/yr 52*; if power plant, hrs/yr N/A; if seasonal, describe: *Operating time may be variable due to production problems and market demand.

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? — No
   a. If yes, has "offset" been applied? — N/A
   b. If yes, has "Lowest Achievable Emission Rate" been applied? — N/A
   c. If yes, list non-attainment pollutants. N/A
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. — No
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. — No
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? — No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? — No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

17-2 PSD Rule .04

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Phosphate Rock	Particulate	100%	97,200	See Attachment D
Phosphate Rock	Fluoride	3.5%	97,200	"
Phosphoric Acid	Fluoride	1.0%	27,700	"
Caustic Soda	N/A	N/A	21,200	"

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 147,000
2. Product Weight (lbs/hr): 120,000

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	4.17	15.2	Ch 17-2.05 (2)	34.42	1200	4,368	Attachment D
Fluoride	Covered by FDER Permit # AO 29-6315						

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Mikro-Pulsaire	Particulate	99.65%	1.3 - 13.7 μ	
(Model 380S-10-TR)		@ 7gr/SCF		

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels * All emissions vented through scrubber covered in FDER Permit # AO 29-6315.

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	38.5 MMCF	40.8 MMCF	42 MMBTU/HR
* #5 Fuel Oil	6.37 BBL	6.94 BBL	42 MMBTU/HR

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: 2.08% Percent Ash: N/A

Density: 7.563 lbs/gal Typical Percent Nitrogen: N/A

Heat Capacity: 19,040 BTU/lb 144,000 BTU/gal

Other Fuel Contaminants (which may cause air pollution):

F. If applicable, indicate the percent of fuel used for space heating. Annual Average N/A Maximum N/A

G. Indicate liquid or solid wastes generated and method of disposal.

Not Applicable

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 81 ft. Stack Diameter: 2.43 ft. X 2.43 ft. (5.9 ft.^{2}) ft.

Gas Flow Rate: 30,000 ACFM Gas Exit Temperature: 110° °F.

Water Vapor Content: Not Applicable % Velocity: 84.75 FPS

*Note: Fuel oil is used only during periods of natural gas curtailment.

SECTION IV: INCINERATOR INFORMATION

NOT APPLICABLE

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Not Applicable

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation. See Attachment A

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See Attachment B

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). See Attachment C-1

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). See Attachment C-2, C-3

6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment D

7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment E

8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

Not Applicable

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

Not Applicable

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no sites _____ TSP _____ ( ) SO^2* _____ Wind spd/dir

Period of monitoring ____/____/____ to ____/____/____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location) _____

3. Upper air (mixing height) data obtained from (location) _____

4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO^2	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant informatio describing the theory and application of the requested best available control technology.

ATTACHMENT A

TOTAL PROCESS INPUT RATE

97,200 lb/hr. Phosphate Rock +

(14,400 lb/hr. P_2O_5 @ 52%→) 27,700 lb/hr. Phosphoric Acid (H_3PO_4) +

(8,400 lb/hr. Na_2O @ 38%→) 22,100 lb/hr. Caustic (NaOH)

= 147,000 lbs/hr. Total Process Input Rate

PRODUCT WEIGHT

147,000 lbs/hr. Total Process Input Rate -

4 lbs/hr Particulate Loss to Atmosphere -

26,996 lbs/hr Moisture Loss to the Dryer

= 120,000 lbs/hr. Product Weight

ATTACHMENT B

EMISSIONS ESTIMATE

Estimated baghouse loading: 5.76 grains/ft^3

100% - 99.65% (baghouse efficiency) = 0.35% discharge

5.76 grains/ft^3 x 24,300 SCFM airflow through the baghouse

= 139,968 grains/min. X 60 min./hour =

8,398,080 grains/hour ÷ 7,000 grains/lb =

1,200 lbs/hour actual loading to the baghouse

1,200 lbs/hour loading X 0.35% discharge =

4.17 lbs/hour emissions

4.17 lbs/hour emissions X 7,280 hours annual operating time

= 30,358 lbs/per year emissions ÷ 2,000 lbs/ton =

15.2 tons per year emissions

POTENTIAL EMISSIONS

1,200 lbs/hour baghouse loading

1,200 lbs/hour X 7,280 hour annual operating time

= 8,736,000 lbs/year ÷ 2,000 lbs/ton =

4,368 tons/year potential emissions

ATTACHMENT C-1

The baghouse to be installed is a Mikro-Pulsaire dry filter collector Model 380S-10-TR with cloth area of 4,476 $ft.^2$ and an air flow of 24,300 CFM. The resulting air to cloth ratio is 5.43 CFM/ft^2 of cloth. The baghouse will contain 380 10 ft. long filter bags and the material collected by this baghouse will be returned to the process.

Baghouses are considered to be the best available control technology by the U.S. Environmental Protection Agency when used to control nuisance particulate. Baghouses are considered to be +99% efficient, and this installation will meet or exceed this level.

Mikro-Pulsaire

The Mikro-Pulsaire dry filter collector combines high dust collection efficiency with very low maintenance. The unit is fully automatic and self cleaning. The unique design of the Mikro-Pulsaire has eliminated all moving parts thereby contributing to minimum maintenance and maximum efficiency of operation. All controls for the Mikro-Pulsaire are located on the outside of the unit.

Reverse Jet Operation

Basically the Mikro-Pulsaire consists of a series of cylindrical filter elements enclosed in a rugged, dust-tight fabricated metal housing. The contaminated, dust-laden air enters the housing through the hopper inlet. The dust particles accumulate on the filter elements: Periodically a momentary jet of high-pressure air is "pulsed" through a uniquely designed venturi nozzle located above each filter cylinder. The primary high-pressure jet pumps secondary air as a function of the jet pump method thereby producing a "reverse-flow" of air which cleans the filter cylinders. Continuous flow of air through the Mikro-Pulsaire is maintained at all times since only a small part of the filter element is cleaned at any given time. The air jets are controlled by diaphragm valves which are activated by solenoid pilot valves and a timer.

Unique Features

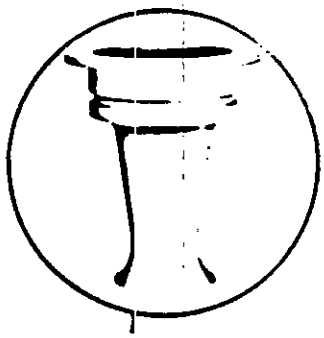
- High Dust Collection Efficiency . . . 99.9%
- Heavy Duty Construction . . . Minimum 14 Gauge
- No Internal Moving Parts
- Economical Installation . . . All Units Pre-wired
- Handles Dust Streams to 425° Fahrenheit. High temperature filter elements of DuPont "Nomex"® allows operation above most acid dew points. When extra resistance to chemicals is required DuPont Teflon® is also available for use in the filter elements.
- Installations World Wide . . . Over 60,000 installations throughout the world.
- Can be Used by Any Industry Having a Dry Dust Problem.

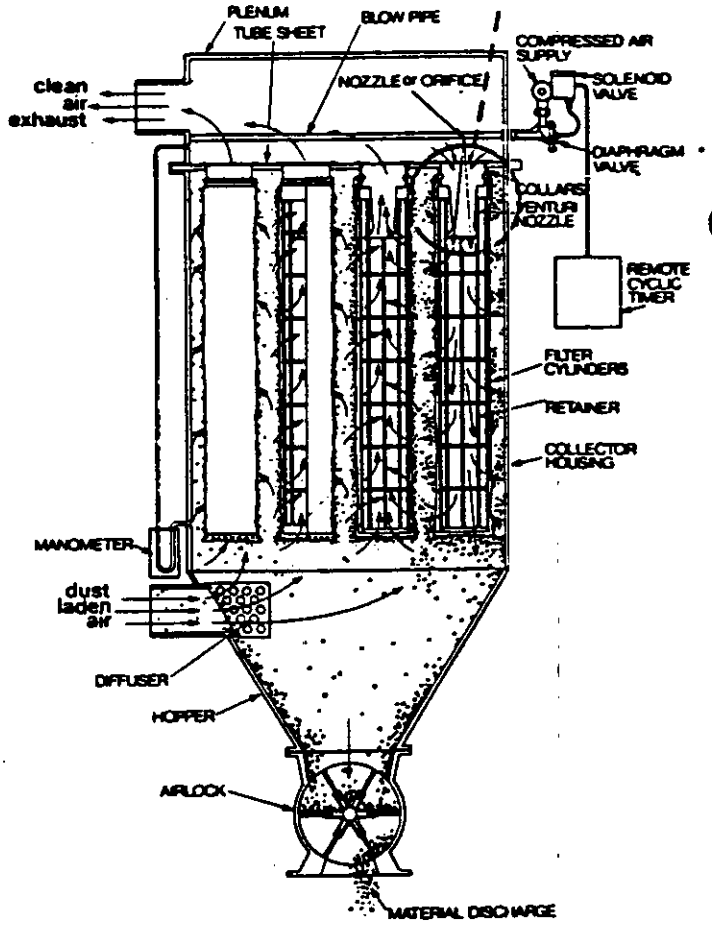
AVAILABILITY — All Mikro-Pulsaires can be supplied in three styles:

A Style — Plenum only
B Style — Plenum and Housing
C Style — Plenum, Housing and Hopper

Original MikroPul Venturi

This venturi provides maximum efficiency to the filter media and is standard equipment of all Mikro-Pulsaire dust collectors.





Schematic diagram showing the flow of dust and air and the arrangement of filter cylinders in the Mikro-Pulsaire Dust Collector.

ATTACHMENT C-2

July 9, 1981

Jacobs Engineering Group
P. O. Box 2008
Lakeland, Florida 33803

ATT: Joe Kardos

REF: Project No. 28-5134
Amax Phosphate, Inc.

Dear Joe:

In accordance with your request, we are pleased to submit the following statement of efficiency covering the three (3) Mikro-Pulsaire Dust Collectors proposed to you in our letter of June 30, 1981 as follows:

THE DUST LOADING LEAVING THE MIKRO-PULSAIRE WILL NOT EXCEED 0.02 GR./SCF.

Based upon our understanding of the proposed application of this equipment and in consideration of the operating and design specifications as they have been stated, we submit that the equipment meets the "Best Available Control Technology" requirements of the Rules of the Department of Environmental Regulation (Air Pollution).

Should you have any questions or comments regarding the above or if we may be of further service, please call.

Very truly yours,

LINDER INDUSTRIAL MACHINERY COMPANY

Gary L. Allen
Assistant Product Manager

GLA:pw
cc: Ray J. Foucher - Linder

ATTACHMENT C-3

June 30, 1981

Jacobs Engineering Group
P.O. Box 2008
Lakeland, Florida 33803

ATTENTION: Mr. Bob Strickland, Purchasing Agent

REFERENCE: Project No. 28-5134
Amax Phosphate, Inc.
Plant City Debottlenecking Project

Dear Bob:

In response to Joe Kardos' request, we are pleased to submit the following estimates on dust collection equipment required on subject project as follows:

FEED PREP AREA DUST COLLECTOR - 30,000 CFM ✓

One (1) - Mikro-Pulsaire Dust Collector, continuous automatic type Model 380S-10-TR (top bag removal type) with plenum, housing and hopper in factory welded construction. Equipment to consist of the following:

- One (1) Filter case housing, plenum and hopper constructed of 12 gauge hot rolled steel, factory welded construction in shippable size sections.
- One (1) Set of (380) filter bags, 10' long fabricated with 16 oz. Polyester (Dacron) filter fabric, to provide a total of 4,476 sq.ft. of filter area. Maximum operating temperature on the filter fabric is 275°F. Bags are shipped loose for installation by others, installed from top of plenum housing.
- One (1) Set of (380) aluminum venturies, top removal type, shipped loose for field installation by others.
- One (1) Set of (380) HRS bag retainers and stainless steel bag clamps, shipped loose for field installation by others.
- One (1) Standard 60° slope hopper, pyramidal type, flanged for mounting airlock (below), with (1) standard inlet and permeable diffuser.

One (1) 8" Mikro-Airlock, cast iron housing with steel rotor and six (6) Delrin blades, reducer, V-belt drive, guard and 1 HP, TE, 230/460 volt motor with 1.0 S.F.
One (1) Standard flanged exhaust connection, located in plenum.
One (1) 18" diameter hinged access door in hopper.
Eight (8) Clamped and removable access doors in plenum roof.
One (1) Timer for pulsing cleaning jet valves, Model 72 Integrated Circuit Type, in NEMA 4 enclosure for 115 volt, single phase operation. Timer shipped loose for field mounting and wiring by others.
One (1) Manometer, 10" U-tube, with 20' of tubing and fittings for field installation by others.
One (1) Venturi installation wrench.
One (1) Shop standard surface preparation and one (1) shop coat of red oxide primer on all housing, plenum and hopper surfaces.

The Mikro-Pulsaire is an automatic self-cleaning system that utilizes momentary jets of high pressure air through a specially designed venturi to provide efficient thorough cleaning with no internal moving parts. Bag cleaning compressed air requirement is approximately 45 SCFM at 100 PSIG. Solenoid valve enclosures are NEMA 4, prewired to terminal strip. All valves are piped for access from top of unit.

Housing is designed for vacuum/pressure up to 20" water gauge. For further detail concerning this unit, refer to Bulletin TRP-3 and Drawing #741385.

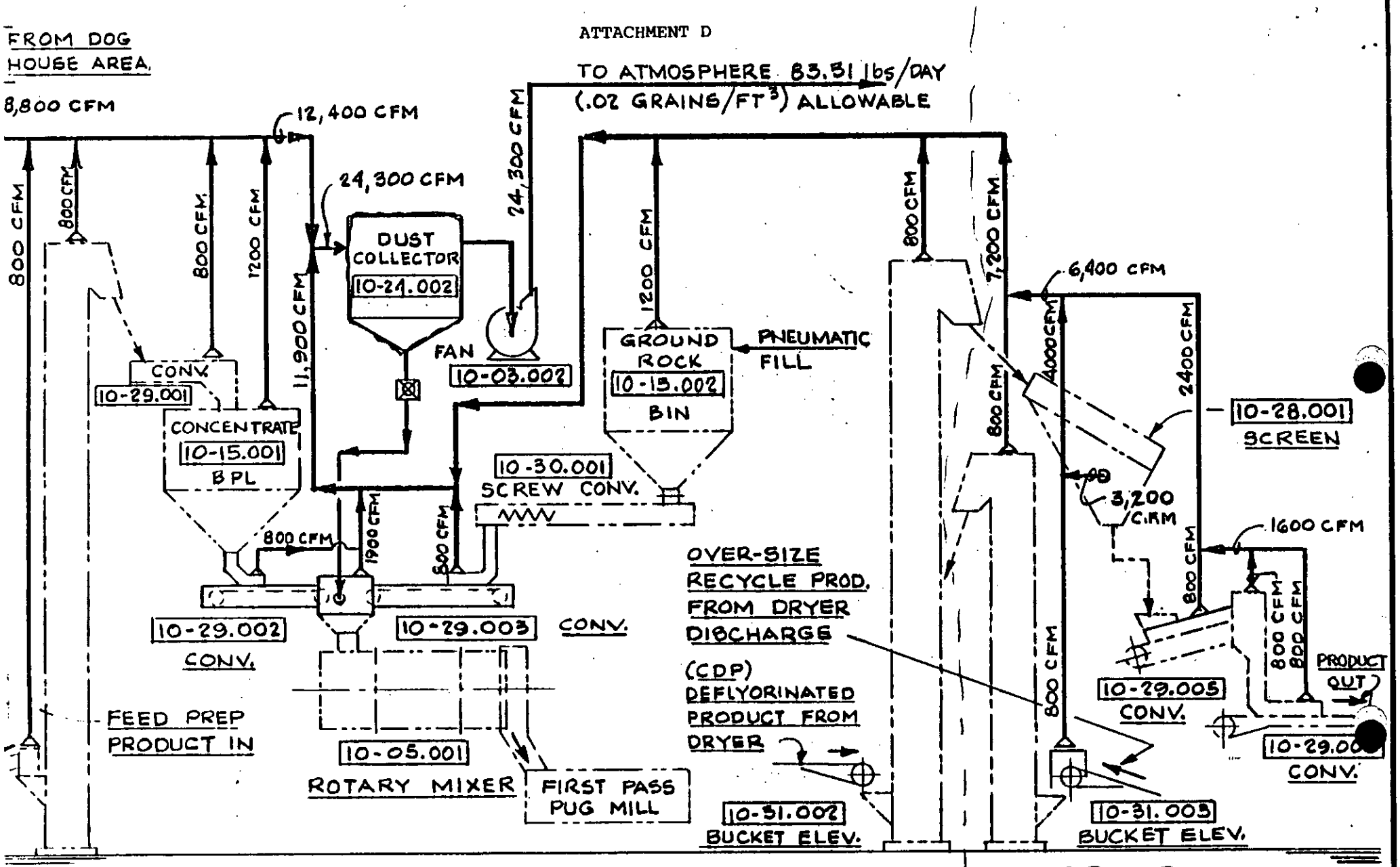
PRICE: $36,600.00 ✓
APPROXIMATE SHIPPING WEIGHT: 15,200#

OPTIONAL EQUIPMENT FOR MODEL 380S-10-TR

Handrailing around upper plenum, complete with caged ladder of standard height as shown on attached print.
PRICE: $3,000.00 ✓

EXHAUST FAN
Westinghouse-Sturtevant Division Size 437MR, Single Width, Single Inlet Industrial Fan in Arrangement 1 complete with access door, housing drain connection, flanged inlet and discharge connections, V-belt drive and enclosed belt guard, opposed-bladed outlet damper, and Westinghouse 125 HP, 1200 RPM, TEFC, 3 Ph., 60 Hz., 460 Volt motor and slide base.

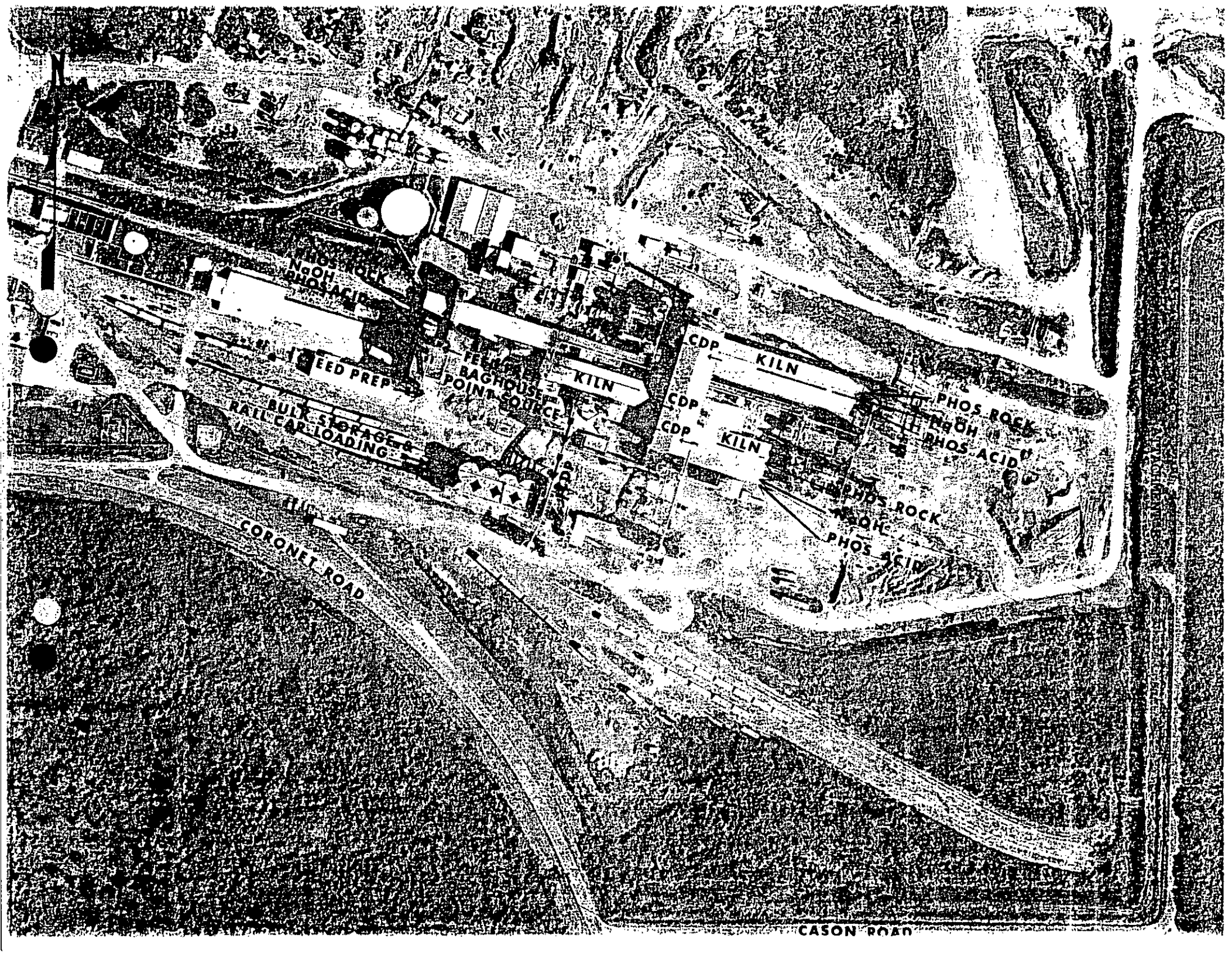
ATTACHMENT D



FEED PREP AREA

DUST PARTICULATE EMISSION COLLECTION SYSTEM (DRY)

13-81 | G.A.


PHOS ROCK
NaOH
PHOS ACID
FEED PREP
KILN
BAGHOUSE
POINT SOURCE
CDP
KILN
CDP
KILN
PHOS ROCK
NaOH
PHOS ACID
BULK STORAGE &
RAIL CAR LOADING
CDP
PHOS ROCK
NaOH
PHOS ACID
CORONET ROAD
CASON ROAD

MEMO
Oct. 19, 1981

To: Files

Subject: A029-6318

Construction permit No. AC 29-46069 has been issued to AMAX for the replacement of the three Feed Prep. Plt. baghouses on A029-6318 with one new baghouse.

The three DiCalcium Phos. plant baghouses, also on A029-6318, will remain active.

A029-6318 should be modified to only include the DiCal baghouses when the new construction is completed and AMAX files for an operating permit for the Feed Prep. Plant.

Tom Williams

SERIAL [redacted]

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

NEDS No. 0075
Point ID. 6 to 11

HILLSBOROUGH COUNTY

OPERATION PERMIT

FOR Borden, Inc.
P.O. Box 790
Plant City, Fla. 33566

PERMIT NO. AO29-6318 DATE OF ISSUE May 9, 1978

PURSUANT TO THE PROVISIONS OF SECTIONS 403.061 (16) AND 403.707 OF CHAPTER 403 FLORIDA STATUTES AND CHAPTERS 17-4 AND 17-7 FLORIDA ADMINISTRATIVE CODE, THIS PERMIT IS ISSUED TO:
Mr. B. V. Galloway, Environmental Manager

FOR THE OPERATION OF THE FOLLOWING:
Six baghouses controlling emissions from the feed preparation and dicalcium phosphate plants subject to the attached condition nos. 1, 2, 3, 6, 9, & 10.

LOCATED AT: Southeast of Coronet Road, Plant City, Hillsborough County
UTM 7393800 E and 3096300 N

IN ACCORDANCE WITH THE APPLICATION DATED 7 December 1977

ANY CONDITIONS OR PROVISOS WHICH ARE ATTACHED HERETO ARE INCORPORATED INTO AND MADE A PART OF THIS PERMIT AS THOUGH FULLY SET FORTH HEREIN. FAILURE TO COMPLY WITH SAID CONDITIONS OR PROVISOS SHALL CONSTITUTE A VIOLATION OF THIS PERMIT AND SHALL SUBJECT THE APPLICANT TO SUCH CIVIL AND CRIMINAL PENALTIES AS PROVIDED BY LAW.

THIS PERMIT SHALL BE EFFECTIVE FROM THE DATE OF ISSUE UNTIL May 5, 1983

OR UNLESS REVOKED OR SURRENDERED AND SHALL BE SUBJECT TO ALL LAWS OF THE STATE AND THE RULES AND REGULATIONS OF THE DEPARTMENT.

DISTRICT ENGINEER

JOSEPH W. LANDERS, JR.
SECRETARY

Roger P. Stewart
Director

DISTRICT MANAGER

This permit replaces a part of Ao29-2443

DER Form PERM 11-3 (Mar. 76)

State of Florida
Department of Environmental Regulation

OPERATION PERMIT CONDITIONS
FOR AIR POLLUTION SOURCES

Permit No.: AO29-6318 Date: May 9, 1978

An (X) indicates applicable conditions

(X) 1. The permit holder must comply with Florida Statute, Chapter 403 and the applicable Chapters of the Department of Environmental Regulation in addition to the conditions of this permit (Chapter 403.161(1)(b), Florida Statutes).

(X) 2. Test the emissions for the following pollutant(s) at intervals of six months from the date 1-1-78 and submit a copy of test data to the District Engineer of this agency within fifteen days of such testing (Chapter 17-2.07(1), Florida Administrative Code (F.A.C.)).

( ) Particulates
( ) Fluorides
(X) Plume Density
( ) Sulfur Oxides
( ) Nitrogen Oxides
( ) Hydrocarbons
( ) Total Reduced Sulfur

(X) 3. Testing of emissions must be accomplished at approximately the rates as stated in the application. Failure to submit the input rates or operation at conditions which do not reflect actual operating conditions may invalidate the data (Chapter 403.161(1)(c), Florida Statutes).

( ) 4. Submit for this source quarterly reports showing the type and monthly quantities of fuels used in the operation of this source. Also state the sulfur content of each fuel (Chapter 17-4.14, F.A.C.).

( ) 5. Submit for this facility, each calendar year, on or before March 1, an emission report for the preceding calendar year containing the following information as per Chapter 17-4.14, F.A.C.

(A) Annual amount of materials and/or fuels utilized.
(B) Annual emissions (note calculation basis).
(C) Any changes in the information contained in the permit application.

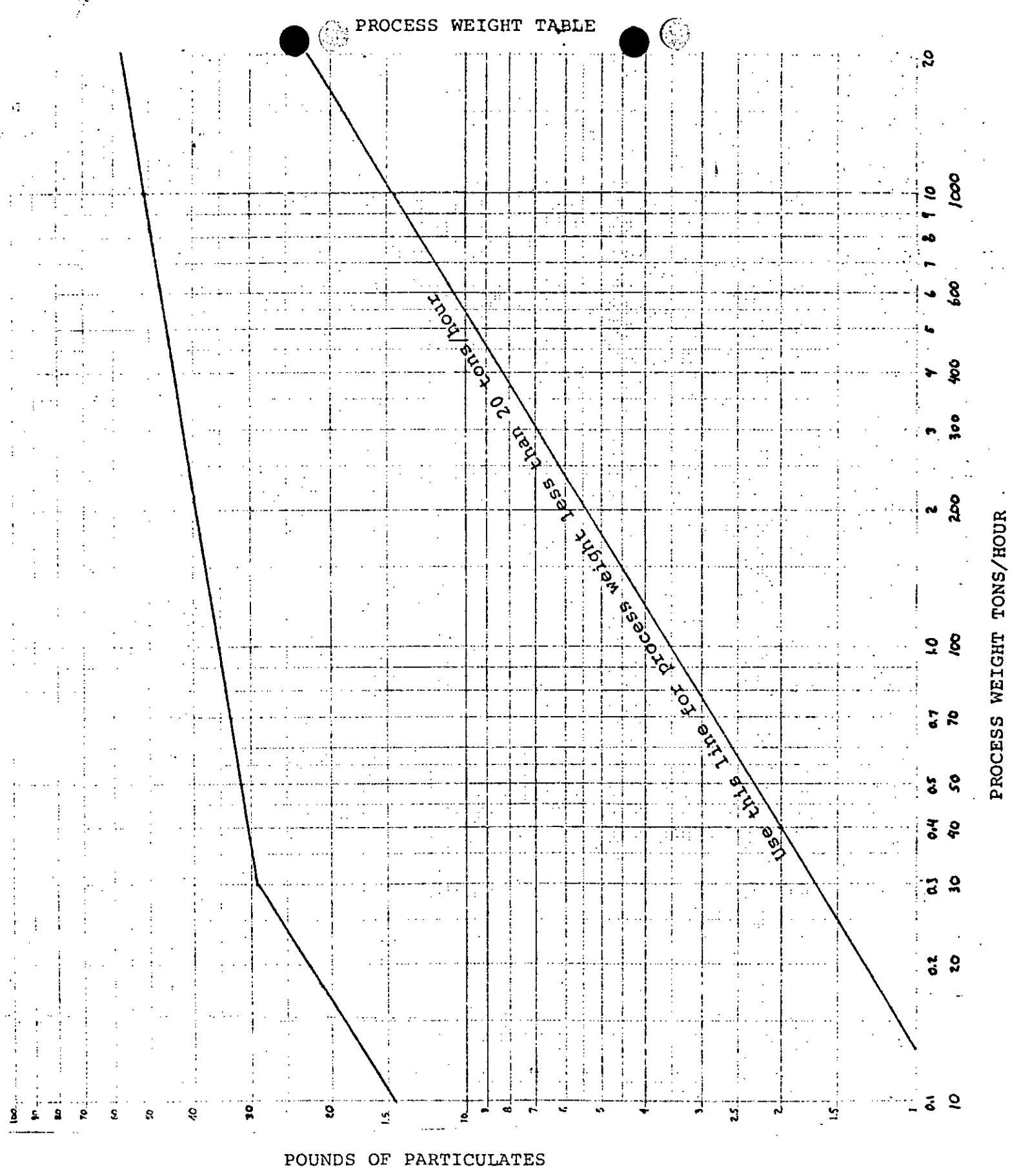
(X) 6. In the event the permittee is temporarily unable to comply with any of the conditions of the permit, the permittee shall immediately notify the District Office of the D.E.R. as per Chapter 17-4.13, F.A.C. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement actions by the Department.

( ) 7. According to the Process Weight Table within Chapter 17-2.04(2), F.A.C., the maximum allowable emission rate of particulate matter for a process rate of _____ tons/hour is _____ pounds/hour. At lesser process rates, the allowable emission rates can be determined from the graph.

( ) 8. This permit is associated with a Development of Regional Impact (D.R.I.). It does not waive any other permits that may be required from this or any other state, federal, or local agency.

(X) 9. Issuance of this permit does not indicate an endorsement or approval of any other required permits by this Department.

(X) 10. The permit holder shall keep records of all maintenance performed on the control device covered by this permit, and shall produce these records at the request of the Department.


PROCESS WEIGHT TABLE
Use this line for process weight less than 20 tons/hour
POUNDS OF PARTICULATES
PROCESS WEIGHT TONS/HOUR

State of Florida

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee

To: _____ Loctn.: _____

To: _____ Loctn.: _____

To: _____ Loctn.: _____

From: _____ Date: _____

TO: The Files

THRU: Harry Kerns

FROM: Bob Garrett

DATE: May 5, 1978

SUBJECT: Borden, Inc. - Defluorinating Plant - Feed Preparation and Dicalcium phosphate dust collectors- Hillsborough County

Borden has applied for a renewal for their permit AO29-2443 which covered an entire plant for feed preparation of dicalcium phosphate and the defluorinating processes. The permit was unwieldy as such, therefore we are splitting it into two areas of baghouses. This permit will be for the (6) baghouses in the feed preparation and dikal areas.

Feed is prepared in one area of the plant where emissions are controlled by (3) baghouses no. 1,2, & 3 and dicalcium phosphate is manufactured by liming phosphate in another area controlled by (3) more baghouses no. 4,5, & 6 as outlined in red on the permit application's areal photo.

All baghouses were tested for visible emissions on 1-14-76 reporting no visible emissions. The calculated particulate weight emitted total 1.31 lbs/hr or 2.11 tons/year.

I recommend we issue permit no. AO29-6318 for 5 years with the condition that they test for visible emissions every 6 months.

BG/rkt

RECEIVED FEB 23 1978 H.C.E.P.C.

A029-6318

RECEIVED 2-23-78 H.C.E.P.C.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

Source Type: Air Pollution [ ] Incinerator [ ]
Type application: [X] Operation [ ] Construction
Source Status: [ ] New [X] Existing [ ] Modification
Company Name: Borden, Inc. County: Hillsborough
Source Identification: Dust Collectors - Feed Preparation & Dicalcium Phosphate Plants
Source Location: Street: Coronet Road City: 3096.3
UTM: East 17-393.8 North 3096.3
Appl. Name and Title: B. V. Galloway, Environmental Manager
Appl. Address: P. O. Box 790, Plant City, Florida 33566

STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative of* Borden, Inc.

I certify that the statements made in this application for a Operating permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403, Florida Statutes, and all the rules and regulations of the Department and revisions thereof. I also understand that a permit, if granted by the Department, will be nontransferable and I will promptly notify the Department upon sale or legal transfer of the permitted establishment.

B. V. Galloway
Signature of the Owner or Authorized Representative and Title

Date: December 7, 1977 Telephone No.: (813) 752-1161

*Attach a letter of authorization. If applicant is a corporation, a Certificate of Good Standing must be submitted with application. This may be obtained for a $5.00 charge from the Secretary of State, Bureau of Corporate Records, Tallahassee, Florida 32304.

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulation of the Department. It is also agreed that the undersigned will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signature: A. R. Lenkei
Mailing Address: P. O. Box 790
Name: A. R. Lenkei (Please Type)
Plant City, Fla. 33566
Company Name: Borden, Inc.
Telephone No.: (813) 752-1161
Florida Registration Number: 8716
Date: December 7, 1977

(Affix Seal)

DETAILED DESCRIPTION OF SOURCE

A. Describe the nature and extent of the project. Refer to existing pollution control facilities, expected improvement in performance of the facilities and state whether the project will result in full compliance. Attach additional sheet if necessary.

This application for renewal covers dust collectors located in the Feed Preparation and Dicalcium phosphate areas of the Plant City facility. These units formerly operated under Permit No. AO 29-2443. A complete list of the dust collectors is attached.

B. Schedule of Project Covered in this Application (Construction Permit Application Only).

Start of Construction: N/A

Completion of Construction:

C. Costs of Construction (Show a breakdown of estimated costs for individual components/units of the project serving pollution control purpose only). Information on actual costs shall be furnished with the application for operation permit.

N/A

D. For this source indicate any previous DER permits, orders, and notices; including issuance dates and expiration dates.

AO 29-2082 issued May 23, 1973, expired July 1, 1975. AO 29-2443 issued September 29, 1975, expires September 29, 1977.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

AIR POLLUTION SOURCES & CONTROL DEVICES
(other than incinerators)

A. Identification of Air Contaminants:

1) [X] Particulates
a) [X] Dust b) [ ] Fly Ash c) [ ] Smoke d) [ ] Other (Identify)

2) [ ] Sulfur Compounds
a) [ ] SO_x as SO_2 b) [ ] Reduced Sulfur as H_2S c) [ ] Other (Identify)

3) [ ] Nitrogen Compounds
a) [ ] NO_x as NO_2 b) [ ] NH_3 c) [ ] Other (Identify)

4) [ ] Fluorides 5) [ ] Acid Mist 6) [ ] Odor

7) [ ] Hydrocarbons 8) [ ] Volatile Organic Compounds

9) [ ] Other (Specify): _____

B. Raw Materials and Chemicals Used (Be Specific):

Description	Utilization Rate lbs./hr.	Approximate Contaminant Content		Relate to Flow Diagram
		Type	% Wt.	
N/A				

C. Process Rate:

1) Total Process Input Rate (Units*): N/A
2) Product Weight (Units*): N/A
3) Normal Operating Time: N/A, if seasonal describe: _____
hrs./day: _____ days/wk.: _____ wks/yr.: _____

D. Airborne Contaminants Discharged:

Name of Contaminant	Actual** Discharge		Discharge Criteria Rate*	Allowable Discharge lbs./hr.	Relate to Flow Diagram
	lbs./hr.	T/yr.			
N/A					

*Refer to Chapter 17-2.04(2), Florida Administrative Code.
(Discharge Criteria: Rate = lbs./ton P_2O_5, lbs./M BTU/hr., etc.)
**Estimate only if this is an application to construct.

E. Control Devices:

Name and Type (Model and Serial No.)	Contaminant	Efficiency*	Conditions of Operations	Basis for Efficiency Operational Data, Test, Design, Data
See Attached List				

*See required supplement.
(Include any test data and/or design data for efficiency substantiation)

F. Fuels:

Type (Be Specific)	Consumption*		Maximum Heat Input MMBTU/hr.
	Avg./hr.	Max./hr.	
N/A			

*Units: Natural Gas – MCG/hr.; Fuel Oils, Coal – lbs./hr.

Fuel Analysis:

Percent Surfur: N/A Percent Ash: _____

Density: _____ lb./gal.

Heat Capacity: _____ BTU/lb. _____ BTU/gal.

Other Fuel Contaminants: _____

G. Indicate liquid or solid wastes generated and method of disposal:

Dust collected from the operation of the various collectors is returned to the system.

H. Emission Stack Geometry and Flow Characteristics, (provide data for each stack):

Stack Height: N/A ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM Gas Exit Temperature: _____ °F

Water Vapor Content: _____ %

INCINERATOR INFORMATION

N/A

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs./Hr. Incinerated							

Description of Waste: _____

Total Weight Incinerated (lbs./hr.): _____ Design Capacity (lbs./hr.): _____

Approximate Number of Hours of Operation per Day: _____, days/week: _____

Manufacturer: _____

Date Constructed: _____ Model No.: _____

	Volume $(ft.)^3$	Heat Release (BTU/hr.)	Fuel		Temp. (^oF)
			Type	BTU/hr.	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter: _____ Stack Temp.: _____ ^oF

Type of Pollution Control Device: [ ] Cyclone [ ] Wet scrubber [ ] Afterburner
[ ] Other (Specify): _____

Brief Description of Operating Characteristics of Control Device: _____

Ultimate Disposal of Any Effluent Other Than That Emitted From the Stack (scrubber water, ash, etc.): _____

Please Provide the Following Required Supplements For All Pollution Sources:

1. Total process input rate and product weight — show derivation.

2. Efficiency estimation — show derivation.

3. An 8½" x 11" flow diagram, which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

4. An 8½" x 11" plot plan showing the exact location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

5. An 8½" x 11" plot plan showing the exact location of the establishment, and points of airborne emissions in relation to the surrounding area, residences and other permanent structures and roadways.

6. Description and sketch of storm water control measures taken both during and after construction.

SMITH-DOUGLASS
Division of
BORDEN CHEMICAL, BORDEN INC

BORDEN

J. J. POINTER
PRESIDENT

October 7, 1976

Mr. B. V. Galloway
Smith-Douglass Division
of Borden Chemical,
Borden, Inc.
P. O. Box 790
Plant City, Florida 33566

Dear Mr. Galloway:

You are authorized to sign on behalf of Borden, Inc., as Authorized Representative, Applications to Operate/Construct Pollution Sources, Pollution Performance Reports, and any other environmental applications or reports relating to the Agricultural Division of Borden, Inc.'s operation in the State of Florida.

Very truly yours,

JJP:hrn

C/c to Mr. R. S. Rydell

DUST COLLECTORS CORONET PLANT

Location	Model	CFM	Filter Area	Date Installed
1. Feed Prep	Mikro - 37-8-100	3,300	344 sq.ft.	1965
2. Feed Prep	Mikro - 25-8-100	2,050	232 sq.ft.	1965
3. Feed Prep Soda	Mikro - 16-8-100	1,250	149 sq.ft.	1965
4. Lime Bin (Dikal)	Mikro - 16S-6-30	1,000	114 sq.ft.	1974
5. CDP Bin (Dikal)	Mikro - 69-8-55	5,800	642 sq.ft.	1969
6. Dikal Plt.	Mikro - 64S-6-20	3,000	454 sq.ft.	1967
7. Bag House (West)	Mikro 1C1	4,000	510 sq.ft.	1963
8. Bag House (East)	Mikro 1F1	7,100	670 sq.ft.	1968
9. 800 T. Bin	Mikro 1F1-48	10,000	1,116 sq.ft.	1973
10. Millroom	Mikro 2G224	27,700	3,124 sq.ft.	1964
11. Millroom	Mikro 1F1-48	10,000	1,116 sq.ft.	1972
12. Truck Loading	Mikro 1F1-24	8,000	905 sq.ft.	1974
13. Bulk Loading	Mikro 1-F1-48	10,000	1,116 sq.ft.	1975

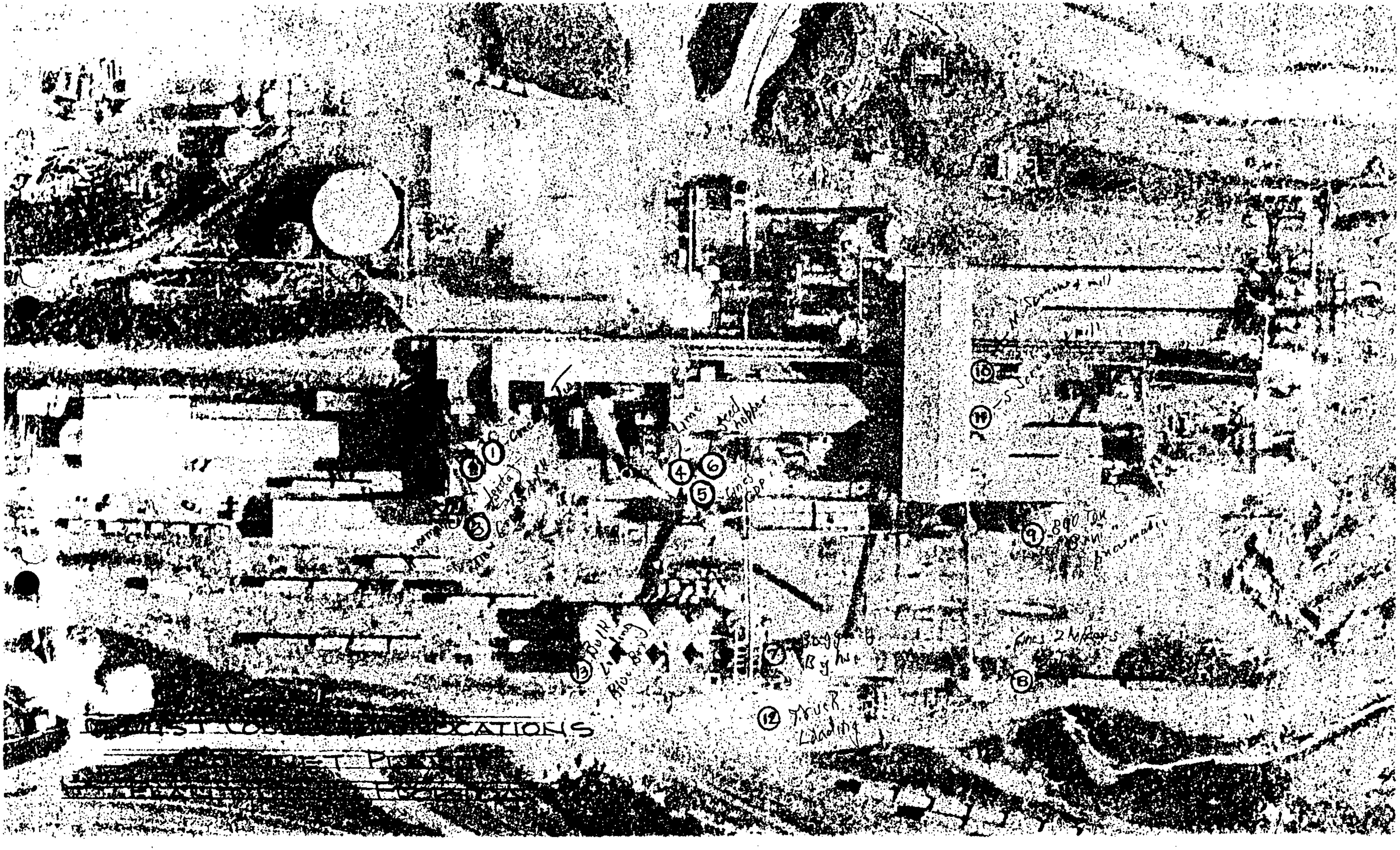
The Mikro-Pulsaire dust collector is guaranteed to have an efficiency of 99.9%. Regardless of inlet loading the maximum effluent dust loading shall be .01 grains per cu. ft. with stack visibly clear at all times.

EGP/mkb

6/10/75

DUST COLLECTORS - FEED PREPARATION & DICALCIUM PHOSPHATE PLANT

	LOCATION	COLLECTOR MODEL	PROCESS WEIGHT RATE: TPH	CALCULATED PARTICULATE EMISSIONS WHEN OPERATING LBS/HR	CALCULATED PARTICULATE EMISSIONS TONS/YEAR
1.	Feed Prep	Mikro-37-8-100	45	.28	.76
2.	Feed Prep	Mikro-25-8-100	45	.18	.48
3.	Feed Prep Soda	Mikro-16-8-100	-0-	-0-	-0-
4.	Lime Bin (Dikal)	Mikro-165-6-30	10	.09	.04
5.	CDP Bin (Dikal)	Mikro-69-8-55	3	.50	.55
6.	Dikal Plant	Mikro-645-6-20	6	.26	.28
				1.31	2.11


1
4
5
6
Lime
feed hopper
9
890 Ton
10
13
Bulk Loading
7
8
Fines 2 hoppers
12
Truck Loading
OCATIONS