certified P728 685 987

PINEY POINT PHOSPHATES, INC.

13300 U. S. Hwy. 41 North
Palmetto, Florida 34221
(813) 722-4555

May 27, 1993

Mr. Clair H. Fancy
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Air Construction Permit Application for Increase in Operation Hours of Auxiliary Boiler
Piney Point Phosphates, Inc.
Manatee County, Florida

Dear Mr. Fancy:

Enclosed are four copies of the air construction permit application, one copy of the Appendix (air modeling output), and a check in the amount of $7500 (permit processing fee).

This application is being submitted to request an increase in the allowable hours of operation of the auxiliary boiler from 876 to 8760 hours per year.

If you have any question, please contact this office.

Very truly yours,

Susanne Bidwell

Susanne Bidwell
Environmental Supervisor

Enclosure
cc: file
B. Thomas, SWD Tlst.
J. Harper, EPA
J. Runyan, NPS
R. Baum, Manatee Co.

PINEY POINT PHOSPHATES, INC.
General Disbursements
13300 U.S. Hwy. 41 N.
Palmetto, FL 34221-8662

FLORIDA DER $7500.00
BOILER PERMIT APPLICATION
PROCESSING FEE

REMITTANCE ADVICE CHECK NO. 800224 05/27/93 $7500.00

DETACH BEFORE DEPOSITING

Reynolds + Reynolds LITHO IN U.S.A. GPO 083375

PINEY POINT PHOSPHATES, INC.
General Disbursements
13300 U.S. Hwy. 41 N.
Palmetto, FL 34221-8662

ACCOUNTS PAYABLE CHECK

No 10 800224

DATE 05/27/93

CHECK NUMBER 800224

63-526/631
BRANCH 185

PAY EXACTLY

SEVEN THOUSAND FIVE HUNDRED DOLLARS AND 00/100**********

AMOUNT ****$7500.00

SunBank/Mid-Florida, N.A.
Mulberry Office 185
400 North Church Avenue
Mulberry, FL 33860

Pay to the order of

FLORIDA DER
TWIN OFFICE BLDG.
2600 BLAIR STONE RD.
TALLAHASSEE, FL 32399-2400

AUTHORIZED SIGNATURE

⑈800224⑈ ⑆063105269⑆018500131007?⑈

AN APPLICATION FOR A PSD CONSTRUCTION PERMIT

PREPARED FOR:

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

NOVEMBER 1992

PREPARED BY:

KOOGLER & ASSOCIATES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form #
Form Title
Effective Date
DER Application No. (Filled in by DER)

AC 41-232096
PSD-FL-205

$7500 pd.
5-28-93
Rcpt. #180961

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Auxiliary Boiler [ ] New[1] [X] Existing[1]

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

COMPANY NAME: Piney Point Phosphates, Inc. COUNTY: Manatee

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

SOURCE LOCATION: Street 13300 US Highway 41 North City Palmetto

UTM: East (17) 348.5 km North 3057.3 km

Latitude 27 ° 37 ' 58 "N Longitude 82 ° 32 ' 08 "W

APPLICANT NAME AND TITLE: Ivan Nance Environmental Manager

APPLICANT ADDRESS: 13300 US Hwy 41 N, Palmetto, Florida 34221-8662

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Piney Point Phosphates, In

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

*Attach letter of authorization

Signed: Ivan Nance

Ivan Nance, Environmental Manager
Name and Title (Please Type)

Date: 5/26/93 Telephone No. (813) 722-4555

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 h been designed/examined by me and found to be in conformity with modern engineeri principles applicable to the treatment and disposal of pollutants characterized in t permit application. There is reasonable assurance, in my professional judgment, th

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

Northwest District 160 Governmental Center Pensacola, Florida 32501-5794 904-436-8300
Northeast District 3426 Bills Rd Jacksonville, Florida 32207 904-798-4200
Central District 3319 Maguire Blvd. Suite 232 Orlando, Florida 32803-3767 407-894-7555
Southwest District 4520 Oak Fair Blvd Tampa, Florida 33610-7347 813-623-5561
South District 2269 Bay St. Fort Myers, Florida 33901-2896 813-332-6567
Southeast District 1900 S. Congress Ave. Suite A West Palm Beach, Florida 33406 407 964-9568

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 _____

John B. Koogler, Ph.D., P.E.
Name (Please Type)

Koogler & Associates, Environmental Services
Company Name (Please Type)

4014 N.W. 13th Street, Gainesville, FL 32609
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 11/19/92 Telephone No. (904) 377-5822

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.

For the increase in the operating hours of the auxiliary boiler from 876 to 8760 hours per year. The source is currently permitted under AC41-211848. The proposed project will operate in compliance with all applicable air regulations.

B. Schedule of project covered in this application (Construction Permit Application Only) (Permitted source)
Start of Construction August 1993 Completion of Construction August 1994

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.)

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

AC41-211848 : Issued 8-17-92 ; Expires 7-14-93.

A041-156789 : Expires 1-24-94. (Replaced)

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr _____; if seasonal, describe: 8760 hrs/yr

F. 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? NA

   b. If yes, has "Lowest Achievable Emission Rate" been applied? NA

   c. If yes, list non-attainment pollutants. NA

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. YES [1]

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. YES [1]

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? YES [1]

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? NO

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? NO

   a. If yes, for what pollutants? NA

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted. NA

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

[1] See attached report.

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		
Water			150,000	

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

1. Total Process Input Rate (lbs/hr): 150,000 water

2. Product Weight (lbs/hr): 150,000 steam

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
PM	2.7	11.8	17-2.660	2.7	2.7	11.8	
SO_2	95.8	419.5	17-2.660	95.8	95.8	419.5	
NOx	38.0	166.4	17-2.660	38.0	38.0	166.4	
CO	6.7	29.5	--	--	6.7	29.5	
VOC	0.3	1.2	--	--	0.3	1.2	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 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).

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
NO. 2 Fuel Oil	1349.0 gph	1349 gph	190

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: 0.5 (max.) Percent Ash: 0.02

Density: 7.3 lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: 19,300 BTU/lb 140,000 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. NA

Annual Average _____ Maximum _____

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

None

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

Stack Height: 29.0 ft. Stack Diameter: (Rect.) 4.5 ft x 10 ft.

Gas Flow Rate: 130,000 ACFM 82,000 DSCFM Gas Exit Temperature: 310 °F.

Water Vapor Content: 8 % Velocity: 48 FPS

SECTION IV: INCINERATOR INFORMATION

NA

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.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

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 Diamter: _____ 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: _____

_____

_____

_____

_____

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

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

See attached report.

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

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.

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

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, design pressure drop, etc.)

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).

6. An 8 1/2" 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.

7. An 8 1/2" 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).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation. $7500

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

See attached report.

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:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

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:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

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:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

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

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

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:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

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:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]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

See attached report.

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.

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

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

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)_____

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.

Applicants Maximum Allowable Emission Data

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

Emission Data Used in Modeling

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

Attach all other information supportive to the PSD review.

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.

REPORT IN SUPPORT OF AN APPLICATION FOR A PSD CONSTRUCTION PERMIT REVIEW

PREPARED FOR:

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

NOVEMBER 1992

PREPARED BY:

KOOGLER & ASSOCIATES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

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1.0 SYNOPSIS OF APPLICATION

1.1 APPLICANT

Piney Point Phosphates, Inc.
13300 US Hwy 41 North
Palmetto, Florida 34221-8662

1.2 FACILITY LOCATION

Piney Point Phosphates, Inc. (previously Royster Phosphates) operates a fertilizer plant located approximately nine miles north of Palmetto on US Highway 41 in Manatee County, Florida (see Figures 1-1 and 1-2). The UTM coordinates of the facility are Zone 17, 348.5 km east and 3057.3 km north.

1.3 PROJECT DESCRIPTION

Piney Point Phosphates proposes to increase the permitted hours of operation of the auxiliary boiler from 876 to 8760 hours per year.

The existing auxiliary boiler at the facility is in need of replacement. Piney Point Phosphates recently decided to replace the existing boiler and applied for an air construction permit for a new boiler. The FDER Southwest District office issued a construction permit (AC41-211848) on August 17, 1992, allowing Piney Point Phosphates to replace the existing auxiliary boiler and to operate the new boiler for no more than 876 hours per year. The function of the auxiliary boiler is to supply steam to the facility when the sulfuric acid plant (which supplies steam from waste heat recovery) is down. The auxiliary boiler is also operated for sulfuric acid plant startups.

Piney Point Phosphates is requesting an increase in the operating hours of the auxiliary boiler from 876 to 8760 hours per year so that key plant operations may continue during prolonged sulfuric acid plant down time. The auxiliary boiler is located adjacent to the sulfuric acid plant (see Figure 1-3).

Piney Point Phosphates is submitting this report in support of the application to the Florida Department of Environmental Regulation for an increase in the allowable operating hours of the auxiliary boiler. The report includes a description of the operations, a review of Best Available Control Technology, an ambient air quality analysis and an evaluation of the impact of the proposed permit modification on soils, vegetation and visibility.

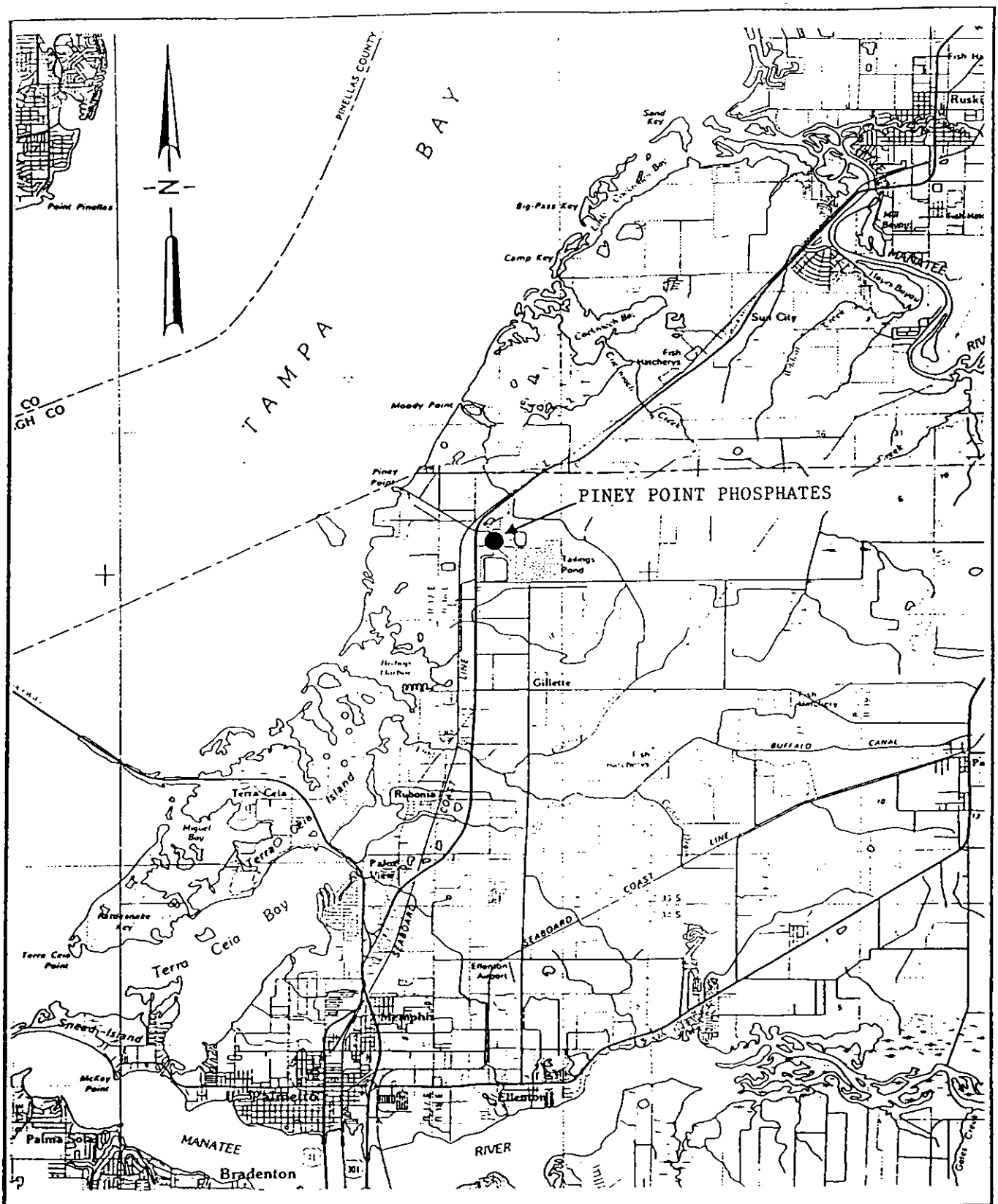


FIGURE 1-1

AREA LOCATION MAP

PINEY POINT PHOSPHATES, INC.

KOOGLER & ASSOCIATES

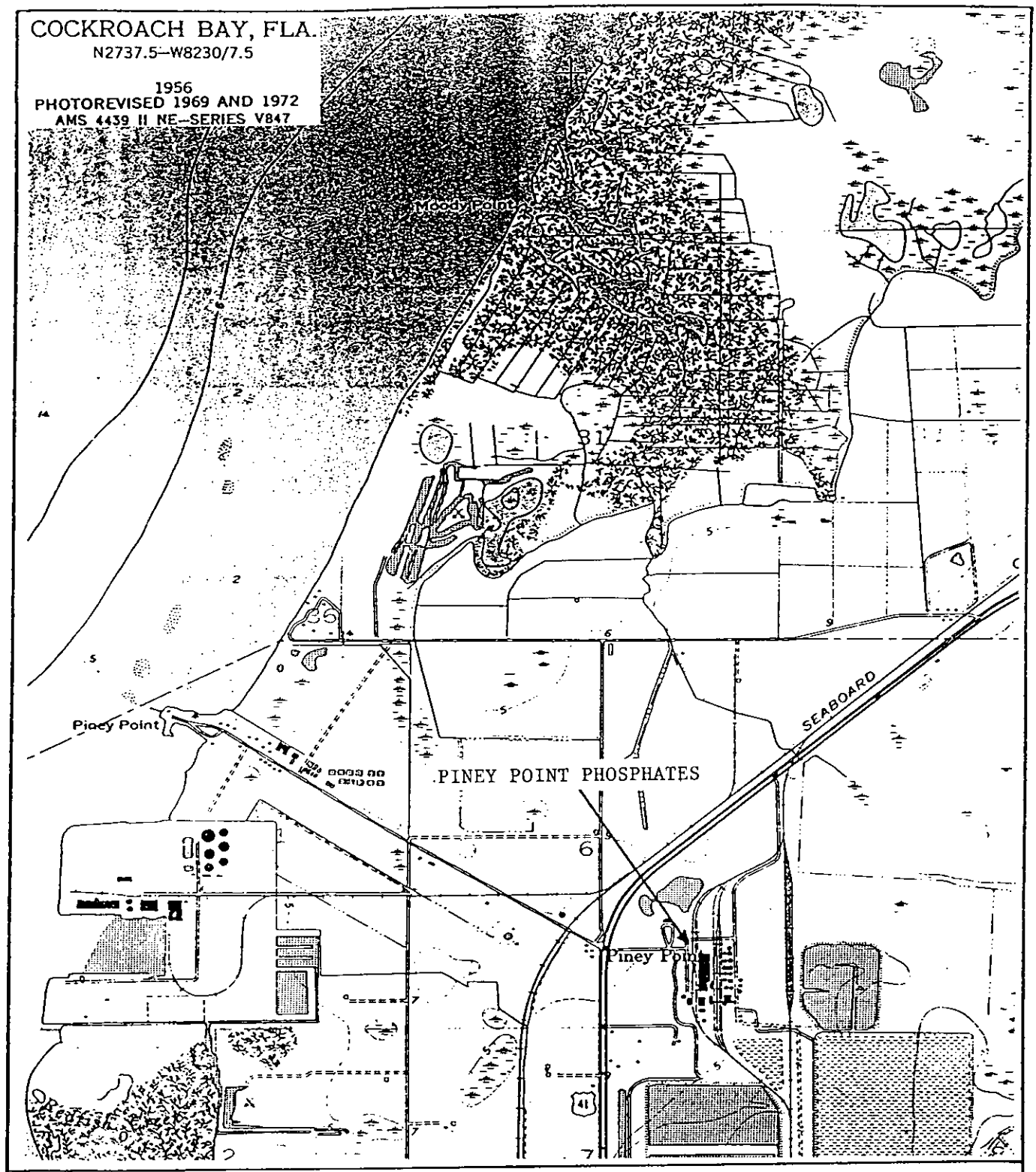
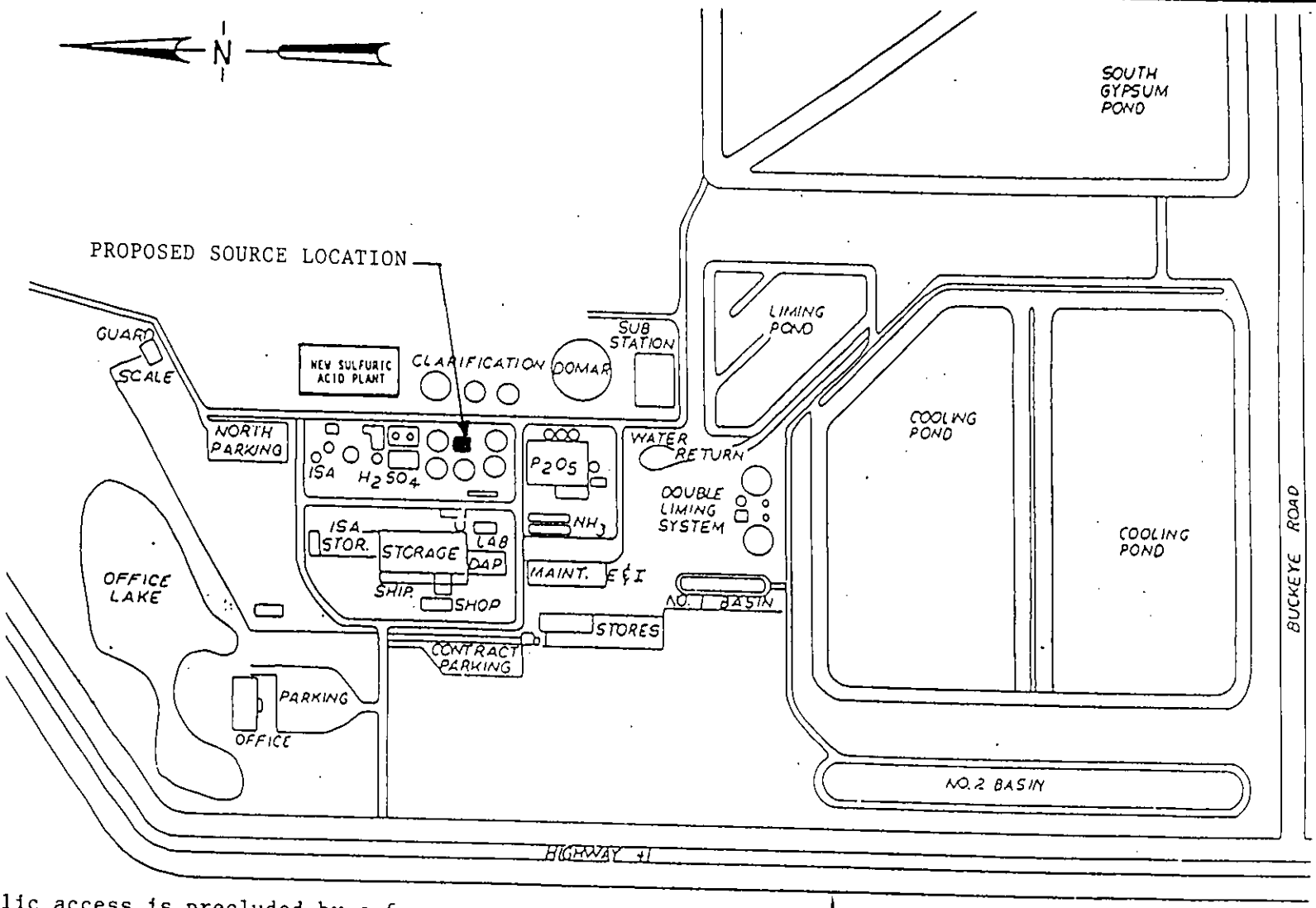


FIGURE 1-2

SITE LOCATION MAP

PINEY POINT PHOSPHATES, INC.



NOTE: Public access is precluded by a fence and personnel for plant security.

FIGURE 1-3

PLOT PLAN

PINEY POINT PHOSPHATES, INC.

KOOGLER & ASSOCIATES

2.0 FACILITY DESCRIPTION

The existing fertilizer complex consists of an auxiliary steam boiler, one sulfuric acid plant, one phosphoric acid plant, one diammonium phosphate plant, storage facilities for phosphate rock and fertilizer products, and shipping facilities for the fertilizer products.

2.1 EXISTING BOILER

The existing auxiliary boiler has a heat input capacity of 96 MMBtu/hour provided by No. 4 fuel oil with a maximum sulfur content of one percent. The auxiliary boiler permit (A041-156789) limited the boiler operation to 876 hours per year.

3.0 PROPOSED PROJECT

3.1 PROJECT DESCRIPTION

Piney Point Phosphates is requesting an increase in the allowable operating hours of the auxiliary boiler from 876 to 8760 hours per year so that key plant operations may continue during prolonged sulfuric acid plant down time.

The proposed project will result in a significant increase (as defined by FAC Rule 17-2.500) in the annual emission rates of sulfur dioxide and nitrogen oxides (see Tables 3-1 and 3-2). Therefore, the proposed permit modification is subject to a Prevention of Significant Deterioration (PSD) review.

3.2 RULE REVIEW

The following are the state and federal air regulatory requirements that apply to new or modified sources subject to a Prevention of Significant Deterioration (PSD) review.

In accordance with EPA and State of Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) are subject to preconstruction review. Florida's State Implementation Plan (SIP), approved by the EPA, authorizes the Florida Department of Environmental Regulation (FDER) to manage the air pollution program in Florida.

The PSD review determines whether or not significant air quality deterioration will result from a new or modified facility. Federal PSD regulations are contained in 40CFR52.21, Prevention of Significant Deterioration of Air Quality. The state of Florida has adopted PSD regulations which are essentially identical to the federal regulations and are contained in Chapter 17-2 of the Florida Administration Code (FAC). All new major facilities and major modifications to existing facilities are subject to control technology review, source impact analysis, air quality analysis and additional impact analyses for each pollutant subject to a PSD review. A facility must also comply with the Good Engineering Practice (GEP) stack height rule.

A major facility is defined in the PSD rules as any one of the 28 specific source categories (see Table 3-3) which has the potential to emit 100 tons per year (tpy) or more, or any other stationary facility which has the potential to emit 250 tpy or more, of any pollutant regulated under the CAA. A major modification is defined in the PSD rules as a change at an existing major facility which increases the actual emissions by greater than significant amounts (see Table 3-4).

3.2.1 Ambient Air Quality Standards

The EPA and the state of Florida have developed/adopted ambient air quality standards, AAQS (see Table 3-5). Primary AAQS protect the public health while the secondary AAQS protect the public welfare from adverse effects of air pollution. Areas of the country have been designated as attainment or nonattainment for specific pollutants. Areas not meeting

the AAQS for a given pollutant are designated as nonattainment areas for that pollutant. Any new source or expansion of existing sources in or near these nonattainment areas are usually subject to more stringent air permitting requirements. Projects proposed in attainment areas are subject to air permit requirements which would ensure continued attainment status.

3.2.2 PSD Increments

In promulgating the 1977 CAA Amendments, Congress quantified concentration increases above an air quality baseline concentration level for sulfur dioxide and particulate matter which would constitute significant deterioration. The size of the allowable increment depends on the classification of the area in which the source would be located or have an impact. Class I areas include specific national parks, wilderness areas and memorial parks. Class II areas are all areas not designated as Class I areas and Class III areas are industrial areas in which greater deterioration than Class II areas would be allowed. There are no designated Class III areas in Florida.

In 1988, EPA promulgated PSD regulations for nitrogen oxides and PSD increments for nitrogen dioxide concentrations. FDER adopted the nitrogen dioxide increments in July 1990 (see Table 3-6 for PSD increments).

3.2.3 Control Technology Evaluation

The PSD control technology review requires that all applicable federal and state emission limiting standards be met and that Best Available Control

Technology (BACT) be applied to the source. The BACT requirements are applicable to all regulated pollutants subject to a PSD review.

BACT is defined in Chapter 17-2, FAC, as an emission limitation, including a visible emission standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case-by-case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of such pollutant. If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of a source or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead, to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation. Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

The reason for evaluating the BACT is to minimize as much as possible the consumption of PSD increments and to allow future growth without significantly degrading air quality. The BACT review also analyzes if the most current control systems are incorporated in the design of a proposed

facility. The BACT, as a minimum, has to comply with the applicable New Source Performance Standard for the source. The BACT analysis requires the evaluation of the available air pollution control methods including a cost-benefit analysis of the alternatives. The cost-benefit analysis includes consideration of materials, energy, and economic penalties associated with the control systems, as well as environmental benefits derived from the alternatives.

EPA recently determined that the bottom-up approach (starting at NSPS and working up to BACT) was not providing the level of BACT originally intended. As a result, in December 1987, EPA strongly suggested changes in the implementation of the PSD program including the "top-down" approach to BACT. The top-down approach requires a technology evaluation to start with the most stringent control alternative, often Lowest Achievable Emission Rate (LAER), and justify its rejection or acceptance as BACT. Rejection of control alternatives may be based on technical or economical infeasibility, physical differences, locational differences, and environmental or energy impact differences when comparing a proposed project with a project previously subject to that BACT.

3.2.4 Air Quality Monitoring

An application for a PSD permit requires an analysis of ambient air quality in the area affected by the proposed facility or major modification. For a new major facility, the affected pollutants are those that the facility would potentially emit in significant amounts. For a major modification, the pollutants are those for which the net emissions

increase exceeds the significant emission rate.

Ambient air monitoring for a period of up to one year, but no less than four months, is required. Existing ambient air data for a location in the vicinity of the proposed project is acceptable if the data meet FDER quality assurance requirements. If not, additional data would need to be gathered. There are guidelines available for designing a PSD air monitoring network in EPA's "Ambient Monitoring Guidelines for Prevention of Significant Deterioration."

FDER may exempt a proposed major stationary facility or major modification from the monitoring requirements with respect to a particular pollutant if the emissions increase of the pollutant from the facility or modification would cause air quality impacts less than the de minimis levels (see Table 3-4).

3.2.5 Ambient Impact Analysis

A source impact analysis is required for a proposed major source subject to PSD for each pollutant for which the increase in emissions exceeds the significant emission rate. Specific atmospheric dispersion models are required in performing the impact analysis. The analysis should demonstrate the project's compliance with AAQS and allowable PSD increments. The impact analysis for criteria pollutants may be limited to only the new or modified source if the net increase in impacts due to the new or modified source is below significant impact levels.

Typically, a five-year period is used for the evaluation of the highest, second-highest short-term concentrations for comparison to AAQS or PSD increments. The term "highest, second-highest" refers to the highest of the second-highest concentrations at all receptors. The second-highest concentration is considered because short-term AAQS specify that the standard should not be exceeded at any location more than once a year. If less than five years of meteorological data are used in the modeling analysis, the highest concentration at each receptor is normally used.

3.2.6 Additional Impact Analysis

The PSD rules also require analyses of the impairment to visibility and the impact on soils and vegetation that would occur as a result of the project. A visibility impairment analysis must be conducted for PSD Class I areas. Impacts due to commercial, residential, industrial, and other growth associated with the source must be addressed.

3.2.7 Good Engineering Practice Stack Height

In accordance with Chapter 17-2, FAC, the degree of emission limitation required for control of any pollutant is not to be affected by a stack height that exceeds GEP, or any other dispersion technique. GEP stack height is defined as the highest of:

1. 65 meters (m), or
2. A height established by applying the formula:

   $Hg = H + 1.5\ L$

   where:

   Hg - GEP stack height,

H - Height of the structure or nearby structure, and

L - Lesser dimension, height or projected width of nearby structure(s)

3. A height demonstrated by a model or field study.

The GEP stack height regulations require that the stack height used in modeling for determining compliance with AAQS and PSD increments not exceed the GEP stack height. The actual stack height may be higher or lower.

3.3 RULE APPLICABILITY

The increase in the annual emissions of sulfur dioxide and nitrogen oxides associated with an increase in the annual hours of operation of the auxiliary boiler will result in a major modification to a major facility subject to both state and federal regulations as set forth in Chapter 17-2, FAC. The facility is located in an area classified as attainment for each of the regulated air pollutants. The proposed project will result in a significant increase in the emissions of sulfur dioxide and nitrogen oxides as defined by FAC Rule 17-2.500(2)(e)2. Therefore, the proposed project is subject to PSD review requirements in accordance with FAC Rule 17-2.500. The PSD review requirements include a determination of Best Available Control Technology, an air quality review, a Good Engineering Practice stack height analysis and an evaluation of impacts on soils, vegetation and visibility.

TABLE 3-1

AUXILIARY BOILER - CURRENT AND PROPOSED
AIR EMISSION RATES

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

POLLUTANT	EMISSIONS lbs/hr	EMISSIONS tpy
Current Actual Emissions (1)		
Particulate Matter	1.4	0.3
Sulfur Dioxide	87.4	14.7
Nitrogen Oxides	53.8	11.0
Carbon Monoxide	3.4	0.7
Volatile Organic Compounds	0.2	0.03
Proposed Allowable Emissions (2)		
Particulate Matter	2.7	11.8
Sulfur Dioxide	95.8	419.5
Nitrogen Oxides	38.0	166.4
Carbon Monoxide	6.7	29.5
Volatile Organic Compounds	0.3	1.2

(1) Based on 1989, 1990, and 1991 fuel oil usage and AP-42 emission factors. The emission factor for nitrogen oxides is from the previous permit application submitted to FDER.

(2) Based on 8760 hours/year operation and AP-42 emission factors. The proposed nitrogen oxides emission rate is based on the BACT determination and NSPS requirements.

TABLE 3-2

NET EMISSION INCREASES(1)

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

POLLUTANT	ACTUALS (tpy)	PROPOSED (tpy)	NET CHANGE (tpy)	PSD SIGNIFICANT (tpy) (2)
PM/PM10	0.3	11.8	11.5	25/15
SO2	14.7	419.5	404.8	40
NOx	11.0	166.4	155.4	40
CO	0.7	29.5	28.8	100
VOCs	0.03	1.2	1.2	40

(1) See Appendix for emission calculations.
(2) Presented in Table 500.2, Chapter 17-2, FAC.

TABLE 3-3

MAJOR FACILITY CATEGORIES

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

Fossil fuel fired steam electric plants of more than 250 MMBTU/hr heat input
Coal cleaning plants (with thermal dryers)
Kraft pulp mills
Portland cement plants
Primary zinc smelters
Iron and steel mill plants
Primary aluminum ore reduction plants
Primary copper smelters
Municipal incinerators capable of charging more than 250 tons of refuse per day
Hydrofluoric acid plants
Sulfuric acid plants
Nitric acid plants
Petroleum refineries
Lime plants
Phosphate rock processing plants
Coke oven batteries
Sulfur recovery plants
Carbon black plants (furnace process)
Primary lead smelters
Fuel conversion plants
Sintering plants
Secondary metal production plants
Chemical process plants
Fossil fuel boilers (or combinations thereof) totaling more than 250 million BTU/hr heat input
Petroleum storage and transfer units with total storage capacity exceeding 300,000 barrels
Taconite ore processing plants
Glass fiber processing plants
Charcoal production plants

TABLE 3-4

REGULATED AIR POLLUTANTS - SIGNIFICANT EMISSION RATES

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

Pollutant	Significant Emission Rate tons/yr	De minimis Ambient Impacts μg/m3
CO	100	575 (8-hour)
NOx	40	14 (NO2, Annual)
SO2	40	13 (24-hour)
Ozone	40 (VOC)	-
PM (TSP)	25	10 (24-hour)
PM10	15	10 (24-hour)
TRS (including H2S)	10	0.2 (1-hour)
H2SO4 mist	7	-
Fluorides	3	0.25 (24-hour)
Vinyl Chloride	1	15 (24-hour)
	pounds/yr	
Lead	1200	0.1 (Quarterly avg)
Mercury	200	0.25 (24-hour)
Asbestos	14	-
Beryllium	0.8	0.001 (24-hour)

TABLE 3-5

AMBIENT AIR QUALITY STANDARDS

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

Pollutant	FDER (State)		USEPA (National) Primary		USEPA (National) Secondary	
	µg/m3	PPM	µg/m3	PPM	µg/m3	PPM
SO_2, 3-hour	1,300	0.5	-	-	1300	0.5
24-hour	260	0.1	365	0.14	-	-
Annual	60	0.02	80	0.03	-	-
PM10, 24-hour	150	-	150	-	150	-
Annual	50	-	50	-	50	-
CO, 1-hour	40,000	35	40,000	35	-	-
8-hour	10,000	9	10,000	9	-	-
Ozone, 1-hour	235	0.12	235	0.12	235	0.12
NO_2, Annual	100	0.05	100	-	100	-
Lead, Quarterly	1.5	-	1.5	-	1.5	-

TABLE 3-6

PSD INCREMENTS

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

Pollutant	Allowable PSD Increments (State/National) Class I μg/m3	Class II μg/m3	Class III μg/m3
TSP, Annual	5	19	37
24-hour	10	37	75
SO2, Annual	2	20	40
24-hour	5	91	182
3-hour	25	512	700
NO2, Annual	2.5	25	50

4.0 BEST AVAILABLE CONTROL TECHNOLOGY

Best Available Control Technology (BACT) is required to control air pollutants emitted from newly constructed major sources or from modification to the major emitting facilities if the modification results in significant increase in the emission rate of regulated pollutants (see Table 3-4 for significant emission levels). The proposed project will result in a significant increase in the emissions of sulfur dioxide and nitrogen oxides. A BACT analysis is therefore required for both sulfur dioxide and nitrogen oxides.

4.1 EMISSION STANDARDS

Federal New Source Performance Standards (NSPS) have been promulgated for steam generating units with a heat input capacity of less than 250 MMBtu per hour. These standards, contained in 40CFR60 Subpart Db, became effective on November 25, 1986. Subpart Db specifies emission standards for particulate matter, sulfur dioxide and nitrogen oxides.

The proposed project will comply with the applicable particulate matter and sulfur dioxide emission standards by utilizing distillate fuel oil containing no more than 0.5 percent sulfur. The applicable nitrogen oxides emission standard for this boiler, which has a high heat release rate, is 0.2 pound/MMBtu heat input or 38 pounds per hour (at a heat input rate of 190 MMBtu/hour). The proposed project is subject to a visible emission standard of 20 percent opacity to be determined by a continuous opacity monitor.

The state of Florida emission standards in FAC Rule 17-2.600(6), for steam generators with less than 250 MMBtu per hour heat input, require a BACT determination for particulate matter and sulfur dioxide, and limit visible emissions to 20 percent opacity.

4.2 PREVIOUS BACT DETERMINATIONS

A review of past BACT determinations for sulfur dioxide emissions from fuel oil fired boilers with less than 250 MMBtu per hour heat input indicates the use of low sulfur content fuel oil as BACT. The fuel oil sulfur content limitations have depended largely on the fuel availability and has usually been specified at 0.5 percent. The proposed project will utilize No. 2 fuel oil with a sulfur content not to exceed 0.5 percent. This sulfur content limitation is in line with the FDER BACT determination (in the permit issued August 1992) for the auxiliary boiler.

A review of past BACT determinations for nitrogen oxides emissions from fuel oil fired boilers with less than 250 MMBtu per hour heat input indicates low-NOx burners, flue gas recirculation, and proper operation practices as BACT. A discussion on various nitrogen oxides emission reduction technologies is presented below. These technologies include selective catalytic reduction (SCR), selective non-catalytic reduction (SNCR), flue gas recirculation, and low-NOx burners.

4.3 NITROGEN OXIDES CONTROL TECHNOLOGY

Nitrogen oxides emissions are formed in the combustion process by the oxidation of nitrogen in fuels (fuel NOx) and in combustion air (thermal

NOx). Thermal NOx is formed from the reaction of oxygen and nitrogen in the combustion air at combustion temperatures. Formation of thermal NOx depends on the flame temperature, residence time, combustion pressure, and air-to-fuel ratio in the combustion zone. The design and operation of the combustion system dictates these conditions. Fuel bound NOx is created by the oxidation of the volatilized nitrogen in the fuel. Nitrogen content of the fuel is the primary factor in the formation of fuel NOx.

The emissions of nitrogen oxides can be lowered by lowering combustion temperatures and reducing combustion air. These measures, however, do increase the generation of carbon monoxide. Post combustion controls have been proposed for certain sources where reduction of nitrogen oxides have been demonstrated. The source categories for which the "add-on" controls have been proposed or recommended include municipal waste combustors, industrial and utility boilers, glass furnaces, and gas turbines. The add-on controls used in the above applications typically consist of Selective Catalytic Reduction (SCR) technology or Selective Non-Catalytic Reduction (SNCR) technology.

4.3.1 Selective Catalytic Reduction

SCR uses ammonia to react with the nitrogen oxides present in the flue gas stream in the presence of a catalyst. Ammonia is typically diluted with air to an optimum concentration and introduced into the gas stream. A temperature range between 600 and 750^{o}F is required for the reaction of ammonia and nitrogen oxides and results in the formation of nitrogen and water.

The exit temperature of flue gases from the package boiler of around 300°F is not within the SCR operation range. The installation of the catalyst and ammonia injection system within the boiler is not possible without redesigning and refabricating the boiler. For this reason, SCR is rejected as BACT for the package boiler.

4.3.2 Selective Non-Catalytic Reduction

SNCR technology also uses ammonia or urea injection into the gas stream to control nitrogen oxides. In some systems, the simultaneous injection of hydrogen has also been used to extend the process effectiveness. While no catalyst is required, the effective temperature range necessary for the reaction of the ammonia and nitrogen oxides is significantly higher than that required for SCR. The ammonia is typically diluted with air or steam and introduced at a location that provides optimum reaction temperature and residence time. At temperatures between 1500 and 2200°F, the ammonia reacts with the nitrogen oxides in the gas stream to produce nitrogen and water. However, at temperatures above 2200°F, the ammonia reacts with the oxygen in the gas stream to produce nitrogen oxides.

In large boilers, there is adequate contact within the required temperature range for successful SNCR application. The same conditions are not encountered in the auxiliary package boiler because the compact design. The SNCR system cannot be installed within the boiler without boiler redesign and refabrication. For this reason, SNCR is rejected as BACT for the auxiliary boiler.

4.3.3 Flue Gas Recirculation

Emissions of nitrogen oxides can be reduced by limiting the amount of excess combustion air supplied to the combustion process. The same effect is created by diluting the oxygen rich combustion air with oxygen deficient recirculated flue gas. Based on discussions with the boiler manufacturer, the use of induced flue gas recirculation technology can reduce the nitrogen oxides emissions by up to 30 percent.

The cost of installing an induced flue gas recirculation system on the auxiliary boiler is not expected to exceed $30,000. The annualized cost for the installation and maintenance of system is not expected to be significant. However, a loss in the efficiency of the boiler, estimated to be about one percent by the manufacturer, will result in an annual fuel cost alone of about $1100 per ton of nitrogen oxides reduced. Despite these costs the proposed project will utilize the induced flue gas recirculation system.

Additional reduction in the emissions of nitrogen oxides can be achieved by increasing the amount of flue gas recirculated. However, a fan would have to be installed to provide forced recirculation. The manufacturer estimates an additional 10 percent reduction in nitrogen oxides emissions from forced flue gas recirculation at an additional cost in the boiler efficiency of 2 percent.

The installation cost of the forced recirculation system is estimated to be about $80,000. The additional loss in boiler efficiency will result in

an annual incremental fuel cost of $9200 per ton of nitrogen oxides reduced. This fuel cost alone far exceeds costs considered reasonable for the control of nitrogen oxides (up to $4000 per ton of nitrogen oxides reduced). For this reason, forced flue gas recirculation is rejected as BACT.

4.3.4 Low-NOx Burner Technology

The low-NOx burner technology provides reduction of nitrogen oxides by combustion control. This involves optimizing the quantities of combustion air and fuel introduced into the burner. The use of low-NOx burners in steam generating units can result in a reduction in nitrogen oxides emissions of 30 to 40 percent. The package boiler is equipped with a low-NOx burner.

4.4 CONCLUSION

Based upon the analysis presented above, the use of low-NOx burner technology in combination with induced flue gas recirculation resulting in a nitrogen oxides emission rate of 38.0 pounds per hour (0.2 pound per MMBtu), represents BACT for the auxiliary boiler.

5.0 AIR QUALITY REVIEW

The air quality review required of a PSD construction permit application potentially requires both air quality modeling and air quality monitoring. The air quality monitoring is required when the impact of air pollutant emission increases and decreases associated with a proposed project exceed the de minimis impact levels defined by Rule 17-2.500(3)(e)1, FAC or in cases where an applicant wishes to define existing ambient air quality by monitoring rather than by air quality modeling. The air quality modeling is required to provide assurance that the emissions from the proposed project, together with the emissions of all other air pollutants in the project area, will not cause or contribute to a violation of any ambient air quality standard.

5.1 AIR QUALITY MODELING

The ambient air quality impacts resulting from changes in the emissions of sulfur dioxide and nitrogen oxides were evaluated using air dispersion modeling.

The impact analysis of the changes in emissions of sulfur dioxide and nitrogen oxides, for the operation of the new auxiliary boiler in place of the existing auxiliary boiler, was conducted using the EPA approved SCREEN and Industrial Source Complex-Short Term (ISC-ST2), Version 92062, air quality models, and in accordance with the discussion on November 12, 1992, with FDER on the modeling protocol.

The SCREEN model was used to determine downwind distances associated with the maximum predicted impacts and also to determine the Class I area impacts resulting from the proposed project. The ISC-ST2 model was used for determining the Area of Significant Impact (ASI). The modeling was conducted in accordance with guidelines established by EPA and published in the document, Guidelines for Air Quality Modeling (Revised 1990). The meteorological data used with the model were for Tampa, Florida and represent the period 1985 to 1989.

The sulfur dioxide and nitrogen oxides emissions modeled to determine the ASI represent the net increase in emissions of the operation of the new boiler over the existing boiler (see Table 5-1). The ASI modeling included receptors established by the polar grid system extending to 1 kilometer from the plant. Five sets of receptor rings were placed at distances ranging from 460 to 1000 meters from the plant with the receptors placed at 10 degree intervals on each receptor ring. Further downwind receptors were not included as the SCREEN modeling results predicted maximum ambient air quality impacts from the auxiliary boiler at the property boundary. The receptor ring at 460 meters approximately corresponds to the nearest property boundary (see Figure 1-2).

The SCREEN modeling included a single receptor at a distance of 100 kilometers from the facility representing the nearest Class I area (Chassahowitzka National Wildlife Refuge) boundary. A distance of 100 kilometers was input to the SCREEN model rather than the actual distance to the Class I area of 109 kilometers due to the limitations of the model.

However, the modeled distance is acceptable for the analysis as the results would be more conservative (greater predicted impacts). The existing and proposed emission scenarios were modeled individually. The difference in the impacts resulting from the two scenarios represents the net ambient air quality impacts at the nearest Class I area boundary. The modeling results are presented below.

5.2 MODELING RESULTS

The results of the ASI modeling, summarized in Tables 5-2 (for sulfur dioxide impacts) and 5-3 (for nitrogen dioxide impacts), demonstrate that the predicted impacts of the sulfur dioxide and nitrogen oxides emission increases associated with the proposed project are less than both the significant impact level and the de minimis impact level for the respective time periods.

The SCREEN modeling predicted an improvement in the sulfur dioxide and the nitrogen oxides concentrations at the Class I area as a result of the proposed project (see Table 5-4).

The PSD increment and ambient air quality standard analyses were not required as the impacts from the proposed project were predicted to be less than significant. Ambient air monitoring was not required as the predicted impacts from the proposed project were less than de minimis.

TABLE 5-1

AIR QUALITY MODELING PARAMETERS

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

Source	Emission Rate SO2 (g/s)	Emission Rate NOx (g/s)	Stack Parameters Ht (m)	Stack Parameters Dia (m)	Stack Parameters Vel (mps)	Stack Parameters Temp (°K)
Existing Unit	-11.02	-6.78	9.15	1.21	7.7	558
Proposed Unit	12.08	4.79	8.84	2.28	14.8	427

NOTE:

1. The modeled emission rates represent the net increase in sulfur dioxide and nitrogen oxides from proposed project.

2. The dimensions of the nearest building were included in the model as 25.6 m height, 45.7 m length, and 45.7 m width.

TABLE 5-2

SUMMARY OF SULFUR DIOXIDE IMPACT ANALYSIS

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

METEOROLOGICAL DATA	MAXIMUM SULFUR DIOXIDE IMPACT ($\mu g/m^3$) (1) ANNUAL	3-HOUR	24-HOUR
1985	0	23.74 (460m, 160°)	3.96 (460m, 160°)
1986	0	10.55 (460m, 160°)	0.11 (1000m, 360°)
1987	0	2.24 (1000m, 250°)	0.31 (460m, 180°)
1988	0	9.25 (460m, 130°)	0.30 (460m, 210°)
1989	0	1.83 (700m, 350°)	0.06 (1000m, 300°)
De minimis Impact 17-2.500(3)(e)1,FAC	NA	NA	13
Significant Impact 17-2.100,FAC	1	25	5

(1) Highest-high impacts based on the modeling inputs presented in Table 5-1.

TABLE 5-3

SUMMARY OF NITROGEN OXIDES IMPACT ANALYSIS

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

METEOROLOGICAL DATA	MAXIMUM NITROGEN OXIDES IMPACT ($\mu g/m^3$) (1)		
	ANNUAL	8-HOUR	24-HOUR
1985	0	0	0
1986	0	0	0
1987	0	0	0
1988	0	0	0
1989	0	0	0
De minimis Impact 17-2.500(3)(e)1,FAC	14	NA	NA
Significant Impact 17-2.100,FAC	1	NA	NA

(1) Highest-high impacts based on the modeling inputs presented in Table 5-1. The maximum predicted impact is zero because the majority of the predicted impacts are negative, indicating an overall improvement in the ambient air quality as a result of the proposed project.

TABLE 5-4

SUMMARY OF CLASS I AREA IMPACTS

PINEY POINT PHOSPHATES, INC.
MANATEE COUNTY, FLORIDA

	SULFUR DIOXIDE IMPACT ($\mu g/m^3$) 1-HR MAXIMUM	NITROGEN OXIDES IMPACT ($\mu g/m^3$) 1-HR MAXIMUM
EXISTING	9.0	5.5
PROPOSED	8.6	3.4
NET CHANGE (1)	-0.4	-2.1

(1) As the net 1-hour maximum impacts predicted by the SCREEN modeling are negative, it was not deemed necessary to scale the impacts to other averaging periods for comparison with any standards.

6.0 GOOD ENGINEERING PRACTICE STACK HEIGHT

The criteria for good engineering practice stack height in Rule 17-2.270 states that the height of a stack should not exceed the greater of 65 meters (213) feet or the height of nearby structures plus the lesser of 1.5 times the height or cross-wind width of the nearby structure. This stack height policy is designed to prevent achieving ambient air quality goals solely through the use of excessive stack heights and air dispersion.

The auxiliary boiler stack is less than 213 feet in height above-grade. This satisfies the Good Engineering Practice (GEP) stack height criteria.

7.0 IMPACTS ON SOILS, VEGETATION AND VISIBILITY

7.1 IMPACT ON SOILS AND VEGETATION

The U. S. Environmental Protection Agency was directed by Congress to develop primary and secondary ambient air quality standards. The primary standards were to protect human health and the secondary standards were to:

> "... protect the public welfare from any known or anticipated adverse effects of a pollutant."

The public welfare was to include soils, vegetation and visibility.

As a basis for promulgating the air quality standards, EPA undertook studies related to the effects of all major air pollutants and published criteria documents summarizing the results of the studies. The studies included in the criteria documents were related to both acute and chronic effects of air pollutants. Based on the results of these studies, the criteria documents recommended air pollutant concentration limits for various periods of time that would protect against both chronic and acute effects of air pollutants with a reasonable margin of safety.

The air quality modeling that has been conducted as a requirement for the PSD application demonstrates that the levels of sulfur dioxide and nitrogen oxides expected as a result of the proposed project will be below the significant impact levels and the de minimis impact levels. Therefore it can be concluded there will be no adverse effect to the soils or vegetation of the area.

7.2 GROWTH RELATED IMPACTS

An increase in annual operating hours of the auxiliary boiler will require no increase in personnel to operate the boiler. Therefore, no additional growth impacts are expected as a result of the proposed project.

7.3 VISIBILITY IMPACTS

The emissions of particulate matter and nitrogen oxides from the proposed project were evaluated for visibility impacts at the Class I area using the EPA approved VISCREEN model. The results of the Level 1 VISCREEN analysis demonstrate that the proposed project is not expected to cause any impairment to the visibility in the Class I area.

8.0 CONCLUSION

It can be concluded from the information in this report that the proposed increase in the operating hours of the auxiliary boiler at Piney Point Phosphates, as described in this report, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other provision of Chapter 17-2, FAC.

VISCREEN LEVEL-I ANALYSIS

PINEY POINT PHOSPHATES, INC. AUXILIARY BOILER

SUMMARY OF ALL EMISSIONS AND METEOROLOGICAL INPUT

Emissions for Auxiliary Boiler in G /S :

Particulate	=	3.400000E-01
NOx	=	4.790000
Primary NO2	=	0.000000E+00
Soot	=	0.000000E+00
Primary SO4	=	0.000000E+00

Meteorological and Ambient Data for Chass

Wind speed (m/s)	=	1.000000
Stability Index	=	6
Visual Range (km)	=	25.000000
Ozone Conc. (ppm)	=	4.000000E-02
Plume Offset Angle	=	11.250000 degrees

Distances Between Auxiliary Boiler and Chass

Source-Observer	=	109.000000 km
Min. Source-Class I	=	109.000000 km
Max. Source-Class I	=	123.000000 km

Are these input values ready for execution (y/n)?

OVERALL RESULTS OF PLUME VISIBILITY SCREENING

SOURCE: Auxiliary Boiler
CLASS I AREA: Chass

INSIDE class I area --
Plume delta E DOES NOT EXCEED screening criterion for SKY background
Plume delta E DOES NOT EXCEED screening criterion for TERRAIN background
Plume contrast DOES NOT EXCEED screening criterion for SKY background
Plume contrast DOES NOT EXCEED screening criterion for TERRAIN background

OUTSIDE class I area --
Plume delta E DOES NOT EXCEED screening criterion for SKY background
Plume delta E DOES NOT EXCEED screening criterion for TERRAIN background
Plume contrast DOES NOT EXCEED screening criterion for SKY background
Plume contrast DOES NOT EXCEED screening criterion for TERRAIN background

SCREENING CRITERIA: DELTA E = 2.0
GREEN CONTRAST = .050

Do you want to see calculated results for lines of
sight with maximum delta E (y/n)?

EMISSION CALCULATIONS

PROPOSED EMISSIONS

Based on AP-42 emission factors for fuel oil combustion (Table 1.3-1).

PM = 1349 gals/hr x 2 lbs PM/1000 gals

= 2.7 lbs/hr

x 8760 hrs/yr x ton/2000 lbs

= 11.8 tpy

SO_2 = 1349 gals/hr x 142(0.5) lbs SO_2/1000 gals

= 95.8 lbs/hr

x 8760 hrs/yr x ton/2000 lbs

= 419.5 tpy

CO = 1349 gals/hr x 5 lbs CO/1000 gals

= 6.7 lbs/hr

x 8760 hrs/yr x ton/2000 lbs

= 29.5 tpy

NMHC, VOC = 1349 gals/hr x 0.2 lb NMHC/1000 gals

= 0.3 lb/hr

x 8760 hrs/yr x ton/2000 lbs

= 1.2 tpy

Based on NSPS,

NOx = 190 MMBTU/hr x 0.2 lb/MMBTU

= 38 lbs/hr

x 8760 hrs/yr x ton/2000 lbs

= 166.4 tpy

ACTUAL EMISSIONS

Based on 1990 and 1991 fuel oil usage and fuel oil sulfur content documented in AORs submitted to FDER and AP-42 emission factors for fuel oil combustion in Table 1.3-1.

1990

Fuel Oil Usage = 250,000 gal

Fuel Oil Sulfur Content = 0.58%

PM = 250,000 gals/yr x 2 lbs/1000 gal x ton/2000 lbs

= 0.25 ton/yr

SO_2 = 250,000 gals/yr x 142(0.58) lbs/1000 gals x ton/2000 lbs

= 10.3 tons/yr

CO = 250,000 gals/yr x 5 lbs/1000 gals x ton/2000 lbs

= 0.63 ton/yr

NMHC, VOC = 250,000 gals/yr x 0.2 lb/1000 gals x ton/2000 lbs

= 0.025 ton/yr

Based on past permit application information,

NOx = 250,000 gals/yr x 80 lbs/1000 gals x ton/2000 lbs

= 10 tons/yr

1991

Fuel Oil Usage = 300,000 gals

Fuel Oil Sulfur Content = 0.9%

PM = 300,000 gals/yr x 2 lbs/1000 gals x ton/2000 lbs

= 0.3 ton/yr

SO_2 = 300,000 gals/yr x 142(0.9) lbs/1000 gals x ton/2000 lbs

= 19.17 tons/yr

CO = 300,000 gals/yr x 5 lbs/1000 gals x ton/2000 lbs

= 0.75 ton/yr

NMHC, VOC = 300,000 gals/yr x 0.2 lb/1000 gals x ton/2000 lbs

= 0.03 ton/yr

Based on past permit application information,

NOx = 300,000 gals/yr x 80 lbs/1000 gals x ton/2000 lbs

= 12 tons/yr

1990-1991 Average Emissions

PM = (0.25 + 0.3)/2 tons/yr = 0.3 tpy

SO_2 = (10.3 + 19.17)/2 tons/yr = 14.7 tpy

CO = (0.63 + 0.75)/2 tons/yr = 0.7 tpy

VOC = (0.025 + 0.03)/2 tons/yr = 0.03 tpy

NOx = (10 + 12)/2 tons/yr = 11 tpy

Actual Hourly Emissions

For particulate matter, sulfur dioxide, carbon monoxide and non-methane hydrocarbons (VOCs), the actual hourly emissions are estimated based on a ratio of the fuel firing rates and the fuel sulfur contents of the existing boiler to the proposed boiler. For nitrogen oxides, the actual hourly emissions are estimated based on information in past permit application submitted to FDER.

PM = (684/1349) (gals/hr) x 2.7 lbs/hr (proposed)

= 1.4 lbs/hr

SO_2 = (684/1349) (gals/hr) x (0.9/0.5) (S%) x 95.8 lbs/hr

= 87.4 lbs/hr

NOx = 96 MMBtu/hr x 0.56 lb/MMBtu

= 53.8 lbs/hr

CO = (684/1349) (gals/hr) x 6.7 lbs/hr

= 3.4 lbs/hr

VOC = (684/1349) (gals/hr) x 0.3 lb/hr

= 0.15 lb/hr

COST CALCULATIONS FOR BACT DETERMINATION

I. Induced FGR Fuel Cost (@ 1% efficiency loss)

Cost = 1349 gals/hr x 8760 hrs/yr x $0.65/gal x 0.01 eff. loss

= $76,812/yr

NOx Reduction (@ 30%)

Uncontrolled NOX = 166.4 tpy x 1/(1-0.3)

= 237.7 tons/yr

Reduced = 237.7 tons/yr x 0.3

= 71.3 tons/yr

Fuel Cost Per Ton NOx Reduced

Operation Cost = $76,812/yr x yr/71.3 tons

= $1,077 per ton NOx removed

II. Forced FGR Fuel Costs (Incremental @ 2% eff. loss)

Cost = 1349 gals/yr x 8760 hrs/yr x $0.65/gal x 0.02 eff. loss

= $153,624/yr

Incremental NOx Reduction (@ 10%)

NOx Reduced = 166.4 tons/yr x 0.1

= 16.6 tons/yr

Fuel Cost Per Ton NOx Reduced

Operation Cost = $153,624/yr x yr/16.6 tons

= $9254/yr

CLASS I AREA IMPACTS

The following impacts represent the net SO_2 and NOx impacts at the Class I area based on the SCREEN modeling results.

Sulfur Dioxide Impacts

SO_2 (Existing) = 9.0 $\mu g/m^3$

SO_2 (Proposed) = 8.6 $\mu g/m^3$

Net Impact = (8.6 - 9.0) $\mu g/m^3$ = -0.4 $\mu g/m^3$

Nitrogen Oxides Impacts

NOx (Existing) = 5.5 $\mu g/m^3$

NOx (Proposed) = 3.4 $\mu g/m^3$

Net Impact = (3.4 - 5.5) $\mu g/m^3$ = -2.1 $\mu g/m^3$

AUXILIARY BOILER OPERATION HISTORY

	1989	1990	1991
Operating Hours	367	875	1,154
Fuel	110,000 gal	250,000 gal	300,000 gal
% S	0.54	0.58	0.9
TPY SO_2	4.39	10.71	19.94

NOTE: Based on the above data, 1990 and 1991 have been considered representative of normal operation in determining actual emissions.

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347

Lawton Chiles, Governor 813-620-6100 Carol M. Browner, Secretary

PERMITTEE:

Piney Point Phosphates, Inc.
13300 U.S. Highway 41 North
Palmetto, Florida 34221-8662

PERMIT/CERTIFICATION:

Permit No.: AC41-211848
County: Manatee
Expiration Date: 7-14-93
Project: Auxiliary Steam Boiler

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

For the construction of an auxiliary Nebraska Boiler Company, Type N2S-7-89, Package Watertube Steam Boiler. This auxiliary steam boiler is permitted to operated a maximum of 876 hours per year to provide steam only when the sulfuric acid plant is down and during cold startup. This auxiliary steam boiler is permitted to be fired with only new No. 2 "very low sulfur" distillate fuel oil having a maximum sulfur content not to exceed 0.5% by weight and a nitrogen content not to exceed 0.30% by weight, at a maximum permitted heat input rate of 190 MMBTU/hour.

Location: 13300 U.S. Highway 41 North, Palmetto, Manatee County

UTM: 17-348.5 E 3057.3 N NEDS NO: 0002 Point ID: 11

Replaces Permit No.: A041-156789

PERMITTEE:
Piney Point Phosphates, Inc.

Permit No.: AC41-211848
Project: Auxiliary Steam Boiler

SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.

2. This auxiliary steam boiler is subject to and shall meet all the applicable requirements and limitations of 40 CFR 60, Subpart Db-Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, adopted by reference in Rule 17-2.660, F.A.C.

3. This auxiliary steam boiler is permitted to operate a maximum of 876 hours per year, to provide steam when the sulfuric acid plant is down and during cold startup (construction permit application dated 4/9/92).

4. The maximum heat input capacity from fuels combusted in this auxiliary steam boiler shall not exceed 190.0 MMBTU/hour, this is approximately 1,349 gallons/hour of new No. 2 distillate fuel oil (construction permit application dated 4/9/92).

5. Visible emissions from this auxiliary steam boiler shall not be greater than 20% opacity (6-minute average) except for one 6-minute period per hour of not more than 27% opacity, 40 CFR 60.43b(f), and Rule 17-2.660, F.A.C.

6. The permittee shall comply with the requirements of 40 CFR 60.42b(j), which requires combusting "very low sulfur" (0.5% by weight) fuel oil as defined in 40 CFR 60.41b in lieu of complying with the emission limiting standards for Sulfur Dioxide under 40 CFR 60.42b (construction permit application dated 4/9/92).

7. The permittee shall comply with the requirements of 40 CFR 40.44b(j), paragraphs (1), (2), and (3), which requires combusting fuel oil with a nitrogen content of 0.30 percent by weight or less, have an annual capacity factor of 10% or less and have a heat input capacity of 250 MMBTU/hour or less in lieu of complying with the emission limiting standards for Nitrogen Oxides under 40 CFR 40.44b (construction permit application dated 4/9/92).

8. In accordance with Rule 17-2.600(6)(b) & (c), F.A.C., the Best Available Control Technology (BACT) determination issued on June 15, 1992 in accordance with Rule 17-2.630, limits the firing of this auxiliary steam boiler on new No. 2 distillate fuel oil having a sulfur content not to exceed 0.5% by weight. This limitation will control the amount of particulates and sulfur dioxide emissions from this auxiliary steam boiler. New oil means an oil that has been refined from crude oil and has not been used and which may or may not contain additives. The firing of waste or reclaimed oil in this auxiliary steam boiler is prohibited.

9. Test this auxiliary steam boiler for visible emissions using EPA Method 9 contained in 40 CFR 60, Appendix A and adopted by reference in Rule 17-2.700, F.A.C., within 60 days after achiving the maximum firing rate at which the boiler will be operated but no later than 180 days after initial startup of the boiler. For the purpose of determining initial compliance, the minimum total time of observations shall be 3 hours, 30 6-minute averages, 40 CFR 60.11. The visible emissions compliance tests shall be conducted by a certified observer. Copies of the compliance test data shall be submitted to the Air Sections of the Southwest District Office of the Department and the Manatee County Environmental Action Commission within 45 days of such testing. The minimum requirements for source sampling and reporting, shall be in accordance with the requirements of 40 CFR 60, Appendix A, and Rule 17-2.700, F.A.C.

10. Piney Point Phosphates, Inc. shall submit along with the visible emissions compliance test reports, a complete fuel analysis of the new No. 2 distillate fuel oil fired during the compliance tests proving compliance with the sulfur and nitrogen percent by weight limitations as specified in Specific Conditions No. 6, 7 & 8.

11. Testing of emissions must be conducted while firing the auxiliary steam boiler within 90-100% of the maximum permitted heat input rate of 190.0 MMBTU/hour. Compliance tests submitted at operating rates less than 90% of the maximum permitted rate will automatically constitute an amended permit at the lesser rate until another test showing compliance at a higher rate is submitted. Failure to submit the operating rate and actual operating conditions may invalidate the test (Rule 17-4.070(3), F.A.C.).

12. The Permittee shall notify the Air Sections of the Southwest District Office of the Department and the Manatee County Environmental Action Commission in writing at least 15 days prior to the date on which each compliance test is to begin. The notice shall include, the date, time, and place of each test, and the test contact person who will be responsible for coordinating and having each test conducted (Rule 17-2.700(2)(a)9., F.A.C.).

13. Each time this auxiliary steam boiler is fired, the permittee shall maintain records of the hours of operation, the type and quantity of fuel fired, and calculate the annual capacity factor (40 CFR 60.49b(d) and Rules 17-2.660, and 17-4.070(3), F.A.C.).

14. The permittee shall install, calibrate, maintain and operate a continuous emission monitoring system for opacity, and record the output of the system on a 6-minute average opacity basis (40 CFR 60.48b(a), and Rule 17-2.660, F.A.C.).

15. In order to document continuing compliance with the percent by weight limitations as specified in Specific Conditions No. 6, 7 & 8, the permittee shall obtain and maintain at the facility fuel oil receipts from the fuel oil supplier which certify that each shipment of fuel oil received for firing in this auxiliary steam boiler meets the definition of new No. 2 distillate fuel oil (40 CFR 60.49.b(r) and Rules 17-2.660, and 17-4.070(3), F.A.C.).

16. All records required by this permit and/or 40 CFR 60.49b shall be retained for a minimum period of 2 years following the date of such records and be made available to the Department upon request (40 CFR 60.49.(o), and Rules 17-2.660, and 17-4.070(3), F.A.C.).

17. The permittee shall submit quarterly reports certifying that only new No. 2 distillate fuel oil with a sulfur content not exceeding 0.5% by weight and a nitrogen content not exceeding 0.30% by weight was fired in this auxiliary steam boiler in the preceding calandar quarter. The total hours of operation during the quarter shall also be included in the report (40 CFR 60.49.b(r) and Rules 17-2.660, and 17-4.070(3), F.A.C.).

18. The permittee shall submit quaterly opacity excess emission reports in accordance with 40 CFR 60.49b(h). If there are no excess emissions during a calendar quarter the permittee shall submit a report stating that no excess emissions occured during the reporting period (40 CFR 60.49b(h) and Rule 17-2.660, F.A.C.).

19. Issuance of this permit does not relieve the permittee from complying with applicable emission limiting standards or other requirements of Rule 17-2, or any other requirements under federal, state of local law (Rule 17-2.210, F.A.C.).

20. Any change in the method of operation, fuels (percent sulfur and/or nitrogen), or operating hours that affect potential emissions and changes the permitted conditions for this auxiliary steam boiler shall be submitted to the Air Sections of the Southwest District Office of the Department and the Manatee County Environmental Action Commission in the form of a application to construct/modify for review and approval (Rule 17-2.210, F.A.C.).

21. All applicable rules of the Department and design discharge limitations specified in the construction permit application shall be adhered to. The permit holder may also need to comply with county, municipal, federal, or other state regulations prior to construction (Rule 17-4.070(1), F.A.C.)

22. 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 Subsection 403.061(13), Florida Statutes:

(A) Annual amount of fuel fired in this boiler.
(B) Annual Hours of Operation (annual capacity factor).
(C) Annual emissions for particulates, PM_{10}, carbon monoxide, SO_2, NO_x, based on fuel fired (provide a copy of the calculation sheet(s) and basis for calculations).
(D) Any changes in the information contained in the permit application.

23. Two applications for an operating permit shall be submitted to the Air Section of the Southwest District Office of the Department of Environmental Regulation and one copy of the application sent to the Manatee County Environmental Action Commission at least 60 days prior to the expiration date of this construction permit (Rule 17-4.090(1), F.A.C.).

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Richard D. Garrity, Ph.D.
Director of District Management
Southwest District

4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
(813)620-6100

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary
Richard Garrity, Deputy Assistant Secretary

PERMITTEE:
Royster Phosphates,Inc.
Post Office Box 1329
Palmetto, FL 34220

PERMIT/CERTIFICATION
Permit No.: AO41-156789
County: Manatee
Expiration Date: 01/24/94
Project: Auxiliary Boiler

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

For the operation of a Nebraska Boiler Company Model No. NOS2A67 auxiliary boiler fired with fuel oil No. 4 with sulphur content not exceeding 1.0 wt.%. The unit is rated at 96.2 MMBTU/hour.

Location: U.S. Highway 41 North, Palmetto

UTM: 17-348.5E 3057.3N NEDS NO: 0002 Point ID: 11

Replaces Permit No.: AC41-148295

PERMITTEE:
Royster Phosphates, Inc.

PERMIT NO: AO41-156789
PROJECT: Auxiliary Boiler

SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.

2. The firing rate of this auxiliary boiler shall not exceed 96.2 MMBTU/hour and the hours of operation shall not exceed 876 hours per year. (BACT determination of Aug. 9, 1988)

3. Pursuant to Subsection 17-2.600(6)(a), F.A.C., visible emissions shall not exceed 20% opacity except for periods up to two minutes in any one hour where opacities up to 40% are allowed.

4. New fuel oil #4, with a sulphur content not exceeding 1.0% by weight, can be used. The term "new" oil means an oil that has been refined from crude oil and has not been used, and which may or may not contain additives. The firing of waste or recycled oil is disallowed. (BACT determination of August 9, 1988).

5. This boiler shall be tested for visible emissions at intervals of 12 months from October 25, 1988. A copy of the test data shall be submitted to this office and the Manatee County Public Health Unit within 45 days of such testing (Subsection 17-2.700(7), F.A.C.). Compliance with Specific Condition No. 4 shall be demonstrated by a certificate of fuel analysis from a fuel oil vendor of the fuel oil used during the compliance test and shall be submitted in conjunction with the test results.

6. Compliance with the emission limitation of Specific Condition No. 3 shall be determined using DER Method No. 9 contained in Section 17-2.700, F.A.C., and be a minimum of 60 minutes.

7. The Manatee County Public Health Unit shall be notified in writing 15 days prior to compliance testing.

8. Compliance testing of this boiler shall be accomplished during a period when it is cycling up to a normal high firing rate, or it is continuously operated at a high firing rate. The permittee shall submit a statement of the operating mode as a part of the compliance test. Failure to submit an operation mode statement or operating at conditions which do not reflect the normal operating conditions may invalidate the data (Section 403.161(1)(c) Florida Statutes).

9. No objectionable odors will be allowed, as per Subsection 17-2.600(1)(a)2, F.A.C.

10. Submit to the Department, each calendar year, on or before March 1, an emission report for the preceding calendar year containing the following information as per Section 17-4.140, 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.

A copy of this report shall also be submitted to the Manatee County Public Health Unit.

11. Three applications to renew this operating permit shall be submitted to the Department and one copy to the Manatee County Public Health Unit sixty (60) days prior to the expiration date of this permit. (Subsection 17-4.090).

Issued this 24 day of Jan. 1987.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Richard D. Garrity, Ph.D.
Deputy Assistant Secretary

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

Cert Mail
P 168 562 811
2/21/90

SOUTHWEST DISTRICT
4520 OAK FAIR BLVD.
TAMPA, FLORIDA 33610-7347
813-623-5561
Suncom—552-7612

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 89 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: Royster Phosphates, Inc.
2. Permit Number: A041-156789
3. Source Address: P.O. Box 1329 Palmetto, FL. 34220
4. Description of Source: Auxiliary Boiler

II ACTUAL OPERATING HOURS: 367 hrs/yr _____ days/wk _____ wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
No. 4 Fuel Oil	110,000 Gal. 406.7	tons/yr
		tons/yr
		tons/yr
		tons/yr
		tons/yr

IV PRODUCT OUTPUT (Specify applicable units)

Steam

V TOTAL FUEL USAGE including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10^6 cubic feet Natural Gas _____ 10^3 Kerosene

110 10^3 gallons # 4 Oil, .54 %S _____ tons Coal

_____ 10^3 gallons Propane _____ tons Carbonaceous

_____ 10^6 Black Liquor Solids _____ tons Refuse

Other (Specify type and units) _____

VI EMISSION RATE(S) (tons/yr)

_____ Particulates 4.39 Sulfur Dioxide _____ Total Reduced Sulfur

_____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride

_____ Hydrocarbon Other (Specify type and units) _____

VII METHOD OF CALCULATING EMISSION RATES (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

VE conducted September 1989

Estimated Maximum (110,000 gal) (7.387 #/gal)(.54% S) $\frac{(64\ WSO2)}{32\ WS}$ x $\frac{(\ tons\ )}{2000\ \#}$

4.39 tons/yr

VIII CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

F. Ivan Nance

SIGNATURE OF OWNER OR AUTHORIZED REPRESENTATIVE

F. Ivan Nance Environmental/Technical Mgr

TYPED NAME AND TITLE

2/21/90

DATE

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DEP Form #
Form Title
Effective Date
DER Application No.
(if known or to be assigned by DER)

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 1990 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: ROYSTER PHOSPHATES, INC.
2. Permit Number: A041-156789
3. Source Address: 13300 U S Highway 41 N
   Palmetto, Fl 34221
4. Description of Source: Auxiliary Boiler

II ACTUAL OPERATING HOURS: 875 hrs/~~day~~ yr _____ days/wk _____ wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
No. 4 Fuel Oil	923	tons/yr
		tons/yr
		tons/yr
		tons/yr
		tons/yr

IV PRODUCT OUTPUT (Specify applicable units)

Steam

DER Form 17-1.202(6)
Effective November 30, 1982

TOTAL FUEL USAGE including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10^6 cubic feet Natural Gas

_____ 10^3 Kerosene

250 10^3 gallons #4 Oil, 0.58 %S

_____ tons Coal

_____ 10^3 gallons Propane

_____ tons Carbonaceous

_____ 10^6 Black Liquor Solids

_____ tons Refuse

Other (Specify type and units) _____

EMISSION RATE(S) (tons/yr)

_____ Particulates 10.7 Sulfur Dioxide _____ Total Reduced Sulfur

_____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride

_____ Hydrocarbon Other (Specify type and units)_____

METHOD OF CALCULATING EMISSION RATES (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

VE conducted September 1990

Estimated Maximum SO_2 (250,000 gal) (7.387 lb/gal) (.58 % S) $\left(\frac{64 \text{ W } SO_2}{32 \text{ WS}}\right)$ $\left(\frac{\text{Tons}}{2000 \text{ lb}}\right)$

$= 10.7 \frac{\text{Tons}}{\text{Yr.}}$

CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

_____ SIGNATURE OF OWNER OR AUTHORIZED REPRESENTATIVE

_____ TYPED NAME AND TITLE

_____ DATE

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form #
Permit Type
Effective Date
DER Application No.
(Issued by the DER)

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 1991 prior to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: Royster Phosphates, Inc.
2. Permit Number: A041-156789
3. Source Address: 13300 U S Hwy 41 N
   Palmetto, FL 34221
4. Description of Source: Auxiliary Boiler

II ACTUAL OPERATING HOURS: 1,154 hrs/~~day~~ yr ____ days/wk ____ wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
No. 4 Fuel Oil	1,100	tons/yr
		tons/yr
		tons/yr
		tons/yr
		tons/yr

PRODUCT OUTPUT (Specify applicable units)

Steam

DER Form 17-1.202(6)
Effective November 30, 1982

Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794
904-436-8300

Northeast District
3426 Bills Rd
Jacksonville, Florida 32207
904-798-4200

Central District
3319 Maguire Blvd. Suite 232
Orlando, Florida 32803-3767
305-894-7555

Southwest District
4520 Oak Fair Blvd
Tampa, Florida 33610-7347
813-623-5561

South District
2269 Bay St.
Fort Myers, Florida 33901-2896
813-332-6975

Southeast District
1900 S. Congress Ave., Suite A
West Palm Beach, Florida 33406
305-964-9611

TOTAL FUEL USAGE including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10^6 cubic feet Natural Gas

_____ 10^3 Kerosene

300 10^3 gallons No 4 Oil, 0.9 %S

_____ tons Coal

_____ 10^3 gallons Propane

_____ tons Carbonaceous

_____ 10^6 Black Liquor Solids

_____ tons Refuse

Other (Specify type and units) _____

EMISSION RATE(S) (tons/yr)

_____ Particulates

19.9 Sulfur Dioxide

_____ Total Reduced Sulfur

_____ Nitrogen Oxide

_____ Carbon Monoxide

_____ Fluoride

_____ Hydrocarbon

Other (Specify type and units)_____

METHOD OF CALCULATING EMISSION RATES (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

Visible Emission conducted September 1991

Estimate SO2 maximum (300,000 gal)(7.387 lb/gal)(0.9%S)$\frac{(64W\ SO2)}{32\ WS}\left(\frac{Tons}{2000\ lb}\right)$ = 19.2 $\frac{tons}{year}$

III CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

D D H

SIGNATURE OF OWNER OR AUTHORIZED REPRESENTATIVE

Daniel D. Harris/Plant Manager

TYPED NAME AND TITLE

1/13/92

DATE

DER Form 17-1.202(6)

Effective November 30, 1982