

**REVISIONS TO
ANIMAL FEED INGREDIENT PLANT
CARGILL FERTILIZER, INC.
RIVERVIEW, FLORIDA**

Prepared For:

**Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, FL 33569**

Prepared By:

**Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500**

**December 1998
9837583Y/F1**

RECEIVED

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**BUREAU OF
AIR REGULATION**

APPLICATION FOR AIR PERMIT - LONG FORM

Department of Environmental Protection

DIVISION OF AIR RESOURCES MANAGEMENT

APPLICATION FOR AIR PERMIT - LONG FORM

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

This section of the Application for Air Permit form identifies the facility and provides general information on the scope and purpose of this application. This section also includes information on the owner or authorized representative of the facility (or the responsible official in the case of a Title V source) and the necessary statements for the applicant and professional engineer, where required, to sign and date for formal submittal of the Application for Air Permit to the Department. If the application form is submitted to the Department using ELSA, this section of the Application for Air Permit must also be submitted in hard-copy.

Identification of Facility Addressed in This Application

Enter the name of the corporation, business, governmental entity, or individual that has ownership or control of the facility; the facility site name, if any; and the facility's physical location. If known, also enter the facility identification number.

1. Facility Owner/Company Name: Cargill Fertilizer, Inc.	
2. Site Name: Tampa Plant	
3. Facility Identification Number: 0570008 [] Unknown	
4. Facility Location Information: Street Address or Other Locator: 8813 U.S. Highway 41 South City: Riverview County: Hillsborough Zip Code: 33569	
5. Relocatable Facility? [] Yes [x] No	6. Existing Permitted Facility? [x] Yes [] No

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	0570008-028-AC
2. Permit Number:	Dec 17, 1998
3. PSD Number (if applicable):	PSD-FL-234A
4. Siting Number (if applicable):	

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:

David Jellerson, Environmental Superintendent

2. Owner/Authorized Representative or Responsible Official Mailing Address:

Organization/Firm: Cargill Fertilizer, Inc.

Street Address: 8813 Highway 41 South

City: Riverview

State: FL

Zip Code: 33569

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:

Telephone: (813) 677-6297

Fax: (813) 671-6149

4. Owner/Authorized Representative or Responsible Official Statement:

I, the undersigned, am the owner or authorized representative of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.*

David B. Jellerson

Signature

12-14-98

Date

* Attach letter of authorization if not currently on file.

Scope of Application

This Application for Air Permit addresses the following emissions unit(s) at the facility. An Emissions Unit Information Section (a Section III of the form) must be included for each emissions unit listed.

Emissions Unit ID **Description of Emissions Unit** **Permit Type**

Unit #	Unit ID		
1R	*	Animal Feed Plant	ACM2

See individual Emissions Unit (EU) sections for more detailed descriptions.
Multiple EU IDs indicated with an asterisk (*). Regulated EU indicated with an "R".

Purpose of Application and Category

Check one (except as otherwise indicated):

Category I: All Air Operation Permit Applications Subject to Processing Under Chapter 62-213, F.A.C.

This Application for Air Permit is submitted to obtain:

- Initial air operation permit under Chapter 62-213, F.A.C., for an existing facility which is classified as a Title V source.
- Initial air operation permit under Chapter 62-213, F.A.C., for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number: _____

- Air operation permit renewal under Chapter 62-213, F.A.C., for a Title V source.

Operation permit to be renewed: _____

- Air operation permit revision for a Title V source to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: _____

Operation permit to be renewed: _____

- Air operation permit revision or administrative correction for a Title V source to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. Also check Category III.

Operation permit to be revised/corrected: _____

- Air operation permit revision for a Title V source for reasons other than construction or modification of an emissions unit. Give reason for the revision e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit to be revised: _____

Reason for revision: _____

Category II: All Air Construction Permit Applications Subject to Processing Under Rule 62-210.300(2)(b),F.A.C.

This Application for Air Permit is submitted to obtain:

- Initial air operation permit under Rule 62-210.300(2)(b), F.A.C., for an existing facility seeking classification as a synthetic non-Title V source.

Current operation/construction permit number(s): _____

- Renewal air operation permit under Rule 62-210.300(2)(b), F.A.C., for a synthetic non-Title V source.

Operation permit to be renewed: _____

- Air operation permit revision for a synthetic non-Title V source. Give reason for revision; e.g.; to address one or more newly constructed or modified emissions units.

Operation permit to be revised: _____

Reason for revision: _____

Category III: All Air Construction Permit Applications for All Facilities and Emissions Units.

This Application for Air Permit is submitted to obtain:

- Air construction permit to construct or modify one or more emissions units within a facility (including any facility classified as a Title V source).

Current operation permit number(s), if any: _____
0570008-013-AC; PSD-FL-234

- Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

Current operation permit number(s): _____

- Air construction permit for one or more existing, but unpermitted, emissions units.

4. Professional Engineer's Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [] if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X] if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [] if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

David A. Buff

Signature
(seal)

12/10/98

Date

* Attach any exception to certification statement.

Application Contact

1. Name and Title of Application Contact: Kathy Edgemon, Environmental Engineer
2. Application Contact Mailing Address: Organization/Firm: Cargill Fertilizer, Inc. Street Address: 8813 Highway 41 South City: Riverview State: FL Zip Code: 33569
3. Application Contact Telephone Numbers: Telephone: (813) 671-6369 Fax: (813) 671-6149

Application Comment

B. FACILITY REGULATIONS

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

Not Applicable

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-212.300 - Preconstruction Review

C. FACILITY POLLUTANTS

Facility Pollutant Information

1. Pollutant Emitted	2. Pollutant Classification
PM Particulate Matter - Total	A
PM10 Particulate Matter - PM10	A
FL Fluorides - Total	A
SO2 Sulfur Dioxide	A
NOx Nitrogen Oxides	A
H107 Hydrogen fluoride	A

D. FACILITY POLLUTANT DETAIL INFORMATION

Facility Pollutant Detail Information:

1. Pollutant Emitted:		
2. Requested Emissions Cap:	(lb/hr)	(tons/yr)
3. Basis for Emissions Cap Code:		
4. Facility Pollutant Comment (limit to 400 characters):		

Facility Pollutant Detail Information:

1. Pollutant Emitted:		
2. Requested Emissions Cap:	(lb/hr)	(tons/yr)
3. Basis for Emissions Cap Code:		
4. Facility Pollutant Comment (limit to 400 characters):		

E. FACILITY SUPPLEMENTAL INFORMATION

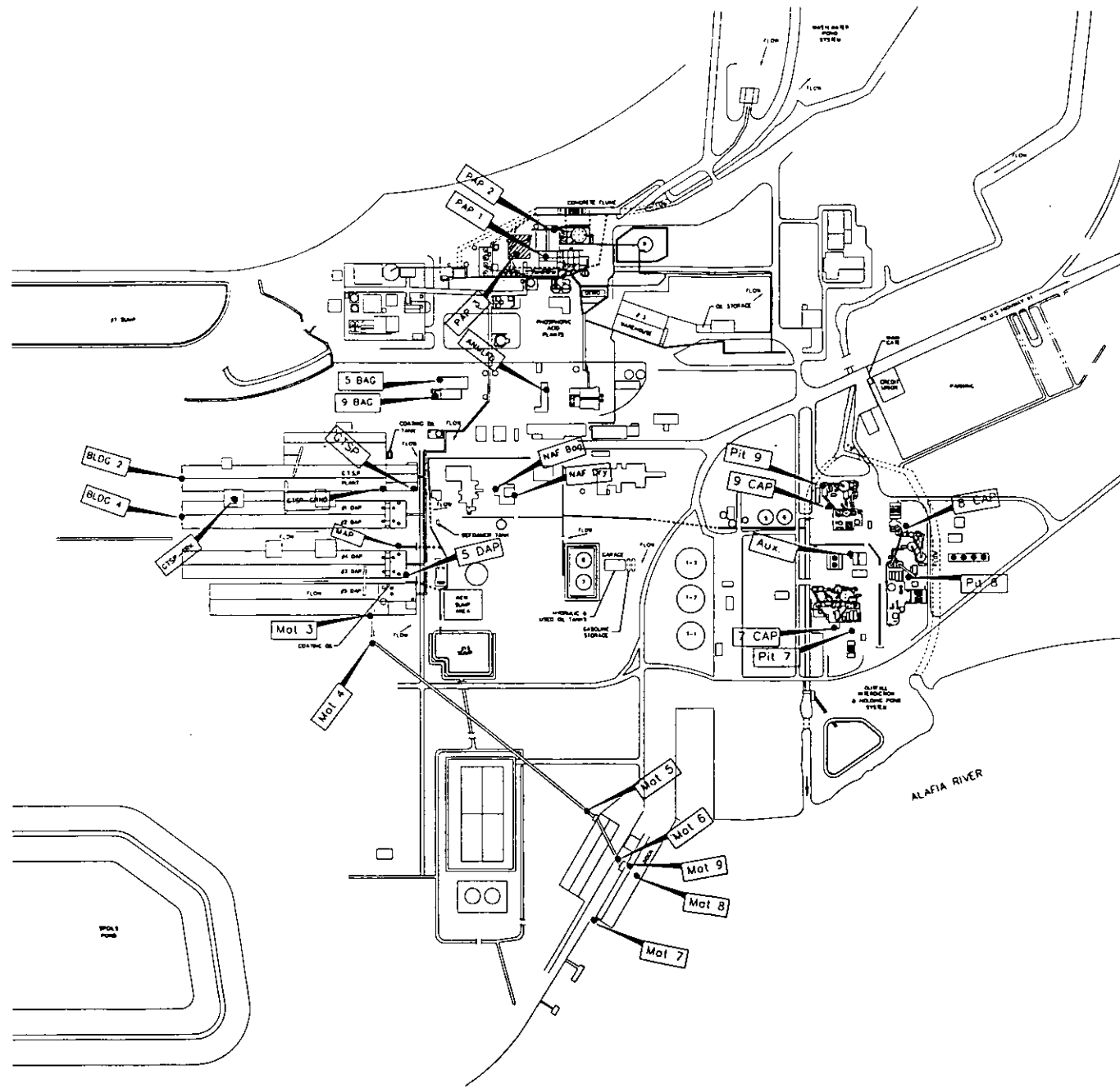
Supplemental Requirements for All Applications

1. Area Map Showing Facility Location: <input checked="" type="checkbox"/> Attached, Document ID: <u>Attachment A</u> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
2. Facility Plot Plan: <input checked="" type="checkbox"/> Attached, Document ID: <u>Attachment A</u> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
3. Process Flow Diagram(s): <input checked="" type="checkbox"/> Attached, Document ID(s): <u>CR-FI-E3</u> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
6. Supplemental Information for Construction Permit Application: <input checked="" type="checkbox"/> Attached, Document ID: <u>Attachment A</u> <input type="checkbox"/> Not Applicable

Additional Supplemental Requirements for Category I Applications Only

7. List of Proposed Exempt Activities: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
8. List of Equipment/Activities Regulated under Title VI: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Equipment/Activities On site but Not Required to be Individually Listed <input checked="" type="checkbox"/> Not Applicable
9. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

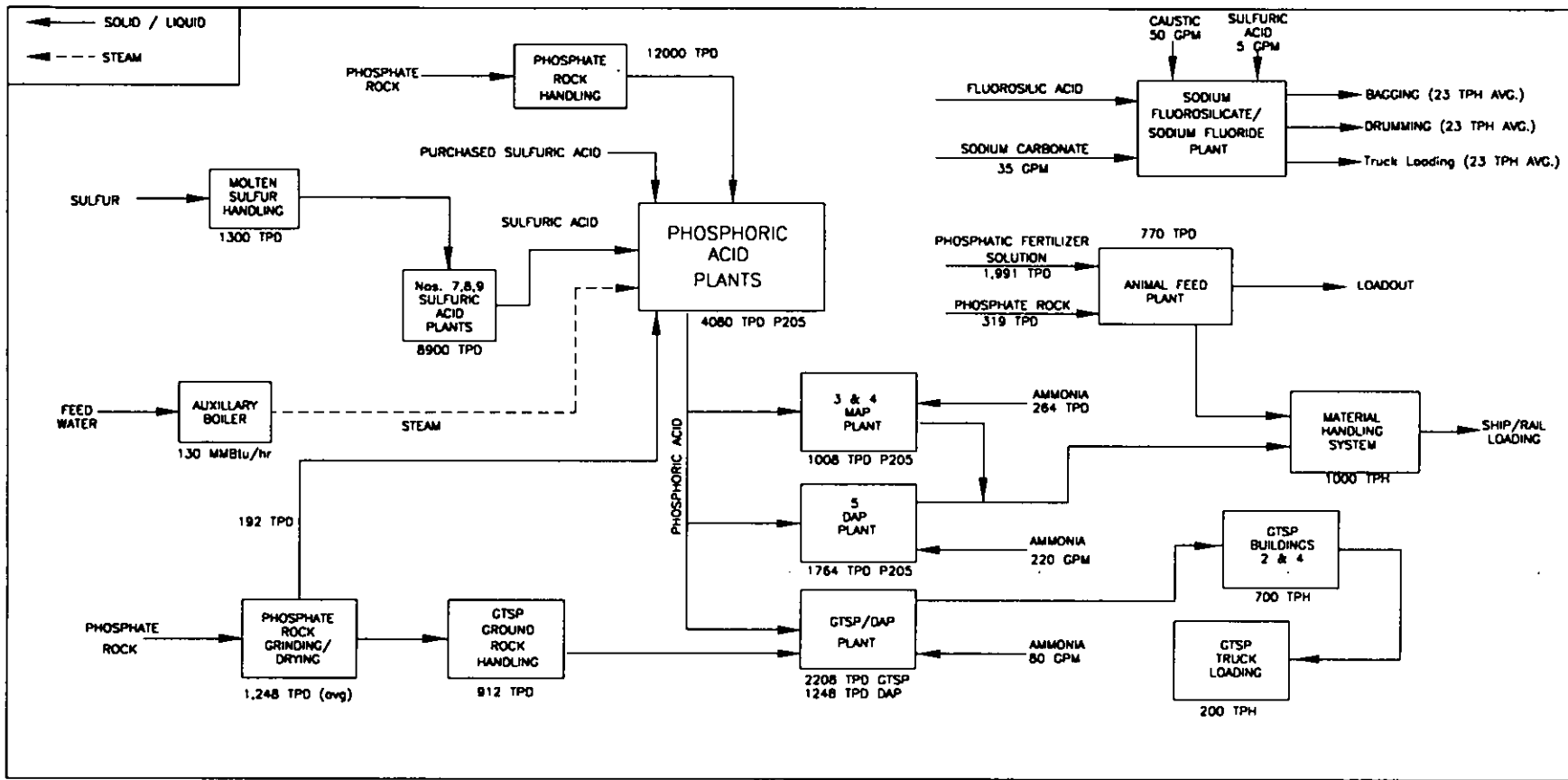
<p>11. Identification of Additional Applicable Requirements:</p> <p><input type="checkbox"/> Attached, Document ID: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p>
<p>12. Compliance Assurance Monitoring Plan:</p> <p><input type="checkbox"/> Attached, Document ID: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p>
<p>13. Risk Management Plan Verification:</p> <p><input type="checkbox"/> Plan Submitted to Implementing Agency - Verification Attached Document ID: _____</p> <p><input type="checkbox"/> Plan to be Submitted to Implementing Agency by Required Date</p> <p><input checked="" type="checkbox"/> Not Applicable</p>
<p>14. Compliance Report and Plan</p> <p><input type="checkbox"/> Attached, Document ID: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p>
<p>15. Compliance Statement (Hard-copy Required)</p> <p><input type="checkbox"/> Attached, Document ID: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p>




 PLOT PLAN
 SCALE 1" = 200'

Attachment CR-FI-E2
Facility Plot Plan

Facility:	Corgill Fertilizer Plant
Location:	Riverview, FL
Filename:	tpa-plt2.dwg
Date:	June 6, 1996



CARGILL FERTILIZER TAMPA, FL FACILITY FLOW DIAGRAM CR-FI-E3	EMISSION UNIT: FACILITY WIDE
	PROCESS AREA:
	FILENAME: H:/CARGILL/RIVERVIEW/CRFLOW1b.DWG
	LATEST REVISION: 12/09/98 by RTZ

ATTACHMENT CR-E14-L2
FUEL ANALYSIS OR SPECIFICATION

Attachment CR-E14-L2

Animal Feed Plant
Fuel Analysis

Fuel	Density (lb/scf)/ (lb/gal)	Moisture (%)	Weight % Sulfur	Weight % Nitrogen	Weight % Ash	Heat Capacity
Natural Gas	0.048	< 0.01	< 0.001	0.62	----	1,000 Btu/scf
No. 2 Fuel Oil	6.83	< 0.01	0.5	0.006	< 0.01	140,000 Btu/gal

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through L as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application. Some of the subsections comprising the Emissions Unit Information Section of the form are intended for regulated emissions units only. Others are intended for both regulated and unregulated emissions units. Each subsection is appropriately marked.

**A. TYPE OF EMISSIONS UNIT
(Regulated and Unregulated Emissions Units)****Type of Emissions Unit Addressed in This Section**

1. Regulated or Unregulated Emissions Unit? Check one:

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

2. Single Process, Group of Processes, or Fugitive Only? Check one:

This Emissions Unit information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

**B. GENERAL EMISSIONS UNIT INFORMATION
(Regulated and Unregulated Emissions Units)****Emissions Unit Description and Status**

1. Description of Emissions Unit Addressed in This Section (limit to 60 characters): Animal Feed Plant		
2. Emissions Unit Identification Number: [] No Corresponding ID [] Unknown *		
3. Emissions Unit Status Code: A	4. Acid Rain Unit? [] Yes [x] No	5. Emissions Unit Major Group SIC Code: 28
6. Emissions Unit Comment (limit to 500 characters): * 78, 79, 80, 81. Note that source number 103 (AFI No. 2 Plant Stack) will be eliminated.		

Emissions Unit Control Equipment Information

A.

1. Description (limit to 200 characters): Baghouses (3)
2. Control Device or Method Code: 18

B.

1. Description (limit to 200 characters): Cyclones (2) (cyclones reclaim product and are not for pollution control purposes)
2. Control Device or Method Code: 75

C.

1. Description (limit to 200 characters): Defluorination Scrubber and Venturi Scrubber
2. Control Device or Method Code: 53

**C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Details

1. Initial Startup Date:		
2. Long-term Reserve Shutdown Date:		
3. Package Unit: Manufacturer:	Model Number:	
4. Generator Nameplate Rating:	MW	
5. Incinerator Information:		
	Dwell Temperature:	°F
	Dwell Time:	seconds
	Incinerator Afterburner Temperature:	°F

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate:	50	mmBtu/hr
2. Maximum Incineration Rate:	lbs/hr	tons/day
3. Maximum Process or Throughput Rate:		
4. Maximum Production Rate:	770	tons/day
5. Operating Capacity Comment (limit to 200 characters):		
Heat input is annual average. Production rate represents animal feed ingredient.		

Emissions Unit Operating Schedule

1. Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	52 weeks/yr	8,760 hours/yr

**D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)**

Rule Applicability Analysis (Required for Category II Applications and Category III applications involving non Title-V sources. See Instructions.)

A large, empty rectangular box with a black border, intended for the user to provide a Rule Applicability Analysis. The box is currently blank.

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-212.400 PSD Preconstruction Review
62-296.403(1)(i) Phosphate Processing-BACT for Fluorides
62-296.403(3) Test Methods
62-297.310 General Compliance Test Requirements

**E. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)**

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: ANML FD	
2. Emission Point Type Code: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4	
3. Descriptions of Emissions Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): 078-AFI Plant Common Stack; Baghouses: 079-D.E. Silo; 080-Limestone Silo; 081-AFI Loadout System	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:	
5. Discharge Type Code: <input type="checkbox"/> D <input type="checkbox"/> F <input type="checkbox"/> H <input type="checkbox"/> P <input type="checkbox"/> R <input checked="" type="checkbox"/> V <input type="checkbox"/> W	
6. Stack Height:	136 feet
7. Exit Diameter:	6 feet
8. Exit Temperature:	150 °F

9. Actual Volumetric Flow Rate:	114,000 acfm
10. Percent Water Vapor:	%
11. Maximum Dry Standard Flow Rate:	dscfm
12. Nonstack Emission Point Height:	feet
13. Emission Point UTM Coordinates:	
Zone:	East (km): North (km):
14. Emission Point Comment (limit to 200 characters):	
<p>Parameters are for the common stack for the No. 1 AFI Plant. See Attachment A for parameters for other sources.</p>	

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment 1 of 3

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): In-Process Fuel Use, Natural Gas: General	
2. Source Classification Code (SCC): 3-90-005-98	
3. SCC Units: Million Cubic Feet Burned	
4. Maximum Hourly Rate: 0.05	5. Maximum Annual Rate: 438
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: 1,000	
10. Segment Comment (limit to 200 characters): Represents annual average fuel usage of 50 MMBtu/hr for the rotary dryer in the granulation area.	

Segment Description and Rate: Segment 2 of 3

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): In-Process Fuel Use, Distillate Oil: General	
2. Source Classification Code (SCC): 3-90-005-98	
3. SCC Units: Thousand Gallons Burned	
4. Maximum Hourly Rate: 0.36	5. Maximum Annual Rate: 143
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur: 0.5	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: 140	
10. Segment Comment (limit to 200 characters): Represents annual average fuel usage of 50 MMBtu/hr for the rotary dryer in the granulation area (357.1 gal/hr). Fuel oil burning also limited to 400 hr/yr (142,857 gal/yr).	

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment 3 of 3

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): Mineral Products, Phosphate Rock	
2. Source Classification Code (SCC): 3-05-019-99	
3. SCC Units: Tons Processed	
4. Maximum Hourly Rate: 32	5. Maximum Annual Rate: 281,050
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters): Represents total granular animal feed phosphate product for AFI Plant (32.08 TPH).	

Segment Description and Rate: Segment of

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters):	
2. Source Classification Code (SCC):	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment (limit to 200 characters):	

**G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
SO2			EL
PM	018	075	EL
PM10	018	075	EL
FL	053		EL
NOx			NS
CO			NS

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: SO2		
2. Total Percent Efficiency of Control:		%
3. Potential Emissions:	25 lb/hour	5.2 tons/year
4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions:		
[]1 []2 []3 _____ to _____ tons/yr		
6. Emission Factor:		71.5 lb/1,000 gal
Reference: AP-42		
7. Emissions Method Code:		
[x]0 []1 []2 []3 []4 []5		
8. Calculation of Emissions (limit to 600 characters):		
<p>Fuel oil burning limited to 142,857 gal/yr (equivalent to 400 hr/yr on fuel oil). 357 gal/hr x 142 (0.5) lb/1000 gal = 25.36 lb/hr; 142,857 gal/yr x 142 (0.5) lb/1,000 gal x ton/2,000 lb= 5.1 TPY (plus 0.1 TPY from gas burning).</p>		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):		

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

Animal Feed Plant
Sulfur Dioxide

A.

1. Basis for Allowable Emissions Code: OTHER		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 0.5 % S fuel oil		
4. Equivalent Allowable Emissions:	25 lb/hour	5.2 tons/year
5. Method of Compliance (limit to 60 characters): Fuel analysis and fuel usage records		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: PM		
2. Total Percent Efficiency of Control:		%
3. Potential Emissions:	8 lb/hour	35.1 tons/year
4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions:		
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 _____ to _____ tons/yr		
6. Emission Factor:		8 lb/hr
Reference: Current prmt. factor		
7. Emissions Method Code:		
<input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5		
8. Calculation of Emissions (limit to 600 characters):		
<p style="margin-left: 40px;">From current permit (0570008-013-AC): 6.0 lb/hr x 770 TPD/580 TPD = 8.0 lb/hr</p>		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):		

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: OTHER		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	8 lb/hour	35.1 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 5		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): Based on equivalent BACT limit in Permit No. 0570008-013-AC.		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: PM10		
2. Total Percent Efficiency of Control:		%
3. Potential Emissions:	8 lb/hour	35.1 tons/year
4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions:		
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 _____ to _____ tons/yr		
6. Emission Factor:		8 lb/hr
Reference: Current prmt. factor		
7. Emissions Method Code:		
<input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5		
8. Calculation of Emissions (limit to 600 characters):		
From current permit (0570008-013-AC): 6.0 lb/hr x 770 TPD/580 TPD = 8.0 lb/hr		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):		

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: OTHER		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	8 lb/hour	35.1 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 5		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): Based on equivalent BACT limit in Permit No. 0570008-013-AC.		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: FL		
2. Total Percent Efficiency of Control:		%
3. Potential Emissions:	2.8 lb/hour	2.76 tons/year
4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions:		
[] 1 [] 2 [] 3 _____ to _____ tons/yr		
6. Emission Factor:		0.04 lb/ton P2O5
Reference: BACT		
7. Emissions Method Code:		
<input checked="" type="checkbox"/> 0 [] 1 [] 2 [] 3 [] 4 [] 5		
8. Calculation of Emissions (limit to 600 characters):		
<p>Basis: 91% of F evolved over first 5 hours of batch. 7.7 lb/batch x 2 batches/day x 91% ÷ 5 hours = 2.8 lb/hr; 281,050 TPY AFI x 54.5% P2O5 x batch/214 tons P2O5 x 7.7 lb/batch x ton/2,000 lb = 2.76 TPY</p>		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):		
<div style="border: 1px solid black; height: 100px; width: 100%;"></div>		

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: OTHER		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 0.04 lb/ton P2O5		
4. Equivalent Allowable Emissions:	2.8 lb/hour	2.76 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 13A or 13B		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): BACT determination in Permit No. 0570008-013-AC; PSD-FL-234		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: NOx		
2. Total Percent Efficiency of Control:		%
3. Potential Emissions:	7.1 lb/hour	30.7 tons/year
4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions:		
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 _____ to _____ tons/yr		
6. Emission Factor:		20 lb/Mgal
Reference: AP-42		
7. Emissions Method Code:		
<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5		
8. Calculation of Emissions (limit to 600 characters):		
<p>357.1 lb/gal x 20 lb/1,000 gal = 7.14 lb/hr</p>		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):		

Emissions Unit Information Section 1 of 1
Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

**H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)**

Pollutant Detail Information:

1. Pollutant Emitted: CO		
2. Total Percent Efficiency of Control:		%
3. Potential Emissions:	1.8 lb/hour	7.7 tons/year
4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions:		
[] 1 [] 2 [] 3 _____ to _____ tons/yr		
6. Emission Factor:		5 lb/Mgal
Reference: AP-42		
7. Emissions Method Code:		
[] 0 [] 1 [] 2 <input checked="" type="checkbox"/> 3 [] 4 [] 5		
8. Calculation of Emissions (limit to 600 characters):		
357.1 lb/gal x 5 lb/1,000 gal = 1.79 lb/hr		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):		

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Visible Emissions Limitations: Visible Emissions Limitation 1 of 2

1.	Visible Emissions Subtype: VE20
2.	Basis for Allowable Opacity: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
3.	Requested Allowable Opacity Normal Conditions: 20 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: EPA Method 9.
5.	Visible Emissions Comment (limit to 200 characters): Based on BACT from Permit No. 0570008-013-AC; PSD-FL-234

Visible Emissions Limitations: Visible Emissions Limitation 2 of 2

1.	Visible Emissions Subtype: VE5
2.	Basis for Allowable Opacity: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
3.	Requested Allowable Opacity Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: EPA Method 9
5.	Visible Emissions Comment (limit to 200 characters): BACT per Permit No. 0570008-013-AC; PSD-FL-234. Limit accepted in lieu of PM stack test per Rule 62-297.620.

**J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)**

Continuous Monitoring System Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: [] Rule [] Other	
4. Monitor Information: Monitor Manufacturer: Model Number: Serial Number:	
5. Installation Date:	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters):	

Continuous Monitoring System Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: [] Rule [] Other	
4. Monitor Information: Monitor Manufacturer: Model Number: Serial Number:	
5. Installation Date:	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters):	

**K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT
TRACKING INFORMATION
(Regulated and Unregulated Emissions Units)**

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

-] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.
- []] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and the emissions unit consumes increment.
- []] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and the emissions unit consumes increment.
- []] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.
- []] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

- The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.
- The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and the source consumes increment.
- The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and the source consumes increment.
- For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and the emissions unit consumes increment.
- None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3.	Increment Consuming/Expanding Code:		
	PM	<input checked="" type="checkbox"/> C	<input type="checkbox"/> E <input type="checkbox"/> Unknown
	SO ₂	<input checked="" type="checkbox"/> C	<input type="checkbox"/> E <input type="checkbox"/> Unknown
	NO ₂	<input checked="" type="checkbox"/> C	<input type="checkbox"/> E <input type="checkbox"/> Unknown
4.	Baseline Emissions:		
	PM	lb/hour	tons/year
	SO ₂	lb/hour	tons/year
	NO ₂		tons/year
5.	PSD Comment (limit to 200 characters):		

**L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)**

Supplemental Requirements for All Applications

1. Process Flow Diagram	<input checked="" type="checkbox"/> Attached, Document ID: <u>Attachment A</u>	<input type="checkbox"/> Waiver Requested
	<input type="checkbox"/> Not Applicable	
2. Fuel Analysis or Specification	<input checked="" type="checkbox"/> Attached, Document ID: <u>CR-E14-L2</u>	<input type="checkbox"/> Waiver Requested
	<input type="checkbox"/> Not Applicable	
3. Detailed Description of Control Equipment	<input checked="" type="checkbox"/> Attached, Document ID: <u>Attachment A</u>	<input type="checkbox"/> Waiver Requested
	<input type="checkbox"/> Not Applicable	
4. Description of Stack Sampling Facilities	<input type="checkbox"/> Attached, Document ID: _____	<input type="checkbox"/> Waiver Requested
	<input checked="" type="checkbox"/> Not Applicable	
5. Compliance Test Report	<input type="checkbox"/> Attached, Document ID: _____	<input checked="" type="checkbox"/> Not Applicable
	<input type="checkbox"/> Previously Submitted, Date: _____	
6. Procedures for Startup and Shutdown	<input type="checkbox"/> Attached, Document ID: _____	<input checked="" type="checkbox"/> Not Applicable
7. Operation and Maintenance Plan	<input type="checkbox"/> Attached, Document ID: _____	<input checked="" type="checkbox"/> Not Applicable
8. Supplemental Information for Construction Permit Application	<input checked="" type="checkbox"/> Attached, Document ID: <u>Attachment A</u>	<input type="checkbox"/> Not Applicable
9. Other Information Required by Rule or Statute	<input checked="" type="checkbox"/> Attached, Document ID: <u>Attachment A</u>	<input type="checkbox"/> Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
11. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
12. Identification of Additional Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
13. Compliance Assurance Monitoring Plan <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
14. Acid Rain Permit Application (Hard Copy Required) <input type="checkbox"/> Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

ATTACHMENT A
PROJECT DESCRIPTION

ATTACHMENT A

1.0 INTRODUCTION

Cargill Fertilizer, Inc. has constructed an animal feed ingredient (AFI) plant at its existing fertilizer manufacturing facility in Riverview, Florida (see Figure 1-1). The AFI plant is located in an area to the northeast of the existing granular triple superphosphate (GTSP) production plant (see Attachment CR-FI-E2). The plant was originally permitted under air construction permit AC29-242897, issued June 16, 1994. This permit was amended on January 12, 1996, with the issuance of air construction permit 05700008-002-AC. The purpose of this amendment was to update the design data for the plant. The original plant capacity was 480 tons per day (TPD) and 150,000 tons per year (TPY) of AFI, based on two acid defluorination batch tanks and one granulation area. The AFI plant began initial operations in January 1996.

In early 1996, Cargill submitted an application to expand the AFI Plant, consisting of adding a third acid defluorination batch tank and a second granulation area. This expansion, permitted under air construction permit no. 0570008-013-AC issued on June 12, 1997, increased the AFI production capacity to 1,160 TPD (580 TPD for each granulation area) and 300,000 TPY. The current air construction permit is provided in Attachment B.

Subsequently, Cargill installed the third acid defluorination tank, but has not constructed the second granulation area. The current plant consists of a diatomaceous earth unloading and storage operation; three acid defluorination batch tanks and associated equipment; a limestone unloading and storage operation; one granulation area with a mixer, pug mill, dryer, screens, mills and a classifier; and an AFI product storage and loadout system. Initial compliance testing of the current plant configuration was conducted in October, 1998.

Cargill is now proposing changes to the AFI plant. The second granulation area permitted under permit no. 0570008-013-AC will not be constructed. Instead, the capacity of the existing granulation area will be increased through implementing minor modifications to the system. The permitted rate will increase from 580 TPD AFI to 770 TPD AFI, although the total permitted rate for the AFI plant will decrease (currently permitted rate is 1,160 TPD AFI). Modifications will also be made to upgrade the existing venturi scrubber utilized for PM control in the granulation area.

In addition to the proposed changes in production rate, Cargill is proposing to decrease the total allowable particulate matter (PM) and fluoride (F) emissions from the AFI plant. Specifically, permitted PM/PM₁₀ emissions from the granulation area will decrease from 12.0 lb/hr and 52.6 TPY to 8.0 lb/hr and 35.1 PY. Permitted F emissions will decrease from 3.26 TPY to 2.76 TPY.

The purpose of this construction permit application is to request changes to the permitted production rates and allowable emissions for the AFI plant. Since the AFI plant only recently performed initial compliance testing, there is no long-term operational history for the plant. Due to the proposed project, allowable annual emissions of PM, particulate matter less than or equal to 10 micrometers (PM₁₀), and F will decrease. Therefore, a minor modification to the current construction permit is requested.

Since some of the information presented in the original application has changed, a complete air permit long form application is being submitted, along with a description of the changes in the project description, design information, air emissions, and control equipment information. Suggested changes to current permit condition wording are also presented.

2.0 PROJECT DESCRIPTION

Cargill's AFI Plant is currently permitted to add an acid defluorination batch tank and double the production of the existing facility from 150,000 TPY to 300,000 TPY AFI by constructing a duplicate of the existing granulation process. This permit expires December 31, 2000. The new acid defluorination tank has been constructed and is in operation; however, the second granulation plant has not been constructed.

Each granulation process is currently permitted to produce 580 TPD and is limited to 6 lb/hr PM/PM₁₀. Both granulation processes combined are permitted to produce 300,000 TPY AFI product. With minor modifications to the existing granulation process, the production rate can be increased. Cargill is requesting that the permitted rate be increased to 770 TPD of AFI for the existing granulation process.

The present AFI evacuation system is designed for 85,000 acfm of air evacuation from the existing granulation process equipment. The proposed expansion will include the installation of additional screens and mills, and will require increased air evacuation. The existing venturi scrubber utilized for PM/PM₁₀ control will also be modified to include a larger cyclonic separation section to accommodate the increased air flow, thus maintaining PM/PM₁₀ control. Total air flow to the venturi scrubber after the proposed modification is estimated to be 100,000 acfm.

The granulation area of the AFI Plant will be the only area of the plant physically modified under the proposed project. The diatomaceous earth unloading and storage system, acid defluorination system, limestone unloading and storage system, and AFI product loadout system will not be physically modified as part of the proposed project.

Flow diagrams of the currently permitted and proposed AFI Plant process are presented in Figures 2-1 and 2-2, respectively.

2.3 POLLUTION CONTROL EQUIPMENT AND AIR EMISSIONS

Emissions from the existing process equipment and product storage and handling operations are controlled by scrubbers and baghouses. A wet crossflow scrubber is used to control fluoride emissions from the acid defluorination process. A wet venturi scrubber is used to control PM emissions from the pug mill, dryer, and equipment vents in the granulation area. Baghouses are used to control potential PM emissions from product

storage and handling operations. These systems will remain in place in the future, except that the venturi scrubber serving the granulation area will be modified.

Currently, exhaust gases from the rotary dryer, equipment vents and high efficiency cyclones are vented to a venturi scrubber with a cyclonic separator for particulate matter removal. The granulation plant scrubber is a variable venturi scrubber with a scrubber liquid design flow of 850 gpm. The granulation plant scrubber has a sump which is supplied with freshwater makeup at 10 to 40 gpm and the spent scrubber liquor is consumed in the reaction section to provide necessary dilution of the feed acid.

The granulation venturi scrubber will be modified to include a larger cyclonic section. This will maintain particulate matter control at its current level. Total design air flow through the scrubber will increase from 85,000 acfm to 100,000 acfm as a result of the modifications to the granulation area evacuation system.

Air emissions from the various sources in the AFI Plant, after modification, are presented in Table 2-1 and Table 2-2. Note that fluoride emissions from the acid defluorination scrubber are based on the current permitted emission limit of 0.4 lb/ton P_2O_5 input and 7.7 lb/batch. PM/ PM_{10} emissions from the granulation area venturi scrubber of 8.0 lb/hr are based on the current permit emission factor of 6.0 lb/hr per granulation area, equivalent to 0.25 lb/ton of AFI product.

Air emissions from the granulation area dryer due to fuel combustion are presented in Table 2-2. Emissions are presented for nitrogen oxides (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), and volatile organic compounds (VOC). Estimated emissions from fuel combustion were developed using factors specified in the Environmental Protection Agency's (EPA) Compilation of Air Pollution Emission Factors (AP-42) (see Attachment A). Emissions are presented for natural gas and No. 2 fuel oil use. Fuel oil use will be limited to 400 hr/yr.

Stack geometry and operating data are presented in Table 2-3 for each emission source located at the AFI Plant. These sources include the common plant stack, the DE and limestone handling baghouses, and the AFI product loadout baghouse.

3.0 SUGGESTED CHANGES TO SPECIFIC CONDITIONS

Suggested changes to the specific conditions of permit no. 0570008-013-AC; PSD-FL-234 are provided below, with a rationale provided, where appropriate.

General: Remove all references to AFI No. 2 Plant.
 Change production rate from 1,160 TPD to 770 TPD AFI.

B.8 – “The maximum natural gas usage for the dryer shall not exceed 50,000 cubic feet/hour (annual average). The maximum new No. 2 fuel oil usage for the dryer shall not exceed 357.1 gallons/hour (daily average) or 142,857 gallons/year (annual average).”

B.11, B.12, Table 1-1 and BACT Determination – In lieu of a numerical emissions limit, a work practice standard is proposed to limit fluoride emissions from the process. The definition of BACT allows the setting of a design, equipment, work practice, operational standard or combination thereof where “the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of an emissions unit or facility would make the imposition of an emission standard infeasible.” [Rule 62-210.200(42)]. In the case of the AFI plant, the following render a numerical emissions limit infeasible:

1. The AFI Plant acid defluorination process is a batch process, which may require from 10 to more than 30 hours to complete. The time to complete a batch is dependent upon several variables, including initial fluoride content of the acid, impurities in the acid, etc. The total batch time cannot be determined prior to or during the batch.
2. Maximum fluoride emissions from each batch are expected to occur over the first 5 hours of a batch. However, as the recent compliance testing demonstrated, fluoride emissions 15 hours into a batch can be nearly as high as emissions at the beginning of a batch. The variability is further compounded by the fact that two batches typically overlap each other, i.e., one batch begins in one acid batch tank, and several hours later a second batch begins in a second batch tank.

3. Current test requirements for fluoride dictate that nine (9) test runs be conducted, with the first three runs performed within 5 hours of adding DE to the batch. The remaining six runs are to be spaced evenly over the remaining hours of the batch. After initial compliance testing, the test frequency may be reduced. Since it is not possible to predict the length of a batch prior to or during a batch, it may not be possible to evenly space the last six test runs over the batch cycle. In addition, this could require the source testing team to remain on-site testing for two days continuously (including setup time and demobilization after testing is completed). This is very burdensome from a manpower standpoint as well as a cost standpoint.

4. Due to the unpredictable duration of each batch, as well as the long batch times, it is impractical and economically burdensome to conduct source testing of the acid defluorination process.

In lieu of a numerical emission limit for the acid defluorination process, the following work practice standard is proposed:

“The wet scrubber used to control fluoride emissions from the acid defluorination process shall be a packed crossflow scrubber designed for a minimum of 8 transfer units. Volumetric liquid water flow rate to the scrubber shall be continuously monitored and maintained at a minimum of 330 gallons per minute (3-hour avg.), and pressure drop across the scrubber shall be continuously monitored and maintained at 4 inches of water or greater (3-hour avg.).”

These requirements will ensure that the scrubber design and operation satisfies BACT criteria. The Department accepted this scrubber design (i.e., 8 transfer units) in issuing the most recent BACT determination for the AFI Plant in June 1997 (permit no. 0570008-013-AC;PSD-FL-234).

It is noted that the above proposed BACT determination would only be applicable to “batch acid defluorination processes which are unpredictable in duration”, and thus should not be extended to other acid defluorination processes.

Table 2-1. Summary of Pollution Control Equipment and PM/PM10/Fluoride Emissions, Animal Feed Plant, Cargill Fertilizer

Source	Control Type	Manufacturer/Model	Design Capacity		Control Efficiency (percent)	Operating Hours	PM/PM10 Emissions			Fluoride Emissions	
			Value	Units			(gr/dscf)	(lb/hr)	(TPY)	(lb/batch)	(TPY)
AFI PLANT COMMON STACK: Defluor. Batch Tanks A, B, & C Reactor/Granulator/Dryer/ Materials Handling	Wet Scrubber	BCI/Bithell CF4x4-3	14,000	acfm	99.95 (Fl)	8,760	NA	NA	NA	7.70 (a)	2.76 (b)
	Venturi Scrubber	Fisher-Klosterman/MS 1200	100,000	acfm	99.9 (PM)	8,760	NA	8.02	35.13	NA	NA
DE HOPPER	Baghouse	MAC 39-AVRC-21	518	dscfm	99.9	8,760	0.02	0.089	0.39	NA	NA
LIMESTONE SILO	Baghouse	MAC 39-AVRC-21	691	dscfm	99.9	8,760	0.02	0.12	0.52	NA	NA
AFI PRODUCT LOADOUT	Baghouse	MAC 144-MCF-255	12,960	dscfm	99.9	3,500	0.02	2.22	3.89	NA	NA
TOTAL AFI PLANT							Total =	10.45	39.93	7.70	2.76

Note: acfm = actual cubic feet per minute
 AFI = animal feed ingredient
 DE = diatomaceous earth
 dscfm = dry standard cubic foot per minute.
 gr/scf = grains per standard cubic foot
 lb/hr = pounds per hour
 TPY = tons per year

(a) Based on 0.04 lb/ton P2O5 and 7.7 lb/batch, from current construction permit.

(b) Based on 281,050 TPY AFI; 54.5% P2O5; 214 tons P2O5/batch; 716 batches/yr; and 7.7 lb/batch.

Table 2-2. Emissions from Fuel Combustion in AFI Plant Dryer, Cargill Riverview

Parameter	No. 2 Fuel Oil	Natural Gas	No. 2 Fuel Oil/ Natural Gas			
OPERATING DATA						
Operating Time (hr/yr)	400	8,760	8,760			
Heat Input Rate (MMBtu/hr)	50	50	50			
Fuel Oil Use (gal/hr) (a)	357.1	NA	NA			
Fuel Oil Use (gal/yr)	142,857	NA	142,857			
Maximum Sulfur Content (Wt %)	0.5	NA	0.5			
Natural Gas Use (scf/hr)	NA	50,000	NA			
Natural Gas Use (MMscf/yr)	NA	438.0	418.0			
Pollutant	Emission Factor (b)	No. 2 Fuel Oil		Natural Gas		No. 2 Fuel Oil/ Natural Gas
		lb/hr	TPY	lb/hr	TPY	TPY
EMISSIONS DATA						
SO ₂ : Fuel Oil	142*S lb/Mgal (c)	25.36	5.07	0.030	0.13	5.20
Natural Gas	0.6 lb/MMft ³					
NO _x : Fuel Oil	20 lb/Mgal	7.14	1.43	7.00	30.66	30.69
Natural Gas	140 lb/MMft ³					
CO: Fuel Oil	5 lb/Mgal	1.79	0.36	1.75	7.67	7.67
Natural Gas	35 lb/MMft ³					
NM VOC: Fuel Oil	0.2 lb/Mgal	0.071	0.014	0.14	0.61	0.60
Natural Gas	2.8 lb/MMft ³ (d)					

Note: NA = not applicable.
Particulate matter emissions discharge through the common plant stack and are included in Table 2-1.

- (a) Based on 140,000 Btu/gal for 0.5% S oil; 1000 Btu/scf for natural gas.
 (b) Emission factors based on AP-42.
 (c) "S" denotes the weight % sulfur in fuel oil; max sulfur content = 0.5%
 (d) Based on methane comprises 52% of total VOC

Table 2-3. Stack and Vent Geometry and Operating Data for Modified Animal Feed Plant, Cargill Riverview

Source	Stack/Vent Release Height (ft)	Stack/Vent Diameter (ft)				Gas Exit Temperature (°F)	Water Vapor Content (Percent)	Velocity (ft/sec)
			(ACFM)	(SCFM)	(DSCFM)			
AFI Plant #1 Common Stack	136	6.0	114,000	98,675	83,874	150	15	67.2
DE Hopper Dust Collector Vent	64	1.5	600	576	518	90	10	5.7
Limestone Silo Dust Collector	85	1.5	800	768	691	90	10	7.5
AFI Loadout System Dust Collector	15	1.0 x 3.5	15,000	14,400	12,960	90	10	55.6

Note: ACFM = actual cubic feet per minute
 AFI = animal feed ingredient
 DE = diatomaceous earth
 DSCFM = dry standard cubic feet per minute
 SCFM = standard cubic feet per minute

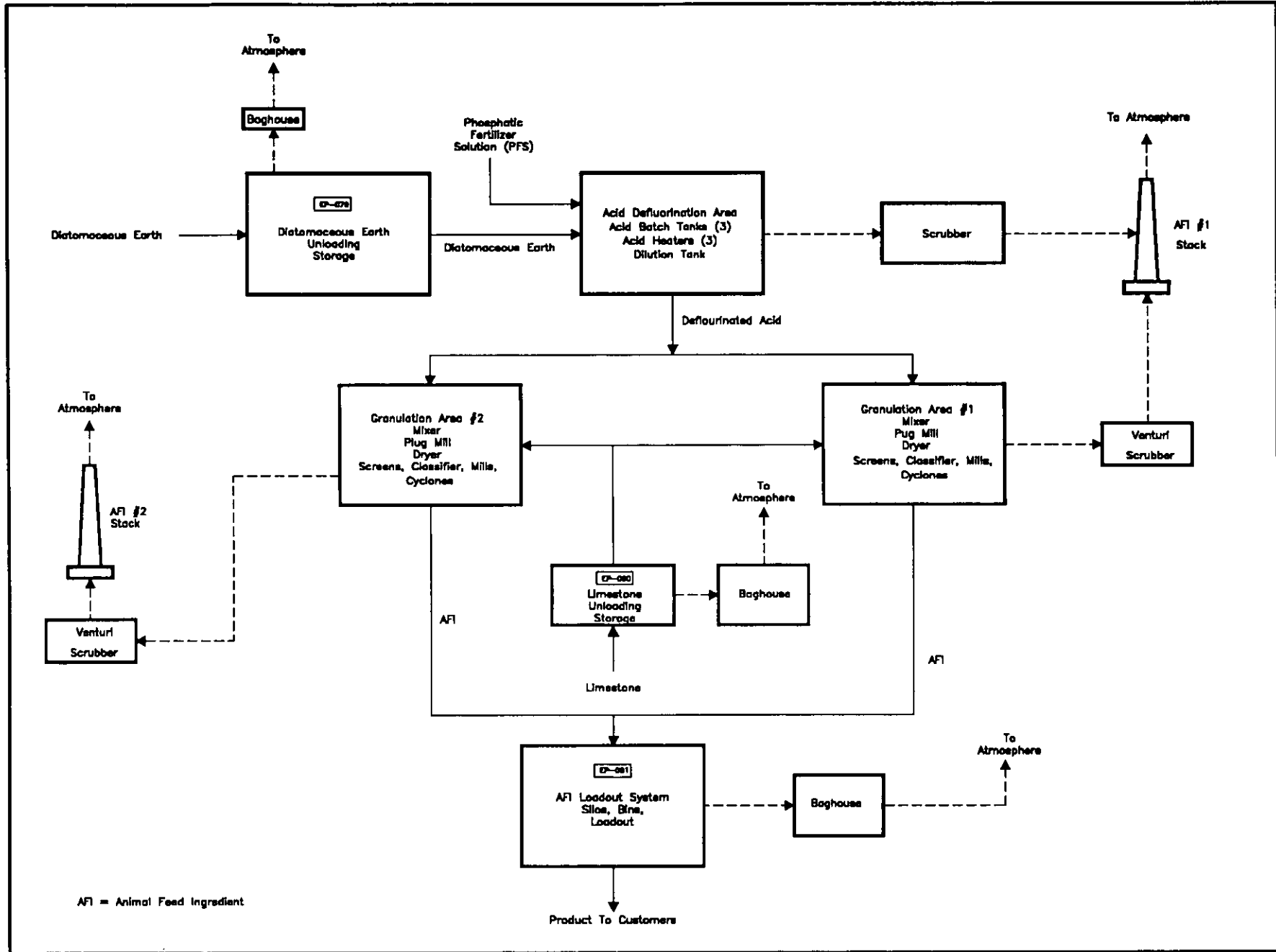


Figure 2-1
Flow Diagram of Currently
Permitted Animal Feed Plant
Cargill, Tampa

Process Flow Legend:

Solid/Liquid
 Gas

Emission Unit: Animal Feed Plant

Filename: AFICURR.DWG

Latest Revision Date: 12/08/98

ATTACHMENT B

CURRENT AIR CONSTRUCTION PERMIT

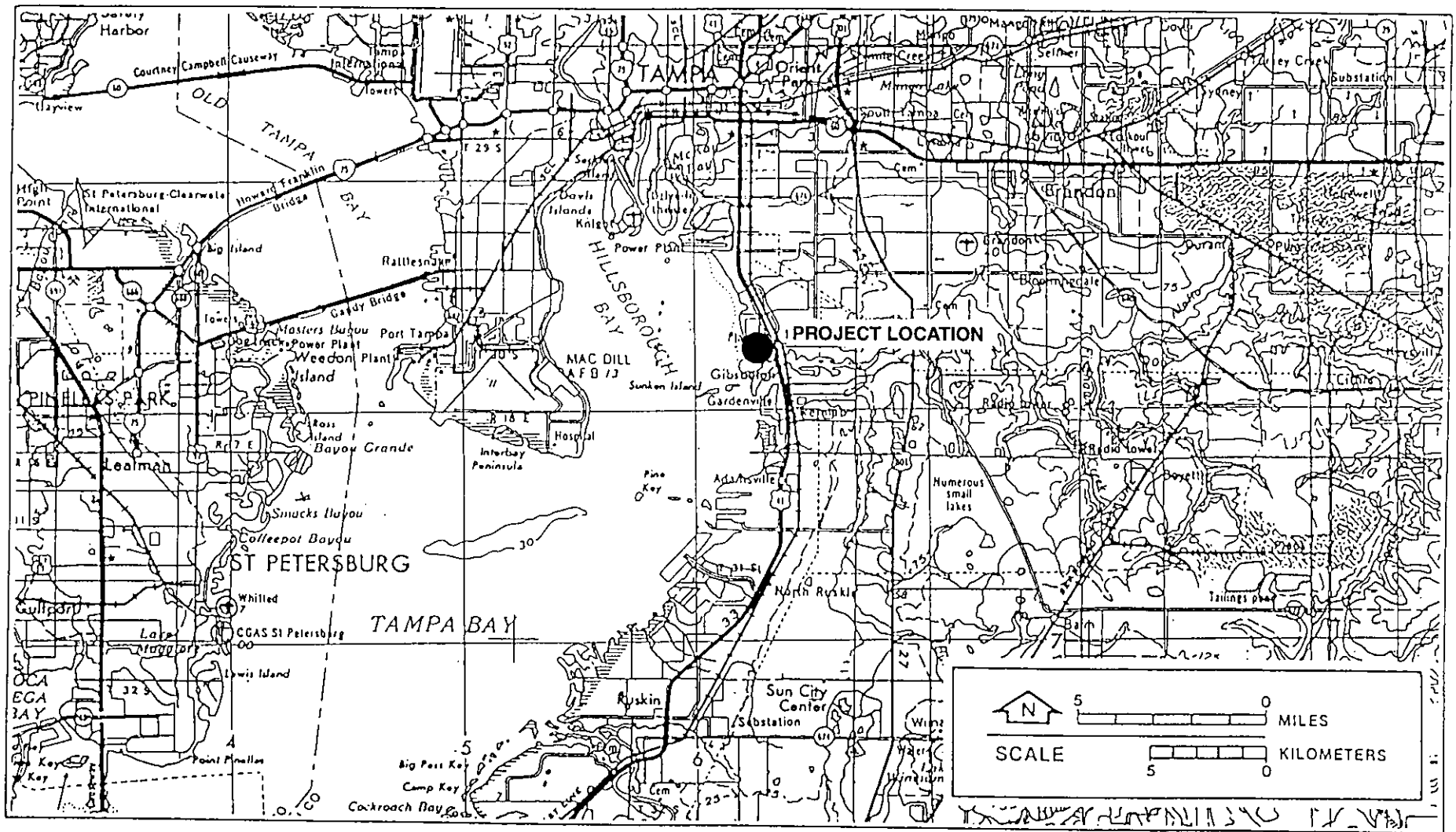


Figure 1-1
 General Location Map of Cargill Fertilizer, Inc. - Riverview, FL

Source: USGS, 1981.



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit


Ms. Melody Russo
Cargill Fertilizer, Incorporated
8813 Highway 41 South
Riverview, Florida 33569

DEP File No. 0570008-013-AC
PSD-FL-234

Enclosed is the FINAL Permit Number PSD-FL-234. This permit is issued for the construction of a second animal feed ingredient plant and to revise permitted emission limits for the existing animal feed ingredient plant. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.


C.H. Fancy, P.E., Chief
Bureau of Air Regulation


CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 6-12-97 to the person(s) listed:

Ms. Melody Russo, Cargill Fertilizer, Inc. *
Mr. David Buff, P.E., Golder Associates
Mr. Brian Beals, EPA
Mr. John Bunyak, NPS
Mr. Bill Thomas, SWD
Mr. Jerry Campbell, HCEPC

Clerk Stamp

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


(Clerk) 6-12-97
(Date)

FINAL DETERMINATION

Cargill Fertilizer, Incorporated

Permit No. 0570008-013-AC, PSD-FL-234

Animal Feed Ingredient Plants

An Intent to Issue an air construction permit for Cargill Fertilizer, Inc., Animal Feed Ingredient Plants located in Riverview, Hillsborough county, Florida was distributed on May 15, 1997. The Notice of Intent was published in the Tampa Tribune on May 22, 1997. Copies of the draft construction permit were available for public inspection at the Department offices in Tampa and Tallahassee.

No comments were submitted by the National Park Service or the U.S. Environmental Protection Agency. Comments were submitted by the applicant concerning the Technical Evaluation and Preliminary Determination (TEPD), draft permit conditions, and Best Available Control Technology (BACT). The Department's responses are as follows:

TEPD: The Department concurs with the comments submitted by the applicant.

Draft Permit: The Department concurs with the comments submitted by the applicant except the request to delete the lb/ton limit for fluorides for both animal feed ingredient plants. The Department understands that the primary emission limit is 7.70 lb per batch, and if the facility is able to comply with that emission limit, then the lb/ton emission limit will always be complied with.

BACT: The Department responses are same as above for the Draft Permit.

The applicant requested that the final permit be issued prior to the expiration of the 30 day comment period in order to facilitate construction of the new animal feed ingredient plant. Cargill has agreed that the Department can amend the permit in consideration of comments received by June 22, 1997.

The final action of the Department will be to issue the permit as noted above.



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

**Cargill Fertilizer, Inc.,
Riverview Plant
8813 Highway 41 South
Riverview, Florida 33569**

FID No.:	0570008
PSD No.	PSD-FL-234
Permit No.:	0570008-013-AC
SIC No.	2874
Expires:	December 31, 2000

Authorized Representative:
Melody Russo, Environmental Superintendent

LOCATED AT:

Cargill Fertilizer, Inc., Riverview Plant, Hillsborough County
Project: Fertilizer Manufacturing Facility
Animal Feed Ingredient Plants No. 1 & 2

UTM: Zone 17 ; 362.9 km E ; 3082.5 km N


STATEMENT OF BASIS:

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices made a part of this permit:

Table 1-1
Table 2-1
Appendix BD
Appendix GC

Air Pollutants Standards and Term
Compliance Requirements
BACT Determination
Construction Permit General Conditions

for 
Howard L. Rhodes, Director
Division of Air Resources
Management

AIR CONSTRUCTION PERMIT 057008-013-AC

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

1.0 ADMINISTRATIVE

- 1.1 Regulating Agencies: All applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Hillsborough County Environmental Protection Commission (HCEPC) located at 1410 North 21 Street, Tampa, Florida 33605 and phone number (813) 272-5530. All applications for permits to construct or modify an emission unit(s) subject to the Prevention of Significant Deterioration requirements should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (904) 488-1344. Please note that permitting activities are conducted by the FDEP while the HCEPC has delegated authority for compliance issues.
- 1.2 General Conditions: The owner and operators shall be aware of, and operate under, the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
- 1.3 Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapter of the Florida Administrative Code.
- 1.4 Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. [Rule 62-210.900, F.A.C.]
- 1.5 Expiration: This air construction permit shall expire on December 31, 2000. [Rule 62-210.300(1), F.A.C.]
- 1.6 Application for Title V Permit: This air construction permit revises specific permit conditions to reflect the current applicable requirements and new BACT limits. Emissions stack testing that is required by this permit shall be performed to show compliance with all new applicable BACT limits. Therefore, the air operation permit will be issued based on this revised permit. [Rule 62-210.300(2), F.A.C.] A revision of the Title V operating permit application pursuant to Chapter 62-213 F.A.C. shall be submitted to the DEP District office in Tampa.
- 1.7 Applicable Regulations: This facility is subject to the following regulations: Florida Administrative Code Chapters 62-4; 62-103; 62-204, 62-210, 62-212, 62-296 and 62-297. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300 , F.A.C.]

2.0 EMISSION LIMITING STANDARDS

AIR CONSTRUCTION PERMIT 057008-013-AC

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

- (a) No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department.
- (b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

NOTE: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [F.A.C. 62-212.198(123)]

3.0 OPERATION AND MAINTENANCE

- 3.1 Summary of Sources: The following is a summary of the sources, emission control equipment, limitations on production and hours of operation for this facility:

<u>Source</u>	<u>Control Device</u>	<u>Operating Hours</u>
COMMON STACK AFI No. 1 & 2		
Defluor. Tanks	Wet Scrubber	8,760
Reactor/Granulator/ Materials Handling	Dryer Scrubber	8,760
DE SILO	Baghouse	8,760
LIMESTONE SILO	Baghouse	8,760
AFP LOADOUT SYSTEM	Baghouse	3,500

Production Limitation (Combined AFI No. 1 & 2): 1160 tons/day and 300,000 tons/year.

- 3.2 Changes/Modifications: The owner or operator of any emissions unit which emits or can reasonably be expected to emit any air pollutant shall obtain an appropriate permit from the Department prior to beginning construction, modification, or initial or continued operation of the emissions unit unless exempted pursuant to Department rule or statute. All emissions limitations, controls, and other requirements imposed by such permits shall be at least as stringent as any applicable limitations and requirements contained in or enforceable under the State Implementation Plan (SIP) or that are otherwise federally enforceable. Issuance of a permit does not relieve the owner or operator of any emissions unit from complying with applicable emission limiting standards or other requirements of the air pollution rules of the Department, or any other applicable requirements under federal, state, or local law.

AIR CONSTRUCTION PERMIT 057008-013-AC

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

- (b) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
- (c) In case of excess emissions resulting from malfunctions, each owner or operator shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

4.0 MONITORING OF OPERATIONS

4.1 Determination of Process Variables

- (a) The permittee shall install, operate, and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- (b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5), F.A.C.]

5.0 TEST REQUIREMENTS

- 5.1 Test Performance: During each federal fiscal year (October 1- September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:
 - (a) Visible emissions, if there is an applicable standard;
 - (b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and
 - (c) Each NESHAP pollutant, if there is an applicable emission standard. [Rule 62-297.310 (7), F.A.C.]
- 5.2 Test procedures: Testing of emissions shall be conducted with the emissions unit operation at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to

AIR CONSTRUCTION PERMIT 057008-013-AC

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

- 6.3 Annual Operating Report for Air Pollutant Emitting Facility: Before March 1st of each year, the owner or operator shall submit to the Department this required report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year. [Rule 62-210.370(2), F.A.C.]

AIR CONSTRUCTION PERMIT 057008-013-AC

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. COMMON CONDITIONS:

EMISSION UNITS

This permit addresses the following emission units.

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
078	Common Stack Animal Feed Plant No. 1
079	Diatomaceous Earth Silo
080	Limestone Silo
081	Animal Feed Plant Loadout System
103	Common Stack Animal Feed Plant No. 2

SUBSECTION B. SPECIFIC CONDITIONS:

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
078	Common Stack Animal Feed Plant No. 1
103	Common Stack Animal Feed Plant No. 2

EMISSION LIMITATIONS

- B.1 The emissions from these emission units shall not exceed the allowable emission rates listed in Table 1-1 Air Pollutant Standards and Terms (attached).

CONTROL EQUIPMENT

- B.2 The BACT determination requires the installation of a packed crossflow scrubber for control of gaseous fluoride and particulate matter emissions. The permittee shall submit the necessary scrubber efficiency calculations and drawings to the Department for approval prior to modifying the existing scrubber. [Rule 62-212.400(6), F.A.C.]
- B.3 The following scrubber operating parameters shall be monitored during any compliance test and a summary of this data shall be included in any emissions test report. [Rule 62-4.070(3), F.A.C.]

(X) Water Pressure or Volumetric Liquid Water Flow Rate

AIR CONSTRUCTION PERMIT 057008-013-AC

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

(X) Gas Pressure Drop

- B.4 To provide reasonable assurance of compliance with Specific Condition B.1, Cargill shall create and keep a record log of the scrubber operating parameters. The record log shall contain, at a minimum, the volumetric liquid water flow rate (or the water pressure), the gas pressure drop, and the date and time of the measurements. Where measurements are collected manually, the person responsible for performing the measurements shall also be recorded. A record log entry shall be made at least once for every 8 hour shift that the animal feed ingredient plants operate. The record log shall be maintained at the facility and shall be retained at least five years from the date of the measurement. [Rule 62-4.070(3), F.A.C.]
- B.5 Cargill may, at its option, substitute continuous monitoring and data logging or recordings for the manual recordkeeping required by Specific Condition B.4. If this option is exercised, then all calibration and maintenance records and logged or recorded data shall be retained at least five years. [Rule 62-4.070(3), F.A.C.]

OPERATIONAL LIMITATIONS

- B.6 Animal Feed Plant No. 1 and No. 2 is allowed to operate continuously (8760 hours/year). [Rule 62-210.200, F.A.C. Definitions-Potential to emit (PTE)]

Process operating rates:

- B.7 The combined maximum production rates for Animal Feed Plants No. 1 and No. 2 shall not exceed 1160 TPD and 300,000 TPY. [Rule 62-210.200, F.A.C.,(PTE)]
- B.8 The dryers for each Animal Feed Plant shall be fired with natural gas as primary fuel or with new No. 2 fuel oil having a maximum sulfur content not to exceed 0.5% by weight as standby during natural gas curtailment at a maximum of 400 hours/year. The maximum natural gas usage for the two dryers combined shall not exceed 93,000 cubic feet/hour (annual avg.). The maximum new No. 2 fuel oil usage for the two dryers combined shall not exceed 662 gallons/hour (daily avg.). Use of fuels other than those listed above is prohibited. [Rule 62-210.200, F.A.C.,(PTE)]

TEST METHODS AND PROCEDURES

- B.9 Emission Units 078 and 103 shall be tested in accordance with the EPA/reference method, testing time frequency, and minimum compliance test duration in Table 2-1. Compliance Requirements (attached). [Rules 62-204.800 and 62-297.401, F.A.C.]
- B.10 In conducting the initial or annual compliance tests, the permittee shall use as reference methods and procedures the test methods in Rule 62-297.401, F.A.C., or other methods and procedures as specified in

AIR CONSTRUCTION PERMIT 057008-013-AC

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

B.17 Two copies of the results of the emission tests for the pollutants listed in Condition B.1 for these emission units shall be submitted within forty-five days of the last sampling run to the HCEPC office in Tampa. Reports shall be in a format consistent with and shall include the information in accordance with Rule 62-297.310 (8), F.A.C. [Rule 62-.297.310(8), F.A.C.]

Daily Operation and Maintenance (O&M) Log:

B.18 This facility shall maintain a file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information

- the data collected from in-stack monitoring instruments;
- the records on daily feed rates and production rate;
- the amount and type of fuel burned per affected unit;
- the results of all source tests; and,
- Fuel analysis data.

All measurements, records, and other data required to be maintained by Cargill, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. These data shall be made available to the Department upon request. [Rule 62-4.070(3), F.A.C.]

AIR CONSTRUCTION PERMIT 057008-013-AC

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

- calibration logs for all instruments required by Common Specific Condition 4.1; and
- maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit.

All measurements, records, and other data required to be maintained by Cargill, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. These data shall be made available to the Department upon request. [Rule 62-4.070(3), F.A.C]

Table 1-1. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0570008

Permittee:
Cargill Fertilizer, Inc.
Animal Feed Ingredient Plant

DRAFT Permit No.: 0570008-013-AC

Emission Unit 078/103 - AFI No. 1/AFI No. 2
Emission Unit 079/080/081 - DE Silo/Limestone Silo/Loadout System

E.U. ID#	Description	Pollutant ID	Fuel(s)	gr/dscf	lb/ton P ₂ O ₅	lb/hr	TPY	Regulation(s)
078	AFI No. 1	PM/PM ₁₀	Gas/Oil	N/A	N/A	6.00	26.28	Rule 62-212.410, F.A.C.
078	AFI No. 1	F	Gas/Oil	N/A	0.04	7.70 lb/batch	1.63	Rule 62-212.410, F.A.C.
078	AFI No. 1	NO _x	Gas/Oil	N/A	N/A	6.50	28.42	Rule 62-212.410, F.A.C.
078	AFI No. 1	20% VE	Gas/Oil	N/A	N/A	N/A	N/A	Rule 62-204.800, F.A.C.
103	AFI No. 2	PM/PM ₁₀	Gas/Oil	N/A	N/A	6.00	26.28	Rule 62-212.410, F.A.C.
103	AFI No. 2	F	Gas/Oil	N/A	0.04	7.70 lb/batch	1.63	Rule 62-212.410, F.A.C.
103	AFI No. 2	NO _x	Gas/Oil	N/A	N/A	6.50	28.42	Rule 62-212.410, F.A.C.
103	AFI No. 2	20% VE	Gas/Oil	N/A	N/A	N/A	N/A	Rule 62-204.800, F.A.C.
079	DE Silo	5% VE	N/A	0.02	N/A	0.09	0.39	Rule 62-297.620(4), F.A.C.
080	Limestone Silo	5% VE	N/A	0.02	N/A	0.12	0.52	Rule 62-297.620(4), F.A.C.
081	Loadout System	5% VE	N/A	0.02	N/A	2.22	3.89	Rule 62-297.620(4), F.A.C.

ALLOWABLE OPERATING RATES

		AFI No. 1	AFI No. 2	DE Silo	LIMESTONE Silo	LOADOUT System
Hours of operation	hr	8760	8760	8760	8760	3500
Production rate	TPD	580	580	N/A	N/A	N/A

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

CARGILL FERTILIZER, INC.
ANIMAL FEED INGREDIENT PLANT
PSD-FL-234 and 0570008-013-AC
Hillsborough County

The applicant, Cargill Fertilizer, Inc. (Cargill), requested to revise the allowable emissions limits for particulate matter (PM/PM₁₀) at their existing Animal Feed Ingredient (AFI) Plant No. 1. Cargill also requested to construct a second AFI plant, designated as AFI Plant No. 2, which will increase the production rate of the AFI plant from 150,000 tons/year (TPY) to 300,000 TPY. The original AFI project constituted a minor modification to an existing major source. Since an alteration in federally enforceable permit restrictions is being requested, air permitting source applicability is determined as though construction had not yet commenced on the AFI plant [Rule 62-212.500(2)(d)5]. The proposed modification at Cargill will result in significant net emissions increases for particulate matter/particulate matter less than or equal to 10 micrometers (PM/PM₁₀), fluorides (F) and nitrogen oxides (NO_x), and prevention of significant deterioration (PSD) new source review will be required for these pollutants

This facility has a maximum combined production rate of 1160 ton per day (AFI No. 1 & 2) of animal feed product (AFP). This facility consists of defluorinated acid batch tanks (3), pug mill, dryer and cooler/classifier along with diatomaceous earth and limestone unloading systems, and the AFI loadout system. A process description is included in the Technical Evaluation and Preliminary Determination.

Following is the BACT determination proposed by the applicant:

BACT DETERMINATION REQUESTED BY THE APPLICANT:

POLLUTANT	EMISSION LIMIT
PM/PM ₁₀ (Material Handling Sources)	0.02 gr/dscf by baghouses
PM/PM ₁₀ (Process Equipment)	6.0 lb/hr by wet scrubber
F	0.04 lb/ton P ₂ O ₅ input
NO _x	Low nitrogen containing fuels Combustion Control

The animal feed plant uses a combination of baghouses, cyclones and wet scrubbers to control PM/PM₁₀ emissions. Baghouses are used to control all raw material (diatomaceous earth and limestone) handling operations, as well as product loadout operations. PM/PM₁₀ emissions from the

APPENDIX BD

BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

- o Combustion Products (e.g., SO₂, NO_x). These are controlled generally by gaseous control devices and fuel quality.
- o Products of Incomplete Combustion (e.g., CO, VOC). Control is largely achieved by proper combustion techniques.
- o Emissions from materials handling, conveyance, and storage (primarily PM). These are controlled generally by fabric filters and reasonable precautions.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO₂, H₂SO₄, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

Particulate Matter (PM, PM₁₀)

Particulate Matter is generated by the material handling sources and process equipment from this facility. Baghouses are used to control all raw material (diatomaceous earth and limestone) handling operations, as well as product loadout operations. Baghouse technology represents the state of the art in control of PM/PM₁₀ emissions for material handling sources. Baghouses are highly efficient and allow collected PM to be recovered as product. Baghouse technology is proposed as BACT for the material handling sources within the animal feed plants. *The proposed BACT emission level for the material handling sources is 0.02 gr/dscf for each baghouse.*

PM emissions from the animal feed dryers and cooler/classifier systems are controlled by cyclones followed by a wet scrubber. This combination provides for a high overall PM collection efficiency. The cyclones allow for recovery of product in a dry form, with subsequent recycling back

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

Nitrogen Oxides (NO_x)

In the animal feed plant, NO_x is created during the combustion of natural gas, the primary fuel, or No. 2 fuel oil, the backup fuel. The fuel combustion takes place in the rotary dryer, which dries the wet granulated animal feed product. The use of natural gas, which contains no fuel bound nitrogen, and No. 2 fuel oil, which contains low fuel bound nitrogen levels, result in low NO_x emissions relative to burning of other types of fossil fuel, such as No. 6 fuel oil or coal. Good combustion practices are implemented to achieve the highest combustion efficiency. While this reduces fuel consumption and lowers carbon monoxide and volatile organic compounds emissions, higher NO_x emissions can result. However, the level of NO_x emissions (57 TPY) are relatively low, and do not warrant further reduction.

Phosphate fertilizer plants typically have several rotary dryers located throughout the plant, such as those associated with DAP, MAP and GTSP production. Although several add-on NO_x control technologies are potentially available for application to rotary dryers, these are not known to have been applied in the phosphate industry. These technologies include flue gas recirculation, selective non-catalytic reduction (SNCR by ammonia or urea injection), and selective catalytic reduction (SCR).

Based on the low NO_x emissions from the expanded animal feed plant, the use of low nitrogen containing fuels (natural gas and No. 2 fuel oil) and good combustion practices are proposed as BACT for NO_x emissions.

BACT Determination by DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, a top-down BACT approach for PM/PM₁₀, F and NO_x was employed.

For PM/PM₁₀ emissions, the Department accepts the applicant's proposed standard of 0.02 gr/dscf for material handling sources utilizing baghouses, and 6.0 lb/hr for process equipment utilizing venturi scrubber.

For F emissions, the Department is accepting the revised design as proposed by the applicant in a letter dated March 13, 1997. Based on the letter, the total fluoride emissions are calculated as 5.72 lb per batch for the 17-hour batch and 7.70 lb per batch for a 30-hour batch. Approximately 91 percent of the fluoride evolution from the batch tank occurs during the first 5 hours after the diatomaceous earth is added to the batch tank, with the remaining 9 percent being evolved over the remaining hours of the batch. Using this basis and 7.70 lb per batch or 15.40 lb/2 batches, proper operation of the scrubber would be demonstrated if fluoride emissions during the stack test do not exceed 1.4 lb/hr/batch or 2.8 lb/hr/2 batches (average of first five hours after adding DE to a batch tank). In order to demonstrate compliance with F emissions, the Department is proposing a 9 test


APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

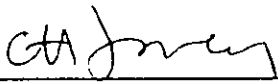
Syed Arif, Review Engineer
A. A. Linero, Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

Approved By:



C. H. Fancy, P.E., Chief
Bureau of Air Regulation



HLR Howard L. Rhodes, Director
Division of Air Resources Management

6/12/97

Date:

6/12/97

Date:

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither 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. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use 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.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

- G.8 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 provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including 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.