

IMC FERTILIZER GROUP • MINERALS DIVISION  
P.O. Box 867 • Bartow, Florida 33830  
Telephone: (813) 533-1121

Sub code 14

Receipt 76189 for \$500.00  
AC 29-141149-Dryer 1  
2078  
AC 29-141150-Dryer 2

DER

OCT 26 1987

BAQM



INTERNATIONAL MINERALS & CHEMICAL CORPORATION

October 23, 1987

Mr. William A. Thomas, P.E.  
Environmental Administrator  
Bureau of Air Quality Management  
Department of Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Dear Mr. Thomas:

RE: Lonesome Dryer PSD Permit Application Amendment

As you instructed, we are submitting a permit application, copies and fee in order to initiate the review process of the original PSD construction permit application for the fuel conversion of the two Lonesome Dryers. The aim of this review is to either correct, clarify, or simplify various aspects of the conditions of the original construction permits and the current operating permits. As we understand the situation, these issues must be addressed in the original construction permit application prior to addressing the operating permit conditions.

Much of the related information is referenced to either the original documents or recent submittals since IMC operation of these units. If you need any of this information, please contact me. We will appreciate any advice or assistance that you can give us in this review.

Thank you for your attention in this matter.

Very truly yours,

*W C Cross*

W. C. Cross  
Vice President & General Manager  
Florida Minerals Operations

DER

OCT 27 1987

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Attachments

001031



I.M.C.  
P.O. Box 867  
Bartow, FL 33836



**IMC FERTILIZER, INC.**  
INTERNATIONAL MINERALS & CHEMICAL CORPORATION

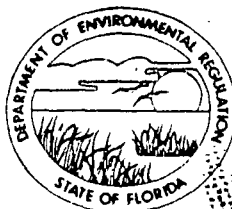
P.O. BOX 867 • BARTOW, FLORIDA 33830  
C. D. TURLEY

TO:

MR. WILLIAM A. THOMAS, P.E.  
ENVIRON. ADMIN. - BUR. OF AIR QUAL. MGMT.  
DEPT. OF ENVIRON. REG.  
TWIN TOWERS OFFICE BLDG.  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FL 32301

## DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32399-2400



DER

OCT 27 1987

BAOM

BOB MARTINEZ  
GOVERNORDALE TWACHTMANN  
SECRETARY

## APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: PSD  New<sup>1</sup>  Existing<sup>1</sup>

APPLICATION TYPE:  Construction  Operation  Modification  Correction

COMPANY NAME: IMC Fertilizer, Inc. COUNTY: Millsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lonesome No. 1 and No. 2 Dryer Scrubbers

SOURCE LOCATION: Street State Road 37 South City Bradley Junction

UTM: East (17) 389.6 km North 3067.9 km

Latitude      °      '      "N Longitude      °      '      "W

APPLICANT NAME AND TITLE: W. C. Cross - Vice Pres. & Gen. Mgr. - Fla. Mins. Opns.

APPLICANT ADDRESS: P. O. Box 867 - Bartow, FL 33830

## SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

## A. APPLICANT

I am the undersigned owner or authorized representative\* of IMC Fertilizer, Inc.

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

\*Attach letter of authorization

Signed: W.C. Cross

Vice Pres. & Gen. Mgr.  
W. C. Cross - Fla. Mins. Opns.  
Name and Title (Please Type)

Date: 10/23/87 Telephone No. (813) 533-1121

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

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

<sup>1</sup> See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed Charles David Turley

Charles David Turley  
Name (Please Type)

IMC Fertilizer, Inc.  
Company Name (Please Type)

P. O. Box 867 - Bartow, FL 33830  
Mailing Address (Please Type)

Florida Registration No. 23344 Date: 10/23/87 Telephone No. (813) 533-1121



**SECTION II: GENERAL PROJECT INFORMATION**

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

This application will correct and amend the original fuel conversion PSD applications for the Lonesome Dryers. It corrects originally estimated existing emissions. It changes the maximum operating condition specification consistent with representative operation. See Attachment A.

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

Start of Construction N/A Completion of Construction \_\_\_\_\_

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

N/A

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

No. 1 AC29-49692 and A029-111119 Issued: 1/27/87 Expires: 1/22/92

No. 2 AC29-49694 and A029-111120 Issued: 7/31/87 Expires: 7/31/92

Both: PSD-FL-088 Issued: 7/01/82

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 41.7 ;  
if power plant, hrs/yr \_\_\_\_\_ ; if seasonal, describe: \_\_\_\_\_

The original specification of 7000 hrs/yr for each dryer is not changed.

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

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

- H. Do "Reasonably Available Control Technology" (RACT) requirements apply  
to this source? No
- a. If yes, for what pollutants? \_\_\_\_\_
- b. If yes, in addition to the information required in this form,  
any information requested in Rule 17-2.650 must be submitted.

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

\*Refer to "Final Determination," 5/25/82.

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Phosphate Rock	Dust	Varies	Unknown*	1-1, See original appl.
Phosphate Rock	Dust	Varies	Unknown*	2-1, See original appl.

\*See "PSD Permit Application Review." 9/30/87.

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

1. Total Process Input Rate (~~lbs/hr~~): @ 10-14% moisture

2. Product Weight (~~lbs/hr~~): @ 2-3% moisture

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

Name of Contaminant	Emission <sup>1</sup>		Allowed Emission <sup>2</sup> Rate per Rule 17-2	Allowable <sup>3</sup> Emission lbs/hr	Potential <sup>4</sup> Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Particulate	*						
SO <sub>2</sub>							
NO <sub>x</sub>							
CO							
VOC							

<sup>1</sup>See Section V, Item 2. \*See amended Tables I and II in "PSD Permit Application Review," 9/30/87.

<sup>2</sup>Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard.

<sup>4</sup>Emission, if source operated without control (See Section V, Item 3).

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Entoleter Centrifield Model 1200/1700	Particulate	95.6%	Unknown	Test*
Entoleter Centrifield Model 1200/1700	Particulate	99.0%	Unknown	Test*

\*As specified in original permit application.

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 6 Fuel Oil			*
COM			
Coal			

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

\*See "PSD Permit Application Review," 9/30/87.

Fuel Analysis:

\*See recent test reports, 4/03/87 and 6/09 and 6/10/87.

Percent Sulfur: \_\_\_\_\_ Percent Ash: \_\_\_\_\_

Density: \_\_\_\_\_ lbs/gal Typical Percent Nitrogen: \_\_\_\_\_

Heat Capacity: \_\_\_\_\_ BTU/lb \_\_\_\_\_ BTU/gal

Other Fuel Contaminants (which may cause air pollution): \_\_\_\_\_

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

Annual Average     N/A     Maximum                     

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

Collected material discharged to a settling area.

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

Both stacks: Stack Height: 125 ft. Stack Diameter: 8 ft.

Gas Flow Rate: 130-155,000 ACFM 84-98,000 DSCFM Gas Exit Temperature: 150-160 °F.

Water Vapor Content: 25-32 % Velocity: 50-60 FPS

\*See "Operational Analysis, Supplement to Emission Tests," 7/15/87.

**SECTION IV: INCINERATOR INFORMATION**

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

Description of Waste \_\_\_\_\_

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

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

Manufacturer \_\_\_\_\_

Date Constructed \_\_\_\_\_ Model No. \_\_\_\_\_

	Volume (ft) <sup>3</sup>	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: \_\_\_\_\_ ft. Stack Diameter: \_\_\_\_\_ Stack Temp. \_\_\_\_\_

Gas Flow Rate: \_\_\_\_\_ ACFM \_\_\_\_\_ DSCFM\* Velocity: \_\_\_\_\_ FPS

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

Type of pollution control device:  Cyclone  Wet Scrubber  Afterburner  
 Other (specify) \_\_\_\_\_



Brief description of operating characteristics of control devices: \_\_\_\_\_

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

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

#### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

**SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY**

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes  No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

Yes  No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

- |                           |                          |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:*           | 4. Capital Costs:        |

\*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

- a. Height: ft.
- b. Diameter: ft.
- c. Flow Rate: ACFM
- d. Temperature: °F.
- e. Velocity: FPS

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

1.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:<sup>1</sup>
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:<sup>2</sup>
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:<sup>1</sup>
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:<sup>2</sup>
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:

<sup>1</sup>Explain method of determining efficiency.

<sup>2</sup>Energy to be reported in units of electrical power - KWH design rate.

- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:<sup>1</sup>
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:<sup>2</sup>
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:<sup>1</sup>
- d. Capital Costs:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:<sup>2</sup>
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

- 1. Control Device:
- 2. Efficiency:<sup>1</sup>
- 3. Capital Cost:
- 4. Useful Life:
- 5. Operating Cost:
- 6. Energy:<sup>2</sup>
- 7. Maintenance Cost:
- 8. Manufacturer:
- 9. Other locations where employed on similar processes:
- a. (1) Company:
- (2) Mailing Address:
- (3) City:
- (4) State:

<sup>1</sup>Explain method of determining efficiency.

<sup>2</sup>Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant	Rate or Concentration
_____	_____
_____	_____
_____	_____

(8) Process Rate:<sup>1</sup>

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant	Rate or Concentration
_____	_____
_____	_____
_____	_____

(8) Process Rate:<sup>1</sup>

10. Reason for selection and description of systems:

<sup>1</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

### SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

#### A. Company Monitored Data

1. \_\_\_\_\_ no. sites \_\_\_\_\_ TSP \_\_\_\_\_ ( ) SO<sub>2</sub>\* \_\_\_\_\_ Wind spd/dir

Period of Monitoring \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
month day year month day year

Other data recorded \_\_\_\_\_

Attach all data or statistical summaries to this application.

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

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No
- b. Was instrumentation calibrated in accordance with Department procedures?  
[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

- 1. \_\_\_\_\_ Year(s) of data from \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
month day year month day year
- 2. Surface data obtained from (location) \_\_\_\_\_
- 3. Upper air (mixing height) data obtained from (location) \_\_\_\_\_
- 4. Stability wind rose (STAR) data obtained from (location) \_\_\_\_\_

C. Computer Models Used

- 1. \_\_\_\_\_ Modified? If yes, attach description.
- 2. \_\_\_\_\_ Modified? If yes, attach description.
- 3. \_\_\_\_\_ Modified? If yes, attach description.
- 4. \_\_\_\_\_ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO <sup>2</sup>	_____ grams/sec

E. Emission Data Used in Modeling

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

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

- G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.
- H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

## ATTACHMENT A

This application addresses the following items for the two Lonesome phosphate rock dryers:

1. Emission limits:

Format: eliminates double specification of same limit.  
NOx: corrects original estimate of existing emissions.  
CO: corrects omission of fuel specification.  
VOC: corrects original estimate of existing emissions.  
proposes auxiliary limitation specification.

2. Fuel Sulfur Content correction of condition specification of the BACT Determination limit.
3. Maximum production rate related to heat input rather than tonnage.
4. Continuous analyzer test methods added as allowable test methods. VOC test method adaptation proposed.
5. Revision of test operating condition related to heat input rather than tonnage.
6. Correction of scrubber water flow and pressure drop specification.
7. Revision of daily record requirements.

The primary documents related to the review of the dryer permit conditions are the following:

1. Application for Federal PSD Approval, Volume I, Nov. 1981.  
This is original Brewster application for the fuel conversion project.
2. Supplemental Information, Application of Federal PSD Approval PSD-FL-088, Jan. 1982.  
This is a subsequent submittal by Brewster to the original application.
3. Technical Evaluation and Preliminary Determination, April 14, 1982.
4. Final Determination, May 25, 1982.
5. Operation Analysis, Supplement to Emission Tests, July 15, 1987.  
IMC document of additional analyses done during compliance testing.
6. PSD Permit Application Review, September 30, 1987.  
IMC basis for requesting the revision of the PSD application changes.

# State of Florida



## Department of State

I certify from the records of this office that IMC FERTILIZER, INC. is a corporation organized under the laws of Delaware, authorized to transact business in the State of Florida, qualified on July 1, 1987.

The document number of this corporation is P15049.

I further certify that said corporation has paid all fees due this office through December 31, 1987, and its status is active.

Given under my hand and the  
Great Seal of the State of Florida,  
at Tallahassee, the Capital, this the  
10th day of September, 1987.



*Jim Smith*

Jim Smith  
Secretary of State