



KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 124-94-04

March 14, 1995

PSD 114
C.D 7.1

public notice

Mr. A. A. Linero
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

request withdrawn

Subject: Polk County-AP
IMC-Agrico Company
New Wales Plant
Permit Amendment Requests

Dear Mr. Linero:

During recent discussions with FDEP staff, the subject of air permit conditions had come up. Based on those discussions, it is our understanding that all emission limitations in current permits must either be based on a standard, or reflect emission limits requested by a permittee to avoid a specific rule applicability (e.g. PSD, etc.). Any emission limit which is not supported by this criteria can be removed from the permit.

It is anticipated that the removal of such emission limitations from current operation permits and source construction permits will facilitate Title V permit application compilation by IMC-Agrico as well as the compilation of Title V permit conditions by FDEP. Thus, only valid applicable requirements will remain in the source permits.

IMC-Agrico has several air operation (and the preceding construction) permits which contain emission limitations outside of the above FDEP criteria. Often, emission estimates/fuel specifications stated in the application for information purposes were then imposed as permit limitations. As a result, we are requesting FDEP to amend the permits tabulated below. A discussion on these permits is provided in the attachments. The attachment number corresponds to the item number in the table below.

In accordance with FDEP protocol, the request for permit amendment is being submitted to the office where the permit was issued. For permits issued by FDEP's Tampa office, a request for amendment is simultaneously being submitted to that office. The amendment request for construction permits issued by the Bureau of Air Regulation (BAR) is being sent to your attention. The permit listing below, however, includes all the permits to be amended so that both the FDEP District and the BAR offices are aware of the scope of the permit amendments.

Mr. A. A. Linero
Florida Department of
Environmental Protection

March 14, 1995
Page 2

It is requested that the following permits be amended:

Item	Unit/Operation	Operation Permit No.	Construction Permit No.	Other Permit No.
	AFI Plant	A053-223229 (D)	AC53-5043 (D)	
	DAP 1	A053-185648 (D)	AC53-33850 (D)	
1.	DAP 2 East Train	A053-215386 (DT)	AC53-118671 (T)	AC53-23546(T)
1.	DAP 2 West Train	A053-215387 (DT)	AC53-118671 (T)	AC53-23546(T)
	GTSP Plant	A053-206082 (D)	AC53-211264 (D)	AC53-47664(D)
	Multifos Plant	A053-206083 (D)	AC53-40084 (D)	
2.	SAP 1	A053-204057 (DT)	AC53-192221 (T)	
2.	SAP 2	A053-204058 (DT)	AC53-192221 (T)	
2.	SAP 3	A053-204059 (DT)	AC53-192221 (T)	
2.	SAP 4	A053-204060 (DT)	AC53-192221 (T)	
2.	SAP 5	A053-204061 (DT)	AC53-192221 (T)	
	Standby Boiler	A053-218795 (D)	AC53-2030 (D)	A053-137315(D)

NOTES:

- (D) Operation permit amendment expected from FDEP District office.
- (DT) Permit amendment expected from FDEP District office after the construction permit amendment is issued by BAR in Tallahassee.
- (T) Construction permit amendment expected from BAR in Tallahassee.

A check in the amount of \$500 (permit amendments processing fee) is enclosed.

Thank you for your kind assistance. If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOUGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JEK:par

c: C.D. Turley, IMC-Agrico
G. Kissel, FDEP Tampa

J. Reynolds
J. ...
J. ...
J. ...
J. ...



ATTACHMENT 1

Unit/Operation : DAP 2 Plant (East & West Trains)

Permit No. : AC53-118671

Amendment Request :

The above referenced permit includes emission limitations for sulfur dioxide and nitrogen oxides (NOx), and, a sulfur content limit for No. 6 fuel oil of 2.5%. This sulfur content reflects a typical analysis of No. 6 fuel oil available on the market. To our knowledge, the sulfur content limit in the permit is not based on a regulatory standard, nor does it reflect a limitation requested by IMC-Agrico to avoid a specific rule applicability (e.g. PSD, etc.). Past permit amendment (attached) indicates a fuel quantity (not a fuel sulfur content) restriction submitted by the permittee to avoid an emissions increase.

Both the sulfur dioxide and nitrogen oxides emission limits are based on past BACT limitations. However, the BACT limits merely represent the expected emissions from the source without the application of add-on controls or fuel sulfur content restriction beyond market specifications. As there are no emission standards for sulfur dioxide and nitrogen oxides from a DAP plant, it is requested that the respective emission limitations and the corresponding testing and recordkeeping requirements be deleted from the permit.

It is requested that the construction permit be amended as follows:

Specific Condition No. 2:

Delete the sulfur dioxide and nitrogen oxides emission limitations.

Specific Condition No. 4:

Delete the first sentence which states the fuel oil sulfur content limitation.

Specific Condition No. 9:

Delete the reference to the fuel oil sulfur content requirement.

Specific Condition No. 11:

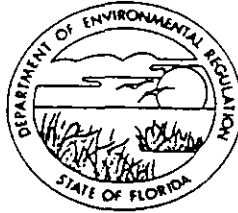
Delete the requirement for sulfur dioxide and nitrogen oxides testing.



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DAP II
Inc.

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



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

June 29, 1987

RECEIVED BY
JOHN A. BRAFFORD

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John A. Brafford
Vice President and General Manager
International Minerals & Chemical Corporation
New Wales Operations
Post Office Box 1035
Mulberry, Florida 33860

JUL 9 1987
COPIES DKL, ALG
ROUTE TO JMB (ORG)
VCC: L. Sellers 7/31/87
d.

Dear Mr. Brafford:

Re: Amendment of Construction Permit No. AC 53-118671

The Department has considered your June 4, 1987, request for amendment of construction permit AC 53-118671 for the IMCC/New Wales Operations's No. 2 DAP plant and agrees to amend the permitted capacity as proposed since there will be no increase in permitted emissions. However, the Department finds it necessary to maintain provisional restrictions on fuel consumption and scrubber pressure drop. The wording for these specific conditions has been modified to show that the restrictions will apply unless compliance can be demonstrated under operating conditions less restrictive than those specified.

Amendments are as follows:

Page 1 - Second Paragraph

Present:

For the modification of two 125 TPH trains (140 TPH total allowed) diammonium phosphate plant with a common cooler unit to be located at the permittee's existing phosphate fertilizer complex in the west part of Polk County near the intersection of State Highway 640 and County Line Road. The UTM coordinates of the proposed plant are zone 17, 396.6 km E and 3078.9 km N.

Amended:

For the modification of two 140 TPH trains (280 TPH total allowed) diammonium phosphate plant with a common cooler unit to be located at the permittee's existing phosphate fertilizer complex in the west part of Polk County near the intersection of State Highway 640 and County Line Road. The UTM coordinates of the proposed plant are zone 17, 396.6 km E and 3078.9 km N.

Mr. John A. Brafford
Page Two
June 29, 1987

Specific Condition No. 1

Present:

Maximum production for both plants shall not exceed a total of 140 TPH DAP and each plant will not operate over 7,920 hours per year. The cooler will be allowed to operate 8,760 hours per year.

Amended:

Maximum production for each plant shall not exceed 140 TPH DAP or 280 TPH DAP total for both plants combined. Each plant shall not operate over 7,920 hours per year. The cooler will be allowed to operate 8,760 hours per year.

✓ Specific Condition No. 2

Present:

The maximum allowable discharge from the plants will be:

<u>Pollutant</u>	<u>Max. Emission Rate for each Plant</u>	<u>Total Max. Emission for both Plants</u>
Particulate	0.5 lbs/ton P ₂ O ₅	28.2 lbs/hr and 112 TPY
Visible Emissions	20% opacity	20% opacity
Fluoride	0.060 lbs/ton P ₂ O ₅	4.2 lbs/hr & 16.6 TPY
Sulfur Dioxide	0.7 lbs/ton P ₂ O ₅	44 lbs/hr & 174 TPY
Nitrogen Oxides	0.60 lbs/10 ⁶ Btu	25.2 lbs/hr & 110.4 TPY

The max. allowable discharge of particulate from the bag filter serving the cooler will be 0.01 grain/dscf and 4.5 lbs/hr which is 17.8 TPY.

Amended:

The maximum allowable discharge from the plants will be:

<u>Pollutant</u>	<u>Max. Emission Rate for each Plant</u>	<u>Total Max. Emission for each Plant</u>
Particulate	0.5 lbs/ton P ₂ O ₅	14.1 lbs/hr and 56 TPY
Visible Emissions	20% opacity	20% opacity
Fluoride	0.060 lbs/ton P ₂ O ₅	2.1 lbs/hr & 8.3 TPY
Sulfur Dioxide	0.7 lbs/ton P ₂ O ₅	22 lbs/hr & 87 TPY
Nitrogen Oxides	0.60 lbs/10 ⁶ Btu	12.6 lbs/hr & 55.2 TPY

The max. allowable discharge of particulate from the bag filter serving the cooler will be 0.01 grain/dscf and 4.5 lbs/hr which is 17.8 TPY.

Mr. John A. Brafford
Page Three
June 29, 1987

✓ Specific Condition No. 4

Present:

No. 6 fuel oil for the dryer shall not contain more than 2.5% sulfur. Total heat input to both trains shall not exceed 42×10^6 Btu/hr which is approximately 280 GPH of No. 6 fuel oil.

Amended:

No. 6 fuel oil for the dryer shall not contain more than 2.5% sulfur. The maximum heat input to each train shall not exceed 36×10^6 Btu/hr, which is approximately 240 GPH of No. 6 fuel oil, unless emissions compliance can be demonstrated under higher conditions of higher heat input.

Specific Condition No. 6

Present:

The permittee will measure and record the pressure drop across each scrubber system. Pressure drop across the venturi scrubber must be a least 12" H₂O during plant operations. These records will be maintained for 2 years and available for inspection by regulatory agency personnel on request.

Amended:

The permittee will measure and record the pressure drop across each scrubber system. Pressure drop across each of the venturi scrubbers (the reactor/granulator and dryer scrubbers) must be at least 12" H₂O during plant operations, unless emissions compliance can be demonstrated under permitted operating conditions at a lower pressure drop.

✓ Specific Condition No. 9

Present:

Each plant (train) shall be sampled, while operating near 125 TPH DAP production on oil with approximately 2.5% sulfur content, for particulate matter, sulfur dioxide, nitrogen oxides, visible emissions, and fluorides by the reference methods described in 40 CFR 60, Appendix A, or other methods as approved by the Department. Compliance tests shall be conducted prior to the expiration date of this construction permit or within 45 days after placing a plant in operation. P₂O₅ input, pH of the scrubber solution, and pressure drop across the scrubbers will be as normally operated and reported, along with the data and results, to the Department. The Department (SW District) shall be notified 15 days prior to any compliance test.

Mr. John A. Brafford
Page Four
June 29, 1987

Amended:

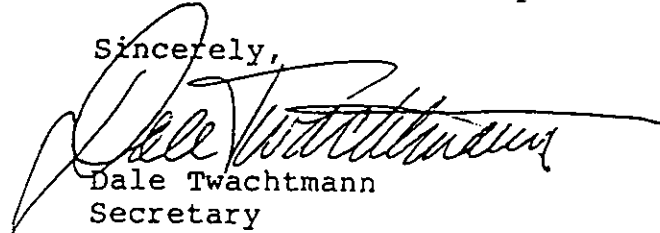
Each plant (train) shall be sampled, while operating near 140 TPH DAP production on oil with approximately 2.5% sulfur content, for particulate matter, sulfur dioxide, nitrogen oxides, visible emissions, and fluorides by the reference methods described in 40 CFR 60, Appendix A, or other methods as approved by the Department. Compliance tests shall be conducted prior to the expiration date of this construction permit or within 45 days after placing a plant in operation. P₂O₅ input, pH of the scrubber solution, and pressure drop across the scrubbers will be as normally operated and reported, along with the data and results, to the Department. The Department (SW District) shall be notified 15 days prior to any compliance test.

Attachment to be Incorporated

13. Dr. John Koogler's letter dated June 4, 1987.

A copy of this letter must be attached to the referenced construction permit and shall become a part of that permit.

Sincerely,



Dale Twachtmann
Secretary

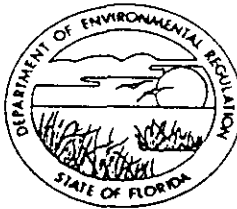
DT/ks

cc: J. Koogler
B. Thomas-SW District
J. Baretincic, IMCC/New Wales Operation

attachment

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

PERMITTEE:
International Minerals &
Chemical Corporation
New Wales Operations
Post Office Box 1035
Mulberry, Florida 33860

Permit Number: AC 53-118671
Expiration Date: December 31, 1987
County: Polk
Latitude/Longitude: 27° 49' 56.4"N
82° 02' 59.9"W
Project: No. 2 DAP Plant Modification

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

For the modification of two 125 TPH trains (140 TPH total allowed) diammonium phosphate plant with a common cooler unit to be located at the permittee's existing phosphate fertilizer complex in the west part of Polk County near the intersection of State Highway 640 and County Line Road. The UTM coordinates of the proposed plant are zone 17, 396.6 km E and 3078.9 km N.

Construction shall be in accordance with the attached permit application, plans, documents and drawings except as noted in the Specific Conditions.

Attachments:

1. Application for the No. 2 DAP plant signed by Mr. Brafford on March 31, 1986.
2. October 18, 1985, letter by Dr. Koogler.
3. July 3, 1985, letter by Dr. Koogler.
4. August 19, 1985, letter by Dr. Koogler.
5. April 2, 1986, letter by Dr. Koogler.
6. May 9, 1986, letter by Dr. Koogler.
7. November 10, 1986, letter by Dr. Koogler.
8. December 18, 1986, letter by Dr. Koogler.
9. Waiver of 90 Day Time Limit dated February 26, 1987.
10. March 26, 1987, letter by Dr. Koogler.
11. April 6, 1987, letter by Mr. Bruce P. Miller.
12. April 7, 1987, letter by Mr. James Q. Duane.

PERMITTEE:
International Minerals &
Chemical Corporation

Permit Number: AC 53-118671
Expiration Date: December 31, 1987

SPECIFIC CONDITIONS:

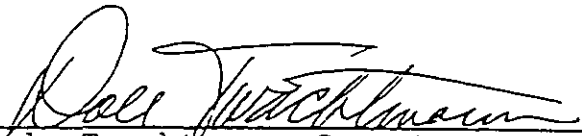
A, or other methods as approved by the department. Compliance tests shall be conducted prior to the expiration date of this construction permit or within 45 days after placing a plant in operation. P₂O₅ input, pH of the scrubber solution, and pressure drop across the scrubbers will be as normally operated and reported, along with the data and results, to the department. The department (SW District) shall be notified 15 days prior to any compliance test.

10. An application for permit to operate the No. 2 DAP plant shall be submitted to the department (SW District) within 45 days of the compliance tests. In the event the application for permit to operate does not include test data on both trains of the No. 2 DAP plant, the permittee shall request the District amend any permit to operate that may be issued for this plant within 45 days of placing the other train in operation.

✓ 11. Any permit to operate issued for the No. 2 DAP plant shall require annual tests for particulate matter and fluoride, and on renewal of the permit to operate (every 5 years), tests for sulfur dioxide and nitrogen oxides.

Issued this 21 day of April 1987

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION


Dale Twachtman, Secretary

___ pages attached

Best Available Control Technology (BACT) Determination
International Minerals & Chemical Corporation
Polk County

The applicant has installed a dual train diammonium phosphate (DAP) plant with each train capable of producing 125 tons per hour. This (No. 2) DAP plant utilizes a dryer that was designed to be fired with either No. 6 fuel oil or natural gas.

The plant was permitted in 1980 under PSD construction permit PSD-FL-034 for a nitrogen oxides emission rate of 4.3 pounds per hour (0.21 pounds per million Btu heat input) for each of the two 70 tons per hour DAP trains. By letter dated February 27, 1985, EPA modified the nitrogen oxide emission limiting standard to allow a total plant nitrogen oxides emission rate of 8.6 pounds per hour or 0.21 pounds per million Btu heat input.

On May 29, 1985, nitrogen oxides emission measurements were made on the No. 2 DAP plant dryer to demonstrate compliance with the permitted emission limiting standard. The testing, which was performed while operating the dryer on No. 6 fuel oil, resulted in an average nitrogen oxides emission rate of 0.71 pounds per million Btu heat input. Subsequent nitrogen oxides emissions measurements on the No. 2 DAP plant showed nitrogen oxides emissions ranging from 0.80 to 0.88 pounds per million Btu heat input.

In accordance with this finding, the applicant completed a review of the plant operating practices and the dryer burner design, and concluded that there were no practical modifications that could be made to reduce nitrogen oxides emissions to the permitted emission rate of 0.21 pounds per million Btu heat input.

For permitting purposes, the applicant has proposed that the nitrogen oxides limit for the No. 2 DAP plant be set at 1.0 pound of nitrogen oxides (expressed as nitrogen dioxide) per million Btu heat input. At a maximum plant operation rate of 140 tons of DAP per hour and a design heat input rate of 0.3 million Btu per ton of DAP, the proposed limit of 1.0 pound of nitrogen oxides per million Btu heat input will result in a nitrogen oxides emission increase of 151.8 tons per year. The annual increase exceeds the 40 tons per year significant emission increase defined in 17-2.500(2)(e)2 FAC; thus requiring a PSD review and hence a BACT determination for the requested action.

Review Group Members:

This determination was based upon comments received from the applicant and the Stationary Source Control Section.

\$60.00 and 28.4 pounds/hour respectively. By comparison, the cost of using natural gas to dry 125 tons of product would compute to \$56.34 and an emission rate of 4.7 pounds/hour when using the data submitted by the applicant. This calculation clearly shows that the applicant should be operating on natural gas both from the standpoint of reducing operating costs and emissions.

In addition to the data submitted, which served as the basis for the computations above, the applicant has submitted data which indicates that with proper operation the DAP dryer can be fired with No. 6 fuel oil at a lower throughput per ton of product resulting in a lower emission rate. During discussions with the bureau, the applicant has indicated that the dryer can be operated with a maximum emissions rate not to exceed 0.60 pounds per million Btu when operating at maximum production for one train (125 tons per hour). The data submitted indicates that the cost to operate at this level would be \$44.57 with a corresponding emission rate of 12.7 pounds/hour. At this level of operation the incremental costs of switching to natural gas would be \$1.47 per pound (\$2,940.00/ton) of nitrogen oxides controlled which would indeed be unreasonable in comparison to the guideline of \$1,000.00/ton of nitrogen oxides controlled for establishing NSPS. It should be noted that the cost of switching to natural gas only results in a change of operating costs, capital investment is not required to modify the facility to use natural gas as fuel. Based on this evaluation, the applicant's proposal of accepting a limitation of 0.60 pounds, per million Btu is justified.

Environmental Impacts Analysis

Dispersion modeling completed by the applicant indicates that the nitrogen oxides emissions at the originally permitted rate (0.21 pounds/million Btu) result in an ambient concentration level of 0.16 ug/m³. The proposal to increase the emission rate to 1.0 pound per million Btu would increase the ambient concentration level by approximately 0.5 ug/m³ for a total of 0.62 ug/m³. This increase in the nitrogen oxides impact as originally proposed is insignificant in comparison to the maximum existing NO₂ level in urban Hillsborough County of 54 ug/m³ and the Ambient Air Quality Standard (AAQS) of 100 ug/m³. Based on the impacts analysis, the proposed emission rate and certainly the counter proposal of 0.6 pounds per million Btu, which would reduce the ambient impacts by a factor of 2, would not constitute a problem from an ambient concentration level standpoint.

Conclusion

In view of the fiscal condition of the phosphate fertilizer industry and the other information presented in the preceding analysis, the bureau has determined that nitrogen oxides emission

limitation of 0.60 pounds/million Btu is justified in all respects as being BACT for this facility.

From an economic standpoint, the firing of No. 6 fuel oil at the 0.60 lb/MMBtu level does not justify switching to natural gas. In addition, the cost of having the applicant perform modifications to the burner/combustion chamber is not justified during a period when the market price of the applicant's product (DAP) is below the cost of production.

In terms of environmental impacts, it has been shown that the emissions limit, as proposed and as agreed to as being BACT, will be minimal.

It is important to note that the level of emissions determined to be BACT in this analysis is subject to change if deemed necessary in accordance with modifications that may be proposed in the future. At that time, the BACT determination would again be completed on a case-by-case basis taking into account the elements as presented herein.

Details of the Analysis May be Obtained by Contacting:

Barry Andrews, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:



C. H. Fancy, P.E.
Deputy Bureau Chief, BAQM

4/16/87

Date

Approved by:



Dale Twachtmann, Secretary

21 April 87

Date

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee	
To: _____	Loctn.: _____
To: _____	Loctn.: _____
To: _____	Loctn.: _____
From: _____	Date: _____

TO: Jake Varn

FROM: Steve Smallwood *MK for S.S.*

DATE: March 28, 1980

SUBJECT: Best Available Control Technology (BACT) Determination
Diammonium Phosphate Plant, New Wales Chemicals, Inc.
Polk County

RECEIVED
MAR 31 1980

SO₂ BACT

Office of the Secretary

Facility: A 140 ton per hour diammonium phosphate (DAP) plant. The plant will produce DAP fertilizer from anhydrous ammonia, and phosphoric acid using No. 6 oil fired dryer, screens, mills, cooler, reactor and granulator. Estimated potential emission of pollutants subject to the BACT rule are:

Particulate 6,000 tons/year

Sulfur Dioxide 444 tons/year

BACT Determination Requested by the Applicant:

Pollutant Maximum Allowable Emission

Fluorides 0.060 lbs/ton P₂O₅ Feed

Date of Receipt of a Complete BACT Application:

February 13, 1980

Date of Publication in the Florida Administrative Weekly:

March 28, 1980

Date of Publication in a Newspaper of General Circulation:

April 2, 1980 Tampa Tribune

Jacob D. Varn
Page Three
March 28, 1980

Justification of DER Determination

Particulate Matter: The 0.5 lbs/ton P₂O₅ feed emission limitation selected is representative of Best Available Control Technology and can be met with the proposed design.

Sulfur Dioxide: On the basis of the information provided the 0.7 lb/ton P₂O₅ limit is attainable with the 2.5% S fuel proposed by the applicant.

Details of the Analysis May be Obtained by Contacting:

Victoria Martinez, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, Florida 32301

Recommendation from: Bureau of Air Quality Management

By: Martin Kahel for
Steve Smallwood

Date: March 31, 1980

Approved by: Jacob D. Varn
Jacob D. Varn

Date: 31st MARCH 1980

SS:jr
attachment

ATTACHMENT 2

Unit/Operation : Sulfuric Acid Plants 1-5

Permit No. : AC53-192221, PSD-FL-170

Amendment Request

The above referenced permit contains an emission limitation for nitrogen oxides. To our knowledge, the NOx limit in the permit is not based on a regulatory standard, nor does it reflect a limitation requested by IMC-Agrico to avoid a specific rule applicability (e.g. PSD, etc.). Due to lack of actual NOx test data, conservative estimates were made in projecting potential emissions. FDEP projected, using these conservative emission assumptions, that the potential emissions in the permit application could trigger a PSD review. BACT for NOx would be represented by the projected emissions (uncontrolled). As the attached emissions data indicate, the plants are not capable of emitting NOx at levels that would require PSD review.

Therefore, it is requested that the construction permit be amended as follows:

Page 5, Specific Condition No. 4:

Delete this specific condition which contains emission limits for NOx.

Page 6, Specific Condition No. 6:

Delete the NOx testing requirement from this specific condition and the corresponding reference to EPA Method 7E.



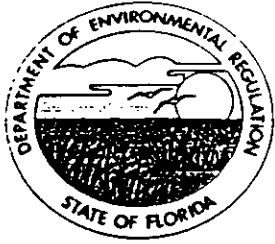
SUMMARY OF NITROGEN OXIDES EMISSIONS

SULFURIC ACID PLANTS 1-5 TEST DATA

IMC-AGRICO NEW WALES PLANT

PLANT No.	TEST DATE	NO _x EMISSION RATE	
		(lb/hr)	(lb/ton acid)
1	9/94	7.22	0.067
2	9/94	8.52	0.079
3	10/94	7.74	0.070
4	10/94	8.31	0.070
5	10/94	8.36	0.072
PERMIT LIMITATION		14.50	0.12





Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

May 22, 1991

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. John A. Brafford
Vice President & General Manager
IMC Fertilizer, Inc.
P. O. Box 1035
Mulberry, Florida 33860

Dear Mr. Brafford:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for IMC Fertilizer, Inc. to increase the production rates of sulfuric acid plants Nos. 1-5 at their facility near Mulberry, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Barry Andrews of the Bureau of Air Regulation.

Sincerely,

for C. H. Fancy, P.E.
Chief

Bureau of Air Regulation

CHF/JR/plm

Attachments

c: B. Thomas, SW Dist.
J. Harper, EPA
C. Shaver, NPS
J. Koogler, P.E.

I. Application Information

A. Applicant

IMC Fertilizer, Inc.
P. O. Box 1035
Mulberry, Florida 33860

B. Request

The Department received an application on February 4, 1991, for a permit to increase the production rate of the five sulfuric acid plants at the applicant's phosphate complex near Mulberry, Florida. After receiving additional information on March 18, the application was deemed complete.

C. Classification/Location

The applicant's facility (SIC Code 2819) is located off State Road 640 and County Line Road near Mulberry, Florida, with latitude of 27°49'56"N and longitude of 82°02'60"W. The UTM coordinates of the site are: Zone 17, 396.6 km E and 3078.9 km N.

II. Project Description/Emissions

It is proposed to increase the allowable annual production rate of the applicant's five sulfuric acid plants from 4,881,500 to 5,292,500 TPY. The proposed project will increase each plant's daily sulfuric acid capacity to 2900 TPD as shown below:

Plant	Present Capacity (TPD)	Present Hours	New Capacity (TPD)	New Hours
1	2700	8760	2900	8760
2	2700	8760	2900	8760
3	2700	8760	2900	8760
4	2750	8400	2900	8760
5	2750	8400	2900	8760

Annual emission changes resulting from the increased production rate are summarized in the following table:

Pollutant	Emissions (tons/yr)			Significant Increase
	Present	Proposed	Net Increase	
SO ₂	7530	10,585	3055	40
Acid Mist	93	397	304	7
NOx	?*	214	Over 40	40

*The applicant states that their NOx emission factor of $1.15(10)^{-6}$ lbs/dscf is based on testing of the No. 5 plant. However, the

application contains no raw data nor is there any indication of the number of tests done. Without sufficient results to show otherwise, the Department believes that the prior generic emission factor of $2.1(10)^{-6}$ lbs/dscf, being based on several tests, would indicate that this production increase will probably cause a greater than significant increase in NOx emissions. Also, if a BACT-based NOx emission limit of 0.12 lb/ton is applied to the actual vs. proposed allowable tonnage increase, it is clear that the NOx emissions increase will be significant: $(0.12 \text{ lb NOx/ton}) (721,909 \text{ tons/yr}) (\text{ton}/2000 \text{ lbs}) = 43.3 \text{ tons NOx/yr}$. Therefore, for this production increase, the Department will not require a NOx air quality analysis but will impose a BACT-based limit for NOx emissions.

$$721,909 \times 0.02 / 2000 = 28.9 \text{ tpy}$$

III. Rule Applicability

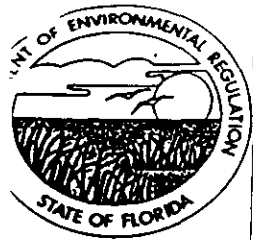
The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The facility is located in an area classified as attainment for each of the regulated air pollutants. The proposed project is subject to the preconstruction review requirements of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The proposed increases in SO₂, acid mist, and NOx emissions exceed significant levels set forth in Table 500-2 of F.A.C. Rule 17-2.500. Preconstruction review must include a determination of Best Available Control Technology (BACT), good-engineering practice stack height, ambient impact analysis, impact on soils, vegetation, and visibility. F.A.C. Rules 17-2.660, Table 660-1, Section 60.80, and 17-2.700, Table 700-1, apply to this production increase. Emissions will be limited by the federal new source performance standards for sulfur dioxide, acid mist, and visible emissions, and a BACT determination for NOx.

IV. Air Quality Analysis

a. Introduction

The production rate increases at the five existing sulfuric acid plants will result in emissions increases which are projected to be greater than the PSD significant rate. Therefore, the project is subject to the PSD review requirements contained in F.A.C. Rule 17-2.500. Part of these requirements is an air quality impact analysis for the pollutant, which includes:

- o An analysis of existing air quality.
- o A PSD increment analysis for SO₂.
- o An Ambient Air Quality Standards (AAQS) analysis.
- o An analysis of impacts on soils, vegetation, visibility, and growth-related air quality impacts.
- o A Good Engineering Practice (GEP) stack height determination



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

IMC Fertilizer, Inc.
P. O. Box 1035
Mulberry, Florida 33860

Permit Number: AC 53-192221
PSD-FL-170
Expiration Date: Dec. 31, 1991
County: Polk
Latitude/Longitude: 27°40'56"N
82°02'60"W
Project: Sulfuric Acid Plants
(Nos. 1-5) - Production Increases
to 2900 TPD

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

For the increase in production to 2900 TPD of sulfuric acid in plants No. 1-5. These sources are located at the permittee's existing facility near Mulberry, Polk County, Florida. The UTM coordinates are Zone 17, 396.6 km East and 3078.9 km North.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received on February 4, 1991.

PERMITTEE:
IMC Fertilizer, Inc.

Permit Number: AC 53-192221
PSD-FL-170
Expiration Date: December 31, 1991

GENERAL CONDITIONS:

this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The maximum production rate of each of the No. 1-5 sulfuric acid plants shall not exceed 2900 tons per day based on 100% H₂SO₄.
2. Sulfur dioxide emissions from each plant shall not exceed 4 lbs/ton of 100% sulfuric acid produced, 483.3 lbs/hr, 2117 tons/yr.
3. Sulfuric acid mist emissions from each plant shall not exceed 0.15 lb/ton of 100% sulfuric acid produced, 18.1 lbs/hr, 79.4 tons/yr.
4. Nitrogen oxides emissions from each plant shall not exceed 0.12 lb/ton of 100% sulfuric acid produced, 14.5 lbs/hr, 63.5 tons/yr.

The nitrogen oxides limits, based on a general emission factor of 18 ppm, are subject to revision if sufficient test data indicate that the emission factor is improper.

5. Visible emissions from each plant shall not exceed 10% opacity.

PERMITTEE:
IMC Fertilizer, Inc.

Permit Number: AC 53-192221
PSD-FL-170
Expiration Date: December 31, 1991

SPECIFIC CONDITIONS:

✓ 6. A continuous emission monitor shall be used to monitor sulfur dioxide in accordance with F.A.C. Rule 17-2.710. Initial and annual compliance tests shall be conducted using: EPA Method 7E for nitrogen oxides, EPA Method 8 for sulfur dioxide and acid mist, DER Method 9 for visible emissions.

7. The compliance tests shall be conducted within 30 days after operation begins. The Department's Southwest District office shall be notified in writing 15 days prior to source testing. Written reports of the tests shall be submitted to that office within 45 days of test completion.

8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

9. An application for an operation permit must be submitted to the Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. The operation permit application shall include a set of conditions acceptable to the Department for sequential startup/shutdown of the permittee's five sulfuric acid plants. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this _____ day
of _____, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Carol M. Browner, Secretary

- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determinations of any other state.
- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source 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.

BACT Determined by DER:

<u>Control Technology</u>	Double Absorption/Fiber Mist Eliminators
<u>Pollutant</u>	<u>Emission Limits</u>
SO ₂	4.0 lb/ton of 100% H ₂ SO ₄ produced
Sulfuric Acid Mist	0.15 lb/ton of 100% H ₂ SO ₄ produced
Visible Emissions	10% opacity
NOx	0.12 lb/ton

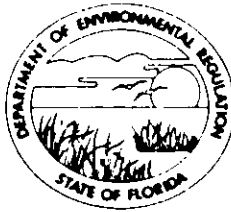
BACT Determination Rationale

DER's BACT determination is the same as that proposed by the applicant (except for the addition of a NOx limit for reasons discussed in the Technical Evaluation), determinations completed by other states, and Standards of Performance for Sulfuric Acid Plants, 40 CFR 60 Subpart H, (double absorption process). The process in itself is the control technology for SO₂ and acid mist. The emission limits reflect conversion efficiency of around 99.7% of SO₂ to H₂SO₄. High efficiency mist eliminators are considered BACT for sulfuric acid mist. A review of BACT/LAER Clearinghouse indicates that the double absorption technology, and the use of high efficiency mist eliminators is representative of BACT using the top-down approach.

File Copy

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

July 6, 1987

Mr. Wayne Aronson
Chief
Program Support Section
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Aronson:

RE: Amendment of Construction Permit No. AC 53-118671
IMCC/New Wales Operation
Past PSD Permit: PSD-FL-114

Enclosed is an amended state construction permit, which is referenced above, for IMCC/New Wales Operation for the No. 2 DAP Plant located at the existing IMCC/New Wales Complex in Polk County, Florida. If you have any comments, please contact John Reynolds or Bill Thomas at the above address or at (904)488-1344.

Sincerely,

Margaret V. Janes
Bureau of Air Quality
Management

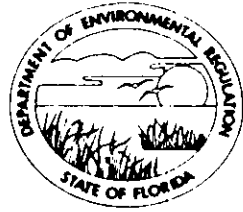
/mj

enclosure

File Copy

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

July 6, 1987

Mr. Miguel Flores
Chief, Permit Review and Technical
Support Branch
National Park Service-Air
Post Office Box 25287
Denver, Colorado 80225

Dear Mr. Flores:

RE: Amendment of Construction Permit No. AC 53-118671
IMCC/New Wales Operation
Past PSD Permit: PSD-FL-114

Enclosed is an amended state construction permit, which is referenced above, for IMCC/New Wales Operation for a production rate increase for the No. 2 DAP Plant located at the existing IMCC/New Wales Complex in Polk County, Florida. The facility is within 100 kilometers of the Chassahowitzka Class I area. If you have any comments, please contact John Reynolds or Bill Thomas at the above address or at (904)488-1344.

Sincerely,

Margaret V. Janes
Bureau of Air Quality
Management

/mj

enclosure

cc: Russ Galipeau, SE Regional Office, NPS
Glen A. Carowan, Jr., Chassohowitzka-National Wildlife Refuge
U.S. Fish and Wildlife Service



7 Jul
Atlanta, Ga

file copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

DER

JUL 6 1987

BAQM

JUN 30 1987

4APT-AB/aes

issued 4/21

Mr. Clair Fancy
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Re: Potential PSD Application IMC/New Wales Past Permit: PSD-F1-114

✓ AC 53-118671

Dear Mr. Fancy:

This is to acknowledge the receipt of your June 8, 1987, letter containing a copy of an amendment request from IMC/New Wales for a production rate increase for the No. 2 DAP Plant located at Polk County, Florida.

Although the source claims the proposed production increase will not cause any changes in the emission rates, you must ensure that the source provides sufficient documentation to substantiate its claim. This is to ensure there would be no significant emissions increase that will cause the source to be subject to Prevention of Significant Deterioration review for any regulated pollutants.

*do we have this or will it be via a stack test?
There will be stack test required BT*

If you have any questions concerning our comment, please contact me or Mr. Gary Ng of my staff at (404) 347-2864.

Sincerely yours,

Bruce P. Miller

Bruce P. Miller, Chief
Air Programs Branch
Air, Pesticides, and Toxics
Management Division

Jill

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

June 29, 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John A. Brafford
Vice President and General Manager
International Minerals & Chemical Corporation
New Wales Operations
Post Office Box 1035
Mulberry, Florida 33860

Dear Mr. Brafford:

Re: Amendment of Construction Permit No. AC 53-118671

The Department has considered your June 4, 1987, request for amendment of construction permit AC 53-118671 for the IMCC/New Wales Operations's No. 2 DAP plant and agrees to amend the permitted capacity as proposed since there will be no increase in permitted emissions. However, the Department finds it necessary to maintain provisional restrictions on fuel consumption and scrubber pressure drop. The wording for these specific conditions has been modified to show that the restrictions will apply unless compliance can be demonstrated under operating conditions less restrictive than those specified.

Amendments are as follows:

Page 1 - Second Paragraph

Present:

For the modification of two 125 TPH trains (140 TPH total allowed) diammonium phosphate plant with a common cooler unit to be located at the permittee's existing phosphate fertilizer complex in the west part of Polk County near the intersection of State Highway 640 and County Line Road. The UTM coordinates of the proposed plant are zone 17, 396.6 km E and 3078.9 km N.

Amended:

For the modification of two 140 TPH trains (280 TPH total allowed) diammonium phosphate plant with a common cooler unit to be located at the permittee's existing phosphate fertilizer complex in the west part of Polk County near the intersection of State Highway 640 and County Line Road. The UTM coordinates of the proposed plant are zone 17, 396.6 km E and 3078.9 km N.

Mr. John A. Brafford
Page Two
June 29, 1987

Specific Condition No. 1

Present:

Maximum production for both plants shall not exceed a total of 140 TPH DAP and each plant will not operate over 7,920 hours per year. The cooler will be allowed to operate 8,760 hours per year.

Amended:

Maximum production for each plant shall not exceed 140 TPH DAP or 280 TPH DAP total for both plants combined. Each plant shall not operate over 7,920 hours per year. The cooler will be allowed to operate 8,760 hours per year.

Specific Condition No. 2

Present:

The maximum allowable discharge from the plants will be:

<u>Pollutant</u>	<u>Max. Emission Rate for each Plant</u>	<u>Total Max. Emission for both Plants</u>
Particulate	0.5 lbs/ton P ₂ O ₅	28.2 lbs/hr and 112 TPY
Visible Emissions	20% opacity	20% opacity
Fluoride	0.060 lbs/ton P ₂ O ₅	4.2 lbs/hr & 16.6 TPY
Sulfur Dioxide	0.7 lbs/ton P ₂ O ₅	44 lbs/hr & 174 TPY
Nitrogen Oxides	0.60 lbs/10 ⁶ Btu	25.2 lbs/hr & 110.4 TPY

The max. allowable discharge of particulate from the bag filter serving the cooler will be 0.01 grain/dscf and 4.5 lbs/hr which is 17.8 TPY.

Amended:

The maximum allowable discharge from the plants will be:

<u>Pollutant</u>	<u>Max. Emission Rate for each Plant</u>	<u>Total Max. Emission for each Plant</u>
Particulate	0.5 lbs/ton P ₂ O ₅	14.1 lbs/hr and 56 TPY
Visible Emissions	20% opacity	20% opacity
Fluoride	0.060 lbs/ton P ₂ O ₅	2.1 lbs/hr & 8.3 TPY
Sulfur Dioxide	0.7 lbs/ton P ₂ O ₅	22 lbs/hr & 87 TPY
Nitrogen Oxides	0.60 lbs/10 ⁶ Btu	12.6 lbs/hr & 55.2 TPY

The max. allowable discharge of particulate from the bag filter serving the cooler will be 0.01 grain/dscf and 4.5 lbs/hr which is 17.8 TPY.

Mr. John A. Brafford
Page Three
June 29, 1987

Specific Condition No. 4

Present:

No. 6 fuel oil for the dryer shall not contain more than 2.5% sulfur. Total heat input to both trains shall not exceed 42×10^6 Btu/hr which is approximately 280 GPH of No. 6 fuel oil.

Amended:

No. 6 fuel oil for the dryer shall not contain more than 2.5% sulfur. The maximum heat input to each train shall not exceed 36×10^6 Btu/hr, which is approximately 240 GPH of No. 6 fuel oil, unless emissions compliance can be demonstrated under higher conditions of higher heat input.

Specific Condition No. 6

Present:

The permittee will measure and record the pressure drop across each scrubber system. Pressure drop across the venturi scrubber must be at least 12" H₂O during plant operations. These records will be maintained for 2 years and available for inspection by regulatory agency personnel on request.

Amended:

The permittee will measure and record the pressure drop across each scrubber system. Pressure drop across each of the venturi scrubbers (the reactor/granulator and dryer scrubbers) must be at least 12" H₂O during plant operations, unless emissions compliance can be demonstrated under permitted operating conditions at a lower pressure drop.

Specific Condition No. 9

Present:

Each plant (train) shall be sampled, while operating near 125 TPH DAP production on oil with approximately 2.5% sulfur content, for particulate matter, sulfur dioxide, nitrogen oxides, visible emissions, and fluorides by the reference methods described in 40 CFR 60, Appendix A, or other methods as approved by the Department. Compliance tests shall be conducted prior to the expiration date of this construction permit or within 45 days after placing a plant in operation. P₂O₅ input, pH of the scrubber solution, and pressure drop across the scrubbers will be as normally operated and reported, along with the data and results, to the Department. The Department (SW District) shall be notified 15 days prior to any compliance test.



Certified Mail
Return Receipt Requested

Circulate

Marty

John Reynolds

Mike Harkey

Heather Hirst (last -> to appropriate files)

October 18, 1996

(let me know if you want to have this stuff routinely routed to you - all)

RECEIVED

OCT 22 1996

BUREAU OF AIR REGULATION

Mr. W. C. Thomas, P. E.
Air Program Administrator
Florida Department of
Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619-8318

**RE: Continuous Emission Monitor
Quarterly Reports for
New Wales Plant and Nichols Plant**

Dear Mr. Thomas:

The third quarter 1996, above-referenced reports are enclosed for the following:

NEW WALES PLANT			
PLANT NAME	PERMIT NO.	AIRS ID NO.	UNIT ID NO.
Sulfuric Acid Plant No. 1	AO53-204057	1050059	002
Sulfuric Acid Plant No. 2	AO53-204058	1050059	003
Sulfuric Acid Plant No. 3	AO53-204059	1050059	004
Sulfuric Acid Plant No. 4	AO53-204060	1050059	042
Sulfuric Acid Plant No. 5	AO53-204061	1050059	044
NICHOLS PLANT			
Sulfuric Acid Plant No. 1	AO53-255206	1050057	005

If you should have any questions, please contact me.

Sincerely,

P. A. Steadham
Chief Environmental
Services - Concentrates

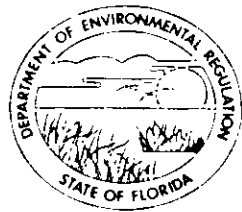
Enclosures

xc: Bureau of Air Regulations - FDEP Tallahassee
cwk
qtrly

File 0017

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

May 7, 1987

Mr. James W. Pulliam, Jr.
Regional Director
United States Department of the Interior
Fish and Wildlife Service
75 Spring Street, Southwest
Atlanta, Georgia 30303

Dear Mr. Pulliam:

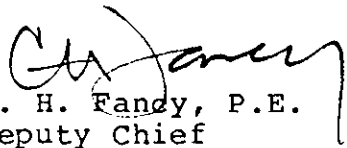
Re: IMCC No. 2 DAP Plant/AC 53-118671

The Department appreciates your comments on the Technical Evaluation and Preliminary Determination for the modifications to International Minerals and Chemical Corporation's (IMCC) No. 2 diammonium phosphate plant.

Your observation that the nitrogen oxides (NOx) emissions for the plant will be lower when it is burning natural gas is correct. In situations, such as this one, where the emissions from a source vary due to the type of operation being used, the Department bases its review on the alternative that produces the highest emissions. For IMCC, the highest NOx emissions occur when the plant is using residual fuel oil. The plant is in compliance with state regulations while it is burning oil. We are convinced that the NOx emissions and ambient air impact will be less when the plant burns natural gas.

We again would like to thank you for your comments.

Sincerely,


C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/WH/s

If you have any questions regarding the information presented here or if additional information is required, please do not hesitate to contact me.

As indicated by Joe Baretincic during our meeting, IMC is anxious to have Permit AC53-118671 amended as quickly as possible so that production plans for the next year can be finalized. Additionally, IMC has submitted an application for an operating permit for the east train of No. 2 DAP Plant to the Department's Southwest District office in Tampa. If the requested amendments to the subject construction permit are approved in a timely manner, these amendments can be incorporated in the operating permit that will be issued for the east train.

We appreciate your assistance on this matter.

Very truly yours,

KOOGLER & ASSOCIATES


John B. Koogler, Ph.D., P.E.

JBK:mab

cc: John Reynolds, FDER, Tallahassee
W.C. Thomas, FDER, Tampa
Joe Baretincic, IMC/New Wales

Wayne Anderson USEPA, Region II 6-5-87
Miguel Flores National Resources 6-5-87

Mr. John A. Brafford
Page Four
June 29, 1987

Amended:

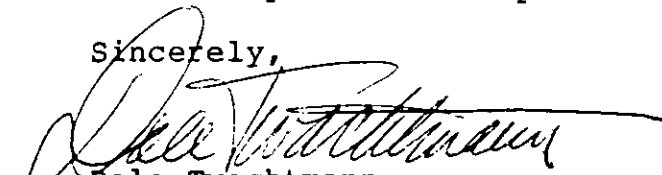
Each plant (train) shall be sampled, while operating near 140 TPH DAP production on oil with approximately 2.5% sulfur content, for particulate matter, sulfur dioxide, nitrogen oxides, visible emissions, and fluorides by the reference methods described in 40 CFR 60, Appendix A, or other methods as approved by the Department. Compliance tests shall be conducted prior to the expiration date of this construction permit or within 45 days after placing a plant in operation. P₂O₅ input, pH of the scrubber solution, and pressure drop across the scrubbers will be as normally operated and reported, along with the data and results, to the Department. The Department (SW District) shall be notified 15 days prior to any compliance test.

Attachment to be Incorporated

13. Dr. John Koogler's letter dated June 4, 1987.

A copy of this letter must be attached to the referenced construction permit and shall become a part of that permit.

Sincerely,



Dale Twachtmann
Secretary

DT/ks

cc: J. Koogler
B. Thomas-SW District
J. Baretincic, IMCC/New Wales Operation

attachment Miguel Flores, NPS
Wayne Aronson, EPA
Russ Galipazo, SE Reg. Office, NPS
Glen A. Carowan, Jr., Chassahowitzka-National Wildlife Refuge
U.S. Fish & Wildlife Service

P 408 531 201

Mr. John A. Brafford
International Min. & Chem.
Post Office Box 1035
Mulberry, Florida 33860

Mailed: 07/06/87
AC 53-118671

PS Form 3871, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

Show to whom, date and address of delivery.

2. Restricted Delivery.

3. Article Addressed to:
Mr. John A. Brafford
International Minerals & Chem. Corp.
Post Office Box 1035
Mulberry, Florida 33860

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	P 408 531 201

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X *[Signature]*

6. Signature - Agent
X

7. Date of Delivery
7/9/87

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION



RECEIVED

Interoffice Memorandum

JUN 1 1987

TO: Dale Twachtmann
THRU: Howard Rhodes *HR*
FROM: Clair Fancy *CF*
DATE: June 29, 1987
SUBJ: Amendments of Permit Conditions

FOR ROUTING TO OTHER THAN THE ADDRESSEE	
To: _____	Location of the Secretary _____
To: _____	Location _____
To: _____	Location _____
From: _____	Date: _____

Attached for your approval and signature is a letter that will amend the permitted capacity for the IMCC/New Wales Operation's No. 2 DAP Plant with no increase in permitted emissions. IMCC/New Wales Operation maintains that the plant can be operated so that increased production will not cause exceedance of permitted emission levels. Therefore, the Bureau recommends that the permit amendments be approved.

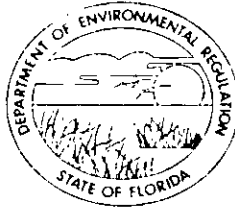
CF/JR/s

Attachment

file 6/8/87

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

June 8, 1987

Mr. Miguel Flores
Chief, Permit Review and Technical
Support Branch
National Park Service-Air
Post Office Box 25287
Denver, Colorado 80225

Dear Mr. Flores:

RE: Potential PSD Application
IMC/New Wales
Past Permit: PSD-FL-114

Enclosed for your review and comment is a copy of a request from IMC/New Wales for a production rate increase for the No. 2 DAP Plant located at the existing IMC/New Wales Complex in Polk County, Florida. The facility is within 100 kilometers of the Chassahowitzka Class I area. If you have any comments or questions, please contact John Reynolds or Bill Thomas by July 5, 1987, at the above address or at (904)488-1344.

Sincerely,

R. Bruce Mitchell
Bureau of Air Quality
Management

/bm

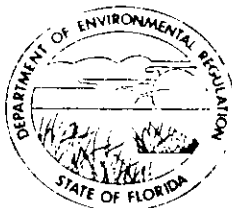
enclosure

cc: Russ Galipeau, SE Regional Office, NPS
Glen A. Carowan, Jr., Chassahowitzka-National Wildlife Refuge
U.S. Fish and Wildlife Service

file copy

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

June 8, 1987

Mr. Wayne Aronson
Chief
Program Support Section
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Aronson:

RE: Potential PSD Application
IMC/New Wales
Past Permit: PSD-FL-114

Enclosed for your review and comment is a copy of a request from IMC/New Wales for a production rate increase for the No. 2 DAP Plant located at the existing IMC/New Wales Complex in Polk County, Florida. If you have any comments or questions, please contact John Reynolds or Bill Thomas by July 5, 1987, at the above address or at (904)488-1344.

Sincerely,

R. Bruce Mitchell
Bureau of Air Quality
Management

/bm

enclosure



PM
7 Jul
Atlanta, Ga

AC 53-118671

file copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

DER

JUL 6 1987

BAQM

JUN 30 1987

4APT-AB/aes

Mr. Clair Fancy
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Re: Potential PSD Application IMC/New Wales Past Permit: PSD-F1-114

Dear Mr. Fancy:

This is to acknowledge the receipt of your June 8, 1987, letter containing a copy of an amendment request from IMC/New Wales for a production rate increase for the No. 2 DAP Plant located at Polk County, Florida.

Although the source claims the proposed production increase will not cause any changes in the emission rates, you must ensure that the source provides sufficient documentation to substantiate its claim. This is to ensure there would be no significant emissions increase that will cause the source to be subject to Prevention of Significant Deterioration review for any regulated pollutants.

If you have any questions concerning our comment, please contact me or Mr. Gary Ng of my staff at (404) 347-2864.

Sincerely yours,

Bruce P. Miller

Bruce P. Miller, Chief
Air Programs Branch
Air, Pesticides, and Toxics
Management Division



KOOGLER & ASSOCIATES, *Environmental Services*

1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 124-85-01

June 4, 1987

VIA FEDERAL EXPRESS

DER
JUN 5 1987
BAQM

Mr. W.A. Thomas
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: IMC/New Wales
No. 2 DAP Plant
Permit AC53-118671
Amendment to Allow Production Rate Increase
PSD-FL-114

Dear Bill:

On behalf of Joe Baretincic and myself, I would like to express our appreciation for the opportunity to meet with you and your staff on June 2, 1987 to discuss a permit amendment that would allow a production rate increase for the No. 2 DAP Plant located at the IMC/New Wales Chemical Complex in Polk County, Florida. Specifically, we discussed an amendment to Permit AC53-118671 that would allow a DAP production rate increase from 140 tons per hour to 280 tons per hour with no increase in permitted air pollutant emission rates. The No. 2 DAP Plant is still operating under the subject air construction permit which was issued on April 21, 1987 and will expire on December 31, 1987.

The No. 2 DAP Plant is a dual train production facility consisting of two identical, parallel production units, both served by a common cooler and screens. The plant was originally permitted under Air Construction Permit AC53-23546. This permit covered both production trains and the cooler/screens. On October 31, 1985 Air Operating Permit A053-106293 was issued for the operation of the cooler and screens. The two production trains continued to operate under Permit AC53-23546.

On April 21, 1987, Air Construction Permit AC53-118671 was issued, modifying the NOx emission rates from the dryers of the two production trains. This construction permit also restated the emission-limiting standards for the cooler/screens as the standards were originally stated in Permit AC53-23546.

During the time the No. 2 DAP Plant has operated, IMC/New Wales personnel have been able to increase the production efficiency of the plant through improved operating technology and to operate the plant at air pollutant emission rates that are well below maximum permitted emission rates. As a result, IMC is requesting an amendment to Construction Permit AC53-118671 that will allow an increase in the production rate of both trains with no increase in the permitted air pollutant emission rates. The requested increase in production rate is from 140 tons per hour for the total plant (both trains combined) to 140 tons per hour for each train or 280 tons per hour for the total plant. In the following sections, I have addressed all of the amendments that will be necessary in Permit AC53-118671 to allow this production rate increase. You will note that there are no increases in the total permitted air pollutant emission rates (hourly or annually). The total allowable emission rates have been proportioned, on a 50-50 basis, between the east and west trains, however.

Permit AC53-118671-Page 1 of 7

The second paragraph should be changed from:

"For the modification of two 125 TPH trains (140 TPH total allowed) diammonium phosphate plant..."

To read:

For the modification of two 140 TPH trains (280 TPH total allowed) diammonium phosphate plant...

This amendment identifies the capacity of the plant on the cover page of the application.

Specific Condition No. 1

Present:

Maximum production rate for both plants shall not exceed a total of 140 TPH DAP and each plant will not operate over 7,920 hours per year. The cooler will be allowed to operate 8,760 hours per year.

Proposed:

Maximum production rate for each plant shall not exceed 140 TPH DAP (each plant) or 280 TPH DAP total for both plants combined. Each plant shall not operate over 7,920 hours per year. The cooler will be allowed to operate 8,760 hours per year.

Specific Condition No. 2

Present:

The maximum allowable discharge from the plants will be:

<u>Pollutant</u>	<u>Max. Emission Rate for each Plant</u>	<u>Total Max Emission for both Plants</u>
Particulate	0.5 lbs/ton P205	28.2 lbs/hr and 112 TPY
Visible Emissions	20% opacity	20% opacity
Fluoride	0.060 lbs/ton P205	4.2 lbs/hr & 16.6 TPY
Sulfur Dioxide	0.7 lbs/ton P205	44 lbs/hr & 174 TPY
Nitrogen Oxides	0.60 lbs/10 ⁶ Btu	25.2 lbs/hr & 110.4 TPY

The max. allowable discharge of particulate from the bag filter serving the cooler will be 0.01 grain/dscf and 4.5 lbs/hr which is 17.8 TPY.

Proposed:

The maximum allowable discharge from each plant will be:

<u>Pollutant</u>	<u>Max. Emission Rate for each Plant</u>	<u>Total Max Emission for each Plant</u>
Particulate	0.5 lbs/ton P205	14.1 lbs/hr and 56 TPY
Visible Emissions	20% opacity	20% opacity
Fluoride	0.060 lbs/ton P205	2.1 lbs/hr & 8.3 TPY
Sulfur Dioxide	0.7 lbs/ton P205	22 lbs/hr & 87 TPY
Nitrogen Oxides	0.60 lbs/10 ⁶ Btu	12.6 lbs/hr & 55.2 TPY

The max. allowable discharge of particulate from the bag filter serving the cooler will be 0.01 grain/dscf and 4.5 lbs/hr which is 17.8 TPY.

Specific Condition No. 3

No change.

Specific Condition No. 4

Present:

No. 6 fuel oil for the dryer shall not contain more than 2.5% sulfur. Total heat input to both trains shall not exceed 42 million Btu/hr which is approximately 280 GPH of No. 6 fuel oil.

Proposed:

No. 6 fuel oil for the dryer shall not contain more than 2.5% sulfur. The maximum heat input to each train is expected to be 36 million Btu/hr. This is equivalent to approximately 240 GPH of No. 6 fuel oil.

Rational for Proposed Change:

The present condition was written into the permit to provide a Department inspector with information on the expected fuel oil firing rates; with the fuel oil firing rates being an indicator of the emission rates of combustion byproducts. Since specific air pollutant emission rates are established by Specific Condition No. 2, IMC would prefer to have the reference to an indirect indicator of these emission rates stated as an "expected" value; or a value that can be used to aid an inspector but not a precise value that can be used in an enforcement action. If the expected heat input rate or No. 6 oil firing rate is significantly greater than the expected heat input rate or fuel firing rate, the Department inspector would have the necessary justification for requesting an emission test at those conditions to determine if the emission limits set by Specific Condition No. 2 were being met.

Specific Condition No. 5

No. change.

Specific Condition No. 6

Present:

The permittee will measure and record the pressure drop across each scrubber system. The pressure drop across the Venturi scrubber must be at least 12" H₂O during plant operations. These records will be maintained for two years and will be available for inspection by regulatory agency personnel on request.

Proposed:

The permittee will measure and record the pressure drop across each scrubber system. The pressure drop across each of the Venturi scrubbers (the reactor/granulator and dryer scrubbers) should be at least 10" H₂O during plant operations. These records will be maintained for two years and will be available for inspection by regulatory agency personnel upon request.

Rational for Proposed Change:

The scrubber pressure drop is an indicator of the degree of control expected from the Venturi scrubber. This, in turn, is an indicator of the expected emission rates of air pollutants from the scrubber. The specific emission limits for all air pollutants are set by Specific Condition No. 2.

IMC has operated the No. 2 DAP Plant with a pressure drop across the dryer Venturi scrubber in the range of 10" H₂O and emission tests during this time have demonstrated compliance with the emission limiting standards set forth in Specific Condition No. 2. Hence, IMC is requesting that the 12" pressure drop requirement be reduced to a 10" pressure drop. Additionally, IMC is requesting a change in the wording of this condition so that the information can be used as an indicator of the operating performance of the scrubber but cannot be used for enforcement purposes.

Specific Condition No. 7

No change.

Specific Condition No. 8

No change.

Specific Condition No. 9

The operating rate of each train during compliance testing should be changed from 125 TPH to 140 TPH to reflect the production rate increase requested herein.

Specific Condition No. 10

No change.

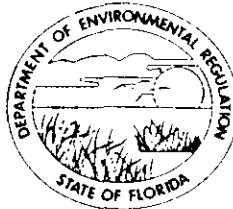
Specific Condition No. 11

No change.

The proposed amendments to the conditions of Permit AC53-118671 proposed herein are consistent with the conditions for the plant production rate increase discussed with you on June 2, 1987; that is, the DAP production rate of the plant would increase from 140 tons per hour DAP to 280 tons per hour DAP (total for the plant) with no increase in either hourly or annual air pollutant emission rates.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Mr. John A. Brafford
Vice President and General Manager
International Minerals & Chemical Corporation
New Wales Operations
Post Office Box 1035
Mulberry, Florida 33860


April 22, 1987

Enclosed is Permit Number AC 53-118671 to International Minerals & Chemical Corporation which authorizes an increase in nitrogen oxides emissions from your existing No. 2 diammonium phosphate plant located at the New Wales Operations complex in Polk County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any Party to this permit has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, 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 Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; 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 days from the date this permit is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

J. Koogler, Ph.D., P.E.
B. Thomas, FDER SW District
W. Aronson, U.S. EPA, Region IV-Air
M. Flores, NPS-Air

P 408 531 220

RECEIPT FOR CERTIFIED MAIL

INSURANCE COVERAGE PROVIDED -
NOT FOR INTERNATIONAL MAIL

See Reverse

Sent to	
John A. Brafford	
IMCC New Wales Operations	
P.O. Box 1035	
P.O., State and ZIP Code	
Mulberry, FL 33860	
Postage	3
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom Date and Address of Delivery	
TOTAL Postage and Fees	3
Postmark or Date	
4/22/87	
AC 53-118671	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, ~~John A. Brafford~~
- Restricted Delivery.

3. Article Addressed to:
John A. Brafford
IMCC New Wales Operations
P.O. Box 1035
Mulberry, FL 33860

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	P 408 531 220

Always obtain signature of addressee or agent and **DATE DELIVERED.**

- Signature - Addressee
X
- Signature - Agent
X *[Signature]*
- Date of Delivery
4-27-87
- Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on April 22, 1987 to the listed persons.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

R. Bruce Hittell
Clerk

4/22/87
Date

Final Determination

International Minerals & Chemical Corporation (IMCC)
New Wales Operations
Polk County, Florida

No. 2 Diammonium Phosphate (DAP) Plant Modification
Permit No. AC 53-118671

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

April 16, 1987

Final Determination

International Minerals & Chemical Corporation's application for a permit to modify the nitrogen oxides (NOx) emission standard of the existing No. 2 diammonium phosphate plant at their New Wales Operations has been reviewed by the Bureau of Air Quality Management. Public Notice of the Department's intent to issue the permit was published in the Lakeland Ledger on March 7, 1987. Copies of the Technical Evaluation and Preliminary Determination were available for public inspection at the Bartow Public Library and the Department's offices in Tampa and Tallahassee.

Comments were submitted by the applicant's engineer, the Environmental Protection Agency, Region IV, and the Central Florida Regional Planning Council (CFRPC).

The applicant's engineer noted that the annualized cost of new low NOx burners and combustion chamber modifications were low and that the Department's economic evaluation was based on the emission standard requested by the applicant (1 lb NOx/MMBtu) which was higher than the emission standard proposed by the Department (0.60 lb NOx/MMBtu). These factors caused the Department's estimate of the cost per ton of NOx controlled to be low. Although the Department is in general agreement with these comments and has modified the proposed BACT determination justification accordingly, the emission standard of 0.60 lb NOx/MMBtu in the BACT and permit remains the same.

EPA has expressed a concern over three issues regarding the modeling analysis. The issues and the Department responses are as follows:

1. Issue: There was no quantitative emission data for nearby sources.

Response: The net emissions increase due to the proposed modification results in an insignificant impact; i.e., the maximum predicted ground-level concentration of NO₂ is less than 1.0 ug/m³, annual average. In addition, the source is located in an area of sparse industrial and population density so that any contribution from other sources to the maximum annual average NO₂ concentrations would be small.

2. Issue: There was no explanation for the omission of the downwash option in the air quality analysis.

Response: An explanation was given in section IV 4.d. of the preliminary determination. In summary, the reasons for the omission of downwash option include: (1) the nearest plant boundary is 1.8 kilometers from the buildings and downwash effects are expected to be negligible at that distance, and; (2) downwash effects are minimal when averaged over an annual period.

3. Issue: The air quality data used in the modeling was not grandfathered under the UNAMAP-5 models. We suggest that additional modeling be done using UNAMAP-6 for comparison.
Response: The use of the UNAMAP-5 version of the Industrial Source Complex Long-Term (ISCLT) model in lieu of the UNAMAP-6 version is not considered significant by the Department. The application for the proposed modification was submitted before the latest version of the model was available. Experience with the new and old versions of the model indicate that the same permitting conclusion would be reached if the UNAMAP-6 version were used. The Department does not feel remodeling is necessary.

CFRPC expressed reservations about the Department's proposed course of action. They were unclear about the Department's notice because of the different times the interested parties received their copy. They felt this abrogated their opportunity to file a petition and submit comments. They also expressed concern that the BACT determination would allow the ambient air to be degraded and requested that the determination be reconsidered.

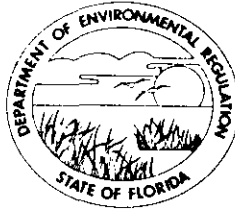
The regulations requiring public notice (Chapter 120, Florida Statutes) for this application were complied with. The time allowed to file a petition and submit comments on the Department's intent is based on the date the Notice of Proposed Agency Action on Permit Application appears in the legal section of a local newspaper, not the date the notice is received by the interested parties. We regret that a copy of the notice did not reach the council earlier.

The Department has reviewed the BACT determination and ambient air impact for this project. We remain convinced that the BACT determination is appropriate and that the ambient air impact of the increased NOx emissions will be insignificant.

The final action of the department will be to modify the BACT determination and issue the permit as proposed in the Technical Evaluation and Preliminary Determination.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

PERMITTEE:
International Minerals &
Chemical Corporation
New Wales Operations
Post Office Box 1035
Mulberry, Florida 33860

Permit Number: AC 53-118671
Expiration Date: December 31, 1987
County: Polk
Latitude/Longitude: 27° 49' 56.4"N
82° 02' 59.9"W
Project: No. 2 DAP Plant Modification

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

For the modification of two 125 TPH trains (140 TPH total allowed) diammonium phosphate plant with a common cooler unit to be located at the permittee's existing phosphate fertilizer complex in the west part of Polk County near the intersection of State Highway 640 and County Line Road. The UTM coordinates of the proposed plant are zone 17, 396.6 km E and 3078.9 km N.

Construction shall be in accordance with the attached permit application, plans, documents and drawings except as noted in the Specific Conditions.

Attachments:

1. Application for the No. 2 DAP plant signed by Mr. Brafford on March 31, 1986.
2. October 18, 1985, letter by Dr. Koogler.
3. July 3, 1985, letter by Dr. Koogler.
4. August 19, 1985, letter by Dr. Koogler.
5. April 2, 1986, letter by Dr. Koogler.
6. May 9, 1986, letter by Dr. Koogler.
7. November 10, 1986, letter by Dr. Koogler.
8. December 18, 1986, letter by Dr. Koogler.
9. Waiver of 90 Day Time Limit dated February 26, 1987.
10. March 26, 1987, letter by Dr. Koogler.
11. April 6, 1987, letter by Mr. Bruce P. Miller.
12. April 7, 1987, letter by Mr. James Q. Duane.

PERMITTEE:
International Minerals &
Chemical Corporation

Permit Number: AC 53-118671
Expiration Date: December 31, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of 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.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement 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.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
International Minerals &
Chemical Corporation

Permit Number: AC 53-118671
Expiration Date: December 31, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times 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.

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, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring 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.

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 notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
International Minerals &
Chemical Corporation

Permit Number: AC 53-118671
Expiration Date: December 31, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- (x) Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
International Minerals &
Chemical Corporation

Permit Number: AC 53-118671
Expiration Date: December 31, 1987

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
- the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Maximum production for both plants shall not exceed a total of 140 TPH DAP and each plant will not operate over 7,920 hours per year. The cooler will be allowed to operate 8,760 hours per year.

PERMITTEE:
International Minerals &
Chemical Corporation

Permit Number: AC 53-118671
Expiration Date: December 31, 1987

SPECIFIC CONDITIONS:

2. The maximum allowable discharge from the plants will be:

Pollutant	Max. Emission Rate for each Plant	Total Max Emission for both Plants
Particulate	0.5 lbs/ton P ₂ O ₅	28.2 lbs/hr and 112 TPY
Visible Emissions	20% opacity	20% opacity
Fluoride	0.060 lbs/ton P ₂ O ₅	4.2 lbs/hr & 16.6 TPY
Sulfur Dioxide	0.7 lbs/ton P ₂ O ₅	44 lbs/hr & 174 TPY
Nitrogen Oxides	0.60 lbs/10 ⁶ Btu	25.2 lbs/hr & 110.4 TPY

The max. allowable discharge of particulate from the bag filter serving the cooler will be 0.01 grain/dscf and 4.5 lbs/hr which is 17.8 TPY.

3. Fugitive particulate and fluoride emissions from process, conveying and storage equipment will be controlled by sealing and/or venting all fumes from the equipment to pollution abatement equipment.

4. No. 6 fuel oil for the dryer shall not contain more than 2.5% sulfur. Total heat input to both trains shall not exceed 42×10^6 Btu/hr which is approximately 280 GPH of No. 6 fuel oil.

5. The permittee shall install, calibrate, maintain, operate, and record data from flow monitoring devices that can be used to determine total P₂O₅ input to each plant.

6. The permittee will measure and record the pressure drop across each scrubber system. Pressure drop across the venturi scrubber must be at least 12" H₂O during plant operations. These records will be maintained for 2 years and available for inspection by regulatory agency personnel on request.

7. The company shall comply with all requirements of 40 CFR 60, Subpart V, Standards of Performances for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants.

8. The permittee's ambient air station measuring TSP will be operated on a 6 day schedule established by DER and the data reported to the DER office in Tampa on a quarterly basis.

9. Each plant (train) shall be sampled, while operating near 125 TPH DAP production on oil with approximately 2.5% sulfur content, for particulate matter, sulfur dioxide, nitrogen oxides, visible emissions, and fluorides by the reference methods described in 40 CFR 60, Appendix

PERMITTEE:
International Minerals &
Chemical Corporation

Permit Number: AC 53-118671
Expiration Date: December 31, 1987

SPECIFIC CONDITIONS:

A, or other methods as approved by the department. Compliance tests shall be conducted prior to the expiration date of this construction permit or within 45 days after placing a plant in operation. P₂O₅ input, pH of the scrubber solution, and pressure drop across the scrubbers will be as normally operated and reported, along with the data and results, to the department. The department (SW District) shall be notified 15 days prior to any compliance test.

10. An application for permit to operate the No. 2 DAP plant shall be submitted to the department (SW District) within 45 days of the compliance tests. In the event the application for permit to operate does not include test data on both trains of the No. 2 DAP plant, the permittee shall request the District amend any permit to operate that may be issued for this plant within 45 days of placing the other train in operation.

11. Any permit to operate issued for the No. 2 DAP plant shall require annual tests for particulate matter and fluoride, and on renewal of the permit to operate (every 5 years), tests for sulfur dioxide and nitrogen oxides.

Issued this 21 day of April 1987

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION


Dale Twachtman, Secretary

_____ pages attached

Best Available Control Technology (BACT) Determination
International Minerals & Chemical Corporation
Polk County

The applicant has installed a dual train diammonium phosphate (DAP) plant with each train capable of producing 125 tons per hour. This (No. 2) DAP plant utilizes a dryer that was designed to be fired with either No. 6 fuel oil or natural gas.

The plant was permitted in 1980 under PSD construction permit PSD-FL-034 for a nitrogen oxides emission rate of 4.3 pounds per hour (0.21 pounds per million Btu heat input) for each of the two 70 tons per hour DAP trains. By letter dated February 27, 1985, EPA modified the nitrogen oxide emission limiting standard to allow a total plant nitrogen oxides emission rate of 8.6 pounds per hour or 0.21 pounds per million Btu heat input.

On May 29, 1985, nitrogen oxides emission measurements were made on the No. 2 DAP plant dryer to demonstrate compliance with the permitted emission limiting standard. The testing, which was performed while operating the dryer on No. 6 fuel oil, resulted in an average nitrogen oxides emission rate of 0.71 pounds per million Btu heat input. Subsequent nitrogen oxides emissions measurements on the No. 2 DAP plant showed nitrogen oxides emissions ranging from 0.80 to 0.88 pounds per million Btu heat input.

In accordance with this finding, the applicant completed a review of the plant operating practices and the dryer burner design, and concluded that there were no practical modifications that could be made to reduce nitrogen oxides emissions to the permitted emission rate of 0.21 pounds per million Btu heat input.

For permitting purposes, the applicant has proposed that the nitrogen oxides limit for the No. 2 DAP plant be set at 1.0 pound of nitrogen oxides (expressed as nitrogen dioxide) per million Btu heat input. At a maximum plant operation rate of 140 tons of DAP per hour and a design heat input rate of 0.3 million Btu per ton of DAP, the proposed limit of 1.0 pound of nitrogen oxides per million Btu heat input will result in a nitrogen oxides emission increase of 151.8 tons per year. The annual increase exceeds the 40 tons per year significant emission increase defined in 17-2.500(2)(e)2 FAC; thus requiring a PSD review and hence a BACT determination for the requested action.

Review Group Members:

This determination was based upon comments received from the applicant and the Stationary Source Control Section.

BACT Determined by DER:

Pollutant	Emission Limit
Nitrogen Oxides	0.60 lb/MMBtu heat input

BACT Determination Rationale

In accordance with the procedure outlined for the BACT analysis, the bureau identified three alternative control strategies that could be incorporated into the No. 2 DAP plant to provide a reduction in emissions of nitrogen oxides. The three strategies selected are listed as follows:

- 1) Replace the existing No. 2 DAP plant burners with low-NOx burners.

The burners for the two dryers in the No. 2 DAP plant were designed during a period of high fuel oil cost in the early 1980's and were designed to be as fuel efficient as possible. It was originally felt that the fuel efficient design would also function similar to low-NOx burners but the emissions have turned out to be much higher than expected.

- 2) Perform physical modifications to the burner/combustion chamber.

The No. 2 DAP plant utilizes a design in which tertiary air is added downstream from the primary and secondary combustion air. In this design, the steam atomized fuel is fired with low primary combustion air with the secondary combustion air being supplied through an orifice plate around the burner, resulting in approximately 100 percent excess air. Tertiary air is then added further downstream resulting in approximately 800 percent excess air in the airstream entering the DAP dryer.

Another DAP plant (No. 1) at the facility utilizes another type of design that has resulted in approximately a 50 percent reduction in nitrogen oxides emissions as compared to the No. 2 DAP plant. The No. 1 plant uses steam atomized fuel oil that is supplied through an orifice plate with approximately 50 percent excess combustion air. Secondary combustion air is supplied through four large openings in the orifice plate surrounding the nozzle, resulting in approximately 600 percent excess air in the combustion chamber downstream of the orifice plate.

It is believed that physical modifications could be made to the burner/combustion chambers of the No. 2 DAP plant dryers that would approximate the burner/combustion chamber design of the No. 1 DAP plant, thereby providing the expected reduction in nitrogen oxides emissions.

- 3) Operate the No. 2 DAP plant dryers using natural gas as the fuel instead of No. 6 fuel oil.

Nitrogen oxides are formed by two mechanisms: Oxidation of fuel-bound nitrogen and thermal fixation of the nitrogen present in the combustion air. When No. 6 fuel oil is fired, fuel nitrogen conversion is generally the primary nitrogen oxides forming mechanism.

Natural gas generally has a lower nitrogen content and burns with a cooler flame. These two characteristics would result in lower emissions of nitrogen oxides at the No. 2 DAP plant. These reductions are evidenced by test data which demonstrated that the nitrogen oxides emissions from the dryers are substantially reduced when fired with natural gas instead of No. 6 fuel oil.

The alternate control strategies have been evaluated from the standpoint of energy, economical, and environmental impacts analysis. In accordance with these reviews, the cost to the applicant of using an alternative control strategy to reduce emissions is heavily considered.

When completing an economic analysis, the strategy has been to obtain the highest reduction of emissions per dollars invested for control equipment or control strategies. This method of maximizing emission reductions per capital invested is a major factor when New Source Performance Standards (NSPS) are developed by the EPA. For nitrogen oxides emissions EPA has determined that a cost of up to \$1,000 per ton of emissions controlled (\$0.50/lb) is reasonable for NSPS. It should be noted that BACT should be a level of control which is at least as stringent as NSPS, thus the cost to provide BACT could be higher than that proposed for NSPS and yet be considered reasonable. For example, the South Coast Air Quality Management District (Los Angeles area) in California, which has high ambient levels of nitrogen oxides, has established a BACT cost guideline of \$9,000 per ton of nitrogen oxides controlled.

The economic evaluations of the three control strategies discussed previously are given below.

Installation of Low NOx Burners

The total expense of replacing the existing burners with low-NOx burners would take into account the cost of both the modifications needed and the lost revenues due to down time of the dryer.

The expense of replacing the burner in the east train of the No. 2 DAP plant would be \$214,866 (capital plus write-off of existing equipment). Assuming that the burner/combustion chamber has a

lifetime of 10 years and using an interest rate of 9.0 percent, the annualized cost of replacing the burner with a low-NOx burner would be approximately \$33,480. Using a corresponding emissions reduction of 78 tons per year for using the low-NOx burner, the cost per ton of control would be approximately \$429.00 which would appear to be reasonable in accordance with the guidelines that are available.

Modification of the Combustion Chamber

The cost associated with modifying the east combustion chamber of the No. 2 DAP plant is estimated to be \$200,000. A modification of this type would provide an emissions reduction which is similar to using a low-NOx burner. This would result in a control cost of approximately \$400.00 per ton of nitrogen oxides, which would again be considered reasonable in comparison to the guidelines available.

It is important to note that the cost of replacing the burners or modifying the combustion chamber to reduce nitrogen oxides emissions should also take into account the amount of revenue lost from the down time associated with making the modifications.

It is expected that the down time required to perform the burner replacement or combustion chamber modification would be approximately three weeks which translates in a DAP production loss of up to 70,000 tons. The profit that could be realized from this amount of DAP produced is directly dependent on the market price of DAP. Currently, due to the fiscal condition of the phosphate fertilizer industry, DAP is being sold for less than the cost of production. However, when the market price for DAP is taken into consideration for a previous period which represents a more representative sales year, the profit that would be lost is substantial and the resulting total cost of modifying the burner/combustion chamber would not be reasonable when compared to the guidelines available.

Operating the Burner with Natural Gas

In response to a request made by the bureau, the applicant has submitted test data which demonstrates that the DAP dryer is capable of meeting the permitted emission limitation (0.21 pound per million Btu) when fired with natural gas. In accordance with this data, the cost to operate using natural gas instead of oil can be completed.

The applicant has stated that the oil consumption necessary to dry the product is 1.5 gallons per ton. Using the data that was submitted for operating at the maximum rate of production (125 tons/hour) and the proposed emission limitation (1.0 pounds per million Btu), the cost to operate and the resulting emissions are

\$60.00 and 28.4 pounds/hour respectively. By comparison, the cost of using natural gas to dry 125 tons of product would compute to \$56.34 and an emission rate of 4.7 pounds/hour when using the data submitted by the applicant. This calculation clearly shows that the applicant should be operating on natural gas both from the standpoint of reducing operating costs and emissions.

In addition to the data submitted, which served as the basis for the computations above, the applicant has submitted data which indicates that with proper operation the DAP dryer can be fired with No. 6 fuel oil at a lower throughput per ton of product resulting in a lower emission rate. During discussions with the bureau, the applicant has indicated that the dryer can be operated with a maximum emissions rate not to exceed 0.60 pounds per million Btu when operating at maximum production for one train (125 tons per hour). The data submitted indicates that the cost to operate at this level would be \$44.57 with a corresponding emission rate of 12.7 pounds/hour. At this level of operation the incremental costs of switching to natural gas would be \$1.47 per pound (\$2,940.00/ton) of nitrogen oxides controlled which would indeed be unreasonable in comparison to the guideline of \$1,000.00/ton of nitrogen oxides controlled for establishing NSPS. It should be noted that the cost of switching to natural gas only results in a change of operating costs, capital investment is not required to modify the facility to use natural gas as fuel. Based on this evaluation, the applicant's proposal of accepting a limitation of 0.60 pounds, per million Btu is justified.

Environmental Impacts Analysis

Dispersion modeling completed by the applicant indicates that the nitrogen oxides emissions at the originally permitted rate (0.21 pounds/million Btu) result in an ambient concentration level of 0.16 ug/m³. The proposal to increase the emission rate to 1.0 pound per million Btu would increase the ambient concentration level by approximately 0.5 ug/m³ for a total of 0.62 ug/m³. This increase in the nitrogen oxides impact as originally proposed is insignificant in comparison to the maximum existing NO₂ level in urban Hillsborough County of 54 ug/m³ and the Ambient Air Quality Standard (AAQS) of 100 ug/m³. Based on the impacts analysis, the proposed emission rate and certainly the counter proposal of 0.6 pounds per million Btu, which would reduce the ambient impacts by a factor of 2, would not constitute a problem from an ambient concentration level standpoint.

Conclusion

In view of the fiscal condition of the phosphate fertilizer industry and the other information presented in the preceding analysis, the bureau has determined that nitrogen oxides emission

limitation of 0.60 pounds/million Btu is justified in all respects as being BACT for this facility.

From an economic standpoint, the firing of No. 6 fuel oil at the 0.60 lb/MMBtu level does not justify switching to natural gas. In addition, the cost of having the applicant perform modifications to the burner/combustion chamber is not justified during a period when the market price of the applicant's product (DAP) is below the cost of production.

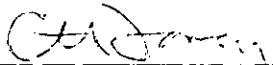
In terms of environmental impacts, it has been shown that the emissions limit, as proposed and as agreed to as being BACT, will be minimal.

It is important to note that the level of emissions determined to be BACT in this analysis is subject to change if deemed necessary in accordance with modifications that may be proposed in the future. At that time, the BACT determination would again be completed on a case-by-case basis taking into account the elements as presented herein.

Details of the Analysis May be Obtained by Contacting:

Barry Andrews, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

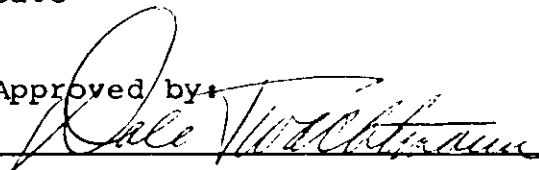
Recommended by:



C. H. Fancy, P.E.
Deputy Bureau Chief, BAQM

4/16/87

Date

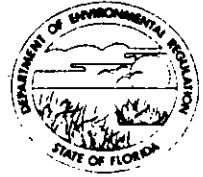
Approved by: 

Dale Twachtmann, Secretary

21 April 87

Date

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION



Interoffice Memorandum

FOR ROUTING TO OTHER THAN THE ADDRESSEE			
To: _____	LOCN: _____	RECEIVED APR 16 1987	
To: _____	LOCN: _____		
To: _____	LOCN: _____		
FROM: _____	DATE: _____		

TO: Dale Twachtmann

THRU: Howard Rhodes *[Signature]*

FROM: Clair Fancy *[Signature]* 8-1344' WHEN SIGNED

DATE: April 16, 1987

SUBJ: Approval of Construction Permit and BACT Determination

Office of the Secretary

Attached for your approval and signature is the final determination, permit to construct, and best available control technology (BACT) determination for the modification to International Minerals & Chemical Corporation's No. 2 diammonium phosphate plant in Polk County, Florida. There have been no significant controversies on this modification. However, the residents near this plant have objected to any modification to it in the past.

The permit and BACT determination are in compliance with all air pollution control regulations. The Bureau recommends your approval and signature.

Day 90, after which the permits would be issued by default, is April 22, 1987.

CHF/WH/s

[Large handwritten signature]