KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ▪ FAX 377-7158

KA 124-96-03

June 25, 1997

RECEIVED
JUN 27 1997
BUREAU OF
AIR REGULATION

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

Subject: Background Information for
Sulfuric Acid Plants 10 & 11
IMC-Agrico Company (South Pierce)
Polk County, Florida

1050055-010-AC
PSD-FL-235

Dear Mr. Holladay:

This is a follow up to your telephone conversation with Pradeep Raval regarding some background information for the above referenced project. The issues discussed are itemized below.

1. We have no objection to FDEP estimating the hourly and annual emission rates for the molten sulfur system, and tabulating them for PSD inventory purposes in the permit. In similar past permitting, the existing estimated emissions were increased proportionately to the sulfuric acid production increase being permitted.

2. Sample specific conditions containing appropriate wording for nitrogen oxides emissions limitations (based on BACT) and nitrogen oxides testing frequency are presented in Attachments 1 and 2, respectively. This wording was developed by BAR, given that the nitrogen oxides emissions from the sulfuric acid plant are uncontrolled; and, the resulting ambient air impacts are not significant.

3. Suggested wording for fugitive emissions from the sulfuric acid plants, refined by FDEP's Southwest District Office over time, is presented in Attachment 3. This wording allows for the use of best operational practices to minimize fugitive emissions.

4. A brief permitting summary of the Nos. 10 and 11 Sulfuric Acid Plants has been prepared for documentation in the Department's Technical Evaluation. Details of each permitting project are not included as the information already exists in the FDEP files. The information in our files on past FDEP air permitting actions is tabulated below. FDEP files may be more chronologically complete.

Permit No.	Issued	Expired	Comments
PLANT No. 10**			
A053-6578	4-27-78	5-01-83	Operation permit
A053-176685	6-26-90	6-21-95	Operation permit
AC53-199112	4-17-92	1-01-94	Rate increase with cogeneration
A053-221846	12-18-92	12-23-97	Operation permit
PLANT No. 11**			
A053-6577	4-27-78	5-01-83	Operation permit
A053-145510	5-05-88	4-21-93	Operation permit
AC53-199112	4-17-92	1-01-94	Rate increase with cogeneration
A053-220555	11-23-92	11-20-97	Operation permit

NOTE: Some past permits were not available for documentation.

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:par
Encl.

c: C. Dave Turley, IMC-Agrico

KOOGLER & ASSOCIATES

PERMITTEE:
IMC-Agrico Company

Permit Number: AC53-230355
PSD-FL-204
Expiration Date: January 1, 1996

GENERAL CONDITIONS:

for 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 the sulfuric acid plant shall not exceed 2500 tons per day based on 100% sulfuric acid (H_2SO_4).

2. Sulfur dioxide (SO_2) emissions from the plant shall not exceed 4 lbs/ton of 100% H_2SO_4, 416.8 lbs/hr, and 1825.6 tons/yr.

3. H_2SO_4 mist emissions from the plant shall not exceed 0.15 lb/ton of 100% H_2SO_4 produced, 15.6 lbs/hr, and 68.5 tons/yr.

4. Nitrogen oxides, (NO_x) emissions from the plant shall not exceed 0.12 lb/ton of 100% H_2SO_4 produced, 12.5 lbs/hr, and 54.8 tons/yr. The nitrogen oxides limits based on a general emission factor, are subject to revision if sufficient test data indicate that the emission factor is improper.

5. Visible emissions (VE) from the H_2SO_4 plant shall not exceed 10% opacity. VE shall not exceed 20% opacity from any source in the molten sulfur system.

PERMITTEE:
IMC-Agrico Chemical Company

Permit Number: AC 53-192221(A)
Expiration Date: 12/30/96

SPECIFIC CONDITIONS:

1. This permit supersedes permit AC53-192221 / PSD-FL-170 dated July 16, 1991, and its revisions: Extension dated June 29, 1992.

2. The provisions of permit AC53-192221 / PSD-FL-170 are incorporated into this air construction permit except for the following changes:

Specific Condition No. 6:

From:

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, and DER Method 9 for visible emissions.

To:

* A continuous emission monitor shall be used to monitor sulfur dioxide emissions from each plant in accordance with **40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid Plants.** Initial and annual compliance tests shall be conducted using: EPA Method 8 for sulfur dioxide and acid mist, and **EPA** Method 9 for visible emissions **as described in 40 CFR 60, Appendix A. An Initial compliance test shall be conducted using EPA Method 7E for nitrogen oxides. Subsequent NO_x testing shall be conducted prior to renewal of each operating permit (every five years).**

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Howard L. Rhodes

Howard L. Rhodes, Director
Division of Air Resources
Management

PERMITTEE
IMC Fertilizer, Inc
Mulberry, FL

PERMIT/EXPIRATION
Permit No.: AO53-204057
County: Polk
Expiration Date: 11/22/96
Project: Sulfuric Acid Plant No. 1

Specific Conditions:

17. This permit acknowledges that leaks of sulfur dioxide and sulfur trioxide, or other fugitive process emissions that do not pass through a stack, may occur as part of routine operations. Best operational practices to minimize these emissions shall be adhered to and shall include regular inspections and the prompt repair or correction of any leaks or other fugitive emissions.

18. All reasonable precautions shall be taken to prevent and control generation of unconfined emissions of particulate matter in accordance with the provisions in Rule 17-2.610(3), F.A.C. These provisions are applicable to any source, including but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrial related activities such as loading, unloading, storing and handling.

19. The permittee shall not cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 17-2.620(2), F.A.C.].

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

21. Submit to the Department, each calendar year, on or before March 1, an emission report for this source for the preceding calendar year containing the following information pursuant to Subsection 403.061(13), F.S.:

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

22. Two applications to renew this operating permit shall be submitted to the Southwest District Office of the Department at least 60 days prior to the expiration date of this permit (i.e. no later than September 23, 1996). [Rule 17-4.090(1), F.A.C.].

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

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

Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

March 7, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Dave Turley
Environmental Coordinator
IMC-Agrico
Post Office Box 2000
Mulberry, Florida 33860

Dear Mr. Turley:

Re: Second Completeness Review for Application to Increase Production Rates of Sulfuric Acid Plants 10 and 11, IMC-Agrico, Permit Numbers 1050055-010, PSD-FL-235

The Department has reviewed the information submitted on behalf of IMC-Agrico by Koogler and Associates. We are interested in knowing more precisely why the emission limit of 4 pounds of sulfur dioxide per ton of sulfuric acid cannot be lowered. This value is the original NSPS limit for these plants. Lower values are routinely achieved during most of the 18 month cycle following catalyst screening and addition.

It is our understanding that during a turnaround, activity tests are performed to determine how much of the catalyst needs to be removed such that the limit of 4 pounds per ton is maintained until the next turnaround (typically 18 months). We would like to know the marginal cost of additional catalyst per additional ton of sulfur dioxide removed. Please provide the marginal costs while aiming for 4, 3.5 and 3 pounds per ton by the end of the 18 month cycle.

If you have any questions, please call Cleve Holladay.

Sincerely,

3/7

A. A. Linero
P.E. Administrator
New Source Review Section

AAL/ch/l

cc: Brian Beals, EPA
John Bunyak, NPS
Bill Thomas, SWD
Pradeep Raval, K&A

P 265 659 128

US Postal Service

Receipt for Certified Mail

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Postage	$
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Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 3-7-97 Permit: 1050055-010 PS D-FL-235	

PS Form **3800**, April 1995

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- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
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I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mr. Dave Turley
Environmental Coordinator
IMC Agrico
Post Office Box 2000
Mulberry, FL 33860

4a. Article Number

P 265 659 128

4b. Service Type

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3/11/97

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8. Addressee's Address *(Only if requested and fee is paid)*

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Thank you for using Return Receipt Service.

PS Form **3811**, December 1994

Domestic Return Receipt

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX 377-7158

KA 124-96-03

April 9, 1997

RECEIVED
APR 10 1997
BUREAU OF
AIR REGULATION

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

Subject: IMC-Agrico Company
South Pierce Plant
Sulfuric Acid Production Increase
File 1050055-010, PSD-FL-235

Dear Mr. Linero:

This is in response to your letter dated March 7, 1997, requesting additional information on the above referenced project. The responses are in the order of the issues raised in your letter.

1. **We are interested in knowing more precisely why the emission limit of 4 pounds of sulfur dioxide per ton of sulfuric acid cannot be lowered. This value is the original NSPS for these plants. Lower values are routinely achieved during most of the 18 month cycle following catalyst screening and addition.**

RESPONSE:

At the time of the original federal rule making and during each subsequent NSPS review, EPA provided the technical and economic criteria justifying the sulfur dioxide emission standard of 4 pounds per ton of acid for double absorption sulfuric acid plants. This issue is addressed in IMC-Agrico's permit application.

The sulfur dioxide emission rates routinely achieved after turnaround at sulfuric acid plants vary from plant to plant. For many plants, the emissions level (lb SO2/ton acid) is a function of the production rate. At South Pierce, plants will generally operate at the maximum achievable (permitted) production rate after turnaround and then gradually reduce the production rate to maintain emissions within permitted levels, as the pressure drop across the catalyst increases leading up to the next turnaround. For most plants operated in this manner, there is generally little change in the sulfur dioxide emission rate per ton of acid during normal plant operations. In these cases, the hourly sulfur dioxide emission rates decrease as the production rates decrease.

2. **It is our understanding that during a turnaround, activity tests are performed to determine how much of the catalyst needs to be removed such that the limit of 4 pounds per ton is maintained until the next turnaround (typically 18 months). We would like to know the marginal costs while aiming for 4, 3.5 and 3 pounds per ton by the end of the 18 month cycle.**

RESPONSE:

Although we are not in a position to comment on the maintenance criteria and practices implemented at other fertilizer companies, we can provide you with information relevant to IMC-Agrico's South Pierce plant.

During a normal turnaround at the IMC-Agrico South Pierce plant, the catalyst is not tested for any activity level. It is, however, checked for structural integrity. Disintegrated catalyst causes pluggage and progressively increasing pressure drops. This results in a reduction in plant operating efficiency and production. The catalyst structural integrity is maintained by simply screening the catalyst during a turnaround. Fresh catalyst is added as replacement for the amount of catalyst removed.

Although the information on catalyst cost may not be useful, based on the above discussion, it is being provided for your reference. The current cost of catalyst, based on conversations with Monsanto staff, is in the range of $2.55/liter (bulk rate, FOB California).

We trust that the information provided herein, along with our previous response, will enable the Department to complete the review of the proposed project.

If you have any further questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:par
c: C.D. Turley, IMC-Agrico

cc: C. Holladay, BAR
SWD
EPA
NPS

KOOGLER & ASSOCIATES

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ▪ FAX 377-7158

KA 124-96-03

February 3, 1997

RECEIVED
FEB 05 1997
BUREAU OF
AIR REGULATION

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

Subject: Additional Information for
Sulfuric Acid Plants 10 & 11
IMC-Agrico Company - South Pierce Plant
Polk County, Florida

Dear Mr. Holladay:

This is a follow up to Pradeep Raval's telephone conversations with Mr. Al Linero and yourself regarding the Department's request for additional information dated December 18, 1996.

Some background information will provide a clearer perspective of the proposed project. Sulfuric acid plants Nos. 10 and 11 have been physically modified to increase the sulfuric acid production rate and to enhance heat recovery under permit No. PSD-FL-179. At the time of that FDEP review, the potential production rate of the modified plants was estimated to be 2700 tpd, each, based on information from the contractor. Having completed the modifications and operated the plants for some time now, IMC-Agrico recognizes that the potential acid production rate of the modified plants was underestimated.

IMC-Agrico is able to project, based on past operation and compliance test results (already submitted to FDEP), that the plants will be able to operate at the higher production rate without any major equipment changes. Minor changes may be required, e.g. piping, ducting, pumps, etc. Please note that equipment changes would not affect the rule applicability for this project under the PSD and NSPS regulations.

Given the above background information, it is anticipated that the following responses will adequately address the issues raised by FDEP.

1. The application does not contain an updated flow diagram for the proposed modified facility. Although Figure 2-3 states that it is a flow diagram, it is in actuality a plant equipment layout diagram. Please submit an updated process flow diagram for the actual proposed modified facility.

RESPONSE:

The diagram submitted to FDEP shows the actual process flow relative to the existing equipment. It does need to be clarified, however, that the resulting air emissions from the sulfuric acid plant are exhausted from the "stack" shown on the diagram. As the existing process and equipment remains unchanged, an updated process flow diagram is not necessary.

2. The application indicates increases in production rates with no replacement or addition of major process equipment. If future projects are anticipated to reliably achieve or take advantage of the higher permitted rates, they should be scoped out and described at this time. Please provide a more detailed description of changes required to piping, pumps, ducts, fans, catalyst change schedules, etc. to handle the higher process rate. Alternatively, please provide reasonable assurance (eg. process or mechanical engineers certification) that the present plant can achieve the planned production rates without improvements.

RESPONSE:

These issues are addressed in the introductory paragraphs on the previous page.

3. What effects will the higher process rates have on actual emissions and actual emissions per unit of product? Will any improvements be made in the secondary absorbers and demisters to maintain or improve pollution control (whether or not emissions are within permitted limits)?

RESPONSE:

As the proposed increases in process rates are not expected to affect actual emissions per unit of product, it can be projected that the proposed increases in process rates will result in corresponding, proportionate increases in actual emissions.

No changes to the secondary absorbers or the demisters are anticipated for the proposed project. This issue is addressed in the introductory paragraphs on the previous page.

4. Do plant historical data, literature, or equipment provider information suggest that BACT emission limits lower than 4 pounds of SO2 and 0.15 pounds of SO3 per ton of product can be achieved? If not, why not?

RESPONSE:

The dual absorption process is capable of reducing sulfur dioxide emission rates to less than 4.0 pounds per ton of acid. However, in an effort to maximize production, most plants in the fertilizer industry tend to run at emission levels close to the permitted rates. As the catalyst ages, the production level is gradually reduced to keep the emissions within permitted levels. Thus, an initial emission reduction could be accomplished, at the cost of acid production, and even then only during periods immediately following turnarounds. That strategy would be ineffective as the catalyst ages and emissions per ton of product correspondingly increase.

EPA and FDEP have taken into consideration this very issue in five recent BACT determinations for double absorption sulfuric acid plants and concluded in each case that the emission limits of 4.0 pounds of sulfur dioxide and 0.15 pounds of sulfuric acid mist per ton of 100 percent sulfuric acid are practical and appropriate.

5. What facilities will use the additional sulfuric acid produced by the modified plants? Where are these facilities located?

RESPONSE:

The additional sulfuric acid will be sold to Sulfuric Acid Trading Company (SATCO) and, at times, to other sulfuric acid customers located in north and central Florida. Other IMC-Agrico facilities consuming sulfuric acid include the New Wales Plant and the Nichols Plant, both located in Polk County.

6. The Air Quality Related Values Analysis (AQRV) is incomplete. IMC did not estimate total (cumulative) pollutant concentrations and loadings at Chassahowitzka. Without this information, it is impossible to evaluate the potential AQRV impacts. To estimate cumulative pollutant concentrations, IMC should add its modeled pollutant impact to background pollutant concentrations, including predicted impacts from sources permitted but not yet operating.

RESPONSE:

The cumulative pollutant concentration levels at Chassahowitzka are estimated, presented below, as suggested by FDEP. However, such an analysis is not meaningful for the proposed project given the predicted insignificant ambient air impacts and given a distance in excess of 100 kilometers from the Class I area.

The estimated cumulative Class I Area pollutant concentrations are as follows:

Pollutant	Class I Area Air Impacts (ug/m3)				
	Source Impact(1)	Other Sources(2)	Backgrd. Conc.(3)	Cumulative Impact (4)	Ambient Air Std.
Sulfur Dioxide					
3-hour	0.81	26.1	86	112.9	1300
24-hour	0.15	6.4	23	29.6	260
Annual	0.013	0.26	5	5.3	60
Nitrogen Oxides					
Annual	0.004	1.91	0.01	1.9	100

NOTES:

(1) Impacts based on the source modeling results previously submitted to FDEP by IMC-Agrico.

(2) Impacts of other recently permitted facilities (see PSD-FL-229, 234), in the vicinity of Chassahowitzka.

(3) 1994 air monitoring values, Chapter 5, Air Quality and Air Quality Related Values in the Chassahowitzka National Wildlife Refuge and Wilderness Area (November, 1996), U.S. Fish and Wildlife Service.

(4) Estimated cumulative impacts.

As the conservatively projected cumulative Class I Area impacts are well below the ambient air standards, no adverse impacts are expected on the Class I Area AQRVs.

7. **Please address the comments contained in the attached correspondence from the National Park Service.**

RESPONSE:

The only additional issue raised by the National Park Service (NPS) was the cumulative Class I PSD increment consumption analysis for sulfur dioxide for the 3-hour and the 24-hour periods. This issue is of interest to the NPS because the predicted sulfur dioxide impacts from the proposed project for those averaging periods were above the NPS significant impact

guidelines. It should be noted that the predicted source impacts are below the Class I significant impact levels proposed by EPA. Not only are the predicted impacts insignificant, but they are projected from a source over a 100 kilometers from the Class I Area using a model which provides a very conservative estimate of impacts beyond 50 kilometers (ISC-ST). Taking all these factors into consideration, it is anticipated, based on conversations with the NPS, EPA and FDEP, that additional Class I area analyses are not warranted for the proposed project.

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:par

c: C. Dave Turley, IMC-Agrico

cc: Holladay

KOOGLER & ASSOCIATES

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

IN REPLY REFER TO

DEC 2 4 1996

RECEIVED
DEC 30 1996
BUREAU OF
AIR REGULATION

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

Dear Mr. Fancy:

We have reviewed the application for IMC-Agrico's proposed production increase at its South Pierce facility, 115 km southeast of Chassahowitzka Wilderness Area. Comments from our Air Quality Branch are contained in the enclosed technical review document. As stated in the technical review document, we find the application to be incomplete. In summary:

(1) IMC should evaluate cumulative consumption of the 3-hour and 24-hour Class I sulfur dioxide (SO_2) increments. IMC did not do this because their predicted impacts were below the Environmental Protection Agency's (EPA) proposed significant impact levels (SILs). However, IMC's predicted impacts exceeded the SILs recommended by the Fish and Wildlife Service (FWS) and the National Park Service (NPS). As you know from past correspondence, we believe that our SILs are more appropriate because they were developed using logic similar to that used to develop the SILs for the National Ambient Air Quality Standards. The proposed EPA SILs were, on the other hand, arbitrarily chosen (EPA's proposed SILs are 4 percent of the increments).

We appreciate the support you have shown in the past for our SILs by routinely requiring applicants to apply them. We also understand that neither our SILs nor EPA's proposed SILs are encoded in Federal regulations. However, both sets of numbers are currently under public review. If, as a result of public comment, the EPA SILs are incorporated into the New Source Review Reform regulations, we will accept their use. Until that time, we ask that you continue your past policy and require IMC to apply the FWS/NPS SILs.

(2) IMC did not evaluate cumulative impacts to air quality related values at Chassahowitzka Wilderness Area. We ask that you require IMC to estimate total pollutant impacts to resources at Chassahowitzka and evaluate those impacts.

In addition, please have IMC explain the statement on page 35 (section on AQRV Analysis): "Although the predicted maximum impacts exceed the Class I PSD increments, the sulfur dioxide impacts from the proposed project are expected to be well below the ambient air quality standards." It is our understanding that a cumulative analysis, which may have predicted an increment exceedance, was not done. In addition, it is irrelevant to the AQRV analysis that impacts are expected to be below the ambient air quality standards. These standards were established to protect human health, not AQRVs. For instance, although the annual ambient air quality standard for SO_2 in Florida is 60 micrograms per cubic meter (ug/m^3), several species of lichens in Chassahowitzka are sensitive to SO_2 levels below 50 ug/m^3 (refer to our February 1996 Technical Review Document for Florida Power Corporation). IMC should consider these lichens when evaluating cumulative SO_2 effects.

If you have questions, please call Ellen Porter of our Air Quality Branch in Denver at (303) 969-2617.

Sincerely yours,

Noreen K. Clough

Noreen K. Clough
Regional Director

Enclosure

Technical Review of the
Permit Modification Application
for IMC-Agrico Company's
South Pierce Plant
Polk County, Florida

by

Air Quality Branch; U.S. Fish and Wildlife Service; Denver, Colorado

BACKGROUND

IMC-Agrico Company (IMC) proposes to increase the sulfuric acid (H_2SO_4) production rate of the two existing double absorption H_2SO_4 plants at its South Pierce phosphate fertilizer manufacturing facility from 5,400 to 6,000 tons per day of 100% H_2SO_4. The facility is located 115 km southeast of Chassahowitzka Wilderness Area, a Class I area administered by the U.S. Fish and Wildlife Service (FWS). Emissions increases in tons per year (TPY) are summarized in the following table:

POLLUTANT	EMISSIONS INCREASE (TPY)
Sulfur dioxide (SO_2)	1187
Sulfuric Acid Mist (H_2SO_4 Mist)	136
Nitrogen Oxides (NO_x)	80

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) ANALYSIS

The BACT analysis is complete.

CLASS I INCREMENT ANALYSIS

The Class I increment analysis is incomplete. IMC's estimated impacts exceed the FWS/National Park Service (NPS) significant impact levels (SILs) for the 3-hour and 24-hour Class I SO_2 increments (levels routinely applied to Florida sources). Therefore, IMC should have evaluated cumulative consumption of these increments. Instead, IMC compared their estimated impact with the higher SILs recently proposed by the Environmental Protection Agency (EPA). Because IMC's estimated impacts were below the EPA SILs, IMC concluded that no additional increment modeling was necessary.

The following table compares IMC's contribution to the 3-hour and 24-hour Class I SO_2 increments to both sets of SILs (IMC used 1987-1991 meteorological data):

METEOROLOGICAL DATA	3-HR SO_2 IMPACT	24-HOUR SO_2 IMPACT
1987	0.81	0.11
1988	0.67	0.11
1989	0.77	0.15
1990	0.64	0.14
1991	0.56	0.10
FWS/NPS SIL (proposed)	0.48	0.07
EPA SIL (proposed)	1.0	0.2

IMC's contributions to the other applicable Class I increments (annual SO_2 and annual NO_x) were below both EPA and FWS/NPS SILs. Therefore, no cumulative analysis is required for these increments.

AIR QUALITY RELATED VALUES (AQRV) ANALYSIS

The AQRV analysis is incomplete. IMC did not estimate total (cumulative) pollutant concentrations and loadings at Chassahowitzka. Without this information, it is impossible to evaluate potential AQRV impacts. To estimate cumulative pollutant concentrations, IMC should add its modeled pollutant impact to background pollutant concentrations, including predicted impacts from sources permitted but not yet operating.

VISIBILITY ANALYSES

The VISCREEN analysis for visible plume impacts and the regional haze analysis are complete.

Contact: Ellen Porter
(303) 969-2617

Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

December 18, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Dave Turley
Environmental Coordinator
Post Office Box 2000
Mulberry, Florida 33860

Dear Mr. Turley:

Re: Completeness Review for Application to Increase Production Rates of Sulfuric Acid Plants 10 and 11, IMC-Agrico, Permit Numbers 1050055-010, PSD-FL-235

The Department has reviewed the above referenced application package received on November 20, 1996. Based on our initial review of your proposed project, we have determined that additional information is needed in order to continue processing this application. Please complete the application by providing the information requested below:

1. The application does not contain an updated flow diagram for the proposed modified facility. Although Figure 2-3 states that it is a flow diagram, it is in actuality a plant equipment layout diagram. Please submit an updated process flow diagram for the actual proposed modified facility.

2. The application indicates increases in production rates with no replacement or addition of major process equipment. If future projects are anticipated to reliably achieve or take advantage of the higher permitted rates, they should be scoped out and described at this time. Please provide a more detailed description of changes required to piping, pumps, ducts, fans, catalyst change schedules, etc. to handle the higher process rate. Alternatively, please provide reasonable assurance (e.g. process or mechanical engineer certification) that the present plant can achieve the planned production rates without improvements.

3. What effects will the higher process rates have on actual emissions and actual emissions per unit of product? Will any improvements be made in the secondary absorbers and demisters to maintain or improve pollution control (whether or not emissions are within permitted limits)?

4. Do plant historical operating data, literature, or equipment provider information suggest that BACT emission limits lower than 4 pounds of SO_2 and 0.15 pounds of SO_3 per ton of product can be achieved? If not, why not?

5. What facilities will use the additional sulfuric acid produced by the modified plants? Where are these facilities located?

6. The Air Quality Related Values Analysis (AQRV) is incomplete. IMC did not estimate total (cumulative) pollutant concentrations and loadings at Chassahowitzka. Without this information, it is impossible to evaluate to potential AQRV impacts. To estimate cumulative pollutant concentrations, IMC should add its modeled pollutant impact to background pollutant concentrations, including predicted impacts from sources permitted but not yet operating.

7. Please address the comments contained in the attached correspondence from the National Park Service.

If you have any questions, call Cleve Holladay at 904-488-1344.

Sincerely,

12/18

A. A. Linero
P.E. Administrator
New Source Review Section

AAL/ch

Enclosure

cc: John Bunyak, NPS
Brian Beals, EPA
Pradeep Raval, Koogler and Associates

METEOROLOGICAL DATA	3-HR SO_2 IMPACT	24-HOUR SO_2 IMPACT
1987	0.81	0.11
1988	0.67	0.11
1989	0.77	0.15
1990	0.64	0.14
1991	0.56	0.10
FWS/NPS SIL (proposed)	0.48	0.07
EPA SIL (proposed)	1.0	0.2

IMC's contributions to the other applicable Class I increments (annual SO_2 and annual NO_x) were below both EPA and FWS/NPS SILs. Therefore, no cumulative analysis is required for these increments.

Air Quality Related Values (AQRV) Analysis

The AQRV analysis is incomplete. IMC did not estimate total (cumulative) pollutant concentrations and loadings at Chassahowitzka. Without this information, it is impossible to evaluate potential AQRV impacts. To estimate cumulative pollutant concentrations, IMC should add its modeled pollutant impact to background pollutant concentrations, including predicted impacts from sources permitted but not yet operating.

Visibility Analyses

The VISCREEN analysis for visible plume impacts and the regional haze analysis are complete.

Contact: Ellen Porter
(303) 969-2617

Technical Review of the Permit Modification Application for IMC-Agrico Company's South Pierce Plant Polk County, Florida

by

Air Quality Branch, U.S. Fish and Wildlife Service, Denver, Colorado

IMC-Agrico Company (IMC) proposes to increase the sulfuric acid (H_2SO_4) production rate of the two existing double absorption H_2SO_4 plants at its South Pierce phosphate fertilizer manufacturing facility from 5,400 to 6,000 tons per day of 100% H_2SO_4. The facility is located 115 km southeast of Chassahowitzka Wilderness Area, a Class I area administered by the U.S. Fish and Wildlife Service (FWS). Emissions increases in tons per year (TPY) are summarized in the following table:

POLLUTANT	EMISSIONS INCREASE (TPY)
Sulfur dioxide (SO_2)	1187
Sulfuric Acid Mist (H_2SO_4 Mist)	136
Nitrogen Oxides (NO_x)	80

Best Available Control Technology (BACT) Analysis

The BACT analysis is complete.

Class I Increment Analysis

The Class I increment analysis is incomplete. IMC's estimated impacts exceeded the FWS/National Park Service (NPS) significant impact levels (SILs) for the 3-hour and 24-hour Class I SO_2 increments (levels routinely applied to Florida sources). Therefore, IMC should have evaluated cumulative consumption of these increments. Instead, IMC compared their estimated impact to the higher SILs recently proposed by the Environmental Protection Agency (EPA). Because IMC's estimated impacts were below the EPA SILs, IMC concluded that no additional increment modeling was necessary.

The following table compares IMC's contribution to the 3-hour and 24-hour Class I SO_2 increments to both sets of SILs (IMC used 1987-1991 meteorological data):

P 265 659 109

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