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

KA 173-99-02

May 30, 2000

RECEIVED
JUN 02 2000
BUREAU OF AIR REGULATION

Mr. Syed Arif, P.E.
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Rd
Tallahassee, FL 32399-2400

Subject: Additional Time to Respond to FDEP Letter
US Agri-Chemicals Corporation
File PSD-FL-278, 1050051-009-AC

Dear Mr. Arif:

This is a follow up to our telephone conversation regarding a response to questions raised by FDEP on the above referenced project.

As indicated to you, we will be submitting a response very shortly. Based on our conversation, it is our understanding that you have no objection to an additional 30-day period for us to submit our response.

If you have any questions, please do not hesitate to call me.

Very truly yours,

KOOGLER & ASSOCIATES

Pradeep Raval

par

c: Jerry Girardin, USAC

Do not throw this FAX Away. SA

PROJECT 173-99-02

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

FAX TRANSMITTAL FORM

TO: Syed Arif
FDEP - BAR

FAX NO.

FROM: Pradeep Raval

DATE: 5/30/00 SENT BY: PR

The text being transmitted consist s of 1 page(s) PLUS this one. If you do not receive all of the pages or if there are difficulties with this transmission, please call (352) 377-5822.

REMARKS: Per our conversation. Thanks for flagging the clock as I was not aware of the 90-day requirement.

Regards,
PR

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

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c: Jerry Girardin, USAC

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

March 3, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Steven J. Susick, P.E.
General Manager, E&TS
U.S. Agri-Chemicals Corp.
3225 State Road 630 West
Fort Meade, Florida 33841

Re: DEP File No. 1050051-009-AC, PSD-FL-278
Sulfuric Acid Plants No. 1 and 2

Dear Mr. Susick:

The Department has received your response to our November 3, 1999 incompleteness letter to you regarding an air construction permit for modification to the existing Sulfuric Acid Plants No. 1 and 2. The response was received on February 2, 2000. In order to expedite the application, we need the additional information listed below:

1. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Please resubmit the response including the certification as required by Rule 62-4.050(3), F.A.C.

2. Please resubmit the appropriate pages of the application to reflect the sulfuric acid mist (SAM) emissions of 0.12 lb/ton. Also, redo the table for net emissions increase based on the new limit for SAM. The original application was based on 0.15 lb/ton.

3. Please show all the calculations for the net emissions increase for SO_2 and NO_x based on the data submitted in the response letter.

4. The actual emissions for SO_2 and SAM submitted with the response for the last five years indicate that the stack testing was probably conducted under optimum conditions. The low emissions are probably not a true indicator of the day to day emissions from the plants. Please submit an analysis of SO_2 emissions based on the CEM readings. The analysis should be done for the years 1998 and 1999, and should include monthly range of SO_2 emissions for both plants during those two years.

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2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Steven J. Susick, PE
General Manager, E+TS
US Agri-Chemicals Corp.
3225 State Road 630 West
Fort Meade, FL 33841

4a. Article Number
Z 031 391 875

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
3-8-00

5. Received By: *(Print Name)*

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6. Signature: *(Addressee or Agent)*
X [signature]

PS Form 3811, December 1994 102595-98-B-0229 Domestic Return Receipt

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Receipt for Certified Mail
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Sent to	Steven Susick
Street & Number	US Agri Chemicals Corp.
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Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
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Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	3-3-00 1050051-009-AC PSD-FL-278

PS Form 3800, April 1995

5. Please indicate the use for the additional sulfuric acid. If the acid is being used to increase the actual production in the Phosphoric Acid plants or other downstream units, then additional analysis may be required for those emission units. Please provide an accounting summary of the past and future sulfuric acid utilization for the facility.

6. What was the significant impact radius for SO_2? Please provide a map showing the location of all receptor locations used in the SO_2 and NO_2 significant impact modeling. The modeling diskettes submitted with the application did not include all of the significant impact modeling input/output files. Please provide all of these files. In addition please explain the difference between the aqs*yy*inv.out and the aqs*yy*inv.ano (where *yy* represents the year of the model run, i.e., aqs88inv.out) files.

7. Tables 2-2 and 2-6, which present the modeling results, do not provide information on the location of the maximum concentrations. These locations should be provided. From our review of the modeling diskettes, some of the predicted maximum SO_2 PSD Class II increment and SO_2 AAQS modeling impacts provided to us are located at receptors on the edge of the receptor grid. Evaluation of maximum impacts should not be terminated at the edge of a receptor grid. In addition maximum predicted impacts from screening modeling should be refined to 100 m resolution around the points of maximum impacts. In Table 2-6 the values for the 3 and 24-hour averaging times represent the highest-high impacts. For regulatory purposes the table should present the highest-second high impact. Also in Table 2.6 the values for the modeled annual SO_2 impacts should be 39.0, 37.1, 48.1, 35.6 and 40.5 for the years 1987,1988, 1989, 1990 and 1991. Please update this table after all required refined modeling is performed.

8. At what distance from the plant did the SO_2 multisource inventory end? There are discrepancies in information between Tables 2-3, 2-4 and 2-6. For instance in Table 2-3, FPL Ft Myers is designated NAAQS and YES in the significant column, but this entry does not appear in Table 4, the AAQS table. Another example is FPC Crystal River which is designated BOTH and YES in the significant column but does not appear in Tables 2-4 or 2-6 as would be indicated from the information given in Table 2-3. Please explain these and any other discrepancies between these tables.

9. More information is needed to allow the Department to determine the extent of the ambient air exemption on USAgrichem's property. 40 CFR Part 50.1(e) defines ambient air as "...that portion of the atmosphere, external to buildings, to which the general public has access." The exemption from ambient air is available only for the atmosphere over land owned or controlled by the source and to which public access is precluded by a fence or other physical barriers. Please provide a detailed USGS map or the equivalent showing the location of the fenceline and/or any other physical barriers equivalent to a fence.

10. SO_2 Background concentrations for use in the AAQS analysis are needed for the 3 and 24-hour averaging times. The Department recommends the use of 138 ug/m^3 and 42 ug/m^3 as background concentrations for the 3 and 24-hour averaging. These values are based on 1998 monitoring data from Mulberry SO_2 monitor 12-105-2006. Alternative values may be determined for these averaging times by using the procedures found in section 9.2 of the

modeling guidelines (40CFR Part 51, Appendix W-Guideline on Air Quality Models (Revised), adopted and incorporated by reference in Rule 62-204.800, F.A.C.).

11. The years 1987-1991 were used in the ISCST3 model runs. These ISCST3 runs identified 1989 as generally providing the maximum concentrations. The reason the year 1990 was chosen for the CALPUFF modeling should be provided.

12. Confirmation is needed that all modeled concentrations in excess of the PSD Class I 3-hour and 24-hour increments are included in Table 2-7.

Enclosed are the preliminary comments from the U.S. Fish and Wildlife Service. Please respond to their concerns about this project. Any additional comments from EPA and the U.S. Fish and Wildlife Service will be forwarded to you after we receive them.

We will be happy to meet and discuss the details with you and your staff. Mr. Syed Arif, P.E. is responsible for the technical review of the application. He may be contacted at 850/921-9528. You may discuss the modeling requirements with Mr. Cleve Holladay at 850/921-8689.

Sincerely,

3/3

A. A. Linero, P.E., Administrator
Bureau of Air Regulation

Enclosure

AAL/sa

Cc: John B. Koogler, P.E., K & A
Bill Thomas, DEP SWD
Gregg Worley, EPA Region IV
John Bunyak, NPS

Preliminary Review of Prevention of Significant Deterioration Permit Application for U.S. Agri-Chemicals Corporation Ft. Meade, Florida PSD-FL-278

by

Air Quality Branch, U. S. Fish and Wildlife Service – Denver
February 28, 2000

Background

U.S. Agri-Chemicals (USAC) is proposing to increase production by 20% at two sulfuric acid plants at its Fort Meade facility. The facility is located in Polk County, 140 km southeast of Chassahowitzka Wilderness, a Class I air quality area administered by the U.S. Fish and Wildlife Service. This project will result in PSD-significant increases in emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), and sulfuric acid mist (SAM). Emissions (in tons per year – TPY) are summarized below.

POLLUTANT	EMISSIONS INCREASE (TPY)
SO_2	1916
NO_x	79
SAM	133

Best Available Control Technology (BACT) Review

Sulfuric Acid Mist (SAM)

USAC is proposing a limit of 0.12 lb SAM/ton of 100 percent acid produced. We agree that this limit is BACT.

Sulfur Dioxide

USAC investigated the addition of a catalyst bed to a double absorption sulfuric acid plant, ammonia scrubbing, other types of scrubbing, molecular sieves, alternate catalysts, and the centaur process. They determined that the addition of 84,600 liters of catalyst would allow them to meet a limit of 3.5 lb SO_2/ton of acid produced limit. This level has been accepted as BACT at similar facilities. However, we would suggest that USAC investigate Mississippi Phosphate, which proposed an SO_2 limit of 3.16 lb/ton in 1997 for its Pascagoula Plant. The Environmental Protection Agency's (EPA) New Source Review/BACT guidance requires that "when reviewing a control technology with a wide range of emission performance levels, it is presumed that the source can achieve the same emission reduction level as another source unless the applicant demonstrates that there are source-specific factors or other relevant information that provide a technical, economic, energy or environmental justification to do otherwise." Based on past emissions data provided in USAC's February 1, 2000 letter to the Florida Department of Environmental Protection, USAC should be able to meet a limit of 3.16 lb SO_2/ton or better.

Other Issues

USAC should verify that the increase in sulfuric acid production would not increase emissions in other areas of the facility. If there are other emissions increases, these need to be quantified and evaluated for PSD significance.

Conclusions

We agree that USAC's proposed limit for SAM of 0.12 lb/ton of 100 percent acid produced is BACT. However, USAC's proposed limit for SO_2 of 3.5 lb/ton may be high. USAC should demonstrate why they couldn't meet a 3.16 lb SO_2/ton limit or better.

Air Quality Impacts Analysis

USAC evaluated the proposed project's contribution to Class I increments in Chassahowitzka Wilderness. Impacts for both the 3-hour and 24-hour Class I SO_2 increments exceeded EPA's proposed significant impact levels. Therefore, USAC did a cumulative analysis, modeling emissions from all SO_2 increment-consuming sources in the area. The results of the analysis predicted that, on days when USAC's increment consumption was significant, there were no exceedances of the increments. Therefore, we do not object to this project on the basis of increment consumption. However, we ask that USAC provide us with the results of their analysis for the days with the highest cumulative impacts so that we can determine if any increment exceedances were predicted.

Air Quality Related Values Analysis

USAC evaluated the project's contribution to haze. The CALPUFF model predicted that the project would increase light extinction by 2.7%, below the recommended threshold of 5%.

Our comments are preliminary and will be followed by a more detailed review of the proposed project.

Contact: Ellen Porter, Air Quality Branch (303) 969-2617.

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3. Article Addressed to:
Steven J. Susick, PE
General Manager, E+TS
US Agri-Chemicals Corp.
3225 State Road 630 West
Fort Meade, FL 33841

4a. Article Number
Z 031 391 875

4b. Service Type
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Post Office, State, & ZIP Code	3225 State Road 630 W, Ft Meade, FL 33841
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	3-3-00 1050051-001-AC PSD-FL-275

PS Form **3800**, April 1995

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CERTIFIED

Z 031 391 875

MAIL

FLORIDA

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

November 3, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Steven J. Susick, P.E.
General Manager, E&TS
U.S. Agri-Chemicals Corp.
3225 State Road 630 West
Fort Meade, Florida 33841-9799

Re: DEP File No. 1050051-009-AC, PSD-FL-278
Sulfuric Acid Plants No. 1 and 2

Dear Mr. Susick:

We received the referenced application on October 18, 1999. We are providing our comments based on the initial review of the application. Any additional comments from EPA and the U.S. Fish and Wildlife Service will be forwarded to you after we receive them.

We appreciate that the plants were previously permitted to increase production to 3,000 tons per day of sulfuric acid. Apparently they were not actually modified to achieve that rate. Please provide estimates of past actual annual production and maximum daily production. Please provide more specific information regarding the type of catalyst to be used and the approximate amounts to be introduced into the various converters.

We did locate the application submitted in 1984. It is helpful but obviously not up to date. Please note that the background information has changed substantially with respect to the impacts of industry on the surrounding PSD Class II areas and the nearest PSD Class I (Chassahowitzka) area. Analyses need to be performed that demonstrate that the project will not cause or contribute to violations of any ambient air quality standards or increments. The techniques by which these demonstrations are made have changed substantially. The latest approved EPA and National Park Service methodologies need to be employed.

We appreciate your plan to comply with the SO_2 emissions rates equal to the determination made for Farmland. We still require that your proposal be based on an analysis of all the methods available for reducing SO_2 emissions and that more stringent controls be excluded on the basis of cost and other impacts. Therefore we need more details regarding the technologies that were rejected and the rationale for their rejection.

If the value of 3.5 lb/ton of sulfuric acid was a Lowest Achievable Emission Rate (LAER), we could agree that it would not be necessary to conduct further cost analysis. However LAER would be on the order of 1-2 lb/ton so we need additional analysis. We also need a similar analysis for sulfuric acid mist (SAM) emissions. Please send a table containing results of annual SO_2 and SAM tests conducted during the past five years.

We will be happy to meet and discuss the details with you and your staff. Mr. Syed Arif, P.E. will be responsible for the technical review of the application. He may be contacted at 850/921-9528. You may discuss the modeling requirements with Mr. Cleve Holladay at 850/921-8689.

Sincerely,

11/3

A. A. Linero, P.E., Administrator
Bureau of Air Regulation

AAL/sa

Cc: Bill Thomas, DEP SWD
Gregg Worley, EPA Region IV
John Bunyak, NPS

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3. Article Addressed to: Steven J. Sucick, PE US Agri-Chem 3225 State Rd-630 West Ft. Meade, Fl 33841-9799	4a. Article Number Z 031 392 001
	4b. Service Type ☐ Registered ☒ Certified ☐ Express Mail ☐ Insured ☐ Return Receipt for Merchandise ☐ COD
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Postage	$
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TOTAL Postage & Fees	$
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PS Form **3800**, April 1995

U.S.FISH&WILDLIFE SERVICE
AIR QUALITY BRANCH
P.O. BOX 25287, Denver, CO 80225-0287

FACSIMILE COVER SHEET

Date: February 29, 2000

Telephone: (303) 969-2617
Fax: (303) 969-2822

To: Syed Arif

From: Ellen Porter

Subject: US Agrichemicals. Our preliminary comments are attached. We will review the project in more detail later.

Number of Pages: 3
(Including this cover sheet)

Office Location: 7333 West Jefferson Ave, Suite 450, Lakewood, CO 80235

Preliminary Review of Prevention of Significant Deterioration Permit Application for U.S. Agri-Chemicals Corporation Ft. Meade, Florida PSD-FL-278

by

Air Quality Branch, U. S. Fish and Wildlife Service – Denver
February 28, 2000

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Syed

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

KA 173-99-02

February 1, 2000

RECEIVED
FEB 02 2000
BUREAU OF AIR REGULATION

Mr. Al Linero, P.E.
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Rd
Tallahassee, FL 32399-2400

Subject: Sulfuric Acid Plant Production Increase
US Agri-Chemicals Corporation
File PSD-FL-278, 1050051-009-AC

Dear Mr. Linero:

This is in response to your letter requesting additional information on the above referenced project. The issues are addressed in the order presented in your letter.

1. The past actual annual production and the maximum daily production are as follows:

Year	Annual Sulfuric Acid Production (tons).	
	Plant 1	Plant 2
1999	787,393	793,569
1998	792,803	789,623
1997	780,322	785,799
1996	793,853	761,309
1995	774,296	802,232

Maximum daily production of Plant 1 and Plant 2 was 2488 tons and 2426 tons, respectively. The proposed maximum operating rate of 3000 tons per day represents about a 20 percent increase.

2. Plants 1 and 2 were built by Monsanto and use Monsanto LP110 and LP120 catalysts. After the modification, each converter will hold approximately 400,000 liters of catalyst.

3. The requested ambient air impact analysis is presented in the attached report.

4. The requested Best Available Control Technology analysis is presented in the attached report.

5. The past sulfuric acid mist and sulfur dioxide emissions are as follows:

Year	Emissions (lb/ton acid)			
	Plant 1		Plant 2	
	SAM	SO2	SAM	SO2
1999	0.043	2.95	0.038	3.76
1998	0.049	2.42	0.046	2.47
1997	0.028	2.27	0.035	2.46
1996	0.042	2.03	0.047	2.23
1995	0.024	1.73	0.026	2.38

If you have any questions, please do not hesitate to call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:par
Enc.

c: Ron Brunk, USAC

cc: J. Arif, BAR
SWD
EPA
NPS
C. Holladay, BAR

REPORT IN SUPPORT OF PSD APPLICATION

FOR

INCREASE IN SULFURIC ACID PRODUCTION

U.S. AGRI-CHEMICALS CORPORATION
FT. MEADE FACILITY

REPORT PREPARED BY

KOOGLER & ASSOCIATES
4014 NW 13TH STREET
GAINESVILLE, FLORIDA
(352) 377-5822

JANUARY, 2000

TABLE OF CONTENTS

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1.0 BEST AVAILABLE CONTROL TECHNOLOGY

Best Available Control Technology (BACT) is required to control air pollutants emitted from newly constructed major sources or from modification to the major emitting facilities if the modification results in significant increase in the emission rate of regulated pollutants.

USAC proposes about a 20 percent increase in the production rate of the two existing double absorption sulfuric acid plants. The proposed maximum production rate for each unit, of 3000 tons per day, was previously permitted under PSD-FL-107. However, the plants had not achieved that level of production. This case-by-case BACT review acknowledges that the proposed project involves a marginal increase in production to achieve a previously permitted federally enforceable operating rate.

The sulfur dioxide (SO2), sulfuric acid mist (SAM) and nitrogen oxides (NOx) emissions increases from the proposed project were determined to represent a significant increase. These pollutants are present in the tail gas from all contact process sulfuric acid plants. In a typical plant with a double absorption system, the sulfur dioxide in the tail gas is less than 4 pounds per ton of acid produced and the acid mist is less than 0.15 pounds per ton of acid produced. The nitrogen oxides that are present in the tail gas are formed in the sulfur burners as a result of the fixation of atmospheric nitrogen. Stack tests indicate nitrogen oxides emissions from Plant 1 and 2 of about 0.07 and 0.08 pound per ton of acid produced, respectively.

1.1 EMISSION STANDARDS FOR SULFURIC ACID PLANTS

Federal New Source Performance Standards (NSPS) for sulfuric acid plants became effective on August 17, 1971. These standards, codified in 40 CFR 60, Subpart H, limit sulfur dioxide emissions to no more than 4.0 pounds per ton of 100 percent acid produced. Sulfuric acid mist emissions are limited to no more than 0.15 pounds per ton of 100 percent acid produced. Additionally, opacity of the emissions from new or modified sulfuric acid plants is limited to less than 10 percent. There are no emission standards under NSPS for nitrogen oxides from sulfuric acid plants.

EPA's most recent review of the New Source Performance Standards for sulfuric acid plants in 1985 (EPA-450/3-85-012), concluded that because of variations in sulfur dioxide emissions as a function of catalyst age, the level of SO2 emissions as specified in the current NSPS should not be changed.

For sulfuric acid mist, EPA concluded that a more stringent acid mist standard would not be practical because of the need to provide a margin of safety due to in-plant operating fluctuations, which introduce variable quantities of moisture into the sulfuric acid production line.

There has been no change in EPA philosophy related to sulfuric acid plants since the 1985 review. A review of BACT/LAER determinations published in the EPA Clearinghouse indicates that no new control alternatives have been applied to the double absorption sulfuric acid plants for reduction in sulfur dioxide emission nor for reduction of sulfuric acid mist emissions. No control technologies for nitrogen oxides are discussed in either the NSPS review or in BACT/LAER determinations as there is typically no control of NOx from the double absorption sulfuric acid plants.

1.2 CONTROL TECHNOLOGIES

Sulfur dioxide and sulfuric acid mist emissions from sulfuric acid plants can be controlled by various processes. The process of choice for sulfur dioxide control has been double absorption and the process of choice for controlling sulfuric acid mist emission has been one of the various types of fiber mist eliminators. These processes have been selected based on cost, product recovery, the formation of no undesirable by-products and the fact that neither introduces operating processes that are foreign to plant personnel.

In EPA's review of NSPS for sulfuric acid plants in March 1985 (EPA-450/3-85-012), 46 sulfuric acid plants built between 1971 and 1985 were reviewed. Of these 46 plants, 40 used the double absorption process for sulfur dioxide control with the remaining six using some type of acid gas scrubbing. All 46 plants used the high efficiency mist eliminators for acid mist control. The control of nitrogen oxides in sulfuric acid plants has not been addressed to date because the low concentration of nitrogen oxides in the tail gases of sulfuric acid plants (10-20 parts per million) does not lend itself to cost effective controls.

Also in the 1985 EPA review, several potential control technologies that had been used to control sulfur dioxide and sulfuric acid mist emissions from sulfuric acid plants were addressed. The alternatives included the double absorption process, ammonia scrubbing, sodium sulfite-bisulfite scrubbing, and molecular sieves for sulfur dioxide control and filter type mist eliminators and electrostatic precipitators for sulfuric acid mist control. A review of the EPA BACT/LAER Clearinghouse information indicated that no other control alternatives for sulfur dioxide and sulfuric acid mist have been as consistently considered for sulfuric acid plants prior to or since the 1985 NSPS review as the double absorption process and fiber mist eliminators, respectively. The limits typically selected with a margin of safety for sulfur dioxide and sulfuric acid mist have been 4.0 and 0.15 pounds per ton, respectively. More recent determinations in Florida have limited sulfur dioxide emissions to 3.5 pounds per ton of acid; and, limited sulfuric acid mist emissions to 0.12 pound per ton acid. No control alternatives were addressed for nitrogen oxides control in either the 1985 EPA NSPS review or in the BACT/LAER Clearinghouse.

1.2.1 Sulfur Dioxide Control

The control alternatives for sulfur dioxide have been summarized based upon information compiled by EPA in the 1985 NSPS review for sulfuric acid plants, information recently submitted to FDEP by companies with similar sulfuric acid plants during review of production increase requests (refer to PSD-FL-225, 229, 235, 238, and 250).

1.2.1.1 Double Absorption Process

The first major improvement in sulfuric acid plant technology was the introduction of the double absorption process. The second absorber tower on double absorption sulfuric acid plants is essentially a sulfur dioxide control device. The second tower adds about 20 percent to the cost of a plant and it increases operating costs by reducing the amount of high pressure steam that can be recovered and by increasing the pressure drop across the plant. The second absorption stage, in reducing sulfur dioxide emissions, results in the recovery of about 25-26 pounds of sulfur dioxide per ton of acid produced. This sulfur dioxide is converted to sulfuric acid, resulting in about a two percent increase in acid production. Based on this information, it becomes apparent that the second absorption stage is added for sulfur dioxide control, not for increased acid production.

As a sulfur dioxide control system, the double absorption process has become the system of choice within the sulfuric acid industry since the promulgation of NSPS in 1971. Several single absorption plants have also been converted to double absorption plants in order to comply with sulfur dioxide emission standards.

The double absorption process offers the following advantages over other SO2 control technologies:

a. 99.7 percent of the sulfur is converted to sulfuric acid compared with about 97.7 percent conversion with a single absorption plant;
b. there are no by-products produced;
c. there are no new operating processes that plant personnel must become familiar with;
d. the process permits higher inlet sulfur dioxide concentrations resulting in a reduction in equipment size;
e. there is no reduction in overall plant operating time or efficiency; and
f. there is no increase in manpower requirements.

A double absorption plant typically operates at a sulfur dioxide emission rate in the range of 2-4 pounds per ton of acid, in compliance with the NSPS. EPA set the standard at 4.0 pounds per ton of acid to account for fluctuations that invariably occur in operating plants.

Since the adoption of the NSPS, there have been some design and operating changes in sulfur burning sulfuric acid plants as well as changes and improvements in catalyst technology. At the time the NSPS were adopted, the SO2 concentration in the gas stream leaving the sulfur burner was in the range of 9.0-9.5 percent. In recent years, changes in plant design have increased the sulfur dioxide concentration at the burner exit to 11.5-11.7 percent.

It should be noted that sulfuric acid plants operating in conjunction with smelters or spent acid regeneration plants still operate with a feed gas sulfur dioxide concentration in the range of 7-9 percent. Because of this difference in the concentration of sulfur dioxide in the feed gas, it is not possible to compare the performance of a sulfur burning sulfuric acid plant as operated in Florida with a sulfuric acid plant operating at a smelter or a spent acid recovery plant.

The second improvement in sulfuric acid plant technology has been in catalyst performance. Changes have occurred in the composition of the vanadium/sodium/potassium catalyst and in the physical shape of the catalyst; from a pellet (4 and 6 millimeters in diameter by 8-15 millimeters long) to a ring-type structure. The change in the composition of the catalyst plus the change in the catalyst shape has resulted in a catalyst with a higher activity and a much lower pressure drop.

Another factor that determines the sulfur dioxide emission rate from a double absorption sulfur burning sulfuric acid plant is the specific design of the plant. For maximum sulfuric acid production the blower of the sulfuric acid plant will be set to operate at the maximum sustainable rate. The sulfur feed rate to the sulfur burner will then be increased until either the sulfuric acid production rate, or the sulfur dioxide emission rate, permit limit is reached.

1.2.1.2 Addition of a Catalyst Bed to a Double Absorption Sulfuric Acid Plant

Most double absorption sulfur burning sulfuric acid plants consist of a sulfur burner, three catalyst beds to convert SO2 to SO3 an intermediate absorption tower, a fourth catalyst bed, a final absorption tower, acid mist control and a heat recovery system. These plants are referred to as 3 by 1 (three catalyst beds followed by one catalyst bed) plants. The predominance of this type of plant is dictated by the fact that this arrangement has been determined to be the most cost-effective design. The conversion of sulfur dioxide produced in the sulfur burner to sulfur trioxide in the catalyst bed and the subsequent absorption of the sulfur trioxide determines the conversion efficiency of a plant (conversion of sulfur to sulfuric acid). As the only release of unconverted sulfur is sulfur dioxide (and a small amount of acid mist) in the stack gas, the conversion efficiency also determines the emissions from the plant.

The conversion from sulfur dioxide to sulfur trioxide is a complex reaction. The equilibrium concentrations of this reaction are determined in part by temperature, the oxygen:sulfur dioxide ratio and the sulfur trioxide concentration. The approach to this equilibrium is a function of temperature, reaction time and the activity of the catalyst. Lower temperatures promote a higher conversion of sulfur dioxide to sulfur trioxide; however, lower temperatures reduce the reaction rate. Increasing the contact time to compensate for a reduced reaction rate at lower temperatures requires more catalyst (greater contact time). The overall conversion process is a complex balance between these and possibly other factors in a temperature range between approximately 770°F and 1150°F and in a time period of approximately 1.5 seconds. The lower temperature limit is determined by the activation temperature of the catalyst. Conventional catalysts have a minimum activation temperature of approximately 770°F (a practical operating minimum of 790°F). The upper temperature limit of the catalyst is about 1150°F. Approximately 90-94 percent of the sulfur dioxide is converted to sulfur trioxide in the first three catalyst beds. The gas stream then passes through an intermediate absorption tower where the sulfur trioxide is absorbed resulting in a shift in the equilibrium curve favoring further conversion of sulfur dioxide to sulfur trioxide. The additional conversion in the fourth catalyst bed raises the final overall conversion to 99.7 percent.

The addition of one or more catalyst beds following the final bed (without the addition of a third absorption tower) will theoretically result in a fractional increase in conversion efficiency. The increase is limited by the slope of the equilibrium curve as 100 percent conversion is approached and by the fact that the temperature required to reach the higher conversion approaches the lower activation limits of the catalyst.

In practice, however, it has been observed that there is little measurable improvement in conversion between a 3 by 1 plant and a 3 by 2 plant.

1.2.1.3 Ammonia Scrubbing

Five sulfuric acid plants constructed between 1971 and 1985 used ammonia scrubbing for sulfur dioxide control. None of these plants were double absorption plants. The process can be effective for reducing sulfur dioxide emissions to below 4.0 pounds per ton and also for controlling sulfuric acid mist emissions. The major disadvantages of ammonia scrubbing are:

a. a waste by-product is produced;

b. the scrubbing system is a high maintenance item and requires additional manpower for operation;

c. no sulfuric acid production increase benefits are achieved with the scrubbing system; and,

d. the environmental liabilities of introducing a potential Hazardous Air Pollutant release point at another location in the plant.

Ammonia scrubbing uses anhydrous ammonia and water in a scrubbing system to convert sulfur dioxide to ammonium sulfite/bisulfite and eventually to ammonium sulfate. The ammonium sulfate can be crystallized and sold as a market commodity, if possible, or disposed of as waste. Furthermore, similar sulfur dioxide emissions levels can be achieved by addition of more catalyst in the converters, without the above disadvantages and without the associated capital, operating and maintenance costs. Therefore, ammonia scrubbing is rejected for the proposed project.

1.2.1.4 Other Scrubbing Technologies

Between 1971 and 1985, two sulfuric acid plants were constructed employing sodium sulfite-bisulfite scrubbing to control sulfur dioxide emissions. One of the plants was subsequently converted to ammonia scrubbing and the second plant has never been used. As a result, sodium sulfite-bisulfite scrubbing is not considered a demonstrated sulfur dioxide control alternative.

Other scrubbing liquors that have a potential for reducing sulfur dioxide emissions include caustic, sodium carbonate, calcium oxide and hydrogen peroxide. Without going through a detailed cost analysis to evaluate these scrubbing technologies, it can be stated that each requires additional capital investment and result in many of the direct and indirect annual costs associated with ammonia scrubbing. Because of higher chemical costs and/or waste disposal costs, these other technologies are expected to be even more costly than ammonia scrubbing. For this reason, these technologies are also rejected for the proposed project.

1.2.1.5 Molecular Sieves

A molecular sieve was installed at one sulfuric acid plant in Florida for sulfur dioxide control. The system was effective for controlling sulfur dioxide; however, extensive operating problems were experienced as the molecular sieve also absorbed nitrogen oxides. The regeneration of sieves resulted in the formation of nitric acid within the sulfuric acid plant. The nitric acid/sulfuric acid mixture resulted in severe corrosion problems that caused the molecular sieve system to be abandoned. As a result, molecular sieves are not considered a viable alternative for sulfur dioxide control in sulfuric acid plants.

1.2.1.6 Catalyst Use

Some changes in catalyst composition and shape have occurred since the NSPS were adopted. The first major change was a change in catalyst shape. The catalyst went from pellets that were 4.0 millimeters and 6.0 millimeters in diameter by 8-15 millimeters long to a ring-type catalyst. The major effect of this shape change was to reduce the pressure drop through the sulfuric plants both initially and over time. The results of this improvement were to extend the time between plant turnarounds from approximately nine months to 18 months or more and to reduce blower operating costs.

A change in catalyst composition, beyond changes in the vanadium content of the catalyst, has been the reintroduction of the cesium-promoted catalyst. The cesium catalyst is a 6-8 percent vanadium catalyst with a portion of the potassium promoter replaced by cesium. The introduction of cesium reduces the activation temperature of the catalyst by approximately 20°F (from about 770°F to 750°F). At temperatures above approximately 770°F, the performance of the cesium catalyst and the conventional catalyst are about the same.

The advantage of the cesium catalyst is that it allows the startup of a sulfuric acid plant at a lower entrance gas temperature. This is a distinct advantage for sulfuric acid plants operating at smelters and spent acid recovery plants where there are frequent plant startups and shutdowns. In sulfuric acid plants that are operating at a steady-state, the potential advantage of using a cesium catalyst is that the temperature (normally of the last catalyst bed) can be reduced about 20°F. The disadvantage of the cesium-promoted catalyst is that it is about three times more expensive than conventional catalyst. Furthermore, recent FDEP determinations based on available data indicate that the addition of more conventional catalyst, in plants capable of accommodating such increase, is expected to achieve the same level of sulfur dioxide reduction as cesium-promoted catalyst. USAC proposes to add about 84,600 liters of conventional catalyst to each plant, at a total cost of almost $400,000. This will allow the 20 percent production increase and maintain the sulfur dioxide emissions in compliance with a more stringent BACT limit of 3.5 pounds per ton of acid produced.

1.2.1.7 Centaur Process

This technology, licensed by Calgon Carbon and Monsanto Enviro-Chem, uses low temperature wet carbon in place of the conventional fourth pass and second absorption tower. While this process has been marketed for small plants (1000 tons per day), the process has neither been optimized, nor been recommended for larger plants.

1.2.2 Sulfuric Acid Mist Control

Control alternatives that were reviewed by EPA in the 1985 New Source Performance Standards review are summarized in the following sections.

1.2.2.1 Fiber Mist Eliminators

The 46 new sulfuric acid plants constructed between 1971 and 1985, all used the fiber-type mist eliminators for sulfuric acid mist control. Operations demonstrated that these types of mist eliminators can control sulfuric acid mist emissions to less than 0.15 pounds per ton of sulfuric acid.

The mist eliminators are the choice of control for sulfuric acid mist within the sulfuric acid industry because they require very little operation and maintenance attention and because of the small space requirement associated with these devices. The disadvantage of this type of mist eliminator is that the pressure drop across the elements varies from five to 15 inches of water; resulting in an increase in operating utility costs. USAC currently utilizes the high efficiency mist eliminators, resulting in sulfuric acid mist emissions that are consistently below NSPS.

1.2.2.2 Electrostatic Precipitators

Electrostatic precipitators (ESPs) have the potential for controlling sulfuric acid mist emissions from sulfuric acid plants; however, there is no demonstrated application of ESPs. The disadvantages associated with ESPs and hence, the reason they have not been used, include the initial cost, size requirements, operating and maintenance requirements and the potential for corrosion.

1.2.3 Nitrogen Oxides Control

The combustion of sulfur in the acid plant is a relatively low temperature process at oxygen levels that are, out of necessity, relatively high. The gas temperature exiting a sulfur furnace is in the range of 2000°F with an oxygen concentration in the range of 9.2 percent. If the oxygen concentration is decreased (and the sulfur dioxide concentration correspondingly increased), the catalyst in sulfuric acid plants becomes ineffective and sulfur dioxide to sulfur trioxide conversion efficiency drops off markedly. The temperature of the exit gas is strictly a function of the heat of combustion of sulfur at the air flow rate necessary to provide approximately 9.2 percent oxygen and 11.7 percent sulfur dioxide in the furnace exit gas.

Compared to a fossil fuel fired combustion source, the temperature of a sulfur furnace is generally lower and the oxygen content of the combustion gas is generally higher. As a result of the relatively low combustion temperature, the nitrogen oxides concentration in the gas stream leaving the sulfur furnace is inherently quite low; in the range of 20 parts per million (v/v). This compares with NOx concentrations of several hundred parts per million in stack gases from typical fossil fuel combustion sources. As a result, there has historically not been any emphasis placed on controlling NOx emissions from the sulfuric acid plants. For purposes of this analysis, control technologies for NOx will be briefly reviewed as they might apply to sulfur burning sulfuric acid plants.

Flue gas recirculation and low-NOx burners are not applicable. Flue gas recirculation would not be practical as reducing oxygen levels below 9.2 percent will be counterproductive as previously discussed. The low-NOx burner is not applicable for the reason that combustion temperatures are already relatively low and further refinements to the combustion process will not be productive in further reducing the NOx concentration in the furnace exit gas. Furthermore, low-NOx burners for sulfur furnaces do not exist.

Add-on control devices include selective catalytic and non-catalytic NOx reduction. Both involve the introduction of ammonia to the stack gas. If introduced, the ammonia would first react with any sulfuric acid mist that is present, producing an ammonium sulfite/bisulfite/sulfate aerosol. These aerosols will plug the mist eliminator normally used in sulfuric acid plants if the NOx control system is installed prior to the mist eliminator. If installed after the mist eliminator, the aerosols will be extremely difficult to remove from the gas stream and will result in a very visible plume from the sulfuric acid plant. Therefore, add-on NOx control alternatives are rejected for the proposed project.

1.3 BACT CONCLUSION

All recent BACT determinations by FDEP for sulfur burning double absorption sulfuric acid plants have concluded that the double absorption process for sulfur dioxide control and the fiber mist eliminators for sulfuric acid mist control represent BACT. No control has been imposed for NOx emissions. These determinations were based on case-by-case analyses taking into account environmental, energy and economic impacts, the degree of emission reduction and the demonstrated availability of the control technology.

It should be kept in mind that USAC is requesting only about a 20 percent increase in production rate in order to achieve a production rate already permitted by FDEP under PSD-FL-107. Further, the emissions data indicate that the existing technology is capable of meeting the sulfur dioxide and sulfuric acid mist emissions recently determined by FDEP to be BACT for other similar sources.

Therefore, for sulfur dioxide emissions control, USAC proposes the use of the existing double absorption system. Additional conventional catalyst will be utilized to meet a BACT limit of 3.5 pounds sulfur dioxide per ton of acid. This reflects the most stringent limit imposed on an existing double absorption plant.

For sulfuric acid mist emissions control, USAC proposes the use of the existing high efficiency mist eliminators. The existing equipment will meet a BACT limit of 0.12 pound acid mist per ton of acid. This reflects the most stringent limit imposed on an existing double absorption plant.

For nitrogen oxide emissions, no add on controls are proposed. The resulting emissions level of 0.12 pound nitrogen oxides per ton of acid corresponds to the limit imposed on other double absorption plants.

2.0 AIR QUALITY REVIEW

The air quality review required of a PSD construction permit application potentially requires both air quality modeling and air quality monitoring. Air quality monitoring is required when the impact of air pollutant emission increases associated with a proposed project exceed the de minimis impact levels, or in cases where an applicant wishes to define existing ambient air quality by monitoring rather than by air quality modeling. The air quality modeling is required to provide assurance that the air pollutant emissions associated with the project, combined with all other applicable air pollutant emission rates associated with other sources affecting the project area, will not cause or contribute to an exceedance of the applicable ambient air quality standards.

The air quality review for the proposed project was limited to SO2 and NOx. In accordance with FDEP guidance, SAM emission increases are addressed under BACT as there is no corresponding applicable air quality standard.

2.1 AIR QUALITY MODELING

2.1.1 Significant Impact Analysis

The emission rate used for Significant Impact Analysis (SIA) air quality modeling purposes represents the proposed SO2 emission rates. Table 2-1 contains modeling input parameters used in the ambient air quality impacts analysis. The average SO2 emission rate was used in the modeling, corresponding to the averaging periods of the air quality standards.

The air impact analysis was conducted using the Industrial Source Complex-Short Term air quality model, Version 96113 (ISC-ST3), in accordance with guidelines established by EPA and published in the document, Guideline for Air Quality Modeling. The meteorological data used with the model were for Tampa, Florida and represented the period 1987-1991. The Class I area SIA was conducted using the CALPUFF model with one full year (1990) of meteorological data.

The SIA modeling included discrete receptors at the facility property boundary and additional receptors established by a polar grid extending up to 24 kilometers. Receptors in the vicinity of the source are presented in Figure 2-1.

The results of the SIA modeling, summarized in Table 2-2, demonstrate that the predicted ambient air quality impact of the SO2 emission increases from the proposed project for the Class I and II areas are greater than significant. The maximum predicted impacts associated with NOx emissions from the proposed project are less than significant. Consequently, additional SO2 modeling was required to determine compliance with the ambient air quality standards and allowable Class I and II area PSD increments.

2.1.2 AAQS and PSD Increment Analysis

The Ambient Air Quality Standards (AAQS) Analysis and the PSD Increment (PSD) Analysis were conducted to determine the combined ambient air impact of the proposed project and other nearby SO2 emitting sources on the Class II area. The significant facilities to be included in the analysis were determined based on the "20 D Rule" using the facility emission inventory most recently utilized by FDEP, with recent updates provided by FDEP staff.

A list of the significant facilities near the proposed project is presented in Table 2-3. The corresponding sources at the significant facilities that contribute to the ambient air concentration and the PSD increment consumption/expansion in the Class II area are presented in Tables 2-4 and 2-5, respectively. Although the ISC model is not recommended for modeling sources beyond 50 kilometers, some of the borderline sources were included to be conservative.

The results of the AAQS and PSD increment analysis indicate that the maximum predicted 3-hour, 24-hour and annual period impacts for the AAQS and Class II area PSD increment are within the standards, as shown in Table 2-6.

The Class I area PSD increment analysis for SO2 was conducted using CALPUFF, a long range transport model, using 1990 meteorological data. Details of the CALPUFF input data are presented in Appendix B. The SIA using CALPUFF resulted in significant SO2 impacts for only the 3-hour and 24-hour periods. Therefore additional modeling, using CALPUFF, was conducted for those averaging periods in order to determine the PSD increment consumption by all sources in FDEP's emission inventory.

The modeling was simplified by limiting the analysis to days when the predicted impacts from the proposed project were significant. The results of the modeling, presented in Table 2-7, indicated that the PSD increment contributions from sources in FDEP's Class I area inventory, are negative (increment expanding) on days when the predicted impacts from the proposed project are significant. The CALPUFF modeling results indicated that the Class I area PSD increment would not be exceeded by the proposed project; and, that the proposed project would not significantly contribute to any predicted violations of the PSD increment.

Figure 2-1
Receptor Locations
US AGRICHEMICALS CORPORATION

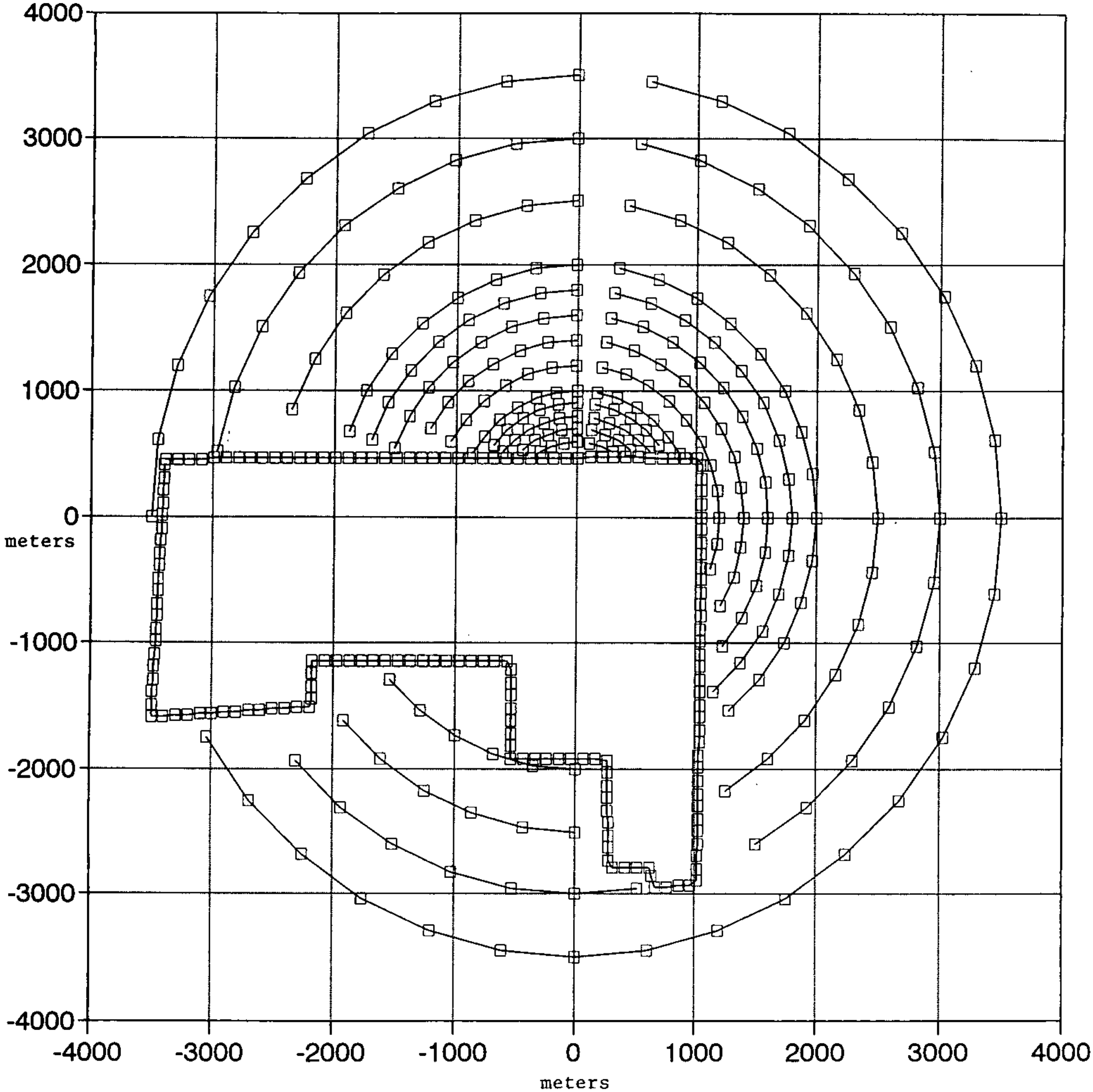

TABLE 2-1

AIR QUALITY MODELING PARAMETERS

U.S. AGRI-CHEMICALS CORP.
POLK COUNTY, FLORIDA

Emission Unit	Stack Ht (m)	Stack Dia (m)	Stack Gas Vel (mps)	Stack Gas Temp (°K)	Emission Rate SO2 (g/s)	Emission Rate NOX (g/s)
Existing						
UNIT 1	53.05	2.59	10.80	344.11	35.15	1.51
UNIT 2	53.05	2.59	10.80	344.11	35.15	1.51
Proposed						
UNIT 1	53.05	2.59	13.50	344.11	55.13	1.89
UNIT 2	53.05	2.59	13.50	344.11	55.13	1.89

NOTES:

1. Building downwash effects included using EPA approved BPIP program.
2. Existing sulfur dioxide emissions are based on past operations data.
3. Proposed sulfur dioxide emissions are based on requested allowable emission rates.

TABLE 2-2

SUMMARY OF SULFUR DIOXIDE
SIGNIFICANT IMPACT ANALYSIS

U.S. AGRI-CHEMICALS CORP.
POLK COUNTY, FLORIDA

MET. DATA	CLASS I AREA SO2 IMPACTS (1) ANNUAL NOX	ANNUAL SO2	3-HR SO2	24-HR SO2	CLASS II AREA SO2 IMPACTS (1) ANNUAL NOX	ANNUAL SO2	3-HR SO2	24-HR SO2
ISC3 RESULTS								
1987	0.0004	0.023	2.36	0.52	0.019	1.78	78.91	18.44
1988	0.0006	0.031	2.69	0.49	0.013	1.14	84.29	18.99
1989	0.0007	0.037	3.40	0.54	0.017	1.82	87.43	23.03
1990	0.0004	0.019	2.27	0.47	0.019	1.80	82.94	20.95
1991	0.0004	0.023	2.04	0.47	0.018	1.59	88.97	21.67
CLASS I AREA CALPUFF RESULTS								
1990	0.0003	0.016	1.47	0.31				
Max.	0.0007	0.037	3.40	0.54	0.019	1.82	88.97	23.03
SIGNIFICANT IMPACT LEVEL (Proposed) / (Final)	0.1	0.1	1.0	0.2	1.0	1.0	25.0	5.0

NOTE:

(1) The impacts represent the highest-high impact in micrograms per cubic meter (ug/m3), resulting from the proposed project.

Table 2-3
Sulfur Dioxide Emitting Facilities

SO2 "20 D" SOURCE INVENTORY US-AGRI CHEMICALS CORP.				Source Location	415.940	3068.930	
SOURCE DESCRIPTION	DESIGNATION	UTM Coordinates (km) EAST	NORTH	SO2 TPY	Distance (Km)	20-D Emission (TPY)	Significant?
ASPHALT PAVERS	BOTH	359.900	3162.400	78	109	2180	NO
ASPHALT PAVERS	BOTH	361.400	3168.400	61	113	2269	NO
ATLANTIC SUGAR	NAAQS	553.300	2945.000	567	185	3700	NO
AUBURNDALE	BOTH	420.800	3103.300	221	35	694	NO
BORDEN	PSD	394.800	3069.600	225	21	423	NO
BREWSTER/IMPERIAL	PSD	404.800	3069.500	670	11	223	YES
CARGILL/GARDINIER MINE	NAAQS	415.300	3063.300	670	6	113	YES
CARGILL/GARDINIER	BOTH	363.400	3082.400	11779	54	1085	YES
CARGILL/SEMINOLE/W.R. GRACE	BOTH	409.770	3086.990	14931	19	382	YES
CF BARTOW	BOTH	408.500	3082.500	29567	15	310	YES
CF PLANT CITY	BOTH	388.000	3116.000	9452	55	1095	YES
CITRUS WORLD	NAAQS	441.000	3087.300	2062	31	621	YES
CLM CHLORIDE METALS	BOTH	361.800	3088.300	731	58	1150	NO
COCA COLA - AUBURNDALE	NAAQS	421.600	3103.700	1393	35	705	YES
CONSOLIDATED MINERALS	NAAQS	393.800	3096.300	943	35	704	YES
COUCH CONST-ODESSA (ASPHALT	BOTH	340.700	3119.500	252	91	1813	NO
COUCH CONST-ZEPHYRHILLS (ASP	BOTH	390.300	3129.400	123	66	1314	NO
DOLIME	PSD	404.813	3069.548	355	11	223	YES
DRIS PAVING (ASPHALT)	BOTH	340.600	3119.200	8	91	1811	NO
ER JAHNA	BOTH	386.700	3155.800	29	92	1833	NO
ESTECH/SWIFT	PSD	411.500	3074.200	4856	7	138	YES
EVANS	BOTH	383.300	3135.800	2188	74	1488	YES
FARMLAND	BOTH	410.516	3079.624	8545	12	240	YES
FDOC	BOTH	382.200	3166.100	104	103	2057	NO
FLA MINING & MATERIALS	BOTH	356.200	3169.900	50	117	2346	NO
FLORIDA CRUSHED STONE	BOTH	360.008	3162.398	3423	109	2179	YES
FPC ANCLOTE	NAAQS	324.400	3118.700	116916	104	2084	YES
FPC BARTOW	NAAQS	342.400	3082.600	62685	75	1496	YES
FPC BAYBORO	NAAQS	338.800	3071.300	6881	77	1544	YES
FPC CRYSTAL RIVER	BOTH	334.200	3204.500	133484	158	3166	YES
FPC DEBARY	BOTH	467.500	3197.200	16224	138	2765	YES
FPC HIGGINS	NAAQS	336.500	3098.400	12082	85	1695	YES
FPC INT. CITY	BOTH	446.300	3126.000	8168	65	1293	YES
FPC OSCEOLA	BOTH	446.300	3126.000	16958	65	1293	YES
FPC POLK	BOTH	414.400	3073.910	859	5	104	YES
FPL FT MYERS	NAAQS	422.100	2952.900	26872	116	2324	YES
FPL MANATEE	NAAQS	367.200	3054.100	83410	51	1019	YES
GAINESVILLE REGIONAL UTILITIES	BOTH	365.500	3292.700	197	229	4588	NO
GEN. PORT. CEMENT	PSD	358.000	3090.600	4602	62	1237	YES
GOLD BOND	NAAQS	347.300	3082.700	320	70	1400	NO
GULF COAST LEAD	NAAQS	364.000	3093.500	1711	57	1149	YES
HARDEE	BOTH	404.800	3057.400	9657	16	321	YES
HILLS. CO. RESOURCE RECOVERY	BOTH	368.200	3092.700	744	53	1067	NO
HOSP CORP OF AM	BOTH	333.400	3141.000	6	110	2192	NO
IMC - AGRICO /NICHOLS/CONSERV	BOTH	398.400	3084.200	3495	23	465	YES
IMC-AGRICO/NEW WALES	BOTH	396.600	3078.900	11416	22	435	YES
IMC-AGRICO/NORALYN	NAAQS	414.700	3080.300	504	11	229	YES
IMC-AGRICO/PIERCE	PSD	404.100	3078.950	1646	16	310	YES
IMC-AGRICO/SO. PIERCE	BOTH	407.500	3071.300	5114	9	175	YES
KISSIMMEE KANE IS.	BOTH	447.680	3127.920	1023	67	1340	NO
KISSIMMEE UTIL	BOTH	460.100	3129.300	1563	75	1496	YES
LAFARGE CORP.	NAAQS	357.7	3090.6	20293	62	1243	YES
LAKE CO. COGEN. FACILITY PROP	BOTH	434.000	3198.800	175	131	2622	NO
LAKELAND LARSEN	BOTH	409.300	3102.800	4944	35	690	YES
LAKELAND MCINTOSH	BOTH	409.200	3106.200	30563	38	757	YES
MOBIL BIG-4	BOTH	394.850	3069.770	591	21	422	YES
MOBIL NICHOLS	BOTH	398.300	3084.300	971	23	468	YES
MOBILE ELECTROPHOS	PSD	405.600	3079.400	3337	15	294	YES
MULBERRY COGENERATION	BOTH	413.600	3080.600	466	12	238	YES

Table 2-3
Sulfur Dioxide Emitting Facilities

SO2 "20 D" SOURCE INVENTORY US-AGRI CHEMICALS CORP.				Source Location	415.940	3068.930	
		UTM Coordinates (km)		SO2	Distance	20-D Emission	
SOURCE DESCRIPTION	DESIGNATION	EAST	NORTH	TPY	(Km)	(TPY)	Significant?
MULBERRY PROSPHATES/ROYSTE	BOTH	406.753	3085.151	5312	19	373	YES
NEW PORT RICHEY HOSP	BOTH	331.200	3124.500	3	101	2027	NO
NITRAM	NAAQS	363.100	3089.000	108	57	1130	NO
OMAN CONST (ASPHALT)	BOTH	359.800	3164.900	73	111	2224	NO
ORLANDO UTIL STANTON	BOTH	483.500	3150.600	24100	106	2120	YES
OVERSTREET PAV. (ASPHALT)	BOTH	355.900	3143.700	128	96	1918	NO
PANDA KATHLEEN	BOTH	398.700	3101.400	25	37	735	NO
PASCO CO. COGEN. FACLITY PROP	BOTH	385.600	3139.000	175	76	1527	NO
PASCO COUNTY RRF	BOTH	347.100	3139.200	490	98	1967	NO
PINELLAS RRF	BOTH	335.300	3084.400	2165	82	1642	YES
PINEY POINT/ROYSTER	NAAQS	348.700	3057.300	1719	68	1365	YES
REEDY CREEK GENERATORS	BOTH	442.000	3139.000	127	75	1495	NO
REEDY CREEK SERVICES	BOTH	443.000	3144.300	5	80	1602	NO
RIDGE COGENERATION	BOTH	416.700	3100.400	480	31	630	NO
SEBRING UTIL	BOTH	464.300	3035.400	3868	59	1177	YES
SECI HARDEE	BOTH	404.900	3057.400	452	16	319	YES
STAUFFER	PSD	325.600	3116.700	2265	102	2044	YES
SUGAR CANE GROWERS	NAAQS	534.900	2953.300	4936	166	3318	YES
SULFUR TERMINALS	NAAQS	358.000	3090.000	104	62	1233	NO
TAMPA GENERAL HOSP	NAAQS	356.400	3091.000	59	63	1270	NO
TAMPA MCKAY BAY RRF	BOTH	360.000	3091.000	744	60	1203	NO
TECO BIG BEND	BOTH	361.900	3075.000	415986	54	1088	YES
TECO GANNON	NAAQS	360.000	3087.500	127495	59	1179	YES
TECO HOOKERS POINT	NAAQS	358.000	3091.000	13535	62	1240	YES
TECO POLK POWER	BOTH	402.488	3066.914	4031	14	272	YES
THATCHER GLASS	NAAQS	361.800	3088.300	177	58	1150	NO
USS AGRI-CHEM BARTOW	PSD	413.200	3086.300	1580	18	352	YES
USSAC FT MEADE	BOTH	415.940	3068.930	3377	0	0	YES

Table 2-4
Class II Area Sulfur Dioxide Emitting Facilities

SO2 FAAQS SOURCE INVENTORY US-AGRI CHEMICALS CORP. SOURCE DESCRIPTION	Emissions (g/s)	AAQS UTM COORDINATES (km EAST	NORTH	Height (m)	Temp. (K)	Velocity (m/s)	Diameter (m)
CARGILL/GARDINIER MINE ROCK DRYER	17.60	415.300	3063.300	19.20	290.0	7.00	2.90
CARGILL/GARDINIER DAP (U55)	0.96	363.400	3082.400	40.50	320.0	16.09	2.13
CARGILL/GARDINIER GTSP (UAA)	1.90	363.400	3082.400	38.40	328.0	11.56	2.44
CARGILL/GARDINIER SAP #7 (U04)	46.20	363.400	3082.400	45.60	340.0	12.64	2.29
CARGILL/GARDINIER SAP #8 (U05)	52.50	363.400	3082.400	45.60	339.0	13.93	2.44
CARGILL/GARDINIER SAP #9 (INCR IN9 OF8/9 U06	67.20	363.400	3082.400	45.60	350.0	12.66	2.74
CARGILL/GARDINIER NaSiF MFG (U41)	0.16	363.400	3082.400	12.20	333.1	13.37	2.80
CARGILL/SEMINOLE/W.R. GRACE DAP 4 - Bartow	0.30	409.770	3086.990	40.20	316.0	26.20	2.10
CARGILL/SEMINOLE/W.R. GRACE SAP 4, 5 & 6	143.64	409.770	3086.990	60.96	347.0	34.00	1.52
CF BARTOW DAP 1-3	3.97	408.500	3082.500	36.40	339.0	16.11	2.13
CF BARTOW DAP 1-3	7.93	408.500	3082.500	36.40	339.0	16.11	2.13
CF BARTOW H2SO4 5 (2400 TPD)	50.40	408.500	3082.500	63.41	361.0	10.88	2.13
CF BARTOW H2SO4 6 (2400 TPD)	50.40	408.500	3082.500	63.41	370.0	7.28	2.13
CF BARTOW H2SO4 7 (2000 TPD)	42.00	408.500	3082.500	67.10	351.0	9.80	2.40
CF PLANT CITY Zephyrhills (U01)	19.98	388.000	3116.000	7.62	560.8	17.74	1.07
CF PLANT CITY (U22)	0.12	388.000	3116.000	2.44	373.0	0.33	0.61
CF PLANT CITY DAP A (U10)	3.00	388.000	3116.000	28.70	326.0	7.90	3.00
CF PLANT CITY DAP X (U16)	13.20	388.000	3116.000	54.90	325.0	9.80	2.80
CF PLANT CITY DAP Z (U11)	13.20	388.000	3116.000	54.90	331.0	13.10	2.80
CF PLANT CITY GTSP X (U12)	13.20	388.000	3116.000	54.90	314.0	7.90	2.80
CF PLANT CITY H2SO4 A&B (U02&03)	88.20	388.000	3116.000	33.50	316.0	19.50	1.52
CF PLANT CITY PROPOSED C & D (U07-08)	109.20	388.000	3116.000	60.35	353.0	17.77	2.44
CF PLANT CITY Y-GTSP (U17)	11.33	388.000	3116.000	54.9	333.1	13.37	2.8
CF PLANT CITY (U23-24)	0.17	388.000	3116.000	3.7	373.1	1.65	0.09
CF PLANT CITY (U22)	0.11	388.000	3116.000	2.4	373.1	1.63	0.27
CITRUS WORLD DRYER 1	11.8	441.000	3087.300	22.90	323.0	10.70	1.00
CITRUS WORLD DRYER 2	23.74	441.000	3087.300	22.90	325.0	12.20	0.80
CITRUS WORLD DRYER 3	23.74	441.000	3087.300	24.40	313.0	21.90	0.80
COCA COLA - AUBURNDALE U01	18.00	421.600	3103.700	28.35	333.2	16.76	1.07
COCA COLA - AUBURNDALE U03	0.52	421.600	3103.700	30.48	344.8	14.93	0.98
COCA COLA - AUBURNDALE U08	21.52	421.600	3103.700	12.19	434.8	18.29	1.22
CONSOLIDATED MINERALS	0.12	393.800	3096.300	6.10	605.2	20.21	0.37
CONSOLIDATED MINERALS FLUID BED REACTOR	11.57	393.800	3096.300	46.33	299.7	12.14	1.77
CONSOLIDATED MINERALS KILNS 3, 4 & 5	15.43	393.800	3096.300	46.33	298.0	13.17	1.77
EVANS BOILER	28.70	383.300	3135.800	12.20	505.0	11.90	1.00
EVANS DRYER	34.00	383.300	3135.800	25.90	346.0	17.30	1.00
EVANS PACKING	0.20	383.300	3135.800	12.30	466.2	9.20	0.40
FARMLAND	2.33	410.330	3079.655	28.96	605.2	3.58	1.68
FARMLAND SULFUR SYSTEM (EXISTING)	0.39	410.330	3079.655	12.19	366.3	2.67	0.61
FARMLAND SULFUR SYSTEM (PROPOSED)	0.16	410.330	3079.655	12.19	366.3	2.67	0.61
FARMLAND 3 & 4 H2SO4 (2100 TPD)	88.20	410.330	3079.655	30.48	355.0	12.02	2.29
FARMLAND 5 H2SO4 (2800 TPD)	58.80	410.330	3079.655	45.72	355.0	13.42	2.44
FARMLAND 6 H2SO4 (2800 TPD)	57.75	410.516	3079.624	45.72	355.0	10.60	2.74
FPC BARTOW PEAKING 1-4	192.89	342.400	3082.600	13.70	772.0	22.30	5.30
FPC BARTOW PIPELINE HEATER (U04)	1.80	342.400	3082.600	9.10	541.0	5.20	0.90
FPC BARTOW UNIT 1 & 2 (U01&02)	896.80	342.400	3082.600	91.40	429.0	36.30	2.70
FPC BARTOW UNIT 3 (U03)	710.54	342.400	3082.600	91.40	408.0	34.40	3.40
FPC BAYBORO PEAKING 1-4	197.80	338.800	3071.300	12.20	755.0	6.40	7.00
FPC HIGGINS OTHER UNITS	25.21	336.500	3098.400	16.76	727.4	113.47	4.60
FPC HIGGINS UNIT 3	129.90	336.500	3098.400	53.00	423.0	7.30	3.80
FPC HIGGINS UNITS 1&2	192.20	336.500	3098.400	53.00	429.0	8.20	3.80
FPC INT. CITY PROP TURBINES/7EA AT 20 DEG F	124.40	446.300	3126.000	15.24	819.8	56.21	4.21
FPC INT. CITY PROP TURBINES/7FA AT 20 DEG F	110.40	446.300	3126.000	15.24	880.8	32.07	7.04
FPC OSCEOLA PEAKING 1-6	273.06	446.300	3126.000	7.90	703.7	18.06	4.24
FPC OSCEOLA PEAKING 7-10	111.88	446.300	3126.000	15.20	834.8	0.05	4.21
FPC OSCEOLA PEAKING 11-12	102.56	446.300	3126.000	15.2	895.9	0.03	7.04

Table 2-4
Class II Area Sulfur Dioxide Emitting Facilities

SO2 FAAQS SOURCE INVENTORY US-AGRI CHEMICALS CORP. SOURCE DESCRIPTION	Emissions (g/s)	AAQS UTM COORDINATES (km EAST	NORTH	Height (m)	Temp. (K)	Velocity (m/s)	Diameter (m)
FPC POLK	24.7	414.400	3073.910	34.40	400.0	40.50	4.10
FPL MANATEE UNIT 1 & 2 (U01&02)	2397.80	367.200	3054.100	152.10	426.0	17.10	8.00
GULF COAST LEAD (U01)	48.45	364.000	3093.500	29.57	344.1	37.59	0.61
GULF COAST LEAD	0.75	364.000	3093.500	8.84	309.1	20.85	0.34
HARDEE	277.60	404.800	3057.400	22.90	389.0	23.90	4.88
IMC - AGRICO /NICHOLS/CONSERVE (2500 TPD @	52.50	398.400	3084.200	45.70	352.0	12.00	2.30
IMC - AGRICO /NICHOLS/CONSERVE DAP DRYER	1.01	398.400	3084.200	24.40	333.0	23.10	1.07
IMC - AGRICO /NICHOLS/CONSERVE DRYER	3.34	398.400	3084.200	24.69	327.4	3.77	2.29
IMC-AGRICO/NEW WALES AFI PLANT	0.20	396.600	3078.900	52.40	322.0	13.10	2.40
IMC-AGRICO/NEW WALES DAP	5.54	396.600	3078.900	36.60	319.1	20.15	1.83
IMC-AGRICO/NEW WALES DAP 1	3.70	396.700	3079.400	40.50	314.0	14.90	2.10
IMC-AGRICO/NEW WALES GTSP	9.20	396.700	3079.400	40.50	316.0	20.40	1.80
IMC-AGRICO/NEW WALES MULTIPHOS	4.80	396.600	3078.900	52.40	314.0	15.80	1.40
IMC-AGRICO/NEW WALES SAP #1,2,3 (3 AT 2900	182.85	396.600	3078.900	61.00	350.0	15.31	2.60
IMC-AGRICO/NEW WALES SAP #4,5 (2 AT 2900 TP	121.90	396.600	3078.900	60.70	350.0	15.31	2.60
IMC-AGRICO/NORALYN	13.30	414.700	3080.300	18.30	341.0	8.50	2.80
IMC-AGRICO/NORALYN	1.20	414.700	3080.300	23.20	394.0	17.10	2.00
IMC-AGRICO/SO. PIERCE DAP PLANT	4.41	407.500	3071.330	38.10	328.0	14.60	3.10
IMC-AGRICO/SO. PIERCE GTSP PLANT	16.60	407.500	3071.300	42.70	305.0	10.40	2.70
IMC-AGRICO/SO. PIERCE H2SO4 (2 @ 2700 TPD)	125.99	407.500	3071.300	44.18	350.0	13.29	2.74
KISSIMMEE UTIL (EXISTING)	32.10	460.100	3129.300	18.30	422.0	38.00	3.66
KISSIMMEE UTIL (U05)	2.09	460.100	3129.300	16.2	477.6	2.87	0.85
KISSIMMEE UTIL (U09&10)	3.69	460.100	3129.300	8.5	505.4	2.43	0.91
KISSIMMEE UTIL (U11-15)	7.05	460.100	3129.300	13.4	505.4	1.92	0.73
LAFARGE CORP.	583.37	357.7	3090.6	44.50	494.8	40.24	2.44
LAKELAND LARSEN	0.20	409.300	3102.800	9.75	699.7	171.38	1.52
LAKELAND LARSEN 4	93.37	409.300	3102.800	50.29	433.0	5.64	3.05
LAKELAND LARSEN 5	0.40	409.300	3102.800	50.29	444.1	6.47	3.05
LAKELAND LARSEN 6	0.35	409.300	3102.800	50.29	444.1	6.47	3.05
LAKELAND LARSEN 7	18.71	409.300	3102.800	50.29	444.1	6.86	3.05
LAKELAND LARSEN CT	29.11	409.300	3102.800	30.48	783.2	28.22	5.79
LAKELAND MCINTOSH	8.32	409.200	3106.200	10.97	791.3	0.39	2.80
LAKELAND MCINTOSH	2.94	409.200	3106.200	6.10	652.4	23.54	0.79
LAKELAND MCINTOSH 1	341.56	409.300	3106.200	45.72	419.1	23.96	2.74
LAKELAND MCINTOSH 2	25.68	409.200	3106.200	47.55	402.4	21.29	3.17
LAKELAND MCINTOSH 3	500.10	409.200	3106.200	76.20	350.0	19.70	4.88
MOBIL BIG-4 BOILER (UAA)	0.60	394.800	3069.770	8.20	505.0	7.57	0.41
MOBIL BIG-4 DRYER (U01)	16.38	394.850	3069.770	30.50	334.0	7.26	1.82
MOBIL NICHOLS DRYER 1	12.73	398.300	3084.300	25.90	342.0	14.10	2.29
MOBIL NICHOLS DRYER 2	12.73	398.300	3084.300	25.90	342.0	14.10	2.29
MOBIL NICHOLS DRYER 4	2.44	398.300	3084.300	25.90	339.0	16.05	2.29
MULBERRY COGENERATION CT	13.40	413.600	3080.600	38.10	377.0	9.31	1.98
MULBERRY PROSPHATES/ROYSTER (1700 TPD @	35.70	406.700	3085.200	61.00	360.0	12.20	2.13
MULBERRY PROSPHATES/ROYSTER DAP	9.30	406.700	3085.200	31.10	316.0	7.90	2.70
MULBERRY PROSPHATES/ROYSTER SAP	25.70	406.753	3085.151	60.96	343.2	10.01	1.81
PINELLAS RRF	62.24	335.300	3084.400	49.10	522.0	27.72	2.74
PINEY POINT/ROYSTER DAP	7.40	348.700	3057.300	61.00	328.0	15.50	3.00
PINEY POINT/ROYSTER SAP	42.02	348.700	3057.300	60.98	350.0	8.08	2.36
SEBRING UTIL 1 & 2	111.20	464.300	3035.400	45.70	446.0	24.10	1.80
SECI HARDEE (50% I)	13.00	404.900	3057.400	27.40	414.0	14.09	5.79
TECO BIG BEND TURBINE 1 (U07)	11.30	361.900	3075.000	10.70	816.0	136.20	1.50
TECO BIG BEND TURBINE 2&3 (U05&06)	79.12	361.900	3075.000	22.86	770.8	18.74	4.27
TECO BIG BEND UNIT 1&2 (U01&02)	3309.00	361.900	3075.000	149.35	404.7	13.74	7.32
TECO BIG BEND UNIT 2 (U02)	3275.32	361.900	3075.000	149.35	404.7	13.02	7.32
TECO BIG BEND UNIT 3 (U03)	3372.92	361.900	3075.000	149.35	410.2	14.47	7.32
TECO BIG BEND UNIT 4 (U04)	654.70	361.900	3075.000	149.40	342.2	19.81	7.32

Table 2-4
Class II Area Sulfur Dioxide Emitting Facilities

SO2 FAAQS SOURCE INVENTORY	AAQS						
US-AGRI CHEMICALS CORP.							
	Emissions	UTM COORDINATES (km		Height	Temp.	Velocity	Diameter
SOURCE DESCRIPTION	(g/s)	EAST	NORTH	(m)	(K)	(m/s)	(m)
TECO GANNON 1 & 2 (U01&02)	760.86	360.000	3087.500	93.27	420.8	30.85	3.05
TECO GANNON 3 (U03)	483.96	360.000	3087.500	93.27	419.7	38.64	3.23
TECO GANNON 4 (U04)	567.71	360.000	3087.500	93.27	426.9	22.97	3.05
TECO GANNON 5 (U05)	691.28	360.000	3087.500	93.27	423.6	23.18	4.45
TECO GANNON 6 (U06)	1149.41	360.000	3087.500	93.27	433.0	24.74	5.36
TECO GANNON TURBINE (U07)	11.90	360.000	3087.500	10.67	816.3	136.61	1.52
TECO HOOKERS POINT 1 & 2 (U01&02)	82.60	358.000	3091.000	85.30	419.0	6.10	3.40
TECO HOOKERS POINT 3 & 4 (U03&04)	114.00	358.000	3091.000	85.30	434.0	7.90	3.70
TECO HOOKERS POINT 5 (U05)	84.60	358.000	3091.000	85.30	448.0	11.00	3.40
TECO HOOKERS POINT 6 (U06)	107.90	358.000	3091.000	85.30	434.0	22.30	2.90
TECO POLK POWER	49.68	402.450	3067.350	45.72	400.0	16.76	5.79
TECO POLK POWER	8.20	402.328	3067.472	60.70	1033.0	10.70	1.40
TECO POLK POWER	5.42	402.488	3066.954	22.86	812.0	27.43	5.49
TECO POLK POWER	1.27	402.298	3067.297	60.70	1033.0	9.10	1.10
TECO POLK POWER	0.30	402.420	3067.320	6.10	533.0	13.10	0.91
TECO POLK POWER	0.016	402.016	3067.640	22.90	1000.0	20.00	1.20
TECO POLK POWER 4 CC	17.60	402.450	3067.216	45.72	389.0	16.15	4.42
TECO POLK POWER 5 CT	33.40	402.488	3066.914	22.86	785.0	31.39	5.49
USSAC FT MEADE H2SO4 1 & 2 (2200 TPD)	92.48	415.940	3068.930	53.40	355.0	10.00	2.59

Table 2-5
Class I AND CLASS II Area Sulfur Dioxide Emitting PSD Facilities

Class 1 SO2 SOURCE INVENTORY		PSD - CLASS I					
US-AGRI CHEMICALS CORP.							
	Emissions	UTM COORDINATES (km)		Height	Temp.	Velocity	Diameter
SOURCE DESCRIPTION	(g/s)	EAST	NORTH	(m)	(K)	(m/s)	(m)
ASPHALT PAVERS 3 (0700-1800)	2.25	359.900	3162.400	12.20	377.0	10.58	1.37
ASPHALT PAVERS 4 (0700-1800)	1.76	361.400	3168.400	8.50	357.4	10.95	1.08
AUBURNDALE @ 0.5% SULFUR	6.35	420.800	3103.300	48.80	411.0	14.30	5.49
BORDEN DRYER	-6.48	394.800	3069.600	30.48	344.0	14.79	1.82
BORDEN DRYER	-5.29	414.500	3109.000	17.07	333.0	8.26	2.34
BREWSTER/IMPERIAL DRYER	-19.26	404.800	3069.500	27.44	339.0	15.25	2.29
CARGILL/GARDINIER DRYER	-28.89	363.400	3082.400	20.73	310.0	13.12	1.07
CARGILL/GARDINIER SAP #4,5,6	-187.70	363.400	3082.400	22.60	363.0	7.00	1.52
CARGILL/GARDINIER SAP #7	-26.25	363.400	3082.400	45.60	340.0	12.64	2.29
CARGILL/GARDINIER SAP #8	-41.16	363.400	3082.400	45.60	339.0	13.93	2.44
CARGILL/GARDINIER SAP #9	-54.60	363.400	3082.400	45.60	350.0	10.30	2.74
CARGILL/GARDINIER SAP #9 (INCR IN9 OF8/9 U06)	67.20	363.400	3082.400	45.60	350.0	12.66	2.74
CARGILL/SEMINOLE/W.R. GRACE DRYER	-39.66	409.770	3086.990	15.24	327.0	17.32	2.04
CARGILL/SEMINOLE/W.R. GRACE SAP #1 & #2	-216.00	409.770	3086.990	45.72	352.0	16.50	1.37
CARGILL/SEMINOLE/W.R. GRACE SAP #3	-52.50	409.770	3086.990	45.72	311.0	16.70	1.52
CARGILL/SEMINOLE/W.R. GRACE SAP 4, 5 & 6	-121.07	409.770	3086.990	60.96	347.0	25.10	1.52
CARGILL/SEMINOLE/W.R. GRACE SAP 4, 5 & 6	143.64	409.770	3086.990	60.96	347.0	34.00	1.52
CF BARTOW DAP 1-3	3.97	408.500	3082.500	36.40	339.0	16.11	2.13
CF BARTOW H2SO4 1 (400 TPD)	-60.90	408.500	3082.500	30.49	350.0	12.20	1.37
CF BARTOW H2SO4 2 (500 TPD)	-110.25	408.500	3082.500	30.49	350.0	10.37	1.68
CF BARTOW H2SO4 3 (600 TPD)	-107.10	408.500	3082.500	30.49	364.0	4.27	2.74
CF BARTOW H2SO4 4 (900 TPD)	-174.83	408.500	3082.500	30.49	358.0	7.93	2.13
CF BARTOW H2SO4 5 (2400 TPD)	50.40	408.500	3082.500	63.41	361.0	10.88	2.13
CF BARTOW H2SO4 5 (900 TPD)	-226.80	408.500	3082.500	63.41	358.0	10.67	2.13
CF BARTOW H2SO4 6 (2400 TPD)	50.40	408.500	3082.500	63.41	370.0	7.28	2.13
CF BARTOW H2SO4 6 (900 TPD)	-170.10	408.500	3082.500	63.41	359.0	10.37	2.13
CF BARTOW H2SO4 7 (2000 TPD)	42.00	408.500	3082.500	67.10	351.0	9.80	2.40
CF PLANT CITY BASELINE A & B	-105.00	388.000	3116.000	23.80	316.0	18.80	1.52
CF PLANT CITY BASELINE C & D	-100.80	388.000	3116.000	60.35	353.0	16.40	2.44
CF PLANT CITY H2SO4 A&B (U02&03)	88.20	388.000	3116.000	33.50	316.0	19.50	1.52
CF PLANT CITY PROPOSED C & D (U07-08)	109.20	388.000	3116.000	60.35	353.0	17.77	2.44
CLM CHLORIDE METALS	13.00	361.800	3088.300	30.00	375.0	20.10	0.61
COUCH CONST-ODESSA (ASPHALT)	7.25	340.700	3119.500	9.14	436.0	22.30	1.40
COUCH CONST-ZEPHYRHILLS (ASPHALT)	3.54	390.300	3129.400	6.10	422.0	21.00	1.38
DOLIME BOILER	-4.52	404.813	3069.548	27.43	494.1	7.25	0.61
DOLIME DRYER	-5.68	404.813	3069.548	27.43	333.0	20.67	1.52
DRIS PAVING (ASPHALT)	0.23	340.600	3119.200	12.20	339.0	6.47	3.05
ER JAHNA (LIME DRYER)	0.82	386.700	3155.800	10.67	327.0	8.99	1.83
ESTECH/SWIFT DRYER	-23.94	411.500	3074.200	18.29	339.0	8.47	2.95
ESTECH/SWIFT DRYER	-22.80	411.500	3074.200	18.75	340.0	5.06	2.95
ESTECH/SWIFT SAP (610 TPD & 29 LB/TON)	-92.87	411.500	3074.200	30.79	358.0	3.90	2.13
EVANS PACKING	0.20	383.300	3135.800	12.30	466.2	9.20	0.40
FARMLAND 1,2 H2SO4	-83.98	410.330	3079.655	30.48	311.0	20.18	1.37
FARMLAND 3 & 4 H2SO4 (1620 TPD)	-67.16	410.330	3079.655	30.48	355.0	9.27	2.29
FARMLAND 3 & 4 H2SO4 (2100 TPD)	88.20	410.330	3079.655	30.48	355.0	12.02	2.29
FARMLAND 3 H2SO4	-44.1	410.268	3079.660	30.48	355.0	20.18	1.37
FARMLAND 5 H2SO4 (2400 TPD)	-50.40	410.330	3079.655	45.72	355.0	11.55	2.44
FARMLAND 5 H2SO4 (2800 TPD)	58.80	410.330	3079.655	45.72	355.0	13.42	2.44
FARMLAND 6 H2SO4 (2800 TPD)	57.75	410.516	3079.624	45.72	355.0	10.60	2.74
FDOC BOILER #3	2.99	382.200	3166.100	9.14	478.0	4.57	0.61
FLA MINING & MATERIALS KILN 2	1.45	356.200	3169.900	32.01	394.0	9.90	4.27
FLORIDA CRUSHED STONE KILN 1	98.40	360.008	3162.398	97.60	442.0	23.23	4.88
FPC CRYSTAL RIVER 1	-314.00	334.200	3204.500	152.00	422.0	42.10	4.57
FPC CRYSTAL RIVER 2	-1859.00	334.200	3204.500	153.00	422.0	42.10	4.88
FPC CRYSTAL RIVER 4	1008.80	334.200	3204.500	182.90	398.0	21.00	6.90
FPC CRYSTAL RIVER 5	1008.80	334.200	3204.500	182.90	398.0	21.00	6.90
FPC DEBARY PROP TURBINES AT 20 DEG F	466.40	467.500	3197.200	15.24	819.8	56.21	4.21
FPC INT. CITY PROP TURBINES/7EA AT 20 DEG F	124.40	446.300	3126.000	15.24	819.8	56.21	4.21
FPC INT. CITY PROP TURBINES/7FA AT 20 DEG F	110.40	446.300	3126.000	15.24	880.8	32.07	7.04

Table 2-5
Class I AND CLASS II Area Sulfur Dioxide Emitting PSD Facilities

Class 1 SO2 SOURCE INVENTORY US-AGRI CHEMICALS CORP.	PSD - CLASS I						
SOURCE DESCRIPTION	Emissions (g/s)	UTM COORDINATES (km) EAST	NORTH	Height (m)	Temp. (K)	Velocity (m/s)	Diameter (m)
FPC OSCEOLA PEAKING 11-12	102.56	446.300	3126.000	15.2	895.9	0.03	7.04
FPC OSCEOLA PEAKING 7-10	111.88	446.300	3126.000	15.20	834.8	0.05	4.21
FPC POLK	24.7	414.400	3073.910	34.40	400.0	40.50	4.10
GAINESVILLE REGIONAL UTILITIES	5.65	365.500	3292.700	15.80	811.0	46.02	4.30
GEN. PORT. CEMENT KILN 4	-62.99	358.000	3090.600	35.97	505.2	17.61	2.74
GEN. PORT. CEMENT KILN 5	-69.30	358.000	3090.600	45.42	494.1	5.80	3.81
HARDEE	277.60	404.800	3057.400	22.90	389.0	23.90	4.88
HILLS. CO. RESOURCE RECOVERY	21.40	368.200	3092.700	50.00	491.0	18.30	1.80
HOSP CORP OF AM BOILER #1	0.08	333.400	3141.000	10.98	533.0	4.00	0.31
HOSP CORP OF AM BOILER #2	0.08	333.400	3141.000	10.98	533.0	4.00	0.31
IMC - AGRICO /NICHOLS/CONSERVE (2 @ 1300 TPD & 4 LB/TO	-54.60	398.400	3084.200	30.50	308.0	18.90	1.80
IMC - AGRICO /NICHOLS/CONSERVE (2000 TPD @ 4 LB/TON)	-42.00	398.400	3084.200	45.70	352.0	10.30	2.30
IMC - AGRICO /NICHOLS/CONSERVE (2500 TPD @ 4 LB/TON)	52.50	398.400	3084.200	45.70	352.0	12.00	2.30
IMC - AGRICO /NICHOLS/CONSERVE ROCK DRYER	-3.88	398.400	3084.200	24.40	339.0	12.90	1.52
IMC-AGRICO/NEW WALES AFI PLANT	0.20	396.600	3078.900	52.40	322.0	13.10	2.40
IMC-AGRICO/NEW WALES DAP	5.54	396.600	3078.900	36.60	319.1	20.15	1.83
IMC-AGRICO/NEW WALES MULTIPHOS	4.80	396.600	3078.900	52.40	314.0	15.80	1.40
IMC-AGRICO/NEW WALES ROCK DRYER	-34.27	396.600	3078.900	21.00	347.0	18.60	2.13
IMC-AGRICO/NEW WALES SAP #1,2,3 (3 AT 2900 TPD)	182.85	396.600	3078.900	61.00	350.0	15.31	2.60
IMC-AGRICO/NEW WALES SAP #1,2,3 BASELINE	-146.00	396.600	3078.900	61.00	350.0	14.28	2.60
IMC-AGRICO/NEW WALES SAP #4,5 (2 AT 2900 TPD)	121.90	396.600	3078.900	60.70	350.0	15.31	2.60
IMC-AGRICO/PIERCE DRYERS 1,2	-24.32	404.100	3078.950	24.38	339.0	12.94	1.52
IMC-AGRICO/PIERCE DRYERS 3,4	-23.00	404.100	3078.950	24.38	339.0	18.82	2.43
IMC-AGRICO/SO. PIERCE DAP PLANT	4.41	407.500	3071.330	38.10	328.0	14.60	3.10
IMC-AGRICO/SO. PIERCE H2SO4 (2 @ 2700 TPD)	125.99	407.500	3071.300	44.18	350.0	13.29	2.74
IMC-AGRICO/SO. PIERCE H2SO4 (2 @1800 TPD)	-75.60	407.500	3071.300	45.73	350.0	26.40	1.60
KISSIMMEE KANE IS. @ 0.3% SULFUR	29.40	447.680	3127.920	12.20	654.0	29.10	3.05
KISSIMMEE UTIL (EXISTING)	32.10	460.100	3129.300	18.30	422.0	38.00	3.66
LAKE CO. COGEN. FACILITY PROPOSED	5.04	434.000	3198.800	30.48	384.3	17.13	3.35
LAKELAND LARSEN CT	29.11	409.300	3102.800	30.48	783.2	28.22	5.79
LAKELAND MCINTOSH 3	500.10	409.200	3106.200	76.20	350.0	19.70	4.88
MOBIL BIG-4 BOILER (UAA)	0.60	394.800	3069.770	8.20	505.0	7.57	0.41
MOBIL BIG-4 DRYER (U01)	16.38	394.850	3069.770	30.50	334.0	7.26	1.82
MOBIL NICHOLS 75 HP BOILER	-0.87	398.300	3084.300	4.00	522.0	1.80	0.80
MOBIL NICHOLS CALCINER	-13.89	398.300	3084.300	28.40	340.0	19.24	1.09
MOBIL NICHOLS DRYER 4	2.44	398.300	3084.300	25.90	339.0	16.05	2.29
MOBILE ELECTROPHOS 400HP BOILER	-6.53	405.600	3079.400	7.32	464.0	3.23	0.91
MOBILE ELECTROPHOS 600HP BOILER	-10.05	405.600	3079.400	6.10	464.0	7.71	0.91
MOBILE ELECTROPHOS CALCINER	-7.11	405.600	3079.400	25.61	306.0	6.97	2.13
MOBILE ELECTROPHOS COKE DRYER	-3.17	405.600	3079.400	18.29	322.0	22.87	0.70
MOBILE ELECTROPHOS FURNACE (31.25 TPH ROCK @ 0.3% S)	-47.25	405.600	3079.400	29.27	314.0	8.52	2.13
MOBILE ELECTROPHOS ROCK DRYER	-21.81	405.600	3079.400	18.29	350.0	6.79	1.83
MULBERRY COGENERATION CT	13.40	413.600	3080.600	38.10	377.0	9.31	1.98
MULBERRY PROSPHATES/ROYSTER (1003 TPD @ 29 LB/TON)	-152.71	406.700	3085.200	51.00	356.0	9.90	2.13
MULBERRY PROSPHATES/ROYSTER (1700 TPD @ 4 LB/TON)	35.70	406.700	3085.200	61.00	360.0	12.20	2.13
MULBERRY PROSPHATES/ROYSTER SAP	25.70	406.753	3085.151	60.96	343.2	10.01	1.81
NEW PORT RICHEY HOSP BLR#1	0.06	331.200	3124.500	10.98	544.0	3.88	0.31
NEW PORT RICHEY HOSP BLR#2	0.03	331.200	3124.500	10.98	544.0	3.88	0.31
OMAN CONST (ASPHALT)	2.09	359.800	3164.900	7.62	347.0	6.29	1.83
OVERSTREET PAV. (ASPHALT)	3.67	355.900	3143.700	9.14	408.0	16.00	1.30
PANDA KATHLEEN	0.73	398.700	3101.400	45.72	372.0	14.57	5.33
PASCO CO. COGEN. FACLITY PROPOSED	5.04	385.600	3139.000	30.48	384.3	17.13	3.35
PASCO COUNTY RRF	14.10	347.100	3139.200	83.82	394.3	15.70	3.05
PINELLAS RRF	62.24	335.300	3084.400	49.10	522.0	27.72	2.74
REEDY CREEK GENERATORS 1 & 2 EPCOT	3.66	442.000	3139.000	5.20	616.5	44.12	0.55
REEDY CREEK SERVICES	0.15	443.000	3144.300	19.80	414.0	15.56	3.41
RIDGE COGENERATION	13.80	416.700	3100.400	99.10	350.0	14.54	3.05
SECI HARDEE (50% I)	13.00	404.900	3057.400	27.40	414.0	14.09	5.79
STAUFFER BOILER	-4.86	325.600	3116.700	7.32	464.0	3.23	0.91

Table 2-5
Class I AND CLASS II Area Sulfur Dioxide Emitting PSD Facilities

Class 1 SO2 SOURCE INVENTORY US-AGRI CHEMICALS CORP. SOURCE DESCRIPTION	Emissions (g/s)	UTM COORDINATES (km) EAST	NORTH	Height (m)	Temp. (K)	Velocity (m/s)	Diameter (m)
	PSD - CLASS I						
STAUFFER DRYER	-1.50	325.600	3116.700	18.29	322.0	22.87	0.70
STAUFFER FURNACE	-50.93	325.600	3116.700	49.00	335.0	3.60	1.20
STAUFFER KILN	-7.36	325.600	3116.700	25.61	306.0	6.97	2.13
STAUFFER ROASTER	-0.45	325.600	3116.700	25.61	322.0	6.97	0.91
TAMPA MCKAY BAY RRF 1-4 (U01-04)	21.40	360.000	3091.000	48.80	555.0	29.60	1.80
TECO BIG BEND UNIT 3 (24-HR)	-1218.00	361.900	3075.000	149.40	418.0	14.33	7.32
TECO BIG BEND UNIT 4 (U04)	654.70	361.900	3075.000	149.40	342.2	19.81	7.32
TECO BIG BEND UNITS 1&2 (24-HR)	-2436.00	361.900	3075.000	149.40	422.0	28.65	7.32
TECO POLK POWER	0.016	402.016	3067.640	22.90	1000.0	20.00	1.20
TECO POLK POWER	0.30	402.420	3067.320	6.10	533.0	13.10	0.91
TECO POLK POWER	1.27	402.298	3067.297	60.70	1033.0	9.10	1.10
TECO POLK POWER	5.42	402.488	3066.954	22.86	812.0	27.43	5.49
TECO POLK POWER	8.20	402.328	3067.472	60.70	1033.0	10.70	1.40
TECO POLK POWER	49.68	402.450	3067.350	45.72	400.0	16.76	5.79
TECO POLK POWER 4 CC	17.60	402.450	3067.216	45.72	389.0	16.15	4.42
TECO POLK POWER 5 CT	33.40	402.488	3066.914	22.86	785.0	31.39	5.49
USS AGRI-CHEM BARTOW DRYER	-3.41	413.200	3086.300	15.80	332.0	10.01	1.83
USS AGRI-CHEM BARTOW SAP (800 TPD & 10 LB/TON)	-42.00	413.200	3086.300	28.96	305.0	7.50	2.12
USSAC FT MEADE GTSP	-18.27	416.000	3069.000	28.35	330.0	17.60	1.52
USSAC FT MEADE H2SO4 (1500 TPD @ 10 LB/TON)	-78.80	416.210	3068.740	29.00	314.0	6.77	3.02
USSAC FT MEADE H2SO4 1 & 2 (2200 TPD)	92.48	415.940	3068.930	53.40	355.0	10.00	2.59

Table 2-5
Class I AND CLASS II Area Sulfur Dioxide Emitting PSD Facilities

Class 2 SO2 SOURCE INVENTORY US-AGRI CHEMICALS CORP.	PSD - CLASS 2						
SOURCE DESCRIPTION	Emissions (g/s)	UTM COORDINATES (km) EAST	NORTH	Height (m)	Temp. (K)	Velocity (m/s)	Diameter (m)
BREWSTER/IMPERIAL DRYER	-19.26	404.800	3069.500	27.44	339.0	15.25	2.29
CARGILL/GARDINIER DRYER	-28.89	363.400	3082.400	20.73	310.0	13.12	1.07
CARGILL/GARDINIER SAP #4,5,6	-187.70	363.400	3082.400	22.60	363.0	7.00	1.52
CARGILL/GARDINIER SAP #7	-26.25	363.400	3082.400	45.60	340.0	12.64	2.29
CARGILL/GARDINIER SAP #8	-41.16	363.400	3082.400	45.60	339.0	13.93	2.44
CARGILL/GARDINIER SAP #9	-54.60	363.400	3082.400	45.60	350.0	10.30	2.74
CARGILL/GARDINIER SAP #9 (INCR IN9 OF8/9 U06)	67.20	363.400	3082.400	45.60	350.0	12.66	2.74
CARGILL/SEMINOLE/W.R. GRACE DRYER	-39.66	409.770	3086.990	15.24	327.0	17.32	2.04
CARGILL/SEMINOLE/W.R. GRACE SAP #1 & #2	-216.00	409.770	3086.990	45.72	352.0	16.50	1.37
CARGILL/SEMINOLE/W.R. GRACE SAP #3	-52.50	409.770	3086.990	45.72	311.0	16.70	1.52
CARGILL/SEMINOLE/W.R. GRACE SAP 4, 5 & 6	143.64	409.770	3086.990	60.96	347.0	34.00	1.52
CARGILL/SEMINOLE/W.R. GRACE SAP 4, 5 & 6	-121.07	409.770	3086.990	60.96	347.0	25.10	1.52
CF BARTOW DAP 1-3	3.97	408.500	3082.500	36.40	339.0	16.11	2.13
CF BARTOW H2SO4 1 (400 TPD)	-60.90	408.500	3082.500	30.49	350.0	12.20	1.37
CF BARTOW H2SO4 2 (500 TPD)	-110.25	408.500	3082.500	30.49	350.0	10.37	1.68
CF BARTOW H2SO4 3 (600 TPD)	-107.10	408.500	3082.500	30.49	364.0	4.27	2.74
CF BARTOW H2SO4 4 (900 TPD)	-174.83	408.500	3082.500	30.49	358.0	7.93	2.13
CF BARTOW H2SO4 5 (2400 TPD)	50.40	408.500	3082.500	63.41	361.0	10.88	2.13
CF BARTOW H2SO4 5 (900 TPD)	-226.80	408.500	3082.500	63.41	358.0	10.67	2.13
CF BARTOW H2SO4 6 (2400 TPD)	50.40	408.500	3082.500	63.41	370.0	7.28	2.13
CF BARTOW H2SO4 6 (900 TPD)	-170.10	408.500	3082.500	63.41	359.0	10.37	2.13
CF BARTOW H2SO4 7 (2000 TPD)	42.00	408.500	3082.500	67.10	351.0	9.80	2.40
CF PLANT CITY BASELINE A & B	-105.00	388.000	3116.000	23.80	316.0	18.80	1.52
CF PLANT CITY BASELINE C & D	-100.80	388.000	3116.000	60.35	353.0	16.40	2.44
CF PLANT CITY H2SO4 A&B (U02&03)	88.20	388.000	3116.000	33.50	316.0	19.50	1.52
CF PLANT CITY PROPOSED C & D (U07-08)	109.20	388.000	3116.000	60.35	353.0	17.77	2.44
DOLIME BOILER	-4.52	404.813	3069.548	27.43	494.1	7.25	0.61
DOLIME DRYER	-5.68	404.813	3069.548	27.43	333.0	20.67	1.52
ESTECH/SWIFT DRYER	-22.80	411.500	3074.200	18.75	340.0	5.06	2.95
ESTECH/SWIFT DRYER	-23.94	411.500	3074.200	18.29	339.0	8.47	2.95
ESTECH/SWIFT SAP (610 TPD & 29 LB/TON)	-92.87	411.500	3074.200	30.79	358.0	3.90	2.13
FARMLAND 1,2 H2SO4	-83.98	410.330	3079.655	30.48	311.0	20.18	1.37
FARMLAND 3 & 4 H2SO4 (1620 TPD)	-67.16	410.330	3079.655	30.48	355.0	9.27	2.29
FARMLAND 3 & 4 H2SO4 (2100 TPD)	88.20	410.330	3079.655	30.48	355.0	12.02	2.29
FARMLAND 5 H2SO4 (2400 TPD)	-50.40	410.330	3079.655	45.72	355.0	11.55	2.44
FARMLAND 5 H2SO4 (2800 TPD)	58.80	410.330	3079.655	45.72	355.0	13.42	2.44
FARMLAND 3 H2SO4	-44.1	410.268	3079.660	30.48	355.0	12.02	2.29
FARMLAND 6 H2SO4 (2800 TPD)	57.75	410.516	3079.624	45.72	355.0	10.60	2.74
FPC INT. CITY PROP TURBINES/7EA AT 20 DEG F	124.40	446.300	3126.000	15.24	819.8	56.21	4.21
FPC INT. CITY PROP TURBINES/7FA AT 20 DEG F	110.40	446.300	3126.000	15.24	880.8	32.07	7.04
FPC OSCEOLA PEAKING 7-10	111.88	446.300	3126.000	15.20	834.8	0.05	4.21
FPC OSCEOLA PEAKING 11-12	102.56	446.300	3126.000	15.2	895.9	0.03	7.04
FPC POLK	24.7	414.400	3073.910	34.40	400.0	40.50	4.10
GEN. PORT. CEMENT KILN 4	-62.99	358.000	3090.600	35.97	505.2	17.61	2.74
GEN. PORT. CEMENT KILN 5	-69.30	358.000	3090.600	45.42	494.1	5.80	3.81
HARDEE	277.60	404.800	3057.400	22.90	389.0	23.90	4.88
IMC - AGRICO /NICHOLS/CONSERVE (2 @ 1300 TPD & 4 LB/TO	-54.60	398.400	3084.200	30.50	308.0	18.90	1.80
IMC - AGRICO /NICHOLS/CONSERVE (2000 TPD @ 4 LB/TON)	-42.00	398.400	3084.200	45.70	352.0	10.30	2.30
IMC - AGRICO /NICHOLS/CONSERVE (2500 TPD @ 4 LB/TON)	52.50	398.400	3084.200	45.70	352.0	12.00	2.30
IMC - AGRICO /NICHOLS/CONSERVE ROCK DRYER	-3.88	398.400	3084.200	24.40	339.0	12.90	1.52
IMC-AGRICO/NEW WALES AFI PLANT	0.20	396.600	3078.900	52.40	322.0	13.10	2.40
IMC-AGRICO/NEW WALES DAP	5.54	396.600	3078.900	36.60	319.1	20.15	1.83
IMC-AGRICO/NEW WALES MULTIPHOS	4.80	396.600	3078.900	52.40	314.0	15.80	1.40
IMC-AGRICO/NEW WALES ROCK DRYER	-34.27	396.600	3078.900	21.00	347.0	18.60	2.13
IMC-AGRICO/NEW WALES SAP #1,2,3 (3 AT 2900 TPD)	182.85	396.600	3078.900	61.00	350.0	15.31	2.60
IMC-AGRICO/NEW WALES SAP #1,2,3 BASELINE	-146.00	396.600	3078.900	61.00	350.0	14.28	2.60
IMC-AGRICO/NEW WALES SAP #4,5 (2 AT 2900 TPD)	121.90	396.600	3078.900	60.70	350.0	15.31	2.60
IMC-AGRICO/PIERCE DRYERS 1,2	-24.32	404.100	3078.950	24.38	339.0	12.94	1.52
IMC-AGRICO/PIERCE DRYERS 3,4	-23.00	404.100	3078.950	24.38	339.0	18.82	2.43

Table 2-5
Class I AND CLASS II Area Sulfur Dioxide Emitting PSD Facilities

Class 2 SO2 SOURCE INVENTORY US-AGRI CHEMICALS CORP.	PSD - CLASS 2						
	Emissions	UTM COORDINATES (km)		Height	Temp.	Velocity	Diameter
SOURCE DESCRIPTION	(g/s)	EAST	NORTH	(m)	(K)	(m/s)	(m)
IMC-AGRICO/SO. PIERCE DAP PLANT	4.41	407.500	3071.330	38.10	328.0	14.60	3.10
IMC-AGRICO/SO. PIERCE H2SO4 (2 @ 2700 TPD)	125.99	407.500	3071.300	44.18	350.0	13.29	2.74
IMC-AGRICO/SO. PIERCE H2SO4 (2 @1800 TPD)	-75.60	407.500	3071.300	45.73	350.0	26.40	1.60
LAKELAND LARSEN CT	29.11	409.300	3102.800	30.48	783.2	28.22	5.79
LAKELAND MCINTOSH 3	500.10	409.200	3106.200	76.20	350.0	19.70	4.88
MOBIL BIG-4 BOILER (UAA)	0.60	394.800	3069.770	8.20	505.0	7.57	0.41
MOBIL BIG-4 DRYER (U01)	16.38	394.850	3069.770	30.50	334.0	7.26	1.82
MOBIL NICHOLS 75 HP BOILER	-0.87	398.300	3084.300	4.00	522.0	1.80	0.80
MOBIL NICHOLS CALCINER	-13.89	398.300	3084.300	28.40	340.0	19.24	1.09
MOBIL NICHOLS DRYER 4	2.44	398.300	3084.300	25.90	339.0	16.05	2.29
MOBILE ELECTROPHOS 400HP BOILER	-6.53	405.600	3079.400	7.32	464.0	3.23	0.91
MOBILE ELECTROPHOS 600HP BOILER	-10.05	405.600	3079.400	6.10	464.0	7.71	0.91
MOBILE ELECTROPHOS CALCINER	-7.11	405.600	3079.400	25.61	306.0	6.97	2.13
MOBILE ELECTROPHOS COKE DRYER	-3.17	405.600	3079.400	18.29	322.0	22.87	0.70
MOBILE ELECTROPHOS FURNACE (31.25 TPH ROCK @ 0.3% S)	-47.25	405.600	3079.400	29.27	314.0	8.52	2.13
MOBILE ELECTROPHOS ROCK DRYER	-21.81	405.600	3079.400	18.29	350.0	6.79	1.83
MULBERRY COGENERATION CT	13.40	413.600	3080.600	38.10	377.0	9.31	1.98
MULBERRY PROSPHATES/ROYSTER (1003 TPD @ 29 LB/TON)	-152.71	406.700	3085.200	51.00	356.0	9.90	2.13
MULBERRY PROSPHATES/ROYSTER (1700 TPD @ 4 LB/TON)	35.70	406.700	3085.200	61.00	360.0	12.20	2.13
MULBERRY PROSPHATES/ROYSTER SAP	25.70	406.753	3085.151	60.96	343.2	10.01	1.81
SEBRING UTIL 1 & 2	111.20	464.300	3035.400	45.70	446.0	24.10	1.80
SECI HARDEE (50% I)	13.00	404.900	3057.400	27.40	414.0	14.09	5.79
TECO BIG BEND UNIT 3 (24-HR)	-1218.00	361.900	3075.000	149.40	418.0	14.33	7.32
TECO BIG BEND UNIT 4 (U04)	654.70	361.900	3075.000	149.40	342.2	19.81	7.32
TECO BIG BEND UNITS 1&2 (24-HR)	-2436.00	361.900	3075.000	149.40	422.0	28.65	7.32
TECO POLK POWER	49.68	402.450	3067.350	45.72	400.0	16.76	5.79
TECO POLK POWER	8.20	402.328	3067.472	60.70	1033.0	10.70	1.40
TECO POLK POWER	5.42	402.488	3066.954	22.86	812.0	27.43	5.49
TECO POLK POWER	1.27	402.298	3067.297	60.70	1033.0	9.10	1.10
TECO POLK POWER	0.30	402.420	3067.320	6.10	533.0	13.10	0.91
TECO POLK POWER	0.016	402.016	3067.640	22.90	1000.0	20.00	1.20
TECO POLK POWER 4 CC	17.60	402.450	3067.216	45.72	389.0	16.15	4.42
TECO POLK POWER 5 CT	33.40	402.488	3066.914	22.86	785.0	31.39	5.49
USS AGRI-CHEM BARTOW DRYER	-3.41	413.200	3086.300	15.80	332.0	10.01	1.83
USS AGRI-CHEM BARTOW SAP (800 TPD & 10 LB/TON)	-42.00	413.200	3086.300	28.96	305.0	7.50	2.12
USSAC FT MEADE GTSP	-18.27	416.000	3069.000	28.35	330.0	17.60	1.52
USSAC FT MEADE H2SO4 (1500 TPD @ 10 LB/TON)	-78.80	416.210	3068.740	29.00	314.0	6.77	3.02
USSAC FT MEADE H2SO4 1 & 2 (2200 TPD)	92.48	415.940	3068.930	53.40	355.0	10.00	2.59

TABLE 2-6
SUMMARY OF CLASS II AREA SULFUR DIOXIDE IMPACTS ANALYSIS

U.S. AGRI-CHEMICALS CORP.
POLK COUNTY, FLORIDA

	SULFUR DIOXIDE IMPACT (ug/m^3) (1)					
MET	CLASS II PSD INCREMENT			AAQS		
DATA	ANNUAL	3-HOUR	24-HOUR	ANNUAL	3-HOUR	24-HOUR
1987	0	160.1	29.5	35.6	537.1	182.4
1988	0	227.1	49.6	31.2	523.9	183.9
1989	0	256.3	62.7	30.1	597.6	237.9
1990	0	140.3	30.2	31.5	484.6	199.5
1991	0	205.3	32.6	34.7	583.8	191.8
MAXIMUM + Background. (2)	0 (3)	259.3	62.7	48.6	610.6	250.9
INCREMENT & STD.	20	512	91	60	1300	260
STD. EXCEEDED	NO	NO	NO	NO	NO	NO

NOTE:

(1) All impacts represents the highest-high impact.
(2) A background concentration of 13 ug/m3, based on a measured annual average from an ambient air monitor near Mulberry, was included in the AAQS. Short-term measurements were not included in order to avoid double counting of impacts of the major sources in the immediate vicinity of the monitor.
(3) The source inventory for the annual period is increment expanding.

TABLE 2-7
SUMMARY OF CLASS I AREA SULFUR DIOXIDE IMPACTS ANALYSIS

U.S. AGRI-CHEMICALS CORP.
POLK COUNTY, FLORIDA

PSD Inventory Impacts (using 1990 meteorological data)

3-Hour Results

Rank	Day/ Hour	Receptor Number	Inventory Contribution (ug/m ^ 3)	USAC Contribution (ug/m ^ 3)
1	D123H7	1	-58.389	1.4684
2	D123H7	12	-63.296	1.2832
3	D123H7	2	-53.207	1.1591
4	D89H4	11	-37.741	1.0926
5	D123H7	4	-44.354	1.0827
6	D89H4	12	-37.438	1.0737
7	D89H4	3	-37.554	1.0451
8	D89H4	2	-37.978	1.0249
9	D123H7	11	-51.427	0.9776
10	D89H4	14	-33.85	0.9668
11	D89H4	5	-36.745	0.9628
12	D89H4	10	-30.939	0.9585
13	D89H4	4	-37.828	0.9546
14	D123H7	3	-43.034	0.9509
15	D89H4	13	-31.005	0.9492
16	D89H4	6	-33.802	0.9176

24 - Hour Results

Rank	Day	Receptor Number	Inventory Contribution (ug/m ^ 3)	USAC Contribution (ug/m ^ 3)
1	21	11	-13.8970	0.3141
2	21	12	-13.6180	0.3101
3	21	3	-13.7940	0.2923
4	21	10	-12.1780	0.2861
5	21	2	-13.6720	0.2852
6	21	14	-12.9460	0.2835
7	21	13	-12.1340	0.2811
8	21	6	-12.6630	0.2754
9	21	5	-13.5100	0.2749
10	21	7	-11.3150	0.2647
11	21	4	-13.5210	0.2630
12	21	1	-12.1580	0.2517
13	21	9	-9.0740	0.2400
14	124	1	-8.6520	0.2360
15	21	8	-8.5490	0.2311
16	333	1	-8.0290	0.1921

3.0 GOOD ENGINEERING PRACTICE STACK HEIGHT

The criteria for good engineering practice stack height in Rule 62-210, FAC, states that the height of a stack should not exceed the greater of 65 meters (213) feet or the height of nearby structures plus the lesser of 1.5 times the height or cross-wind width of the nearby structure. This stack height policy is designed to prevent achieving ambient air quality goals solely through the use of excessive stack heights and air dispersion.

Based on this policy, the limiting height for sources addressed in this application is 213 feet. The stack associated with the proposed project are less than 213 feet in height above-grade. This satisfies the good engineering practice (GEP) stack height criteria.

4.0 IMPACTS ON SOILS, VEGETATION AND VISIBILITY

4.1 IMPACT ON SOILS AND VEGETATION

The U. S. Environmental Protection Agency was directed by Congress to develop primary and secondary ambient air quality standards. The primary standards were to protect human health and the secondary standards were to protect the public welfare from any known or anticipated adverse effects of a pollutant. The public welfare was to include soils, vegetation and visibility.

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

The air quality modeling that has been conducted as a requirement for the PSD application demonstrates that the levels of SO2 expected in the vicinity of the proposed project are below the ambient air quality standards. As a result, it is reasonable to conclude that there will be no adverse effect to the soils, vegetation or visibility of the area.

The plant property and the surrounding areas are comprised of mining lands (phosphate), flatwoods, marshes, and sloughs. The soils of the area are primarily sandy and are typically low in both clay and silt content. These characteristics and the semi-tropic climatic factors of high temperature and rainfall are the natural factors that determine the terrestrial communities of the region.

The land in the vicinity of the plant supports various plant communities. Much of the natural vegetation on the site and the surrounding areas has been altered due to mining and industrial use; primarily the phosphate fertilizer industry. As a result of mining and industrial activity, there is very little undisturbed land in existence in the vicinity of the plant. As a result, no adverse impacts from the proposed project are expected on the soils and vegetation in the vicinity of the facility.

4.2 GROWTH RELATED IMPACTS

The proposed modification will require no changes in personnel and minimal other changes to operate the facility. Therefore, no significant growth impacts are expected as a result of the proposed project.

4.3 VISIBILITY IMPACTS

The proposed project will result in an increase in air emissions and therefore has the potential for adverse impacts on visibility.

Visibility impairment analysis was conducted in accordance with guidance from the NPS, using the results of the CALPUFF model. The results, presented in Table 4-1, indicate that there will be no adverse visibility impacts from the proposed project. Details of the visibility analysis are presented in Appendix A.

4.4 IMPACTS ON AIR QUALITY RELATED VALUES FOR CLASS I AREA

The analysis presented in this section addresses the review of the impact of increased emissions on air quality related values associated with the Chassahowitzka Wildlife Refuge, a Class I area located in excess of 100 kilometers northwest of the plant.

4.4.1 Impact on Vegetation

The response of vegetation to air pollutants is influenced by the concentration of the pollutant, the duration of the exposure and the frequency of the exposure. The pattern of exposure expected from a single facility is that of a few episodes of relatively high concentrations inter-dispersed with long periods of no exposure or extremely low concentrations. This is the pattern of exposure that would be expected from SO2, NOX and SAM emissions from the proposed project impacting the Class I area.

Vegetation responds to a dose of an air pollutant with a dose being defined as the product of the concentration of the pollutant and the duration of the exposure. The impact of the SO2 emissions on Chassahowitzka regional vegetation was assessed by comparing pollutant doses that have been projected with air quality modeling to threshold doses reported in the literature.

SO2 damage to vegetation can be grouped into two general categories: acute and chronic. Acute damage is caused by short-term exposure to relatively high concentrations of SO2. This damage is usually characterized by a yellowing of leaf tips with a sharp, well-defined separation between the damaged and healthy areas of a leaf. In pine trees, injury usually first occurs at the base of the youngest needles (the newest tissue on the plant).

Damaged plants typically show decreased growth and yield. These effects vary widely between species but studies have shown a rough correlation between the loss and yield and the exposure dose. These studies showed approximately a 10 percent yield loss for each 10-fold increase in SO2 dose beyond 260 micrograms per cubic meter-hour.

Susceptibility to acute damage varies widely with plant species and also with the time of exposure. For example, alfalfa can tolerate 3250 micrograms per cubic meter for one hour (3250 micrograms per cubic meter-hour dose), but only 1850 micrograms per cubic meter for two hours (3700 micrograms per cubic meter-hour dose). Table 4-2 shows the sulfur dioxide concentration/time thresholds for several plant species common to Florida.

The vegetation in the Chassahowitzka area is characterized by flatwoods, brackish-water, marine and halothytic terrestrial species. Predominant tree species are slash pine, laurel oak, sweet gum and palm. Other plants in the area include needlegrass rush, seashore saltgrass, marsh hay and red mangrove.

A study of the tolerance of native Florida species to SO2 (Woltz and Howe, 1981) demonstrated that cypress, slash pine, live oak and mangrove exposed to 1300 micrograms per cubic meter of SO2 for 8-hours were not visibly damaged. This is consistent with the results reported in Table 4-2. Another study (McLaughlin and Lee, 1974) demonstrated that approximately 20 percent of a broad range of plants ranging from sensitive to tolerant were visibly injured when exposed to a SO2 concentration of 920 micrograms per cubic meter for a 3-hour period.

Acute injury results from a plants inability to quickly convert absorbed SO2 into the sulfate ion; an essential nutrient to plants. Chronic injury, on the other hand, results from a build-up of sulfate in tissue to the point where it becomes toxic. This sulfate build-up occurs over a relatively long period of time. Symptoms include a reduction in chlorophyll production resulting in decreased photosynthesis and yellow or reddish areas on leaves in a mottled pattern. In pines, sulfate injury is typically shown first at tips of older needles (the oldest tissue in the needle).

Chronic injury can result from SO2 exposures that are much lower than is required for acute injury. Unfortunately, there is a lack of quantitative experimental data for long term effects of SO2 exposure. The lowest average concentration for which chronic injury has been shown is 80 micrograms per cubic meter. The Environmental Protection Agency has therefore established an ambient air quality standard of 80 micrograms per cubic meter, annual average. The Florida Department of Environmental Protection adopted a more conservative standard of 60 micrograms per cubic meter, annual average. The SO2 impacts from the proposed project are expected to be well below the ambient air quality standards.

The maximum expected concentrations of acid mist in the Chassahowitzka area resulting from the increased emissions from the proposed project are less than four percent of the expected sulfur dioxide impacts. Furthermore, it would be expected that by the time acid mist droplets have traveled over 100 kilometers from the plant to the Chassahowitzka area, the droplets may react with particles in the atmosphere to produce a sulfate salt.

Salt deposition concentrations in coastal areas are in the range of 25-300 pounds per acre per year and may be as high as 4000 pounds per acre per year on exposed shorelines. Sulfates can account for 5 - 6 percent of the total salt; resulting in a deposition rate in the range of 1-200 pounds per acre per year.

One study (Mulchi Armbruster, 1975) demonstrated leaf damage in reduced yields in corn and soybeans with a salt deposition of 169 - 339 pounds per acre per year. Another study (Curtis, 1975) reported that broad leaf plants absorbed greater amounts of salt than do pines, probably due to leaf shape. It has been found that deciduous trees begin to exhibit adverse effects to salt exposure concentrations in the range of 100 micrograms per cubic meter (DeVine, 1975). The same study reported no observed injury to plants with long-term exposures to salt spray of 40 micrograms per cubic meter.

The sulfate concentrations resulting from acid mist emissions from the proposed project are well below concentrations that have been reported to produce vegetation damage.

4.4.2 Impact on Soils

The major soil classification in the Chassahowitzka area is Weeki Wachee-Durbin muck. This is an euic, hyderthermic typic sufihemist that is characterized by high levels of sulfur and organic matter. This soil is flooded daily with the advent of high tide and the pH ranges between 6.1 and 7.8. The upper level of this soil may contain as much as four percent sulfur (USDA, 1991).

Based upon the expected SO2 and sulfate concentrations in the Chassahowitzka area resulting from the increased emissions from the plant, it is not expected that there will be any adverse impact on the native soils. A study, coordinated by the National Park Service in 1994, supported this position.

4.4.3 Impacts on Wildlife

As the predicted SO2 levels are below those known to affect vegetation, the proposed project is not expected to have any adverse impact on the wildlife in the Chassahowitzka area.

4.4.4. Visibility Impairment Analysis

Visibility impairment analysis was performed to determine potential impact of the proposed project in the Chassahowitzka area. Results of the CALPUFF model are used in the analysis. A sample calculation is presented in Table 4-1 to show the procedure used for the analysis. The complete analysis is presented in Appendix A. The results of this analysis indicates that the visibility impacts from the proposed project are below the significant levels determined by the NPS.

TABLE 4-1

VISIBILITY IMPACT ANALYSIS RESULTS

Example Calculation

Background	from the 20% Cleanest Days			
SO2 =	0.00329	ppm =	8.62	ug/m^3
SO4 = SO2 * 1.5 =		12.92	ug/m^3	
(NH4)SO4 = 1.1875 * SO4 =			15.35	ug/m^3
NO2 =	0.0085	ppm =	16	ug/m^3
NO3 = 1.348 * NO2 =		21.55		
(NH4)2NO3 = 1.29 * NO3 =			27.80	ug/m^3
(NH4)SO4 + (NH4)2NO3 =			43.15	ug/m^3
PM10 =	22.5		22.5	ug/m^3
Assume 90% RH fRH =	5			
Background	extinction =	b back =	238.26	Mm-1

Source				
			Impact ug/m^3	
NO2			0.0007	
SO2			0.3140	
H2SO4 =			0.01153	
SO4 = SO2 * 1.5 =	0.4883			
(NH4)2SO4 = 1.375 * SO4 =		0.6714	ug/m^3	
(SO2+H2SO4)*1.5*1.375 =		2.14	ug/m^3	
NO3 = 1.348 * NO2 =	0.0009	ug/m^3		
(NH4)NO3 = 1.29 * NO3 =		0.0012	ug/m^3	
PM10 =	0 ug/m^3			
Source	extinction =	b source	3.363	Mm-1

Change in Deciview

Ddv = 10 * ln (b back + b source / b back) =	0.140	dv

Estimated Maximum = 0.27 dv
Estimated Minimum = 0 dv
Estimated Average = 0.01 dv

NOTE: Calculations are based on NPS guidance and are presented in Appendix A.

TABLE 4-2

SENSITIVITY OF VEGETATION TO SULFUR DIOXIDE

CONCENTRATION - TIME EXPOSURES TO SULFUR DIOXIDE RESULTING IN DAMAGE TO SEVERAL SPECIES COMMON TO FLORIDA

<u>Sensitive Plants</u>

Poplar	Radish	Cabbage
Lombardy Poplar	Cucumber	Broccoli
Black Willow	Squash	Spinach
Elm	Bean	Wheat
American Elm	Pea	Begonia
Southern pines	Soybean	Zinnia
Red Oak	Cotton	Rubber plant
Black Oak	Eggplant	Bluegrass
Sumac	Celery	Ryegrass

<u>Intermediate Plants</u>

Basswood	Yellow Poplar	Virginia creeper
Red Oxier Dogwood	Sweetgum	Rose
Maples	Locust	Hibiscus
Red Maple	Eastern Cottonwood	Gladiolus
Elm	Saltgrass	Honeysuckle
Pine	Cucumber	Wisteria
White Oak	Tobacco	Chrysanthemum
Pin Oak	Potato	

<u>Tolerant Plants</u>

Juniper	Pine	Gardenia
Ginkgo	Sumac	Citrus
Dogwood	Cantaloupe	Celery
Oak	Corn	
Live Oak	Lily	

(Continued)

TABLE 4-2 (CONTINUED)

Exposure Time, Hours	Concentration Needed to Produce Injury (ug/m^3) Sensitive	Intermediate	Tolerant
0.5	2,620 - 10,480	9,170 - 31,440	>26,200
1.0	1,310 - 7,860	6,550 - 26,200	>20,960
2.0	655 - 5,240	3,930 - 19,650	>15,720
4.0	262 - 2,620	1,310 - 13,100	>10,480
8.0	131 - 1,310	524 - 6,550	> 5,240

5.0 CONCLUSION

It can be concluded from the information in this report that the proposed project described in this report, will not cause or significantly contribute to an exceedance of any air quality standard, PSD increment, or any other provision of Chapter 62, FAC.

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APPENDIX A - CALCULATIONS

USAC Chemicals Visibility Calculations
For 1 Year of Data

DATE	Monthly RH Fator	Background Extinction	Jday	Class 1 Impact From SO2 Source ug/m^3	RH Factor	Source (NH4)2SO4 ug/m^3	Source NO2 ug/m^3	Source (NH4)NO3 ug/m^3	Source Extinction Mm-1	Change in Deciview ddv dv
01/07/1990			7	0						
01/08/1990			8	0						
01/09/1990			9	0						
01/10/1990			10	0						
01/11/1990			11	0						
01/12/1990			12	0						
01/13/1990			13	0						
01/14/1990			14	0						
01/15/1990			15	0						
01/16/1990			16	0						
01/17/1990			17	0						
01/18/1990			18	0						
01/19/1990			19	0						
01/20/1990		118.30	20	0.038575	2.62	0.0825	0.00132	0.0022993	0.2221311	0.019
01/21/1990		118.30	21	0.31405	4.7	0.6715	0.01077	0.0187192	3.2441348	0.271
01/22/1990			22	0						
01/23/1990			23	0						
01/24/1990		118.30	24	0.016382	2.46	0.0350	0.00056	0.0009765	0.0885736	0.007
01/25/1990		118.30	25	0.05133	3.3	0.1098	0.00176	0.0030596	0.3722952	0.031
01/26/1990			26	0						
01/27/1990			27	0						
01/28/1990			28	0						
01/29/1990		118.30	29	0.00133	5.5	0.0028	4.6E-05	7.928E-05	0.0160774	0.001
01/30/1990		118.30	30	0.0609	3.5	0.1302	0.00209	0.00363	0.4684762	0.040
01/31/1990	2.22		31	0						
02/01/1990		118.30	32	0.08259	3.06	0.1766	0.00283	0.0049228	0.5554579	0.047
02/02/1990		118.30	33	0.09025	3.06	0.1930	0.00309	0.0053794	0.6069751	0.051
02/03/1990		118.30	34	0.0685	2.62	0.1465	0.00235	0.004083	0.3944519	0.033
02/04/1990		118.30	35	0.07446	3.3	0.1592	0.00255	0.0044383	0.5400565	0.046
02/05/1990			36	0						
02/06/1990			37	0						
02/07/1990		118.30	38	0.008531	1.82	0.0182	0.00029	0.0005085	0.0341251	0.003
02/08/1990		118.30	39	0.016323	2.22	0.0349	0.00056	0.0009729	0.0796444	0.007
02/09/1990		118.30	40	0.042424	2.22	0.0907	0.00145	0.0025287	0.2069983	0.017
02/10/1990		118.30	41	0.036153	4.34	0.0773	0.00124	0.0021549	0.3448548	0.029
02/11/1990			42	0						
02/12/1990			43	0						
02/13/1990			44	0						
02/14/1990		118.30	45	0.004937	1.66	0.0106	0.00017	0.0002943	0.0180125	0.002
02/15/1990		118.30	46	0.14566	1.86	0.3115	0.00499	0.0086822	0.595464	0.050
02/16/1990		118.30	47	0.14482	2.7	0.3097	0.00496	0.0086321	0.8593984	0.072
02/17/1990			48	0						
02/18/1990			49	0						
02/19/1990		118.30	50	0.11309	2.94	0.2418	0.00388	0.0067408	0.7307583	0.062
02/20/1990			51	0						
02/21/1990			52	0						
02/22/1990		118.30	53	0.09719	2.82	0.2078	0.00333	0.0057931	0.6023833	0.051
02/23/1990		118.30	54	0.13841	5.5	0.2960	0.00475	0.00825	1.6731404	0.140
02/24/1990		118.30	55	0.029208	1.54	0.0625	0.001	0.001741	0.0988609	0.008
02/25/1990			56	0						
02/26/1990			57	0						
02/27/1990			58	0						

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DATE	Monthly RH Fator	Background Extinction	Jday	Class 1 Impact From SO2 Source ug/m ^3	RH Factor	Source (NH4)2SO4 ug/m ^3	Source NO2 ug/m ^3	Source (NH4)NO3 ug/m ^3	Source Extinction Mm-1	Change in Deciview ddv dv
02/28/1990	2.22		59	0						
03/01/1990		102.76	60	0						
03/02/1990			61	0						
03/03/1990		102.76	62	0.033206	2.62	0.0710	0.00114	0.0019793	0.1912142	0.019
03/04/1990			63	0						
03/05/1990			64	0						
03/06/1990		102.76	65	0.020726	2.06	0.0443	0.00071	0.0012354	0.0938393	0.009
03/07/1990		102.76	66	0.000938	2.06	0.0020	3.2E-05	5.591E-05	0.0042469	0.000
03/08/1990			67	0						
03/09/1990			68	0						
03/10/1990			69	0						
03/11/1990			70	0						
03/12/1990			71	0						
03/13/1990			72	0						
03/14/1990			73	0						
03/15/1990		102.76	74	0.035775	2.06	0.0765	0.00123	0.0021324	0.1619754	0.016
03/16/1990		102.76	75	0.17975	2.14	0.3844	0.00616	0.0107142	0.8454441	0.082
03/17/1990		102.76	76	0.031814	3.3	0.0680	0.00109	0.0018963	0.2307461	0.022
03/18/1990			77	0						
03/19/1990		102.76	78	1.83E-05	1.74	0.0000	6.3E-07	1.091E-06	6.998E-05	0.000
03/20/1990		102.76	79	0.003639	1.66	0.0078	0.00012	0.0002169	0.0132768	0.001
03/21/1990			80	0						
03/22/1990			81	0						
03/23/1990			82	0						
03/24/1990			83	0						
03/25/1990		102.76	84	0						
03/26/1990		102.76	85	0.015762	2.38	0.0337	0.00054	0.0009395	0.08245	0.008
03/27/1990		102.76	86	0.010511	2.06	0.0225	0.00036	0.0006265	0.0475898	0.005
03/28/1990		102.76	87	0.002115	1.86	0.0045	7.3E-05	0.0001261	0.0086462	0.001
03/29/1990		102.76	88	0.013334	2.22	0.0285	0.00046	0.0007948	0.0650602	0.006
03/30/1990		102.76	89	0.19112	2.3	0.4087	0.00655	0.0113919	0.9661314	0.094
03/31/1990	1.86	102.76	90	0.16731	2.94	0.3578	0.00574	0.0099727	1.0811139	0.105
04/01/1990		101.04	91	0.002113	2.7	0.0045	7.2E-05	0.0001259	0.0125391	0.001
04/02/1990			92	0						
04/03/1990			93	0						
04/04/1990			94	0						
04/05/1990			95	0						
04/06/1990			96	0						
04/07/1990		101.04	97	0						
04/08/1990			98	0						
04/09/1990			99	0						
04/10/1990			100	0						
04/11/1990		101.04	101	0.031206	2.82	0.0667	0.00107	0.0018601	0.1934147	0.019
04/12/1990			102	0						
04/13/1990			103	0						
04/14/1990			104	0						
04/15/1990		101.04	105	0.000521	2.3	0.0011	1.8E-05	3.105E-05	0.0026337	0.000
04/16/1990		101.04	106	0.000802	1.86	0.0017	2.7E-05	4.78E-05	0.0032786	0.000
04/17/1990		101.04	107	0.00542	1.9	0.0116	0.00019	0.0003231	0.0226337	0.002
04/18/1990		101.04	108	0.09368	1.74	0.2003	0.00321	0.0055839	0.35826	0.035
04/19/1990		101.04	109	0.013382	2.3	0.0286	0.00046	0.0007976	0.0676474	0.007
04/20/1990			110	0						

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04/21/1990			111	0						
04/22/1990			112	0						
04/23/1990			113	0						
04/24/1990			114	0						
04/25/1990			115	0						
04/26/1990			116	0						
04/27/1990		101.04	117	0						
04/28/1990		101.04	118	0.10435	2.82	0.2231	0.00358	0.0062199	0.646761	0.064
04/29/1990		101.04	119	0.002538	2.54	0.0054	8.7E-05	0.0001513	0.0141686	0.001
04/30/1990		101.04	120	0.000723	2.54	0.0015	2.5E-05	4.31E-05	0.0040362	0.000
05/01/1990	1.82	101.04	121	0.009019	2.14	0.0193	0.00031	0.0005376	0.0424204	0.004
05/02/1990		104.49	122	0.000853	1.7	0.0018	2.9E-05	5.084E-05	0.0031871	0.000
05/03/1990		104.49	123	0.003765	1.78	0.0081	0.00013	0.0002244	0.0147295	0.001
05/04/1990		104.49	124	0.236	1.98	0.5046	0.00809	0.014067	1.0270212	0.098
05/05/1990		104.49	125	0.11633	2.3	0.2487	0.00399	0.0069339	0.5880602	0.056
05/06/1990		104.49	126	0.007414	2.3	0.0159	0.00025	0.0004419	0.0374785	0.004
05/07/1990			127	0						
05/08/1990			128	0						
05/09/1990		104.49	129	0.008162	2.06	0.0175	0.00028	0.0004865	0.0369544	0.004
05/10/1990		104.49	130	0.1054	2.62	0.2254	0.00361	0.0062825	0.6069377	0.058
05/11/1990			131	0						
05/12/1990			132	0						
05/13/1990		104.49	133	0.015808	2.06	0.0338	0.00054	0.0009422	0.0715725	0.007
05/14/1990		104.49	134	0.022569	1.66	0.0483	0.00077	0.0013452	0.0823422	0.008
05/15/1990		104.49	135	0.012653	1.78	0.0271	0.00043	0.0007542	0.0495012	0.005
05/16/1990		104.49	136	0.002009	1.82	0.0043	6.9E-05	0.0001197	0.0080363	0.001
05/17/1990		104.49	137	0.18117	1.86	0.3874	0.00621	0.0107988	0.7406303	0.071
05/18/1990		104.49	138	0.010639	1.82	0.0227	0.00036	0.0006341	0.0425573	0.004
05/19/1990		104.49	139	0.000818	1.9	0.0017	2.8E-05	4.876E-05	0.0034159	0.000
05/20/1990		104.49	140	0.004384	1.86	0.0094	0.00015	0.0002613	0.017922	0.002
05/21/1990			141	0						
05/22/1990			142	0						
05/23/1990			143	0						
05/24/1990			144	0						
05/25/1990		104.49	145	0.09938	2.14	0.2125	0.00341	0.0059236	0.4674283	0.045
05/26/1990		104.49	146	0						
05/27/1990		104.49	147	6.14E-05	2.94	0.0001	2.1E-06	3.66E-06	0.0003968	0.000
05/28/1990		104.49	148	0.058117	2.82	0.1243	0.00199	0.0034641	0.360209	0.034
05/29/1990		104.49	149	0.007768	2.3	0.0166	0.00027	0.000463	0.039268	0.004
05/30/1990			150	0						
05/31/1990	1.9		151	0						
06/01/1990		114.85	152	0						
06/02/1990		114.85	153	0.035165	3.06	0.0752	0.00121	0.002096	0.2365017	0.021
06/03/1990		114.85	154	0.045792	2.46	0.0979	0.00157	0.0027295	0.2475865	0.022
06/04/1990		114.85	155	0.011674	2.06	0.0250	0.0004	0.0006958	0.0528554	0.005
06/05/1990		114.85	156	0.000616	1.98	0.0013	2.1E-05	3.672E-05	0.0026807	0.000
06/06/1990			157	0						
06/07/1990		114.85	158	0.001717	2.38	0.0037	5.9E-05	0.0001023	0.0089815	0.001
06/08/1990		114.85	159	0.013252	2.38	0.0283	0.00045	0.0007899	0.0693203	0.006
06/09/1990		114.85	160	0.15345	2.38	0.3281	0.00526	0.0091465	0.8026867	0.070
06/10/1990		114.85	161	0.012499	2.38	0.0267	0.00043	0.000745	0.0653814	0.006
06/11/1990		114.85	162	0.12693	2.46	0.2714	0.00435	0.0075658	0.6862804	0.060

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06/12/1990			163	0						
06/13/1990			164	0						
06/14/1990			165	0						
06/15/1990		114.85	166	0					0	0.000
06/16/1990		114.85	167	0.001994	1.62	0.0043	6.8E-05	0.0001189	0.0070997	0.001
06/17/1990		114.85	168	9.72E-05	1.7	0.0002	3.3E-06	5.794E-06	0.0003632	0.000
06/18/1990			169	0						
06/19/1990			170	0						
06/20/1990			171	0						
06/21/1990			172	0						
06/22/1990			173	0						
06/23/1990			174	0						
06/24/1990			175	0						
06/25/1990			176	0						
06/26/1990			177	0						
06/27/1990		114.85	178	0					0	0.000
06/28/1990		114.85	179	0.000806	1.78	0.0017	2.8E-05	4.804E-05	0.0031532	0.000
06/29/1990		114.85	180	0.05779	2.3	0.1236	0.00198	0.0034446	0.2921344	0.025
06/30/1990		114.85	181	0.08589	2.7	0.1837	0.00294	0.0051195	0.5096929	0.044
07/01/1990	2.14	114.85	182	0.10674	2.38	0.2282	0.00366	0.0063623	0.5583498	0.048
07/02/1990		139.01	183	0.007667	2.94	0.0164	0.00026	0.000457	0.0495422	0.004
07/03/1990			184	0						
07/04/1990		139.01	185	2.52E-05	2.7	0.0001	8.6E-07	1.502E-06	0.0001495	0.000
07/05/1990		139.01	186	-0.00019	2.22	-0.0004	-6.5E-06	-1.13E-05	-0.000927	-0.000
07/06/1990			187	0						
07/07/1990			188	0						
07/08/1990		139.01	189	4.75E-05	2.94	0.0001	1.6E-06	2.831E-06	0.0003069	0.000
07/09/1990		139.01	190	0.025947	2.62	0.0555	0.00089	0.0015466	0.1494138	0.011
07/10/1990		139.01	191	0						
07/11/1990		139.01	192	0.11791	3.06	0.2521	0.00404	0.0070281	0.793002	0.057
07/12/1990		139.01	193	0.11484	2.62	0.2456	0.00394	0.0068451	0.6612972	0.047
07/13/1990		139.01	194	0.0403	2.94	0.0862	0.00138	0.0024021	0.2604082	0.019
07/14/1990			195	0						
07/15/1990			196	0						
07/16/1990		139.01	197	0.10777	2.54	0.2304	0.00369	0.0064237	0.601636	0.043
07/17/1990		139.01	198	0.034022	2.94	0.0727	0.00117	0.0020279	0.2198414	0.016
07/18/1990			199	0						
07/19/1990			200	0						
07/20/1990			201	0						
07/21/1990		139.01	202	0.048511	2.46	0.1037	0.00166	0.0028915	0.2622875	0.019
07/22/1990		139.01	203	0.009795	2.94	0.0209	0.00034	0.0005838	0.0632928	0.005
07/23/1990			204	0						
07/24/1990			205	0						
07/25/1990			206	0						
07/26/1990			207	0						
07/27/1990			208	0						
07/28/1990			209	0						
07/29/1990			210	0						
07/30/1990		139.01	211	8.81E-05	2.38	0.0002	3E-06	5.251E-06	0.0004608	0.000
07/31/1990	2.7	139.01	212	8.18E-05	2.3	0.0002	2.8E-06	4.876E-06	0.0004135	0.000
08/01/1990		128.65	213	0						
08/02/1990			214	0						

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08/03/1990			215	0						
08/04/1990			216	0						
08/05/1990			217	0						
08/06/1990		128.65	218	0						
08/07/1990		128.65	219	0						
08/08/1990			220	0						
08/09/1990			221	0						
08/10/1990			222	0						
08/11/1990			223	0						
08/12/1990		128.65	224	0.000294	2.46	0.0006	1E-05	1.752E-05	0.0015896	0.000
08/13/1990		128.65	225	0.10553	2.7	0.2257	0.00362	0.0062902	0.6262416	0.049
08/14/1990		128.65	226	0					0	0.000
08/15/1990		128.65	227	0.17182	2.94	0.3674	0.00589	0.0102415	1.1102564	0.086
08/16/1990		128.65	228	0.05433	2.14	0.1162	0.00186	0.0032384	0.2555381	0.020
08/17/1990		128.65	229	0.040281	2.06	0.0861	0.00138	0.002401	0.1823768	0.014
08/18/1990		128.65	230	0.010607	2.7	0.0227	0.00036	0.0006322	0.0629446	0.005
08/19/1990			231	0						
08/20/1990			232	0						
08/21/1990		128.65	233	0.07818	2.7	0.1672	0.00268	0.00466	0.4639398	0.036
08/22/1990		128.65	234	0.04924	2.38	0.1053	0.00169	0.002935	0.2575712	0.020
08/23/1990			235	0						
08/24/1990			236	0						
08/25/1990			237	0						
08/26/1990		128.65	238	0.08478	2.54	0.1813	0.00291	0.0050534	0.4732922	0.037
08/27/1990		128.65	239	0.14399	2.14	0.3079	0.00494	0.0085826	0.6772489	0.053
08/28/1990		128.65	240	0.007456	2.46	0.0159	0.00026	0.0004444	0.0403128	0.003
08/29/1990			241	0						
08/30/1990			242	0						
08/31/1990	2.46		243	0						
09/01/1990		114.85	244	0.001095	2.46	0.0023	3.8E-05	6.527E-05	0.0059204	0.001
09/02/1990		114.85	245	0.07079	3.06	0.1514	0.00243	0.0042195	0.4760971	0.041
09/03/1990		114.85	246	0.001238	2.22	0.0026	4.2E-05	7.379E-05	0.0060405	0.001
09/04/1990			247	0						
09/05/1990			248	0						
09/06/1990			249	0						
09/07/1990			250	0						
09/08/1990		114.85	251	0.003999	2.14	0.0086	0.00014	0.0002384	0.0188091	0.002
09/09/1990		114.85	252	0.003174	1.86	0.0068	0.00011	0.0001892	0.0129754	0.001
09/10/1990		114.85	253	0.000958	1.98	0.0020	3.3E-05	5.71E-05	0.004169	0.000
09/11/1990		114.85	254	0.11057	2.38	0.2364	0.00379	0.0065906	0.5783843	0.050
09/12/1990			255	0						
09/13/1990			256	0						
09/14/1990			257	0						
09/15/1990		114.85	258	0.006331	2.38	0.0135	0.00022	0.0003774	0.033117	0.003
09/16/1990		114.85	259	0.001691	2.7	0.0036	5.8E-05	0.0001008	0.0100348	0.001
09/17/1990			260	0						
09/18/1990			261	0						
09/19/1990			262	0						
09/20/1990			263	0						
09/21/1990			264	0						
09/22/1990			265	0						
09/23/1990		114.85	266	0						

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09/24/1990			267	0						
09/25/1990			268	0						
09/26/1990			269	0						
09/27/1990		114.85	270	0.000789	1.7	0.0017	2.7E-05	4.703E-05	0.002948	0.000
09/28/1990			271	0						
09/29/1990			272	0						
09/30/1990	2.14	114.85	273	0.01368	6.3	0.0293	0.00047	0.0008154	0.1894213	0.016
10/01/1990		121.75	274	0.004083	2.82	0.0087	0.00014	0.0002434	0.0253064	0.002
10/02/1990		121.75	275	0.002813	2.22	0.0060	9.6E-05	0.0001677	0.0137254	0.001
10/03/1990		121.75	276	0						
10/04/1990			277	0						
10/05/1990			278	0						
10/06/1990			279	0						
10/07/1990			280	0						
10/08/1990			281	0						
10/09/1990			282	0						
10/10/1990			283	0						
10/11/1990		121.75	284	0.002339	3.98	0.0050	8E-05	0.0001394	0.0204605	0.002
10/12/1990		121.75	285	0.02168	3.06	0.0464	0.00074	0.0012923	0.1458085	0.012
10/13/1990			286	0						
10/14/1990			287	0						
10/15/1990			288	0						
10/16/1990			289	0						
10/17/1990			290	0						
10/18/1990			291	0						
10/19/1990		121.75	292	0.11852	2.7	0.2534	0.00406	0.0070645	0.7033276	0.058
10/20/1990			293	0						
10/21/1990			294	0						
10/22/1990			295	0						
10/23/1990		121.75	296	0.047774	3.06	0.1022	0.00164	0.0028476	0.3213034	0.026
10/24/1990			297	0						
10/25/1990			298	0						
10/26/1990			299	0						
10/27/1990			300	0						
10/28/1990			301	0						
10/29/1990			302	0						
10/30/1990			303	0						
10/31/1990	2.3		304	0						
11/01/1990		118.30	305	0						
11/02/1990			306	0						
11/03/1990			307	0						
11/04/1990			308	0						
11/05/1990			309	0						
11/06/1990			310	0						
11/07/1990			311	0						
11/08/1990		118.30	312	0						
11/09/1990		118.30	313	0.008069	3.3	0.0173	0.00028	0.000481	0.0585243	0.005
11/10/1990		118.30	314	0.019592	2.14	0.0419	0.00067	0.0011678	0.0921499	0.008
11/11/1990			315	0						
11/12/1990			316	0						
11/13/1990			317	0						
11/14/1990			318	0						

USAC Chemicals Visibility Calculations
For 1 Year of Data

DATE	Monthly RH Fator	Background Extinction	Jday	Class 1 Impact From SO2 Source ug/m^3	RH Factor	Source (NH4)2SO4 ug/m^3	Source NO2 ug/m^3	Source (NH4)NO3 ug/m^3	Source Extinction Mm-1	Change in Deciview ddv dv
11/15/1990			319	0						
11/16/1990			320	0						
11/17/1990			321	0						
11/18/1990			322	0						
11/19/1990			323	0						
11/20/1990			324	0						
11/21/1990			325	0						
11/22/1990			326	0						
11/23/1990			327	0						
11/24/1990		118.30	328	0.002065	6.3	0.0044	7.1E-05	0.0001231	0.0285932	0.002
11/25/1990			329	0						
11/26/1990			330	0						
11/27/1990		118.30	331	0.022261	3.5	0.0476	0.00076	0.0013269	0.1712438	0.014
11/28/1990		118.30	332	0.17657	3.7	0.3776	0.00605	0.0105246	1.435889	0.121
11/29/1990		118.30	333	0.19212	2.94	0.4108	0.00659	0.0114515	1.2414297	0.104
11/30/1990	2.22	118.30	334	0.029236	1.36	0.0625	0.001	0.0017426	0.0873895	0.007
12/01/1990		128.65	335	0						
12/02/1990			336	0						
12/03/1990			337	0						
12/04/1990		128.65	338	0.039182	2.7	0.0838	0.00134	0.0023355	0.2325159	0.018
12/05/1990		128.65	339	0						
12/06/1990			340	0						
12/07/1990		128.65	341	0.000162	3.18	0.0003	5.6E-06	9.656E-06	0.0011323	0.000
12/08/1990		128.65	342	0.055434	3.3	0.1185	0.0019	0.0033042	0.4020614	0.031
12/09/1990			343	0						
12/10/1990			344	0						
12/11/1990			345	0						
12/12/1990			346	0						
12/13/1990		128.65	347	0.07616	1.82	0.1629	0.00261	0.0045396	0.3046496	0.024
12/14/1990		128.65	348	0.034671	1.9	0.0741	0.00119	0.0020666	0.1447845	0.011
12/15/1990			349	0						
12/16/1990		128.65	350	0.028521	2.38	0.0610	0.00098	0.0017	0.1491915	0.012
12/17/1990		128.65	351	0.08461	2.62	0.1809	0.0029	0.0050433	0.4872201	0.038
12/18/1990		128.65	352	0.06631	3.7	0.1418	0.00227	0.0039525	0.5392411	0.042
12/19/1990			353	0						
12/20/1990			354	0						
12/21/1990		128.65	355	0.12282	2.54	0.2626	0.00421	0.0073208	0.685654	0.053
12/22/1990		128.65	356	0.003943	2.46	0.0084	0.00014	0.000235	0.0213189	0.002
12/23/1990		128.65	357	0.18267	2.54	0.3906	0.00626	0.0108882	1.0197722	0.079
12/24/1990		128.65	358	0.10002	3.18	0.2139	0.00343	0.0059618	0.6990628	0.054
12/25/1990			359	0						
12/26/1990			360	0						
12/27/1990			361	0						
12/28/1990			362	0						
12/29/1990			363	0						
12/30/1990			364	0						
12/31/1990	2.46			0.31405						

		Max	0.27
		Min	-0.00
Days with Class 1 Impact =	141	Avg	0.01

APPENDIX B – AIR MODELING

THESE FIVE DISKS CONTAIN SULFUR DIOXIDE (SO2) AND NITROGEN OXIDES (NOX) MODELING FILES FOR THE U. S. AGRICHEMICALS FACILITY IN FT. MEADE, FLORIDA. THESE FILES CONTAIN ISCST3 AND CALPUFF MODELING OF:

SIGNIFICANT IMPACT ANALYSIS (SIA) FOR CLASS 1 AND 2 AREAS
INCREMENT ANALYSIS FOR CLASS II AND CLASS I AREA, (CHASSAHOWITZKA NWR)
BUILDING DOWNWASH PROFILE INPUT PROGRAM (BPIP) FILES.

THE FOLLOWING FILES ARE IN SELF EXTRACTING ARCHIVE FORMAT.

DISK 1 - ISCST3 FILES

C2ASISO2	EXE	55,243	02-01-00	SO2 CLASS 2 AREA SIA ANALYSIS
C2ASINX	EXE	98,243	02-01-00	NOX CLASS 2 AREA SIA ANALYSIS
C2-INV	EXE	400,893	02-01-00	SO2 CLASS 2 INCREMENT ANALYSIS
AQS-INV	EXE	489,557	02-01-00	SO2 FAAQS STANDARD ANALYSIS
BPIP	EXE	19,951	02-01-00	BUILDING DOWNWASH CALCULATIONS

DISK 2 - CALPUFF SIA FOR CHASSAHOWITZKA NWR CLASS I AREA FILES

SIA-PUFF	EXE	96,285	02-01-00	CALPUFF SO2 INPUT & OUTPUT
SIA-24	EXE	206,460	02-01-00	CALPOST SO2 24-HOUR INPUT & OUTPUT
SIA-3H	EXE	206,460	02-01-00	CALPOST SO2 3-HOUR INPUT & OUTPUT
SIA-ADD	EXE	717,733	02-01-00	CALPOST SO2 RESULTS ANALYSIS WORKSHEETS
SIA-NX	EXE	98,873	02-01-00	CALPUFF INPUT & OUTPUT FOR NOX

DISK 3 - CALMET, CALPUFF, AND CALPOST INCREMENT ANALYSIS FILES

CMT-INP	EXE	794,720	02-01-00	CALMET INPUT FILES
INV-24	EXE	99,379	02-01-00	CALPOST ADDITION ANALYSIS FOR 24-HOUR
INV-PUF	EXE	132,681	02-01-00	CALPUFF INVENTORY FILES

DISK 4 - CALPOST CULPABILITY INCREMENT ANALYSIS FOR 3-HOUR AVERAGING FILES

INV-3H	EXE	439,443	02-01-00	CALPOST ADDITION ANALYSIS FOR 3-HOUR
INV-CUL	EXE	921,066	02-01-00	SO2 CULPABILITY

DISK 5 - CALPOST ADDITION INCREMENT ANALYSIS FOR 3-HOUR AVERAGING FILE

INV-ADD	EXE	1,116,178	02-01-00	CALPOST ADDITION ANALYSIS FOR 3-HOUR

TO UNARCHIVE THESE FILES COPY THEM TO A HARD DISK DRIVE AND TYPE THE FILE NAME. FOR EXAMPLE TO UNARCHIVE THE SO2 ASI CLASS 2 ISCST3 OUTPUT FILES, TYPE:

C2SIASO2
AND PRESS ENTER.

THE FILES WILL AUTOMATICALLY UNARCHIVE TO THE HARD DISK DRIVE.
THESE ARCHIVED FILES CONTAIN THE MODELING AND ANALYSIS FILES IN ASCII FORMAT DESCRIBED AS FOLLOWS;

CLASS 1 MODELING OF SIGNIFICANT IMPACT ANALYSIS (SIA) FOR CHASSAHOWITZKA NWR CLASS 1 AREAS ARE PROVIDED IN THE FOLLOWING FILES;

IF THERE ARE ANY QUESTIONS OR IF I MAY PROVIDE ADDITIONAL FILES, OR CLARIFICATION PLEASE CALL ME.

FEBRUARY 1, 2000
MARK KOLETZKE, P.E.
KOOGLER AND ASSOCIATES
(352) 377-5822 KOOGLER@WORLDNET.ATT.NET

1999 USAC SO_2 CEM DATA

	EMISSIONS (lbs/day)	
	PLANT 1	PLANT 2
Maximum	8563	9171
Most Frequent	6228	5241
Average	5423	5494
Avgdev	1247	1206
Avg+Avgdev	6670	6700
Modeling use	6700	6700

Department of
Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

October 26, 1999

Mr. Gregg Worley, Chief
Air, Radiation Technology Branch
Preconstruction/HAP Section
U.S. EPA – Region IV
61 Forsyth Street
Atlanta, Georgia 30303

Re: U.S./Agri-Chemicals – Fort Meade Plant
1050051-009-AC, PSD-FL-278

Dear Mr. Worley:

Enclosed for your review and comment is an application for the above mentioned project. It consists of increasing production rates to 3000 TPD of sulfuric acid plants No. 1 and 2. The facility had received a construction permit (PSD-FL-107) in August 1985 for the same production rate, but were unable to achieve that production rate.

The applicant has requested a SO_2 limit of 3.5 #/T (3 hour average), sulfuric acid mist limit of 0.15 #/T and a NO_x limit of 0.12 #/T.

Your comments can be forwarded to my attention at the letterhead address or faxed to me at (850)922-6979. If you have any questions, please contact Syed Arif at (850)921-9528.

Sincerely,

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

AAL/kt

Enclosures

cc: S. Arif, BAR

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

October 26, 1999

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS-Air Quality Division
Post Office Box 25287
Denver, CO 80225

Re: U.S. Agri-Chemicals – Fort Meade Plant
1050051-009-AC, PSD-FL-278

Dear Mr. Bunyak:

Enclosed for your review and comment is an application for the above mentioned project. It consists of increasing production rates to 3000 TPD of sulfuric acid plants No. 1 and 2. The facility had received a construction permit (PSD-FL-107) in August 1985 for the same production rate, but were unable to achieve that production rate.

The applicant has requested a SO_2 limit of 3.5 #/T (3 hour average), sulfuric acid mist limit of 0.15 #/T and a NO_x limit of 0.12 #/T.

Your comments can be forwarded to my attention at the letterhead address or faxed to the Bureau at (850)922-6979. If you have any questions, please contact Syed Arif at (850)921-9528.

Sincerely,

Kim Tober for

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

AAL/kt

Enclosures

cc: S. Arif, BAR