State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

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

TO: Victoria J. Tschinkel

FROM: for Steve Smallwood, Chief, Bureau of Air Quality Management

DATE: July 16, 1981

SUBJ: Approval and Signature - Air Construction Permit
Conserv, Inc.

Attached please find an Air Construction Permit for which the applicant is Conserv, Inc. The proposed construction is for a sulfuric acid plant to be located 2 miles SW of Mulberry, in Polk County, Florida.

The day after which the permit would be issued by default is July 21, 1981.

I recommend your approval and signature.

SS:dav

Final Determination

Conserv, Inc.

Polk County, Florida

Sulfuric Acid Plant

Construction Permit

AC 53-42397

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

July 16, 1981

Conserv, Inc.

Construction Permit

Conserv, Inc's application for a permit to construct a sulfuric acid plant in Polk County has been reviewed by the Bureau of Air Quality Management. Public notice of the Department's Intent to Issue the construction permit was published in the Tampa Tribune on June 12, 1981. Copies of the preliminary determination have been available for public inspection at the Department's Southwest District Office in Tampa, and the Bureau of Air Quality Management Office in Tallahassee.

No comments were received during the public notice period that would involve modifications to the draft permit.

The final action by the Department shall be to issue the permit as noticed in the public review process.

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

July 16, 1981

Mr. R.E. Graf
Vice President, General Manager
Conserv, Inc.
P. O. Box 314
Nichols, Florida 33863

Dear Mr. Graf:

Enclosed is Permit Number AC 53-42397, dated July 16, 1981 to Conserv, Inc. issued pursuant to Section 403, Florida Statutes.

Acceptance of the permit constitutes notice and agreement that the Department will periodically review this permit for compliance, including site inspections where applicable, and may initiate enforcement actions for violation of the conditions and requirements thereof.

Sincerely,

for Steve Smallwood, Chief
Bureau of Air Quality Management

SS:dav

cc: SW District Office

DER Form 17-1.122(65)

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

CONSTRUCTION
PERMIT

NO. AC 53-42397

CONSERV, INC.
POLK COUNTY, FLORIDA
SULFURIC ACID PLANT

DATE OF ISSUANCE

JULY 16, 1981

DATE OF EXPIRATION

DECEMBER 3, 1982

Victoria J. Tschinkel

VICTORIA J. TSCHINKEL,
SECRETARY

DER FORM PERM 11-42

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: Conserv
P. O. Box 314
Nichols, Florida 33863

PERMIT/CERTIFICATION NO. 53-42397

COUNTY: Polk

PROJECT: Sulfuric Acid Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of a 2,000 TPD double absorption type sulfuric acid plant to be located 2 miles SW of Mulberry, in Polk County, Florida. UTM Coordinates of the proposed plant are 398.41 km east and 3084.2 km north.

Construction shall be in accordance with the attached permit application and plans, documents, and drawings except as otherwise noted in pages 3 and 4 -Specific Conditions.

Attachment:

1. Application to Construct Air Pollution Sources, DER form 17-1.122(16).

PERMIT NO.: AC 53-42397
APPLICANT: Conserv

GENERAL CONDITIONS:

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

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

3. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

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

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

13. This permit also constitutes:

[X] Determination of Best Available Control Technology (BACT)
[X] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 53-42397
APPLICANT: Conserv

SPECIFIC CONDITIONS:

1. Maximum operation time will be 8,736 hours per year.

2. Maximum production rate will be 2,000 tons per day and 85.1 tons per hour of 100% sulfuric acid.

3. The maximum amount of sulfur dioxide emitted will be 4 lb SO_2/ton 100% H_2SO_4 and 333.4 lb SO_2/hr.

4. The maximum amount of H_2SO_4 mist emitted will be 0.15 lb acid mist/ton 100% H_2SO_4 and 12.5 lb acid mist/hr.

5. Visible emissions shall not exceed 10% opacity.

6. Sulfur dioxide emission of the new sulfuric acid plant shall be continuously monitored in accordance with the provisions of Paragraph 60.84 of 40 CFR 60, Subpart H - Standards of Performance for Sulfuric Acid Plants. The applicant shall also comply with all other applicable requirements of 40 CFR 60, Subpart H. Quarterly reports of excess emissions from this plant will be submitted to the Department's Southwest District Office.

7. Existing sulfuric acid plants permit No. AO 53-5771 will be shut down and any permits for these sources returned to the Department within 3 months after written notification from DER that the compliance test in the new sulfuric acid plant is acceptable.

8. Reasonable precautions to prevent fugitive particulate emissions during construction by spraying roads and construction sites used by contractors, will be taken by the applicant.

9. Construction shall reasonably conform to the plans submitted in the application.

10. The applicant shall report any delays in construction and completion of this plant to the Department's Southwest District Office.

11. Before this construction permit expires, the sulfuric acid plant will be tested for visible emissions, sulfur dioxide and sulfuric acid mist. Test procedures will be EPA reference methods 1,2,3,8, and 9 as published in 40 CFR 60, Appendix A, dated July 1, 1978 or by any other State-approved method. Minimum sample volume and time per run will be as defined in 40 CFR 60, Subpart H. The Department will be notified 30 days in advance of the compliance test. The test will be conducted at permitted production capacity ±10%.

PERMIT NO.: AC 53-42397
APPLICANT: Conserv

Specific Conditions (Cont'd)

12. The applicant will demonstrate compliance with the conditions of this construction permit and submit a complete application for an operating permit to the Department's Southwest District Office prior to 90 days before the expiration date of this permit. The applicant may continue to operate in compliance with all terms of this construction permit until its expiration or until issuance of an operation permit.

13. Upon obtaining an operating permit, the applicant will be required to submit periodic test reports on the actual operation and emissions of the facility.

14. Stack sampling facilities will include the eyebolt and angle described in Chapter 17-2.23, F.A.C.

Expiration Date: December 3, 1982

_____ Pages Attached.

Issued this 16 day of July, 1981

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Victoria J. Tschinkel
Signature

Final Determination

Conserv, Inc.

(PSD-FL-076)

On July 23, 1981, FDER issued a Preliminary Determination that the source could be approved with conditions. The Preliminary Determination was advertised in the Tampa Tribune on August 29, 1981, and made available for inspection at the Bartow Public Library, EPA, Region IV, and the FDER's Offices in Tallahassee and Tampa.

Comments were received from Mr. Tommie A. Gibbs, Chief, Air Facilities Branch and Mr. James T. Wilburn, Chief, Compliance Branch, Enforcement Division, EPA Region IV. EPA questioned the Department's Preliminary Determination in several areas. The areas of question and DER's response are as follows:

Comment 1

Modeling of all SO_2 sources in the vicinity of the proposed modification does not represent the total background. Background should also include "natural and distant non-specified sources" therefore, the total NAAQS analysis should include background plus other major sources plus proposed source impacts.

Response 1

The FDER has customarily assumed a background value of 0 ug/m^3 for SO_2 in those areas of the state in which space heating requirements are low and the easterly subtropical flow prevails. However, a conservative background SO_2 concentration attributable to non-specified sources can be estimated from

current monitoring sites in the surrounding region. The annual average from these sites may be used as the background concentration for all averaging times. This may be assumed because the distances from non-specified sources are greater than 50 kilometers. The monitor locations and annual concentrations are listed below.

Monitor Location	Annual Average (ug/m^3)	Year
Plant City, Florida	7	1980
Bradley, Florida	7	1980
Mulberry, Florida	3	1980
Bartow, Florida	5	1980

All of these locations are influenced by local sources and thereby give a conservative estimate of the background concentration from distant sources. Nevertheless, the addition of a 7 ug/m^3 to the previously computed concentrations in the Conserv modeling will not result in a violation of an applicable ambient air quality standard.

Comment 2

The initial chemical reaction will take place in the furnace of a boiler where the sulfur is burned and converted to SO_2. It is difficult to determine from the preliminary determination whether or not this boiler is also part of the modification. If it is, the type of fuel used should be presented along with emissions calculations and compared to the significance levels for such pollutants as TSP and NO_x.

Response 2

A process flow diagram of a contact sulfuric acid plant (copy attached) shows the process equipment where chemical reactions take place. The waste heat boiler is part of the process equipment. It is designed to recover heat and to cool the gas containing SO_2 to the required converter inlet temperature of 795^{o}-820^{o}F (catalytic oxidation). Supplementary fuel is not burned in this boiler.

Comment 3

It is recommended that the State permit not be issued until a final federal PSD determination is made, since a source cannot construct until it receives both permits anyway.

Response 3

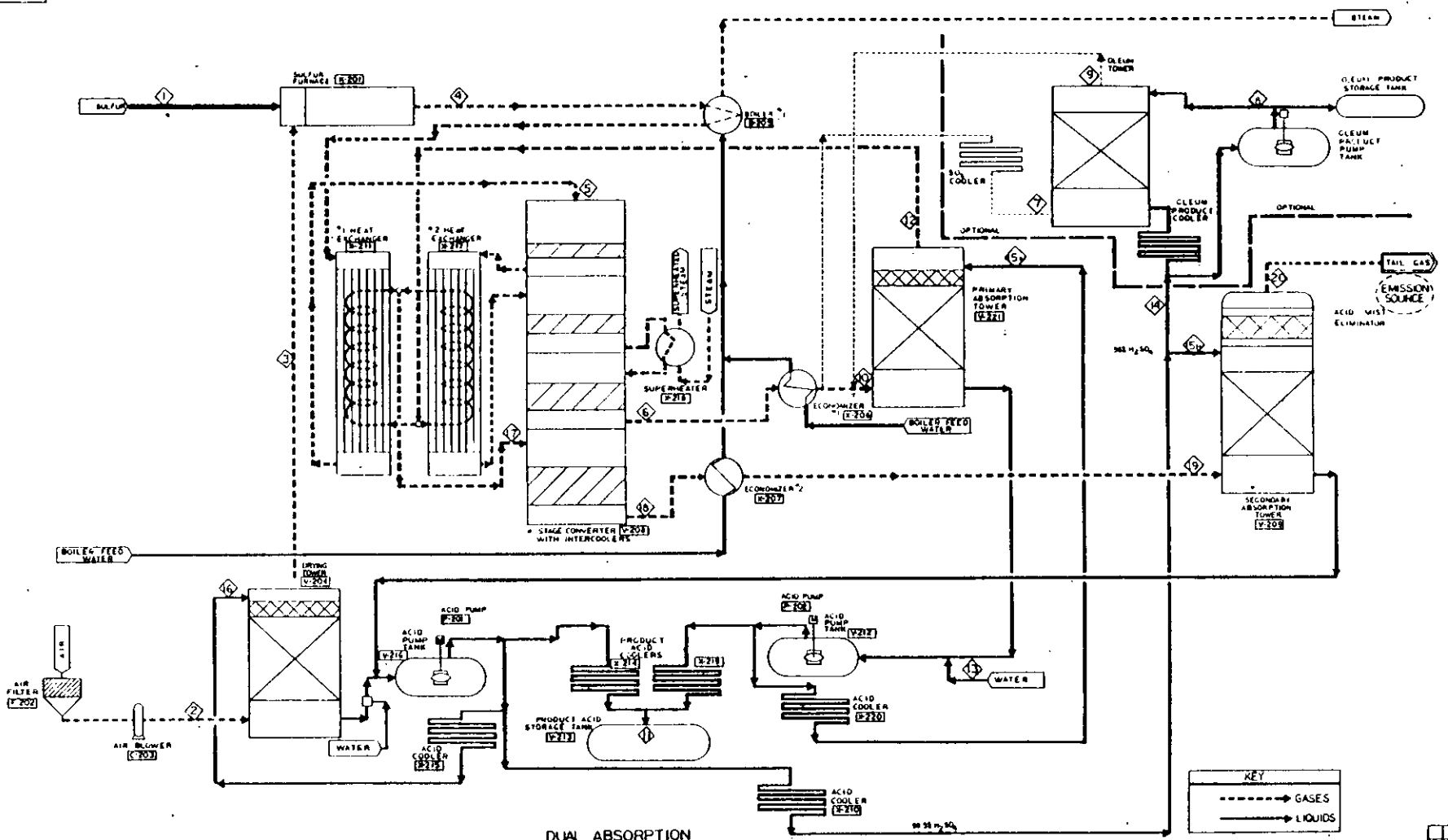
Pursuant to Chapter 120, Florida Administrative Procedures Act, final agency action must take place within 90 days after a complete application is received.

Comment 4

Our only comment concerns the permitted 2000 tons per day of 100% H_2SO_4. As cited in Technical Appendix D - Specific Condition No. 3, the maximum allowable operating rate is stated as 85.1 tons/hour of 100% H_2SO_4. At this hourly production rate, the maximum permitted production rate for the daily basis would be exceeded with a resultant change in the allowable emission rate for sulfuric acid mist and sulfur dioxide.

Response 4

DER has added and corrected the maximum capacity of the plant as follows: 85.1 tons per hour and a daily production of 2000 tons per day of 100% H_2SO_4.



DUAL ABSORPTION

SULFUR BURNING CONTACT
SULFURIC ACID PLANT
PROCESS FLOW DIAGRAM

FIGURE 2

Final Determination

Conserv, Inc.

Polk County, Florida

Sulfur Acid Plant

Federal Permit Number:

PSD-FL-076

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

October 1, 1981

Final Determination

Conserv, Inc.

PSD-FL-076

I. PROJECT DESCRIPTION

A. Applicant:

Conserv, Inc.

P. O. Box 314

Nichols, Florida 33863

B. Project and Location:

The applicant proposes to construct a 2,000 tons per day (TPD) (100% H_2SO_4 basis) double absorption sulfuric acid plant to replace two existing 750 TPD plants. The new plant will increase Conserv's production of sulfuric acid by 500 TPD.

The plant site is in Polk County at State Road 676, 2 miles southwest of Mulberry, Florida. UTM coordinates are 398.41 km East and 3084.km North.

C. Process and Controls:

The principal steps in the process consist of burning sulfur (S) in air to form sulfur dioxide (SO_2), combining the sulfur dioxide with oxygen (O_2) to form sulfur trioxide (SO_3), and combining the sulfur trioxide with water (H_2O) to form sulfuric acid (H_2SO_4). The chemical reactions are:

$S + O_2 = SO_2$	In sulfur furnace
$SO_2 + {}^1/_2\ O_2 = SO_3$	In converter
$SO_3 + H_2O = H_2SO_4$	In two absorption towers

The dual absorption process selected by the applicant is the best demonstrated control technology for SO_2 emissions from sulfuric acid plants. The high efficiency acid mist eliminator is the best demonstrated control technology for acid mist emissions. These controls will reduce the total emissions from the proposed source to a level that is in compliance with the federal New Source Performance Standards (NSPS) requirements of 40 CFR 60, Subpart H.

II. RULE APPLICABILITY:

The proposed project, building a new sulfuric acid plant to replace two existing units, is subject to preconstruction review under federal prevention of significant deterioration (PSD) regulations, Section 52.21 of Title 40 of the Code of Federal Regulations (40 CFR 52.21) as amended in the Federal Register of August 7, 1980 (45 FR 52676). Specifically, the new sulfuric acid plant is a major stationary source (40 CFR 52.21(b)(1)) located in an area designated in 40 CFR 81.310 as unclassifiable for the criteria pollutant particulate matter and attainment for the remaining criteria pollutants including SO_2. The plant will increase production from 1500 TPD to 2000 TPD; this will result in a significant net emissions increase of SO_2, thereby rendering it a major modification (40 CFR 52.21(b)(2)) subject to PSD review (40 CFR 52.21(i)).

Full PSD review is required for each pollutant for which a significant net emissions increase would occur. For this modification, the review is required for SO_2 only. The review consists of a determination of best available control technology (BACT) and an analysis of the air quality impact of the increased emissions. The review also includes an analysis of the impact of the proposed project on soils, vegetation, visibility and the air quality impacts resulting from associated commercial, residential and industrial growth.

The proposed project is also subject to the provisions of the federal New Source Performance Standard (NSPS) for sulfuric acid plants (40 CFR 60, Subpart H).

III. SUMMARY OF EMISSIONS AND AIR QUALITY ANALYSIS:

A. Emission Limitations

Table I summarizes the emissions of all pollutants regulated under the Act which are affected by the proposed modification. The contemporaneous emissions reductions of sulfuric acid mist and nitrogen oxides (NO_x) from the existing plants that will be shut down have been credited to the proposed emissions of the new plant. As the table shows, the proposed emissions increase of SO_2 exceeds the significance levels set in the PSD regulations. Although the other regulated pollutants are exempt from a PSD review because their emissions do not increase, they are required to meet all applicable emission limits and standards of performance under the Florida State Implementation Plan and Federal New Source Performance Standards.

Best Available Control Technology (BACT) has been determined for SO_2 emissions from the proposed source. The emission limiting standards selected as BACT and made a condition of this permit are listed in Table II. Justification for the standard selected is included in Technical Appendix A.

The permitted emissions, including those subject to BACT, are in compliance with the Federal New Source Performance Standards (NSPS) requirements of 40 CFR 60, Subpart H.

Table I

Emission Summary

(Tons per Year)

	SOURCE	SO_2	Acid Mist	NO_x
A.	New Sulfuric Acid Plant	1460[a]	54.76[a]	225.5[a]
B.	Existing Sulfuric Acid Plants to be shut down	529.25[b]	60.84[b]	380.1[b]
C.	Net Increase from Proposed Construction	+930.75	-5.72[c]	-157.6[c]
D.	PSD Significance Level	40[d]	7.0[d]	40.0[d]

(a) Permitted allowable emissions (PSD-FL-076) at maximum allowable production rate of 2000 tons per day of 100% H_2SO_4 for 365 days per year.

(b) Applicant's estimate of actual (1979-1980) emissions.

(c) Emissions decrease after the shut down of the existing plants.

(d) 40 CFR 52.21(b)(23).

Table II

Allowable Emission Limits

Pollutant	Pounds per hour	Max. Emission Rate	Basis
Sulfur Dioxide	333.4	4 [a]	NSPS, BACT
Acid Mist	12.5	0.15 [a]	NSPS
Visible Emissions		10% opacity	NSPS, BACT
Nitrogen Oxides	50.8		Documentation of contemporaneous change

(a) Pounds per ton of 100% H_2SO_4 produced.

B. Air Quality Impacts

An air quality impacts analysis has been performed to evaluate the impact of the proposed project on ambient concentrations of sulfur dioxide. Through the use of dispersion modeling, the analysis considered the impacts of all sulfur dioxide emitting sources within the Conserv plant along with those sources at other facilities surrounding the site which may add to the impact from Conserv.

Results of the analysis provide reasonable assurance that the project, as described in this permit and subject to the conditions herein, will not lead to any violation of National Ambient Air Quality Standards or PSD increments. Details of the analysis are discussed in the Technical Appendix B.

C. Additional Impact Analysis

An additional impacts analysis has been performed to assess (1) the impact of the proposed project on soils, vegetation, and visibility and (2) any air quality impacts resulting from associated commercial, residential, or industrial growth. No adverse impacts are expected; details of the analysis are discussed in Technical Appendix C.

CONCLUSIONS

Based on the review of the data submitted by Conserv, Inc. for the construction of a double absorption type sulfuric acid plant, the FDER concludes that compliance with all applicable federal air quality regulations will be achieved provided certain specific conditions are met. The NSPS emission limits proposed by the applicant of 4 pounds of sulfur dioxide per ton of 100% acid produced, 0.15 pounds of acid mist per ton of 100% acid produced, and 10 percent opacity have been determined to be the Best Available Control Technology (BACT). The impact of the sulfuric acid plant emissions will not cause or contribute to a violation of any ambient air quality standard or PSD increment.

The FDER therefore proposes that an authorization to construct be issued to Conserv, Inc. for the proposed sulfuric acid plant subject to specific conditions to insure compliance with all applicable regulations. Appendix D includes the proposed conditions.

TECHNICAL APPENDIX A

BACT ANALYSIS

The applicant is required under the provisions of 40 CFR 52.21 as revised August 7, 1980 (45 CFR 52676), to apply BACT to all criteria and non-criteria pollutants for which a significant net emissions increase would occur. In this case, only sulfur dioxide is affected.

The applicant proposed double absorption technology and an emission limit of 4.0 pounds of sulfur dioxide per ton of 100% H_2SO_4 produced as BACT for this sulfuric acid plant. This limit meets NSPS requirements (40 CFR 60.82).

EPA recently reviewed available sulfuric acid plant technology and concluded that double absorption remains the best technology for SO_2 emissions control. No basis for reducing the NSPS limit was found to exist. Similarly, no justification could be found by FDER to require a lower emission limit for the proposed plant.

TECHNICAL APPENDIX B

AIR QUALITY ANALYSIS

PSD Increment Analysis

PSD increment analysis pertains only to sulfur dioxide (SO_2) and particulate matter (PM) for which maximum allowable increases (increments) are defined in 40 CFR 52.21(c). These increments provide for future industrial growth while also ensuring that "cleaner" areas of the nation remain relatively clean. The class II PSD increments apply in the area of the Conserv plant.

For the proposed modification (sulfuric acid plant replacement) at the Conserv facility, only one pollutant, SO_2, is subject to PSD review. The emission rate increase of this pollutant is above the significance level defined in 40 CFR 52.21(b)(23).

Two EPA-approved dispersion models, CRSTER and ISC, were used in the PSD increment analysis. The CRSTER model was used for preliminary analysis and the ISC short-term model was used for a more refined analysis. CRSTER was utilized to determine worst-case meteorology over a five year record and to determine annual increment consumption. In the above applications of CRSTER, the conservative assumption of all emissions of Conserv and Mobil Chemicals Co. being colocated was used.

The ISC model was run for all short-term (3-hour and 24-hour) periods using only the days of critical meteorology as determined by previous CRSTER runs. The ISC model is more complex than the CRSTER model in that it allows for greater variation of information in its input and output; e.g., separation

of sources. It is, however, equivalent to CRSTER in regards to the dispersion algorithm.

The meteorological data input to the models for both hourly surface observations and twice-daily mixing heights were that of Tampa, Florida, 1970-1974.

The results of the PSD increment analysis, taking into account all increment consuming sources within a 50 kilometer radius of Conserv, show no violation of any maximum allowable increase.

Pollutant (Avg. Time)	Maximum Increment Consumed	Class II Allowable Increment
SO_2 (annual)	1 ug/m^3	20 ug/m^3
SO_2 (24-hour)	27.6 ug/m^3	91 ug/m^3
SO_2 (3-hour)	88.8 ug/m^3	512 ug/m^3

Preconstruction Monitoring

Under the PSD regulations, FDER may require a period of continuous preconstruction monitoring for any pollutant subject to review. An exemption from this requirement can be obtained if the net emissions increase of the pollutant from the modification would cause, in any area, an air quality impact less than a certain de minimus level as defined in 40 CFR 52.21(l)(8)(i). Using the CRSTER model, the applicant has shown that this exemption is valid for the proposed modification in that the maximum obtained, 10.7 ug/m^3, is less than the 13 ug/m^3 de minimus level for SO_2 on a 24-hour basis. Therefore, the Department has not required Conserv to conduct preconstruction monitoring as part of the air quality analysis.

National Ambient Air Quality Standards Analysis

The National Ambient Air Quality Standards (NAAQS) are established to protect public health and welfare. PSD regulations require the permit applicant to demonstrate that a proposed emissions increase subject to PSD review will not cause or contribute to any NAAQS violation. For the proposed modification at Conserv, PSD review is required for SO_2.

The maximum annual average ground-level SO_2 concentration was computed using the CRSTER dispersion model. A receptor grid spacing of 0.1 kilometers was used. Two conservative assumptions were made in the input to the model run: one, the collocation of all point sources at Conserv and Mobil; and two, the inclusion of two standby boilers which would be run only when the new plant is shut down.

The 24-hour and 3-hour maximum impacts were determined for selected days of critical meteorology. The ISC short-term dispersion model was used with a receptor spacing of 0.1 kilometers. All significant sources upwind of Conserv were included in the model runs as appropriate. The Mobil plant, which is located in close proximity, was included in all runs. The values obtained were highest second-high concentrations over a five year meteorological record. Included in all cases but one were the two stand-by boilers.

In both the annual and short-term analyses, the background value for SO_2 was assumed to be zero since all sources of SO_2 in the area were included in the modeling. The results of the NAAQS analysis are as follows:

Pollutant (Avg. Time)	Projected Air Quality	NAAQS
SO_2 (annual)	43.2 ug/m^3	80 ug/m^3
SO_2 (24-hour)	223.3 ug/m^3	365 ug/m^3
SO_2 (3-hour)	748.2 ug/m^3	1300 ug/m^3

Class I Area Analysis

The nearest Class I area to the Conserv plant is the Chassahowitzka National Wilderness Area more than 100 kilometers to the northwest. Based on a long-range transport screening procedure contained in the EPA document Guidelines for Air Quality Maintenance Planning and Analysis, Volume 10 (Revised), impact on this area as a result of the proposed modification would be less than the significance level of 1 ug/m^3, 24-hour average.

Stack Heights

For the new sulfuric acid plant, the applicant has proposed a stack height consistent with Good Engineering Practice (GEP). The GEP stack height is determined from the formula $h_s = h_b + 1.5a$ where h_b is a building height and "a" is the lesser of the building height or maximum building width. For the Conserv sources, the major obstacle which could produce downwash of the stack effluent is a rock pile 60 feet in height and approximately 110 feet wide. The appropriate GEP stack height of 150 feet was used in all model calculations.

TECHNICAL APPENDIX C

ADDITIONAL IMPACTS ANALYSIS

Impacts on Soils, Vegetation, and Visibility

The maximum impact of the proposed increase in SO_2 emissions, as demonstrated through the air quality analysis, will be below the national secondary air quality standards established to protect public welfare related values. As such, no adverse effect on soils, vegetation, and visibility is expected.

Growth Impacts

The increased production of sulfuric acid by 500 tons per day is the result of replacing existing units. There will be little or no increase in the number of employees at this site due to the modification, and no secondary residential, commercial, or industrial growth which will adversely affect air quality in the area is expected.

TECHNICAL APPENDIX D

SPECIFIC CONDITIONS

FDER proposes a preliminary determination of approval with conditions for the project (construction of a new sulfuric acid plant to replace two existing plants) requested by Conserv, Inc. in the complete PSD permit application submitted on April 23, 1981.

The specific conditions of approval are as follows:

1. The new facility shall be constructed in accordance with the capacities and specifications stated in Table 1.

2. Following start-up and shake-down (180 days maximum) of the new sulfuric acid plant, the existing sulfuric acid plants will cease operation. During the shake-down period, the existing facilities may be operated so long as the combined capacity utilization of the new and existing facilities does not exceed the maximum capacity of the new unit (85.1 tons per hour and a daily production of 2000 tons per day of 100% H_2SO_4).

3. Emission of sulfur dioxide from the sulfuric acid plant shall not exceed 333.4 pounds per hour at the maximum allowable operating rate of 85.1 tons per hour of 100% H_2SO_4. At lower operating rates, the emissions shall not exceed 4 pounds per ton of 100% H_2SO_4 produced.

4. Emission of acid mist from the sulfuric acid plant shall not exceed 12.5 pounds per hour at the maximum allowable operating rate of 85.1 tons per hour of 100% H_2SO_4. At lower operating rates, the emissions shall not exceed 0.15 pounds per ton 100% H_2SO_4.

5. Visible emissions from the sulfuric acid plant shall not exceed 10% opacity.

6. Sulfur dioxide emissions from the sulfuric acid plant shall be continuously monitored in accordance with the provisions of Paragraph 60.84 of 40 CFR 60, Subpart H - Standards of Performance for Sulfuric Acid Plants. The applicant shall also comply with all other requirements of 40 CFR 60, Subpart H.

7. Compliance with all emission limits shall be determined by performance tests scheduled in accordance with the attached General Conditions. Except as provided under 40 CFR 60.8(b), the performance tests shall be conducted in accordance with the provisions of the following reference methods which are described in Appendix A of 40 CFR 60:

a. Method 1 for sample and velocity traverses;

b. Method 2 for volumetric flow rate;

c. Method 3 for gas analysis;

d. Method 7 for nitrogen oxides;

e. Method 8 for concentration of SO_2 and acid mist; and

f. Method 9 for visible emissions.

A compliance test shall consist of the average of three consecutive runs. The maximum sample time and volume per run will be as specified in the NSPS (40 CFR 60.85). The facility shall operate within 10 percent of maximum capacity during sampling. The parameters for the operating rate and control equipment variables and all continuous monitoring results shall be recorded during compliance testing and made a part of the test report.

8. The plant shall be allowed to operate continuously (8736 hours per year).

9. The plant shall comply with the requirements of the attached General Conditions.

10. This permit is not valid until the applicant has received a permit covering the proposed modification issued under the State of Florida SIP. Any emission limits in the State permit which are more stringent than those specified in the conditions above shall become a condition of this permit.

GENERAL CONDITIONS

1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.

2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.

3. Each emission point for which an emission test method is established in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.

4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.

5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall provide the permitting authority with the following information in writing within five (5) days of such conditions:

   (a) Qualitative and quantitative description of noncomplying emission(s),

   (b) cause of noncompliance,

   (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,

   (d) steps taken by the permittee to reduce and eliminate the noncomplying emission,

   and

   (e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

   Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.

7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority. Such notification must be given prior to transfer of ownership.

8. The permittee shall allow representatives of the State environmental control agency and/or representatives (including contractors) of the Environmental Protection Agency, upon the presentation of credentials:

   (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;

   (b) to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;

   (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

   (d) to sample at reasonable times and emission of pollutants;

   and

   (e) to perform at reasonable times an operation and maintenance inspection of the permitted source.

9. All correspondence required to be submitted by this permit to the permitting agency shall be mailed to the:

   Chief, Consolidated Permits Branch
   Enforcement Division
   U.S. Environmental Protection Agency
   345 Courtland Street, N.E.
   Atlanta, Georgia 30365

10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

October 1, 1981

Mr. Kent Williams, Chief
New Source Review Section
Air Facilities Branch
U.S. Environmental Protection
Agency, Region IV
345 Courtland Street
Atlanta, Georgia 30365

Dear Mr. Williams:

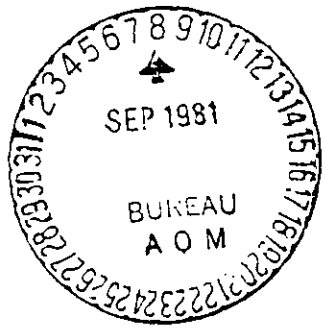
RE: PSD Permit Application - Conserv, Inc. (PSD-FL-076)

Enclosed please find a copy of the proof of publication of the public notice, the public comments and the Department's response to the public comments and Final Determination for the subject project. We recommend that the applicant be granted Authority to Construct, subject to the conditions in the Final Determination.

Sincerely,

C. H. Fancy, P.E.
Central Air Permitting

CHF:caa



THE TAMPA TRIBUNE

Published Daily
Tampa, Hillsborough County, Florida

State of Florida }
County of Hillsborough } ss.

Before the undersigned authority personally appeared R. F. Pittman, who on oath says that he is Publisher of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a ----------Legal Notice----------

in the matter of Conserv, Inc. proposes to replace two existing sulfuric acid plants with a new double absorption type sulfuric acid plant at their chemical complex in Polk County, Florida.----------

was published in said newspaper in the issues of August 29, 1981----------

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa, in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm, or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

R. F. Pittman

Sworn to and subscribed before me, this 31st *day of* August *A.D. 19* 81.

A. Michelle Ingram
Notary Public State of Florida at Large
My Commission Expires Aug. 7, 1983.

(SEAL)

Public Notice

Conserv, Inc proposes to replace two existing sulfuric acid plants with a new double absorption type sulfuric acid plant at their chemical complex in Polk County, Florida. The new plant will have a maximum production rate of 2,000 tons of 100% sulfuric acid per day. The modification will increase emissions of sulfur dioxide by 930.75 tons per year.

By authority of the U.S. Environmental Protection Agency, the Florida Department of Environmental Regulation (FDER) has reviewed the proposed modification under federal prevention of significant deterioration (PSD) regulations (40 CFR 52.21). The FDER has made a preliminary determination that the modification can be approved provided certain conditions are met. A summary of the basis for this determination and the application for a permit submitted by Conserv, Inc. are available for public review in the Bartow Public Library, Bartow, Florida, and the following FDER Offices:

Southwest District, 7601 Highway 301 North, Tampa, Florida 33601

Bureau of Air Quality Management, 2600 Blair Stone Road, Tallahassee, Florida 32301

The maximum percentage of allowable PSD increment consumed by the proposed modification is as follows:

Percent of Class II Increment Consumed

	Annual	24-Hour	3-Hour
SO2	5	30	17

Any person may submit written comments to FDER regarding the proposed modification. All comments postmarked not later than 30 days from the date of this notice will be considered by FDER in making a final determination regarding approval of this modification. These comments will be made available for public review at the above mentioned Department Offices. Furthermore, a public hearing can be requested by any person. Such requests should be submitted within 15 days of the date of this notice. Letters should be addressed to:

Mr. Clair Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

M3110 - Aug. 29, 1981

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

TO: Bill Thomas/Willard Hanks

FROM: Bob Garrett

DATE: July 7, 1981

SUBJECT: Proposed Construct Permit - Conserv, Sulfuric Acid Plant

For the record, prior to and in 1978, the Department has received some complaints from the Nichols area which is influenced by Conserv's Chemical Plant, Mobil's rock dryers, and New Wales Chemical Plants. During the month of January this year our Nichols ambient air station received higher than normal (45 to 131 micrograms/cubic meter) SO_2 measurements. The meterological group has detailed data on this phenomenon from this office. See attachments - a microanalysis in addition to the general models run might reveal an SO_2 problem of a specific nature.

We have no objection to the issuance of this permit for a DC/DA plant which in general is an improvement over the older existing scrubbed sulfuric acid plants. Their steady state emission output is much more reliable and would tend to preclude incidences such as the January '81 high SO_2 concentrations mentioned.

RRG/rkt

Return to Tallahassee

attachment

TO: The Files
Thru: Harry Kerns / Dan Williams
Fr: Bob Garrett / Steve Thompson
Subj: Complaint Investigation of SO_2 plant damage on 9 & 10 May '72 in the Nichols area.

Summary: A complaint was received from Mr. Whitten at noon on 5/12/72 which was investigated by Mr Thompson and Mr Garrett from the DER. The complaint was for damage to Mr. Whitten and his neighbor's garden which was determined to have been caused by excessive SO_2 gas and/or acid mists. The three phosphate plants under suspicion in the Nichols area were investigated and records were examined for the 10th, 11th & 12th of May for upsets to any SO_2 emitters. No dramatic incidents were discovered from plant records, but severe nighttime inversions caused a meteorological concentration of pollutants.

attachment

③ 1-22-81 $Q = 147$ $C = 1.7(147) = 250$ NG/CM

Meteorological Contributions:

① 1-10-81 $^{23}/_{24}$ hrs $\times$ 22 NG/CM = 21 NG/CM

1-16-81 $(^{4}/_{24})(68) + ^{7}/_{24}(80) + ^{10}/_{24}(22) = 43.8$ NG/CM

② 1-10-81 $^{18}/_{24}(34.6) + ^{23}/_{24}(66) = 96.4$ NG/CM

1-16-81 $^{21}/_{24}(17.7) + ^{21}/_{24}(66.8) = 73.9$ NG/CM

③ 1-22-81 $^{6}/_{24}(250) = 62.5$ NG/CM

Comparisons:

	Nichols Sta. NG/CM	Gaussian Estimates
1-10-81	45	117.4
→ 1-16-81	131	117.7
1-22-81	62	62.5