

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**

M E M O R A N D U M

TO: Mr. R. E. Jones Jr., New Wales Chemicals, Inc.  
Mr. William Hennessey, Southwest District

FROM: *Steve Smallwood*  
Steve Smallwood, Bureau of Air Quality Management

DATE: March 20, 1981

SUBJ: New Wales Chemicals, Inc. Applications for Permits  
to Construct Two Sulfuric Acid Plants.

Attached is one copy of the applications, Technical Evaluation and Preliminary Determination, BACT determination and proposed permits to construct two sulfuric acid plants to be located at the New Wales Chemicals facility on Highway 640 and County Line Road in Polk County.

Please submit any comments which you wish to have considered concerning this action, in writing, to Willard Hanks of the Bureau of Air Quality Management.

SS:dav

Public Notice

The Department intends to issue permits to New Wales Chemicals, Inc. for the construction of two sulfuric acid plants at their chemical complex in Polk County near the intersection of highway 640 and the Polk/Hillsborough County line. The permits will include conditions to assure compliance with Chapter 17-2 Florida Administrative Code (F.A.C.).

Any person wishing to file comments on this proposed action may do so by submitting such comments in writing to:

Mr. Willard Hanks  
Bureau of Air Quality Management  
Florida Department of Environmental  
Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Any comments received within thirty days after publication of this notice will be considered and noted in the Department's final determination.

Any person whose substantial interest would be affected by the Department's intended action on these permits may request an administrative hearing by filing a petition as set forth in Section 28-5.15 F.A.C. within 14 days of the date of this notice with:

Ms. Mary Clark  
Office of General Counsel  
Department of Environmental Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Technical Evaluation  
and  
Preliminary Determination

New Wales Chemical, Inc.  
Polk County, Florida

Application Numbers:

AC 53-37829  
AC 53-37830

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

March 20, 1981

## I. PROJECT DESCRIPTION

### A. Applicant

New Wales Chemicals, Inc.  
P. O. Box 1035  
Mulberry, Florida 33860

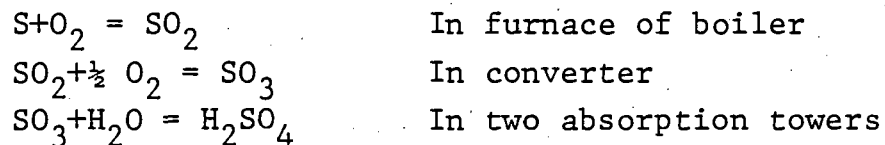
### B. Project and Location

The applicant proposes to construct two sulfuric acid plants of the double absorption type. Each plant will have a maximum production rate of 2750 tons of 100% sulfuric acid per day.

The plant site is in western Polk County, Florida, at Highway 640 and County Line Road. UTM coordinates are 396.6 km East and 3078.9 km North.

### C. Process and Controls

The principal steps in the process consist of burning sulfur (S) in air to form sulfur dioxide ( $\text{SO}_2$ ), combining the sulfur dioxide with oxygen ( $\text{O}_2$ ) to form sulfur trioxide ( $\text{SO}_3$ ), and combining the sulfur trioxide with water ( $\text{H}_2\text{O}$ ) to form a solution containing sulfuric acid ( $\text{H}_2\text{SO}_4$ ). The chemical reactions are:



The dual absorption process selected by the applicant is the best demonstrated control technology for  $\text{SO}_2$  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 sources to a level that it is in compliance with New Source Performance Standards (NSPS) requirements (40 CFR 60, Subpart H) and State regulations.

## II. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code.

The proposed project location is in the area of influence of the Hillsborough County particulate matter nonattainment area; however, the proposed plants will not emit particulate matter, and are therefore exempt from the provisions of Section 17-2.17, New Source Review for Nonattainment Areas. The proposed location is in an area designated "unclassifiable" for the criteria pollutant particulate matter and attainment for the remaining criteria pollutants including sulfur dioxide.

The sources comprise a major emitting facility for sulfur dioxide and sulfuric acid mist as defined in Chapter 17-2, because the potential emissions of each exceed 100 tons per year (TPY). The project is subject to the provisions of Sub-section 17-2.05(6) Table II, Emission Limiting Standards, and Sub-section 17-2.04(6) Prevention of Significant Deterioration -PSD Review which requires the use of Best Available Control Technology (BACT).

The sources are also subject to the provisions of the federal New Source Performance Standard (NSPS) for sulfuric acid plants, 40 CFR 60, Subpart H. This NSPS has been adopted by reference in Section 17-2.21.

### III. SUMMARY OF EMISSIONS AND AIR QUALITY ANALYSIS

#### A. Emission Limitations

The regulated pollutant emissions from the two sulfuric acid plants are sulfur dioxide, acid mist and opacity. Organic compounds, nitrogen oxides, nitrosyl sulfuric acid and water vapor may also be present in the emissions from the plants.

Best Available Control Technology (BACT) has been determined in accordance with Section 17-2.03 for sulfur dioxide, sulfuric acid mist and visible emissions from the proposed sources. The emission limiting standards selected as BACT and made permit conditions are listed below. Justification for the standards selected is included in Technical Appendix A (attached).

Pollutant	Emission Limiting Standard (lb/ton of 100% H <sub>2</sub> SO <sub>4</sub> produced)	Emissions Per Plant (lb/hr)
Sulfur Dioxide	4	458
Acid Mist	0.15	17.2
Visible Emission	10% opacity	

The permitted emissions, including those determined as BACT, are in compliance with all applicable requirements of Chapter 17-2 including the adopted New Source Performance Standard (NSPS) requirements of 40 CFR 60, Subpart H.

#### B. Air Quality Analysis

An air quality analysis has been performed to evaluate the impact of the proposed project on ambient concentrations of SO<sub>2</sub>. Through the use of dispersion modeling, the analysis considered the impacts of all SO<sub>2</sub> emitting sources within the New Wales complex along with those sources at other facilities surrounding the site which may add to the impact from New Wales. Two additional facilities which were omitted by the consultant but were added to the analysis and modeling by the Department were Conserv and Mobil, both in Nichols, Polk County.

Results of the analysis provide reasonable assurance that the project, as described in the permit and subject to the conditions therein, will not lead to any violation of Florida ambient air quality standards or PSD increments. Details of the analysis are discussed in the Technical Appendix B (attached).

#### IV. CONCLUSIONS

The emission limits proposed by the applicant of 4 pounds of sulfur dioxide per ton of acid produced, 0.15 pounds of acid mist per ton of acid produced, and 10 percent opacity have been determined to be BACT and can be achieved by the proposed plants.

The permitted emissions from the plants, while each plant is at its maximum production rate of 2,750 TPD sulfuric acid, will not cause or contribute to any violation of ambient air quality standards or PSD increments.

The General and Specific Conditions listed in the proposed permits (attached) will assure compliance with all applicable requirements of Chapter 17-2.

## TECHNICAL APPENDIX A

### BACT Analysis

A determination of BACT for the two sulfuric acid plants was made by the Department on August 20, 1979, and revised on February 16, 1981, to reflect a greater production rate projected by the applicant. A copy of the February 16, 1981, BACT determination follows.



Best Available Control Technology (BACT) Determination

New Wales Chemicals, Inc.

Polk County, Florida

This BACT Determination is a revision of a previous Determination dated August 20, 1979. The applicant had proposed the construction of two identical double absorption sulfuric acid plants with a combined process input rate of 1320 tons per day of sulfur. The applicant has submitted applications to increase the combined process input rate to 1848 tons per day of sulfur. This determination incorporates the increase in process throughput.

BACT Determination Requested by the Applicant:

Pollutant

SO<sub>2</sub> 4 lbs/ton 100% H<sub>2</sub>SO<sub>4</sub> acid produced

Sulfuric Acid Mist 0.15 lbs/ton 100% H<sub>2</sub>SO<sub>4</sub> acid produced

Date of Receipt of a Complete BACT Application:

January 26, 1981

Date of Publication in the Florida Administrative Weekly:

August 6, 1979

Study Group Members:

There have been no significant technological improvements since the original BACT was prepared. The same emission limitations apply so a study group was not required.

BACT Determination by the Florida Department of Environmental Regulation:

SO<sub>2</sub> Emission not to exceed 4.0 #/ton of 100% H<sub>2</sub>SO<sub>4</sub>/attainable with a double absorption system.

Sulfuric Acid Mist Emissions not to exceed 0.15 #/ton 100% H<sub>2</sub>SO<sub>4</sub>/attainable with a high efficiency demister.

Opacity Not greater than 10 percent.

Test Method As prescribed in EPA NSPS, 40 CFR, Part 60, Subpart H.

Jacob D. Varn  
February 13, 1981  
Page Two

Justification of DER Determination:

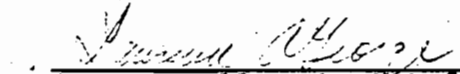
The NSPS for this type of source has not changed since the original BACT. The emissions related to the revised process throughput will not violate any ambient air quality standards.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator  
Department of Environmental Regulation  
Bureau of Air Quality Management  
2600 Blair Stone Road  
Tallahassee, Florida 32301

The Bureau recommends approval and signature of this BACT Determination as amended.

By:

  
Steve Smallwood, Chief, BAQM

Date:

February 13, 1981

Approved by:

  
Jacob D. Varn, Secretary

Date:

February 16, 1981

## TECHNICAL APPENDIX B

### Air Quality Impact Analysis

The air quality impact analysis for the proposed sulfuric acid plants was conducted in accordance with air quality modeling guidelines established by the U.S. Environmental Protection Agency. The long-term impact analysis was conducted with the AQDM and the short-term analysis with the CRSTER and PTMTPW models. Meteorological data from Orlando for the period 1974-1978 were used in the modeling.

The following tables summarize the results of the air quality impact analysis for sulfur dioxide and acid mist.

Pollutant	Max. New Source Impact ( $\mu\text{g}/\text{m}^3$ )	Max. Impact of all Sources ( $\mu\text{g}/\text{m}^3$ )
$\text{SO}_2$		
Annual	6.5	26
24-Hour	59.0	233
3-Hour	347.0	924

Pollutant	Max. New Source Impact ( $\mu\text{g}/\text{m}^3$ )	Max. Impact of all Sources ( $\mu\text{g}/\text{m}^3$ )
Acid Mist		
Annual	0.13	1
24-Hour	2.2	5.3 <sup>(1)</sup>
3-Hour	13.1	32.2 <sup>(1)</sup>

(1) Max. impact of New Wales sources only.

The air quality analysis indicates that the two sulfuric acid plants can be constructed and operated at a production rate of 2750 tons per day each with no threat to  $\text{SO}_2$  ambient air quality standards or PSD increments. The impact of sulfuric acid mist resulting from the proposed plants is not considered to be significant.

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BOB GRAHAM  
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JACOB D. VARN  
SECRETARY

STATE OF FLORIDA

## DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: New Wales Chemicals, Inc.  
P. O. Box 1035  
Mulberry, Florida 33860

PERMIT/CERTIFICATION  
NO. AC 53-37829

COUNTY: Polk

PROJECT: Sulfuric Acid  
Plant No. 4

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 2750 TPD double absorption type Sulfuric Acid Plant to be located at Highway 640 & County Line Road, in Polk County, Florida. The UTM Coordinates of the proposed plant are 396.6 km E and 3078.9 km N.

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

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16)
2. New Wales Chemicals letter of January 22, 1981, (Responses to technical discrepancies).

PERMIT NO.: AC 53-37829  
APPLICANT: New Wales Chemicals, Inc.

**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 penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, 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:
  - Determination of Best Available Control Technology (BACT)
  - Determination of Prevention of Significant Deterioration (PSD)
  - Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 53-37829  
APPLICANT: New Wales Chemical, Inc.

**SPECIFIC CONDITIONS:**

1. This permit replaces permit No. AC 53-19049
2. Maximum operation time will be 8,400 hours per year.
3. Maximum production rate will be 2750 tons per day and 114.6 tons per hour of 100% sulfuric acid.
4. The maximum amount of sulfur dioxide emitted will be 4 lb SO<sub>2</sub>/ton 100% H<sub>2</sub>SO<sub>4</sub> and 458 lb SO<sub>2</sub>/hr.
5. The maximum amount of H<sub>2</sub>SO<sub>4</sub> mist emitted will be 0.15 lb acid mist/ton 100% H<sub>2</sub>SO<sub>4</sub> and 17.2 lb acid mist/hr.
6. Visible emissions shall not exceed 10% opacity.
7. 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.
8. While construction is underway and before operating this plant, a minimum stack extension of 85 feet shall be added to the standby boiler on operating permit A0 53-5962 to prevent any violation of the ambient air standards for SO<sub>2</sub>.
9. Reasonable precautions to prevent fugitive particulate emissions during construction, such as coating or spraying roads and construction sites used by contractors, will be taken by the applicant.
10. Construction shall reasonably conform to the plans submitted in the application.
11. The applicant shall report any delays in construction and completion of this plant to the Department's Southwest District Office.
12. 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 40CFR 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 53-37829  
APPLICANT: New Wales Chemicals, Inc.

Specific Conditions (Con't)

13. 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 operating permit.
14. Upon obtaining an operating permit, the applicant will be required to submit periodic test reports on the actual operation and emissions of the facility.
15. Stack sampling facilities will include the eyebolt and angle described in Chapter 17-2.23, F.A.C.

\_\_\_\_\_  
Victoria J. Tschinkel,  
Secretary

Expiration Date: March 1, 1982

Issued this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_\_.

\_\_\_\_\_ Pages Attached.

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

\_\_\_\_\_  
Signature

PAGE 4 OF 4

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: New Wales Chemicals, Inc.  
P. O. Box 1035  
Mulberry, Florida 33860

PERMIT/CERTIFICATION  
NO. AC 53-37830

COUNTY: Polk

PROJECT: Sulfuric Acid  
Plant No. 5

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 2750 TPD double absorption type Sulfuric Acid Plant to be located at Highway 640 & County Line Road, in Polk County, Florida. The UTM Coordinates of the proposed plant are 396.6 km E and 3078.9 km N.

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

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16)
2. New Wales Chemicals letter of January 22, 1981, (Responses to technical discrepancies).



PERMIT NO.: AC 53-37830  
APPLICANT: New Wales Chemicals, Inc.

**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 penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, 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 acknowledgment 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:

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

PERMIT NO.: AC 53-37830  
APPLICANT: New Wales Chemical, Inc.

SPECIFIC CONDITIONS:

1. This permit replaces permit No. AC 53-19050.
2. Maximum operation time will be 8,400 hours per year.
3. Maximum production rate will be 2750 tons per day and 114.6 tons per hour of 100% sulfuric acid.
4. The maximum amount of sulfur dioxide emitted will be 4 lb SO<sub>2</sub>/ton 100% H<sub>2</sub>SO<sub>4</sub> and 458 lb SO<sub>2</sub>/hr.
5. The maximum amount of H<sub>2</sub>SO<sub>4</sub> mist emitted will be 0.15 lb acid mist/ton 100% H<sub>2</sub>SO<sub>4</sub> and 17.2 lb acid mist/hr.
6. Visible emissions shall not exceed 10% opacity.
7. 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.
8. While construction is underway and before operating this plant, a minimum stack extension of 85 feet shall be added to the standby boiler on operating permit AO 53-5962 to prevent any violation of the ambient air standards for SO<sub>2</sub>.
9. Reasonable precautions to prevent fugitive particulate emissions during construction, such as coating or spraying roads and construction sites used by contractors, will be taken by the applicant.
10. Construction shall reasonably conform to the plans submitted in the application.
11. The applicant shall report any delays in construction and completion of this plant to the Department's Southwest District Office.
12. 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 40CFR 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 53-37830  
APPLICANT: New Wales Chemicals, Inc.

Specific Conditions (Con't)

13. 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 operating permit.
14. Upon obtaining an operating permit, the applicant will be required to submit periodic test reports on the actual operation and emissions of the facility.
15. Stack sampling facilities will include the eyebolt and angle described in Chapter 17-2.23, F.A.C.

\_\_\_\_\_  
Victoria J. Tschinkel,  
Secretary

Expiration Date: June 1, 1982

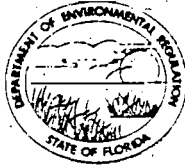
Issued this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_\_

\_\_\_\_\_  
Pages Attached.

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

\_\_\_\_\_  
Signature

PAGE 4 OF 4



AC 53-37829  
RECEIVED  
BARM  
12/17/80

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
APPLICATION TO OPERATE/CONSTRUCT  
AIR POLLUTION SOURCES

SOURCE TYPE: Sulfuric Acid Plant  New<sup>1</sup>  Existing<sup>1</sup> (Under Construction)

APPLICATION TYPE:  Construction  Operation  Modification

COMPANY NAME: New Wales Chemicals, Inc. COUNTY: Polk

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Double absorption sulfuric acid plant (04)

SOURCE LOCATION: Street Highway 640 & County Line Rd. City Mulberry

UTM: East 396.6 North 3078.9

Latitude      °      '      "N Longitude      °      '      "W

APPLICANT NAME AND TITLE: R.E. Jones, Jr. Vice President

APPLICANT ADDRESS: P.O. Box 1035 Mulberry, Fla. 33860

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of New Wales Chemicals, Inc.

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

\*Attach letter of authorization

Signed: R.E. Jones, Jr.

R. E. Jones, Jr. Vice President  
Name and Title (Please Type)

Date: \_\_\_\_\_ Telephone No. 813-428-2531

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

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: Craig A. Pflaum PE

Craig A. Pflaum  
Name (Please Type)

New Wales Chemical, Inc.

Company Name (Please Type)

P.O. Box 1035, Mulberry, Fla.

Mailing Address (Please Type)

Florida Registration No. 18595

Date: 12-16-80 Telephone No. 813-428-2531

<sup>1</sup>See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

**SECTION II: GENERAL PROJECT INFORMATION**

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.  
A Double Absorption Contact Plant with permitted production rates of 2000 TPD of 100% H2SO4 will increase production rates to 2750 TPD by utilizing excess capacity built into the plant. There will be no physical changes to this plant from the original scope, and the plant will meet NSPS for SO2 and acid mist.
- B. Schedule of project covered in this application (Construction Permit Application Only)  
 Start of Construction 5/23/80 Completion of Construction 9/1/81
- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)  
Estimated cost of double absorption unit with Brinks demisters, water reuse facilities, continuous SO2 monitor and manual sampling access is \$5,000,000.00.
- D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.  
AC 53-19049 issued 2/7/80, expires 9/30/83
- E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? Yes  No
- F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 50 ; if power plant, hrs/yr \_\_\_\_\_ ; if seasonal, describe: \_\_\_\_\_
- G. If this is a new source or major modification, answer the following questions. (Yes or No)
- |   |            |
|---|------------|
| 1. Is this source in a non-attainment area for a particular pollutant?  | <u>No</u>  |
| a. If yes, has "offset" been applied?   | _____      |
| b. If yes, has "Lowest Achievable Emission Rate" been applied?  | _____      |
| c. If yes, list non-attainment pollutants.  | _____      |
| 2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.  | <u>Yes</u> |
| 3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. | <u>Yes</u> |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?  | <u>Yes</u> |
| 5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?                                       | <u>No</u>  |

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Molten Sulfur	carbon	0.25	38.5 TPH	Sulfur Burner

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

- Total Process Input Rate (lbs/hr): 38.5 TPH
- Product Weight (lbs/hr): 115 TPH

**C. Airborne Contaminants Emitted:**

Name of Contaminant	Emission <sup>1</sup>		Allowed Emission <sup>2</sup> Rate per Ch. 17-2, F.A.C.	Allowable <sup>3</sup> Emission lbs/hr	Potential Emission <sup>4</sup>		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
S02	458	1925	4.0 lbs/ton acid	458	458	1925	stack
H2S04 Mist	17.2	72	0.15 lbs/ton acid	17.2	172	722	"
NOx	16.2	68	NA	16.2	16.2	68	"
CO	0.1	0.5	NA	0.1	0.1	0.5	"

See page 3A for increase in pollutant emission rates over current permitted rates

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup> )
Double Absorption Towers With	S02	99.7	NA	Design
Brinks HV Mist Eliminators	Acid Mist	100%	> 3 Microns	"
		85-97%	1-3 Microns	"
		50-85%	< 1/2 Microns	"

<sup>1</sup>See Section V, Item 2.

<sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. - 0.1 pounds per million BTU heat input)

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

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

<sup>5</sup>If Applicable

SECTION III, C

Contaminant	Permitted		Emission Rate Proposed		Increase	
	(lbs/hr)	(tons/year)	(lbs/hr)	(tons/year)	(lbs/hr)	(tons/year)
SO <sub>2</sub>	333	1400	458	1925	125	525
Mist	12	52	17	72	5	20
NO <sub>x</sub>	12	50	16	68	4	18
CO	<1	<1	<1	<1	<1	<1

E. Fuels - Not Applicable

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

\*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: \_\_\_\_\_ Percent Ash: \_\_\_\_\_  
 Density: \_\_\_\_\_ lbs/gal Typical Percent Nitrogen: \_\_\_\_\_  
 Heat Capacity: \_\_\_\_\_ BTU/lb \_\_\_\_\_ BTU/gal  
 Other Fuel Contaminants (which may cause air pollution): \_\_\_\_\_

F. If applicable, indicate the percent of fuel used for space heating. Annual Average \_\_\_\_\_ Maximum \_\_\_\_\_

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

Liquid waste reused in Kingsford operation.

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

Stack Height: 199 ft. Stack Diameter: 8.5 ft.  
 Gas Flow Rate: 153,920 ACFM Gas Exit Temperature: 170 °F.  
 Water Vapor Content: 0 % Velocity: 45.2 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

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

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

Approximate Number of Hours of Operation per day \_\_\_\_\_ days/week \_\_\_\_\_

Manufacturer \_\_\_\_\_

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



- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

**SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY**

BACT determined by FDER 8/24/79, BACT determined by EPA 5/23/80.

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?  
 Yes  No

Contaminant	Rate or Concentration

- B. Has EPA declared the best available control technology for this class of sources (if yes, attach copy)  Yes  No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

- |                           |                      |
|---------------------------|----------------------|
| 1. Control Device/System: | 4. Capital Costs:    |
| 2. Operating Principles:  | 5. Operating Costs:  |
| 3. Efficiency: *          | 6. Maintenance Cost: |
| 5. Useful Life:           |                      |
| 7. Energy:                |                      |
| 9. Emissions:             |                      |

Contaminant	Rate or Concentration

\*Explain method of determining D 3 above.

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

August 24, 1979

RECEIVED BY  
NEW WALES CHEMICALS, INC.  
T. L. CRAIG

AUG 30 1979

Mr. Thomas L. Craig,  
Vice President & General  
Manager  
New Wales Chemicals, Inc.  
P. O. Box 1035  
Mulberry, Florida 33860

Noted.....File.....  
Referred To.....

Subject: Best Available Control Technology (BACT)  
for New Wales Chemicals, Inc. Sulfuric Acid  
Plants No. 4 & No. 5, to be located in Polk  
County

Dear Mr. Craig:

The Department of Environmental Regulation has reviewed the BACT Application submitted by you, and determined Best Available Control Technology (BACT) for the above referenced source as follows:

SO<sub>2</sub>: Emission not to exceed 4.0 #/ton of  
100% H<sub>2</sub>SO<sub>4</sub>/attainable with a double  
absorption system.

Sulfuric Acid Mist: Emissions not to exceed 0.15 #/ton of  
100% H<sub>2</sub>SO<sub>4</sub>/attainable with a high  
efficiency demister.

Opacity: Not greater than 10 percent.

Test Method: Asprescribed in EPA NSPS, 40 CFR,  
Part 60, Subpart H.

The complete BACT determination document is attached.

Sincerely,

*Victoria Martinez*

Victoria Martinez,  
BACT Coordinator

VM/es

Attachment

original typed on 100% recycled paper

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: Jacob D. Varn  
Secretary

FROM: J. P. Subramani, Chief *J. P. Subramani*  
Bureau of Air Quality Management

DATE: August 20, 1979

SUBJECT: BACT Determination - New Wales Chemicals, Inc.  
Sulfuric Acid Plants No. 4 and No. 5, to be  
located in Polk County

Facility: Two identical double absorption sulfuric  
acid plants with a combined process input  
rate of 1320 tons/day of sulfur.

BACT Determination Requested by the Applicant:

Pollutant

SO<sub>2</sub>: 4 lbs/ton 100% H<sub>2</sub>SO<sub>4</sub> acid produced

Sulfuric Acid  
Mist: 0.15 lbs/ton 100% H<sub>2</sub>SO<sub>4</sub> acid  
produced

Date of Receipt of a Complete BACT Application:

June 5, 1979

Date of Publication in the Florida Administrative Weekly:

August 6, 1979

Date of Publication in a Newspaper of General Circulation:

August 8, 1979, The Ledger, Lakeland, Florida

Jacob D. Varn  
Page Two  
August 20, 1979

Study Group Members:

A BACT determination on a sulfuric acid plant was completed April 16, 1979. There has been no significant technological improvement since that date. Thus the same BACT applies and a study group is not needed.

EPA's New Source Performance Standards (NSPS) for Sulfuric Acid Plants:

Pollutant	Rate of Concentration
SO <sub>2</sub> :	4 #/ton of 100 H <sub>2</sub> SO <sub>4</sub>
Sulfuric Acid Mist:	0.15 #/ton of 100% H <sub>2</sub> SO <sub>4</sub>

BACT Determination by the Florida Department of Environmental Regulation:

SO <sub>2</sub> :	Emission not to exceed 4.0 #/ton of 100% H <sub>2</sub> SO <sub>4</sub> /attainable with a double absorption system.
Sulfuric Acid Mist:	Emissions not to exceed 0.15 #/ton of 100% H <sub>2</sub> SO <sub>4</sub> /attainable with a high efficiency demister.
Opacity:	Not greater than 10 percent.
Test Method:	As prescribed in EPA NSPS, 40 CFR, Part 60, Subpart H.

Justification of DER Determination:

There has been no significant technological improvements since December 1978 when EPA reviewed its NSPS for this type of source. Although lower emissions than NSPS are attainable the selection of NSPS as BACT allows for the normal decrease in efficiency with the passage of time.

Details of the Analysis May be Obtained by Contacting:

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

Jacob D. Varn  
Page Three  
August 20, 1979

Recommendation from: Bureau of Air Quality Management

by: J. P. Subramani  
J. P. Subramani

Date: AUGUST 20, 1979

Approved by: Jacob D. Varn  
Jacob D. Varn

Date: 21<sup>ST</sup> AUGUST 1979

JDV/es.

Attachment

**SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION**

To be supplied by Sholtes & Koogler Environmental Consultants

**A. Company Monitored Data**

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

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

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

Attach all data or statistical summaries to this application.

**2. Instrumentation, Field and Laboratory**

a) Was instrumentation EPA referenced or its equivalent? \_\_\_\_\_ Yes \_\_\_\_\_ No

b) Was instrumentation calibrated in accordance with Department procedures? \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Unknown

**B. Meteorological Data Used for Air Quality Modeling**

1. \_\_\_\_\_ Year(s) of data from \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
month day year month day year

2. Surface data obtained from (location) \_\_\_\_\_

3. Upper air (mixing height) data obtained from (location) \_\_\_\_\_

4. Stability wind rose (STAR) data obtained from (location) \_\_\_\_\_

**C. Computer Models Used**

1. \_\_\_\_\_ Modified? If yes, attach description.

2. \_\_\_\_\_ Modified? If yes, attach description.

3. \_\_\_\_\_ Modified? If yes, attach description.

4. \_\_\_\_\_ Modified? If yes, attach description.

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

**D. Applicants Maximum Allowable Emission Data**

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

**E. Emission Data Used in Modeling**

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

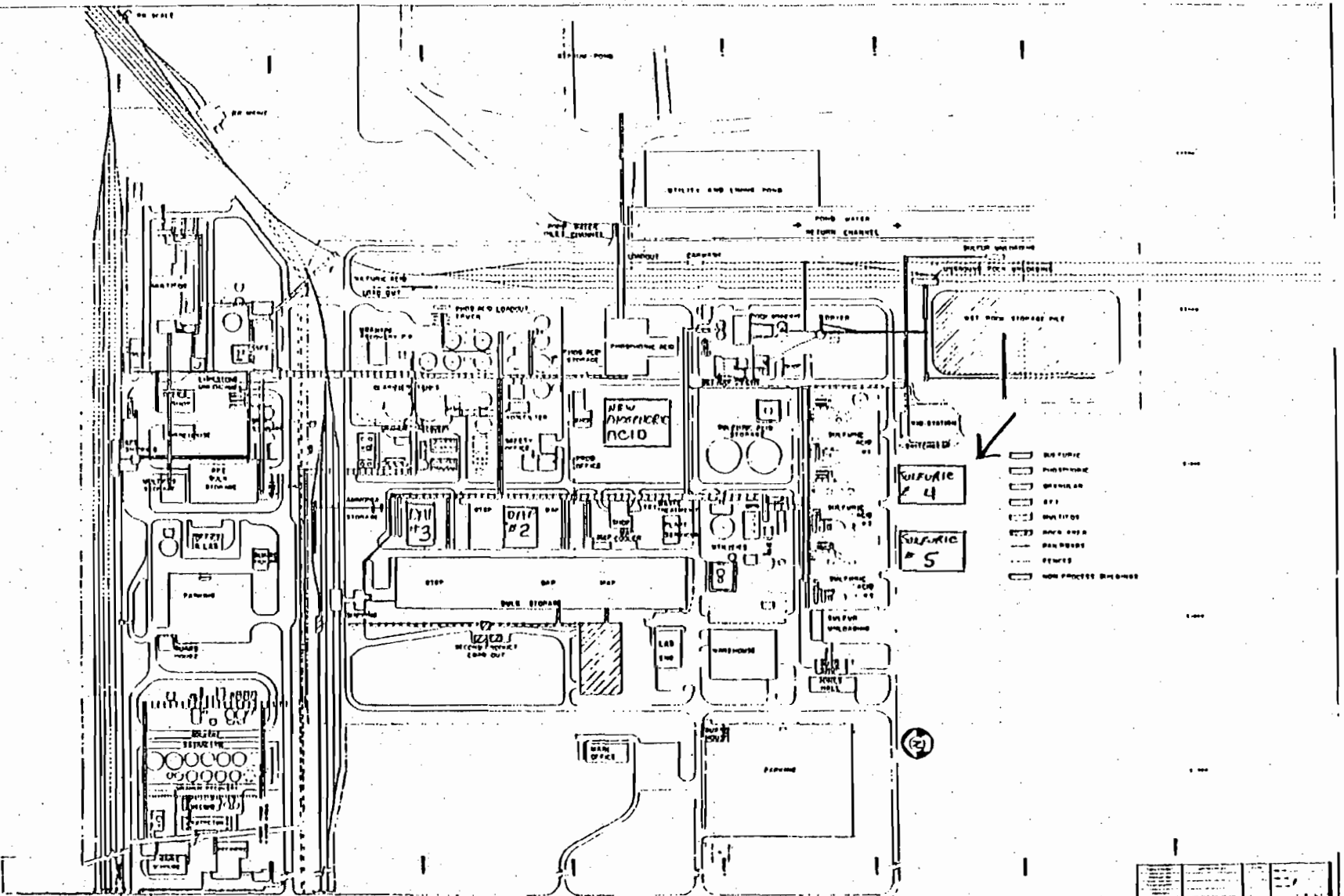
**F. Attach all other information supportive to the PSD review.**

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

**G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.**

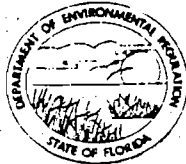
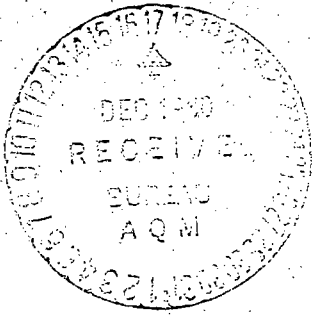
**H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.**

# Best Available Copy



NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10	NO. 11	NO. 12	NO. 13	NO. 14	NO. 15	NO. 16	NO. 17	NO. 18	NO. 19	NO. 20	NO. 21	NO. 22	NO. 23	NO. 24	NO. 25	NO. 26	NO. 27	NO. 28	NO. 29	NO. 30	NO. 31	NO. 32	NO. 33	NO. 34	NO. 35	NO. 36	NO. 37	NO. 38	NO. 39	NO. 40	NO. 41	NO. 42	NO. 43	NO. 44	NO. 45	NO. 46	NO. 47	NO. 48	NO. 49	NO. 50
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New York Chemicals Inc.  
68



REC. 12/17/80  
AC 53-37830

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
APPLICATION TO OPERATE/CONSTRUCT  
AIR POLLUTION SOURCES

SOURCE TYPE: Sulfuric Acid Plant  New<sup>1</sup>  Existing<sup>1</sup> (Under Construction)

APPLICATION TYPE:  Construction  Operation  Modification

COMPANY NAME: New Wales Chemicals, Inc. COUNTY: Polk

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Double absorption sulfuric acid plant (05)

SOURCE LOCATION: Street Highway 640 & County Line Rd. City Mulberry

UTM: East 396.6 North 3078.9

Latitude      °      '      "N Longitude      °      '      "W

APPLICANT NAME AND TITLE: R. E. Jones, Jr. Vice President

APPLICANT ADDRESS: P. O. Box 1035 Mulberry, Fla. 33860

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of New Wales Chemicals, Inc.

I certify that the statements made in this application for a Modification to an existing

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

\*Attach letter of authorization

Signed: R. E. Jones, Jr.

R. E. Jones, Jr. Vice President  
Name and Title (Please Type)

Date: \_\_\_\_\_ Telephone No. 813-428-2531

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

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: Craig A. Pflaum

Craig A. Pflaum  
Name (Please Type)

New Wales Chemicals, Inc.  
Company Name (Please Type)

P.O. Box 1035, Mulberry, Fla.  
Mailing Address (Please Type)

Florida Registration No. 18595 Date: 12-16-80 Telephone No. 813-428-2531

<sup>1</sup>See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)



SECTION II: GENERAL PROJECT INFORMATION

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.  
A Double Absorption Contact Plant with permitted production rates of 2000 TPD of 100% H2SO4 will increase production rates to 2750 TPD by utilizing excess capacity built into the plant. There will be no physical changes to this plant from the original scope, and the plant will meet NSPS for SO2 and acid mist.
- B. Schedule of project covered in this application (Construction Permit Application Only)  
Start of Construction 5/23/80 Completion of Construction 12/1/81
- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)  
Estimated cost of double absorption unit with Brinks demisters, water reuse facilities, continuous SO2 monitor and manual sampling access is \$5,000,000.00.
- D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.  
AC 53-19050 issued 2/7/80, expires 9/30/83
- E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? Yes  No
- F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 50 ; if power plant, hrs/yr \_\_\_\_\_ ; if seasonal, describe: \_\_\_\_\_
- G. If this is a new source or major modification, answer the following questions. (Yes or No)
- |   |            |
|---|------------|
| 1. Is this source in a non-attainment area for a particular pollutant?  | <u>No</u>  |
| a. If yes, has "offset" been applied?   | _____      |
| b. If yes, has "Lowest Achievable Emission Rate" been applied?  | _____      |
| c. If yes, list non-attainment pollutants.  | _____      |
| 2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.  | <u>Yes</u> |
| 3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. | <u>Yes</u> |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?  | <u>Yes</u> |
| 5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?                                       | <u>No</u>  |

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
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**B. Process Rate, if applicable: (See Section V, Item 1)**

1. Total Process Input Rate (lbs/hr): 38.5 TPH

2. Product Weight (lbs/hr): 115 TPH

**C. Airborne Contaminants Emitted:**

Name of Contaminant	Emission <sup>1</sup>		Allowed Emission <sup>2</sup> Rate per Ch. 17-2, F.A.C.	Allowable <sup>3</sup> Emission lbs/hr	Potential Emission <sup>4</sup>		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
S02	458	1925	4.0 lbs/ton acid	458	458	1925	stack
H2S04 Mist	17.2	72	0.15 lbs/ton acid	17.2	172	722	"
NOx	16.2	68	NA	16.2	16.2	68	"
CO	0.1	0.5	NA	0.1	0.1	0.5	"

See page 3A for increase in pollutant emission rates over current permitted rates

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup> )
Double Absorption	S02	99.7	NA	Design
Towers With	Acid Mist	100%	> 3 Microns	"
Brinks HV Mist		85-97%	1-3 Microns	"
Eliminators		50-85%	< ½ Microns	"

<sup>1</sup>See Section V, Item 2.

<sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. - 0.1 pounds per million BTU heat input)

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

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

<sup>5</sup>If Applicable

SECTION III, C

Contaminant	Permitted		Emission Rate Proposed		Increase	
	(lbs/hr)	(tons/year)	(lbs/hr)	(tons/year)	(lbs/hr)	(tons/year)
SO <sub>2</sub>	333	1400	458	1925	125	525
Mist	12	52	17	72	5	20
NO <sub>x</sub>	12	50	16	68	4	18
CO	<1	<1	<1	<1	<1	<1

E. Fuels - Not Applicable

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

\*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: \_\_\_\_\_ Percent Ash: \_\_\_\_\_  
 Density: \_\_\_\_\_ lbs/gal Typical Percent Nitrogen: \_\_\_\_\_  
 Heat Capacity: \_\_\_\_\_ BTU/lb \_\_\_\_\_ BTU/gal  
 Other Fuel Contaminants (which may cause air pollution): \_\_\_\_\_

F. If applicable, indicate the percent of fuel used for space heating. Annual Average \_\_\_\_\_ Maximum \_\_\_\_\_

G. Indicate liquid or solid wastes generated and method of disposal.  
Liquid waste reused in Kingsford operation.

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

Stack Height: 199 ft Stack Diameter: 8.5 ft  
 Gas Flow Rate: 153,920 ACFM Gas Exit Temperature: 170 °F.  
 Water Vapor Content: 0 % Velocity: 45.2 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste \_\_\_\_\_  
 Total Weight Incinerated (lbs/hr) \_\_\_\_\_ Design Capacity (lbs/hr) \_\_\_\_\_  
 Approximate Number of Hours of Operation per day \_\_\_\_\_ days/week \_\_\_\_\_  
 Manufacturer \_\_\_\_\_  
 Date Constructed \_\_\_\_\_ Model No. \_\_\_\_\_

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

**SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY**

BACT determined by FDER 8/24/79, BACT determined by EPA 5/23/80

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?  
 Yes  No

Contaminant	Rate or Concentration

- B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)  Yes  No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

- 1. Control Device/System:
- 2. Operating Principles:
- 3. Efficiency: \*
- 4. Capital Costs:
- 5. Useful Life:
- 6. Operating Costs:
- 7. Energy:
- 8. Maintenance Cost:
- 9. Emissions:

Contaminant	Rate or Concentration

\*Explain method of determining D 3 above.

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

August 24, 1979

RECEIVED BY  
NEW WALES CHEMICALS, INC.  
T. L. CRAIG

AUG 30 1979

Mr. Thomas L. Craig,  
Vice President & General  
Manager  
New Wales Chemicals, Inc.  
P. O. Box 1035  
Mulberry, Florida 33860

Noted.....File.....  
Referred To.....

Subject: Best Available Control Technology (BACT)  
for New Wales Chemicals, Inc. Sulfuric Acid  
Plants No. 4 & No. 5, to be located in Polk  
County

Dear Mr. Craig:

The Department of Environmental Regulation has reviewed the BACT Application submitted by you, and determined Best Available Control Technology (BACT) for the above referenced source as follows:

SO<sub>2</sub>: Emission not to exceed 4.0 #/ton of  
100% H<sub>2</sub>SO<sub>4</sub>/attainable with a double  
absorption system.

Sulfuric Acid Mist: Emissions not to exceed 0.15 #/ton of  
100% H<sub>2</sub>SO<sub>4</sub>/attainable with a high  
efficiency demister.

Opacity: Not greater than 10 percent.

Test Method: Asprescribed in EPA NSPS, 40 CFR,  
Part 60, Subpart H.

The complete BACT determination document is attached.

Sincerely,

*Victoria Martinez*  
Victoria Martinez,  
BACT Coordinator

VM/es

Attachment

original typed on 100% recycled paper

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: Jacob D. Varn  
Secretary

FROM: J. P. Subramani, Chief *J. P. Subramani*  
Bureau of Air Quality Management

DATE: August 20, 1979

SUBJECT: BACT Determination - New Wales Chemicals, Inc.  
Sulfuric Acid Plants No. 4 and No. 5, to be  
located in Polk County

Facility: Two identical double absorption sulfuric  
acid plants with a combined process input  
rate of 1320 tons/day of sulfur.

BACT Determination Requested by the Applicant:

Pollutant

SO<sub>2</sub>: 4 lbs/ton 100% H<sub>2</sub>SO<sub>4</sub> acid produced

Sulfuric Acid  
Mist: 0.15 lbs/ton 100% H<sub>2</sub>SO<sub>4</sub> acid  
produced

Date of Receipt of a Complete BACT Application:

June 5, 1979

Date of Publication in the Florida Administrative Weekly:

August 6, 1979

Date of Publication in a Newspaper of General Circulation:

August 8, 1979, The Ledger, Lakeland, Florida

Jacob D. Varn  
Page Two  
August 20, 1979

Study Group Members:

A BACT determination on a sulfuric acid plant was completed April 16, 1979. There has been no significant technological improvement since that date. Thus the same BACT applies and a study group is not needed.

EPA's New Source Performance Standards (NSPS) for Sulfuric Acid Plants:

Pollutant	Rate of Concentration
SO <sub>2</sub> :	4 #/ton of 100 H <sub>2</sub> SO <sub>4</sub>
Sulfuric Acid Mist:	0.15 #/ton of 100% H <sub>2</sub> SO <sub>4</sub>

BACT Determination by the Florida Department of Environmental Regulation:

SO <sub>2</sub> :	Emission not to exceed 4.0 #/ton of 100% H <sub>2</sub> SO <sub>4</sub> /attainable with a double absorption system.
Sulfuric Acid Mist:	Emissions not to exceed 0.15 #/ton of 100% H <sub>2</sub> SO <sub>4</sub> /attainable with a high efficiency demister.
Opacity:	Not greater than 10 percent.
Test Method:	As prescribed in EPA NSPS, 40 CFR, Part 60, Subpart H.

Justification of DER Determination:

There has been no significant technological improvements since December 1978 when EPA reviewed its NSPS for this type of source. Although lower emissions than NSPS are attainable the selection of NSPS as BACT allows for the normal decrease in efficiency with the passage of time.

Details of the Analysis May be Obtained by Contacting:

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



Jacob D. Varn  
Page Three  
August 20, 1979

Recommendation from: Bureau of Air Quality Management

by: J. P. Subramani  
J. P. Subramani

Date: AUGUST 20, 1979

Approved by: Jacob D. Varn  
Jacob D. Varn

Date: 21<sup>ST</sup> AUGUST 1979

JDV/es

Attachment

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

To be supplied by Sholtes & Koogler Environmental Consultants

A. Company Monitored Data

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

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

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

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? \_\_\_\_\_ Yes \_\_\_\_\_ No

b) Was instrumentation calibrated in accordance with Department procedures? \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. \_\_\_\_\_ Year(s) of data from \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 month day year month day year

2. Surface data obtained from (location) \_\_\_\_\_

3. Upper air (mixing height) data obtained from (location) \_\_\_\_\_

4. Stability wind rose (STAR) data obtained from (location) \_\_\_\_\_

C. Computer Models Used

1. \_\_\_\_\_ Modified? If yes, attach description.

2. \_\_\_\_\_ Modified? If yes, attach description.

3. \_\_\_\_\_ Modified? If yes, attach description.

4. \_\_\_\_\_ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

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

E. Emission Data Used in Modeling

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

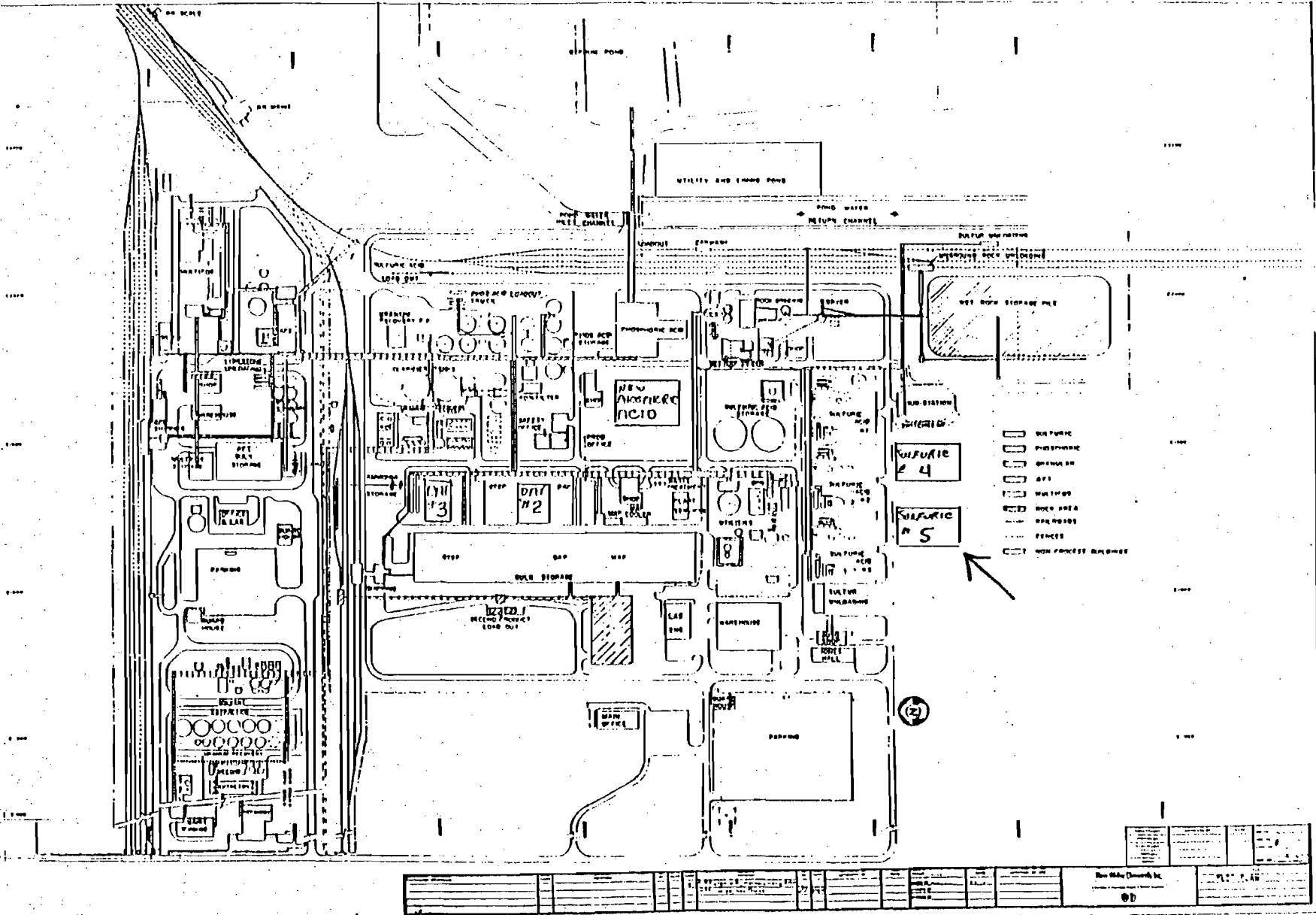
F. Attach all other information supportive to the PSD review.

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

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

# Best Available Copy



<p>DATE: 11/15/50</p> <p>BY: [Signature]</p> <p>SCALE: 1" = 100'</p> <p>PROJECT: [Project Name]</p> <p>NO. 100</p>															
<p>REVISIONS:</p> <table border="1"> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>ISSUED FOR CONSTRUCTION</td> <td>11/15/50</td> </tr> </table>										NO.	DESCRIPTION	DATE	1	ISSUED FOR CONSTRUCTION	11/15/50
NO.	DESCRIPTION	DATE													
1	ISSUED FOR CONSTRUCTION	11/15/50													
<p>APPROVED:</p> <p>[Signature]</p>															

Best Available Copy

# STATE OF FLORIDA

DEPARTMENT OF STATE • DIVISION OF CORPORATIONS

I certify from the records of this office that **DC CHEMICALS CORP.**, changed its name to; **NEW WALKER CHEMICALS, INC.**, is a corporation organized under the laws of the State of Delaware, authorized to transact business within the State of Florida, qualified on the 1st day of June, 1977, under the new name.

I further certify that said corporation has paid all fees due this office through December 31, 1977 and its status is active.



GIVEN under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capital, this the 1st day of June 1977.

*Bruce C. Hoffman*

SECRETARY OF STATE

BILLIE B. TURNER  
Vice President  
Executive Vice President-Operations  
Fertilizer Group



INTERNATIONAL MINERALS & CHEMICAL CORPORATION

April 2, 1980

Mr. R. E. Jones, Jr.  
Vice President  
New Wales Chemicals, Inc.  
Post Office Box 1035  
Mulberry, Florida 33860

Dear Bob,

This letter is your authorization to sign on behalf of New Wales Chemicals, Inc. the various applications for permits, specifically the applications for operating permits from the Florida Department of Environmental Regulation.

Sincerely,

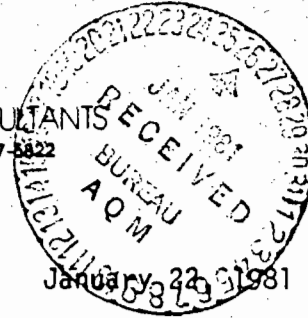
A handwritten signature in cursive script that reads "Billie B. Turner".

hl



SHOLTÈS & KOOGLER, ENVIRONMENTAL CONSULTANTS  
1213 N.W. 6th Street Gainesville, Florida 32601 (904) 377-5822

SKEC 124-80-04



Mr. Steve Smallwood, Chief  
Bureau of Air Quality Management  
Department of Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Fl 32301

Subject: New Wales Chemicals, Inc.  
Polk County, Florida  
Sulfuric Acid Plants Nos. 4 and 5  
Rate Increase

Dear Mr. Smallwood:

This is in response to your letter of January 9, 1981, requesting clarification of information submitted to you in support of a request by New Wales Chemicals, Inc., to increase the production rate of the Nos. 4 and 5 sulfuric acid plants at the New Wales Chemical complex in Polk County. In your letter you requested clarification of the sulfur dioxide emission data used in the air quality review and clarification on the expected completion of construction dates for the Nos. 4 and 5 plants.

We reviewed the air quality modeling submitted to your office and discovered there were indeed some inconsistencies. These inconsistencies have been rectified and several of the air quality models rerun. To expedite your review I have summarized, in the attached table, the maximum hourly and annual average daily sulfur dioxide emission rates for all of the sulfur dioxide emitting sources at the New Wales Chemical Complex. These emission rates are representative of sulfur dioxide emissions from the various sources with the sources operating at the permitted maximum rated capacity, or in the case of the Nos. 4 and 5 sulfuric acid plants, at the proposed maximum rated capacity.

The revisions in the air quality modeling to rectify the inconsistencies in the emission data include revisions to CRSTER model runs 3/74 through 3/78 and revisions to PTMTPW model runs 14 through 17, 20 through 25 and 28. With the PTMTPW model runs, the modified runs are designated by the original number followed by the letter A (e.g., modified run 14 becomes run No. 14A). These revisions are incorporated in a revised Section 5.0 of the permit application support document submitted by New Wales Chemicals, Inc. We are also submitting as a separate document,

copies of computer print-outs for revised CRSTER runs 3/74 through 3/78 and PTMPW runs 10 through 28A. If there are further questions regarding this air quality review, please feel free to contact me.

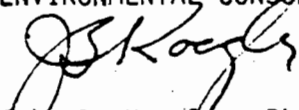
Regarding the completion of construction dates for the Nos. 4 and 5 sulfuric acid plants, it was originally anticipated that the completion of construction of the two plants would be June 30, 1983. As the construction project has progressed, it has become apparent to New Wales that both Nos. 4 and 5 sulfuric acid plants will be completed earlier than originally anticipated. It is now anticipated that the No. 4 sulfuric acid plant will be completed on September 1, 1981 and that the No. 5 sulfuric acid plant will be completed on December 1, 1981.

When the permit applications for the two sulfuric acid plants were submitted to your staff on December 17, 1980, both state and federal permit applications were submitted. The federal PSD application was submitted since FDER now has technical review responsibility for these applications. Subsequent to submittal, your staff forwarded the federal PSD application to EPA, Region IV with a request to determine whether the requested production rate increase would be handled as a new PSD application or a modification to the PSD approval granted to New Wales in May, 1980. I was informed on January 21, 1981, by Gordon Nixon of EPA by telephone that the request would be treated as a new PSD application. This determination is to be confirmed by letter with a copy to your office.

I trust the above will provide you with the information requested in your letter of January 9, 1981 and clarify the status of the federal review required for the production rate increase. If any other questions arise during the review of the permit applications, please contact us.

Very truly yours,

SHOLTES & KOOGLER  
ENVIRONMENTAL CONSULTANTS



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

JBK:sc  
Enclosures

cc: Mr. R. E. Jones, Jr., V.P. New Wales Chemicals, Inc.  
Mr. Larry George, FDER  
Mr. Tom Rogers, FDER  
Mr. Joseph A. Baretincic, New Wales Chemicals, Inc. (w/enc)  
Mr. A. L. Girardin, New Wales Chemicals, Inc.

SUMMARY OF SULFUR DIOXIDE EMISSIONS(1)  
WITH SOURCE AT 100 PERCENT CAPACITY

NEW WALES CHEMICALS, INC.  
POLK COUNTY, FLORIDA

Name	Source Number	Sulfur Dioxide Emissions	
		(grams/sec)	(tons/day)(2)
Sulfuric Acid 1	59-02 <sup>1</sup>	54.60	5.20
Sulfuric Acid 2	59-03	51.91	4.94
Sulfuric Acid 3	59-04	53.93	5.14
Sulfuric Acid 4 (new)	59-94	57.75	5.50
Sulfuric Acid 5 (new)	59-95	57.75	5.50
Auxiliary Boiler	59-13	71.73	6.83
DAP No. 1	59-09	0.82	0.08
DAP No. 2 (new)	59-96	5.54	0.53(3)
GTSP	59-10	1.89	0.18
AFI	59-27	3.78	0.36
Multiphos	59-33	5.36	0.51

- 
- (1) Emissions are consistent with sulfur dioxide emissions used in New Wales federal PSD application PSD-FL-034, approved 5/23/80.
- (2) Assumed that all sources operate with annual operating factor of 1.0.
- (3) An emission rate of 1.39 tons per day was used for annual air quality modeling. This will result in an over-estimate of the annual sulfur dioxide impact.