

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



BOB GRAHAM  
GOVERNOR

Victoria J. Tschinkel  
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

November 20, 1981

CERTIFIED MAIL

R. W. Harrell  
SCM Corporation/Organic Chemicals Division  
P. O. Box 389  
Jacksonville, Florida 32201

Dear Mr. Harrell:

Enclosed is Permit Number AC 16-45367, dated November 19, 1981  
to SCM Corporation/Organic Chemicals Division  
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,

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

cc: ✓ Steve Pace  
Johnny Cole  
James O. Sewell

CHF:caa

Final Determination

SCM Corporation/Organic Chemicals Division  
Duval County, Florida

Terpene Reactor

Application Number:  
AC 16-45367

Florida Department of Environmental Regulation  
Bureau of Air Quality Management  
Central Air Permitting  
November 20, 1981

SCM Corporation/Organic Chemicals Division

Final Determination

The SCM Corporation application for a permit to construct a new terpene reactor 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 Florida Times-Union on October 20, 1981. Copies of the preliminary determination have been available for public inspection at the Department's St. Johns River Subdistrict Office in Jacksonville, and the Duval County Bio-Environmental Services Offices, also in Jacksonville.

SCM Corporation has requested changes in the Specific Conditions as follows:

Specific Condition 3.

Eliminating the VOC hourly emission limits for each of the two steps of the reaction and adopting a total VOC emissions cap per batch. Variability in feed and catalyst quality would make the latter limit more realistic for permitting purposes.

Specific Condition 4.

The applicant suggests elimination of the distinction between recycle and new solvent used in the reaction. Rather, they would prefer one limit on solvent usage, which could be any combination of new and recycled solvent.

Specific Condition 5.

The applicant requests elimination of this condition requiring gas chromatographic analysis of scrubber absorbent prior to each batch charged. The contention is that the scrubber water is relatively pure, being freshly distilled from Step 1. The scrubber water will absorb a certain amount of solvent, but this is not easily quantified. Regardless, VOC emissions would be less than a ton per year more than proposed if the scrubber was totally ineffective capturing VOC. The scrubber's main purpose is to reduce ammonia fumes.

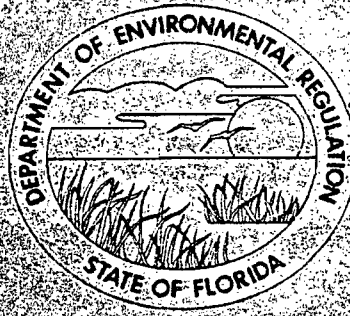
The Bureau feels that the requested changes can be made without violating regulations or increasing actual emissions over what was proposed by the applicant. Upon reconsideration of Condition No. 5, it seems that such a requirement would not have much benefit. Therefore all three aforementioned conditions are changed, incorporating an emissions cap per batch charged and a new annual VOC emissions limit of 8.0 tons per year. This new annual emissions limit reflects uncontrolled VOC emissions from the scrubber, although in actuality VOC emissions control efficiency through the scrubber

Page Two

probably approaches 50%.

Specific Condition No. 5 will be withdrawn from the permit conditions.

No other comments were received as a result of the public notice, therefore, the final action by the Department shall be to issue the permit as proposed in the public review process, with the noted changes to the Specific Conditions.



STATE OF FLORIDA  
DEPARTMENT OF  
ENVIRONMENTAL REGULATION

CONSTRUCTION  
PERMIT

NO. AC-16-45367

SCM CORPORATION  
DUVAL COUNTY  
TERPENE REACTOR

DATE OF ISSUANCE

Nov 19, 1981

DATE OF EXPIRATION

AUGUST 1, 1982

*Victoria Tschinkel*  
VICTORIA TSCHINKEL  
SECRETARY



STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: SCM Corporation  
Organic Chemicals Division  
P. O. Box 389  
Jacksonville, Florida 32201

PERMIT/CERTIFICATION  
NO. AC 16-45367

COUNTY: Duval

PROJECT: Terpene Reactor

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 terpene reactor, to be located at the foot of West 61st Street in Jacksonville, Duval County, Florida. The UTM coordinates of the proposed source are 743.6 km East and 3360.8 km North.

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. Letter of Incompleteness from Steve Smallwood to applicant, dated July 28, 1981.
3. Comments from SCM Corporation to William Thomas, dated November 6, 1981.

PERMIT NO.: AC 16-45367  
APPLICANT: SCM Corporation

**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 16-45367  
APPLICANT: SCM Corporation

**SPECIFIC CONDITIONS:**

1. Construction should reasonably conform to the plans submitted in the application.
2. The applicant should report any delays in construction and completion of the proposed reactor to the Department's St. Johns River Sub-district Office.
3. The maximum emission of VOC during the processing of one batch shall be 66.1 pounds. The annual rate of VOC emissions shall not exceed 8.0 tons per year.
4. The maximum solvent input shall be 33,420 pounds/batch.
5. The applicant will demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit to the St. Johns River Subdistrict prior to 90 days of the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until the expiration date or issuance of an operating permit.



PERMIT NO.: AC16-45367  
APPLICANT: SCM Corporation

Expiration Date: August 1, 1982

Issued this 19 day of Nov., 19 81

           Pages Attached.

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

Terry Cole  
Signature

PAGE        OF       .

Check Sheet

Company Name: SCM Corporation  
Permit Number: AC 16-645367  
PSD Number: \_\_\_\_\_  
Permit Engineer: \_\_\_\_\_

**Application:**

- Initial Application
  - Incompleteness Letters
  - Responses
  - Waiver of Department Action
  - Department Response
  - Other

**Cross References:**

- AC 16-060309
- 
- 

**Intent:**

- Intent to Issue
- Notice of Intent to Issue
- Technical Evaluation
- BACT or LAER Determination
- Unsigned Permit
  - Correspondence with:
    - EPA
    - Park Services
    - Other
- Proof of Publication
  - Petitions - (Related to extensions, hearings, etc.)
  - Waiver of Department Action
  - Other

**Final**

**Determination:**

- Final Determination
- Signed Permit
- BACT or LAER Determination
  - Other

**Post Permit Correspondence:**

- Extensions/Amendments/Modifications
- Other

In the folder labeled as follows there are documents, listed below, which were not reproduced in this electronic file. That folder can be found in one of the file drawers labeled Supplementary Documents Drawer. Folders in that drawer are arranged alphabetically, then by permit number.

**Folder Name:** SCM Corporation

**Permit(s) Numbered:**

AC	16	-	045367
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Period during  
which document  
was received:

Detailed Description

Period during which document was received:		Detailed Description
APPLICATION 30 JUNE 1980	1.	13"×28" BLUEPRINT: GLIDDEN-DURKEE ORGANIC CHEMICALS JACKSONVILLE PLANT LOCATION OF REACTORS & JET SYSTEMS AND BULK TANKS (DRAWING NUMBER: 5000-2) DRAWN 9/29/70, REV #8
1 JULY 1981	2.	8.5"×11" BLUEPRINT: TYPICAL REACTOR (DRAWING NUMBER: S-5000-13)
1 JULY 1981	3.	8.5"×11" BLUEPRINT: PLANT LOCATION (DRAWING NUMBER: S-5000-26)

PS Form 3811, Jan. 1978  
RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

**SENDER:** Complete items 1, 2, and 3.  
Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)

Show to whom and date delivered.....¢

Show to whom, date and address of delivery.....¢

RESTRICTED DELIVERY  
Show to whom and date delivered.....¢

RESTRICTED DELIVERY.  
Show to whom, date, and address of delivery \$\_\_\_\_\_

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
James O. Sewell, SCM Corp.  
P. O. Box 389  
Jacksonville, FL 32201

3. ARTICLE DESCRIPTION:

REGISTERED NO.	CERTIFIED NO.	INSURED NO.
	P408530319	

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE  Addressee  Authorized agent

4. DATE OF DELIVERY \_\_\_\_\_ POSTMARK \_\_\_\_\_

5. ADDRESS (Complete only if requested) \_\_\_\_\_

6. UNABLE TO DELIVER BECAUSE \_\_\_\_\_ CLERK'S INITIALS \_\_\_\_\_

GPO : 1978-300-459

P 408 530 319

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to James O. Sewell	
Street and No. P. O. Box 389	
P.O., State and ZIP Code Jacksonville, FL 32201	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date 6/1/83	

PS Form 3800, Feb. 1982

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

May 25, 1983

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

James O. Sewell, Project Engineer  
SCM Corporation  
Organic Chemicals Division  
Post Office Box 389  
Jacksonville, Florida 32301

Dear Mr. Sewell:

The Department is in receipt of your request for an amendment of your construction permit, No. AC 16-45367. This request is acceptable and the condition and expiration date are changed as follows:

**Specific Condition, No. 4**

From:

The maximum solvent input shall be 33,420 pounds/batch.

To:

The maximum solvent input shall not exceed 49,500 pounds/batch.

Expiration Date:

From:

August 1, 1982

To:

August 31, 1983

Attachment:

Mr. James O. Sewell's amendment request letter with enclosures dated April 11, 1983.

James O. Sewell  
May 25, 1983  
Page Two

This letter and attachment must be attached to your permit AC 16-45367, and shall become a part of this permit.

Sincerely,



Victoria J. Tschinkel  
Secretary

VJT/TH/bjm

cc: Northeast District  
Duval County Department of Health, Welfare &  
Bio-Environmental Services

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: Victoria J. Tschinkel, Secretary  
FROM: C. H. Fancy, P.E. *[Signature]*  
DATE: May 25, 1983  
SUBJ: Amendment of SCM Corporation Air Construction Permit  
Number AC 16-45367

The Bureau of Air Quality Management has received a request from SCM Corporation for an amendment to specific condition No. 4 and for an extension to the expiration date of the terpene reactor's air construct permit.

The amendment to specific condition No. 4 was requested because it was found that the reactor could process a larger batch of material in the same period of time than originally specified. No modification will be made to this unit. The annual rate of VOC emissions will remain at 8.0 tons per year.

A "Waiver of 90 Day Time Limit" form was submitted by the applicant which will allow sufficient time for clarification of the above mentioned matter and issuance of the operating permit.

Therefore, we respectfully request that these amendments be granted.

VJT/TH/bjm

Enclosure

"Special format"

changes

condition No 4

from

The maximum solvent input shall  
be 33,420 pound/batch

to

The maximum solvent input shall  
not exceed 49,500 lbs/batch

and

expiration date ?

from August 1, 1982  
August 1, 1983



DEPARTMENT OF ENVIRONMENTAL REGULATION

**ROUTING AND TRANSMITTAL SLIP**

ACTION NO.

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION)

INITIAL

DATE

2.

*Bill Thomas*

INITIAL

DATE

3.

INITIAL

DATE

4.

INITIAL

DATE

REMARKS:

*Bill ?  
- I think the only condition that needs change is condition No 4.*

*- Condition No 3 lists:  
66.1 pounds / batch  
and 8.0 tons / year of VO*

*Please see copy of final permit.  
Conditions No 3 and No 4.*

INFORMATION

REVIEW & RETURN

REVIEW & FILE

INITIAL & FORWARD

DISPOSITION

REVIEW & RESPOND

PREPARE RESPONSE

FOR MY SIGNATURE

FOR YOUR SIGNATURE

LET'S DISCUSS

SET UP MEETING

INVESTIGATE & REPT

INITIAL & FORWARD

DISTRIBUTE

CONCURRENCE

FOR PROCESSING

INITIAL & RETURN

FROM:

*Televa*

DATE

*March 24, 1973*

PHONE

PERMIT NO.: AC 16-45367  
APPLICANT: SCM Corporation

*Preliminary P. Notice*  
*Before P. Notice*

SPECIFIC CONDITIONS:

1. Construction should reasonably conform to the plans submitted in the application.
2. The applicant should report any delays in construction and completion of the proposed reactor to the Department's St. Johns River Sub-district Office.
3. The maximum emission rate of VOC during the processing of one batch shall be:

*changed for #.p.*

- 8.2 pounds/hour through the vacuum system for a period of no more than 6 hours. *49.2 lbs charge*
- 8.3 pounds/hour through the scrubbing system for a period of no more than 30 hours. *= 9 lbs/charge*

The annual rate of VOC emissions shall not exceed 7.1 tons per year.

4. The maximum solvent input shall be 31,800 pounds/batch of recycle solvent and 1,620 pounds/batch of new solvent. *changed 3342 final*
5. The effectiveness of the absorbent in the scrubber shall be checked by gas chromatography analysis prior to each batch charged. *deleted*
6. The applicant will demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit to the St. Johns River Subdistrict prior to 90 days of the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until the expiration date or issuance of an operating permit.

$$\frac{66.1 \text{ lb}}{\text{batch}} \times 36 \frac{\text{hr}}{\text{batch}} \times \frac{8736 \text{ hr}}{\text{yr}} \times \frac{\text{ton}}{2000 \text{ lb}}$$

*Eden*

$$= 8.02 \frac{\text{ton}}{\text{yr}}$$

*Comments after P.N.*

*Final permit*

PERMIT NO.: AC 16-45367  
APPLICANT: SCM Corporation

SPECIFIC CONDITIONS:

1. Construction should reasonably conform to the plans submitted in the application.
2. The applicant should report any delays in construction and completion of the proposed reactor to the Department's St. Johns River Sub-district Office.
3. The maximum emission of VOC during the processing of one batch shall be 66.1 pounds. The annual rate of VOC emissions shall not exceed 8.0 tons per year. *Same*
4. The maximum solvent input shall be 33,420 pounds/batch. *49,500*
5. The applicant will demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit to the St. Johns River Subdistrict prior to 90 days of the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until the expiration date or issuance of an operating permit.

*Issued Nov 19, 198*

*66.1 pound batch*

*at permit expiration date*

*35 + 9 = 64 lb*

$$\frac{64 \text{ pounds}}{\text{batch}} \times \frac{\text{batch}}{36 \text{ hours}} \times \frac{8736 \text{ hours}}{\text{yr}} \times \frac{\text{tons}}{2000 \text{ lb}} = 7.76 \frac{\text{tons}}{\text{yr}}$$

*August 1, 198*

**SCM** **ORGANIC CHEMICALS**  
DIVISION OF SCM CORPORATION

P. O. BOX 389, JACKSONVILLE, FLA. 32201 (904) 764-1711

April 11, 1983

*Bill*  
Department of Environmental Regulations  
Bureau of Air Quality Management  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301

DER  
APR 15 1983  
BAQM

Attention: Mr. C. F. Fancy

Re: AC 16-45367

Dear Sir:

Mr. Jerry E. Woosley's letter of March 30 noted discrepancies between the data supplied on the construction permit and on the operating permit application.

No modification or redesign of the equipment has been made changing the basis of the construction permit. During the startup period we found that we could process larger batches of material in the same period of time. This was the result of a conservative design. We have used this startup time to determine the maximum amount of material that can be processed in a batch and get a better determination of the operating conditions.

The data presented in the operating permit application is based on knowledge obtained in startup. As could be expected for economic reasons, we would like to be able to operate at the most efficient rate.

The increase in hydrocarbon emissions from 6.91 tons/year to 7.14 tons/year does not raise the total emissions to the 15 tons/year level as given in the Emission Cutoff Level 17-2.510 (3)-1-a.

In view of the minor increase of an emission that was small in the construction permit, I am asking that this permit be approved.

Yours very truly,

*James O. Sewell*  
James O. Sewell, P.E.  
Project Engineer

cc: Mr. Jerry Woosley - File 66309

Mr. R. W. Harrell

WAIVER OF 90 DAY TIME LIMIT  
UNDER SECTION 120.60(2), F.S.

Re: License (Permit, Certification) Application No. 66309

Applicant's Name: SCM Corporation

The undersigned has read section 120.60(2), Florida Statutes, and fully understands the Applicant's rights under that section.

With regard to the above referenced license (permit, certification) application, the Applicant hereby with full knowledge and understanding of (his) (her) (its) rights under section 120.60(2), F.S., waives the right under section 120.60(2), F.S., to have the application approved or denied by the State of Florida Department of Environmental Regulation within the 90 day time period prescribed in section 120.60(2), F.S.

Said waiver is made freely and voluntarily by the Applicant, is in (his) (her) (its) self-interest, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Regulation.

This waiver shall expire on the 31 day of August 19 83.

The undersigned is authorized to make this waiver on behalf of the applicant.



Signature

Robert W. Harrell

Name of Signee

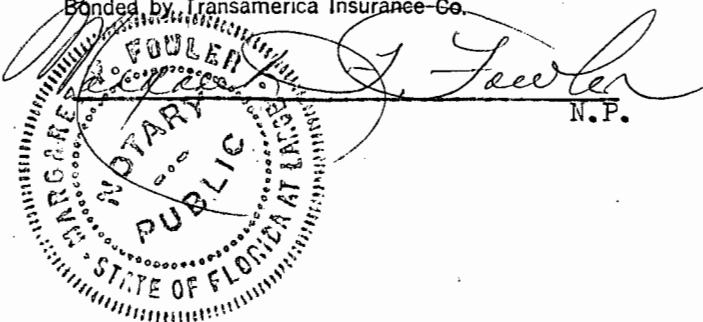
April 14, 1983

Date

Sworn to and subscribed before

me this 14<sup>th</sup> day of April 19 83

Notary Public, State of Florida at Large  
My commission expires May 17, 1983  
Bonded by Transamerica Insurance Co.



~~File in Const.~~

PERMIT FILE

DEPARTMENT OF HEALTH, WELFARE  
& BIO-ENVIRONMENTAL SERVICES  
Bio-Environmental Services Division  
Air and Water Pollution Control

March 30, 1983



Mr. R. W. Harrell  
Manager of Engineering  
SCM Corporation  
P.O. Box 389  
Jacksonville, Florida 32201

DER  
APR 05 1983  
BAQM

Re: LG Reactor  
File #66309

Dear Mr. Harrell:

Receipt of the Operation Permit application for the captioned source is acknowledged. Numerous discrepancies are apparent between the Construction Permit and Operation Permit applications as indicated on the attached sheet. In order to allow for sufficient time to clarify these discrepancies and modify the Construction Permit (if needed), I have enclosed a "Waiver of 90 Day Time Limit" form. Please complete this form and return it to me on or before April 15, 1983. Please provide clarification of the discrepancies on the attached sheet on or before April 30, 1983.

If you have any questions concerning this matter, please advise.

Very truly yours,

Jerry E. Woosley  
Assistant Engineer

JEW/vj  
Enclosure

cc: Mr. Ed Palagyi  
cc: Mr. Doug Dutton - DER

4-5-83  
Told Jim Swell to send letter to Clair Hancy requesting modification of construction permit.



	Construction Permit	Operation Permit Application	Comments
lbs Solvent/ Batch	33,420	49,500 (Section IIIA) 49,426 (Section V)	
lbs VOC Emitted from Vacuum System per charge	48.9	55	
lbs VOC Emitted from Scrubber System per charge (Assume No VOC removal)	17.2	9	
lbs VOC Emitted from Scrubber System per charge (Assume given removal eff.)	(45% removal efficiency) $17.2 \times .55 = 9.46$	(61% removal efficiency) $9 \times .39 = 3.51$	

} 66.1

} 64

WAIVER OF 90 DAY TIME LIMIT

UNDER SECTION 120.60(2), F.S.

Re: License (Permit, Certification) Application No. 66309

Applicant's Name: SCM Corporation

The undersigned has read section 120.60(2), Florida Statutes, and fully understands the Applicant's rights under that section.

With regard to the above referenced license (permit, certification) application, the Applicant hereby with full knowledge and understanding of (his) (her) (its) rights under section 120.60(2), F.S., waives the right under section 120.60(2), F.S., to have the application approved or denied by the State of Florida Department of Environmental Regulation within the 90 day time period prescribed in section 120.60(2), F.S. Said waiver is made freely and voluntarily by the Applicant, is in (his) (her) (its) self-interest, and without any pressure or coercion by anyone employed by the State of Florida Department of Environmental Regulation.

This waiver shall expire on the 31 day of August 19 83.

The undersigned is authorized to make this waiver on behalf of the applicant.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Signee

Sworn to and subscribed before  
me this      day of      19    .

\_\_\_\_\_  
Date



**SCM** **ORGANIC CHEMICALS**  
DIVISION OF SCM CORPORATION

P. O. BOX 389, JACKSONVILLE, FLA. 32201 (904) 764-1711

November 6, 1981

Mr. William Thomas  
Department of Environmental Regulations  
Bureau of Air Quality Management  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Re: AC 16-45367

Dear Mr. Thomas:

This letter is referenced to C. H. Fancy's memorandum dated October 18, 1981 on "Preliminary Determination - SCM Corporation/Organic Chemicals Division, Application to Construct a Terpene Reactor".

SCM objects to items 3, 4, and 5 as written in the specific conditions section on page 3 of the permit certification.

The process planned for this reactor has not been operated in a batch this size. The flow sheet is our best estimate of the times and operations for an average batch. In organic chemistry, reaction times are very sensitive to both feed quality and to catalyst quality. The feed, which we will produce, will not be uniform in quality and the catalyst, which we will purchase, will not be exactly uniform in activity. SCM contends that as operators of the reaction the time should be at our discession in order to obtain the best quality of product. We are willing to accept the weight of emissions per batch as given in my letter of August 20, 1981 and the annual rate of 7.1 tons/year as given in item 3.

We are requesting that item 3 be rewritten to read as follows:

"The maximum annual rate of VOC emissions shall not exceed 7.1 tons per year."

"The maximum emissions per batch shall be 48.9 pounds from the vacuum system and 17.2 pounds from the scrubbing system, for a total of 66.1 pounds per batch."



Page -2-  
November 6, 1981  
Mr. William Thomas

Item 4 of the specific conditions set a fixed amount of recycle solvent and new solvent. SCM contends that as operators of the reaction the use of recycle or new solvent is their prerogative and will not change the emissions of VOC. The use of the recycle is purely economic, however, if the recycle will not produce the quality of product required, the owner has the right to use all new solvent or any proportion of new plus recycle.

SCM is requesting that item 4 be rewritten as follows:

"The maximum solvent input shall be 33,420 pounds/batch."

Item 5 requires the absorbent in the scrubber to be checked prior to the start of each batch.

The last operation of the batch cycle returns all the water from the water tank and from the scrubber to the reactor leaving no absorbent to test.

The water used in the scrubber is freshly distilled water from the reactor removed at the start of step 1. At the end of step 1 we have estimated that 80% of this water will be returned to the process in the reactor and the balance of the water will be circulated through the scrubber during step 2. At the end of step 2 all of the water in the scrubbing system is to be returned to the reactor for use in the next batch.


My letter of August 20, 1981 shows the emission of 17.2 pounds of hydrocarbons per batch leaving the reactor and going through the scrubber with no removal. The reason for scrubbing is to remove ammonia. The removal of hydrocarbons, if any, will be an added benefit. Test work in our research has shown that the freshly distilled water contains about 5% hydrocarbons. The maximum solubility is 8.5% so there is reason to believe that part of this 17.2 pounds hydrocarbon will be removed in the scrubber.

It is SCM's contention that since the scrubber is not counted upon to remove hydrocarbons there is no reason for testing the water which, incidentally, could be tested just as validly by TOC as by gc.

I would appreciate acknowledgement of your decision of these three items before the permit is issued if it can be done without delaying the issuing of the permit.

If there are any questions, please call me.

Yours very truly,



James O. Sewell, P.E.  
Project Engineer

JOS:mcb

cc: R. W. Harrell

BEST AVAILABLE COPY

Jacksonville Journal

FLORIDA PUBLISHING COMPANY

Publishers

JACKSONVILLE, DUVAL COUNTY, FLORIDA

STATE OF FLORIDA }
COUNTY OF DUVAL }

Before the undersigned authority personally appeared \_\_\_\_\_

John R. Mayo \_\_\_\_\_ who on oath says that he is

Retail Advertising Manager \_\_\_\_\_ of The Florida Times-Union, and

Jacksonville Journal, daily newspapers published at Jacksonville in Duval County,

Florida; that the attached copy of advertisement, being a \_\_\_\_\_

Legal Notice

in the matter of \_\_\_\_\_ Application for a construction - Permit to SCM

Corporation.

in the \_\_\_\_\_ Court,

was published in \_\_\_\_\_ The Florida Times- Union

in the issues of \_\_\_\_\_ October 20, 1981

Affiant further says that the said The Florida Times-Union and Jacksonville Journal are each newspapers published at Jacksonville, in said Duval County, Florida, and that the said newspapers have each heretofore been continuously published in said Duval County, Florida, The Florida Times-Union each day, and Jacksonville Journal each day except Sundays, and each has been entered as second class mail matter at the postoffice in Jacksonville, in said Duval 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 said newspaper.

Sworn to and subscribed before me
this 20th day of
October 1981

Notary Public
State of Florida at Large.

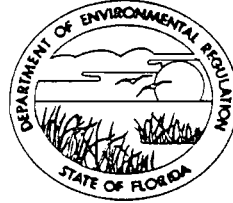
John R Mayo

My Commission Expires
Notary Public, State of Florida at Large
My Commission Expires July 9, 1982

PROPOSED AGENCY ACTION
The Florida Department of Environmental Regulation (DER) has received an application from and intends to issue a Construction Permit to SCM Corporation-Organic Chemicals Division for the construction of a ferrocene reactor to be located at their plant in Jacksonville, Duval County, Florida. A Determination of Best Available Control Technology was required. Copies of the Applications, Technical Evaluation, and Departmental Intent are available for inspection at the following offices:
FDER, St. Johns River Subdistrict
3426 Billis Road
Jacksonville, Florida 32207
DER, Bureau of Air Quality Management
2600 Blair Stone Rd.
Tallahassee, FL 32301
Duval County Department of Health, Welfare & Bio-Env. Services
515 West 6th Street
Jacksonville, FL 32206
Comments on this action shall be submitted in writing to Bill Thomas of the Tallahassee Office, within 30 days of this notice.



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

*F. H. G.*

FL. TIMES UNION  
1 RIVERSIDE DR  
JACKSONVILLE, FL 32202

10-13-81

Dear Sir:

We are forwarding to you a legal/~~classified~~ advertisement to be published:

SUNDAY OCT. 18, 1981

Subject: CONSTRUCTION PERMIT

To ensure prompt payment, please send an invoice and proof of publication for legal ads to the address below:

Department of Environmental Regulation  
PURCHASING OFFICE  
2600 Blair Stone Road  
Tallahassee, FL 32301

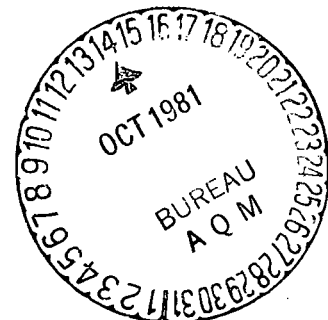
If you have any questions, please contact us at 904/488/0870.

Sincerely,

*William H. Wallace*

William H. Wallace  
Purchasing Office

Enclosure: (1)



PROPOSED AGENCY ACTION

The Florida Department of Environmental Regulation (DER) has received an application from and intends to issue a Construction Permit to SCM Corporation-Organic Chemicals Division for the construction of a terpene reactor to be located at their plant in Jacksonville, Duval County, Florida. A Determination of Best Available Control Technology was required. Copies of the Applications, Technical Evaluation, and Departmental Intent are available for inspection at the following offices:

FDER, St. Johns River Subdistrict  
3426 Bills Road  
Jacksonville, Florida 32207

DER, Bureau of Air Quality  
Management  
2600 Blair Stone Rd.  
Tallahassee, Fl 32301

Duval County Department of Health,  
Welfare & Bio-Env. Services  
515 West 6th Street  
Jacksonville, Fl 32206

Comments on this action shall be submitted in writing to Bill Thomas of the Tallahassee Office, within 30 days of this notice.

To appear in: Florida Times-  
Union on 10-18-81

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

MEMORANDUM

TO: R. W. Harrel, SCM Corporation  
James O. Sewell, SCM Corporation  
Steve Pace, Duval County Bio-Environmental Services  
Johnny Cole, FDER, St. Johns River Subdistrict

FROM: C. H. Fancy, Deputy Chief, Bureau of Air Quality  
Management

DATE: October 18, 1981

SUBJ: Preliminary Determination - SCM Corporation/Organic  
Chemicals Division Application to Construct a Ter-  
pene Reactor (AC 16-45367)

Attached is one copy of the application, Technical Evaluation and Preliminary Determination, and proposed permit to construct a terpene reactor at the SCM facility in Jacksonville, Duval County, Florida.

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

CF/TP/bjm

Attachment

Technical Evaluation  
and  
Preliminary Determination

SCM Corporation/Organic Chemicals Division  
Duval County, Florida

Terpene Reactor

Application Number:  
AC 16-45367

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

October 18, 1981

PUBLIC NOTICE

The Department intends to issue a permit to the SCM Corporation/Organic Chemicals Division for the construction of a terpene reactor at the applicant's facility in Jacksonville, Duval County, Florida. The permit 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. Bill Thomas  
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 this permit may request an administrative hearing by filing a petition as set forth in Section 28-5.15 F.A.C. within fourteen days of the date of this notice with:

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



## I. PROJECT DESCRIPTION

### A. Applicant

SCM Corporation/Organic Chemicals Division  
P. O. Box 389  
Jacksonville, Florida 32201

### B. Project and Location

The applicant proposes to construct a terpene reactor at the SCM plant on West 61st Street in Jacksonville, Duval County, Florida.

UTM coordinates are 743.56 km East and 3360.75 North.

### C. Process and Controls

This will be a batch process, to be run every 36 hours on a continuing schedule year-round.

Raw terpenes, solvent, acid and catalyst are first put in the reactor. The water is heated, removed by vacuum condensation, stripped and saved. Light hydrocarbon by-product is also stripped off at this stage and stored. This initial step lasts 6 hours.

The next step in the reaction occurs after the reactor is cooled to 90° F, the recovered water is returned to the reactor and ammonia is added. The water layer is separated, filtered to remove the catalyst, and saved for recycle to step 1. The remaining contents are heated again to evaporate the remaining water to a scrubber (Croll-Reynolds Model No. 44) which removes about 45% of the soluble solvent. Terpene oils are then cooled and sent to storage as product. The attached addendums to the application should be referred to for a more detailed description of the process.

## II. RULE APPLICABILITY

The only criteria pollutant to be emitted from the reactor will be the solvent, classified as a Volatile Organic Compound (VOC) by definition in Chapter 17-2, Florida Administrative Code (FAC).

The proposed source will be located in the Duval County ozone nonattainment area. VOC pollutants are precursors to ozone and are therefore controlled under the rules of 17-2.17 FAC, New Source Review (NSR) for Nonattainment Areas. Since the proposed potential emissions are greater than 5 pounds per hour, but less than 100 pounds per hour and 50 tons per year, according to Table II, 17-2.17 (3), the source shall be exempt from the provisions of 17-2.17 (5) through (7) and

shall be permitted in accordance with the standards of 17-2.17 (4), which in the absence of any applicable New Source Performance Standard, calls for "any applicable emission limiting standard in 17-2.05 or 17-2.16, whichever is more restrictive. There is no applicable standard in 17-2.16, therefore the source should be permitted through 17-2.05 (5) which prohibits use of organic solvents "without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department."

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

#### A. Emission Limitations

Considering the low level of emissions - a maximum of 8.2 pounds/hour from the vacuum step and a maximum total of 7.1 tons per year overall - the Bureau feels that use of the scrubber and materials balance limits will adequately limit VOC emissions.

#### B. Air Quality Analysis

An air quality analysis is not necessary under the applicable regulations for this source.

### IV. CONCLUSIONS

The emission limits proposed by the applicant have been determined to be in compliance with all applicable requirements of Chapter 17-2. Monitoring of the scrubber water and limiting of the process materials will ensure that VOC emissions will not exceed 7.1 tons per year.

The applicant has requested that the information contained in their response to the Bureau's Letter of Incompleteness remain confidential. Therefore, a copy of this letter is not attached to the Preliminary Determination for public review.

The General and Specific Conditions are listed in the Proposed Permit.

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



BOB GRAHAM  
GOVERNOR

Victoria J. Tschinkel  
SECRETARY

STATE OF FLORIDA

## DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: SCM Corporation  
Organic Chemicals Division  
P. O. Box 389  
Jacksonville, Florida 32201

PERMIT/CERTIFICATION  
NO. AC 16-45367

COUNTY: Duval

PROJECT: Terpene Reactor

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 terpene reactor, to be located at the foot of West 61st Street in Jacksonville, Duval County, Florida. The UTM coordinates of the proposed source are 743.6 km East and 3360.8 km North.

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. Letter of Incompleteness from Steve Smallwood to applicant, dated July 28, 1981.

PERMIT NO.: AC 16-45367  
APPLICANT: SCM Corporation

**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 16-45367  
APPLICANT: SCM Corporation

**SPECIFIC CONDITIONS:**

1. Construction should reasonably conform to the plans submitted in the application.
2. The applicant should report any delays in construction and completion of the proposed reactor to the Department's St. Johns River Sub-district Office.
3. The maximum emission rate of VOC during the processing of one batch shall be:

8.2 pounds/hour through the vacuum system for a period of no more than 6 hours.

.3 pounds/hour through the scrubbing system for a period of no more than 30 hours.

The annual rate of VOC emissions shall not exceed 7.1 tons per year.

4. The maximum solvent input shall be 31,800 pounds/batch of recycle solvent and 1,620 pounds/batch of new solvent.
5. The effectiveness of the absorbent in the scrubber shall be checked by gas chromatography analysis prior to each batch charged.
6. The applicant will demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit to the St. Johns River Subdistrict prior to 90 days of the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until the expiration date or issuance of an operating permit.

PERMIT NO.: AC16- 45367  
APPLICANT: SCM Corporation

Expiration Date: August 1, 1982

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

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

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

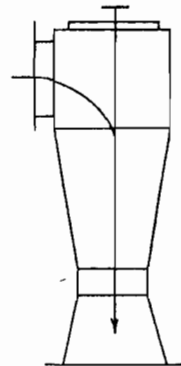
\_\_\_\_\_  
Signature

PAGE \_\_\_\_\_ OF \_\_\_\_\_.

AIR POLLUTION CONTROL

FUME SCRUBBERS  
PACKED TOWERS  
VENTURI SCRUBBERS  
SPECIAL UNITS

SAVE



**CROLL-REYNOLDS COMPANY, INC.**  
CHEMICAL & MECHANICAL ENGINEERS  
751 CENTRAL AVENUE  
P. O. BOX 668  
WESTFIELD, N. J. 07091

TEL. 201-232-4200  
N.Y. PHONE 212-964-5784  
TWX NO. 710-987-9642

August 10, 1981

W. J. S.  
AUG 13 1981

SCM Corporation  
P. O. Box 389  
Jacksonville, FL 32208

Attention: Mr. W. J. Somora, Project Engineer

Subject: Your Order No. 2003-16274  
Croll-Reynolds No. 56847

Dear Mr. Somora:

Per your request by telephone on August 4, 1981, we have revised the performance data section for the scrubber ordered on the above noted purchase order.

Because of the increase in temperature from ambient to 122°F on the water and air inlet, the amount of ammonia that can be absorbed is reduced to approximately 60%. In our calculations, we had found that we were possibly a bit too conservative the last time on isobutyl alcohol and that as a result, even @122°F, we should still get approximately 50% removal.

Please let us know if there are any questions.

Very truly yours,

CROLL-REYNOLDS CO., INC.

R. J. Chironna

RJC:km  
Encl.

cc: George S. Edwards Co., Inc.



DESIGNERS AND MANUFACTURERS SINCE 1917

WATER JET VACUUM  
PUMPS & CONDENSERS  
BAROMETRIC CONDENSERS  
SYPHONS & JET PUMPS

CROLL-REYNOLDS FUME SCRUBBER SYSTEM - DATA SHEET

To: SCM Corporation Serial No. 56847  
P. O. Box 389 Cust. P.O. No. 2003-16274  
Jacksonville, FL 32208 Quantity One  
Attn: Mr. W. J. Somora, P.E. Model No. 44  
 Net price per system \$1220 F.O.B. Shops   
 Terms of Payment: Net 30 Days Buffalo, New York area   
 Quotation valid for 30 days from proposal date. Teterboro, New Jersey area   
 Estimated delivery 14-16 wks. after drawing approval. Weeks for drawings 1-2 Item in stock, delivery      wks. after receipt of order.

**EQUIPMENT DATA**  
 Gas inlet/outlet 4" / 4"  
 Scrubbing liquid inlet 1-1/2"  
 Separator tank Not Included  Included   
 Tank diameter      Tank height       
 Liquid storage YES  NO  Capacity      Gal.  
 Tank connections: Drain     , Fill      Overflow       
 Manway       
 Separator type       
 Other     

**MATERIALS OF CONSTRUCTION:**  

ITEM	MATERIAL
Jet Scrubber	FRP-Atlac #382 Resin
Spinner	Kynar

**APPROXIMATE WEIGHT**  
 Shipping 25# 's Operating 25# 's

**CONSTRUCTION DESIGN**  
 In general accordance with:  
 PS 15-69   
 ASME Code   
 ASME Code Stamped   
 or vessel designed for pressure/vacuum Flooded / -  
 Wall thicknesses 3/16" Minimum  
 Head Thicknesses Bottom/Top - / -  
 Hold down lugs  Included  Not Included  
 Lifting lugs  Included  Not Included

**OPERATING CONDITIONS**  
 Gas inlet rate capacity 225 acfm  
 Gas inlet temp. 122°F  
 Press. Atmospheric  
 Gas composition Air Containing Unknown  
**Quantities of Ammonia & Isobutyl Alcohol**  
 Liquid inlet rate 20 gpm  
 Pressure at liquid inlet 40 psig  
 x specific gravity       
 Liquid composition Water Once Through  
 Max. liquid temp. 122°F  
 Draft across system zero in.W.G.

**PERFORMANCE DATA (Typical)**  
60% Removal efficiency of Ammonia  
50% Removal efficiency of Isobutyl Alcohol  
     % Removal efficiency of       
     % Removal efficiency of       
 Based upon above operating conditions

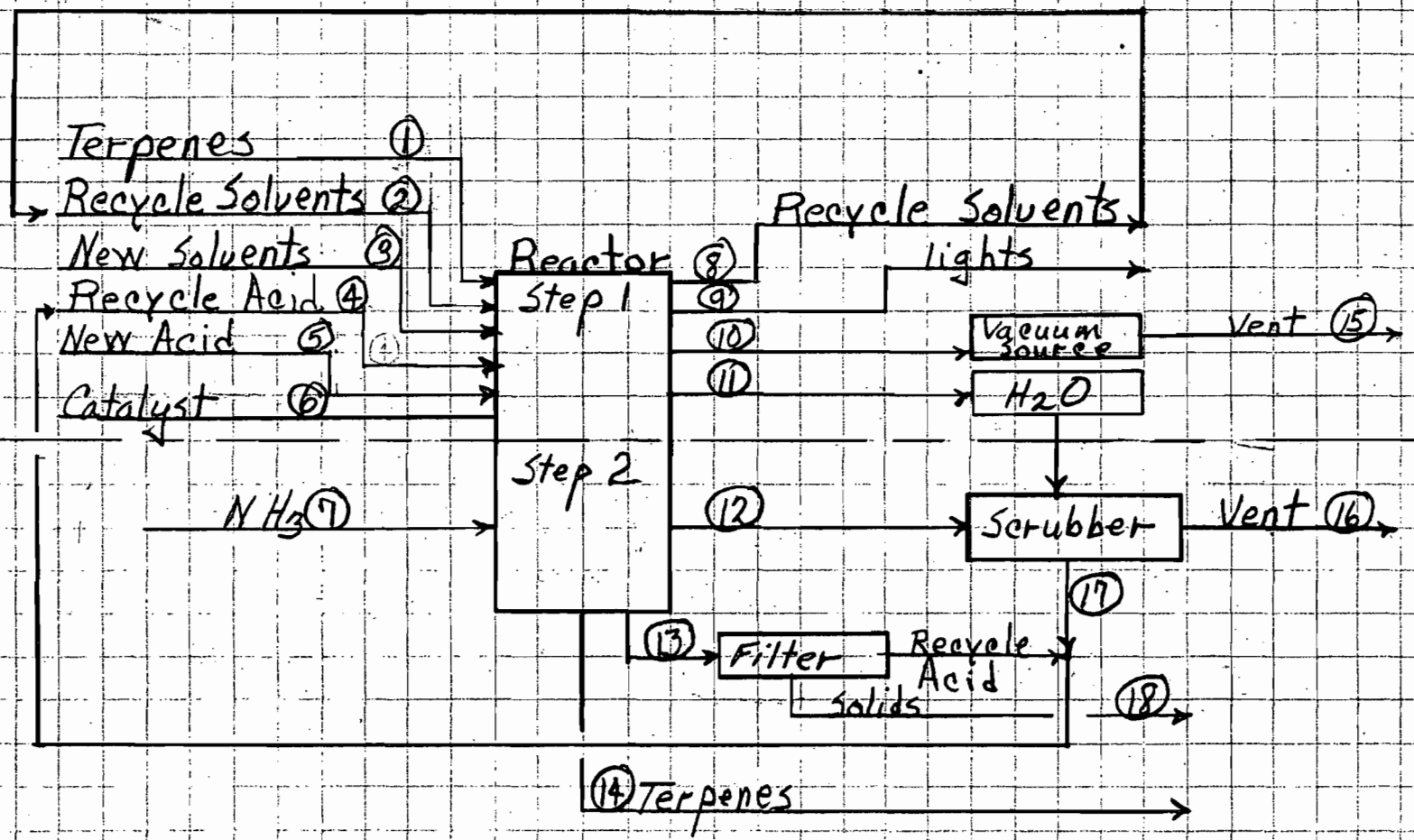
**COMMENTS:**  
 Since Croll-Reynolds Co. has no control over the mixture or concentration of corrosive elements which may come in contact with the equipment supplied, no guarantee is expressed or implied concerning materials of construction for corrosion resistance.  
 Customer should make every effort to assure suitability prior to purchase.



CHECKED BY J.O. Sewell

DATE 6-15-81

SUBJECT Construction Permit Application



$$VP = nRT$$

$$P = \frac{nRT}{V} = \frac{\left(\frac{\text{mass}}{\text{mw}}\right)RT}{V}$$

$$\text{mass} = \frac{(P)(V)(\text{mw.})}{(R)(T)}$$

185  
197  
- Dept

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

May 28, 1981

Mr. David Schofield  
Central Florida Pipeline Corporation  
120 South Riverside Plaza  
Chicago, Illinois 60606

Dear Mr. Schofield:

Application No. AC 48-42931, for the construction of a tank truck loading rack at the existing facility of Central Florida Pipeline Corporation has been found to be incomplete by the Department. The areas of incompleteness are described below.

1. The throughput of petroleum products through the proposed rack must be specified since the emissions are directly related to the transfer of the product. This could be estimated on a yearly average with the inclusion of a maximum hourly rate.
2. In Section V of the application, Supplemental Requirements, a description of the control device is required including the design criteria with a derivation of its efficiency. Although the Department has previous permits for this facility, it must be documented that the control equipment capacity will not be exceeded.
3. In the Best Available Control Technology (BACT) section of the application, it is stated that the technology selected is a vapor recovery system with an efficiency of 97.2% or 30 mg/liter. The emissions projected on page 3 of the application (Section III) shows only a 90% efficiency or 80 mg/liter. A previous construction permit (AC 48-2560) for the tank truck rack vapor recovery system included a manufacturer's guarantee of an emission level of 35 mg/liter. In accordance with 17-4.22(2), this guarantee should become part of the permit. Section 17-4.23(4)(b) requires that the control equipment be maintained properly in order to insure the continued operation of the control equipment at the guaranteed level. A substantiation of why the actual emissions should be greater than what the manufacturer's guarantee states is necessary.

Process Description

Step 1. All emissions from this step are vented through the vacuum system.

The materials itemized (1) through (6) are put into the reactor. The contents are heated to remove the water by vaporization. The water vapors are condensed and saved. The light hydrocarbons are then stripped off condensed, and sent to storage.

Step 2. All emissions from this step are vented through the scrubber.

The reactor is cooled to 90° and the recovered water returned to the reactor. Ammonia is added to the reactor. The water layer is settled away from the terpene, filtered to remove the catalyst, and recycled as used acid to Step 1. The remaining contents are heated to 100° to evaporate the remaining water to the scrubber. The oils are then cooled and sent to storage as product.

PROPOSAL

CROLL-REYNOLDS FUME SCRUBBER SYSTEM

To: SCM Organic Chemicals
P.O. Box 389
Jacksonville, FL 32201
Attn: Mr. W. J. Somora, Proj.Engr.

Ref. No.: 10515
Cust. Inquiry No.: Item R-9-J-1
Quantity: One
Model No.: 44

NET PRICE PER SYSTEM: \$1220

Terms of Payment: Net 30 Days Quotation valid for 30 days from proposal date.

Estimated delivery 14-16 wks. after drawing approval. Weeks for drawings 1-2

Deliveries are quoted based on standard shop schedules at the time of quote. Special delivery requirements may be accommodated on an individual basis.

EQUIPMENT DATA

Gas Inlet/Outlet: 4" / 4"
Scrubbing Liquid Inlet: 1-1/2"
Separator Tank Not Included [X] Included [ ]
Tank Diameter: Tank Height:
Liquid Storage YES [ ] NO [ ] Capacity Gallons
Tank Connections: Drain, Fill, Overflow
Manway:
Separator Type:
Other:

MATERIALS OF CONSTRUCTION:

Table with 2 columns: ITEM, MATERIAL. Rows include Jet Scrubber (FRP-Atlac #382 Resin) and Spinner (Kynar).

APPROXIMATE WEIGHT

Shipping: 25#'s Operating: 25#'s

CONSTRUCTION DESIGN

In general accordance with:

- PS 15-69 [X]
ASME Code [ ]
ASME Code Stamped [ ]

or vessel designed for pressure/vacuum Flooded / -

Wall Thicknesses: 3/16" Minimum

Head Thicknesses Bottom/Top - / -

- Hold down lugs [ ] Included [X] Not Included
Lifting lugs [ ] Included [X] Not Included

OPERATING CONDITIONS

Gas Inlet Rate Capacity: 225 acfm
Gal Inlet Temp: Assumed Ambient
Press: Atmospheric
Gas Composition: Air Containing Unknown
Quantities of Ammonia & Isobutyl Alcohol
Liquid Inlet Rate: 20 gpm
Pressure At Liquid Inlet: 40 psig
x Specific Gravity:
Liquid Composition: Water Once Through
Max. Liquid Temp.: Assumed Ambient

Draft Across System: zero Inch(es) W.G.

PERFORMANCE DATA (Typical)

95% Removal efficiency of Ammonia
40-50% Removal efficiency of Isobutyl Alcohol
% Removal efficiency of
% Removal efficiency of

Based upon above operating conditions

COMMENTS:

Since Croll-Reynolds Co. has no control over the mixture or concentration of corrosive elements which may come in contact with the equipment supplied, no guarantee is expressed or implied concerning materials of construction for corrosion resistance.

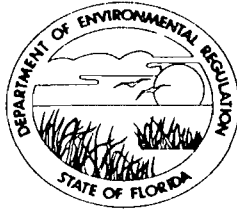
Customer should make every effort to assure suitability prior to purchase.

Est.Frgt Charges for UPS Surface Shipment: \$6

No sales tax is included in the quoted price.

Proposal by Date

## DEPARTMENT OF ENVIRONMENTAL REGULATION

BOB GRAHAM  
GOVERNORVICTORIA J. TSCHINKEL  
SECRETARYTWIN TOWERS OFFICE BUILDING  
600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301

July 28, 1981

James O. Sewell  
SCM Corporation  
Organic Chemicals Division  
P. O. Box 389  
Jacksonville, Florida 32201

Dear Mr. Sewell:

RE: Application No. AC 16-45367 to Construct Terpene Reactor  
as Air Pollution Source.

Your company's application to construct a terpene reactor, originally submitted to Jacksonville Bio-Environmental Services on June 30, 1981, and since transferred to the Bureau of Air Quality Management/DER in Tallahassee, has been determined incomplete as submitted. The following is a list of questions in reference to additional material deemed necessary to determine compliance with Section 17-2, F.A.C.

- (1) Section II, Part B of the application states initiation of construction during July, 1981. Considering the required public notice of 30 days, in addition to the time involved for technical review by the Department, authority to construct would have been impossible to grant even if the application had been determined complete as originally submitted.

Start of construction is prohibited before the air construction permit has been issued.

- (2) For Section III, Part C, the emission estimate of 66.1 pounds per hour must be derived from supporting data, such as vapor pressure of the proposed solvent mixture and the periods of time the charge gases are vented to the atmosphere through the vacuum and scrubber vents.

Mr. Sewell  
July  
Page Two

- (3) Addendum No. 2 states a scrubber gas temperature of 122<sup>o</sup>F, whereas the manufacturer's specifications indicates ambient temperature and pressure. Please provide the true temperature of the vapors entering the scrubber and the temperature of the scrubbing medium. If they are significantly higher than ambient, please verify the manufacturer's efficiency guarantee at the higher temperature.
- (4) Is the scrubber water clean and used once through only? If not, explain the proposed method of monitoring the solvent content of recycled scrubber water. Please indicate the solubility of the emitted solvents with water.
- (5) Concerning the materials balance chart submitted, the summation of light hydrocarbons indicates about 2200 pounds more light hydrocarbons as product (and emissions) than was introduced as raw material. The same is true for the terpene material balance, but with the deficiency on the product end (again by about 2200 pounds). Please explain or clarify these discrepancies.

Any information that you would consider confidential is for Department use only, however, we need the additional data for emission calculations.

Please feel free to call or write if we may be of further assistance.

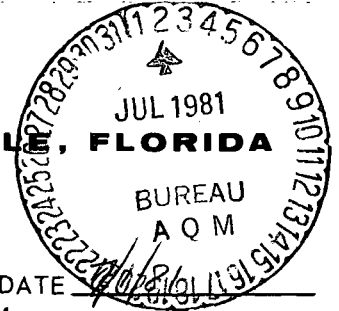
Sincerely,

Steve Smallwood, Chief  
Bureau of Air Quality Management

SS:TP:dav

cc: Steve Pace  
Johnny Cole

CONSOLIDATED CITY OF JACKSONVILLE, FLORIDA



Tim OFFICE MEMO

- o TO BAQM/BEI2 - Carl Beck & Clairfancy
- o FROM Ed Balducci
- o SUBJECT SCM Corporation - Organic Chemicals Division

Enclosed are copies of a construction permit application for a #16 Chemical Reactor. The emissions (VOC) are above ~~15 lb/hr~~ and 5 T/yr. The \$20 check was sent to the Sub District office, but I contacted them and they will forward it to you. The following information was obtained from Mr. Sewell by telephone on this date.

Sec III.C. - The Actual & Potential emissions were derived from their design engineers (calculations not enclosed). The hourly emissions are equal because the scrubber system removed mostly NH<sub>3</sub> and not VOC. 66.1 lb/hr should be 1 lb/kg which is  $\frac{66.1 \text{ lb}}{36.5 \text{ hr}} = 1.81 \text{ lb/hr}$

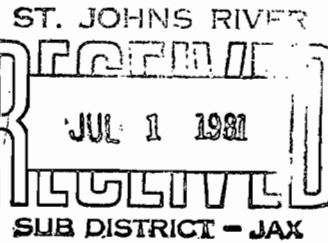
Sec IV.D - hydrocarbon removal efficiency is given at 45% for solvents, the manuf. specs show 40-50% removal of isobutyl alcohol. Mr. Sewell indicated that isobut. alch. is the major solvent but did not know what % of total it represented. Alcohol is not the only solvent used. (over)

REPLY REQUESTED

~~(over)~~

I have kept 1 copy for our files





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

SOURCE TYPE: Chemical Reactor [X] New [ ] Existing
APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification
COMPANY NAME: SCM Corporation Organic Chemicals Div. COUNTY: Duval
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) Chemical Reactor - #LG
SOURCE LOCATION: Street Foot of W. 61st Street City Jacksonville,
UTM: East 7435600 North 3360750
Latitude 30 o 22 ' 45 "N Longitude 81 o 39 ' 50 "W
APPLICANT NAME AND TITLE: R. W. Harrell, Manager of Engineering
APPLICANT ADDRESS: P. O. Box 389, Jacksonville, Florida, 32201

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of SCM Corporation, Organic Chemicals Div.

I certify that the statements made in this application for a Construction 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.

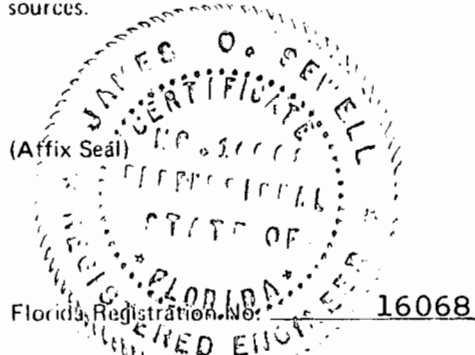
\*Attach letter of authorization

Signed: [Signature]
R. W. Harrell, Manager of Engineering
Name and Title (Please Type)
Date: 6-25-81 Telephone No. (904)-764-1711

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: [Signature]
James O. Sewell
Name (Please Type)
SCM Corporation-Organic Chemicals Div.
Company Name (Please Type)
P. O. Box 389, Jacksonville, Fla., 32201
Mailing Address (Please Type)
Date: 6-25-81 Telephone No. (904)-764-1711



1See 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.  
This is a sealed reactor for use in processing terpenes.

B. Schedule of project covered in this application (Construction Permit Application Only)  
 Start of Construction July, 1981 Completion of Construction April, 1982

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.)  
Jet - \$1200  
Pump-\$2400  
Tank - Surplus at Owners Plant

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.  
None

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 52 ; 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) N/A

- |   |            |
|---|------------|
| 1. Is this source in a non-attainment area for a particular pollutant?  | <u>Yes</u> |
| a. If yes, has "offset" been applied?   | <u>No</u>  |
| b. If yes, has "Lowest Achievable Emission Rate" been applied?  | <u>No</u>  |
| c. If yes, list non-attainment pollutants.  |            |
| <u>Hydrocarbons</u>   |            |
| 2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.  | <u>No</u>  |
| 3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. | <u>No</u>  |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?  | <u>No</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		
Terpene Oils	VOC	100	932	(1)
Solvents	VOC	100	916	(2) & (3)

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

1. Total Process Input Rate (lbs/hr): 932

2. Product Weight (lbs/hr): 897

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	
Hydrocarbons	66.1	6.91	100lb/hr. 50T/Yr	N/A	66.1	7.93	(15) & (16)

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> )
Croll-Reynolds	Ammonia	95% of NH <sub>3</sub>	N/A	Mfg. Data
	Hydrocarbons	45% Solvent	N/A	Sheet *

<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

E. Fuels None

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 N/A Maximum \_\_\_\_\_

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

Solid waste-spent catalyst - To be returned to manufacturer

Light Hydrocarbons - To be burned as fuel

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack): See Addendum No. 2

Stack Height: \_\_\_\_\_ ft. Stack Diameter: \_\_\_\_\_ ft.

Gas Flow Rate: \_\_\_\_\_ ACFM Gas Exit Temperature: \_\_\_\_\_ °F.

Water Vapor Content: \_\_\_\_\_ % Velocity: \_\_\_\_\_ FPS

**SECTION IV: INCINERATOR INFORMATION - N/A**

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. \_\_\_\_\_

	Volume (ft) <sup>3</sup>	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: \_\_\_\_\_ ft. Stack Diameter \_\_\_\_\_ Stack Temp. \_\_\_\_\_

Gas Flow Rate: \_\_\_\_\_ ACFM \_\_\_\_\_ DSCFM\* Velocity \_\_\_\_\_ FPS

\*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device:  Cyclone  Wet Scrubber  Afterburner  Other (specify) \_\_\_\_\_

Brief description of operating characteristics of control devices: \_\_\_\_\_

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Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

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### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- 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**

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:  | 6. Operating Costs:  |
| 3. Efficiency: *          | 8. Maintenance Cost: |
| 5. Useful Life:           |                      |
| 7. Energy:                |                      |
| 9. Emissions:             |                      |

Contaminant	Rate or Concentration

\*Explain method of determining D 3 above.

10. Stack Parameters

- a. Height: \_\_\_\_\_ ft.
- b. Diameter: \_\_\_\_\_ ft.
- c. Flow Rate: \_\_\_\_\_ ACFM
- d. Temperature: \_\_\_\_\_ °F
- e. Velocity: \_\_\_\_\_ FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

- a. Control Device: \_\_\_\_\_
- b. Operating Principles: \_\_\_\_\_
- c. Efficiency\*: \_\_\_\_\_
- d. Capital Cost: \_\_\_\_\_
- e. Useful Life: \_\_\_\_\_
- f. Operating Cost: \_\_\_\_\_
- g. Energy\*\*\*: \_\_\_\_\_
- h. Maintenance Cost: \_\_\_\_\_
- i. Availability of construction materials and process chemicals: \_\_\_\_\_
- j. Applicability to manufacturing processes: \_\_\_\_\_
- k. Ability to construct with control device, install in available space, and operate within proposed levels: \_\_\_\_\_

2.

- a. Control Device: \_\_\_\_\_
- b. Operating Principles: \_\_\_\_\_
- c. Efficiency\*: \_\_\_\_\_
- d. Capital Cost: \_\_\_\_\_
- e. Useful Life: \_\_\_\_\_
- f. Operating Cost: \_\_\_\_\_
- g. Energy\*\*\*: \_\_\_\_\_
- h. Maintenance Costs: \_\_\_\_\_
- i. Availability of construction materials and process chemicals: \_\_\_\_\_
- j. Applicability to manufacturing processes: \_\_\_\_\_
- k. Ability to construct with control device, install in available space, and operate within proposed levels: \_\_\_\_\_

\*Explain method of determining efficiency. \_\_\_\_\_

\*\*Energy to be reported in units of electrical power — KWH design rate. \_\_\_\_\_

3.

- a. Control Device: \_\_\_\_\_
- b. Operating Principles: \_\_\_\_\_
- c. Efficiency\*: \_\_\_\_\_
- d. Capital Cost: \_\_\_\_\_
- e. Life: \_\_\_\_\_
- f. Operating Cost: \_\_\_\_\_
- g. Energy: \_\_\_\_\_
- h. Maintenance Cost: \_\_\_\_\_

\*Explain method of determining efficiency above. \_\_\_\_\_

- i. Availability of construction materials and process chemicals:
  - j. Applicability to manufacturing processes:
  - k. Ability to construct with control device, install in available space and operate within proposed levels:
- 4.
- a. Control Device
  - b. Operating Principles:
  - c. Efficiency\*:
  - d. Capital Cost:
  - e. Life:
  - f. Operating Cost:
  - g. Energy:
  - h. Maintenance Cost:
  - i. Availability of construction materials and process chemicals:
  - j. Applicability to manufacturing processes:
  - k. Ability to construct with control device, install in available space, and operate within proposed levels:

**F. Describe the control technology selected:**

- 1. Control Device:
- 2. Efficiency\*:
- 3. Capital Cost:
- 4. Life:
- 5. Operating Cost:
- 6. Energy:
- 7. Maintenance Cost:
- 8. Manufacturer:
- 9. Other locations where employed on similar processes:

a.

- (1) Company:
- (2) Mailing Address:
- (3) City:
- (4) State:
- (5) Environmental Manager:
- (6) Telephone No.:

\* Explain method of determining efficiency above:

(7) Emissions\*:

Contaminant	Rate or Concentration

(8) Process Rate\*:

b.

- (1) Company:
- (2) Mailing Address:
- (3) City:
- (4) State:

\* Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.



(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions\*:

Contaminant

Rate or Concentration

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(8) Process Rate\*:

0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 4.0 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8 4.9 5.0 5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 6.0 6.1 6.2 6.3 6.4 6.5 6.6 6.7 6.8 6.9 7.0 7.1 7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9 8.0 8.1 8.2 8.3 8.4 8.5 8.6 8.7 8.8 8.9 9.0 9.1 9.2 9.3 9.4 9.5 9.6 9.7 9.8 9.9 10.0

0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 4.0 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8 4.9 5.0 5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 6.0 6.1 6.2 6.3 6.4 6.5 6.6 6.7 6.8 6.9 7.0 7.1 7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9 8.0 8.1 8.2 8.3 8.4 8.5 8.6 8.7 8.8 8.9 9.0 9.1 9.2 9.3 9.4 9.5 9.6 9.7 9.8 9.9 10.0

**SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION**

**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.**

Process Description

Step 1. All emissions from this step are vented through the vacuum system.

The materials itemized (1) through (6) are put into the reactor. The contents are heated to remove the water by vaporization. The water vapors are condensed and saved. The light hydrocarbons are then stripped off condensed, and sent to storage.

Step 2. All emissions from this step are vented through the scrubber.

The reactor is cooled to 90° and the recovered water returned to the reactor. Ammonia is added to the reactor. The water layer is settled away from the terpene, filtered to remove the catalyst, and recycled as used acid to Step 1. The remaining contents are heated to 100° to evaporate the remaining water to the scrubber. The oils are then cooled and sent to storage as product.

1. Vacuum Vent

Stack Height	6 ft.
Gas Flow Rate	41 ACFM
Water Vapor Content	2%
Stack Diameter	2" IPS
Gas Exit Temperature	122°F.
Velocity	29.3 fps

2. Scrubber Vent

Stack Height	10 ft.
Gas Flow Rate	225 ACFM
Water Vapor Content	6%
Stack Diameter	2" IPS
Gas Exit Temperature	122°F.
Velocity	161 fps

PROPOSAL

CROLL-REYNOLDS FUME SCRUBBER SYSTEM

To: SCM Organic Chemicals
P.O. Box 389
Jacksonville, FL 32201
Attn: Mr. W. J. Somora, Proj. Engr.

Ref. No.: 10515
Cust. Inquiry No.: Item R-9-J-1
Quantity: One
Model No.: 44

NET PRICE PER SYSTEM: \$1220

Terms of Payment: Net 30 Days Quotation valid for 30 days from proposal date.

Estimated delivery 14-16 wks. after drawing approval. Weeks for drawings 1-2

Deliveries are quoted based on standard shop schedules at the time of quote. Special delivery requirements may be accommodated on an individual basis.

EQUIPMENT DATA

Gas Inlet/Outlet: 4" / 4"
Scrubbing Liquid Inlet: 1-1/2"
Separator Tank Not Included [X] Included [ ]
Tank Diameter: Tank Height:
Liquid Storage YES [ ] NO [ ] Capacity Gallons
Tank Connections: Drain, Fill, Overflow
Manway:
Separator Type:
Other:

MATERIALS OF CONSTRUCTION:

Table with 2 columns: ITEM, MATERIAL. Rows include Jet Scrubber (FRP-Atlac #382 Resin) and Spinner (Kynar).

APPROXIMATE WEIGHT

Shipping: 25#'s Operating: 25#'s

CONSTRUCTION DESIGN

In general accordance with:

- PS 15-69 [X]
ASME Code [ ]
ASME Code Stamped [ ]

or vessel designed for pressure/vacuum Flooded / -

Wall Thicknesses: 3/16" Minimum

Head Thicknesses Bottom/Top - / -

Hold down lugs [ ] Included [X] Not Included

Lifting lugs [ ] Included [X] Not Included

OPERATING CONDITIONS

Gas Inlet Rate Capacity: 225 acfm
Gal Inlet Temp: Assumed Ambient
Press.: Atmospheric
Gas Composition: Air Containing Unknown
Quantities of Ammonia & Isobutyl Alcohol
Liquid Inlet Rate: 20 gpm
Pressure At Liquid Inlet: 40 psig
x Specific Gravity:
Liquid Composition: Water Once Through
Max. Liquid Temp.: Assumed Ambient
Draft Across System: zero Inch(es) W.G.

PERFORMANCE DATA (Typical)

95% Removal efficiency of Ammonia
40-50% Removal efficiency of Isobutyl Alcohol
% Removal efficiency of
% Removal efficiency of

Based upon above operating conditions

COMMENTS:

Since Croll-Reynolds Co. has no control over the mixture or concentration of corrosive elements which may come in contact with the equipment supplied, no guarantee is expressed or implied concerning materials of construction for corrosion resistance.

Customer should make every effort to assure suitability prior to purchase.

Est. Frgt Charges for UPS Surface Shipment: \$6

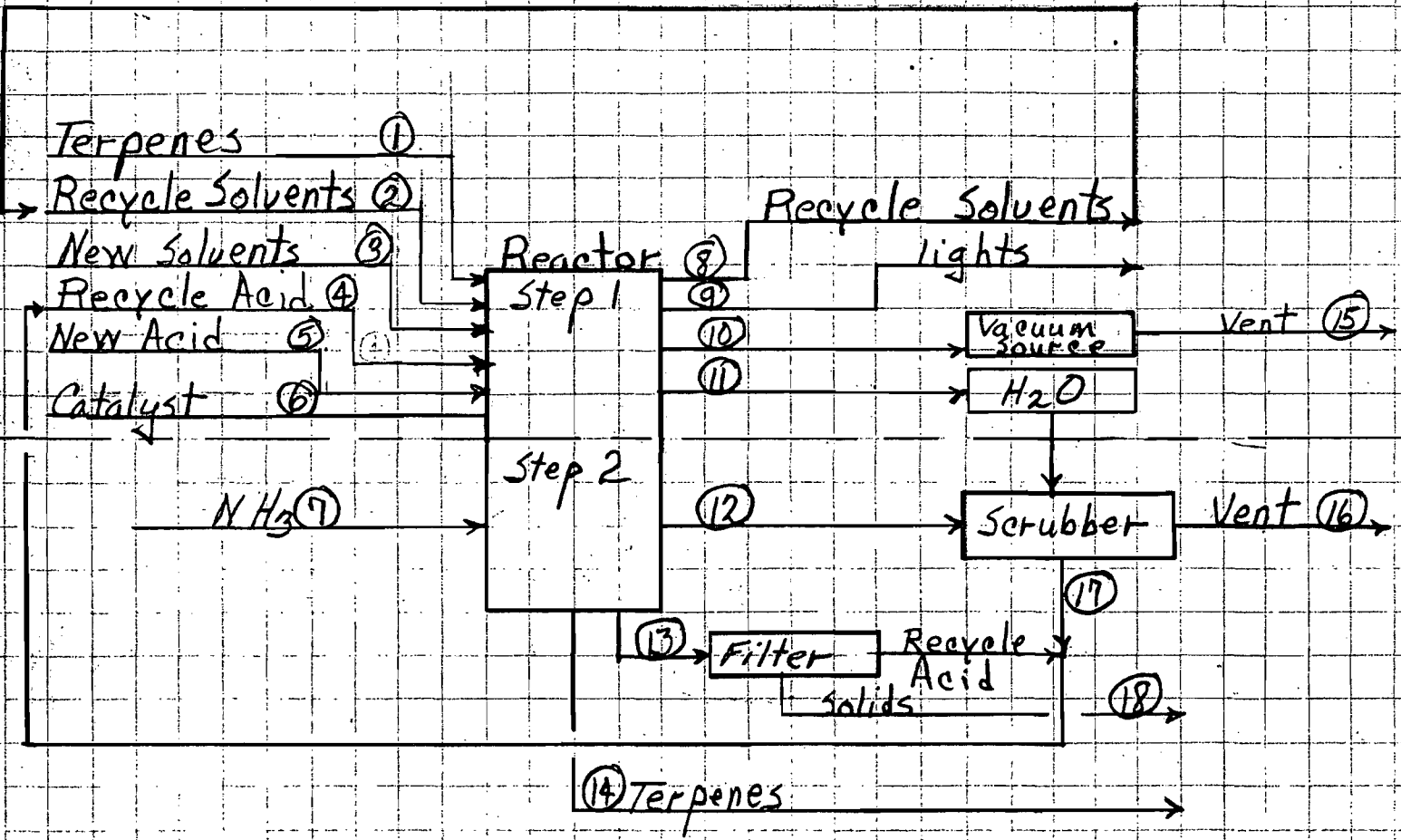
No sales tax is included in the quoted price.

Proposal by Date

CHECKED BY V.O. Sewell

DATE 6-15-81

SUBJECT Construction Permit Application



CHECKED BY: J. D. Sewell  
DATE: 6-15-81  
SUBJECT: Construction Permit Application

Stream No	Description	% light hydrocarbons	% Terpenes	% Water	% Acid	% NH <sub>3</sub>	% Catalyst	lb/charge
1	Terpene Feed		100					34,000
2	Recycle Solvents	90	10					31,800
3	New Solvents	100						1,620
4	Recycle Acid			76.8	21	2.0	0.2	24,290
5	New Acid			100				480
6	Catalyst	82.2					17.8	100
7	Ammonia					100		67
8	Recycle Solvents	90	10					31,800
9	light hydrocarbons	95	5					3,400
10	Vapor to Vacuum	100						49
11	Recycle Water			100				18,650
12	Vapors to Scrubber	3.9				96.1		438
13	Unfiltered Acid Soln			76.6	21.1	2.0	0.3	24,340
14	Terpene product	2.0	96.5		1.5	0.14		32,738
15	Vent Vapors (Vacuum)	100						49.0
16	Vent Vapors (Scrubber)	28.7				71.3		30
17	Water from Scrubber			98.5		1.5		18,943
18	Catalyst solids				64.4		35.6	50

36.5 hours per charge

SAVE

		% v/v	# v/v
① Terpene feed	34,000	100	34,000
② Recycle solvents	31,800	90	28,620
③ New solvents	1,620	100	1,620
④ Recycle acid	24,290	0	
⑤ New acid	480	0	
⑥ Catalyst	100	82.2	82.2
⑦ ammonia	67	0	

64322.2 in

34000
30240
64240

 = solv. hydrocarbons

34000
<del>31800</del>
37180

3180
170

2237.8 # Terpenes not accounted for

light H.C.  

1620
82.2
1702.2 in

3230
49
17.1
654.8
3950.9 out

light H.C.  
 in  

1620
82.2
1702.2

out  

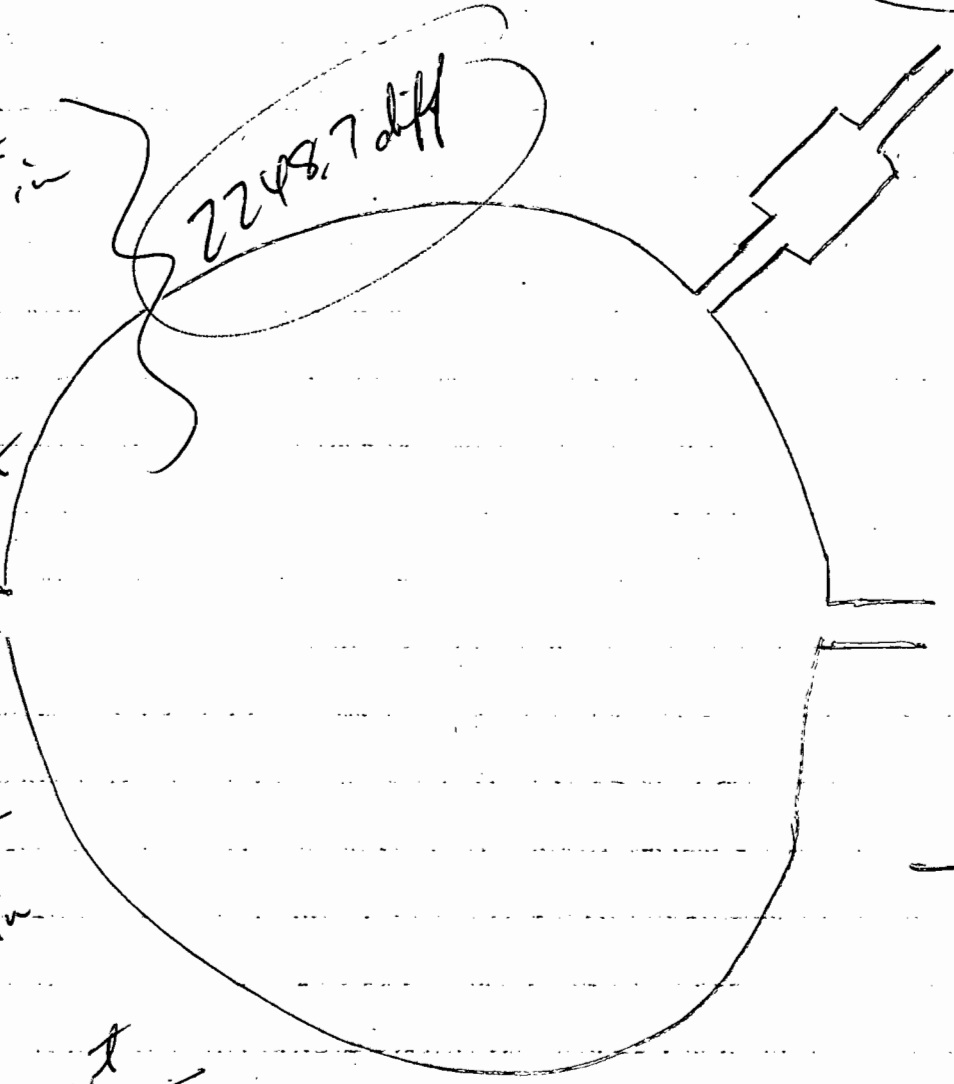
3230
49
17.1
654.8

3950.9

2248.7 not accounted for

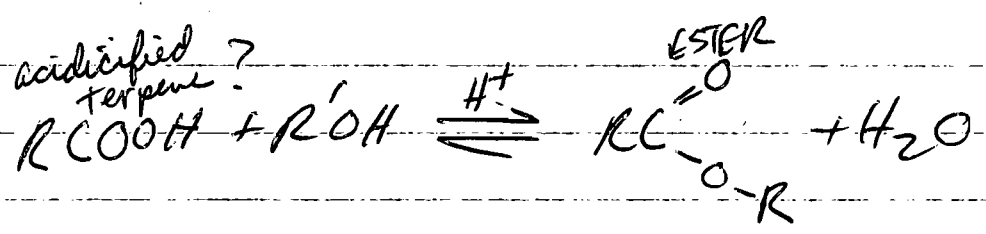
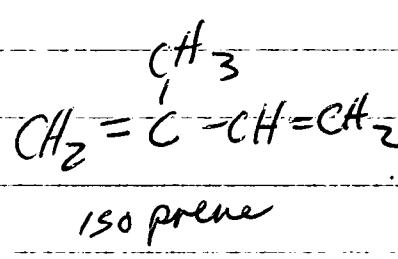
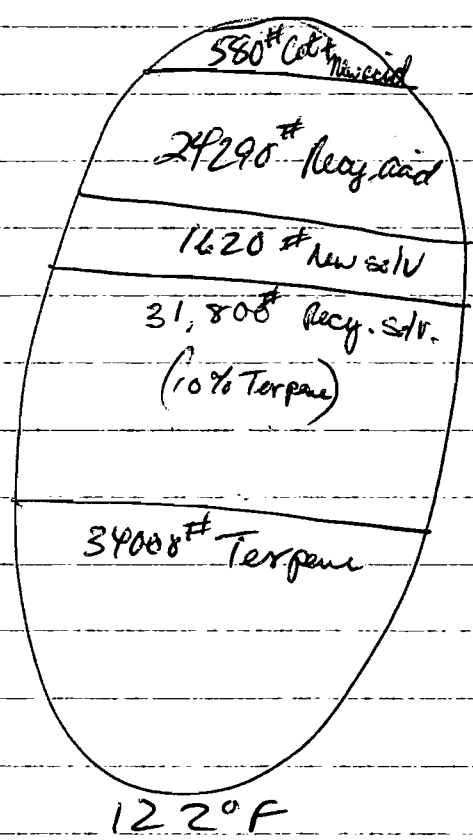
Terpenes  
 in  
 34000 in

~~31762.2 out~~  
 2237.8 diff





isobutyl ~~alcohol~~ alcohol + terpene = ester?



~~Section I~~  
Section II

- ① B. - start of construction slated for July
- ② D. - previous DEK permits - none

Section III

- ③ B. - Process Rate - input does not match up w/output -  
check in book
- ④ C. Emission calculation deriving 66.1 #/hr

potential emissions

$$17.082 \frac{\#}{\text{charge}} (\text{to scrubber}) \times 240 \text{ charges/yr} = 4099.68 \frac{\#}{\text{yr}} = 2.05 \text{ TPY}$$

$$+ 49.0 \frac{\#}{\text{charge}} (\text{vent vacuum}) \times 240 \text{ charges/yr} = 11760 \frac{\#}{\text{yr}} = 5.88 \text{ TPY}$$

$$\text{Total VOC pot. emiss} = 2.05 + 5.88 = \boxed{7.93 \text{ TPY}}$$

$$\text{or } \boxed{66.1 \frac{\#}{\text{hr}}}$$

Actual emissions

(worst case 40% <sup>scrubber</sup> efficiency)

$$49.0 \frac{\#}{\text{charge}} (\text{vent vacuum}) + \left(\frac{160}{100}\right) (17.08) = \frac{59.25}{\cancel{66.1}} \frac{\#}{\text{charge}}$$

$$\times 240 \text{ charges/yr} = \boxed{\frac{14.1}{7.11} \text{ TPY}}$$

$\frac{59.25}{\cancel{66.1}} \frac{\#}{\text{hr}}$   
 $59.25 \frac{\#}{\text{hr}}$

Addendum No. 2

- ⑤ gas exit temp given as 122°F, whereas <sup>scrubber</sup> manufacturer's data assumes ambient T & P

Flow chart

- ⑥ ~~scrubber~~ scrubber water - what happens to alc. + ammonia absorbed?

Materials balance

- ⑦ a) ~ 2200 # more light HC out than were put in
- ⑧ ~ 2200 # more Turpene feed than out product.
- ⑨ ~~When does recycle (scrubber water come from?)~~

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

No 33576

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from SCM Organic Chemicals Date 30 JUN 81  
Address Jacksonville FL 32201 Dollars \$ 2000  
Applicant Name & Address (above)  
Source of Revenue \_\_\_\_\_  
Revenue Code 0101 Application Number AC 16-45367  
By J. Harrell

DER PERMIT APPLICATION TRACKING SYSTEM MASTER RECORD

FILE#000000045367 COE# DER PROCESSOR:POWELL DER OFFICE:TLH  
FILE NAME:SCM CDRP. DATE FIRST REC: 06/30/81 APPLICATION TYPE:AC  
APPL NAME:R. W. HARRELL APPL PHONE:(904)764-1711 PROJECT COUNTY:16  
ADDR:P. O. BOX 389 CITY:JACKSONVILLE ST:FLZIP:32201  
AGNT NAME:JAMES O. SEWELL AGNT PHONE:(904)764-1711  
ADDR:P. O. BOX 389 CITY:JACKSONVILLE ST:FLZIP:32201

ADDITIONAL INFO REQ: / / / / / REC: / / / / /  
APPL COMPLETE DATE: / / COMMENTS NEC:Y DATE REQ: / / DATE REC: / /  
LETTER OF INTENT NEC:Y DATE WHEN INTENT ISSUED: / / WAIVER DATE: / /

HEARING REQUEST DATES: / / / / /  
HEARING WITHDRAWN/DENIED/ORDER -- DATES: / / / / /  
HEARING ORDER OR FINAL ACTION DUE DATE: / / MANUAL TRACKING DESIRED:N

THIS RECORD HAS BEEN SUCCESSFULLY ADDED 07/13/81 11:56:38  
FEE PD DATE#1:06/30/81 \$0020 RECEIPT#00033576 REFUND DATE: / / REFUND \$  
FEE PD DATE#2: / / \$ RECEIPT# REFUND DATE: / / REFUND \$  
APPL:ACTIVE/INACTIVE/DENIED/WITHDRAWN/TRANSFERRED/EXEMPT/ISSUED:AC DATE:06/30/81  
REMARKS:TURPENE REACTOR  
UTM: 7435600E/3360750N LAT/LONG: 30D22'45"N/81D39'50"W