SENDER: Complete items 1 and 2 when additional... 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
Mr. Stephen M. Richards
ThermoTank Term. Inc
P.O. Box 5046
Tampa, Fl 33675

4. Article Number
P 280 742 406

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X

7. Date of Delivery

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

NOV 1 1990 USPO

P 280 742 406

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Stephen Richards	
Street and No. ThermoTank Term	
P.O., State and ZIP Code PO Box 5046 Tampa, FL	
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 11-6-90 AC 29-164540	

PS Form 3800, June 1985

☆ U.S.G.P.O. 1989-234-555

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Stephen M. Richards, President
ThermoTank Terminals, Inc.
P. O. Box 5046
Tampa, Florida 33675

November 6, 1990

Enclosed is construction permit No. AC 29-164540 for ThermoTank Terminals, Inc. to construct a molten sulfur storage and handling facility located at the Pasco Terminal in Tampa, Hillsborough County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this permit has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this permit is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

Copy furnished to:

B. Thomas, SW District
I. Choronenko, HCEPC
T. Brumagin, P.E.

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of buisness on 11-6-90.

FILING AND ACKNOWLEDGEMENT FILED, on this date, pursuant to §120.52(9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kim Tober 11-6-90

Clerk Date

Final Determination

ThermoTank Terminals, Inc.
Pasco Terminal
Tampa, Hillsborough County
Florida

Molten Sulfur Storage and Handling System
Permit Number: AC 29-164540

Florida Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

October 24, 1990

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to construct molten sulfur storage and handling facility at the Pasco Terminal (an existing facility) in Tampa, Hillsborough County, Florida was distributed on September 21, 1990. The Notice of Intent to Issue was published in the Tampa Tribune on October 3, 1990. Copies of the evaluation were available for public inspection at the Department's offices in Tampa and Tallahassee.

No comments were submitted on the Department's Intent to Issue the permit. The final action of the Department will be to issue construction permit No. AC 29-164540 as proposed in the Technical Evaluation and Preliminary Determination.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

PERMITTEE:
ThermoTank Terminals, Inc.
Pasco Terminal
Post Office Box 5046
Tampa, FL 33675

Permit Number: AC 29-164540
Expiration Date: Feb. 28, 1991
County: Hillsborough
Latitude/Longitude: 27°54'20"N
82°25'32"W
Project: Pasco Terminal/Molten Sulfur Storage & Handling System

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

For the permitting of the Pasco molten sulfur storage and handling terminal consisting of a ship unloading system; two truck loadout systems; one 15,000 long ton (LT), one 12,500 long ton, and three 9,400 long ton molten sulfur storage tanks; and the associated transfer pumps and piping. Emissions from this facility are controlled by limiting the throughput to 510,000 long tons of molten sulfur per year, and through proper operation and maintenance practices. The Pasco facility is located at 3411 Port Sutton Road, Tampa, Hillsborough County, Florida.

The UTM coordinates of this facility are Zone 17, 359.7 km East and 3087.3 km North.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. ThermoTank Terminals' application received May 5, 1989.
2. DER's letter dated May 31, 1989.
3. TTT's response received July 11, 1990.
4. DER's Preliminary Determination dated February 9, 1990.

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 Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement 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 applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), 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. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use 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.

5. 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 therefor 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, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. 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 noncompliance, 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.

GENERAL CONDITIONS:

9. 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 Sections 403.73 and 403.111, Florida Statutes.

10. The 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.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

14. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. ThermoTank Terminals, Inc.'s Pasco molten sulfur storage and handling terminal shall be allowed to operate continuously (i.e. 8760 hours/year).

2. The maximum molten sulfur throughput rate shall neither exceed 24,000 long tons per day (LTPD), nor 510,000 long tons per year (LTPY).

3. Visible emissions (VE) shall not exceed 10% opacity from any source in the molten sulfur system, except during periods of ship unloading when the VE shall not exceed 15% opacity.

4. The permittee shall employ procedures to minimize emissions, from the molten sulfur system pursuant to the applicable requirements of F.A.C. Rule 17-2.600(11)(a) [Molten Sulfur Storage and Handling Facilities]. The permittee shall also comply with other applicable provisions of F.A.C. Chapters 17-2 and 17-4.

5. No objectionable odors shall be allowed, in accordance with F.A.C. Rule 17-2.620(2) [Objectionable Odor Prohibited].

SPECIFIC CONDITIONS:

6. Initial compliance tests shall be conducted before December 31, 1990, in accordance with the July 1, 1988, version of 40 CFR 60 Appendix A, using EPA Method 9, for visible emissions. Such tests shall be conducted for a minimum duration of thirty (30) minutes at each vent, for each storage tank, each truck loadout station, and ship unloading system. The tests shall be conducted while the tanks and trucks are being filled. VE tests shall be conducted annually if required by the SW District office at the time of issuing or renewing operation permits.

7. Any change in the method of operation, equipment or operating hours shall be submitted to the Bureau of Air Regulation (BAR) office for approval.

8. For emission inventory and PSD purposes, the estimated maximum emissions from the sources in the molten sulfur storage and handling system are:

Source		Expected Emissions			
		PM/PM_{10}	SO_2	TRS/H_2S	VOC
Tanks	lb/hr	0.8	0.6	1.8	1.3
(All 5)	TPY	1.8	0.1	3.3	4.4
Truck Load	lb/hr	0.03	.1	.3	0.1
Stations	TPY	0.1	0.1	1.4	0.3

9. A minimum of 15 days prior written notification of the compliance tests shall be given to the HCEPC office. The compliance test results shall be submitted to the HCEPC office within 45 days of test completion.

10. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation (BAR) prior to 60 days before the expiration of the permit (F.A.C. 17-4.090).

11. An application for an operation permit must be submitted to the HCEPC office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the

PERMITTEE:
ThermoTank Terminals, Inc.

Permit Number: AC 29-164540
Expiration Date: February 28, 1991

SPECIFIC CONDITIONS:

appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. 17-4.220).

Issued this 5th day
of November, 1990

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

STEVE SMALLWOOD, P.E.
Director
Division of Air Resources
Management

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

TO: Steve Smallwood

FROM: Clair Fancy [signature]

DATE: October 24, 1990

SUBJ: Approval of Construction Permit AC 29-164540
ThermoTank Terminals, Inc. - Pasco Terminal

Attached for your approval and signature is a construction permit prepared by the Bureau of Air Regulation for the above mentioned facility to construct a molten sulfur storage/handling system at their Pasco Terminal in Tampa, Hillsborough County, Florida.

Day 90, after which this permit will be issued by default, is November 6, 1990.

I recommend your approval and signature.

CF/MB/plm

Attachment

NO. - Re phase specific condition #7 we have not delegated approval authority to HCEPC. - Double check the validity of the comment under the Table IV condition #8. Revise as needed and return ASAP [illegible] 10-25-90

674 OK BA

Steve - Redone 11/5 CHF

OK Thank you [illegible] 11-5-90

Check Sheet

Company Name: Thermotank Terminals
Permit Number: AC29-164540
PSD Number:
Permit Engineer:

Application:

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

Cross References:
☐
☐
☐

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

ThermoTank Terminals, Inc.

RECEIVED
OCT 9 1990
DER-BAQM

October 4, 1990

Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attention: Mr. C. H. Fancy, P.E.
Chief, Bureau of Air Regulation

Re: DER File No. AC 29-164540

Gentlemen:

In response to your letter of September 21, 1990, we attach hereto proof of publication of the legal notice required for the issuance of Permit Number AC 29-164540 for our Pasco Terminal sulphur facility.

Please note that in Paragraph 1 of the Specific Conditions of the proposed permit, the word "Pennzoil" appears. Although we are pursuing a permit for our Pennzoil facility, the proper word here is "Pasco".

Thanks to you and your staff for your cooperation and patience during the permitting process.

Yours very truly,

THERMOTANK TERMINALS, INC.

Stephen M. Richards
President

Attachment

SMR/jf

Cc: M. Baiq
B. Thomas, SW Dist.
J. Campbell, EPC HC

THE TAMPA TRIBUNE

Published Daily
Tampa, Hillsborough County, Florida

State of Florida
County of Hillsborough } ss.

Before the undersigned authority personally appeared R. Putney, who on oath says that he is Accounting Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

.....

LEGAL NOTICE

in the matter of .....

INTENT TO ISSUE

.....

was published in said newspaper in the issues of .....

October 3, 1990

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

R Putney

Notary Public, State of Florida
My Commission Expires Sept. 3, 1994
Bonded Thru Troy Fain - Insurance Inc.

Sworn to and subscribed before me, this 3 *day of* October, *A.D. 19* 90

Scott D. Williams

(SEAL)

SCOTT D. WILLIAMS NOTARY PUBLIC STATE OF FLORIDA

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to ThermoTank Terminals, Inc., P. O. Box 5046, Tampa, FL 33675, for the existing molten sulfur storage and handling system consisting of five storage tanks, located at the Pasco Terminal facility in Tampa, Hillsborough County, Florida. A determination of the Best Available Control Technology (BACT) was not required. The Department is issuing this intent to issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The petitions shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the department's action or proposed action.

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which

Con't. Next Column

Con't. From Preceding Column

rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Con't. From Preceding Column

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of
Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida
32399-2400

Department of
Environmental Regulation
Southwest District Office
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347

Hillsborough County
Environmental Protection
Commission
1410 North 21st Street
Tampa, Florida 33605

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

4661 10/3/90

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:

Mr. S. M. Richards, President
ThermoTank Terminals, Inc.
P. O. Box 5046
Tampa, FL 33675-5046

4. Article Number

P 256 396 195

Type of Service:

- ☐ Registered
- ☒ Certified
- ☐ Express Mail
- ☐ Insured
- ☐ COD
- ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address

X S. M. Richard

6. Signature — Agent

X

7. Date of Delivery 9-26-90

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

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

P 256 396 195

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. S. M. Richards, Thermo-	
Street and No. P.O. Box 5046 Tank Terminals	
P.O., State and ZIP Code Tampa, FL 33675-5046	
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 Mailed: 9-24-90 Permit: AC 29-164540	

PS Form 3800, June 1985 ☆U.S.G.P.O. 1989-234-555

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

September 21, 1990

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. S. M. Richards, President
ThermoTank Terminals, Inc.
Post Office Box 5046
Tampa, Florida 33675-5046

Dear Mr. Richards:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed after-the-fact construction permit to ThermoTank Terminals, Inc. for the molten sulfur storage and handling system at the Pasco Terminal facility in Hillsborough County, Florida.

Please publish the attached "Notice of Intent to Issue" in the legal ad section of a newspaper of general circulation in the area affected and submit the proof of publication to the Department within seven days of publication, along with any written comments you wish to have considered concerning the Department's proposed action, to Mr. Barry Andrews of the Bureau of Air Regulation.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/MB/plm

Attachments

c: B. Thomas, SW District
I. Choronenko, HCEPC
T. Brumagin, P.E.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

ThermoTank Terminals, Inc.
Pasco Terminal
Post Office Box 5046
Tampa, Florida 33675

DER File No. AC 29-164540

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, ThermoTank Terminals, Inc., applied on May 5, 1989, to the Department of Environmental Regulation for a construction permit for the existing molten sulfur storage and handling system located at the Pasco Terminal facility in Hillsborough County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department, at the address specified within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the applicant have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office in General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such

person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

Copies furnished to:

B. Thomas SW District
I. Choronenko, HCEPC
T. Brumagin, P.E.

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 9-24-90.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52(9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Patricia Harrell
Clerk

9-24-90
Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to ThermoTank Terminals, Inc., P. O. Box 5046, Tampa, FL 33675, for the existing molten sulfur storage and handling system consisting of five storage tanks, located at the Pasco Terminal facility in Tampa, Hillsborough County, Florida. A determination of the Best Available Control Technology (BACT) was not required. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the

Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Southwest District Office
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347

Hillsborough County Environmental Protection Commission
1410 North 21st Street
Tampa, Florida 33605

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

ThermoTank Terminals, Inc.
Pasco Terminal
Tampa, Hillsborough County
Florida

Molten Sulfur Storage and Handling System

Permit Number: AC 29-164540

Florida Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

September 21, 1990

I. Application

A. Applicant

ThermoTank Terminals, Inc.- Pasco Terminal
Post Office Box 5046
Tampa, Florida 33675

B. Project and Location

The applicant, ThermoTank Terminals, Inc. (TTT), proposes to permit the existing molten sulfur storage and handling system at the Pasco molten sulfur terminal in Tampa, Hillsborough County, Florida.

The UTM coordinates of this facility are Zone 17, 359.7 km East and 3087.3 km North.

C. Facility Category

The Pasco facility is minor in accordance with Rule 17-2.100 of the Florida Administrative Code (F.A.C.). The molten sulfur storage and handling system consists of several existing minor sources within the facility.

The Standard Industrial Classification (SIC) Code is Industry No. 5169, Wholesale Trade of Chemicals and Allied Products.

The NEDS Source Classification Code (SCC) is 3-01-070-02, Storage and Transfer, Industrial Inorganic Chemicals Production.

TTT applied for a construction permit on May 5, 1989, and the application was deemed complete on July 11, 1990.

II. Project Description

The Pasco molten sulfur storage and handling terminal consists of a ship unloading system; two truck loadout systems; five heated molten sulfur storage tanks; and the associated transfer pumps and piping. The Pasco terminal distributes the molten sulfur, using trucks, to various consumers.

The molten sulfur is delivered to the facility by ships with a capacity of about 24,000 long tons (LT). The molten sulfur is pumped from the ship to the five molten sulfur storage tanks. All the molten sulfur in the ship does not necessarily get unloaded at the Pasco terminal since several terminals share the shipload on occasion. The sulfur is supplied from the storage tanks to the truck loading stations where 21 LT capacity trucks are loaded. The storage tanks are steam heated to about 265°F to keep the sulfur molten. The maximum sulfur handling rate is about 1200 LT per hour, 510,000 LT per year (LTPY).

All five storage tanks are 24' high. The 15,000 ton capacity tank is 130' in diameter, the 12,500 ton tank is 115' in diameter and the three 9,400 ton tanks are 100' in diameter. Each tank has one 6" center vent and three rim vents. The rim vents are sealed by flapper valves which would function only during rare periods of pressure buildup. The rim vents are not expected to emit any emissions under normal operation.

The expected emissions from the molten sulfur system include emissions of particulate matter (PM), particulates less than 10 microns in size (PM_{10}), sulfur dioxide (SO_2), hydrogen sulfide (H_2S), reduced sulfur compounds (TRS), and volatile organic compounds (VOCs).

III. Rule Applicability

The existing Pasco terminal facility is minor in accordance with F.A.C. Rule 17-2.100. The molten sulfur storage and handling system will emit particulate matter and will be permitted in accordance with F.A.C. Rules 17-2 and 17-4; and, Chapter 403 of the Florida Statutes.

The facility is located in Hillsborough County, an area designated as nonattainment for ozone and particulate matter; unclassifiable for sulfur dioxide; and attainment for the other criteria pollutants; in accordance with F.A.C. Rules 17-2.410, 17-2.430, and 17-2.420, respectively.

The project is not subject to the new source review requirements of F.A.C. Rule 17-2.500(5), Prevention of Significant Deterioration-Preconstruction Review Requirements, or F.A.C. Rule 17-2.510(4), nonattainment area review, because it is minor.

The project is subject to F.A.C. Rule 17-2.520, Sources Not Subject to PSD or Nonattainment Requirements.

The project is subject to F.A.C. Rule 17-2.600(11), Specific Emission Limiting and Performance Standards for Sulfur Storage and Handling Facilities, which lists specific operational emission reduction procedures that are to be followed. Visible emissions (VE) will be limited to 10% opacity, except during periods of ship unloading when VE shall not exceed 15% opacity. The sources are not subject to a weight emission limiting standard, in accordance with F.A.C. Rule 17-2.600(11)(e), since the sulfur particulate emissions from each individual source are less than 1 ton per year.

The project is subject to F.A.C. Rule 17-2.620, General Pollutant Emission Limiting Standards, which prohibits objectionable odors.

The project is subject to compliance testing and reporting requirements in accordance with F.A.C. Rule 17-2.700. Compliance testing for the sources shall be conducted using EPA Method 9 for visible emissions in accordance with F.A.C. Rule 17-2.700(6)(b)9. VE tests will be required to be conducted for every emission point in the sulfur system (every vent) for the initial compliance demonstration. Several emission points may be done simultaneously if possible within the requirements of EPA Method 9. The Department will require a retest at the time of operation permit renewals.

IV. Source Impact Analysis

A. Emission Limitations

The maximum emissions from the molten sulfur system are estimated to be as follows, based on test results:

Source		Expected Emissions			
		PM/PM_{10}	SO_2	TRS/H_2S	VOC
Tanks (All 5)	lb/hr	0.8	0.6	1.8	1.3
	TPY	1.8	0.1	3.3	4.4
Truck Load Stations	lb/hr	0.03	.1	.3	0.1
	TPY	0.1	0.1	1.4	0.3

The ship's emissions during ship unloading are expected to be temporary and negligible.

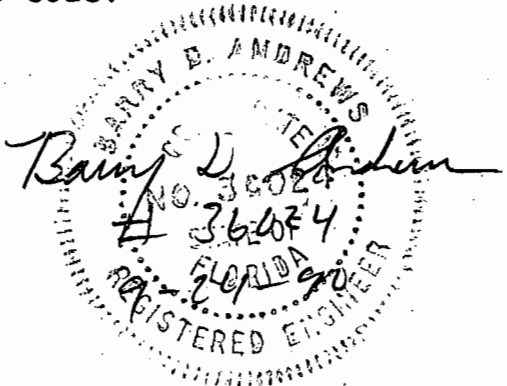
Visible emissions (VE) will be limited to 10% opacity, except during periods of ship unloading when VE shall not exceed 15% opacity.

B. Air Quality Impacts

The technical evaluation of this project determined that ambient air monitoring or modeling would not be required to provide reasonable assurance that Florida'a air quality standards would not be violated.

V. Conclusion

Based on the information provided by ThermoTank Terminals, Inc., the Department has reasonable assurance that the existing Pasco molten sulfur storage and handling terminal, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

PERMITTEE:
ThermoTank Terminals, Inc.
Pasco Terminal
Post Office Box 5046
Tampa, FL 33675

Permit Number: AC 29-164540
Expiration Date: Feb. 28, 1991
County: Hillsborough
Latitude/Longitude: 27°54'20"N
82°25'32"W
Project: Pasco Terminal/Molten Sulfur Storage & Handling System

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

For the permitting of the Pasco molten sulfur storage and handling terminal consisting of a ship unloading system; two truck loadout systems; one 15,000 long ton (LT), one 12,500 long ton, and three 9,400 long ton molten sulfur storage tanks; and the associated transfer pumps and piping. Emissions from this facility are controlled by limiting the throughput to 510,000 long tons of molten sulfur per year, and through proper operation and maintenance practices. The Pasco facility is located at 3411 Port Sutton Road, Tampa, Hillsborough County, Florida.

The UTM coordinates of this facility are Zone 17, 359.7 km East and 3087.3 km North.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. ThermoTank Terminals' application received May 5, 1989.
2. DER's letter dated May 31, 1989.
3. TTT's response received July 11, 1990.
4. DER's Preliminary Determination dated February 9, 1990.

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 Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement 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 applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), 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. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use 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.

5. 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 therefor 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, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. 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 noncompliance, 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.

GENERAL CONDITIONS:

9. 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 Sections 403.73 and 403.111, Florida Statutes.

10. The 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.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

14. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. ThermoTank Terminals, Inc.'s Pennzoil molten sulfur storage and handling terminal shall be allowed to operate continuously (i.e. 8760 hours/year).

2. The maximum molten sulfur throughput rate shall neither exceed 24,000 long tons per day (LTPD), nor 510,000 long tons per year (LTPY).

3. Visible emissions (VE) shall not exceed 10% opacity from any source in the molten sulfur system, except during periods of ship unloading when the VE shall not exceed 15% opacity.

4. The permittee shall employ procedures to minimize emissions, from the molten sulfur system pursuant to the applicable requirements of F.A.C. Rule 17-2.600(11)(a) [Molten Sulfur Storage and Handling Facilities]. The permittee shall also comply with other applicable provisions of F.A.C. Chapters 17-2 and 17-4.

5. No objectionable odors shall be allowed, in accordance with F.A.C. Rule 17-2.620(2) [Objectionable Odor Prohibited].

SPECIFIC CONDITIONS:

6. Initial compliance tests shall be conducted before December 31, 1990, in accordance with the July 1, 1988, version of 40 CFR 60 Appendix A, using EPA Method 9, for visible emissions. Such tests shall be conducted for a minimum duration of thirty (30) minutes at each vent, for each storage tank, each truck loadout station, and ship unloading system. The tests shall be conducted while the tanks and trucks are being filled. VE tests shall be conducted annually if required by the SW District office at the time of issuing or renewing operation permits.

7. Any change in the method of operation, equipment or operating hours shall be submitted to the Hillsborough County Environmental Protection Commission (HCEPC) office for approval.

8. For emission inventory and PSD purposes, the estimated maximum emissions from the sources in the molten sulfur storage and handling system are:

Source		Expected Emissions			
		PM/PM_{10}	SO_2	TRS/H_2S	VOC
Tanks	lb/hr	0.8	0.6	1.8	1.3
(All 5)	TPY	1.8	0.1	3.3	4.4
Truck Load	lb/hr	0.03	.1	.3	0.1
Stations	TPY	0.1	0.1	1.4	0.3

The ship's emissions during ship unloading are expected to be temporary and negligible.

9. A minimum of 15 days prior written notification of the compliance tests shall be given to the HCEPC office. The compliance test results shall be submitted to the HCEPC office within 45 days of test completion.

10. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation (BAR) prior to 60 days before the expiration of the permit (F.A.C. 17-4.090).

11. An application for an operation permit must be submitted to the HCEPC office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the

SPECIFIC CONDITIONS:

appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. 17-4.220).

Issued this _____ day
of _____, 1990

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____

STEVE SMALLWOOD, P.E.
Director
Division of Air Resources
Management

Attachments Available Upon Request

5652464510
7/11/90
Fed. Exp.

File Code 7

ThermoTank Terminals, Inc.

July 10, 1990

Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

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

Re: Pasco Sulphur Facility Permitting, AC29-164540

Gentlemen:

In response to your letter of May 31, 1989 we submit the following information for the Pasco Sulphur handling terminal:

1. a. Although the capacity of the sulphur delivery vehicles will vary with the configuration of the trailer, the typical capacity is about 47,000 pounds (21 long tons).

   b. The typical delivery frequency is 67 trucks per day (using a terminal throughout of 510,000 long tons per year).

   c. The estimate of expected emissions form the sulphur delivery vehicles are shown in Exhibit "A".

2. The sources of air emissions in the terminal are (a) Five (5) sulphur storage tanks (one (1) 15,500 long ton tank, one (1) 12,500 long ton tank, three (3) 9,400 long ton tanks) and (b) the sulphur loading station. The sulphur loading station is addressed in Exhibit "A", attached, and the storage tanks are addressed in Exhibit "B".

3. Heat requirements for the terminal are supplied by steam piped from the adjacent Gannon Station of the Tampa Electric Company in a closed system where the condensate is pumped back to the TECO plant.

4. There are no other sources of air emissions at the terminal.

Yours very truly,

THERMOTANK TERMINALS, INC.

Stephen M. Richards
President

cc: Muza

SMR/jf

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AIRBILL
PACKAGE TRACKING NUMBER

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5652464510

Date 7/12/90

RECIPIENT'S COPY

1 From (Your Name) Please Print
Stephen M. Richards

Your Phone Number (Very Important): (813) 248-2074

Company: TERMOTANK INC

Department/Floor No.:

Street Address: 4380 PENDOLA POINT RD

City: TAMPA State: FL ZIP Required: 3 3 6 1 9

2 To (Recipient's Name) Please Print
Mr. C. H. Fancy, P.E.

Recipient's Phone Number (Very Important): ( )

Company: Bureau of Air Quality Management
Florida Department of Environmental Regulat

Department/Floor No.:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)
Twin Towers Office Building
2600 Blair Stone Road

City: Tallahassee, State: Florida ZIP Required: 32399-2400

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.)

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card
5 [ ] Cash

4 SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†)		Standard Overnight Service (Delivery by next business afternoon†)	
11 [ ]	YOUR PACKAGING	51 [ ]	
16 [X]	FEDEX LETTER *	56 [ ]	FEDEX LETTER *
12 [ ]	FEDEX PAK *	52 [ ]	FEDEX PAK *
13 [ ]	FEDEX BOX	53 [ ]	FEDEX BOX
14 [ ]	FEDEX TUBE	54 [ ]	FEDEX TUBE

Economy Service (formerly Standard Air) (Delivery by second business day†)		Heavyweight Service (for Extra Large or any package over 150 lbs.)	
30 [ ]	ECONOMY SERVICE	70 [ ]	HEAVYWEIGHT **
		80 [ ]	DEFERRED HEAVYWEIGHT **

†Delivery commitment may be later in some areas.
*Declared Value Limit $100.
**Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING

1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 [ ] DELIVER SATURDAY (Extra charge) (Not available to all locations)
4 [ ] DANGEROUS GOODS (Extra charge) (CSS not available for Dangerous Goods Shipments)
5 [ ] CONSTANT SURVEILLANCE SVC. (CSS) (Extra charge) (Release Signature Not Applicable)
6 [ ] DRY ICE ____ Lbs
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ] DESCRIPTION
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

	PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE	OVER SIZE
Total	Total	Total		

DIM SHIPMENT (Heavyweight Services Only)
[ ] ____ lbs.

Received At
1 ☐ Regular Stop 3 ☐ Drop Box
2 ☐ On-Call Stop 4 ☐ B.S.C. 5 ☐ Station

FedEx Emp. No.

Date/Time

5 Release Signature:

Emp. No. Date

☐ Cash Received
☐ Return Shipment
☐ Third Party ☐ Chg. To Del. ☐ Chg. To Hold

Street Address

City State Zip

Received By:
X

Date/Time Received FedEx Employee Number

Federal Express Use

Base Charges

Declared Value Charge

Other 1

Other 2

Total Charges

REVISION DATE 10/89
PART #119501 FXEM 10/89
FORMAT #014

014

THERMOTANK TERMINALS, INC.

PASCO SULPHUR HANDLING TERMINAL

SUMMARY OF EMISSIONS

Source	Contaminant	Emissions (lb/hr)	Emissions (ton/yr)	
Truck Loading	SO_2	0.0056	0.024	
	TSP	0.0254	0.111	
	VOC	0.061	0.269	
	H_2S	0.327	1.43	
Storage Tanks			Total of all tanks	Lbs./hr.
15,500 Long Ton	SO_2	0.502	0.078	0.597
	TSP	0.203	1.62	0.823
	VOC	0.346	4.39	1.255
	H_2S	0.502	3.34	1.819
12,500 Long Ton	SO_2	0.029		
	TSP	0.176		
	VOC	0.279		
	H_2S	0.405		
Each 9,400 Long Ton	SO_2	0.022		0.066
	TSP	0.148		0.444
	VOC	0.210		0.630
	H_2S	0.304		0.912

Thermo Tank Terminals, Inc.
PASCO Terminal
Calculation of Emissions

Emissions From Truck Loading Operations

H_2S Emissions

Maximum concentration of H_2S exiting tank trucks: 3500 ppm

Assuming 21 long tons of Sulfur per truck

$$\text{Air Displaced} = \left[\frac{(21 \text{ long tons Sulfur/truck})(2240 \text{ lbs/long ton})}{(112 \text{ lbs Sulfur/ft}^3)}\right]$$

Air Displaced = 420 ft^3 each time a truck is filled

Assume displaced air temperature from truck is between molten sulfur temperature of 270°F and average ambient (90°F) at 2.5% moisture.

$$E_{H_2S} = \left[\frac{420 \text{ ft}^3 \text{ air}}{\text{truck}}\right]\left[\frac{3500 \text{ ft}^3 H_2S}{10^6 \text{ ft}^3 \text{ air}}\right]\left[\frac{550°R}{640°R}(1-.025)\right]$$

$$\left[\frac{\text{mole } H_2S}{359 \text{ dscf } H_2S}\right]\left[\frac{34 \text{ lbs } H_2S}{\text{mole } H_2S}\right] = \mathbf{0.117 \text{ lb } H_2S/\text{truck}}$$

$$E_{H_2S} = \left[\frac{67 \text{ trucks}}{24 \text{ hours}}\right]\left[\frac{0.117 \text{ lb } H_2S}{\text{truck}}\right] = \mathbf{0.327 \text{ lb } H_2S/\text{hr}}$$

$$E_{H_2S} = \left[\frac{(0.117 \text{ lb } H_2S/\text{truck})(67 \text{ trucks/day})(365 \text{ days/year})}{(2000 \text{ lbs/ton})}\right]$$

$$E_{H_2S} = \mathbf{1.43 \text{ tons } H_2S/\text{year}}$$

The following emission factors were obtained from Freeport Sulphur Company from tests on sulfur with a carbon content of 0.25%±. The carbon content of PASCO sulfur will average 0.18%± carbon. The following calculations for SO_2, VOC, & TSP should therefore be higher than actual.

SO_2 = 5.472 (10^{-6}) lb-SO_2/ft^3 displaced air

VOC = 5.224 (10^{-5}) lb-VOC/ft^3 displaced air

TSP = 0.0118 grams/dscf (from Enviroplan's test data)

SO_2 Emissions

E_{SO_2} = (420 ft^3 air/truck)(5.472E-6 lbs SO_2/ft^3 air) = **0.002 lb/truck**

E_{SO_2} = (0.002 lb SO_2/truck)(67 trucks/24 hr) = **0.0056 lb SO_2/hr**

E_{SO_2} = [(0.002 lb SO_2/truck)(67 trucks/day)(365 days/year)]/(2000 lb/ton)

E_{SO_2} = **0.024 tons/year**

VOC Emissions

E_{VOC} = (420 ft^3 air/truck)(5.244E-5 lb VOC/ft^3 air) = **0.022 lb VOC/truck**

E_{VOC} = (0.022 lb VOC/truck)(67 trucks/24 hours) = **0.061 lb VOC/hr**

E_{VOC} = [(0.022 lb VOC/truck)(67 trucks/day)(365 days/yr)]/(2000 lb/ton)

E_{VOC} = **0.269 tons/yr**

TSP Emissions

$$E_{TSP} = \left[\frac{420\ ft^3\ air}{truck}\right]\left[\frac{0.0118\ grams}{dscf}\right]\left[\frac{550°R}{640°R}(1-.025)\right]\left[\frac{1\ lb\ TSP}{453.6\ grams}\right]$$

E_{TSP} = **0.00915 lbs/truck**

E_{TSP} = (9.1E-3 lbs/truck)(67 trucks/24 hours) = **0.0254 lbs/hr**

E_{TSP} = [(9.1E-3 lbs/truck)(67 trucks/day)(365 days/yr)]/(2000 lb/ton)

E_{TSP} = **0.111 tons/yr**

Emissions From Sulfur Storage Tanks

At the PASCO molten sulfur storage and handling facility there are five sulfur storage tanks.

One (1) 15,500 Long Ton Tank
One (1) 12,500 Long Ton Tank
Three (3) 9,400 Long Ton Tanks

Tests with the tank in a static state have indicated H_2S concentrations from 117 ppm to 453 ppm. For these calculations, a maximum concentration of 500 ppm H_2S has been assumed.

Similarly, tests performed during tank filling have indicated H_2S concentrations from 342 ppm to 767 ppm. For these calculations, a maximum concentration of 1000 ppm H_2S has been assumed.

H_2S Emissions

It is assumed that the greatest air flow and emissions will occur from the larger 15,500 long ton tank at this facility. Therefore, during normal operation we will assume that the air flow out of the other four (4) smaller tanks will not exceed the flow for the 15,500 long ton tank while the sulfur concentration remains constant (worst case scenario).

Discharge from tanks: static conditions = 41.5 dscfm

Static Conditions for each of the Five Tanks

$$E_{H_2S} = \left[\frac{41.5 \text{ dscf}}{\text{minute}}\right]\left[\frac{500 \text{ ft}^3 \text{ } H_2S}{10^6 \text{ ft}^3 \text{ air}}\right]\left[\frac{\text{lb-mole } H_2S}{359 \text{ dscf } H_2S}\right]\left[\frac{34 \text{ lbs } H_2S}{\text{lb-mole } H_2S}\right]\left[\frac{60 \text{ min}}{\text{hour}}\right]$$

$$E_{H_2S} = \mathbf{0.118 \text{ lb } H_2S/hr/tank}$$

During Ship Unloading Operations

Emissions from the 15,500 Long Ton Tank

$$E_{H_2S} = \left[\frac{88.3 \text{ dscf}}{\text{minute}}\right]\left[\frac{1000 \text{ ft}^3 \text{ } H_2S}{10^6 \text{ ft}^3 \text{ air}}\right]\left[\frac{\text{lb-mole } H_2S}{359 \text{ dscf } H_2S}\right]\left[\frac{34 \text{ lbs } H_2S}{\text{lb-mole } H_2S}\right]\left[\frac{60 \text{ min}}{\text{hour}}\right]$$

$$E_{H_2S} = \mathbf{0.502 \text{ lb } H_2S/hr}$$

Emissions from the 12,500 Long Ton Tank

$$E_{H_2S} = \left[\frac{71.2 \text{ dscf}}{\text{minute}}\right]\left[\frac{1000 \text{ ft}^3 \text{ } H_2S}{10^6 \text{ ft}^3 \text{ air}}\right]\left[\frac{\text{lb-mole } H_2S}{359 \text{ dscf } H_2S}\right]\left[\frac{34 \text{ lbs } H_2S}{\text{lb-mole } H_2S}\right]\left[\frac{60 \text{ min}}{\text{hour}}\right]$$

E_{H_2S} = **0.405 lb H_2S/hr**

Emissions from each of the 9,400 Long Ton Tanks

$$E_{H_2S} = \left[\frac{53.5 \text{ dscf}}{\text{minute}}\right]\left[\frac{1000 \text{ ft}^3 \text{ } H_2S}{10^6 \text{ ft}^3 \text{ air}}\right]\left[\frac{\text{lb-mole } H_2S}{359 \text{ dscf } H_2S}\right]\left[\frac{34 \text{ lbs } H_2S}{\text{lb-mole } H_2S}\right]\left[\frac{60 \text{ min}}{\text{hour}}\right]$$

E_{H_2S} = **0.304 lb H_2S/hr**

Total Annual H_2S Emissions from the Sulfur Storage Tanks

Annual Throughput of Sulfur: 510,000 long tons/yr

Ship Unloading Rate: 1200 long tons/hr

Annual Ship unloading hours: (510,000 long tons/yr)/(1200 long tons/hr)

Annual Ship unloading hours: 425 hr/yr

Annual Hours for Static conditions: 8760 hr/yr – 425 hr/hr = 8335 hr/yr

E_{H_2S} = [(0.118 lb/hr/tank)(6 tanks)(8335 hr/yr)] +
[(0.502 lb/hr + 0.405 lb/hr + (3)(0.304 lb/hr)] * (425 hr/yr)
/(2000 lb/ton)

E_{H_2S} = 3.34 tons/yr

SO_2 Emissions from Sulfur Storage Tanks

Static Conditions for Each of the Five Tanks

E_{SO_2} = (52.5 acfm/tank)(5.472E-6 lbs SO_2/ft^3 air)(60 min/hr)

E_{SO_2} = **0.002 lb/hr/tank**

During Ship Unloading Operations

For the 15,500 Long Ton Tank

E_{SO_2} = (110.3 acfm/tank)(5.472E-6 lbs SO_2/ft^3 air)(60 min/hr)

E_{SO_2} = **0.036 lb/hr**

For the 12,500 Long Ton Tank

E_{SO_2} = (89.0 acfm/tank)(5.472E-6 lbs SO_2/ft^3 air)(60 min/hr)

E_{SO_2} = **0.029 lb/hr**

For Each of the 9,400 Long Ton Tanks

E_{SO_2} = (66.9 acfm/tank)(5.472E-6 lbs SO_2/ft^3 air)(60 min/hr)

E_{SO_2} = **0.022 lb/hr/tank**

Total Annual E_{SO_2} Emissions for the Sulfur Storage Tanks

E_{SO_2} = [(0.002 lb/hr/tank)(6 tanks)(8335 hr/yr)] +
[(0.036 lb/hr + 0.029 lb/hr + (3)(0.022 lb/hr)] * (425 hr/yr)
/(2000 lb/ton)

E_{SO_2} = 0.070 tons/yr

VOC Emissions from Sulfur Storage Tanks

Static Conditions for Each of the Five Tanks

E_{VOC} = (52.5 acfm/tank)(5.224E-5 lbs VOC/ft^3 air)(60 min/hr)

E_{VOC} = **0.165 lb/hr/tank**

During Ship Unloading Operations

For the 15,500 Long Ton Tank

E_{VOC} = (110.3 acfm/tank)(5.224E-5 lbs VOC/ft^3 air)(60 min/hr)

E_{VOC} = **0.346 lb/hr**

For the 12,500 Long Ton Tank

E_{VOC} = (89.0 acfm/tank)(5.224E-5 lbs VOC/ft^3 air)(60 min/hr)

E_{VOC} = **0.279 lb/hr**

For Each of the 9,400 Long Ton Tanks

E_{VOC} = (66.9 acfm/tank)(5.224E-5 lbs VOC/ft^3 air)(60 min/hr)

E_{VOC} = **0.210 lb/hr/tank**

Total Annual E_{VOC} Emissions for the Sulfur Storage Tanks

E_{VOC} = [(0.165 lb/hr/tank)(6 tanks)(8335 hr/yr)] +
[(0.346 lb/hr + 0.279 lb/hr + (3)(0.210 lb/hr)] * (425 hr/yr)
/(2000 lb/ton)

E_{VOC} = 4.39 tons/yr

TSP Emissions from Sulfur Storage Tanks

For TSP Emissions from the storage tanks, refer to the enviroplan report and the permit application.

During Normal Operation

$$\frac{(0.064\ \text{lb/hr/tank})(8760\ \text{hr/yr} - 425\ \text{ship unloading hrs})}{(2000\ \text{lb/ton})} = 0.267\ \text{tons/yr/tank}$$

However, during ship unloading, the displaced air volume from the storage tanks will vary in proportion to the storage capacity of the tanks since they are the same height.

During Ship Unloading

Ship unloading rate = 1200 long tons/hour

Distribution of Sulfur:

15500 long ton tank receives:
(1200 long tons/hr) (15500/56200) = 331.0 long tons/hr

12500 long ton tank receives:
(1200 long tons/hr) (12500/56200) = 266.9 long tons/hr

Each 9400 long ton tank receives:
(1200 long tons/hr) (9400/56200) = 200.7 long tons/hr

Displacement of air for each tank:

15500 long ton tank

$$\frac{(331.0\ \text{long tons/hr})\ (2240\ \text{lb/long ton})}{(112\ \text{lb/ft}^3\ \text{sulfur})\ (60\ \text{min/hr})} = 110.3\ \text{acfm @200°F} = 88.3\ \text{dscfm}$$

12500 long ton tank

$$\frac{(266.9\ \text{long tons/hr})\ (2240\ \text{lb/long ton})}{(112\ \text{lb/ft}^3\ \text{sulfur})\ (60\ \text{min/hr})} = 89.0\ \text{acfm @200°F} = 71.2\ \text{dscfm}$$

Each 9400 long ton tank

$$\frac{(200.7\ \text{long tons/hr})\ (2240\ \text{lb/long ton})}{(112\ \text{lb/ft}^3\ \text{sulfur})\ (60\ \text{min/hr})} = 69.0\ \text{acfm @200°F} = 53.5\ \text{dscfm}$$

Emissions from each tank during ship unloading

Since we are assuming the concentration of particulate in the air to be constant, the emissions from each tank is dependent on the air flow.

15500 long ton tank:

$$\frac{(88.3 \text{ dscfm} + 41.5 \text{ dscfm})\ (0.0118 \text{ gm/dscf})\ (60 \text{ min/hr})}{(453.6 \text{ gm/lb})} = 0.203 \text{ lb/hr}$$

12500 long ton tank:

$$\frac{(71.2 \text{ dscfm} + 41.5 \text{ dscfm})\ (0.0118 \text{ gm/dscf})\ (60 \text{ min/hr})}{(453.6 \text{ gm/lb})} = 0.176 \text{ lb/hr}$$

Each 9400 long ton tank:

$$\frac{(53.5 \text{ dscfm} + 41.5 \text{ dscfm})\ (0.0118 \text{ gm/dscf})\ (60 \text{ min/hr})}{(453.6 \text{ gm/lb})} = 0.148 \text{ lb/hr}$$

Annual Particulate Emissions for each tank:

15500 long ton tank:
[(0.203 lb/hr) (425 hours)/(2000 lb/ton)] + 0.267 ton/yr = 0.310 tons/yr

12500 long ton tank:
[(0.176 lb/hr) (425 hours)/(2000 lb/ton)] + 0.267 ton/yr = 0.304 tons/yr

Each 9400 long ton tank:
[(0.148 lb/hr) (425 hours)/(2000 lb/ton)] + 0.267 ton/yr = 0.298 tons/yr

Since each tank emits well below one ton per year, they are exempt from the weight limiting standard pursuant to Section 17-2.600(11)(e)2.

Annual Particulate (TSP) Emissions for Facility

[0.310 + 0.304 + 3(0.298) + 0.111] tons/yr = 1.62 tons/yr

Sulfur Particulate Emission Measurement Project at the PASCO Terminals in Tampa, Florida

Prepared for:

PASCO Terminals Inc.

October 1986
Ref. Nos. 4025-617
4025-620

ENVIROPLAN

ENVIROPLAN

TABLE 1: SUMMARY OF DATA COLLECTED DURING THE PARTICULATE EMISSIONS TESTS AT THE PASCO STORAGE TANK

Test	Avg. Wind Speed (mph)	Ambient Temperature (°F)	Stack Volume Flow Rate (dscfm)	Stack Outflow Rate (dscfm)	Stack Temperature (°F)	Total Particulate Sample (mg)	Particulate Concentration (g/dscf)
1	10	86	81.5	45.8	197.8	218.3	0.0114
2	14	82	71.6	40.4	199.1	172.7	0.0105
3	15	84	67.9	38.2	202.2	200.5	0.0134
Average:				41.5	199.7		

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
S.M. Richards, Pres.
Thermo Tank Term. Inc.
Pasco Terminal
P.O. Box 5046
Tampa, Fl 33675

4. Article Number
P 256 396 111

Type of Service:
☐ Registered ☐ Insured
☑ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X

6. Signature — Agent
X

7. Date of Delivery
7-9

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

PS Form **3811**, Mar. 1988 * U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

P 256 396 111

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to S.M. Richards, Pres	
Street and No. Thermo Tank Terminals	
P.O., State and ZIP Code P.O. Box 5046 Tampa, Fl	
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 7-3-90 AC 29-164540	

PS Form 3800, June 1985 ☆U.S.G.P.O. 1989-234-555

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

June 25, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. S. M. Richards, President
ThermoTank Terminals, Inc. - Pasco Terminal
P. O. Box 5046
Tampa, Florida 33675

Re: Hillsborough County - A.P.
ThermoTank Terminals, Inc.
Pasco Sulfur Handling Terminal
AC 29-164540

Dear Mr. Richards:

On May 31, 1989, the Bureau of Air Quality Management sent you an incompleteness letter (copy attached). To this date we have not received a response to this letter.

Accordingly, please submit a response within fourteen (14) days of receipt of this letter or the Bureau will recommend denial of your request for the permit.

Your cooperation in this matter will be appreciated.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/MB/plm

Attachment

c: B. Thomas, SW District
I. Choronenko, HCEPC
Tom E. Brumagin, P.E.

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

May 31, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. S. M. Richards
ThermoTank Terminals, Inc.
P. O. Box 5046
Tampa, Florida 33675-5046

Dear Mr. Richards:

Re: Pasco Sulfur Facility Permitting, AC 29-164540

The Department has received your application package dated May 2, 1989, and deemed it incomplete. Please submit the following information including all assumptions, calculations and reference material:

1. What is the typical capacity of the sulfur delivery vehicle(s)? What is the typical delivery frequency? Please estimate the expected emissions from the sulfur delivery vehicle(s) while it is at the Pasco facility.

2. Please submit air emission estimates for any other source/equipment/process within (or associated with) the sulfur facility which has not yet been permitted by DER.

3. Submit air emission estimates for all the air pollutants emitted by the sources in the sulfur facility.

If you have any questions please call Pradeep Raval at (904) 488-1344 or write to me at the above address.

Sincerely,

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

CHF/PR

cc: I. Choronenko, HCEPC
B. Thomas, SW District
R. Schwenke, Esquire

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

For Routing To Other Than The Addressee

To: Air Quality

From: David M. Beebe, Assistant Chief
bureau of Finance and Accounting

Date: July 25, 1989

Subject: Refund of Fees

Your application for refund for ThermoTank Terminals Inc.

File# AC29-1645409, is complete.

State of Florida Warrant 4 00090 55, dated 07-11-89 and

in the amount of $ 550.00, was mailed 07-13-89.

DMB/ls

Refund processed on Agency Voucher C 01504

Fiscal Year 89-90

19

On PATS 8-22-89

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:

Mr. S. M. Richards
ThermoTank Terminals, Inc.
P. O. ox 5046
Tampa, Florida 33675-5046

4. Article Number
P 938 762 579

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X S M Richards

6. Signature — Agent
X

7. Date of Delivery
6-2-89

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

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

P 938 762 579

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. S. M. Richards, ThermoTank Terminals	
Street and No. P.O. Box 5046	
P.O., State and ZIP Code Tampa, FL 33675-5046	
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 Mailed: 5-31-89 Permit: AC 29-164540	

PS Form 3800, June 1985

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

May 31, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. S. M. Richards
ThermoTank Terminals, Inc.
P. O. Box 5046
Tampa, Florida 33675-5046

Dear Mr. Richards:

Re: Pasco Sulfur Facility Permitting, AC 29-164540

The Department has received your application package dated May 2, 1989, and deemed it incomplete. Please submit the following information including all assumptions, calculations and reference material:

1. What is the typical capacity of the sulfur delivery vehicle(s)? What is the typical delivery frequency? Please estimate the expected emissions from the sulfur delivery vehicle(s) while it is at the Pasco facility.

2. Please submit air emission estimates for any other source/equipment/process within (or associated with) the sulfur facility which has not yet been permitted by DER.

3. Submit air emission estimates for all the air pollutants emitted by the sources in the sulfur facility.

If you have any questions please call Pradeep Raval at (904) 488-1344 or write to me at the above address.

Sincerely,

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

CHF/PR

cc: I. Choronenko, HCEPC
B. Thomas, SW District
R. Schwenke, Esquire

file copy

Central Florida Testing Laboratories, Inc.

Testing Development and Research

1400 STARKEY ROAD LARGO, FLORIDA 34641 PH. (813) 585-3006 / 581-7019

May 10, 1989

State of Florida
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301

Attn: Mr. Pradeep Raval

Re: Pennzoil Molten Sulfur Storage & Handling Terminal
Port Manatee, Tampa, Florida

Dear Mr. Raval,

Pennzoil is contemplating installing two new sulfur storage tanks at their existing molten sulfur storage and handling terminal facility at Port Sutton in Tampa, Florida. The proposed new tanks will be similar in size to the existing six (6) tanks already in service at this terminal.

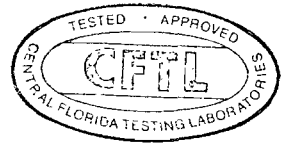
The FDER construction/operation permit application for the existing tanks has been completed by our firm and returned to the manager of the terminal for submittal to the Department.

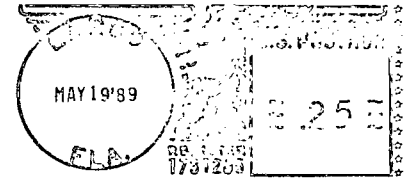
It is my understanding, from our telephone conversation today, that since the emissions from these type of tanks is quite small that no modeling or ambient air sampling and monitoring program will not be required by the Department to obtain a FDER construction permit for the new tanks. Therefore only the standard application to Operate/Construct an Air Pollution Source FDER Form 17-1.202(1) is all that will be required to secure the necessary FDER permit.

Central Florida Testing Laboratories, Inc.

1400 STARKEY ROAD

LARGO, FLORIDA 34641





STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
TWIN TOWERS OFFICE BUILDING
2600 Blair Stone Road
Tallahassee, FL 32301

Attn: Mr. Pradeep Raval

May 10, 1989

Re: Pennzoil Molten Sulfur Storage & Handling Terminal
Port Manatee, Tampa, Florida

Let me remind you that Pennzoil is only contemplating the construction of the new tanks at this time and the Department should not consider this letter as an intent to construct. Should the Department require any information other than what is requested in the permit application form, please inform our office.

Thank you for your cooperation and assistance in this matter. Should you have any questions, do not hesitate to contact our office.

Sincerely,

CENTRAL FLORIDA TESTING LABORATORIES, INC.

Russell B. Keith

Russell B. Keith
Project Engineer

RBK/ff

copied: P. Raval
B. Thomas, SWDist
J. Campbell, HCEPC
CHF/BT

ThermoTank Terminals, Inc.

May 2, 1989

State of Florida
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attention: Central Air Permitting Section

Gentlemen:

We attach hereto three (3) copies of the Application to Operate/Construct Air Pollution Sources for the molten sulphur terminal which we operate for Pasco Terminals, Inc. at Port Sutton, Tampa, Florida.

We also attach our check for Seven Hundred Fifty Dollars ($750.00) to cover the process application fee.

We further attach copy of the report "Sulfur Particulate Emission Measurement Project at the Pasco Terminals in Tampa, Florida" by Enviroplan, Inc. in October 1986.

Simultaneously, we are sending two (2) copies of the above application to the Hillsborough County Environmental Commission along with a check for the appropriate process fee of Three Hundred Fifty-five Dollars ($355.00).

If you need additional information, please contact me at the address and/or telephone number below.

Yours very truly,

THERMOTANK TERMINALS, INC.

Stephen M. Richards
President

Attachments
Copies to:
Hillsborough County Environmental Protection Commission
Roger Schwenke, Esquire
Lic. Federico G. Mariscal

SMR/jf

P.O. BOX 5046 ☐ TAMPA, FLORIDA 33675-5046 ☐ (813) 248-2074

THERMOTANK TERMINALS, INC.
P. O. BOX 5046
TAMPA, FLORIDA 33675-5046

Florida National Bank
Corporate Banking 841
100 S. Ashley Drive
Tampa, Fl. 33602

No 6159

63-507
631

May 2, 1989

PAY THE SUM 750 DOLS 00 CTS $ 750.00

TO THE ORDER OF

State of Florida
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

J Richards

[redacted]

THIS CHECK IS IN FULL PAYMENT OF ALL ITEMS LISTED BELOW. PLEASE DETACH BEFORE DEPOSITING.

DATE	INVOICE NUMBER	AMOUNT	DISCOUNT	G/L ACCT. NO.	AMOUNT
May 2, 1989	For Application to Operate/Construct Air Pollution Sources for ThermoTank Terminals-Pasco			704	750.00

THERMOTANK TERMINALS, INC.

#750 pd.
5-5-89
Rcpt. 117613

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

AC 29-164540

SOUTHWEST DISTRICT
4520 OAK FAIR BLVD.
TAMPA, FLORIDA 33610-7347
813-623-5561
Suncom—552-7612

RECEIVED
MAY 5 1989
DER - BAQM

BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY
DR. RICHARD D. GARRITY
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Molten Sulfur Terminal [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [X] Operation [ ] Modification

COMPANY NAME: ThermoTank Terminals, Inc. Pasco Terminal COUNTY: Hillsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime

(5)Molten Sulfur storage tanks, (3) 9400 long tons (1) 12,500 long tons, (1) 15,500 long tons

SOURCE LOCATION: Street 3411 Port Sutton Road City Tampa

UTM: East 17-359.7 North 3087.3

Latitude 27° 54' 20"N Longitude 82° 25' 32"W

APPLICANT NAME AND TITLE: Mr. Stephen M. Richards, President

APPLICANT ADDRESS: P.O. Box 5046, Tampa, FL 33675

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of ThermoTank Terminals, Inc.

I certify that the statements made in this application for a construction/operation 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: Stephen M. Richards

Mr. Stephen M. Richards, President
Name and Title (Please Type)

Date: _____ Telephone No. (813) 248-2074

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

See Florida Administrative Code Rule 17-2.100(57) and (104)

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 _____

Mr. Thomas B. Brumagin, P.E.
Name (Please Type)

Central Florida Testing Laboratories, Inc.
Company Name (Please Type)

1400 Starkey Road, Largo FL 34641
Mailing Address (Please Type)

Florida Registration No. 31063 Date: 5/1/89 Telephone No. (813) 581-7019

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.

See attached project description

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction Built in 1959 Completion of Construction N/A

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.)

None

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None

ThermoTank Terminals, Inc.

PASCO Terminal

Project Description

This facility consists of a molten sulfur storage and handling facility at 3411 Port Sutton Road at Port Sutton in Hillsborough County, Florida. At the PASCO Terminal molten sulfur is received by ship and pumped directly into five (5) heated storage tanks through a closed pipe system. The molten sulfur storage tanks at this facility are as follows: three (3) 9400 long ton tanks, one (1) 12,500 long ton tank, and (1) 15,500 long ton tank. In the tanks, the sulfur is maintained in a molten form at a temperature of 265 F to 270 F by a non-contact steam heating system. The steam for the heating system is supplied from TECO's Port Sutton power plant and there are no boilers currently at this facility.

The sulfur particulate is emitted through the center roof vent of each tank. Each tank is also equipped with side vents that are kept closed by a counter-weighted damper valve, and only open to relieve an excessive pressure in the tank.

Sulfur is loaded out into trucks on the two (2) separate scales through a closed pipe system. The truck driver pulls onto one of the scales, hooks the truck to a ground wire then lowers the discharge pipe into the loading opening in the top of the tank. Once the pipe is placed into the opening in the tanker, the driver sets the scales to amount which will be loaded onto the tanker. When the predetermined amount is loaded into the tanker, the pump shuts off automatically and the pipe is removed from the tank. A bucket is placed on the end of the pipe while it is still over the opening in the tanker to catch any drippings that may occur and the loading pipe is raised away from the tanker and secured to the discharge station of the terminal.

In the event that a spill occurs, most of the material is captured on the scale or in the scale pit where it is then cleaned up immediately. If some of the sulfur does spill onto the ground surface, it solidifies rapidly as it disperses due to the high surface area to volume ratio. This sulfur is also cleaned up promptly. The solidified sulfur, cleaned up from spills, is stored in a spill material storage area and eventually sold as solid sulfur.

This facility will comply with FDER rules and regulations.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; , hrs/yr 8760; if seasonal, describe: _____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes

   a. If yes, has "offset" been applied? No

   b. If yes, has "Lowest Achievable Emission Rate" been applied? No

   c. If yes, list non-attainment pollutants. Ozone, Particulate

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? Exempt from RACT pursuant to Section 17-2.650(2)(b)1. Limited by emission standards under Section 17-2.600(11)(a) for Molten Sulfur Storage & Handling Facilities. No

   a. If yes, for what pollutants? _____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

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

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; , hrs/yr 8760; if seasonal, describe: _____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes

   a. If yes, has "offset" been applied? No

   b. If yes, has "Lowest Achievable Emission Rate" been applied? No

   c. If yes, list non-attainment pollutants. Ozone, Particulate

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? Exempt from RACT pursuant to Section 17-2.650(2)(b)1. Limited by emission standards under Section 17-2.600(11)(a) for Molten Sulfur Storage & Handling Facilities. No

   a. If yes, for what pollutants? _____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

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

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
None				

E. Fuels None

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

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

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

In general, there is no liquid wastes generated in this process. In the event that a spill occurs, most of the sulfur is captured on the scale or in the scale pit where it is cleaned up immediately. If some of the sulfur does spill onto the ground surface, it solidifies rapidly as it disperses due to the high surface area to volume ratio. This sulfur is also cleaned up promptly. The solidified sulfur cleaned up from spills is stored in a spill material storage area and eventually sold as solid sulfur.

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

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ 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: _____

_____

_____

_____

_____

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

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

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, design pressure drop, 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 8 1/2" 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 8 1/2" 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 8 1/2" 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. The appropriate application fee in accordance with Rule 17-4.05. 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:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

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THERMOTANK TERMINALS, INC.

PASCO Terminal

Stack Geometry and Flow Characteristics

7-13-90 Ken Stover - Mgr. 813-248-3411

H. Emission Stack Geometry and Flow Characteristics

15,500 Long Ton Tank

24' high and 130' dia. one center and six side Vents.

Stack Height: 26 ft. Stack Diameter: 0.5 ft.

Gas Flow Rate:

Normal Operation:	52.5 ACFM	41.5 DSCFM
Ship Unloading:	110.3 ACFM	88.3 DSCFM
Water Vapor Content:	2.6 %	
Gas Exit Temperature:	200 °F	

Velocity:

Normal Operation:	4.46 FPS
Ship Unloading:	9.36 FPS

12,500 Long Ton Tank

24' high and 115' dia. one center 3 side vents with flappers.

Stack Height: 26 ft. Stack Diameter: 0.5 ft.

Gas Flow Rate:

Normal Operation:	52.5 ACFM	41.5 DSCFM
Ship Unloading:	89.0 ACFM	71.2 DSCFM
Water Vapor Content:	2.6 %	
Gas Exit Temperature:	200 °F	

Velocity:

Normal Operation:	4.46 FPS
Ship Unloading:	7.55 FPS

Each 9,400 Long Ton Tank

24' high and 100' dia. one center and 3 side vents with flappers.

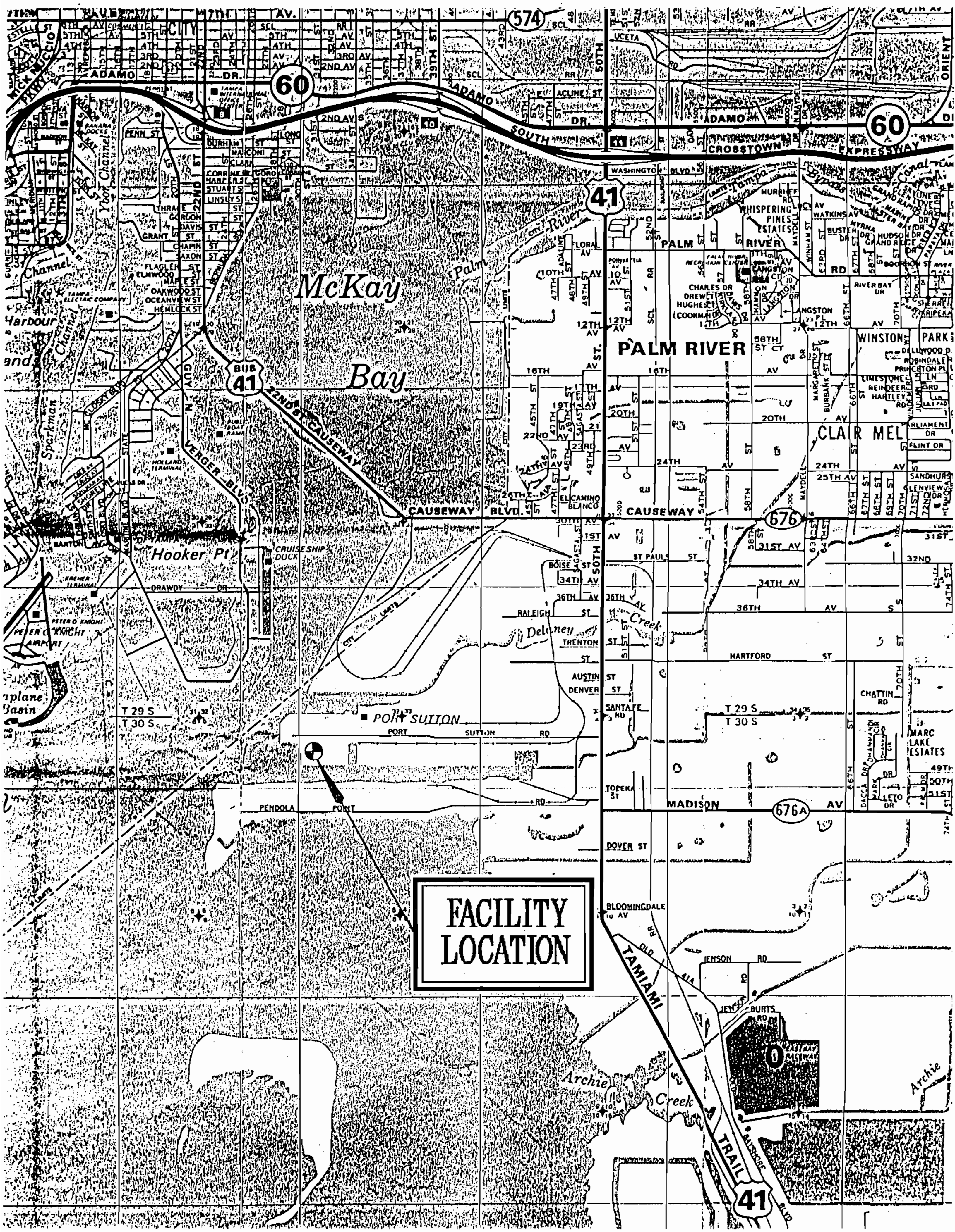
Stack Height: 26 ft. Stack Diameter: 0.5 ft.

Gas Flow Rate:

Normal Operation:	52.5 ACFM	41.5 DSCFM
Ship Unloading:	66.9 ACFM	53.5 DSCFM
Water Vapor Content:	2.6 %	
Gas Exit Temperature:	200 °F	

Velocity:

Normal Operation:	4.46 FPS
Ship Unloading:	5.68 FPS


FACILITY
LOCATION
McKay
Bay
PALM RIVER
CLAIR MEL
Hooker Pt
PORT SUTTON
PORT SUTTON RD
PENDOLA POINT RD
CAUSEWAY BLVD
MADISON AV
TAMIAMI TRAIL
CROSSTOWN EXPRESSWAY
22ND ST CAUSEWAY
Palm River
Delaney Creek
Archie Creek
T 29 S
T 30 S


FACILITY LOCATION
Hooker Point
Sewage Disposal
Tower
Drive-in Theater
CAUSEWAY
ST
COAST
Delaney
Substation
Black Point
Conveyor
Sutton
Conveyor
Lights
Light
BOUNDARY
CHANNEL
HILLSBOROUGH
H B A Y
Light
Lights
Tailings Pond
Archie
(GIBSONTON)
4539 IV SW
SCALE 1:24 000
0
1 MILE
2000
3000
4000
5000
6000
7000 FEET

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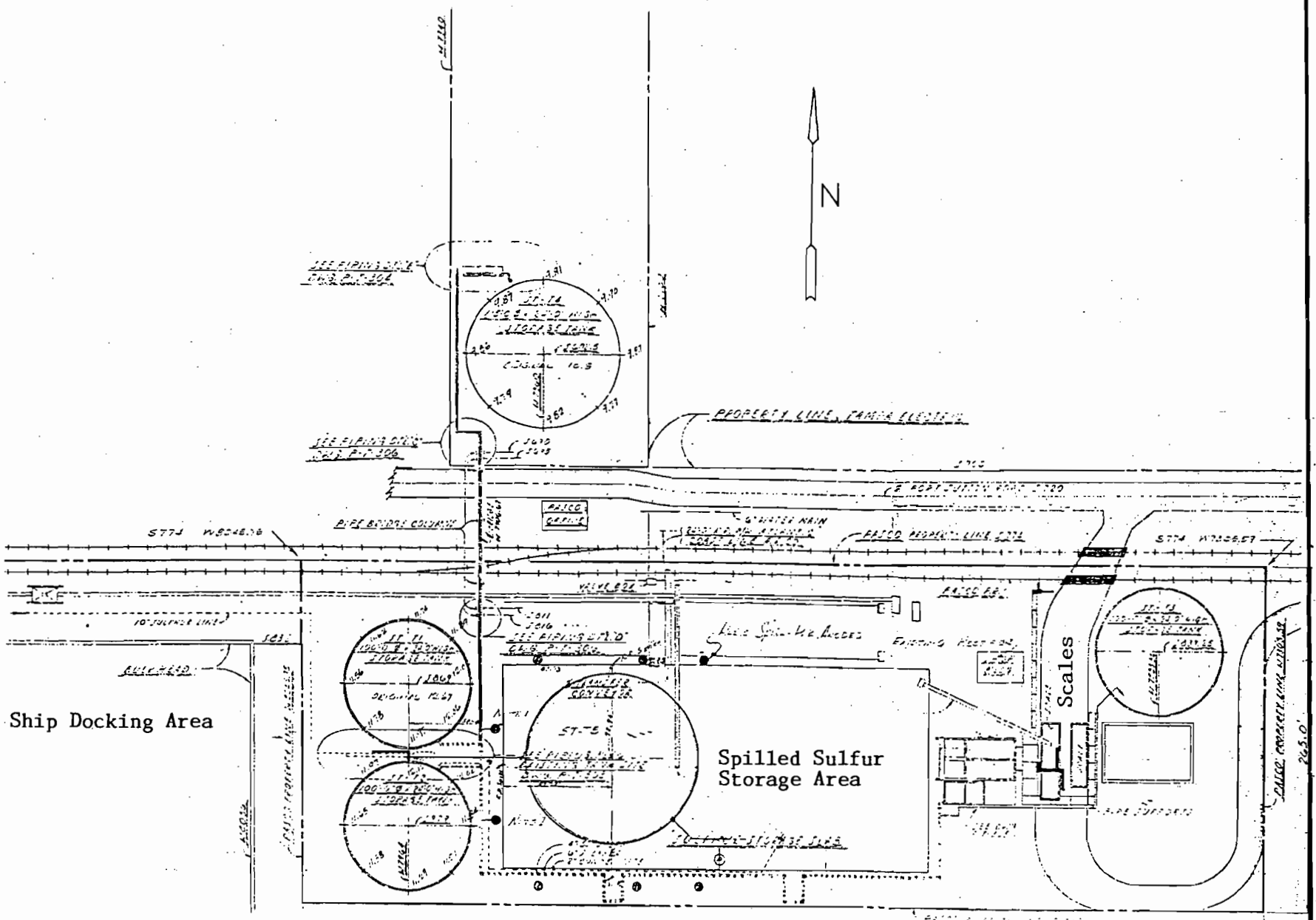

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THERMOTANK TERMINALS, INC.

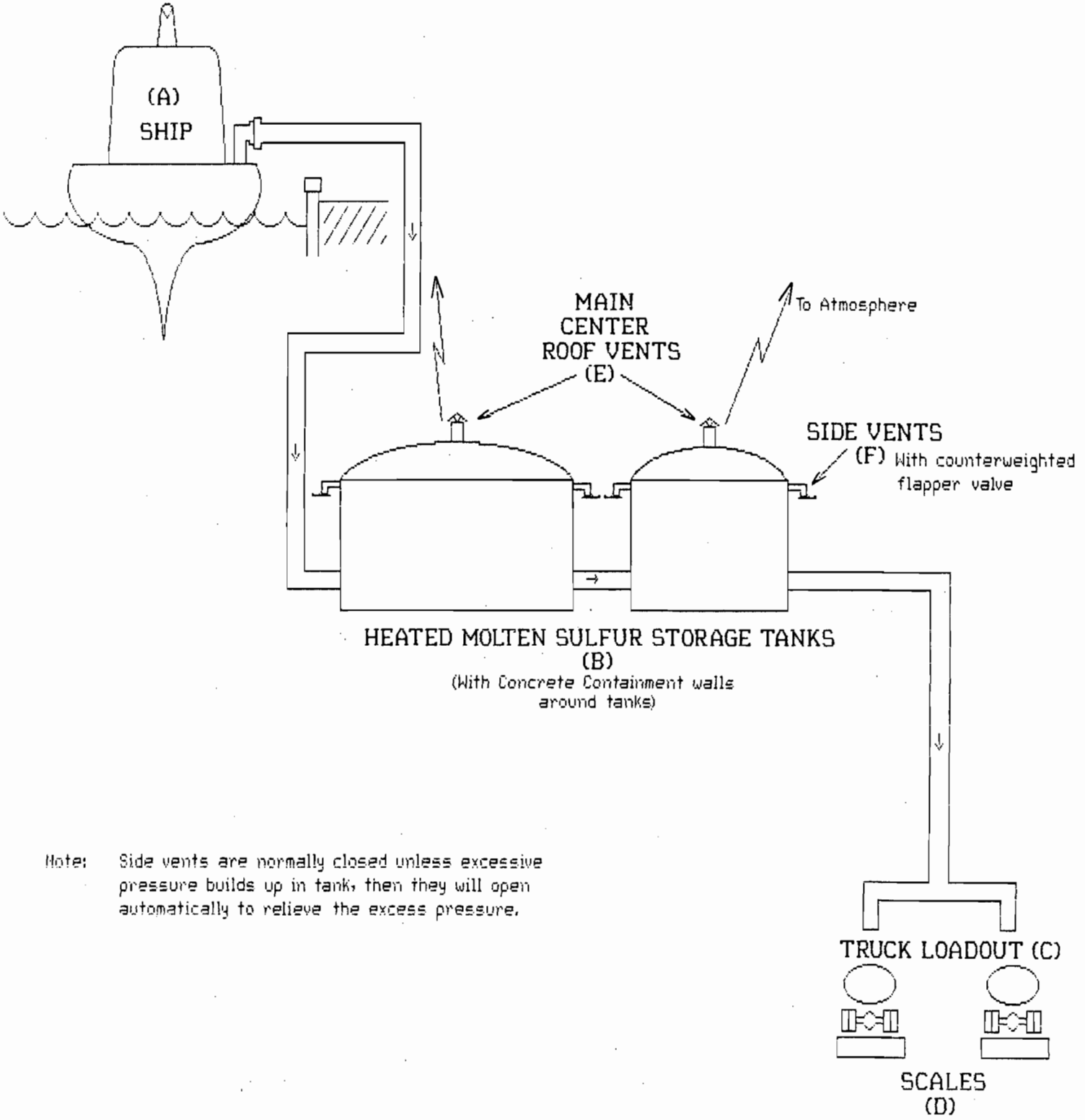
PASCO Terminal

Site Plan

THERMOTANK TERMINALS, INC

PASCO Terminal

Flow Diagram



Note: Side vents are normally closed unless excessive pressure builds up in tank, then they will open automatically to relieve the excess pressure.

It is assumed that the greatest air flow and emissions will occur from the larger 15,500 long ton tank at this facility. Therefore, during normal operation we will assume that the air flow out of the other four (4) smaller tanks will not exceed the flow for the 15,500 long ton tank while the sulfur concentration remains constant (worst case scenario).

During Normal Operation

$$\frac{(.064 \text{ lb/hr/tank})(8760 \text{ hr/yr} - 475 \text{ ship unloading hours})}{(2000 \text{ lb/ton})} = 0.265 \text{ tons/yr/tank}$$

However, during ship unloading, the displaced air volume from the storage tanks will vary in proportion to the storage capacity of the tanks since they are the same height.

During Ship Unloading

Ship unloading rate = 1200 long tons/hour

Distribution of Sulfur:

15500 long ton tank receives:
(1200 long tons/hr) (15500/56200) = 331.0 long tons/hr

12500 long ton tank receives:
(1200 long tons/hr) (12500/56200) = 266.9 long tons/hr

Each 9400 long ton tank receives:
(1200 long tons/hr) (9400/56200) = 200.7 long tons/hr

Displacement of air for each tank:

15500 long ton tank

$$\frac{(331.0 \text{ long tons/hr})(2240 \text{ lb/long ton})}{(112 \text{ lb/ft}^3 \text{ sulfur})(60 \text{ min/hr})} = 110.3 \text{ acfm @200 } ^\circ\text{F} = 88.3 \text{ dscfm}$$

12500 long ton tank

$$\frac{(266.9 \text{ long tons/hr})(2240 \text{ lb/long ton})}{(112 \text{ lb/ft}^3 \text{ sulfur})(60 \text{ min/hr})} = 89.0 \text{ acfm @200 } ^\circ\text{F} = 71.2 \text{ dscfm}$$

Each 9400 long ton tank

$$\frac{(200.7 \text{ long tons/hr})(2240 \text{ lb/long ton})}{(112 \text{ lb/ft}^3 \text{ sulfur})(60 \text{ min/hr})} = 69.0 \text{ acfm @200 } ^\circ\text{F} = 53.5 \text{ dscfm}$$

Emissions from each tank during ship unloading

Since we are assuming the concentration of particulate in the air to be constant, the emissions from each tank is dependent on the air flow.

15500 long ton tank:

$$\frac{(88.3 \text{ dscfm} + 41.5 \text{ dscfm})\ (0.0118 \text{ gm/dscf})\ (60 \text{ min/hr})}{(453.6 \text{ gm/lb})} = 0.203 \text{ lb/hr}$$

12500 long ton tank:

$$\frac{(71.2 \text{ dscfm} + 41.5 \text{ dscfm})\ (0.0118 \text{ gm/dscf})\ (60 \text{ min/hr})}{(453.6 \text{ gm/lb})} = 0.176 \text{ lb/hr}$$

Each 9400 long ton tank:

$$\frac{(53.5 \text{ dscfm} + 41.5 \text{ dscfm})\ (0.0118 \text{ gm/dscf})\ (60 \text{ min/hr})}{(453.6 \text{ gm/lb})} = 0.148 \text{ lb/hr}$$

Annual Particulate Emissions for each tank:

15500 long ton tank:
[(0.203 lb/hr) (475 hours)/(2000 lb/ton)] + 0.265 ton/yr = 0.313 tons/yr

12500 long ton tank:
[(0.176 lb/hr) (475 hours)/(2000 lb/ton)] + 0.265 ton/yr = 0.307 tons/yr

Each 9400 long ton tank:
[(0.148 lb/hr) (475 hours)/(2000 lb/ton)] + 0.265 ton/yr = 0.300 tons/yr

Since each tank emits well below one ton per year, they are exempt from the weight limiting standard pursuant to Section 17-2.600(11)(e)2.

Annual Particulate Emissions for Facility

[0.313 + 0.307 + 3(0.300)] tons/yr = 1.52 tons/yr

Sulfur Particulate Emission Measurement Project at the PASCO Terminals in Tampa, Florida

Prepared for:

PASCO Terminals Inc.

October 1986
Ref. Nos. 4025-617
4025-620

ENVIROPLAN

5. SUMMARY OF SAMPLING RESULTS

5.1 TEST RESULTS

The data collected during the three particulate measurement tests conducted at the PASCO storage tank are summarized in Table 1. This table gives the average wind speed, ambient temperature, total stack volume flow rate, stack outflow rate, stack temperature, total particulate sample, and particulate concentration for each test.

The total stack volume flow rates shown in Table 1 include both inflow and outflow, since the anemometer used to measure stack velocity does not indicate flow direction. For a single-vent storage tank to be in equilibrium, the dry standard cubic feet per minute (dscfm) of ambient air entering the vent must equal the dscfm of heated air containing sulfur particulate matter exiting the vent. This mass balance constraint requires that the tank outflow, or ventilation, rate be computed from the total measured flow rate according to the following formula:

$$F_{out} = F_{total} \, (1 + T_a/T_t)^{-1}$$

where

F_{out} = tank outflow rate (dscfm)
F_{total} = total measured tank flow rate (dscfm)
T_a = ambient temperature (^{o}R)
T_t = typical temperature inside the tank, $700^{o}R$

For an ambient temperature of $90^{o}F$, or $550^{o}R$, the above expression predicts tank outflow rate to be 56% of the total absolute measured flow rate.

The data indicate that there is no direct relationship between the tank outflow rate and wind speed over a range of 10-15 mph, contrary to what has been observed for storage tanks having multiple peripheral vents. Estimated tank outflow rates range from 38.2 dscfm at 15 mph wind speed to 45.8 dscfm at 10 mph. In addition, there is no apparent relationship between particulate concentration and wind speed, suggesting that there is no dilution effect for this tank. Particulate concentrations range from 0.0105-0.0134 g/dscf (i.e., 2.31×10^{-5} - 2.95×10^{-5} lb/dscf).

Table 2 presents the estimated hourly and annual sulfur particulate emission rates for these tests.

Hourly emission rates for normal tank operation (i.e., when the tank is not being filled) were computed as the measured particulate concentration times the estimated tank outflow rate. Annual emission rates for normal tank operation were computed as the product of the hourly emission rate and the number of hours in a year when the tank was not being filled (see below).

During storage tank filling from the ship, there are additional particulate emissions due to the rapid displacement of vapor within the tanks. Hourly emission rates due to tank filling were estimated as the product of the particulate concentration times a typical volumetric rate of liquid sulfur discharge from the ship into the tank. This volumetric discharge rate was computed as the annual facility-wide sulfur throughput divided by the density of liquid sulfur (i.e., 112 lb/ft^3) and the number of hours during the year the tank was being filled. Data from 1980, a year of high sulfur throughput for the PASCO facility, was used. During 1980 the annual facility-wide sulfur throughput was 0.51×10^6 LT (i.e., 0.13×10^5 LT for the 15,000 LT PASCO tank) and the number of hours of tank filling was approximately 372 (based on 31

ship deliveries and 12 hours per delivery), resulting in an estimated volumetric discharge rate of 119.2 acfm for this tank. Annual emissions during tank filling were computed as the hourly emission rate times the number of hours of tank filling during the year, 372.

The hourly particulate emission rates under normal tank operation ranged from 0.056-0.069 lb/hr, as indicated in Table 2. Estimated emission rates during tank filling range from 0.191-0.240 lb/hr. Total annual particulate emission rates range from 0.271-0.330 tons per year. These results show that the largest PASCO liquid sulfur storage tank clearly complies with the hourly particulate emission standard (i.e., 0.03 lbs/hr per thousand long tons of storage capacity, or 0.45 lb/hr for a 15,000 LT tank) and the 1.0 ton per year exemption limit as specified in the Florida Sulfur Storage and Handling Rule. It is unlikely that the hourly and annual emission rates for the smaller PASCO tanks would be significantly different than those found here for the largest tank. These results suggest, therefore, that the PASCO tanks would not be subject to any emission limitations under the Florida Sulfur Rule.

TABLE 1: SUMMARY OF DATA COLLECTED DURING THE PARTICULATE EMISSIONS TESTS AT THE PASCO STORAGE TANK

Test	Avg. Wind Speed (mph)	Ambient Temperature (°F)	Stack Volume Flow Rate (dscfm)	Stack Outflow Rate (dscfm)	Stack Temperature (°F)	Total Particulate Sample (mg)	Particulate Concentration (g/dscf)
1	10	86	81.5	45.8	197.8	218.3	0.0114
2	14	82	71.6	40.4	199.1	172.7	0.0105
3	15	84	67.9	38.2	202.2	200.5	0.0134

TABLE 2: HOURLY AND ANNUAL PARTICULATE EMISSION RATES FOR THE PASCO STORAGE TANK

Test	Hourly Emission Rates (lb/hr) Normal Operation	Tank Filling	Annual Emission Rate (tons/yr) Normal Operation	Tank Filling	Total
1	0.069	0.213	0.289	0.040	0.329
2	0.056	0.189	0.235	0.035	0.270
3	0.068	0.237	0.285	0.044	0.329
Average	0.064	0.213	0.270	0.040	0.309