Check Sheet

Company Name: TPS Technologies
Permit Number: A048-197154, -156, -157
PSD Number:
Permit Engineer:

Application:

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

Cross References:

- ☒ AC 48-160172A
- ☐ ~~[illegible]~~
- ☐ ~~[illegible]~~
- ☑ A048-197154A

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

NOT REQ.

Final Determination:

- ☑ Final Determination
- ☑ Signed Permit
- ☒ BACT or LAER Determination
- ☐ Other

Post Permit Correspondence:

- ☐ Extensions/Amendments/Modifications
- ☐ Other

FLORIDA DEPARTMENT OF HEALTH

AC

Lawton Chiles, Governor

James T. Howell, M.D., M.P.H., Secretary

September 3, 1997

Blair Dominiak, Manager - Regulatory Compliance
TPS Technologies Inc.
1964 South Orange Blossom Trail
Apopka, FL 32703

Re: Revised Page 2 of Air Permit Modification No. 777-0234-003-AC

Dear Mr. Dominiak:

In response to our phone conversation yesterday, I have enclosed the revised page number 2 of this modification. This change updates the permit expiration date to correspond with the date on Page 1. This was a typographical error. I am sorry for the inconvenience. If you have any questions, please contact me at the numbers below.

Sincerely,

For the Division Director
Environmental Health and Engineering

Jeffery F. Koerner

Jeffery F. Koerner, PE, Air Permit Supervisor
Air Pollution Control Section
Phone: (561) 355-4549
Fax: (561) 355-2442

cc: *Andrew Neita, Air Permitting Supervisor*
Southeast District - DEP
P.O. Box 15425 (400 N. Congress Avenue)
West Palm Beach, Florida, 33416-5425

Brian Barnard, Operations Manager
Magnum Environmental Services ,Inc.
9401 Fairgrounds Road
West Palm Beach, FL 33411

Jim Frederico, President
Magnum Environmental Services, Inc.
1280 NE 48th Street
Pompano Beach, FL 33064

Clair Fancy, PE, Chief
Bureau of Air Regulation - DEP
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED
SEP 05 1997
BUREAU OF
AIR REGULATION

Filename: 0234003.REV

AIR CONSTRUCTION PERMIT MODIFICATION

PART I. SUMMARY INFORMATION

Replace old Part I with the following new Part I.

PERMIT HISTORY

- *12-02-96: Health Department issued air permit 777-0234-001-AO, a renewal operation permit which included changes for the coal tar/PCB modification.*
- *11-06-96: Health Department issued air permit modification 777-0234-002-AC to allow the treatment of soils contaminated with specified amounts of coal tars and PCBs.*
- *05-24-94: Bureau of Air Regulation issued air permit modifications AC48-166172B and AO48-197154B to make requested minor corrections to air permits AC48-166172A and AO48-197154A.*
- *02-04-94: Bureau of Air Regulation issued air permit modifications AC48-166172A and AO48-197154A to incorporate the new requirements for Soil Thermal Treatment Units in Rule 17-296.415, F.A.C.*
- *01-09-92: Bureau of Air Regulation modified permits AC48-166172 and AO48-197154 to allow permanent operation at 9401 fairgrounds Road in West Palm Beach, Florida.*
- *08-07-92: Bureau of Air Regulation issued air permit AO48-197154 to operate a mobile soil thermal treatment unit.*
- *10-17-89: Bureau of Air Regulation issued air permit AO48-166172 to construct a mobile soil thermal treatment unit.*

PERMIT CONTENT

- Part I: Summary Information
- Part II: Facility-Wide Specific Conditions
- Part III: Emissions Unit Specific Conditions
- Part IV: Appendices
  - *Appendix A*: General Permit Conditions
  - *Appendix B*: Citation Format and Definitions
  - *Appendix C*: Summary of Test Requirements
  - *Appendix D*: Exempt Activities
  - *Appendix E*: Continuous Temperature Monitor Calibration Methods
  - *Appendix F*: Summary of Soil Sampling and Analysis
  - *Appendix G*: On-Specification Used Oil Fuel Requirements

REGULATORY CLASSIFICATION

This facility is classified as a synthetic (for HAPs, SO_2, and VOC), non-Title V, minor source of air pollution. The facility is subject to *Rule 62-296.415, F.A.C., Soil Thermal Treatment Facilities.*

EMISSIONS UNITS SUMMARY

This permit addresses the following emissions unit:

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
001	Soil Thermal Treatment Facility

PART II. FACILITY-WIDE SPECIFIC CONDITIONS

1.0 ADMINISTRATIVE

Add new specific condition:

1.8 Modification: This air construction permit modification supersedes air permit number 777-0234-002-AC issued on 11-06-96. The provisions of previous air construction permit number 777-0234-002-AC, attached, are hereby incorporated into this air construction permit modification with the exceptions noted as "new" or "modified" permit conditions. **[DARM-PER/GEN-16]**

Modify the following specific conditions:

1.5 Expiration: This air pollution construction permit shall expire on August 27, 1998. **[Rule 62-210.300(1), F.A.C.]**

FLORIDA DEPARTMENT OF HEALTH

AL WILLARD

Lawton Chiles, Governor

James T. Howell, M.D., M.P.H., Secretary

CERTIFIED MAIL

NOTICE OF AIR POLLUTION CONSTRUCTION PERMIT

PERMITTEE:
TPS Technologies Inc.
1964 South Orange Blossom Trail
Apopka, FL 32703

Authorized Representative:
Blair Dominiak, Manager - Regulatory Compliance

Air Permit No.: 777-0234-003-AC
PALM BEACH COUNTY, FLORIDA
Project: On-Specification Used Oil Modification

Filename: 0234003.NOPP

Dear Mr. Dominiak:

Enclosed is Air Permit No. 777-0234-3-AC to perform the proposed modification of a source of air pollution located in Palm Beach County. This permit is issued pursuant to Chapter 403.087 of the Florida Statutes (F.S.) and Chapters 62-4, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code. Any party to this Order (Permit) has the right to seek judicial review pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure with the Health Department at the address listed below 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 Order (Permit) is filed with the Clerk of the Health Department.

Executed in West Palm Beach, Florida.
PALM BEACH COUNTY HEALTH DEPARTMENT

Frank J. Gargiulo, PE, Division Director
Environmental Health and Engineering

For any questions, contact:
Jeffery F. Koerner, PE, Air Permit Supervisor
Air Pollution Control Section
Palm Beach County Health Department
P.O. Box 29 (901 Evernia Street)
West Palm Beach, Florida, 33402-0029

CERTIFICATE OF SERVICE

The undersigned duly designated agency clerk hereby certifies that the Notice of Permit and the Final Permit were sent by certified mail before the close of business on AUG 27 1997 to the permittee.

In addition, the undersigned duly designated deputy agency clerk hereby certifies that *copies* of these documents were sent by U.S. mail on the same date to the following persons:

Isadore Goldman, PE
Southeast District Office - DEP
P.O. Box 15425, West Palm Beach, Florida, 33416-5425

Brian Barnard, Operations Manager
TPS Technolgies Inc.
9401 Fairgrounds Road
West Palm Beach, FL 33411

Clair Fancy, PE, Chief
Bureau of Air Regulation, DEP
2600 Blair Stone Road, Tallahassee, FL 32399-2400

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), F.S., with the designated agency Clerk, receipt of which is hereby acknowledged.

Linda Hudson
(Clerk)

AUG 27 1997
(Date)

RECEIVED
SEP 02 1997
BUREAU OF
AIR REGULATION

FINAL DETERMINATION

AIR POLLUTION CONSTRUCTION PERMIT
(MODIFICATION)

FACILITY

TPS Technologies Inc.
1964 South Orange Blossom Trail
Apopka, FL 32703

Authorized Representative:
Blair Dominiak, Manager - Regulatory Compliance

TPS Technologies Inc.
9401 Fairgrounds Road
West Palm Beach, FL 33411

UTM: Zone 17 ; 580.2 E ; 2952.0 km N
Description: Stationary Soil Thermal Treatment Facility
SIC: 4953

PROJECT

Air Permit No. 777-0234-003-AC
Air Pollution Construction Permit
Modification to add on-specification used oil fuel as an allowable fuel.
Palm Beach County, Florida

COMMENTS / CHANGES

The Health Department received proof of publication on August 12, 1997 that the Public Notice of Intent to Issue Permit was published in the August 12, 1997 issue of the Palm Beach Business Daily Review. No comments were made by the applicant, the general public, nor the Florida Department of Environmental Protection. The Health Department made minor changes to some typographical errors, such as misspelled words.

FINAL ACTION

The final action of the Health Department is to issue this air construction permit, as proposed, with the above noted revisions.

Filename: 0234003.FD

AIR POLLUTION
CONSTRUCTION PERMIT MODIFICATION

PALM BEACH COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH AND ENGINEERING
P.O. Box 29 (901 Evernia Street)
West Palm Beach, Florida 33402-0029
Telephone: (561) 355-3435

{Permitting Note: This permit modifies previous air construction permit 777-0234-002-AC issued on 11-06-96. The original format and sequence of the previous permit has been preserved. Only new or modified permit conditions are noted for each permit part. Original air construction permit 777-0234-002-AC is attached for reference.}

ISSUED TO:

Permittee:
TPS Technologies Inc.
1964 South Orange Blossom Trail
Apopka, FL 32703

ARMS No.:	777-0234
Permit No:	777-0234-003-AC
Issued:	August 27, 1997
Expires:	August 27, 1998

Authorized Representative:
Blair Dominiak, Manager - Regulatory Compliance

LOCATED AT:

TPS Technologies Inc.
9401 Fairgrounds Road
West Palm Beach, FL 33411

UTM: Zone 17 ; 580.2 E ; 2952.0 km N

Description: Stationary Soil Thermal Treatment Facility
SIC No.: 4953

STATEMENT OF BASIS:

The Palm Beach County Health Department (Health Department) issues this permit under the provisions of Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4 through 62-297 the Florida Administrative Code (F.A.C.). The Florida Department of Environmental Protection (DEP) has permitting jurisdiction under Chapter 403.087, F.S. However, in accordance with Section 403.182, F.S., the DEP recognizes the Health Department as the approved local air pollution control program in Palm Beach County. As such, the DEP and the Health Department have entered into a Specific Operating Agreement that delegates to the Health Department the authority to issue or deny permits for this type of air pollution source located in Palm Beach County. The above named permittee is authorized to construct or modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Health Department.

ISSUED BY:

Executed in West Palm Beach, Florida.
PALM BEACH COUNTY HEALTH DEPARTMENT

Frank J. Gargiulo, PE, Division Director
Environmental Health and Engineering

AIR CONSTRUCTION PERMIT MODIFICATION

PART I. SUMMARY INFORMATION

Replace old Part 1 with the following new Part 1.

PERMIT HISTORY

- *12-02-96: Health Department issued air permit 777-0234-001-AO, a renewal operation permit which included changes for the coal tar/PCB modification.*
- *11-06-96: Health Department issued air permit modification 777-0234-002-AC to allow the treatment of soils contaminated with specified amounts of coal tars and PCBs.*
- *05-24-94: Bureau of Air Regulation issued air permit modifications AC48-166172B and AO48-197154B to make requested minor corrections to air permits AC48-166172A and AO48-197154A.*
- *02-04-94: Bureau of Air Regulation issued air permit modifications AC48-166172A and AO48-197154A to incorporate the new requirements for Soil Thermal Treatment Units in Rule 17-296.415, F.A.C.*
- *01-09-92: Bureau of Air Regulation modified permits AC48-166172 and AO48-197154 to allow permanent operation at 9401 fairgrounds Road in West Palm Beach, Florida.*
- *08-07-92: Bureau of Air Regulation issued air permit AO48-197154 to operate a mobile soil thermal treatment unit.*
- *10-17-89: Bureau of Air Regulation issued air permit AO48-166172 to construct a mobile soil thermal treatment unit.*

PERMIT CONTENT

- Part I: Summary Information
- Part II: Facility-Wide Specific Conditions
- Part III: Emissions Unit Specific Conditions
- Part IV: Appendices
  - *Appendix A*: General Permit Conditions
  - *Appendix B*: Citation Format and Definitions
  - *Appendix C*: Summary of Test Requirements
  - *Appendix D*: Exempt Activities
  - *Appendix E*: Continuous Temperature Monitor Calibration Methods
  - *Appendix F*: Summary of Soil Sampling and Analysis
  - *Appendix G*: On-Specification Used Oil Fuel Requirements

REGULATORY CLASSIFICATION

This facility is classified as a synthetic (for HAPs, SO_2, and VOC), non-Title V, minor source of air pollution. The facility is subject to *Rule 62-296.415, F.A.C., Soil Thermal Treatment Facilities.*

EMISSIONS UNITS SUMMARY

This permit addresses the following emissions unit:

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
001	Soil Thermal Treatment Facility

PART II. FACILITY-WIDE SPECIFIC CONDITIONS

1.0 ADMINISTRATIVE

Add new specific condition:

1.8 Modification: This air construction permit modification supersedes air permit number 777-0234-002-AC issued on 11-06-96. The provisions of previous air construction permit number 777-0234-002-AC, attached, are hereby incorporated into this air construction permit modification with the exceptions noted as "new" or "modified" permit conditions. **[DARM-PER/GEN-16]**

Modify the following specific conditions:

1.5 Expiration: This air pollution construction permit shall expire on August 12, 1997. **[Rule 62-210.300(1), F.A.C.]**

1.6 Air Operation Permit Revision: The permittee has simultaneously requested a revision of current air operation permit number 777-0234-001-AO because no new equipment is being installed nor preliminary tests required. Therefore, the Health Department will issue revised air operation permit 777-0234-001-AO after this air construction permit modification becomes final. **[Applicant Request]**

No other changes required to Part II.

PART III. EMISSIONS UNIT SPECIFIC CONDITIONS

EMISSIONS UNIT DESCRIPTION

Add "on-specification used oil fuel" as an allowable fuel for the rotary drum dryer and afterburner in the Emissions Unit Description.

3.0 PERFORMANCE RESTRICTIONS

Modify the following specific conditions:

3.3 Allowable Fuels: Fuels used to fire the drum dryer and afterburner shall be limited to natural gas, liquefied petroleum gas (LPG), and fuel oil (including on-specification used oil fuel) with the following restrictions. Compliance with these restrictions shall be determined by the records in the Operations Log required by this permit. **[Applicant Request]**

(a) Allowable fuels shall contain no more than 0.50% sulfur by weight based on a 12 month rolling average.

(b) No more than 2,028,000 gallons of fuel oil (including on-specification used oil fuel) shall be fired in any consecutive 12 month period, rolling total.

(c) If a combination of natural gas, liquefied petroleum gas, or fuel oil (including on-specification used oil fuel) are fired during the same 12 month period, then the heat input provided by the combined fuels shall not exceed 283,920 mmBTU per consecutive 12 months, rolling total.

(d) Only "on-specification" used oil fuel meeting the requirements defined in Appendix G of this permit shall be burned at this facility.

4.6 Change the words "diesel" and "diesel fuel" to "fuel oil (including on-specification used oil fuel" throughout the specific condition.)

No other changes required to Part III.

PART IV. APPENDICES

Add Appendix G, attached.

1.0 ACCEPTABLE LEVELS FOR ON-SPECIFICATION USED OIL FUELS

1.1. Specifications : This facility may burn used oil for energy recovery that meets the EPA requirements for "on-specification" used oil fuels as defined in the following table. On-specification used oil fuels may be burned in the rotary drum dryer, the afterburner, or both. **[40 CFR 279.11]**

Table 1: EPA's "On-Specification" Requirements for Used Oil Fuels[1]

Constituent/Property	Allowable Level
Arsenic	4 ppm, maximum[4]
Cadmium	2 ppm, maximum
Chromium	7 ppm, maximum[5]
Lead	100 ppm, maximum
Flash Point	100°F, minimum
Total Halogens[3]	1,000 ppm, maximum[2]

[1] The specification does not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see 40 CFR 279.10(b)).

[2] 40 CFR 279.11 actually lists a maximum of 4,000 ppm of halogens. However, used oil fuels containing more than 1,000 ppm of total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under 279.10(b)(1). Hazardous wastes shall not be burned at this facility.

[3] Applicable standards for the burning of used oil containing PCBs are imposed by 40 CFR 761.20(e).

[4] The EPA specification is 5 ppm, but the permittee requested a more stringent specification to lessen the ambient impact.

[5] The EPA specification is 10 ppm, but the permittee requested a more stringent specification to lessen the ambient impact.

Once used oil that is to be burned for energy recovery has been shown not to exceed any of the above specifications and the person making that showing complies with 40 CFR 279.72 , 279.73, and 279.74(b), the used oil is no longer subject to this part. Used oil that does not meet the above requirements for on-specification used oil shall not be burned at this facility. **[40 CFR 279.11]**

1.2 PCB Content: On-specification used oil fuel containing a PCB concentration of 50 ppm or more shall not be burned at this facility. Used oil shall not be blended to meet this requirement. On-specification used oil with a PCB concentration of 2 to 49 ppm shall be burned only at normal source operating temperatures. On-specification used oil with a PCB concentration of 2 to 49 ppm shall not be burned during periods of startup or shutdown. **[40 CFR 279.61 and 761.20(e)]**

Note: A claim that used oil does not contain quantifiable levels of PCBs (that is, that the used oil contains less than 2 ppm of PCBs) must be documented by analysis or other information. The first person making the claim that the used oil does not contain PCBs is responsible for furnishing the documentation. The documentation can be tests, personal or special knowledge of the source and composition of the used oil, or a certification from the person generating the used oil claiming that the used oil contains no detectable PCBs.

1.3 Sulfur Content: On-specification used oil fuels shall contain no more than 0.5% sulfur by weight based on a 12 month rolling average. **[F.A.C. 62-4.070]**

2.0 MONTORING REQUIREMENTS

2.1 Notification: The permittee shall comply with the applicable registration, notification, and reporting requirements of **40 CFR 279.73, 40 CFR 279.75, 40 CFR 761.20(e),** and **Rule 62-710.500, F.A.C.**. All registrations, notifications, and reports required by these regulations shall be sent to Used Oil Coordinator, Hazardous Waste Management Section, Bureau of Solid and Hazardous Waste, Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida, 32399-2400.

2.2 Marketer Certification: For each shipment of used oil fuel to the facility, the permittee shall receive certification from the marketer that the used oil meets the EPA requirements for on-specification used oil fuel and contains a PCB

concentration of no greater than 49 ppm. This certification shall also describe the basis for the certification, such as analytical results. Before accepting the first shipment of used oil from a marketer, the permittee shall provide each marketer with a one-time written and signed notice certifying that the permittee will burn the used oil in a qualified combustion device. The notice must state that EPA or a RCRA-delegated state agency has been given a description of the used oil management activities at the facility and that an industrial boiler or furnace will be used to burn the used oil with a PCB concentration of 2 to 49 ppm. **[40 CFR 279.61, 40 CFR 761.20(e) and Rule 62-4.070, F.A.C.]**

2.3 Testing: If the marketer does not provide certification as described above, the permittee shall sample and analyze each used oil shipment to the facility for the following parameters: **[Rule 62-4.070, F.A.C.]**

- Arsenic (ppm by weight)
- Cadmium (ppm by weight)
- Chromium (ppm by weight)
- Lead (ppm by weight)
- PCBs (ppm by weight)
- Total Halogens (ppm by weight)
- Flash Point (degrees Fahrenheit)
- Sulfur Content (in percent by weight)
- Heat Content (BTU per gallon)

(a) At least once per year, the permittee shall randomly sample the used oil fuel and analyze it for the above parameters. The results shall be submitted to the Health Department within 45 days of sampling.

(b) All sampling and analysis shall be performed in accordance with EPA-approved or ASTM methods.

(c) If the analytical results show that the used oil does not meet the requirements for on-specification used oil, or that it contains a PCB concentration of 50 ppm or greater, the permittee shall immediately notify the Health Department and cease burning of the used oil.

2.4 Record Keeping: The permittee shall obtain, make, and keep the following records: **[40 CFR 279.61, 40 CFR 761.20(e), and F.A.C. Rule 62-4.070]**

(a) The name and address of the facility receiving the shipment.
(b) The name and address of all marketers delivering used oil to the facility.
(c) Copies of the marketer certifications, if obtained, and any supporting information.
(d) Documentation that the used oil contains less than 2 ppm PCBs, if claimed, including the name and address of the person making the claim.
(e) Results of the analyses required above.
(f) A copy of the notice to EPA and a copy of the one-time written notice provided to each marketer.
(g) For each used oil shipment received: the date and quantity of used oil fuel (gallons) received.

The records shall be retained on site at the facility in a form suitable for inspection by the Health Department. Records for on-specification used oil fuel shall be retained for at least 5 years.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT ISSUANCE

CERTIFIED MAIL

In the Matter of Applications
for Permit by:

DEP File No. **AC**50-166172A
AO48-197154A
Palm Beach County

TPS Technologies, Inc.
12068 Market Street
Livonia, Michigan 48150
_____/

Enclosed is revised Permit Number **AC**50-166172A/**AO**48-197154A to construct and operate soil thermal treatment facility SRU-200P-103 in West Palm Beach, Palm Beach County, Florida. This permit is being revised to incorporate the requirement of F.A.C. Rule 17-296.415. This permit is issued pursuant to Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-4, 17-210, 17-212, 17-296, and 17-297.

A person whose substantial interests are affected by this permit 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 14 days of receipt of this Permit. 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 permit. 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 receipt 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.

This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition and conforms to Rule 17-103.070, F.A.C. Upon timely filing of a petition or a request for an extension of time this permit will not be effective until further Order of the Department.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order 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 the Final Order is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT ISSUANCE and all copies were mailed by certified mail before the close of business on 2/4/94 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Charlotte J Hayes (Clerk) 2/4/94 (Date)

Copies furnished to:
Isidore Goldman, SED
Jeff Koerner, PBCHD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
TPS Technologies, Inc.
12068 Market Street
Livonia, MI 48150

4a. Article Number
P 872 562 598

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

7. Date of Delivery
FEB 7 1994

5. Signature (Addressee)

6. Signature (Agent)
Bruce Schaffer

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1991 *U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 872 562 598

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to TPS Technologies, Inc.	
Street and No. 12068 Market St.	
P.O., State and ZIP Code Livonia, MI 48150	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 2-4-94 Permit: AC50-166172A A048-197154A	

PS Form **3800**, JUNE 1991

Florida Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

PERMITTEE:
TPS Technologies, Inc.
12068 Market Street
Livonia, Michigan 48150

Permit Number: AC 50-166172
AO 48-197154
Expiration Date: July 1, 1996
County: Palm Beach
Project: Soil Thermal Treatment Facility SRV-200P-103

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-212 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 and specifically described as follows:

Authorization to construct/operate a 25 TPH soil thermal treatment facility. The facility consists of a contaminated soil feed and weigh mechanism, a rotary kiln, combustion air blower, baghouse, induced draft fan, a LPG/No. 2 oil fuel system, an afterburner operating at a minimum temperature of 1600°F and a minimum retention time of 0.5 seconds, and a 32 ft. high stack with 47" by 25" inside dimensions that handles a minimum of 22,000 acfm of flue gas.

The facility is located at 9101 Fairgrounds Road, West Palm Beach, Palm Beach County, Florida. The coordinates of this site are UTM Zone 17, 580.22 km E - 2952.0 km N; and Latitude/Longitude is 26°41'18"N - 80°11'36"W.

The source shall be operated 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. TPS January 17, 1994, letter.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

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. Neither 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 is not 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, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; 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.

6. The permittee shall 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.

GENERAL CONDITIONS:

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 and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

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

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

c. Sample or monitor 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 provide the Department with the following information:

a. A description of and cause of non-compliance; and

b. The period of noncompliance, including 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 for revocation of this permit.

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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

GENERAL CONDITIONS:

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 17-4.120 and 17-30.300, F.A.C., 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 or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold 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) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

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 dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

GENERAL CONDITIONS:

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 corrected promptly.

SPECIFIC CONDITIONS:

PLANT OPERATION PARAMETERS

1. The facility shall only treat petroleum contaminated soil as defined in F.A.C. Rule 17-775, (F.A.C. Rule 17-296.415).

2. Hazardous waste as defined in 40 CFR 261.3 shall not be processed by this facility (F.A.C. Rule 17-775).

3. This facility shall not treat polychlorinated biphenyls (PCBs) contaminated soil (F.A.C. Rule 17-775).

4. Based on data in the application, the input of Total Recoverable Petroleum Hydrocarbons (TRPH) in the soil into the facility shall not exceed 1,250 lbs/hr (daily avg.). Daily average is the pounds of TRPH in the untreated soil processed during a calendar day divided by the facility's actual hours of operation during that day.

5. The afterburner shall be operated above 1600°F with a minimum of 0.5 second retention time (F.A.C. Rule 17-296.415).

6. The facility may operate 24 hours per day, 7 days per week, but not more than 7,800 hrs/yr. It shall not be operated at a site with another soil thermal treatment facility, without requesting and obtaining a revised permit from the Department.

7. The maximum contaminated soil charging rate to this facility shall be 25 TPH. The facility shall have a calibrated belt scale to monitor the charging rate to the kiln.

8. Soil entering the kiln cannot be larger than 2 inches in diameter (F.A.C. Rule 17-775).

SPECIFIC CONDITIONS:

9. As proposed by the permittee, only LPG or No. 2 fuel oil containing a maximum of 0.3% sulfur shall be used as fuel for the kiln and afterburner. The maximum permitted fuel consumption, equivalent to 37 MMBtu/hr heat input, is 407 GPH LPG or 266 GPH No. 2 fuel oil.

EMISSION LIMITS

10. Particulate matter emissions from the afterburner stack shall neither exceed 0.04 grains/dscf, 3.0 lbs/hr, nor 11.7 TPY (F.A.C. Rule 17-296.415(2)(b)).

11. Visible emissions from the facility stack shall not exceed 5 percent opacity (F.A.C. Rule 17-296.415(2)(a)).

12. Carbon monoxide emissions shall not exceed 100 parts per million by volume, dry, during any 60 consecutive minute period (Rule 17-296.415(1)(b), F.A.C.).

13. The operation of this facility shall not result in the emissions of air pollutants which cause or contribute to an objectionable odor pursuant to F.A.C. Rule 17-296.320.

14. Untreated soil removed from the ground shall be stored under permanent cover structures to reduce fugitive emissions (F.A.C. Rule 17-775.620(2)).

15. Reasonable precautions shall be used to minimize unconfined emissions of particulate matter generated by the operation (F.A.C. Rule 17-296.310). Reasonable precautions shall be defined as keeping the work areas wet where the soil is being removed, treated, handled, and stored or disposed of.

GENERAL REQUIREMENTS

16. The system shall be properly operated and maintained (F.A.C. Rule 17-210.300). No person shall circumvent any pollution control device or allow the emissions of air pollutants without the applicable air pollution control device operating properly (F.A.C. Rule 17-210.650). The permittee's operation of the soil thermal treatment facility in Florida is conditioned upon the baghouse and the afterburner of the facility being fully operational, as demonstrated by monitoring instrumentation on the baghouse and afterburner.

SPECIFIC CONDITIONS:

17. The unit shall not be operated at a location or in a manner that may create a nuisance.

EMISSION TESTING REQUIREMENTS

18. This facility shall be tested (EPA test methods are specified in 40 CFR 60, Appendix A, revised July 1, 1993) on initial startup and annually thereafter for:

(A) Particulate matter (PM) emissions by EPA Methods 1, 2, 3, 4, and 5.

(B) Visible emissions by EPA Method 9.

(C) Carbon monoxide (CO) emissions by averaging each hour of the readings from the CO continuous emission monitor during the PM test period.

(D) Afterburner temperature by averaging each hour of the temperature readings from the continuous temperature monitor during the PM test period.

(E) Afterburner residence time using the test data collected by EPA Methods 1 and 2.

(F) Fuel oil sulfur limits based on analysis ASTM D1552-83 referenced in 40 CFR 60.17 or other methods after Department approval. A certified analysis by the fuel oil supplier will be acceptable.

(G) Contaminated soil analysis for volatile organic aromatics (VOA), total recoverable petroleum hydrocarbons (TRPH), polynuclear aromatic hydrocarbons (PAH), volatile organic halocarbons (VOH), and metals as required by Rule 17-775.410, F.A.C., of the soil being treated during the particulate matter compliance test.

Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90-100% of rated capacity. If it is impracticable to test at capacity, then sources may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the Department.

SPECIFIC CONDITIONS:

19. All compliance tests shall meet the requirements listed in F.A.C. Rule 17-297.

20. When the Department, after investigation, has good reason (such as complaints, increased visible emissions, or questionable maintenance of control equipment) to believe that any applicable emission standard contained in F.A.C. Rule 17-296.415 or in this permit is being violated, it may require the owner or operator of the unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the source and to provide a report on the results of said tests to the Department (F.A.C. Rule 17-297.340(2)).

RECORD KEEPING REQUIREMENTS

21. Pressure drop across the baghouse, temperature of the afterburner, and CO emissions shall be recorded continuously during operations. The instruments used to obtain these measurements shall be properly calibrated, maintained, and in operation any time the facility is in service.

22. The permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements, all continuous monitoring system performance evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, all soil analysis required by F.A.C. Rule 17-775 and all other information required by rules and this permit, recorded in a permanent form suitable for inspection. The file shall be retained for at least 3 years following the date of such measurements, maintenance, reports, and records.

23. The permittee shall maintain a daily log that shows the date, operation time, processing rate, type and quantity of fuel consumption in the dryer and afterburner, and any operation problems. These records shall be maintained for a minimum of 3 years.

ADMINISTRATIVE REQUIREMENTS

24. The Southeast District shall be notified in writing at least 15 days in advance of any scheduled compliance test to be conducted on this facility (F.A.C. Rule 17-297.340(1)(i)).

25. Compliance test results shall be submitted to the Southeast District within 45 days of the test (F.A.C. Rule 17-297.570(2)).

SPECIFIC CONDITIONS:

26. This permit requires compliance with any applicable local (County) regulation. This may include requirements for county operation permits and additional restrictions on the operation of this unit.

27. The permittee shall submit to the Southeast District and the Palm Beach County Health Department each calendar year, on or before March 1, an Annual Operation Report DER Form 17-1.202(c) for this facility for the preceding calendar year containing at least the following information pursuant to Subsection 403.061(13), F.S.:

(A) Annual amount of material and/or fuels utilized.

(B) Annual emissions in TPY (note calculation basis).

(C) Annual hours of operation.

(D) Any changes in the information contained in the application.

(E) All compliance tests reports for the preceding year.

(F) Temperature and CO exceedance reports for the year.

28. An application for an operating permit must be submitted to the Southeast District at least 90 days prior to the expiration date of this permit. To apply for an operation permit, the applicant shall submit the appropriate application form, fee, a report on any physical change or major maintenance to the facility, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Howard L. Rhodes

Howard L. Rhodes
Director
Division of Air Resources Management

Florida Department of
Environmental Protection

Memorandum

TO: Howard L. Rhodes

FROM: Clair Fancy

DATE: February 3, 1994

SUBJ: Amendment of Permits
TPS Technologies, Inc.

Attached for your approval and signature is a construction/ operation permit for a soil thermal treatment facility operated by TPS Technologies, Inc., in West Palm Beach. The permit is being reissued to make it consistent with the air regulations (F.A.C. Rule 17-296.415) that have been adopted for these sources.

CHF/WH/bb

Attachment

TPS
TECHNOLOGIES INC.

12068 Market Street ☐ Livonia, Michigan 48150 USA
Telephone: (313) 591-1000 ☐ Fax: (313) 591-6443

January 17, 1994

RECEIVED
JAN 18 1994
Bureau of
Air Regulation

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

Attn: Mr. Willard Hanks

Re: TPS Technologies' Soil Recycling Center in West Palm Beach
Request for Permit Modification
Air Quality Permit No. AO48-197154

Dear Mr. Hanks:

Pursuant to our telephone conversation of January 12, 1994, TPS Technologies (TPST) formally requests a modification of the above referenced permit, which was amended for a permanent location in Palm Beach County on June 27, 1991 (AC50-166172), and issued as a Permit to Operate on August 1, 1991. TPST is well aware of and in compliance with the revised regulations adopted over the last year concerning the soil thermal treatment industry, namely Rules 17-775 and 17-296/297. We request that our air quality permit be modified to reflect the changes in those regulations, specifically in regard to the compliance program requirements and test methods.

TPST sincerely appreciates your attention to this matter so that we can properly proceed with our soon-to-be-scheduled stack test program.

Respectfully,

B. W. Dominiak

Blair W. Dominiak
Manager, Regulatory Compliance

BD/lk

cc: G. Catalano
B. Barnard
B. Hanks
S. Goldman, S E Dist.

Florida Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

October 22, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. William G. Newton, Facility Manager
TPS Technologies, Inc.
9401 Fairgrounds Road
West Palm Beach, Florida 33411

OK
GPL
10/20
OL JB

Dear Mr. Newton:

Re: AO48-197154

The Department has reviewed your October 14, 1993, letter proposing to dilute 18 tons of soil contaminated with virgin diesel fuel to 10,000 ppm or less prior to processing it in your soil thermal treatment facility. Processing of this contaminated soil as proposed in your letter is approved by the Department.

Sincerely,

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

CHF/WH/bjb

Attachment: TPS Oct. 14, 1993, letter

cc: Isidore Goldman, SED
Jeff Koerner, Palm Beach Co.

BEST AVAILABLE COPY

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

RECEIVED
OCT 28 1993
Division of Air Resources Management

3. Article Addressed to:
Mr. William G. Newton
TPS Technolgoies, Inc.
9401 Fairgrounds Road
West Palm Beach, FL 33411

4a. Article Number
P 872 562 484

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

7. Date of Delivery
10/25/93

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
Barbara L. Pickle

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 872 562 484

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Mr. William G. Newton	
Street and No.: 9401 Fairgrounds Road	
P.O., State and ZIP Code: West Palm Beach, FL 33411	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: Mailed: 10/21/93 A048-197154	

PS Form **3800**, JUNE 1991

TPS
TECHNOLOGIES INC.

9401 Fairgrounds Road ☐ West Palm Beach, Florida 33411 USA
Telephone: (407) 791-2006 ☐ Fax: (407) 791-0082

October 14, 1993

Mr. Willard Hanks
State of Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: TPS General Permit S050-213931
TPS Air Quality Permit A048-197154

Dear Mr. Hanks:

TPS Technologies Inc. operates a Soil Thermal Treatment Facility at 9401 Fairgrounds Road in West Palm Beach.

One of our customers has requested we process 18 tons of soil contaminated with virgin diesel fuel. The contamination resulted from a roadside accident and was collected by a local company specializing in emergency response.

The pre-burn analytical ressults, run as per F.A.C. Chapter 17-775 guidelines, are coherent with this iste history. All 8 RCRA Total Metal concentrations are less that or equal to 1.3 ppm. Hoever, two samples for TRPH were taken and analyzed: the results were 36,600 ppm and 37,600 ppm.

Specific Condition NO. 25 of our Air Quality Permit limits us to soild with a TRPH value less that or equal to 25,000 ppm. Soils exceeding this limit require us to modify our processing procedures and obtain specific Department approval for thermla treatment.

In this case, prior to buring, we propose to blend this soil with other unburned dirt at our facility, which has a known TRPH concentration, to achieve a TRPH value of 10,000 ppm or less. We will document the blending process and record it in our permanet files.

Please consider our request to process this soil as described above, and advise us of your decision.

Sincerely,

William G. Newton
Facility Manager

cc: Blair Dominiak - TPS/Holcroft
Cher Petro - DEP West Palm Beach

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

December 11, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Blair W. Dominiak
Manager, Regulatory Compliance
TPS Technologies, Inc.
12068 Market Street
Livonia, Michigan 48150

Dear Mr. Dominiak:

Re: Application for Permit to Operate SRU-25-P, Serial No. 102

The Department acknowledges receipt of your November 27, 1991, letter that responded to our August 7, 1991, letter requesting emissions test data from a site in Florida to complete the application for permit to operate unit SRU-25-P, Serial No. 102. Your letter stated that the unit is operating in South Carolina and may not operate in Florida for a year or more.

Cessation of operation for an extended period of time or failure to complete the application for permit to operate a source can be grounds to deny the permit to operate. Denial of the permit to operate would require the owner to obtain a new permit to construct prior to placing the source in operation in Florida (F.A.C. Rules 17-4.090 and 17-2.520). To confirm that this unit is being operated, the Department request that copies of all air emissions test results obtained in other states be sent to the Bureau of Air Regulation. The Department will require that a complete compliance test be performed on the unit when it begins operation in Florida and the test report be submitted to the Bureau of Air Regulation within 45 days of the compliance tests. Also be informed that the Department is currently in the process of adopting regulations that could require additional restrictions and/or upgrading of the air pollution control equipment of this unit prior to its operation in Florida.

The Department will hold the processing of the application for permit to operate this unit in abeyance until the requested test data is received or until January 1, 1993, whichever occurs first.

Sincerely,

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

CHF/WH/plm

BEST AVAILABLE COPY

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Blair W. Domiziak
Mgr., Regulatory Compliance
TPS Tech., Inc.
12068 Market St.
Livonia, Michigan 48150

4a. Article Number
P 617 884 192

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

7. Date of Delivery
DEC 16 1991

5. Signature (Addressee)

6. Signature (Agent)
Frank L. McMullen

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, October 1990 ☆U.S. GPO: 1990—273-861 **DOMESTIC RETURN RECEIPT**

P 617 884 192

Certified Mail Receipt
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Blair Domiziak	
Street & No.: TPS	
P.O., State & ZIP Code: Livonia, Michigan	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date 12/12/91	

SRU-25-P
Serial # 102

PS Form **3800**, June 1990

05-28-91
11:54:08

*** SCREEN-1.1 MODEL RUN ***
*** DRAFT VERSION XXXXX ***

tps operation permit

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	1.000
STACK HEIGHT (M)	=	6.70
STK INSIDE DIAM (M)	=	.98
STK EXIT VELOCITY (M/S)	=	12.70
STK GAS EXIT TEMP (K)	=	1030.00
AMBIENT AIR TEMP (K)	=	293.00
RECEPTOR HEIGHT (M)	=	.00
IOPT (1=URB,2=RUR)	=	2
BUILDING HEIGHT (M)	=	.00
MIN HORIZ BLDG DIM (M)	=	.00
MAX HORIZ BLDG DIM (M)	=	.00

BUOY. FLUX = 21.40 M**4/S**3; MOM. FLUX = 11.02 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	0	.0	.0	.0	.0	.0	.0	
100.	2.139	4	20.0	20.0	5000.0	15.7	8.3	4.8	NO
200.	23.46	4	20.0	20.0	5000.0	15.7	15.7	8.8	NO
300.	25.40	4	20.0	20.0	5000.0	15.7	22.8	12.4	NO
400.	20.88	4	15.0	15.0	4800.0	19.6	29.7	15.8	NO
500.	17.99	4	15.0	15.0	4800.0	19.6	36.4	18.7	NO
600.	15.32	4	10.0	10.0	3200.0	27.6	43.1	22.1	NO
700.	13.96	4	10.0	10.0	3200.0	27.6	49.6	24.8	NO
800.	12.53	4	10.0	10.0	3200.0	27.6	55.9	27.5	NO
900.	11.51	4	8.0	8.0	2560.0	33.3	62.3	30.4	NO
1000.	10.56	4	8.0	8.0	2560.0	33.3	68.6	33.0	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
257.	26.24	4	20.0	20.0	5000.0	15.7	19.8	10.9	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	26.24	257.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

Max 1 hr impact = (26.24 ug/m³) × 1 = 26.24 ug/m³
Max 8 hr impact = " × 0.7 = 18.4 ug/m³
Max 24 hr impact = " × 0.4 = 10.5 ug/m³

Unit 103	23120.2 ACFM	47.223 FPS	1434.9 °F	8.160 FT²
	21430.8	43.772	1451.3	
104	30051.8	61.380	1540.5	8.160 FT²
	30317.7	61.923	1585.5	
	31272.7	63.874	1590.6	
	30647.8	62.598	1591.4	
	31000.8	63.319	1590.9	
	30194.6	61.672	1449.5	
	28665.0	58.548	1472.0	
	28312.7	57.828	1472.8	
105	24277.9	45.916	1454.9	8.813 FT²
	24229.3	45.824	1466.4	
	29262.0	55.342	1490.0	
106	25574.0	48.364	1414.7	8.813
	23973.4	45.341	1400.4	
	27572.5	52.144	1394.8	(1030°K)
	22026.7	41.656 (12.7 m/s)	1394.9	

$A = \frac{\pi D^2}{4}$

$D^2 = \frac{4A}{\pi}$

$D = 3.22'$ (0.98m)

Max. 26.29 UG/m³) hr @257m

Stack ht = 22' (6.7m)

AAC BZ = $\frac{40}{40} \frac{1}{100} 3 = 0.03 \text{ mg/m}^3 = 30 \text{ ug/m}^3$

$= \frac{40}{168} \frac{1}{100} 3 = 0.0071 \text{ mg/m}^3 = 7.1 \text{ ug/m}^3$

Max E_{BZ} 40 hr wk $= \frac{0.03 \text{ mg/m}^3 \quad g/s}{18.4 \times 10^{-3} \text{ mg/m}^3} = \frac{1.63 \text{ g/s}}{5} \Big| \frac{3600 \text{ sec}}{\text{hr}} \frac{\text{lb}}{454 \text{ g}}$

$= 12.7 \text{ lbs/hr (40 hr wk)}$

Max E_{BZ} 168 hr/wk $= \frac{0.0071}{\cancel{10.5} \times 10^{-3}} = \cancel{0.676} \text{ g/s} \times \frac{3600}{454} = \boxed{5.36 \text{ lbs/hr}}$

$\cancel{10.5}$ 18.4 ; $\cancel{0.676}$ 0.39 ; 3.1

24 HR IMPACT CONTROLLING

BZ to AB = $\frac{\cancel{5.36}\ 3.1 \text{ lbs BZ OUT}}{\text{hr}} \Big| \frac{100 \text{ lbs IN}}{2 \text{ lbs OUT}} = \frac{\cancel{268}\ 155 \text{ \# BZ IN SOIL}}{\text{hr}}$

PPM BZ SOIL $\frac{\cancel{268}\ 155}{25 \times 2000} \times 10^6 = \cancel{5360}\ 3100 \text{ PPM BZ IN SOIL}$

MAX ALLOWABLE VOC = 25 #/HR OUT

VOC to AB = $\frac{25}{2} \Big| \frac{100}{} = 1250 \frac{\text{\# VOC}}{\text{hr}}$ IN SOIL

PPM VOC SOIL = $\frac{1250 \times 10^6}{25 \times 2000} = 25000 \text{ PPM}$ (2.5% VOC)

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMITS

In the matter of an
Application for Permits by:

Mr. Kenneth L. Wood, Vice President
TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, Florida 32703

DER File No. AO 48-197154
thru -197157
Statewide Operation

Enclosed are Permit Numbers AO 48-197154 thru -197157 for four 25 TPH mobile soil remediation units that are allowed to operate in all counties of Florida, issued pursuant to Section(s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permits 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 Notice 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
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMITS and all copies were mailed before the close of business on 8-7-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk) 8-7-91 (Date)

Copies furnished to:

District Air Program Administrators
County Air Program Administrators

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. Kenneth Wood, U.P.
TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, Fl 32703

4. Article Number
P 832 539 839

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X James Hoover

7. Date of Delivery
8/9/91

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

PS Form **3811**, Mar. 1987 ★ U.S.G.P.O. 1987-178-268 **DOMESTIC RETURN RECEIPT**

P 832 539 839

Certified Mail Receipt
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Kenneth Wood	
Street & No.: TPS Tech	
P.O. State & ZIP Code: Apopka, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date: AO 48-197154 thru 197157 Statewide	

PS Form **3800**, June 1990

Permits to Operate
Evaluation

TPS Technologies, Inc.
Apopka, Florida
Orange County

25 TPH Mobile Soil Remediation Units
Statewide Operation

Unit	File No.
SRU-200P-103	AO 48-197154
SRU-200P-104	AO 48-197155
SRU-200P-105	AO 48-197156
SRU-200P-106	AO 48-197157

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

August 1, 1991

Permits to Operate Evaluation

On May 20, 1991, TPS Technologies, Inc. submitted application for permits to operate four 25 TPH mobile soil throughout the State of Florida. These units are:

Unit	Construction Permit No.	Operation Permit No.
SRU-200P-103	AC 48-166172	AO 48-197154
SRU-200P-104	AC 48-166605	AO 48-197155
SRU-200P-105	AC 48-166606	AO 48-197156
SRU-200P-106	AC 48-166607	AO 48-197157

Except for minor differences in the dimensions of the stacks, all four units are identical. The construction permit allowed each unit to process up to 25 TPH of soils contaminated with petroleum products, emit 0.08 gr/dscf @ 50% EA and 3.0 lbs/hr PM, 6.3 lbs/hr benzene, and 25 lbs/hr VOC.

A summary of the compliance test results is shown in the following table:

		Emissions				
Unit	Feed Rate	gr PM/dscf @50% EA	lbs PM/hr	% Opacity	lbs/VOC	DE*(%)
103	18.25	0.0355	1.59	1.5	0.011	99.99
104	13.25	0.0307	1.45	0	0.039	99.92
105	18.1	0.0284	1.60	0	0.11	99.93
106	16.4	0.0133	0.57	0	0.10	99.91

*Destruction Efficiency

These results indicate that the units are capable of complying with the allowable emissions at production rates of up to 20 TPH. The Department will issue permits to operate the units but will require additional compliance tests when one of these units operate at a feed rate above 20 TPH.

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:
TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, Florida 32703

Permit Number: AO 48-197154
Expiration Date: July 1, 1996
County: Statewide Operation
Project: 25 TPH Portable Rotary Kiln/Afterburner System, Serial No. SRU-200P-103

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:

Authorization to operate a 25 TPH portable rotary kiln/afterburner system. The unit consists of a contaminated soil feed and weigh mechanism, a rotary kiln, combustion air blower, baghouse, induced draft fan, a No. 2 fuel oil system, an afterburner with a minimum destruction efficiency of 98%, a 22 ft. high stack with 47" by 25" inside dimensions, that handles a minimum of 22,000acfm gas at 1400°F.

The unit may operate in any county in Florida after completing the notification requirements.

The source shall be operated 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. TPS May 15, 1991 Application.

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:
TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, Florida 32703

Permit Number: AO 48-197155
Expiration Date: July 1, 1996
County: Statewide Operation
Project: 25 TPH Portable Rotary Kiln/Afterburner System, Serial No. SRU-200P-104

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:

Authorization to operate a 25 TPH portable rotary kiln/afterburner system. The unit consists of a contaminated soil feed and weigh mechanism, a rotary kiln, combustion air blower, baghouse, induced draft fan, a No. 2 fuel oil system, an afterburner with a minimum destruction efficiency of 98%, a 22 ft. high stack with 47" by 25" inside dimensions, that handles a minimum of 22,000 acfm gas at 1400°F.

The unit may operate in any county in Florida after completing the notification requirements.

The source shall be operated 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. TPS May 15, 1991 Application.

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:
TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, Florida 32703

Permit Number: AO 48-197156
Expiration Date: July 1, 1996
County: Statewide Operation
Project: 25 TPH Portable Rotary Kiln/Afterburner System, Serial No. SRU-200P-105

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:

Authorization to operate a 25 TPH portable rotary kiln/afterburner system. The unit consists of a contaminated soil feed and weigh mechanism, a rotary kiln, combustion air blower, baghouse, induced draft fan, a No. 2 fuel oil system, an afterburner with a minimum destruction efficiency of 98%, a 22 ft. high stack with 47" by 27" inside dimensions, that handles a minimum of 22,000 acfm gas at 1400°F.

The unit may operate in any county in Florida after completing the notification requirements.

The source shall be operated 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. TPS May 15, 1991 Application.

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:
TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, Florida 32703

Permit Number: AO 48-197157
Expiration Date: July 1, 1996
County: Statewide Operation
Project: 25 TPH Portable Rotary Kiln/Afterburner System, Serial No. SRU-200P-106

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:

Authorization to operate a 25 TPH portable rotary kiln/afterburner system. The unit consists of a contaminated soil feed and weigh mechanism, a rotary kiln, combustion air blower, baghouse, induced draft fan, a No. 2 fuel oil system, an afterburner with a minimum destruction efficiency of 98%, a 22 ft. high stack with 47" by 27" inside dimensions, that handles a minimum of 22,000 acfm gas at 1400°F.

The unit may operate in any county in Florida after completing the notification requirements.

The source shall be operated 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. TPS May 15, 1991 Application.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

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. Neither 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 is not 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, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; 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 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 and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

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

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

c. Sample or monitor 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 provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including 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.

GENERAL CONDITIONS:

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 for revocation of this permit.

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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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 17-4.120 and 17-30.300, F.A.C., 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 or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold 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

GENERAL CONDITIONS:

continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

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 dates 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 corrected promptly.

SPECIFIC CONDITIONS:

Operation Requirements

1. The afterburner shall operate above 1400°F and achieve the minimum VOC destruction efficiency of 98%.

2. The system shall be properly operated and maintained (F.A.C. Rule 17-2.210(2)). No person shall circumvent any pollution control device or allow the emissions of air pollutants without the applicable air pollution control device operating properly (F.A.C. Rule 17-2.240).

3. Reasonable precautions shall be used to minimize unconfined emissions of particulate matter generated by this operation (F.A.C. Rule 17-2.610(3)). Reasonable precautions shall be defined as keeping the work areas wet where the soil is being removed and treated.

SPECIFIC CONDITIONS:

4. The unit shall not be operated at a location or in a manner that may create a nuisance.

5. Untreated soil removed from the ground shall be stored under waterproof covers to minimize fugitive emissions.

6. This unit shall be allowed to operate 24 hours per day, 7 days per week, but not more than 7,800 hours per year. The unit must not be operated at the same site where another soil remediation unit is being operated.

7. Maximum soil charging rate to the unit shall not exceed 25 TPH. The soil entering the kiln cannot be larger than 2 inches in diameter. The permittee shall have means to determine the feed or production rate on site.

8. Only No. 2 fuel oil or LPG shall be used as fuel for the kiln and afterburner. Maximum permitted fuel consumption is 37 MMBtu/hr (266 GPH No. 2 oil or 407 GPH propane).

9. Only soils contaminated with gasoline, No. 2 type oils, toluene, xylene, ethyl benzene, and motor oils shall be treated in this unit unless otherwise approved by the Bureau of Air Regulation.

Hazardous waste as defined in 40 CFR 261.3 shall not be processed by this unit.

Metals in the untreated soil shall not exceed the following:

Metals	Maximum Concentration TCLP(mg/L)	Total(mg/Kg)
Arsenic	5.0	55
Barium	100.0	2750
Cadmium	1.0	55
Chromium	5.0	275
Lead	5.0	77
Mercury	0.2	17
Selenium	1.0	165
Silver	5.0	165

Total Volatile Organic Aromatics (VOA) constituent in the soil shall not exceed the concentrations that have the potential to exceed the acceptable ambient air concentration or the VOC emission limit for this unit (see Specific Conditions Nos. 12, 15, and 25).

SPECIFIC CONDITIONS:

To show compliance with this condition, the permittee shall analyze composite samples of the contaminated soil (see Specific Condition No. 11) by the EPA SW 846 Methods, Test Method for Evaluating Solid Waste Physical/Chemical, for VOA (EPA Method 5030/8020), TRPH (EPA draft Method 9073), and Metals (EPA Method 1311, 3050, 6010, 7040, 7041, 7060, 7061, 7080, 7130, 7131, 7190, 7191, 7420, 7421, 7471, and 7760).

10. The permittee may request, in writing, permission to treat "off-spec" material. The request shall include the history of the site to be treated, an analysis of the contaminants suspected to be in the soil, an estimate of the emissions from the unit while processing the soil, and calculations showing that the ambient air impact from the unit will not exceed the acceptable ambient air concentration for any toxic pollutant. The Department will approve or deny each request in writing, after a public notice for the specific project, on a case-by-case basis.

11. Sampling and analysis of the contaminated soil at each site, based on the procedures prescribed in SW-846, shall be conducted prior to remediation. Minimum number of composite samples for analysis at each site prior to remediation shall be as follows:

Soil Quantity ($yards^3$)	No. of Composite Samples
Less than 100	1
100 to 500	3
500 to 1000	5
Each additional 500 yds	1 additional sample

12. Unless the Department has determined other concentrations are required to protect public health and safety, predicted ambient air impact of any toxic pollutant, as determined by the PTPLU 6 model or other DARM approved models, shall not exceed the concentration calculated by the following formula:

$$AAC = \frac{40}{X} \cdot \frac{1}{\text{safety factor}} \cdot (OEL)$$

where,

AAC = acceptable ambient concentration

Safety Factor = 100 for category A substances and
50 for category B substances

SPECIFIC CONDITIONS:

X = 40 or the hours/week of actual operation, whichever is larger

OEL - Occupational exposure level such as the TWA-TLV published by the ACGIH, OSHA, and NIOSH published standards for toxic materials.

TWA-TLV is the threshold limit value (8 hrs/day, 40 hrs/wk) maximum exposure concentration considered safe for workers by the ACGIH.

Data in the application shows that, for continuous operation, an emission of 1 gram/sec will have a maximum ambient impact of 18.4×10^{-3} mg/m^3 (8 hr. avg). If the stack parameters are different than the values listed in the application, the permittee must determine and use the actual impact factor calculated by the EPA Approved Screen - 1.1 Model.

$$\text{Maximum Allowable Emissions (g/sec)} = \frac{\text{AAC} \quad \text{mg/m}^3}{18.4 \times 10^{-3}}$$

13. Pressure drop across the baghouse shall be recorded hourly and temperature of the afterburner shall be recorded continuously during operations. The instruments used to obtain these measurements shall be properly calibrated, maintained, and in operation any time the unit is in service.

Emission Restrictions

14. Particulate matter emissions from the afterburner stack shall neither exceed 0.08 grains/dscf corrected to 50% excess air nor 3.0 lbs/hr. Visible emissions from any part of the process shall not exceed 5% opacity.

15. Benzene emissions from the afterburner stack shall not exceed 3.1 lbs/hr. Total VOC emissions shall not exceed 25 lbs/hr.

16. The operation of this source shall not result in the emissions of air pollutants which cause or contribute to an objectionable odor pursuant to F.A.C. Rule 17-2.600(c)2.

SPECIFIC CONDITIONS:

Compliance Requirements

17. This unit has demonstrated compliance at a feed rate of up to 20 TPH. Initial operation above a 20 TPH feed rate requires compliance tests for particulate matter and visible emissions. This unit shall be tested at a process weight rate of 22.5 to 25 TPH. All compliance tests shall meet the requirements listed in F.A.C. Rule 17-2.700. The unit shall not operate above the maximum permitted rate of 25 TPH.

18. When the Department, after investigation, has good reason (such as complaints, increased visible emissions, or questionable maintenance of control equipment) to believe that any applicable emission standard contained in Chapter 17-2, F.A.C., or in this permit is being violated, it may require the owner or operator of the unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the source and to provide a report on the results of said tests to the Department.

19. The exhaust stack for this process must be tested concurrently for particulate matter and visible emissions each year by EPA Methods 5 and 9 pursuant to 40 CFR 60, Appendix A, revised as of July 1, 1990. Operation at each site requires an EPA Method 9 test to be performed within 3 days of placing the unit in service.

20. The unit's destruction efficiency, benzene, and VOC emissions shall be established by a material balance using a Method 18, 25 or 25A test (40 CFR 60, Appendix A, revised as of July 1, 1990) and soil analysis before and after treatment or other methods as approved by the Department. The test must be conducted while the afterburner is operating at approximately 1400°F.

Administrative Requirements

21. This permit requires compliance with any applicable local (county) regulations. This may include requirements for county operation permits and additional restrictions on the operation of this unit.

22. This unit shall not be operated at any new site until the permittee has requested authorization to operate at the new site. The permittee shall notify the BAR, local government (city and/or county), and Department District office by registered mail at least 3 days prior to moving to the new site. The notification shall

SPECIFIC CONDITIONS:

provide the permit number of the unit, a copy of the last stack test results, the date of the proposed move, the new site for the unit, and the locations and contamination levels of the soils to be treated. The Department shall notify the permittee of any new air pollutant emission conditions the unit must meet after the receipt of the relocation notice.

23. The permittee shall maintain a log that includes each date the unit operated, the site, source of contaminated soil, analysis of soil, hours of operation, tons per hour feed, operational problems, and major maintenance on the unit. All required records must be available for inspection at the job site for the unit within 3 working days of a request by the Department.

24. The BAR and the District the unit is operating in shall be notified in writing at least 15 days in advance of any annual compliance test to be conducted on this source.

25. Any analysis required by Specific Condition No. 9 which indicates a violation of any condition in this permit shall be reported as soon as feasible to BAR. An average concentration of benzene above 3,100 ppm in the soil or total hydrocarbons above 25,000 ppm indicate a violation of this permit. The soil may be decontaminated by operating at less than the 25 TPH production rate, or other means, with prior approval of the Department. The permittee must propose the method of compliance with this permit.

26. Records shall be kept on the location, date, time, and number of samples taken for each composite sample. Soil analysis results shall be available for Department inspection during the clean up of the site and for 3 years thereafter.

27. Stack test results from PM and VOC shall be submitted to the Department within 45 days of the test.

28. Each calendar year on or before March 1, submit for each source an Annual Operations Report DER Form 17-1.202(c) for the preceding calendar year in accordance with F.A.C. Rule 17-4.14.

29. An application for an operation permit must be submitted to the BAR at least 90 days prior to the expiration date of this permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, any physical change

$TRPH_{IN} = 25 \frac{TONS}{hr} \; 2000 \frac{lbs}{T} \; \frac{25{,}000 \# TRPH}{1 \times 10^6 \# SOIL} = 1{,}250 \frac{lbs}{hr}$

$BZ = 10 \frac{TONS}{yr} \; 2000 \frac{lb}{T} \; \frac{yr}{8760 hrs} = \frac{2.564 lbs/hr}{2.28}$

$BZ_{IN\ SOIL} = \frac{2.28 lbs\ OUT}{hr} \; \frac{1 \# IN}{.01 \# OUT} = 228 \frac{\#}{hr}$

$PPM\ BZ_{SOIL} = \frac{228 \times 10^6}{50{,}000} =$

SPECIFIC CONDITIONS:

or major maintenance to the unit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this 1st day
of August, 1991

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Carol M. Browner, Secretary

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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

Interoffice Memorandum

TO: Carol M. Browner

FROM: Steve Smallwood

DATE: August 1, 1991

SUBJ: Approval of Operation Permit Nos. AO 48-197154-197157
TPS Technologies, Inc.

Attached for your approval and signature are permits to operate four 25 TPH mobile soil remediation units for TPS Technologies, Inc.

Test data shows the units can comply with the emission restrictions in their permits to construct.

I recommend your approval and signature.

SS/WH/plm

Attachment

PM
6-7-91
West Palm Beach

File Copy

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

PBCPHU - ESE

Date: June 6, 1991

RECEIVED
JUN 10 1991
Division of Air Resources Management

C. H. Fancy
Chief, Bureau of Air Quality Management
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32301-8241

Re: AC48-166172, AC48-166605, AC48-166606, AC48-166607
TPS Thermo Process Systems, Inc.
Completion of Construction for Soil Remediation Units

Dear Mr. Fancy:

The Palm Beach County Public Health Unit received the above referenced application on 6-3-91, and has no comment.

Sincerely,

For the Divisional Director
Environmental Science and Engineering

Jeffery F. Koerner
Engineer II, Air Pollution Control Section

FJG/JFK

cc:
Willard Hanks
Stephanie Brooks, SE Dist
BA/CHF

6-10-91 RA

TPS **Thermo Process Systems Inc.**
TPS Technologies Inc.

2070 South Orange Blossom Trail
Apopka, Florida 32703 U.S.A.

Telephone: (407) 886-2000
FAX: (407) 886-8300

May 15, 1991

Mr. Willard Hanks
Engineer
Bureau of Air Quality Management
Florida Department of Environmental Regulation
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, FL 32301

Re: Amendment and Certificate of
Completion of Construction
of Soil Remediation Units
Serial No. SRU-200P-103 through 106

Dear Mr. Hanks,

Enclosed please find four (4) copies of our FDER Certificate of Completion of Construction for four (4) Soil Remediation Units (SRU's) and a check for the amount of $6000 ($1500 per unit). We request that operating permits be issued for SRU-200P-103 to 106.

In addition, we would like to request an amendment to the current permits for higher allowable hydrocarbon contaminant levels. The destruction efficiencies that were calculated from the actual stack test data are much higher than those claimed in our original application. A higher contaminant level can be accommodated without changing the emission levels that were requested in the original application. The units, along with the current air permit numbers, general permit numbers, and the destruction efficiencies (DE), as calculated from the most recent stack tests, are listed as follows:

Unit Serial #	Air Permit #	General Permit #	DE
SRU-200P-103	AC 48-166172	192851	99.99%
SRU-200P-104	AC 48-166605	192991	99.92%
SRU-200P-105	AC 48-166606	192993	99.93%
SRU-200P-106	AC 48-166607	192994	99.91%

Each unit is identical in construction with the exception of minor differences in the stack dimensions. The stack height has changed from the original construction permit application. It is now 22 ft for all units as opposed to 19 ft in the original application.

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE TRACKING NUMBER **0597607780**

1113M **0597607780**

RECIPIENT'S COPY

1 Date: 5-17-91

From (Your Name) Please Print: BöäérRBchDominiak
Your Phone Number (Very Important): 407-886-2000
Company: T P S TECHNOLOGIES
Department/Floor No.
Street Address: 2070 SOUTH ORANGE BLOSSOM TRL
City: APOPKA
State: FL
ZIP Required: 32703

2 To (Recipient's Name) Please Print: Mr. Willard Hanks
Recipient's Phone Number (Very Important): (904) 488-1344
Company: Bureau of Air Quality Management, FL Dept. of Environmental Regulation
Department/Floor No.
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 2600 Blair Stone Rd., Twin Towers Office Bldg
City: Tallahasse
State: FL
ZIP Required: 32301

RECEIVED
MAY 20 1991
Division of Air Resources Management

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

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/Check

4 **SERVICES** (Check only one box)

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

Economy Two-Day (Delivery by second business day†)	Government Overnight (Restricted for authorized users only)
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	41 [ ] GOVT PACKAGE

Freight Service (for Extra Large or any package over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT ** (Confirmed reservation required) — 80 [ ] TWO-DAY FREIGHT **
† Delivery commitment may be later in some areas. *Declared Value Limit $100. **Call for delivery schedule.

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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)
5 [ ]
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: 1 — WEIGHT In Pounds Only: 2
Total: 1 — Total: 2

DIM SHIPMENT (Chargeable Weight) ____ lbs.

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FedEx Emp. No. 6106

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City / State / Zip
Received By: X
Date/Time Received — FedEx Employee Number

5 Release Signature:
Date/Time 5/17 1530

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 1/91
PART #137204 FXEM 3/91
FORMAT #068
068

The stack height and dimensions for the respective units are listed below:

Unit Serial #	Height	Inside Dimensions	Outside Dimensions
SRU-200P-103	22'	25" x 47"	29" x 51"
SRU-200P-104	22'	25" x 47"	29" x 51"
SRU-200P-105	22'	27" x 47"	31" x 51"
SRU-200P-106	22'	27" x 47"	31" x 51"

A detailed sketch of each stack is contained in Attachment B.

The destruction efficiency calculations for each unit can be found in Attachment A. The stack test reports were submitted to the FDER at the time of the stack test. A summary of the results of each stack test is listed in Attachment B. The calculations show that the destruction efficiency for VOC emission is consistently in the 99+ % range. This is much higher than the original application destruction efficiency of 90.0 %.

Therefore, we would like to submit a request to upgrade the unit destruction efficiency of each of the four (4) referenced SRU's to 98 %. This would allow us to remediate soil with contamination levels up to 2.5% hydrocarbons without creating higher VOC emissions than those calculated in our original permit application. Carbon monoxide (CO) is the only other emission that would be affected and it actually improves. No other emissions would be affected by this increase in destruction efficiency. See Attachment C for a summary of the SRU emissions presented in the original permit application versus the amended emission levels calculated with the higher destruction efficiency.

Should you have any questions concerning this application, please contact me in Livonia, Michigan at (313) 591-1000.

I sincerely appreciate your timely attention to this matter.

Respectfully yours,

Blair W. Dominiak

Blair W. Dominiak
Manager, Regulatory Compliance

Enclosures

THERMO PROCESS SYSTEMS INC.

4395

OUR REFERENCE NUMBER	YOUR INVOICE NUMBER	INVOICE DATE	INVOICE AMOUNT	AMOUNT PAID	DISCOUNT	NET AMOUNT
5-14-91	Converting Construction Permits to Operating Permits				$6,000.00	

TPS Thermo Process Systems Inc.
TPS Technologies Inc.

101 First Avenue
Waltham, MA 02254
(617) 622-1000 • Fax (617) 622-1263

BANK OF BOSTON
CONNECTICUT
51-80-111

4395

DATE	CONTROL NO.	AMOUNT
5-14-91	4395	$6,000.00

TPS TECHNOLOGIES

PAY TO THE ORDER OF

Florida Department of Environmental Regulations
2600 Blair Stone Road
Twin Towners Office Building
Tallahasse, FL 32301

VOID AFTER 90 DAYS

[redacted]

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR POLLUTION SOURCES
CERTIFICATE OF COMPLETION OF CONSTRUCTION*

PERMIT NO. AC 48-166172 DATE: May 15, 1991

Company Name: TPS Technologies Inc. County: Statewide Operation

Source Identification(s): 25 TPH Mobile Soil Remediation Unit SRU-200P-103

Actual costs of serving pollution control purpose: $ 150,000

Operating Rates: 10 - 25 TPH Design Capacity: 25 TPH

Expected Normal 20 TPH During Compliance Test 18.25 Tons/Hr.

Date of Compliance Test: December 15, 1990 (Attach detailed test report)

Test Results:

Pollutant	Actual Discharge	Allowed Discharge
Particulate	0.0355	0.08 gr/SCF @ 50% Excess Air
Particulate	1.59	3.0 lb/Hr. @ 50% Excess Air
Visible Emission	1.5%	5%

Date plant placed in operation: December 1, 1989

This is to certify that, with the exception of deviations noted**, the construction of the project has been completed in accordance with the application to construct and Construction Permit No. AC 48-166172 dated October 23, 1989.

A. Applicant:

Jeffrey L. Powell — President
Name of Person Signing (Type) — Signature of Owner or Authorized Representative and Title

Date: May 15, 1991 Telephone: 407-886-2000

B. Professional Engineer:

Joseph Czajka — Signature of Professional Engineer
Name of Person Signing (Type)

TPS Technologies, Inc. Florida Registration No. 43287
Company Name

Date: May 15, 1991

(Seal)

2070 S. Orange Blossom Tr. Apopka, FL 32703
Mailing Address

(407) 886-2000
Telephone Number

*This form, satisfactorily completed, submitted in conjunction with an existing application to construct permit and payment of application processing fee will be accepted in lieu of an application to operate.

**As built, if not built as indicated include process flow sketch, plot plan sketch, and updates of applicable pages of application form.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR POLLUTION SOURCES
CERTIFICATE OF COMPLETION OF CONSTRUCTION*

PERMIT NO. AC 48-166605 DATE: May 15, 1991

Company Name: TPS Technologies Inc. County: Statewide Operation

Source Identification(s): 25 TPH Mobile Soil Remediation Unit SRU-200P-104

Actual costs of serving pollution control purpose: $ 150,000

Operating Rates: 10 - 25 TPH Design Capacity: 25 TPH

Expected Normal 20 TPH During Compliance Test 13.25 Tons/Hr.

Date of Compliance Test: February 6 and 20, 1990 (Attach detailed test report)

Test Results:

Pollutant	Actual Discharge	Allowed Discharge
Particulate	0.0307	0.08 gr/SCF @ 50% Excess Air
Particulate	1.45	3.0 lb/Hr. @ 50% Excess Air
Visible Emission	0.0	5%

Date plant placed in operation: December 27, 1989

This is to certify that, with the exception of deviations noted**, the construction of the project has been completed in accordance with the application to construct and Construction Permit No. AC 48-166605 dated October 23, 1989.

A. Applicant:

Jeffrey L. Powell — President
Name of Person Signing (Type) — Signature of Owner or Authorized Representative and Title

Date: May 15, 1991 Telephone: 407-886-2000

B. Professional Engineer:

Joseph Czajka
Name of Person Signing (Type)

Signature of Professional Engineer

TPS Technologies, Inc.
Company Name

Florida Registration No. 43257

Date: May 15, 1991

(Seal)

JOSEPH CZAJKA CERTIFICATE NO. 43257 STATE OF FLORIDA REGISTERED ENGINEER

2070 S. Orange Blossom Tr. Apopka, FL 32703
Mailing Address

(407) 886-2000
Telephone Number

*This form, satisfactorily completed, submitted in conjunction with an existing application to construct permit and payment of application processing fee will be accepted in lieu of an application to operate.

**As built, if not built as indicated include process flow sketch, plot plan sketch, and updates of applicable pages of application form.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR POLLUTION SOURCES
CERTIFICATE OF COMPLETION OF CONSTRUCTION*

PERMIT NO. AC 48-166606 DATE: May 15, 1991

Company Name: TPS Technologies Inc. County: Statewide Operation

Source Identification(s): 25 TPH Mobile Soil Remediation Unit SRU-200P-105

Actual costs of serving pollution control purpose: $ 150,000

Operating Rates: 10 - 25 TPH Design Capacity: 25 TPH

Expected Normal 20 TPH During Compliance Test 18.1

Date of Compliance Test: December 1 and 3, 1990 (Attach detailed test report)

Test Results:

Pollutant	Actual Discharge	Allowed Discharge
Particulate	0.0284	0.08 gr/SCF @ 50% Excess Air
Particulate	1.60	3.0 lb/Hr. @ 50% Excess Air
Visible Emission	0.0	5%

Date plant placed in operation: November 1, 1990

This is to certify that, with the exception of deviations noted**, the construction of the project has been completed in accordance with the application to construct and Construction Permit No. AC 48-166606 dated October 23, 1989.

A. Applicant:

Jeffrey L. Powell — Name of Person Signing (Type)

Signature of Owner or Authorized Representative and Title: President

Date: May 15, 1991 Telephone: 407-886-2000

B. Professional Engineer:

Joseph Czajka — Name of Person Signing (Type)

Signature of Professional Engineer

TPS Technologies, Inc. — Company Name

Florida Registration No. 43257

Date: May 15, 1991

(Seal)

JOSEPH CZAJKA CERTIFICATE NO. 43257 STATE OF FLORIDA REGISTERED ENGINEER

2070 S. Orange Blossom Tr. Apopka, FL 32703 — Mailing Address

(407) 886-2000 — Telephone Number

*This form, satisfactorily completed, submitted in conjunction with an existing application to construct permit and payment of application processing fee will be accepted in lieu of an application to operate.

**As built, if not built as indicated include process flow sketch, plot plan sketch, and updates of applicable pages of application form.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR POLLUTION SOURCES
CERTIFICATE OF COMPLETION OF CONSTRUCTION*

PERMIT NO. AC 48-166607 DATE: May 15, 1991

Company Name: TPS Technologies Inc. County: Statewide Operation

Source Identification(s): 25 TPH Mobile Soil Remediation Unit SRU-200P-106

Actual costs of serving pollution control purpose: $ 150,000

Operating Rates: 10 - 25 TPH Design Capacity: 25 TPH

Expected Normal 20 TPH During Compliance Test 16.40

Date of Compliance Test: July 12, 1990 (Attach detailed test report)

Test Results:

Pollutant	Actual Discharge	Allowed Discharge
Particulate	0.0133	0.08 gr/SCF @ 50% Excess Air
Particulate	0.57	3.0 lb/Hr. @ 50% Excess Air
Visible Emission	0.0	5.0%

Date plant placed in operation: July 7, 1990

This is to certify that, with the exception of deviations noted**, the construction of the project has been completed in accordance with the application to construct and Construction Permit No. AC 48-166607 dated October 23, 1989.

A. Applicant:

Jeffrey L. Powell — President
Name of Person Signing (Type) — Signature of Owner or Authorized Representative and Title

Date: May 15, 1991 Telephone: 407-886-2000

B. Professional Engineer:

Joseph Czajka
Name of Person Signing (Type)

Signature of Professional Engineer

TPS Technologies, Inc.
Company Name

Florida Registration No. 43257

Date: May 15, 1991

(Seal)

JOSEPH CZAJKA CERTIFICATE NO. 43257 STATE OF FLORIDA REGISTERED ENGINEER

2070 S. Orange Blossom Tr. Apopka, FL 32703
Mailing Address

(407) 886-2000
Telephone Number

*This form, satisfactorily completed, submitted in conjunction with an existing application to construct permit and payment of application processing fee will be accepted in lieu of an application to operate.

**As built, if not built as indicated include process flow sketch, plot plan sketch, and updates of applicable pages of application form.

ATTACHMENT A

VOC Destruction Efficiency
for
Soil Remediation Units:

SRU-200P-103
SRU-200P-104
SRU-200P-105
SRU-200P-106

CALCULATION METHOD FOR SYSTEM DESTRUCTION EFFICIENCY

Soil Remediation Unit (SRU) system destruction efficiency (DE) is given by:

$$DE = 100.0 - \frac{\text{Contaminants Out of Stack} * 100.0}{\text{Contaminants Removed from the Soil}}$$

Contaminants are expressed in mass rate units, say, lb/hr.
Contaminants of interest in the case of the SRU are:

Total Recoverable Petroleum Hydrocarbons (TPHC)
Contaminants Removed = TPHC in Feed - TPHC in Ash
Contaminants Out = TPHC in Stack Gas

Measurements of TPHC are done by standard EPA Methods (418.1 for the solids and 25A for the gases), but the reference compounds and techniques used are different.

It is proposed here to:

Convert the results of 418.1 and 25A into equivalent Carbon values (Ceq), and then,
Use the mass rates of Ceq in the system DE calculation.

Method 418.1 for Petroleum Hydrocarbons, Total Recoverables

Infrared Spectroscopic Analysis is utilized
Reference Compound used is a mixture of hydrocarbons as follows:

15 ml n-Hexadecane
15 ml iso-Octane
10 ml Chlorobenzene

The results are expressed as TPHC ppm weight equivalent. Reference Compound has a weight % Carbon of 77.65%

Method 25A - Total Gaseous Organic Concentration

Flame Ionization Analysis is utilized.
Reference Compound used is propane (molecular weight = 44.094 lb/lb mole).
The results are expressed as TPHC ppm volume equivalent
Reference Compound has a weight % Carbon of 81.72%

Proposed Calculation Procedure

A. Determine feed moisture (% weight)

B. Determine feed TPHC (ppm weight equivalent 418.1 compound)

C. Determine average feed rate (lbs/hr)

D. Determine average stack gas volume (scfh)

E. Determine average stack gas THPC (ppm volume equivalent 25A compound)

F. Determine ash TPHC (ppm weight equivalent 418.1 compound)

G. Calculate C_{eq} rates as follows:

$$C_{eq} \text{ (feed)} = \text{feed (lbs/hr)} \times \text{feed TPHC} \times 1\text{x}10^{-6} \times 0.7765$$

* Stack Gas Volume = Actual ft^3/min x 60 min/hr

$$\times \frac{\text{Stack Pressure}}{29.92 \text{ in Hg}} \times \frac{528\ ^\circ R}{\text{AB Temp} + 460\ ^\circ R}$$

$$\text{Ash (lbs/hr)} = \text{feed (lbs/hr)} \times \left[1.0 - \frac{\text{feed moisture (\%weight)}}{100}\right]$$

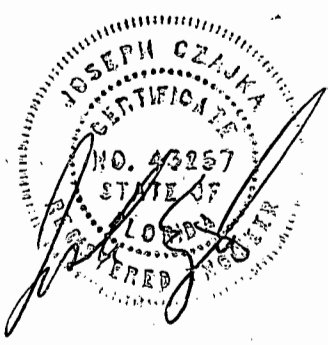
$$C_{eq} \text{ (ash)} = \text{ash (lbs/hr)} \times \text{Ash TPHC} \times 1\text{x}10^{-6} \times 0.7765$$

$$C_{eq} \text{ (stack)} = \text{stack (scfh)} \times \text{stack TPHC} \times \frac{44.094 \times 1\text{x}10^{-6}}{378.0} \times 0.8172$$

H. Calculate system DE as follows:

$$\text{System DE} = 100.0 - \frac{C_{eq}\text{(stack)} \times 100.0}{C_{eq}\text{(feed)} - C_{eq}\text{ (ash)}}$$

* - Actual volumetric flow converted to standard conditions of 1 atmosphere (29.92 in Hg) and 68 °F (528 °R)



Marco Island Destruction Efficiency Calculations - Naples, Fl
SRU-200P-103
December 15, 1990

Stack Test Data

Average TPHC of Feed Soil	= (5500 ppm + 2900 ppm)/2
	= 4200 ppm
Average Feed Rate of Runs 1 and 2	= 18.25 Tons/Hour
Average Moisture Content	= 10.5%
Average Stack Gas Volume Runs 1 and 2	= 22,276 ACFM
Average Stack Gas TPH of Runs 1 and 2	= 0.31 ppm Propane(Wet Basis)
Average TPHC of Ash	= < 1 ppm (Dry Basis)
Average Stack Pressure	= 30.18 in Hg

Calculations of Carbon Equivalent Rates

C_{eq} (feed) = 36,500 lb/hr x 4200 ppm x $1x10^{-6}$ x 0.7765
= 119.04 lbs/hr

Stack Gas Vol. = 22,276 ACFM x 60 min/hr x $\frac{30.18 \text{ in Hg}}{29.92 \text{ in Hg}} \times \frac{528\ ^\circ R}{1443 + 460\ ^\circ R}$
= 374,060 SCFH

Ash (lbs/hr) = 36,500 lb/hr x $\left(1.0 - \frac{10.5\%}{100.0}\right)$

= 32,668 lb/hr

C_{eq} (Ash) = 32,668 lb/hr x 1 ppm x $1x10^{-6}$ x 0.7765
= 0.02537 lb/hr

C_{eq} (stack) = 374,060 SCFH x 0.31 ppm x $1x10^{-6}$ x $\frac{44.094}{378} \times 0.8172$

= 0.01105 lb/hr

System DE = $100.0 - \frac{0.01105 \times 100}{119.04 - 0.02537}$

= 100.0 - 0.00928

= 99.991 %

Gatx - Port of Tampa Destruction Efficiency Calculations
SRU-200P-104
February 6 & 20, 1990

Stack Test Data

Average TPHC of Feed Soil	= (266 + 4100 + 2500)/3
	= 2289 ppm
Average Feed Rate of Runs 2, 3, and 4	= 13.25 Tons/Hour
Average Moisture Content	= 18.0%
Average Stack Gas Volume Runs 2, 3, and 4	= 30,974 ACFM
Average Stack Gas TPH of Runs 2, 3, and 4	= 0.85 ppm Propane(Wet Basis)
Average TPHC of Ash	= (1 + 1 + 1)/3
	= 1.0 ppm
Average Stack Pressure Runs 2, 3, and 4	= 30.4 in Hg

Calculations of Carbon Equivalent Rates

C_{eq} (feed) = 26,500 lb/hr x 2289 ppm x $1x10^{-6}$ x 0.7765

= 47.10 lbs/hr

Stack Gas Vol. = 30,974 ACFM x 60 min/hr x $\frac{30.40 \text{ in Hg}}{29.92 \text{ in Hg}} \times \frac{528\ ^\circ R}{1591 + 460\ ^\circ R}$

= 486,104 SCFH

Ash (lbs/hr) = 26,500 lb/hr x $\left(1.0 - \frac{18.0\%}{100.0}\right)$

= 21,730 lb/hr

C_{eq} (Ash) = 21,730 lb/hr x 1.0 ppm x $1x10^{-6}$ x 0.7765

= 0.01678 lb/hr

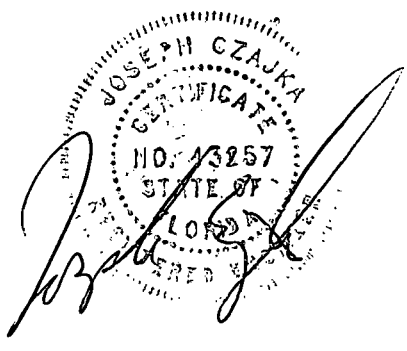
C_{eq} (stack) = 486,104 SCFH x 0.85 ppm x $1x10^{-6}$ x $\frac{44.094}{378}$ x 0.8172

= 0.03939 lb/hr

System DE = $100.0 - \frac{0.03939 \times 100}{47.10 - 0.01678}$

= 100.0 - 0.08366

= 99.92 %



MacDill Air Force Base Destruction Efficiency Calculations - Tampa,Fl
SRU-200P-105
December 1 & 3, 1990

Stack Test Data

Average TPHC of Feed Soil	= (5500 + 3840 + 6480)/3
	= 6270 ppm
Average Feed Rate of Runs 1 and 2	= 18.1 Tons/Hour
Average Moisture Content	= 18.8%
Average Stack Gas Volume Runs 1, 2, and 3	= 25,923 ACFM
Average Stack Gas TPH of Runs 1, 2, and 3	= 2.78 ppm Propane(Wet Basis)
Average TPHC of Ash	= (34 + 25 + 156)/3
	= 71.7 ppm
Average Stack Pressure	= 30.14 in Hg

Calculations of Carbon Equivalent Rates

C_{eq} (feed) = 36,200 lb/hr x 6270 ppm x $1x10^{-6}$ x 0.7765
= 176.25 lbs/hr

Stack Gas Vol. = 25,923 ACFM x 60 min/hr x $\frac{30.14 \text{ in Hg}}{29.92 \text{ in Hg}} \times \frac{528\ ^\circ R}{1470 + 460\ ^\circ R}$
= 428,642 SCFH

Ash (lbs/hr) = 36,200 lb/hr x $\left(1.0 - \frac{18.1\%}{100.0}\right)$

= 29,394 lb/hr

C_{eq} (Ash) = 29,394 lb/hr x 71.7 ppm x $1x10^{-6}$ x 0.7765
= 1.6365 lb/hr

C_{eq} (stack) = 428,642 SCFH x 2.78 ppm x $1x10^{-6}$ x $\frac{44.094}{378}$ x 0.8172

= 0.1136 lb/hr

System DE = $100.0 - \frac{0.1136 \times 100}{176.25 - 1.6365}$

= 100.0 - 0.06512

= 99.93 %

Kelly Tractor Destruction Efficiency Calculations - Miami, FL
SRU-200P-106
July 12, 1990

Stack Test Data

Average TPHC of Feed Soil	= (6000 + 4900 + 3100)/3
	= 4667 ppm
Average Feed Rate of Runs 2, 3, and 4	= 16.4 Tons/Hour
Average Moisture Content	= 15.7%
Average Stack Gas Volume Runs 2, 3, and 4	= 24,525 ACFM
Average Stack Gas TPH of Runs 2, 3, and 4	= 2.50 ppm Propane(Wet Basis)
Average TPHC of Ash	= (20 + 1 + 1)/3
	= 7.3 ppm
Average Stack Pressure Runs 2, 3, and 4	= 30.35 in Hg

Calculations of Carbon Equivalent Rates

C_{eq} (feed) = 32,800 lb/hr x 4667 ppm x $1x10^{-6}$ x 0.7765

= 118.86 lbs/hr

Stack Gas Vol. = 24,525 ACFM x 60 min/hr x $\frac{30.35 \text{ in Hg}}{29.92 \text{ in Hg}} \times \frac{528\ ^\circ R}{1397 + 460\ ^\circ R}$

= 424,404 SCFH

Ash (lbs/hr) = 32,800 lb/hr x $\left(1.0 - \frac{15.7\%}{100.0}\right)$

= 27,650 lb/hr

C_{eq} (Ash) = 27,650 lb/hr x 7.3 ppm x $1x10^{-6}$ x 0.7765

= 0.1567 lb/hr

C_{eq} (stack) = 424,404 SCFH x 2.50 ppm x $1x10^{-6}$ x $\frac{44.094}{378}$ x 0.8172

= 0.10114 lb/hr

System DE = $100.0 - \frac{0.10114 \times 100}{118.86 - 0.1567}$

= 100.0 - 0.08520

= 99.91 %

JOSEPH CZAJKA
CERTIFICATE
NO. 47257
STATE OF
FLORIDA

ATTACHMENT B

Excerpts From
Source Test Report for Particulate,
Volatile Organic Compounds, and
Visible Emissions

by

Air Consulting and Engineering, Inc.
for
Soil Remediation Units:

SRU-200P-103
SRU-200P-104
SRU-200P-105
SRU-200P-106
SRU-200P-107

(Complete report on file with Florida Department of Environmental Regulations)

SOURCE TEST REPORT
for
PARTICULATE, VOLATILE ORGANIC COMPOUNDS,
AND VISIBLE EMISSIONS

SOIL REMEDIATION UNIT
SRU-200P-103
LOCATED AT THE
ANTARAMIAN CONSTRUCTION SITE
MARCO ISLAND, FLORIDA

FDER PERMIT NUMBER AC48-166172

DECEMBER 15, 1990

Prepared for:

TPS TECHNOLOGIES, INC.
2070 SOUTH ORANGE BLOSSOM TRAIL
APOPKA, FLORIDA 32703

Prepared by:

AIR CONSULTING AND ENGINEERING, INC.
2106 N.W. 67th PLACE, SUITE 4
GAINESVILLE, FLORIDA 32606
(904) 335-1889

211-90-10

ace air consulting and engineering, Inc.

REPORT CERTIFICATION

To the best of my knowledge, all applicable field and analytical procedures comply with Florida Department of Environmental Regulation requirements and all test data and plant operating data are true and correct.

Peter F. Burnette

12-28-90
Date

2106 N.W. 67th Place, Suite 4 • Gainesville, Florida 32606 • (904) 335-1889

1.0 INTRODUCTION

On December 15, 1990, Air Consulting and Engineering, Inc. (ACE), conducted emission testing on Soil Remediation Unit Number 103 (SRU 103) located at the Antaramian Construction site in Marco Island, Florida. The SRU 103 is owned and operated by Thermo Process Systems, Inc. (TPS Technologies). Volatile organic compounds (VOC), particulate, and visible emissions were determined using United States Environmental Protection Agency (EPA) Methods 25A, 5, 3A and 9, respectively.

Testing was undertaken to demonstrate compliance with the Florida Department of Environmental Regulation (FDER) Permit Number AC48-166172. Testing was coordinated by Mr. Steve L. Pregel of TPS. Mr. Pregel also conducted the visible emission test.

2.0 SUMMARY AND DISCUSSION OF RESULTS

TPS Technologies, Inc. Unit Number 103 was found to be operating in compliance with construction permit conditions. Particulate emissions averaged 0.0355 grains per dry standard cubic foot (gr/DSCF) corrected to 50% excess air and 1.59 pounds per hour (lbs/Hr). This is within the permitted limit of 0.08 gr/DSCF corrected to 50% excess air and 3.0 lbs/Hr.

VOC emissions averaged 0.31 parts per million on a wet basis (ppmw) and 0.11 pounds per hour (lbs/Hr) as Carbon. Testing was conducted using EPA Method 25A with a "Flame Ionization Analyzer (FIA)", Ratfisch Model RS55 with heated components. VOC test results and strip chart data are provided in Appendix A.

Table 1 summarizes emissions and flue gas parameters. Complete emission data, field data sheets, and laboratory data are located in Appendices B, C and D respectively.

Visible emissions (VE) averaged 1.5 percent opacity for the highest six minute period of the test. This is within the compliance limit of 5% opacity. The VE was conducted concurrently with Particulate Run 1. Appendix G contains the VE data.

Table 1 Emission Summary
TPS Technologies, Inc.
SRU Number 103
Antarmian Construction Site
Marco Island, Florida
December 5, 1990

Run Number	Time	Volumetric Flow ACFM	Volumetric Flow SCFMD	Stack Temperature °F	H_2O %	Excess Air %	Particulate Emissions gr/SCFD	Particulate Emissions gr/SCFD @ 50% Excess Air	Particulate Emissions lbs/Hr
1	1020-1155	23120	5212	1435	19.8	51.056	0.0337	0.0339	1.51
2	1707-1812	21431	4700	1451	21.3	35.243	0.0412	0.0371	1.66
Average		22276	4956	1443	20.6	43.150	0.0375	0.0355	1.59

Run Number	Time	VOC concentration ppm Propane (wet basis)	VOC ppm Propane (dry basis)	VOC emissions lb/Hr Carbon
1	1109-1209	0.41	0.51	0.015
2	1709-1819	0.20	0.25	0.007
Average		0.31	0.38	0.011

$$ppm_{dry} = ppm_{wet}/F.D.A.$$

$$lb/Hr\ C = (2.595 \times 10^{-9})(M)(ppm_{dry})(SCFMD)60$$

where M = molecular weight of carbon content
= 36

$$50\%\ Excess\ Air\ Correction = \frac{100 + \%\ Excess\ Air}{100 + 50}$$

Allowable Emissions = 0.08 gr/SCF @ 50% Excess Air and 3.0 lb/Hr

Normal operation of SRU 103 was hampered by water in the diesel fuel used to fire the dryer. Only one chamber of the tanker truck of fuel was found to be uncontaminated. This allowed only enough operating time for the completion of two test runs. The time required to obtain additional fuel and prior test team commitments precluded conducting a third test run in the required five day period. However, as the unit emitted only 53 percent of the allowables the two run test as conducted is adequate for demonstrating compliance.

3.0 PROCESS DESCRIPTION AND OPERATION

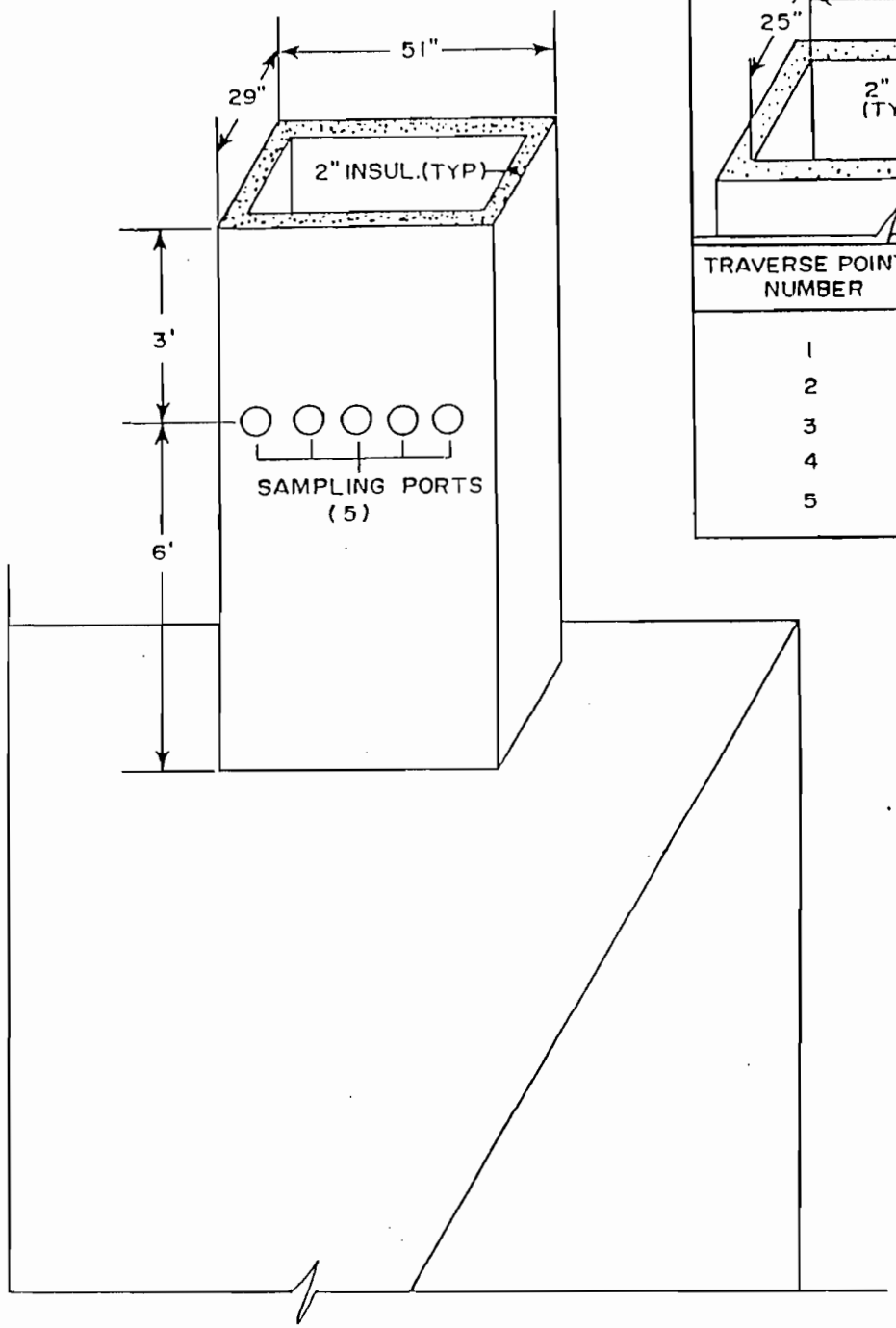
Soil Remediation Unit Number 103 constructed and operated by TPS Technologies, Inc., is a self-contained (package) unit complete with generator, burner, dryer, feed hopper, baghouse dust collector and afterburner. The product (treated soil) is discharged from the dryer after addition of water to the discharge conveyor. Water is added for purposes of controlling fugitive dust and to aid in the treated soil compaction.

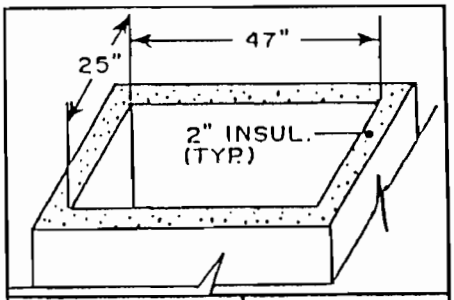
The dryer is fired on Number 2 diesel. Liquid propane gas is used for start up.

The unit was operated at an average rate of 18.25 tons per hour during the test period (see Appendix F).

4.0 SAMPLING POINT LOCATION

The sampling point location and system schematic are shown in Figure 1.





TRAVERSE POINT NUMBER	INCHES INSIDE STACK WALL
1	2.5
2	7.5
3	12.5
4	17.5
5	22.5

FIGURE 1.
SAMPLING POINT LOCATION
SOIL REMEDIATION UNIT-SRU 103
TPS TECHNOLOGIES

AIR CONSULTING
and
ENGINEERING

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant: TPS TECHNOLOGIES
Location: MARCO ISLAND, FLORIDA
Stack: INCENTERATOR OUTLET

Date: 12-15-90
Run 1 From 1020 - 1155

Y Factor	0.994	Nozzle Diameter	0.500 In
Total Time	62.50 Min	Nozzle Area	0.001364 Ft²
Stack Area	8.160 Ft²	Barometric Pressure	30.18 In Hg
Stack Temperature	1434.9 °F	Meter Temperature	80.9 °F
Stack Pressure	30.18 In Hg	Meter Orifice Diff	3.086 In H2O
Stack Avg √ Vel Head	0.437 In H2O	Meter Volume	58.169 CF
		Condensate Vol	300.50 ml

1.	Volume Water Vapor Sampled	14.145	SCF
2.	Volume Standard Dry Gas Sampled	57.337	SCF
3.	Total Standard Sample Volume	71.481	SCF
4.	Percent Moisture	19.800	
5.	Percent Dry Air	80.200	
6.	Molecular Weight of Dry Flue Gas	30.130	
7.	Molecular Weight of Wet Flue Gas	27.728	
8.	Specific Gravity Flue Gas	0.96	
9.	Percent Oxygen [O2]	7.25	
10.	Percent Carbon Dioxide [CO2]	11.50	
11.	Percent Excess Air	51.056	
12.	Velocity of Flue Gas	47.223	FPS
13.	Actual Volumetric Flow Rate	23120.2	ACFM
14.	Dry Volumetric Flow Rate	18542.4	ACFMD
15.	Standard Volumetric Flow Rate	5211.7	SCFMD
16.	Emission Concentration	0.0337	gr/SCF
17.	Emission Concentration	0.0076	gr/ACF
18.	Emission Rate	1.51	lbs/Hr
19.	Percent Isokinetic	105.4	

Probe/Nozzle Wash	34.4	mg
Filter	90.8	mg
Total	125.2	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES		
Location:	MARCO ISLAND, FLORIDA	Date:	121590
Stack:	INCINERATOR OUTLET	Run 2 From	1707 - 1812

Y Factor	0.994	Nozzle Diameter	0.500 In
Total Time	62.50 Min	Nozzle Area	0.001364 Ft²
Stack Area	8.160 Ft²	Barometric Pressure	30.18 In Hg
Stack Temperature	1451.3 °F	Meter Temperature	83.3 °F
Stack Pressure	30.18 In Hg	Meter Orifice Diff	2.480 In H2O
Stack Avg √ Vel Head	0.403 In H2O	Meter Volume	50.079 CF
		Condensate Vol	282.50 ml

1.	Volume Water Vapor Sampled	13.297	SCF
2.	Volume Standard Dry Gas Sampled	49.072	SCF
3.	Total Standard Sample Volume	62.370	SCF
4.	Percent Moisture	21.300	
5.	Percent Dry Air	78.700	
6.	Molecular Weight of Dry Flue Gas	30.304	
7.	Molecular Weight of Wet Flue Gas	27.683	
8.	Specific Gravity Flue Gas	0.96	
9.	Percent Oxygen [O2]	5.60	
10.	Percent Carbon Dioxide [CO2]	13.00	
11.	Percent Excess Air	35.243	
12.	Velocity of Flue Gas	43.772	FPS
13.	Actual Volumetric Flow Rate	21430.8	ACFM
14.	Dry Volumetric Flow Rate	16866.1	ACFMD
15.	Standard Volumetric Flow Rate	4699.8	SCFMD
16.	Emission Concentration	0.0412	gr/SCF
17.	Emission Concentration	0.0090	gr/ACF
18.	Emission Rate	1.66	lbs/Hr
19.	Percent Isokinetic	100.0	

Probe/Nozzle Wash	47.1	mg
Filter	83.8	mg
Total	130.9	mg

PHOSLAB

806 W. Beacon Road • Lakeland, Florida 33803

Client: TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, FL 32703

Attn: Mr. Steve Pregel

P.O.#

Project: TPS/Antaramian Development

Reference: 2-90-64

Sampled By: TPS/S. Pregel

Sample Date: 12-17-90

Date Received: 12-19-90

Analysis Date: 12-19/20-90

Analyzed By: CJF/JMC

CERTIFICATE OF ANALYSIS

TOTAL RECOVERABLE HYDROCARBONS
EPA METHOD 9073 (418.1)

Sample	Conc., mg/kg
12-14-90	* 1.0
12-15-90	* 1.0
12-16-90	* 1.0
Run #1 - 12-15-90/Pre	5,500.0
Run #2 - 12-15-90/Pre	2,900.0
Run #1 - 12-15-90/Post	* 1.0
Run #2 - 12-15-90/Post	* 1.0

* less than

All samples listed above were analyzed for Total VOA(BETX) and were found to be less than 2.00 ug/L for each parameter tested.

QA OFFICER

CHEMIST

SOURCE TEST REPORT
for
VOLATILE ORGANIC COMPOUNDS, PARTICULATE,
AND VISIBLE EMISSIONS

SOIL REMEDIATION UNIT
SRU-200P-104
GATX TERMINAL CORPORATION'S
PORT OF TAMPA FACILITY
TAMPA, FLORIDA

FDER PERMIT NUMBER AC48-166605

FEBRUARY 6 AND 20, 1990

Prepared for:

TPS TECHNOLOGIES, INC.
2070 SOUTH ORANGE BLOSSOM TRAIL
APOPKA, FLORIDA 32703

Prepared by:

AIR CONSULTING AND ENGINEERING, INC.
2106 N.W. 67th PLACE, SUITE 4
GAINESVILLE, FLORIDA 32606
(904) 335-1889

211-90-01

air consulting and engineering, Inc.

REPORT CERTIFICATION

To the best of my knowledge, all applicable field and analytical procedures comply with Florida Department of Environmental Regulation requirements and all test data and plant operating data are true and correct.

J. Colleen Hodge

3/13/95
Date

2106 N.W. 67th Place, Suite 4 • Gainesville, Florida 32606 • (904) 335-1889

1.0 INTRODUCTION

On February 6 and 20, 1990, Air Consulting and Engineering, Inc. (ACE), conducted emission testing on Soil Remediation Unit Number 104 (SRU 104) located at the GATX Terminal Corporation's Port of Tampa facility in Tampa, Florida. The SRU 104 is owned and operated by Thermo Process Systems Technologies, Inc. (TPS Technologies). Volatile Organic Compounds (VOC), particulate, and visible emissions were sampled using United States Environmental Protection Agency (EPA) Methods 25A, 5, and 9, respectively.

Testing was undertaken to demonstrate compliance with Florida Department of Environmental Regulation (FDER) Permit Number AC48-166605. Mr. Bob Soich of the Hillsborough County Environmental Protection Commission observed a portion of the test.

2.0 SUMMARY AND DISCUSSION OF RESULTS

Due to extremely high stack temperature particulate testing was initiated with a 36 inch long quartz glass lined probe with a 1 inch diameter stainless steel sheath. The post test leak check of Test Run 1 revealed a broken probe. A back-up quartz probe was used for Test Run 2 with the same results. It was then decided to utilize a stainless steel probe for this source. The next three runs were successfully completed with good final leak checks, but all three filters and probe washes were contaminated with metal deposits from the deterioration of the inside of the steel probe. This contamination was evidenced by sample particles following a magnet passed over all filters and probe washes. The results of the contaminated test series averaged 0.0816 grains/standard cubic foot (gr/SCF) corrected to 50% excess air and 4.47 pounds per hour (lbs/Hr). These results should be considered eroneous.

Testing for particulate was reconducted on February 20, 1990, utilizing a newly designed quartz glass lined probe enclosed in a 2 inch diameter stainless steel sheath, padded with asbestos wrap. Particulate emissions averaged 0.0307 gr/SCF corrected to 50% excess air, and 1.45 lbs/Hr, which is within the permitted limit of 0.08 gr/SCF corrected to 50% excess air and 3.0 lbs/Hr.

Results of the testing for each date are summarized in Table 1.

Table 1 Emission Summary
TPS Technologies, Inc.
Soil Remediation Unit 104
GATX Terminal Corporation Site
Port of Tampa facility
Tampa, Florida

Run Number	Time	Volumetric Flow ACFM	Volumetric Flow SCFMD	Stack Temperature °F	$\%H_2O$	Particulate Emissions grains/SCF	Particulate Emissions 50% excess air correction	Particulate Emissions lbs/Hr	VOC emissions ppm C_3H_8
February 6, 1990									
1*	0905-1212	30052*	5786*	1541*	28.2*	0.0318*	0.0289*	1.58*	----
2*	1107-1212	30318*	5574*	1586*	29.9*	0.0213*	0.0180*	1.02*	0.90
3	1402-1509	31273	5768	1591	29.5	0.0834	0.0732	4.12	0.75
4	1552-1659	30648	5666	1591	29.3	0.0937	0.0795	4.55	0.90
5	1731-1837	31001	6058	1591	25.3	0.0911	0.0921	4.73	----
Average*		30974	5831	1591	28.0	0.0894	0.0816	4.47	0.85
February 20,1990									
1	1028-1218	30195	6068	1450	27.9	0.0303	0.0310	1.57	**NM
2	1247-1352	28665	5678	1472	28.1	0.0297	0.0317	1.45	**NM
3	1419-1523	28313	5310	1473	31.9	0.0292	0.0293	1.33	**NM
Average		29057	5685	1465	29.3	0.0297	0.0307	1.45	**NM

* Runs 1 and 2 on February 6, 1990, failed post test leak check--not included in particulate averages.

** NM - not measured

EPA Method 25A testing for VOC and EPA Method 9 for visible emissions were conducted on February 6, 1990, only. VOC emission averaged 0.85 parts per million (ppm). VOC test results are discussed in Section 5.1 and strip chart are provided in Appendix A. Visible emissions averaged 0.0 percent opacity for the highest six minutes of the test.

Complete emission data, field data sheets, and laboratory data are presented in Appendices B, C, and D, respectively. Appendix G contains visible emission data sheets and observer's certification.

3.0 PROCESS DESCRIPTION AND OPERATION

Soil Remediation Unit Number 104 constructed and operated by TPS Technologies, Inc., is a self-contained (package) unit complete with generator, burner, dryer, feed hopper, and baghouse dust collector. The product (treated soil) is discharged from the dryer after addition of water to the discharge conveyor. Water is added for purposes of controlling fugitive dust and to aid in the treated soil compactor.

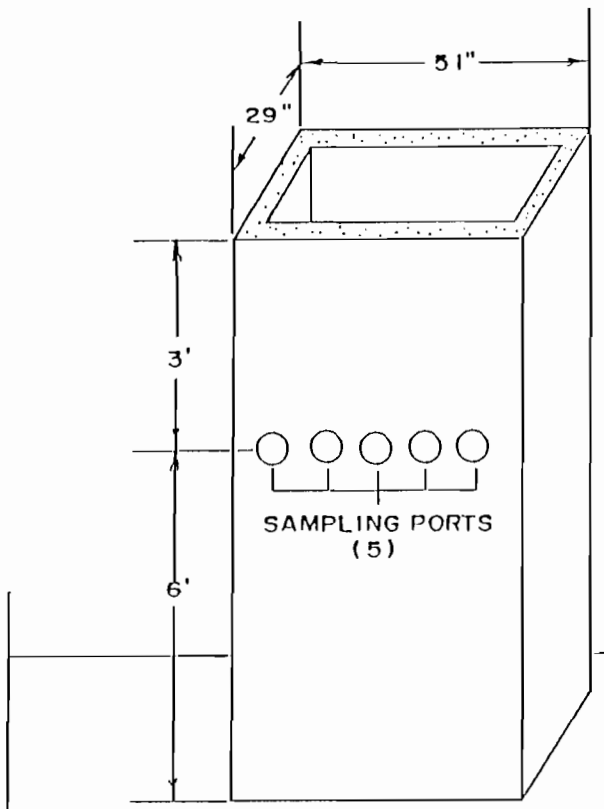
The dryer is fired on Number 2 diesel. Liquid propane gas is used for start up.

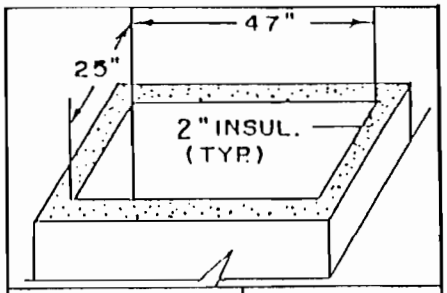
The unit was operated at an average rate of 13.25 tons per hour on February 6, 1990, and 14.36 tons per hour on February 20, 1990.

Production data is presented in Appendix F.

4.0 SAMPLING POINT LOCATION

The sampling point location and system schematic are shown in Figure 1.





TRAVERSE POINT NUMBER	INCHES INSIDE STACK WALL
1	2.5
2	7.5
3	12.5
4	17.5
5	22.5

FIGURE 1.
SAMPLING POINT LOCATION
SOIL REMEDIATION UNIT - SRU 104
TPS TECHNOLOGIES, INC.
PORT OF TAMPA, FLORIDA

AIR CONSULTING
and
ENGINEERING

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	PORT OF TAMPA, FLORIDA	Date:	2/6/90
Stack:	SRU NUMBER 104	Run 1	From 0905 - 1009

Y Factor	1.007	Nozzle Diameter	0.500 In
Total Time	62.50 Min	Nozzle Area	0.001364 Ft^2
Stack Area	8.160 Ft^2	Barometric Pressure	30.40 In Hg
Stack Temperature	1540.5 °F	Meter Temperature	59.8 °F
Stack Pressure	30.40 In Hg	Meter Orifice Diff	3.708 In H_2O
Stack Avg Δ Vel Head	0.544 In H_2O	Meter Volume	68.482 CF
		Condensate Vol	598.00 ml

1.	Volume Water Vapor Sampled	28.148	SCF
2.	Volume Standard Dry Gas Sampled	71.783	SCF
3.	Total Standard Sample Volume	99.931	SCF
4.	Percent Moisture	28.200	
5.	Percent Dry Air	71.800	
6.	Molecular Weight of Dry Flue Gas	30.056	
7.	Molecular Weight of Wet Flue Gas	26.656	
8.	Specific Gravity Flue Gas	0.92	
9.	Percent Oxygen [O_2]	5.80	
10.	Percent Carbon Dioxide [CO_2]	11.40	
11.	Percent Excess Air	36.116	
12.	Velocity of Flue Gas	61.380	FPS
13.	Actual Volumetric Flow Rate	30051.8	ACFM
14.	Dry Volumetric Flow Rate	21577.2	ACFMD
15.	Standard Volumetric Flow Rate	5786.3	SCFMD
16.	Emission Concentration	0.0318	gr/SCF
17.	Emission Concentration	0.0061	gr/ACF
18.	Emission Rate	1.58	lbs/Hr
19.	Percent Isokinetic	118.8	

Probe/Nozzle Wash	21.7	mg
Filter	126.1	mg
Total	147.8	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	PORT OF TAMPA, FLORIDA	Date:	2/6/90
Stack:	SRU NUMBER 104	Run 2 From	1107 - 1212

Y Factor	1.007	Nozzle Diameter	0.380 In
Total Time	62.50 Min	Nozzle Area	0.000788 Ft^2
Stack Area	8.160 Ft^2	Barometric Pressure	30.40 In Hg
Stack Temperature	1585.5 °F	Meter Temperature	67.9 °F
Stack Pressure	30.40 In Hg	Meter Orifice Diff	0.853 In H_2O
Stack Avg √ Vel Head	0.541 In H_2O	Meter Volume	33.413 CF
		Condensate Vol	310.90 ml

1.	Volume Water Vapor Sampled	14.634	SCF
2.	Volume Standard Dry Gas Sampled	34.250	SCF
3.	Total Standard Sample Volume	48.884	SCF
4.	Percent Moisture	29.900	
5.	Percent Dry Air	70.100	
6.	Molecular Weight of Dry Flue Gas	30.104	
7.	Molecular Weight of Wet Flue Gas	26.485	
8.	Specific Gravity Flue Gas	0.92	
9.	Percent Oxygen [O_2]	4.60	
10.	Percent Carbon Dioxide [CO_2]	12.00	
11.	Percent Excess Air	26.410	
12.	Velocity of Flue Gas	61.923	FPS
13.	Actual Volumetric Flow Rate	30317.7	ACFM
14.	Dry Volumetric Flow Rate	21252.7	ACFMD
15.	Standard Volumetric Flow Rate	5574.0	SCFMD
16.	Emission Concentration	0.0213	gr/SCF
17.	Emission Concentration	0.0039	gr/ACF
18.	Emission Rate	1.02	lbs/Hr
19.	Percent Isokinetic	102.0	

Probe/Nozzle Wash	0.0	mg
Filter	47.3	mg
Total	47.3	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	PORT OF TAMPA, FLORIDA	Date:	2/6/90
Stack:	SRU NUMBER 104	Run 3 From	1402 - 1509

Y Factor	1.007	Nozzle Diameter	0.380 In
Total Time	62.50 Min	Nozzle Area	0.000788 Ft^2
Stack Area	8.160 Ft^2	Barometric Pressure	30.40 In Hg
Stack Temperature	1590.6 °F	Meter Temperature	74.5 °F
Stack Pressure	30.40 In Hg	Meter Orifice Diff	0.904 In H_2O
Stack Avg √ Vel Head	0.557 In H_2O	Meter Volume	34.333 CF
		Condensate Vol	308.30 ml

1.	Volume Water Vapor Sampled	14.512	SCF
2.	Volume Standard Dry Gas Sampled	34.763	SCF
3.	Total Standard Sample Volume	49.274	SCF
4.	Percent Moisture	29.500	
5.	Percent Dry Air	70.500	
6.	Molecular Weight of Dry Flue Gas	29.988	
7.	Molecular Weight of Wet Flue Gas	26.452	
8.	Specific Gravity Flue Gas	0.92	
9.	Percent Oxygen [O_2]	5.30	
10.	Percent Carbon Dioxide [CO_2]	11.10	
11.	Percent Excess Air	31.603	
12.	Velocity of Flue Gas	63.874	FPS
13.	Actual Volumetric Flow Rate	31272.7	ACFM
14.	Dry Volumetric Flow Rate	22047.3	ACFMD
15.	Standard Volumetric Flow Rate	5768.0	SCFMD
16.	Emission Concentration	0.0834	gr/SCF
17.	Emission Concentration	0.0154	gr/ACF
18.	Emission Rate	4.12	lbs/Hr
19.	Percent Isokinetic	99.9	

Probe/Nozzle Wash	104.2	mg
Filter	83.7	mg
Total	187.9	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	PORT OF TAMPA, FLORIDA	Date:	2/6/90
Stack:	SRU NUMBER 104	Run 4	From 1552 - 1659

Y Factor	1.007	Nozzle Diameter	0.380 In
Total Time	62.50 Min	Nozzle Area	0.000788 Ft^2
Stack Area	8.160 Ft^2	Barometric Pressure	30.40 In Hg
Stack Temperature	1591.4 °F	Meter Temperature	74.4 °F
Stack Pressure	30.40 In Hg	Meter Orifice Diff	0.875 In H_2O
Stack Avg √ Vel Head	0.547 In H_2O	Meter Volume	34.085 CF
		Condensate Vol	304.60 ml

1.	Volume Water Vapor Sampled	14.338	SCF
2.	Volume Standard Dry Gas Sampled	34.516	SCF
3.	Total Standard Sample Volume	48.853	SCF
4.	Percent Moisture	29.300	
5.	Percent Dry Air	70.700	
6.	Molecular Weight of Dry Flue Gas	30.124	
7.	Molecular Weight of Wet Flue Gas	26.572	
8.	Specific Gravity Flue Gas	0.92	
9.	Percent Oxygen [O_2]	4.70	
10.	Percent Carbon Dioxide [CO_2]	12.10	
11.	Percent Excess Air	27.223	
12.	Velocity of Flue Gas	62.598	FPS
13.	Actual Volumetric Flow Rate	30647.8	ACFM
14.	Dry Volumetric Flow Rate	21668.0	ACFMD
15.	Standard Volumetric Flow Rate	5666.4	SCFMD
16.	Emission Concentration	0.0937	gr/SCF
17.	Emission Concentration	0.0173	gr/ACF
18.	Emission Rate	4.55	lbs/Hr
19.	Percent Isokinetic	101.1	

Probe/Nozzle Wash	131.0	mg
Filter	78.5	mg
Total	209.5	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	PORT OF TAMPA, FLORIDA	Date:	2/6/90
Stack:	SRU NUMBER 104	Run 5	From 1731 - 1837

Y Factor	1.007	Nozzle Diameter	0.380 In
Total Time	62.50 Min	Nozzle Area	0.000788 Ft^2
Stack Area	8.160 Ft^2	Barometric Pressure	30.40 In Hg
Stack Temperature	1590.9 °F	Meter Temperature	74.1 °F
Stack Pressure	30.40 In Hg	Meter Orifice Diff	0.901 In H_2O
Stack Avg √ Vel Head	0.557 In H_2O	Meter Volume	34.262 CF
		Condensate Vol	249.20 ml

1.	Volume Water Vapor Sampled	11.730	SCF
2.	Volume Standard Dry Gas Sampled	34.717	SCF
3.	Total Standard Sample Volume	46.446	SCF
4.	Percent Moisture	25.300	
5.	Percent Dry Air	74.700	
6.	Molecular Weight of Dry Flue Gas	29.944	
7.	Molecular Weight of Wet Flue Gas	26.922	
8.	Specific Gravity Flue Gas	0.93	
9.	Percent Oxygen [O_2]	7.40	
10.	Percent Carbon Dioxide [CO_2]	10.30	
11.	Percent Excess Air	51.650	
12.	Velocity of Flue Gas -	63.319	FPS
13.	Actual Volumetric Flow Rate	31000.8	ACFM
14.	Dry Volumetric Flow Rate	23157.6	ACFMD
15.	Standard Volumetric Flow Rate	6057.6	SCFMD
16.	Emission Concentration	0.0911	gr/SCF
17.	Emission Concentration	0.0178	gr/ACF
18.	Emission Rate	4.73	lbs/Hr
19.	Percent Isokinetic	95.0	

Probe/Nozzle Wash	133.2	mg
Filter	71.7	mg
Total	204.9	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC		
Location:	PORT OF TAMPA, FLORIDA	Date:	2/20/90
Stack:	SOIL REDIATION UNIT 104	Run 1 From	1028 - 1218

Y Factor	1.013	Nozzle Diameter	0.375 In
Total Time	62.50 Min	Nozzle Area	0.000767 Ft^2
Stack Area	8.160 Ft^2	Barometric Pressure	30.17 In Hg
Stack Temperature	1449.5 °F	Meter Temperature	83.2 °F
Stack Pressure	30.16 In Hg	Meter Orifice Diff	1.185 In H_2O
Stack Avg ∫ Vel Head	0.556 In H_2O	Meter Volume	35.667 CF
		Condensate Vol	291.20 ml

1.	Volume Water Vapor Sampled	13.707	SCF
2.	Volume Standard Dry Gas Sampled	35.491	SCF
3.	Total Standard Sample Volume	49.197	SCF
4.	Percent Moisture	27.900	
5.	Percent Dry Air	72.100	
6.	Molecular Weight of Dry Flue Gas	29.840	
7.	Molecular Weight of Wet Flue Gas	26.537	
8.	Specific Gravity Flue Gas	0.92	
9.	Percent Oxygen [O_2]	7.60	
10.	Percent Carbon Dioxide [CO_2]	9.60	
11.	Percent Excess Air	53.299	
12.	Velocity of Flue Gas	61.672	FPS
13.	Actual Volumetric Flow Rate	30194.6	ACFM
14.	Dry Volumetric Flow Rate	21770.3	ACFMD
15.	Standard Volumetric Flow Rate	6068.1	SCFMD
16.	Emission Concentration	0.0303	gr/SCF
17.	Emission Concentration	0.0061	gr/ACF
18.	Emission Rate	1.57	lbs/Hr
19.	Percent Isokinetic	99.6	

Probe/Nozzle Wash	28.0	mg
Filter	41.6	mg
Total	69.6	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC		
Location:	PORT OF TAMPA, FLORIDA	Date:	2/20/90
Stack:	SOIL REMEDIATION UNIT 104	Run 2 From	1247 - 1352

Y Factor	1.013	Nozzle Diameter	0.375 In
Total Time	62.50 Min	Nozzle Area	0.000767 Ft^2
Stack Area	8.160 Ft^2	Barometric Pressure	30.17 In Hg
Stack Temperature	1472.0 °F	Meter Temperature	97.6 °F
Stack Pressure	30.16 In Hg	Meter Orifice Diff	1.106 In H_2O
Stack Avg √ Vel Head	0.524 In H_2O	Meter Volume	33.853 CF
		Condensate Vol	273.00 ml

1.	Volume Water Vapor Sampled	12.850	SCF
2.	Volume Standard Dry Gas Sampled	32.809	SCF
3.	Total Standard Sample Volume	45.660	SCF
4.	Percent Moisture	28.100	
5.	Percent Dry Air	71.900	
6.	Molecular Weight of Dry Flue Gas	29.768	
7.	Molecular Weight of Wet Flue Gas	26.461	
8.	Specific Gravity Flue Gas	0.92	
9.	Percent Oxygen [O_2]	8.20	
10.	Percent Carbon Dioxide [CO_2]	9.00	
11.	Percent Excess Air	60.033	
12.	Velocity of Flue Gas	58.548	FPS
13.	Actual Volumetric Flow Rate	28665.0	ACFM
14.	Dry Volumetric Flow Rate	20610.1	ACFMD
15.	Standard Volumetric Flow Rate	5677.9	SCFMD
16.	Emission Concentration	0.0297	gr/SCF
17.	Emission Concentration	0.0059	gr/ACF
18.	Emission Rate	1.45	lbs/Hr
19.	Percent Isokinetic	98.5	

Probe/Nozzle Wash	18.8	mg
Filter	44.4	mg
Total	63.2	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC		
Location:	PORT OF TAMPA, FLORIDA	Date:	2/20/90
Stack:	SOIL REMEDIATION UNIT 104	Run 3 From	1419 - 1523

Y Factor	1.013	Nozzle Diameter	0.375 In
Total Time	62.50 Min	Nozzle Area	0.000767 Ft^2
Stack Area	8.160 Ft^2	Barometric Pressure	30.17 In Hg
Stack Temperature	1472.8 °F	Meter Temperature	93.5 °F
Stack Pressure	30.16 In Hg	Meter Orifice Diff	1.066 In H_2O
Stack Avg √ Vel Head	0.514 In H_2O	Meter Volume	33.058 CF
		Condensate Vol	320.80 ml

1.	Volume Water Vapor Sampled	15.100	SCF
2.	Volume Standard Dry Gas Sampled	32.273	SCF
3.	Total Standard Sample Volume	47.373	SCF
4.	Percent Moisture	31.900	
5.	Percent Dry Air	68.100	
6.	Molecular Weight of Dry Flue Gas	29.908	
7.	Molecular Weight of Wet Flue Gas	26.109	
8.	Specific Gravity Flue Gas	0.91	
9.	Percent Oxygen [O_2]	7.30	
10.	Percent Carbon Dioxide [CO_2]	10.10	
11.	Percent Excess Air	50.323	
12.	Velocity of Flue Gas	57.828	FPS
13.	Actual Volumetric Flow Rate	28312.7	ACFM
14.	Dry Volumetric Flow Rate	19281.0	ACFMD
15.	Standard Volumetric Flow Rate	5309.5	SCFMD
16.	Emission Concentration	0.0292	gr/SCF
17.	Emission Concentration	0.0055	gr/ACF
18.	Emission Rate	1.33	lbs/Hr
19.	Percent Isokinetic	103.5	

Probe/Nozzle Wash	24.4	mg
Filter	36.7	mg
Total	61.1	mg

PHOSLAB

806 W. Beacon Road • Lakeland, Florida 33803

Client: TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, FL 32703

SRV-104 - Compliance Test Results

Sampled By:

Attn: Mr. Steve Pregel

Sample Date: 2-6-90 @ 1700

P.O. #

Date Received: 2-7-90

Project: GATX

Analysis Date: 2-7/8-90

Reference: R-127 - Port of Tampa

Analyzed By: GJF/JMC

CERTIFICATE OF ANALYSIS

TOTAL RECOVERABLE HYDROCARBONS
EPA METHOD 9073 (418.1)

Sample	Conc., mg/kg
TD-1	266.0
TD-2	4,100.0
TD-3	2,500.0
TCL-1	* 1.0
TCL-2	* 1.0
TCL-3	* 1.0

* less than

QA OFFICER

CHEMIST

SOURCE TEST REPORT
for
VOLATILE ORGANIC COMPOUNDS, PARTICULATE,
AND VISIBLE EMISSIONS

SOIL REMEDIATION UNIT
SRU-200P-105
LOCATED AT THE
MCDILL AIR FORCE BASE SITE
TAMPA, FLORIDA

FDER PERMIT NUMBER AC48-166606

DECEMBER 1 & 3, 1990

Prepared for:

TPS TECHNOLOGIES, INC.
2070 SOUTH ORANGE BLOSSOM TRAIL
APOPKA, FLORIDA 32703

Prepared by:

AIR CONSULTING AND ENGINEERING, INC.
2106 N.W. 67th PLACE, SUITE 4
GAINESVILLE, FLORIDA 32606
(904) 335-1889

211-90-09

air consulting and engineering, Inc.

REPORT CERTIFICATION

To the best of my knowledge, all applicable field and analytical procedures comply with Florida Department of Environmental Regulation requirements and all test data and plant operating data are true and correct.

Peter F. Burnette

12/27/90
Date

2106 N.W. 67th Place, Suite 4 • Gainesville, Florida 32606 • (904) 335-1889

1.0 INTRODUCTION

On December 1 & 3, 1990, Air Consulting and Engineering, Inc. (ACE), conducted emission testing on Soil Remediation Unit Number 105 (SRU 105) located at the McDill Air Force Base (AFB) in Tampa, Florida. The SRU 105 is owned and operated by Thermo Process Systems, Inc. (TPS Technologies). Volatile organic compounds (VOC), particulate, and visible emissions were determined using United States Environmental Protection Agency (EPA) Methods 5, 3, 9 and 25A respectively.

Testing was undertaken to demonstrate compliance with the Florida Department of Environmental Regulation (FDER) Permit Number AC48-166606. Mr. Mike Kelly of TPS coordinated testing and provided process weight rate data.

2.0 SUMMARY AND DISCUSSION OF RESULTS

TPS Technologies, Inc. Unit Number 105 was found to be operating in compliance with construction permit conditions. Particulate emissions averaged 0.0284 grains per dry standard cubic foot (gr/DSCF) corrected to 50% excess air and 1.60 pounds per hour (lbs/Hr). This is within the permitted limit of 0.08 gr/DSCF corrected to 50% excess air and 3.0 lbs/Hr.

VOC emissions averaged 2.78 parts per million on a wet basis (ppmw) and 0.11 pounds per hour (lbs/Hr) as Carbon. A total of three one hour test runs were conducted using EPA Method 25A with a "Flame Ionization Analyzer (FIA)", Ratfisch Model RS55 with heated components. VOC test results and strip chart data are provided in Appendix A.

Table 1 summarizes emissions and flue gas parameters. Complete emission data, field data sheets, and laboratory data are located in Appendices B, C and D respectively.

Visible emissions (VE) averaged 0.0 percent opacity for the highest six minute period of the test. This is within the compliance limit of 5% opacity. The VE was conducted concurrently with Particulate Run 1. Appendix G contains VE data sheets and observer's certification.

Table 1 Emission Summary
TPS Technologies, Inc.
SRU Number 105
Tampa, Florida
December 1 & 3, 1990

Run Number	Time	Volumetric Flow ACFM	Volumetric Flow SCFMD	Stack Temperature °F	H_2O %	Excess Air %	Particulate Emissions gr/SCFD	Particulate Emissions gr/SCFD @ 50% Excess Air	Particulate Emissions lbs/Hr
1	1414-1540	24278	4864	1455	27.9	28.050	0.0093	0.0079	0.39
2	1637-1759	24229	5046	1466	24.6	11.603	0.0050	0.0037	0.21
3	0811-1107	29262	5693	1490	28.6	24.090	0.0860	0.0737	4.20
Average		25923	5201	1470	27.0	21.248	0.0334	0.0284	1.60

Run Number	Time 12/1/90	VOC concentration ppm Propane (wet basis)	VOC ppm Propane (dry basis)	VOC emissions lb/Hr Carbon
1	1422-1522	2.35	3.26	0.09
2	1600-1703*	2.57	3.41	0.10
3	1722-1825*	3.42	4.54	0.13
Average		2.78	3.74	0.11

*Using data from Particulate Run 2 on 12/1/90

50% Excess Air Correction = $\frac{100 + \% \text{ Excess Air}}{100 + 50}$

Allowable Emissions = 0.08 gr/SCF @ 50% Excess Air and 3.0 lb/Hr

$ppm_{dry} = ppm_{wet}/F.D.A.$

$lb/Hr\ C = (2.595 \times 10^{-9})(M)(ppm_{dry})(SCFMD)60$

where M = molecular weight of carbon content
= 36

3.0 PROCESS DESCRIPTION AND OPERATION

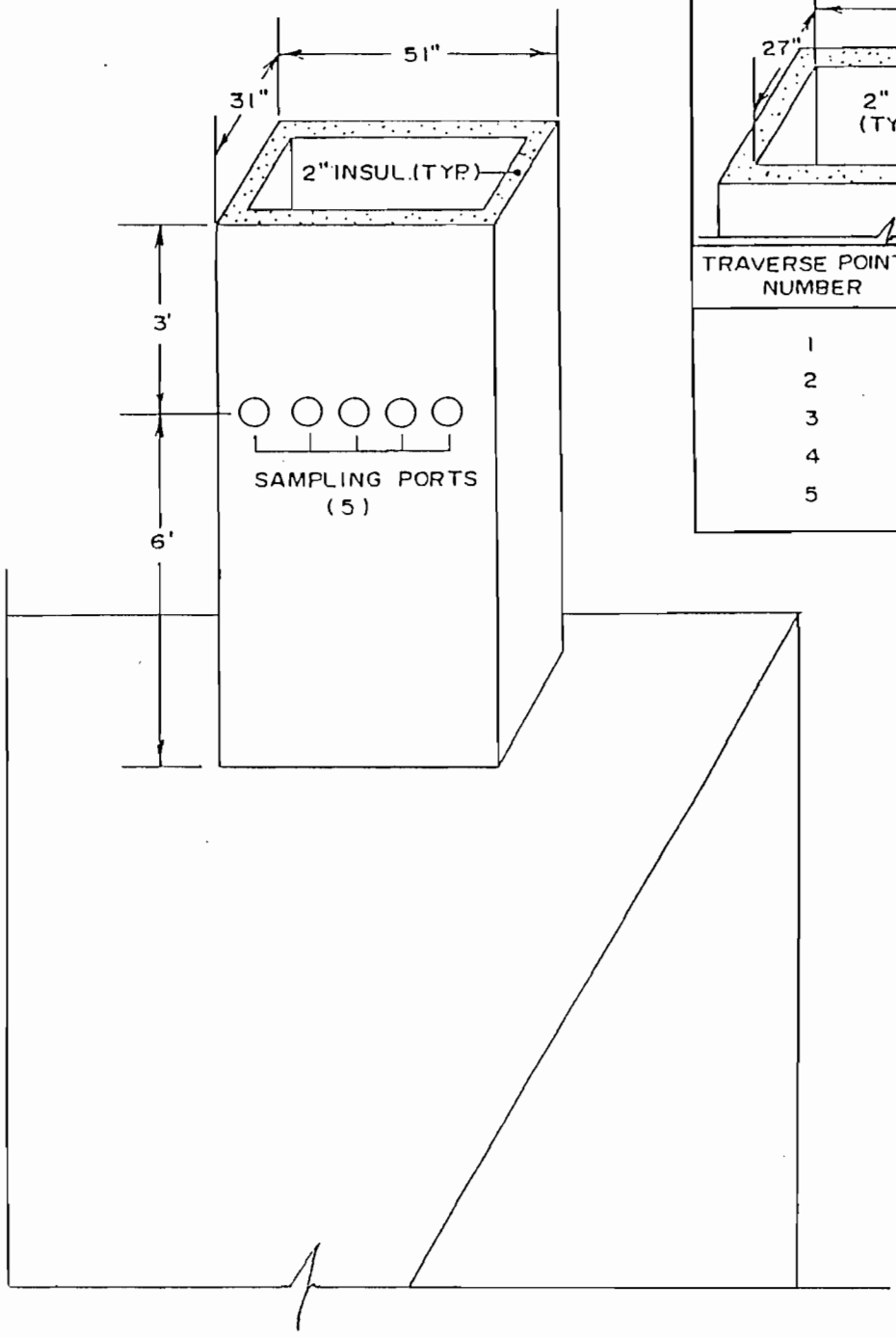
Soil Remediation Unit Number 105 constructed and operated by TPS Technologies, Inc., is a self-contained (package) unit complete with generator, burner, dryer, feed hopper, baghouse dust collector and afterburner. The product (treated soil) is discharged from the dryer after addition of water to the discharge conveyor. Water is added for purposes of controlling fugitive dust and to aid in the treated soil compaction.

The dryer is fired on Number 2 diesel. Liquid propane gas is used for start up.

The unit was operated at an average rate of 18.1 tons per hour during the test periods (see Appendix F).

4.0 SAMPLING POINT LOCATION

The sampling point location and system schematic are shown in Figure 1.



TRAVERSE POINT NUMBER	INCHES INSIDE STACK WALL
1	2.7
2	8.1
3	13.5
4	18.9
5	24.3

FIGURE 1.
SAMPLING POINT LOCATION
SOIL REMEDIATION UNIT - SRU 105
TPS TECHNOLOGIES

AIR CONSULTING
and
ENGINEERING

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant: TPS TECHNOLOGIES, INC.
Location: TAMPA, FLORIDA Date: 12/1/90
Stack: MCDILL AFB (SRU #105) Run 1 From 1414 - 1540

Y Factor	1.007	Nozzle Diameter	0.361 In
Total Time	75.00 Min	Nozzle Area	0.000711 Ft^2
Stack Area	8.813 Ft^2	Barometric Pressure	30.15 In Hg
Stack Temperature	1454.9 °F	Meter Temperature	91.5 °F
Stack Pressure	30.15 In Hg	Meter Orifice Diff	0.547 In H_2O
Stack Avg J Vel Head	0.415 In H_2O	Meter Volume	32.457 CF
		Condensate Vol	259.10 ml

1.	Volume Water Vapor Sampled	12.196	SCF
2.	Volume Standard Dry Gas Sampled	31.561	SCF
3.	Total Standard Sample Volume	43.757	SCF
4.	Percent Moisture	27.900	
5.	Percent Dry Air	72.100	
6.	Molecular Weight of Dry Flue Gas	30.144	
7.	Molecular Weight of Wet Flue Gas	26.756	
8.	Specific Gravity Flue Gas	0.93	
9.	Percent Oxygen [O_2]	4.80	
10.	Percent Carbon Dioxide [CO_2]	12.20	
11.	Percent Excess Air	28.050	
12.	Velocity of Flue Gas	45.916	FPS
13.	Actual Volumetric Flow Rate	24277.9	ACFM
14.	Dry Volumetric Flow Rate	17504.4	ACFMD
15.	Standard Volumetric Flow Rate	4863.7	SCFMD
16.	Emission Concentration	0.0093	gr/SCF
17.	Emission Concentration	0.0019	gr/ACF
18.	Emission Rate	0.39	lbs/Hr
19.	Percent Isokinetic	107.3	

Probe/Nozzle Wash	13.5	mg
Filter	5.6	mg
Total	19.1	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	TAMPA, FLORIDA	Date:	12/1/90
Stack:	MCDILL AFB (SRU #105)	Run 2	From 1637 - 1759

Y Factor	1.007	Nozzle Diameter	0.361 In
Total Time	75.00 Min	Nozzle Area	0.000711 Ft^2
Stack Area	8.813 Ft^2	Barometric Pressure	30.15 In Hg
Stack Temperature	1466.4 °F	Meter Temperature	84.8 °F
Stack Pressure	30.15 In Hg	Meter Orifice Diff	0.538 In H_2O
Stack Avg $\sqrt{}$ Vel Head	0.417 In H_2O	Meter Volume	32.235 CF
		Condensate Vol	220.20 ml

1.	Volume Water Vapor Sampled	10.365	SCF
2.	Volume Standard Dry Gas Sampled	31.730	SCF
3.	Total Standard Sample Volume	42.095	SCF
4.	Percent Moisture	24.600	
5.	Percent Dry Air	75.400	
6.	Molecular Weight of Dry Flue Gas	30.316	
7.	Molecular Weight of Wet Flue Gas	27.286	
8.	Specific Gravity Flue Gas	0.95	
9.	Percent Oxygen [O_2]	2.30	
10.	Percent Carbon Dioxide [CO_2]	13.90	
11.	Percent Excess Air	11.603	
12.	Velocity of Flue Gas	45.824	FPS
13.	Actual Volumetric Flow Rate	24229.3	ACFM
14.	Dry Volumetric Flow Rate	18268.9	ACFMD
15.	Standard Volumetric Flow Rate	5045.6	SCFMD
16.	Emission Concentration	0.0050	gr/SCF
17.	Emission Concentration	0.0010	gr/ACF
18.	Emission Rate	0.21	lbs/Hr
19.	Percent Isokinetic	104.0	

Probe/Nozzle Wash	6.7	mg
Filter	3.5	mg
Total	10.2	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	TAMPA, FLORIDA	Date:	12/3/90
Stack:	MCDILL AFB (SRU #105)	Run 3	From 0811 - 1107

Y Factor	1.007	Nozzle Diameter	0.402 In
Total Time	75.00 Min	Nozzle Area	0.000881 Ft^2
Stack Area	8.813 Ft^2	Barometric Pressure	30.11 In Hg
Stack Temperature	1490.0 °F	Meter Temperature	82.7 °F
Stack Pressure	30.11 In Hg	Meter Orlfice Diff	0.925 In H_2O
Stack Avg √ Vel Head	0.494 In H_2O	Meter Volume	42.178 CF
		Condensate Vol	354.60 ml

1.	Volume Water Vapor Sampled	16.691	SCF
2.	Volume Standard Dry Gas Sampled	41.662	SCF
3.	Total Standard Sample Volume	58.353	SCF
4.	Percent Moisture	28.600	
5.	Percent Dry Air	71.400	
6.	Molecular Weight of Dry Flue Gas	30.060	
7.	Molecular Weight of Wet Flue Gas	26.611	
8.	Specific Gravity Flue Gas	0.92	
9.	Percent Oxygen [O_2]	4.30	
10.	Percent Carbon Dioxide [CO_2]	11.80	
11.	Percent Excess Air	24.090	
12.	Velocity of Flue Gas	55.342	FPS
13.	Actual Volumetric Flow Rate	29262.0	ACFM
14.	Dry Volumetric Flow Rate	20893.0	ACFMD
15.	Standard Volumetric Flow Rate	5693.2	SCFMD
16.	Emission Concentration	0.0860	gr/SCF
17.	Emission Concentration	0.0167	gr/ACF
18.	Emission Rate	4.20	lbs/Hr
19.	Percent Isokinetic	97.6	

Probe/Nozzle Wash	121.0	mg
Filter	111.2	mg
Total	232.2	mg

PHOSLAB

806 W. Beacon Road • Lakeland, Florida 33803

Client: TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, FL 32703

Attn: Mr. Pete Richter

P.O. #

Project: McDill AFB - Tampa

Reference: 2-90-62

Sampled By: JMC

Sample Date: 12-1/4-90

Date Received: 12-4-90

Analysis Date: 12-4-90

Analyzed By: GJF/JMC

CERTIFICATE OF ANALYSIS

TOTAL RECOVERABLE HYDROCARBONS
EPA METHOD 9073 (418.1)

Sample	Conc., mg/kg
12-1-90	144.0
12-2-90	9.0
12-3-90	8.0
11-30-90/SPU-105	62.0
12-1-90/DD-1	8,491.0
12-1-90/DD-2	3,840.0
12-1-90/DD-3	6,480.0
12-1-90/CD-1	34.0
12-1-90/CD-2	25.0
12-1-90/CD-3	156.0

QA OFFICER

CHEMIST

SOURCE TEST REPORT
for
VOLATILE ORGANIC COMPOUNDS, PARTICULATE,
AND VISIBLE EMISSIONS

SOIL REMEDIATION UNIT
SRU-200P-106
LOCATED AT THE
KELLY TRACTOR SITE
MIAMI, FLORIDA

FDER PERMIT NUMBER AC48-166607

JULY 12, 1990

Prepared for:

TPS TECHNOLOGIES, INC.
2070 SOUTH ORANGE BLOSSOM TRAIL
APOPKA, FLORIDA 32703

Prepared by:

AIR CONSULTING AND ENGINEERING, INC.
2106 N.W. 67th PLACE, SUITE 4
GAINESVILLE, FLORIDA 32606
(904) 335-1889

211-90-08

air consulting and engineering, Inc.

REPORT CERTIFICATION

To the best of my knowledge, all applicable field and analytical procedures comply with Florida Department of Environmental Regulation requirements and all test data and plant operating data are true and correct.

J. Colleen Hodge

8/7/90
Date

2106 N.W. 67th Place, Suite 4 • Gainesville, Florida 32606 • (904) 335-1889

1.0 INTRODUCTION

On July 12, 1990, Air Consulting and Engineering, Inc. (ACE), conducted emission testing on Soil Remediation Unit Number 106 (SRU 106) located at the Kelly Tractor facility in Miami, Florida. The SRU 106 is owned and operated by Thermo Process Systems, Inc. (TPS Technologies). Volatile organic compounds (VOC), particulate, and visible emissions were determined using United States Environmental Protection Agency (EPA) Methods 5, 3, 9 and 25A respectively.

Testing was undertaken to demonstrate compliance with the Florida Department of Environmental Regulation (FDER) Permit Number AC48-166607. Mr. Art Boliver of the Dade County Pollution Control observed a portion of the test.

2.0 SUMMARY AND DISCUSSION OF RESULTS

TPS Technologies, Inc. Unit Number 106 was found to be operating in compliance with construction permit conditions. Particulate emissions averaged 0.0133 grains per dry standard cubic foot (gr/DSCF) corrected to 50% excess air and 0.57 pounds per hour (lbs/Hr). This is within the permitted limit of 0.08 gr/DSCF corrected to 50% excess air and 3.0 lbs/Hr.

Particulate Run 1 was voided due to an excessive isokenetic sampling rate of 115.3%. To achieve the required 100% (+/- 10%) isokenetic sampling rate, total testing time was extended from 62.5 minutes to 75 minutes for the following three runs. Asbestos string was utilized to connect the probe nozzle to the probe liner. Particulate Run 2 showed a post test leakage rate of 0.08 cfm and the total volume of dry gas metered was corrected as shown in section 6.3 EPA Method 5 Code of Federal Regulations - 40:

Vm -(Lp-La) @

Table 1 summarizes particulate emissions and flue gas parameters. Complete emission data, field data sheets, and laboratory data are located in Appendices B, C and D respectively.

VOC emissions averaged 2.5 parts per million (ppm). A total of three one hour test runs were conducted using EPA Method 25A with a "Flame Ionization Analyzer (FIA)", Ratfisch Model RS55 with heated components. VOC test results and strip chart data are provided in Appendix A.

Table 1 Emission Summary
TPS Technologies, Inc.
SRU Number 106
Miami, Florida
July 12, 1990

Run Number	Time	Volumetric Flow ACFM	Volumetric Flow SCFMD	Stack Temperature °F	H_2O %	Excess Air %	Particulate Emissions gr/SCFD	Particulate Emissions gr/SCFD @ 50% Excess Air	Particulate Emissions lbs/Hr
1*	0850-0953	25574*	5443*	1415*	25.5	29.336*	0.0410*	0.0354*	1.91*
2	1103-1231	23975	4921	1400	28.7	51.366	0.0186	0.0188	0.79
3	1314-1543	27573	6091	1395	23.5	82.347	0.0081	0.0098	0.42
4	1617-1735	22027	4776	1395	24.9	42.761	0.0120	0.0114	0.49
Average Runs 2, 3 & 4		24525	5263	1397	25.7	58.825	0.0129	0.0133	0.57

Run Number	Time	VOC concentration ppm Propane (wet basis)	VOC ppm Propane (dry basis)	VOC emissions lb/Hr Carbon
1	0837-0937	3.4	4.6	0.14
2	1037-1207	1.6	2.2	0.06
3	1318-1524	2.6	3.4	0.12
Average		2.5	3.4	0.11

* Particulate Run 1 not included in average (see Section 2.0).

50% Excess Air Correction = $\frac{100 + \% \text{ Excess Air}}{100 + 50}$

Allowable Emissions = 0.08 gr/SCF @ 50% Excess Air and 3.0 lb/Hr

$ppm_{dry} = ppm_{wet}/F.D.A.$

lb/Hr C = $(2.595 \times 10^{-9})(M)(ppm_{dry})(SCFMD)60$

where M = molecular weight of carbon content
= 36

Visible emissions (VE) averaged 0.0 percent opacity for the highest six minute period of the test. This is within the compliance limit of 5% opacity. Appendix G contains VE data sheets and observer's certification.

3.0 PROCESS DESCRIPTION AND OPERATION

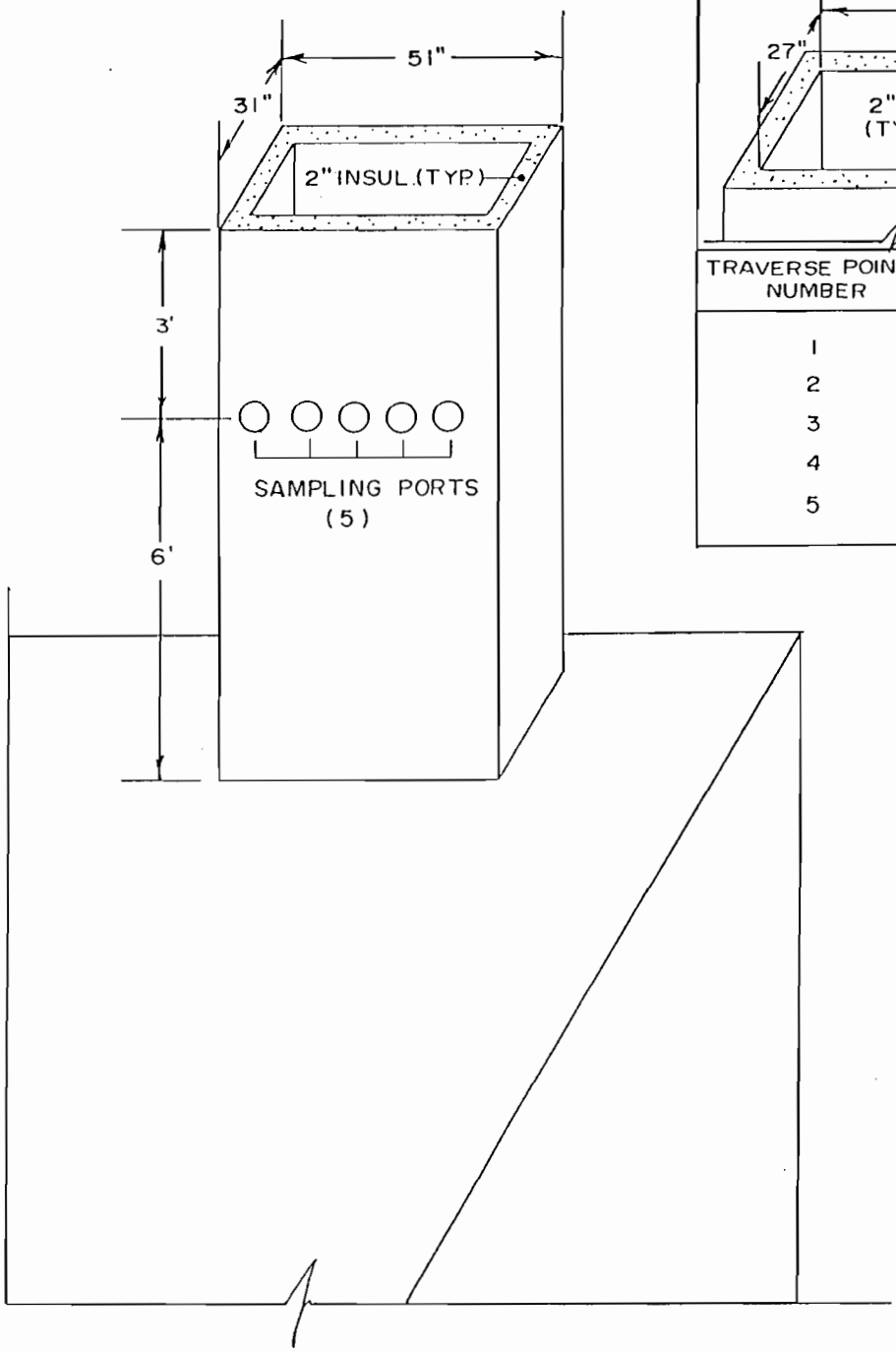
Soil Remediation Unit Number 106 constructed and operated by TPS Technologies, Inc., is a self-contained (package) unit complete with generator, burner, dryer, feed hopper, baghouse dust collector and afterburner. The product (treated soil) is discharged from the dryer after addition of water to the discharge conveyor. Water is added for purposes of controlling fugitive dust and to aid in the treated soil compaction.

The dryer is fired on Number 2 diesel. Liquid propane gas is used for start up.

The unit was operated at an average rate of 16.40 tons per hour during the test periods (see Appendix F).

4.0 SAMPLING POINT LOCATION

The sampling point location and system schematic are shown in Figure 1.



TRAVERSE POINT NUMBER	INCHES INSIDE STACK WALL
1	2.7
2	8.1
3	13.5
4	18.9
5	24.3

FIGURE 1.
SAMPLING POINT LOCATION
SOIL REMEDIATION UNIT—SRU 106
TPS TECHNOLOGIES
MIAMI, FLORIDA

AIR CONSULTING
and
ENGINEERING

AIR CONSULTING AND ENGINEERING. INC.

Complete Emission Results

9

Plant:	TPS TECHNOLOGIES. INC.		
Location:	MIAMI. FLORIDA	Date:	7/12/90
Stack:	SRU NUMBER 106	Run 1 From	0850 - 0953

Y Factor	1.007	Nozzle Diameter	0.353 In
Total Time	62.50 Min	Nozzle Area	0.000680 Ft^2
Stack Area	8.813 Ft^2	Barometric Pressure	30.35 In Hg
Stack Temperature	1414.9 °F	Meter Temperature	86.6 °F
Stack Pressure	30.35 In Hg	Meter Orifice Diff	0.771 In H_2O
Stack Avg √ Vel Head	0.445 In H_2O	Meter Volume	30.602 CF
		Condensate Vol	219.70 ml

1.	Volume Water Vapor Sampled	10.341	SCF
2.	Volume Standard Dry Gas Sampled	30.240	SCF
3.	Total Standard Sample Volume	40.581	SCF
4.	Percent Moisture	25.500	
5.	Percent Dry Air	74.500	
6.	Molecular Weight of Dry Flue Gas	30.040	
7.	Molecular Weight of Wet Flue Gas	26.970	
8.	Specific Gravity Flue Gas	0.94	
9.	Percent Oxygen [O_2]	5.00	
10.	Percent Carbon Dioxide [CO_2]	11.50	
11.	Percent Excess Air	29.336	
12.	Velocity of Flue Gas	48.364	FPS
13.	Actual Volumetric Flow Rate	25574.0	ACFM
14.	Dry Volumetric Flow Rate	19052.6	ACFMD
15.	Standard Volumetric Flow Rate	5442.6	SCFMD
16.	Emission Concentration	0.0410	gr/SCF
17.	Emission Concentration	0.0087	gr/ACF
18.	Emission Rate	1.91	lbs/Hr
19.	Percent Isokinetic	115.3	

Probe/Nozzle Wash	38.8	mg
Filter	41.5	mg
Total	80.3	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	MIAMI, FLORIDA	Date:	7/12/90
Stack:	SRU NUMBER 106	Run 2 From	1103 - 1231

Y Factor	1.007	Nozzle Diameter	0.353 In
Total Time	75.00 Min	Nozzle Area	0.000680 Ft^2
Stack Area	8.813 Ft^2	Barometric Pressure	30.35 In Hg
Stack Temperature	1400.4 °F	Meter Temperature	99.3 °F
Stack Pressure	30.35 In Hg	Meter Orifice Diff	0.547 In H_2O
Stack Avg √ Vel Head	0.415 In H_2O	Meter Volume	27.025 CF
		Condensate Vol	222.60 ml

1.	Volume Water Vapor Sampled	10.478	SCF
2.	Volume Standard Dry Gas Sampled	26.085	SCF
3.	Total Standard Sample Volume	36.562	SCF
4.	Percent Moisture	28.700	
5.	Percent Dry Air	71.300	
6.	Molecular Weight of Dry Flue Gas	29.896	
7.	Molecular Weight of Wet Flue Gas	26.482	
8.	Specific Gravity Flue Gas	0.92	
9.	Percent Oxygen [O_2]	7.40	
10.	Percent Carbon Dioxide [CO_2]	10.00	
11.	Percent Excess Air	51.366	
12.	Velocity of Flue Gas	45.341	FPS
13.	Actual Volumetric Flow Rate	23975.4	ACFM
14.	Dry Volumetric Flow Rate	17094.5	ACFMD
15.	Standard Volumetric Flow Rate	4921.4	SCFMD
16.	Emission Concentration	0.0186	gr/SCF
17.	Emission Concentration	0.0038	gr/ACF
18.	Emission Rate	0.79	lbs/Hr
19.	Percent Isokinetic	91.6	

Probe/Nozzle Wash	21.4	mg
Filter	10.1	mg
Total	31.5	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	MIAMI, FLORIDA	Date:	7/12/90
Stack:	SRU NUMBER 106	Run 3 From	1314 - 1543

Y Factor	1.007	Nozzle Diameter	0.353 In
Total Time	75.00 Min	Nozzle Area	0.000680 Ft^2
Stack Area	8.813 Ft^2	Barometric Pressure	30.35 In Hg
Stack Temperature	1394.8 °F	Meter Temperature	99.1 °F
Stack Pressure	30.35 In Hg	Meter Orifice Diff	0.632 In H_2O
Stack Avg √ Vel Head	0.482 In H_2O	Meter Volume	35.711 CF
		Condensate Vol	224.60 ml

1.	Volume Water Vapor Sampled	10.572	SCF
2.	Volume Standard Dry Gas Sampled	34.488	SCF
3.	Total Standard Sample Volume	45.060	SCF
4.	Percent Moisture	23.500	
5.	Percent Dry Air	76.500	
6.	Molecular Weight of Dry Flue Gas	29.672	
7.	Molecular Weight of Wet Flue Gas	26.929	
8.	Specific Gravity Flue Gas	0.93	
9.	Percent Oxygen [O_2]	9.80	
10.	Percent Carbon Dioxide [CO_2]	8.00	
11.	Percent Excess Air	82.347	
12.	Velocity of Flue Gas	52.144	FPS
13.	Actual Volumetric Flow Rate	27572.5	ACFM
14.	Dry Volumetric Flow Rate	21092.9	ACFMD
15.	Standard Volumetric Flow Rate	6090.8	SCFMD
16.	Emission Concentration	0.0081	gr/SCF
17.	Emission Concentration	0.0018	gr/ACF
18.	Emission Rate	0.42	lbs/Hr
19.	Percent Isokinetic	97.9	

Probe/Nozzle Wash	10.5	mg
Filter	7.6	mg
Total	18.1	mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant:	TPS TECHNOLOGIES, INC.		
Location:	MIAMI, FLORIDA	Date:	7/12/90
Stack:	SRU NUMBER 106	Run 4	From 1617 - 1735

Y Factor	1.007	Nozzle Diameter	0.353 In
Total Time	75.00 Min	Nozzle Area	0.000680 Ft^2
Stack Area	8.813 Ft^2	Barometric Pressure	30.35 In Hg
Stack Temperature	1394.9 °F	Meter Temperature	98.7 °F
Stack Pressure	30.35 In Hg	Meter Orifice Diff	0.421 In H_2O
Stack Avg √ Vel Head	0.386 In H_2O	Meter Volume	29.610 CF
		Condensate Vol	201.80 ml

1.	Volume Water Vapor Sampled	9.499	SCF
2.	Volume Standard Dry Gas Sampled	28.602	SCF
3.	Total Standard Sample Volume	38.100	SCF
4.	Percent Moisture	24.900	
5.	Percent Dry Air	75.100	
6.	Molecular Weight of Dry Flue Gas	30.068	
7.	Molecular Weight of Wet Flue Gas	27.063	
8.	Specific Gravity Flue Gas	0.94	
9.	Percent Oxygen [O_2]	6.50	
10.	Percent Carbon Dioxide [CO_2]	11.30	
11.	Percent Excess Air	42.761	
12.	Velocity of Flue Gas	41.656	FPS
13.	Actual Volumetric Flow Rate	22026.7	ACFM
14.	Dry Volumetric Flow Rate	16542.1	ACFMD
15.	Standard Volumetric Flow Rate	4776.3	SCFMD
16.	Emission Concentration	0.0120	gr/SCF
17.	Emission Concentration	0.0026	gr/ACF
18.	Emission Rate	0.49	lbs/Hr
19.	Percent Isokinetic	103.6	

Probe/Nozzle Wash	15.3	mg
Filter	7.0	mg
Total	22.3	mg

PHOSLAB

806 W. Beacon Road • Lakeland, Florida 33803

Client: TPS Technologies, Inc.
2070 S. Orange Blossom Trail
Apopka, FL 32703

Attn: Ms. Kathy Thompson

P.O. #

Project: Kelly Tractor - Miami

Reference: SE 08-90

Sampled By: B. Mathieu
Sample Date: 7-13/16-90
Date Received: 7-17-90
Analysis Date: 7-17-90
Analyzed By: GJF/JMC

CERTIFICATE OF ANALYSIS

TOTAL RECOVERABLE HYDROCARBONS
EPA METHOD 9073 (418.1)

Sample	Conc., mg/kg
KT-8/7-11-90	* 1.0
KT-9/7-12-90	9.0
KT-10/7-13-90	* 1.0
KT-11/7-14-90	* 1.0
KT-12/7-15-90	* 1.0
Test 1A/7-12-90	6,000.0
Test 1B/7-12-90	20.0
Test 2A/7-12-90	4,900.0
Test 2B/7-12-90	* 1.0
Test 3A/7-12-90	3,100.0
Test 3B/7-12-90	* 1.0

* less than

QA OFFICER

CHEMIST

FDER QA/QC #87308G

ATTACHMENT C

EMISSION CALCULATIONS

Old Emission Calculations

Destruction Efficiency = 90 %

Particulate Matter (PM)

0.03 gr/DSCF ÷ 7000 gr/lb x 8300 DSCFM x 60 min/hr = 2.13 lb/hr

Allowable emission applied for is 0.03 gr/DSCF and 3.0 lb/hr. Higher mass emission is to accommodate potential increase in volumetric flows on site specific basis.

Volatile Organics Compounds (VOC)

Based on a representative soil contamination concentration of 0.5% by weight and an afterburner destruction efficiency of 90.0%

(0.005 lb VOC/lb feed x (50,000 lb feed/hr) x (100-90.0)/100
= 25.0 lb/hr

Carbon Monoxide (CO)

Reference AP-42 Table 1.2-1 Distillate Fuel:

(180.0 gph rotary drum dryer + 86.0 gph afterburner)
x (5 lb CO/1000 gallons) x (100-90.0)/100 = 0.13 lb/hr

Oxides of Nitrogen (NOx)

Reference AP-42 Table 1.3-1 Distillate Fuel:

(180.0 gph rotary drum dryer + 86.0 gph afterburner)
x (20 lb NOx/1000 gallons) = 5.3 lb/hr

Sulfur Dioxide (SO_2)

(180.0 gph rotary drum dryer + 86.0 gph afterburner)
x (7.08 lb/gallon) x (0.005 lb S/lb oil) x (64 lb SO_2/lb mole SO_2)
÷ (32 lb S/lb mole SO_2) = 18.8 lb/hr.

New Emission Calculations

Destruction Efficiency = 98.0 %

Particulate Matter (PM)

0.03 gr/DSCF ÷ 7000 gr/lb x 8300 DSCFM x 60 min/hr = 2.13 lb/hr

Allowable emission applied for is 0.03 gr/DSCF and 3.0 lb/hr. Higher mass emission is to accommodate potential increase in volumetric flows on site specific basis.

Volatile Organics Compounds (VOC)

Based on a representative soil contamination concentration of 2.5% by weight and an afterburner destruction efficiency of 98.0%

(0.025 lb VOC/lb feed x (50,000 lb feed/hr) x (100-98.0)/100
= 25.0 lb/hr

Carbon Monoxide (CO)

Reference AP-42 Table 1.2-1 Distillate Fuel:

(180.0 gph rotary drum dryer + 86.0 gph afterburner)
x (5 lb CO/1000 gallons) x (100-98.0)/100 = 0.027 lb/hr

Oxides of Nitrogen (NOx)

Reference AP-42 Table 1.3-1 Distillate Fuel:

(180.0 gph rotary drum dryer + 86.0 gph afterburner)
x (20 lb NOx/1000 gallons) = 5.3 lb/hr

Sulfur Dioxide (SO_2)

(180.0 gph rotary drum dryer + 86.0 gph afterburner)
x (7.08 lb/gallon) x (0.005 lb S/lb oil) x (64 lb SO_2/lb mole SO_2)
÷ (32 lb S/lb mole SO_2) = 18.8 lb/hr.

JOSEPH CZAJA
CERTIFICATE
NO. 43267
STATE OF
FLORIDA
REGISTERED ENGINEER