

Check Sheet

Company Name: MOBILE RECLAIM - STATE WIDE
Permit Number: A00 01-202044
PSD Number: _____
Permit Engineer: _____

Application:

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

Cross References:

- AC 01-179694
-
-

Intent:

- Intent to Issue
- Notice of Intent to Issue
- Technical Evaluation
- BACT Determination
- Unsigned Permit

Correspondence with:

- EPA
- Park Services
- Other

- Proof of Publication
 - Petitions - (Related to extensions, hearings, etc.)
 - Waiver of Department Action
 - Other

Final Determination:

- Final Determination
- Signed Permit
- BACT Determination
- Other

Post Permit Correspondence:

- Extensions/Amendments/Modifications
- Other

*From OSO
OSI
for AOR*



*AOR Entered APIS 5/11/93
wml*

MOBILE RECLAIM INC.

RECEIVED

APR 14 1993

Bureau of
Air Regulation

APRIL 14, 1993

MR. ANDREW G. KUTYNA, P.E.
DISTRICT AIR PROGRAM ADMINISTRATOR
FLORIDA DEPT. OF ENV. REGULATION
NORTHEAST DISTRICT
SUITE B200, 7825 BAYMEADOWS WAY
JACKSONVILLE, FLORIDA 32256-7577

RE: ANNUAL OPERATING REPORT

DEAR MR. KUTYNA:

ENCLOSED PLEASE FIND OUR ANNUAL OPERATING REPORT FOR 1992. A COPY OF SAME HAVE ALSO BEEN SENT TO THE NORTHEAST BRANCH OFFICE IN GAINESVILLE AND TO THE BUREAU OF AIR REGULATION.

THANK YOU.

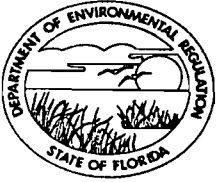
SINCERELY,

MOBILE RECLAIM, INC.

CRAIG R. HEDGECKOCK, PE/PLS
VICE-PRESIDENT OF OPERATIONS

XC: NORTHEAST BRANCH OFFICE, GAINESVILLE
BUREAU OF AIR REGULATION

ENCLOSURE



Florida Department of Environmental Regulation

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

DER Form	17-210.900(4)
Form Title	Annual Operating Report
Effective Date	March 1, 1993
DER Application No.	
(Filled in by DER)	

31GVL01007501

32 X

DIVISION OF AIR RESOURCES MANAGEMENT

ANNUAL OPERATING REPORT FOR AIR POLLUTANT EMITTING FACILITY

See Instructions for Form 17-210.900(4).

(Note: Shaded fields on form are for DER use; please leave blank.)

REPORT INFORMATION

1. Year of Report 1992	2. Date Report Received	3. Number of Sources in Report 1
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FACILITY INFORMATION (AIR020)

1. Facility APIS ID 31GVL010075	2. Facility Status ACTIVE	3. Date of Permanent Facility Shutdown N/A
4. Facility Owner/Company Name MOBILE RECLAIM, INC.		
5. Facility Name/Street Address or Location Description 4131 N.W. 13TH STREET, SUITE 105		
6. Facility City GAINESVILLE	County ALACHUA	
7. Facility Compliance Tracking Codes	CDS	VOC
8. Facility Comment (60 Characters)		

FACILITY HISTORY INFORMATION (AIR022)

1. Change in Facility Name During Year? N/A	Previous Name	2. Date of Change
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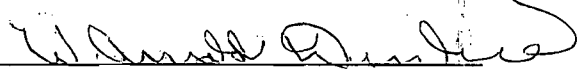
Shaded areas are for DER use.

APIS ID	District	Office	County	Facility	INPUT

OWNER/CONTACT INFORMATION (AIR021)

1. Individual Owner or Authorized Representative		
Name MR. W. ARNOLD DINKINS, PRESIDENT		
Organization/Firm MOBILE RECLAIM, INC.		
Street Address or P.O. Box 4131 N.W. 13TH STREET, SUITE 105		
City GAINESVILLE	State FLORIDA	Zip 32609
Telephone (904) 373-4614		
2. Facility Contact for Air Regulatory Matters		
Name MR. CRAIG R. HEDGECOCK, P.E., VICE-PRESIDENT OF OPERATIONS		
Organization/Firm MOBILE RECLAIM, INC.		
Street Address or P.O. Box 4131 N.W. 13TH STREET, SUITE 105		
City GAINESVILLE	State FLORIDA	Zip 32609
Telephone (904) 373-4614		

CERTIFICATION

Statement by Owner or Authorized Representative	
I hereby certify that the information given in this report is correct to the best of my knowledge.	
	APRIL 13, 1993
Signature	Date

Shaded areas are for DER use.

APIS ID	District	Office	County	Facility	Source	INPUT

SOURCE OPERATION REPORT - PAGE 1 & 2 (SOURCE REPORT 1 OF 1)

FACILITY NAME: MOBILE RECLAIM, INC.

SOURCE INFORMATION (AIR030)

1. Source Description		
25 TPH MOBILE SOIL TREATMENT FACILITY SERIAL NO. SRU-202		
2. DER Permit or PPS Number	3. Source APIS ID	4. Source Status
AO 01-202044	31GVLO10075	ACTIVE
5. Source Startup Date (MM/DD/YY)		6. Source Shutdown Date (MM/DD/YY)
07/19/91		N/A

SOURCE EMISSION POINT/CONTROL INFORMATION (AIR033)

1. Source Emission Point Type
1 - STACK
2a. Description of Control Equipment 'a'
BAGHOUSE
2b. Description of Control Equipment 'b'
AFTERBURNER

SOURCE OPERATING SCHEDULE INFORMATION (AIR050)

1. Operated During Year?	2. Average Operation During Year	hour/day	day/week	3. Total Operation During Year (hour/year)	
1992		7	5	627	
4. Percent Hours of Operation by Season	DJF	MAM	JJA	SON	
	14	33	24	29	

Shaded areas are for DER use.

APIS ID	District	Office	County	Facility	Source	INPUT

SOURCE PROCESS/FUEL INFORMATION (AIR050)

1a. SCC 'a'	2a. Description of Process or Type of Fuel LOW SULFUR NO. 2 FUEL OIL	
3a. Annual Process or Fuel Usage Rate (SCC Units) 82,850 GALLONS		
4a. Fuel Average % Sulfur 0.5	5a. Fuel Average % Ash N/A	6a. Fuel Heat Content (mmBtu/SCC Units) 138,000

1b. SCC 'b'	2b. Description of Process or Type of Fuel PETROLEUM CONTAMINATED SOIL	
3b. Annual Process or Fuel Usage Rate (SCC Units) 8870 TONS		
4b. Fuel Average % Sulfur N/A	5b. Fuel Average % Ash N/A	6b. Fuel Heat Content (mmBtu/SCC Units) N/A

1c. SCC 'c'	2c. Description of Process or Type of Fuel	
3c. Annual Process or Fuel Usage Rate (SCC Units)		
4c. Fuel Average % Sulfur	5c. Fuel Average % Ash	6c. Fuel Heat Content (mmBtu/SCC Units)

1d. SCC 'd'	2d. Description of Process or Type of Fuel	
3d. Annual Process or Fuel Usage Rate (SCC Units)		
4d. Fuel Average % Sulfur	5d. Fuel Average % Ash	6d. Fuel Heat Content (mmBtu/SCC Units)

Shaded areas are for DER use.

District	Office	County	Facility	Source	INPUT
APIS ID					

SOURCE OPERATION REPORT - PAGE 3 & 4 (SOURCE REPORT 1 OF 1)
 SOURCE DESCRIPTION: SOIL REMEDIATION UNIT

SOURCE EMISSIONS INFORMATION (AIR051)

1a. Pollutant 'a' ID CARBON MONOXIDE	2a. Annual Emissions (ton/year) 0.21	3a. Emissions Method Code CO
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4a. Emissions Calculation		
$\frac{82850 \text{ gal} \times 0.005 \text{ \#/gal}}{2000 \text{ \#/ton}} = 0.21 \text{ tons}$		

1b. Pollutant 'b' ID NITROGEN OXIDE	2b. Annual Emissions (ton/year) 0.83	3b. Emissions Method Code NOX
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4b. Emissions Calculation		
$\frac{82850 \text{ gal} \times 0.02 \text{ \#/gal}}{2000 \text{ \#/ton}} = 0.83 \text{ tons}$		

1c. Pollutant 'c' ID PARTICULATE MATTER	2c. Annual Emissions (ton/year) 0.63	3c. Emissions Method Code PM
--	---	---------------------------------

4c. Emissions Calculation		
$\frac{627 \text{ hours} \times 2.02 \text{ \#/hour}}{2000 \text{ \#/ton}} = 0.63 \text{ tons}$		

1d. Pollutant 'd' ID SULFUR DIOXIDE	2d. Annual Emissions (ton/year) 2.90	3d. Emissions Method Code SO2
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4d. Emissions Calculation		
$\frac{82850 \text{ gal} \times 0.07 \text{ \#/gal}}{2000 \text{ \#/ton}} = 2.90 \text{ tons}$		

Shaded areas are for DER use.

APIS ID	District	Office	County	Facility	Source	INPUT

SOURCE EMISSIONS INFORMATION (Continued)

1e. Pollutant 'e' ID VOLATILE ORGANIC COMP.	2e. Annual Emissions (ton/year) 0.18	3e. Emissions Method Code VOC
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4e. Emissions Calculation WEIGHTED BALANCE VOC FROM CONTAMINATED SOIL = 11.22 tons 11.22 tons x 98.4% destruction = 0.18 tons

1f. Pollutant 'f' ID	2f. Annual Emissions (ton/year)	3f. Emissions Method Code
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4f. Emissions Calculation

1g. Pollutant 'g' ID	2g. Annual Emissions (ton/year)	3g. Emissions Method Code
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4g. Emissions Calculation

1h. Pollutant 'h' ID	2h. Annual Emissions (ton/year)	3h. Emissions Method Code
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4h. Emissions Calculation

5. Source Operation Report Comments

Shaded areas are for DER use.

District	Office	County	Facility	Source	INPUT
APIS ID					

SOURCE OZONE-SIP REPORT - PAGE 5 & 6 (SOURCE REPORT 1 OF 1)

SOURCE DESCRIPTION: N/A

SOURCE OZONE-SIP PROCESS/FUEL INFORMATION (AIR052)

1. Existing 12/31/90?	2. Average Operation for Ozone Season (June thru August)	hour/day	day/week
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3a. SCC 'a'	4a. Description of Process or Type of Fuel
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5a. Daily Ozone Season Process or Fuel Usage Rate (SCC Units)

6a. Emission Factor (lb/SCC Unit)	VOC	NOx
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7a. Comments

3b. SCC 'b'	4b. Description of Process or Type of Fuel
-------------	--

5b. Daily Ozone Season Process or Fuel Usage Rate (SCC Units)

6b. Emission Factor (lb/SCC Unit)	VOC	NOx
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7b. Comments

Shaded areas are for DER use.

APIS ID	District	Office	County	Facility	Source	INPUT

SOURCE OZONE SIP EMISSIONS INFORMATION (AIR053)

1a. Pollutant ID VOC	2a. Ozone Season Emissions (lb/day)	3a. Emissions Method Code
4a. Emissions Calculation		

1b. Pollutant ID NOx	2b. Ozone Season Emissions (lb/day)	3b. Emissions Method Code
4b. Emissions Calculation		

Shaded areas are for DER use.

BEST AVAILABLE COPY

SENDER:

- Complete items 1, 2, and 3.
- Complete items 3, and 4.
- Print your name and address so that we can return this card to you.
- Attach this form to the front of the envelope.
- Write "Return Receipt Requested" and 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.

<p>3. Article Addressed to: <i>Mr. W. Arnold Dinkins, Pres. Mobile Reclaim, Inc. 3120 NW 37th St. Gainesville, FL 32605</i></p>	<p>4a. Article Number <i>P 617 884 191</i></p>
<p>5. Signature (Addressee) <i>Ernie Dinkins</i></p> <p>6. Signature (Agent)</p>	<p>4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise</p> <p>7. Date of Delivery <i>12/4</i></p> <p>8. Addressee's Address (Only if requested and fee is paid)</p>

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

P 617 884 191



Certified Mail Receipt

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

Sent to <i>W. Arnold Dinkins</i>
Street & No. <i>Mobile Reclaim</i>
P.O., State & ZIP Code <i>Gainesville, FL</i>
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 <i>AO-01-202044</i> <i>12-2-91</i> <i>Statewide</i>

PS Form 3800, June 1990

API's entry 12/3/91 by wmk

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

DER File No. AO 01-202044
Statewide Operation

Mr. W. Arnold Dinkins, President
Mobile Reclaim, Inc.
3120 NW 37th Street
Gainesville, Florida 32605

Enclosed is Permit Number AO 01-202044 for a 25 TPH mobile soil thermal treatment facility that is 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.

In addition, please be advised that soil thermal treatment facilities are subject to F.A.C. Rule 17-775. This rule is administered by the Bureau of Waste Cleanup. Pursuant to that rule, Mobile Reclaim, Inc. may be required to obtain a general permit to operate this unit from the Bureau of Waste Cleanup.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



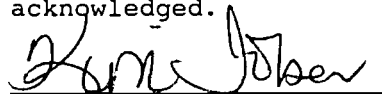
C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 12-2-91 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)

12-2-91
(Date)

Copies furnished to:

District Air Program Administrators
County Air Program Administrators
Tom Conrardy, BWC
Stephen Neck, P.E.

Permit to Operate
Evaluation

Mobile Reclaim Inc.
Alachua County
Gainesville, Florida

25 TPH Mobile Soil Thermal Treatment Facility
Statewide Operation

<u>Unit</u>	<u>File No.</u>
SRU-202	AO 01-202044

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

November 26, 1991

Permit to Operate Evaluation

On September 5, 1991, Mobile Reclaim, Inc. submitted an application for a permit to operate a 25 TPH mobile soil thermal treatment facility throughout Florida.

The construction permit allowed the unit to process up to 25 TPH of soils contaminated with petroleum products, emit 0.08 gr/dscf @ 50% EA and 5.1 lbs/hr PM, 6.0 lbs/hr benzene, and 20 lbs/hr VOC.

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

<u>Unit</u>	<u>Feed Rate</u>	<u>Emissions</u>				
		<u>gr PM/dscf</u> <u>@50% EA</u>	<u>lbs PM/hr</u>	<u>% Opacity</u>	<u>lbs/VOC</u>	<u>DE*(%)</u>
SRU- 202	24.66	0.0494	2.02	0	0.38	98.4

*Destruction efficiency improved to 98.4% after air flow adjustment.

The test report showed that the unit had a lower flow rate and stack temperature than was proposed in the application for permit to construct. Using the stack parameters of 3 ft. diameter, 20 ft. stack height, 1248°F stack temperature, and 62.6 ft./sec. gas velocity, the impact of the emissions were modeled. With the new parameters, it was found that 1 gram per second emissions would have an ambient air impact of 14.3 ug/m³ (8 hr. avg.), 8.2 ug/m³ (24 hr. avg.), and 2.0 ug/m³ (annual). Based on these impacts, it was determined that the benzene emission cannot exceed 4.8 lbs/hr. This is equivalent to 1900 ppm benzene in the soil. The allowable emissions of benzene are revised to these limits. The allowable emissions of VOC, which was not based on the toxic policy, remain unchanged.

The test results indicate that the unit is capable of complying with the allowable emissions at production rates of 25 TPH. The Department will issue a permit to operate the unit.



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:
Mobile Reclaim, Inc.
3120 NW 37th Street
Gainesville, Florida 32605

Permit Number: AO 01-202044
Expiration Date: Oct. 31, 1996
County: Statewide Operation
Project: 25 TPH Mobile Soil Thermal
Treatment Facility, Serial No.
SRU-202

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 mobile soil thermal treatment facility. The unit consists of a contaminated soil hopper and feed system, a 25 TPH rotary dryer with a No. 2 fuel oil burner, a 99% efficient baghouse, a 95% efficient No. 2 fuel oil fired afterburner (0.5 second retention time at 1400°F) and stack (3.0 ft. dia. by 20 ft. ht.) handling approximately 26,560 acfm (4,000 dscfm at 50% EA), and associated equipment, all of which is mounted on a truck.

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. Test report dated July 27, 1991.
2. Certificate of completion received September 5, 1991.

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AO 01-202044
Expiration Date: October 31, 1996

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

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AO 01-202044
Expiration Date: October 31, 1996

GENERAL CONDITIONS:

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.

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

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AO 01-202044
Expiration Date: October 31, 1996

GENERAL CONDITIONS:

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 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;

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AO 01-202044
Expiration Date: October 31, 1996

GENERAL CONDITIONS:

- 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 95%.
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.
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 continuously, 24 hours per day, 7 days per week, and 52 weeks per year. The unit must not be operated at the same site with another soil remediation unit.

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AO 01-202044
Expiration Date: October 31, 1996

SPECIFIC CONDITIONS:

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 containing a maximum of 0.5% sulfur shall be used as fuel for the kiln and afterburner. Maximum permitted fuel consumption is 27.8 MMBtu/hr (201 GPH No. 2 oil).

9. Only soils contaminated with gasoline, No. 2 type oils, 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:

<u>Metals</u>	<u>Maximum Concentration</u>	
	<u>TCLP(mg/L)</u>	<u>Total(mg/Kg)</u>
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).

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).

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AO 01-202044
Expiration Date: October 31, 1996

SPECIFIC CONDITIONS:

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:

<u>Soil Quantity (yards³)</u>	<u>No. of Composite Samples</u>
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:

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

where,

AAC = acceptable ambient concentration

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

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.

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AO 01-202044
Expiration Date: October 31, 1996

SPECIFIC CONDITIONS:

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 an emission of 1 gram/sec will have a maximum ambient impact of 14.3 ug/m³ (8 hr. avg), 8.2 ug/m³ (24 hr. avg), and 2.0 ug/m³ (annual). 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.

$$\text{Maximum Allowable Emissions (g/sec)} = \frac{\text{AAC}}{\text{Impact of 1 g/s}}$$

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 5.1 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 4.8 lbs/hr. Total VOC emissions shall not exceed 20 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.

Compliance Requirements

17. This unit has demonstrated compliance at a feed rate of up to 25 TPH. This unit shall be tested annually for particulate matter and visible emissions 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.

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AO 01-202044
Expiration Date: October 31, 1996

SPECIFIC CONDITIONS:

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 prior to renewal of a permit to operate (every 5 years). 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 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,

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AO 01-202044
Expiration Date: October 31, 1996

SPECIFIC CONDITIONS:

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, District, and County environmental agency that 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 1,900 ppm in the soil or total hydrocarbons above 8,000 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 or major maintenance to the unit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this 2nd day
of December, 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 *[Signature]*
DATE: November 26, 1991
SUBJ: Approval of Operation Permit No. AO 01-202044
Mobile Reclaim, Inc.

743

Attached for your approval and signature is a permit to operate a 25 TPH mobile soil thermal treatment facility that is allowed to operate in all counties of Florida.

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

*Please call
Patty Adams
when signed*

8-1344

mailed out

12-2-91 -

MRI - STACK TEST PARAMETERS

$$\text{FLOW @ 50\% EA} = 7020.1 \frac{\text{FT}^3}{\text{MIN}} \times 0.0276 \frac{\text{gal}}{\text{FT}^3} \times \frac{\text{dscf @ 50\% EA}}{0.04 \frac{\text{gal}}{\text{dscf}}} = 3970 \text{ dscf @ 50\% EA}$$

$$\text{FLOW (acfm)} = 7020.1 \frac{\text{FT}^3}{\text{MIN}} \times (1.174) \times \frac{\text{TEMP}}{520} = 26,560 \text{ acfm}$$

$$A_{\text{stack}} = \pi D^2 / 4 = \pi 3^2 / 4 = 7.07 \text{ ft}^2$$

$$\text{Stack Vel.} = 26,560 \frac{\text{FT}^3}{\text{MIN}} \times \frac{\text{MIN}}{60 \text{ SEC}} \times \frac{1}{7.07 \text{ ft}^2} = 62.6 \text{ FPS} \sim 19.1 \text{ m/s}$$

$$\text{Stack } \phi = 3' \sim 0.91 \text{ m}$$

$$\text{Stack ht} = 20' \sim 6.1 \text{ m}$$

$$\text{Stack temp} = \frac{1248 + 460}{1.8} = 949 \text{ K}$$

$$\text{Impact 1g/s} = 20.78 \text{ ug/m}^3 \text{ (1 hr max)}$$

8 hr	14.3 ug/m ³
24 hr	8.2 ug/m ³
annual	2.0 ug/m ³

$$\text{NTL BZ} = 0.12 \text{ ug/m}^3 \text{ (annual)}$$

$$\text{Impact 1g/s E} = 2.0 \text{ ug/m}^3 \text{ (annual)}$$

$$E = \frac{\text{BZ}}{I} = \frac{0.12}{2} = 0.06 \text{ g/s} \times \frac{2600}{454} \sim 4.8 \text{ lbs/hr BZ}$$

$$\text{BZ to 95\% eff'c AB} = \frac{4.8 \text{ lbs/hr OUT}}{5 \text{ lbs/hr OUT}} \times \frac{100 \text{ lbs/hr in}}{1} = 95 \text{ lbs/hr BZ to AB}$$

$$\text{BZ in Soil} = \frac{95 \times 10^6}{25 \times 2000} = 1900 \text{ PPM}$$

*** SCREEN-1.1 MODEL RUN ***
*** VERSION DATED 88300 ***

MRI

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.000
STACK HEIGHT (M) = 6.10
STK INSIDE DIAM (M) = .91
STK EXIT VELOCITY (M/S) = 19.10
STK GAS EXIT TEMP (K) = 949.00
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 = 26.80 M**4/S**3; MOM. FLUX = 23.32 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
50.	.9106E-01	6	1.0	1.0	5000.0	79.9	18.7	18.6	NO
100.	.5804	6	1.0	1.0	5000.0	79.9	21.5	21.2	NO
200.	15.19	4	20.0	20.0	5000.0	17.7	15.7	8.8	NO
300.	20.37	4	20.0	20.0	5000.0	17.7	22.8	12.5	NO
400.	18.06	4	20.0	20.0	5000.0	17.7	29.7	15.7	NO
500.	15.15	4	15.0	15.0	4800.0	22.5	36.5	18.9	NO
600.	13.28	4	15.0	15.0	4800.0	22.5	43.0	21.7	NO
700.	11.70	4	10.0	10.0	3200.0	31.3	49.7	25.1	NO
800.	10.82	4	10.0	10.0	3200.0	31.3	56.0	27.7	NO
900.	9.878	4	10.0	10.0	3200.0	31.3	62.3	30.3	NO
1000.	9.179	4	8.0	8.0	2560.0	37.6	68.7	33.3	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 50. M:
296. 20.38 4 20.0 20.0 5000.0 17.7 22.6 12.4 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	20.38	296.	0.



MOBILE RECLAIM INC.

SEPTEMBER 30, 1991

RECEIVED

OCT 1 1991

Division of Air
Resources Management

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
BUREAU OF AIR REGULATION
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

ATTENTION: MR. WILLARD HANKS

DEAR MR. HANKS:

AS PER OUR TELEPHONE CONVERSATION OF LAST WEEK, ENCLOSED PLEASE FIND FOUR (4) CERTIFIED COPIES OF THE FIELD NOTES TAKEN TO DETERMINE THE DIMENSIONS OF THE STACK ON MOBILE RECLAIM, INC.'S SOIL RECLAMATION UNIT. THE DIMENSIONS SHOWN ON PAGE 6 OF THE "SOURCE TEST REPORT FOR PARTICULATE, VOLATILE ORGANIC COMPOUNDS AND VISIBLE EMISSIONS - INCINERATOR OUTLET OF SRU-202, PERMIT NUMBER AC01-179694" DATED JULY 27, 1991 PREPARED BY AIR CONSULTING AND ENGINEERING, INC. ARE NOT CORRECT.

BASED UPON THE FIELD DIMENSIONS TAKEN ON SEPTEMBER 30, 1991, THE OUTSIDE DIAMETER OF THE STACK IS COMPUTED TO BE 3.09' OR 37.1" +/- (9.72'/PI). THE THICKNESS OF THE STACK IS 0.125" MAKING THE INSIDE DIAMETER OF THE STACK 36.9" +/- . THE DISTANCE FROM THE BOTTOM OF THE STACK TO THE CENTERLINE OF THE SAMPLING PORTS ARE 6.50' AND 6.40' MAKING THE RATIO OF DISTANCE TO STACK DIAMETER 2.12 AND 2.08 RESPECTIVELY.

THE DISTANCE FROM THE TOP OF THE STACK TO THE CENTERLINE OF THE SAMPLING PORTS ARE 1.50' AND 1.60' MAKING THE RATIO OF DISTANCE TO STACK DIAMETER 0.49 AND 0.52 RESPECTIVELY.

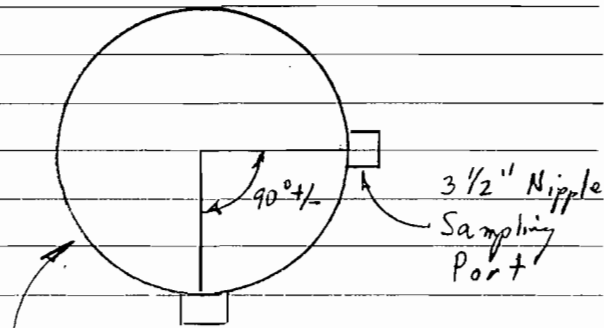
SHOULD HAVE ANY QUESTIONS OR DESIRE ANY ADDITIONAL INFORMATION, PLEASE DO NOT HESITATE TO CONTACT ME.

RESPECTFULLY SUBMITTED,

MOBILE RECLAIM INC.


CRAIG R. HEDGECK, PE/PLS
STATE OF FLORIDA PROFESSIONAL ENGINEER NO. 24651
STATE OF FLORIDA PROFESSIONAL LAND SURVEYOR NO. 3506

Dimensions Of Stack



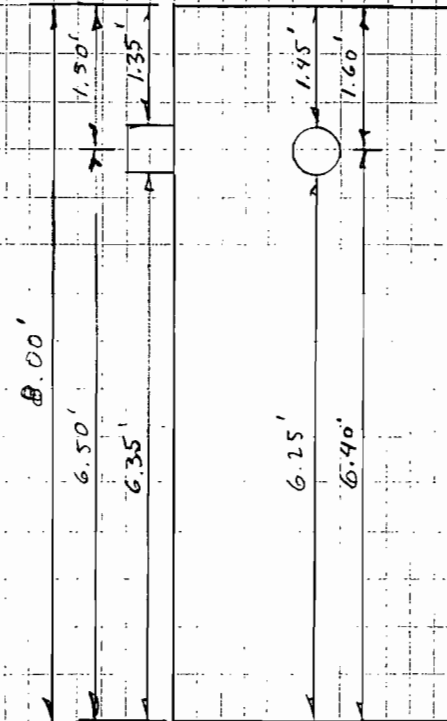
Outside
Circumference = 9.72'
Thickness = 1/8"

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF THE FIELD NOTE MEASUREMENTS OF THE STACK ON MOBILE RECLAIM, INC.'S SOIL RECLAMATION UNIT.

CRAIG R. HEDGECOCK, PE/PLS
STATE OF FLORIDA PROFESSIONAL ENGINEER NO. 24651
STATE OF FLORIDA PROFESSIONAL LAND SURVEYOR NO. 3506

For Mobile Reclaim Inc.

9/30/91
C. Hedgecock



Stainless
Steel Stack



MOBILE RECLAIM INC.

SEPTEMBER 4, 1991

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
BUREAU OF AIR REGULATION
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

ATTENTION: MR. WILIARD HANKS

RE: PERMIT NUMBER AC 01-179694

DEAR MR. HANKS:

ON DECEMBER 20, 1990, A CONSTRUCTION PERMIT WAS APPROVED BY THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION FOR A 25 TPH PORTABLE ROTARY KILN/AFTERBURNER SYSTEM, SERIAL NUMBER: SRU-202, PERMIT NUMBER: AC 01-179694, EXPIRATION DATE: JULY 31, 1991.

AS PER SPECIFIC CONDITION NUMBER 31 ON PAGE 12 OF 12 OF SAID CONSTRUCTION PERMIT, WE REQUESTED THAT THIS CONSTRUCTION PERMIT BE EXTENDED FOR A PERIOD OF NINE (9) MONTHS. THIS EXTENSION WAS GRANTED ON JUNE 4, 1991.

THE EQUIPMENT HAD BEEN OPERATING OUT OF THE STATE OF FLORIDA AND WAS RETURNED TO FLORIDA WHERE MAJOR MAINTENANCE AND MODIFICATIONS WERE PERFORMED BY THE MANUFACTURER AND MOBILE RECLAIM, INC. WE OBTAINED A CONTRACT TO REMEDIATE PETROLEUM CONTAMINATED SOIL AND PERFORMED THE REQUIRED COMPLIANCE TESTING ON JULY 22 AND 23, 1991. A COPY OF SAME IS ENCLOSED WITH TWO (2) COPIES OF THE CERTIFICATE OF COMPLETION OF CONSTRUCTION FORM AND A CHECK IN THE AMOUNT OF \$1500.00 FOR AN OPERATING PERMIT.

THE CONSTRUCTION WAS COMPLETED IN SUBSTANTIAL ACCORDANCE WITH THE PERMIT. HOWEVER, TWO MODIFICATIONS TO THE EQUIPMENT WERE MADE TO IMPROVE THE OPERATION OF THE UNIT. WE REPLACED THE AFTERBURNER COMBUSTION AIR BLOWER DUCT WHICH WAS A SOURCE OF AIR LEAKS WITH A DIRECT CONNECTION BETWEEN THE BAGHOUSE AND THE AFTERBURNER WHICH GREATLY IMPROVED OUR AIRFLOW. WE ALSO ELIMINATED THE DISCHARGE AUGER ON THE BAGHOUSE. THE ORIGINAL AUGER WOULD CLOG AND THE OPERATOR COULD NOT SEE THE PROBLEM. THE DISCHARGE FROM THE BAGHOUSE IS NOW ON THE OPERATOR'S SIDE OF THE UNIT AND CAN NOW BE MONITORED BY THE OPERATOR.

PAGE 2
MR. WILIARD HANKS
SEPTEMBER 4, 1991

AS YOU ARE AWARE, THERE WERE SOME MINOR DUST EMISSIONS FROM THE UNIT ON THE FIRST PROJECT WHICH WE HAVE NOW ELIMINATED. THE SIX WATER PORTS ON THE DISCHARGE AUGER WERE COMPLETELY OPENED UP TO HYDRATE THE SOIL. WE ALSO ADDED A DIRECT SHOWER OF WATER AT THE END OF THE DISCHARGE AUGER. AS A RESULT, THE SOIL TEMPERATURE IS LOWERED AND THE SOIL HYDRATED SUFFICIENTLY THAT VIRTUALLY NO DUST OR STEAM IS CREATED.

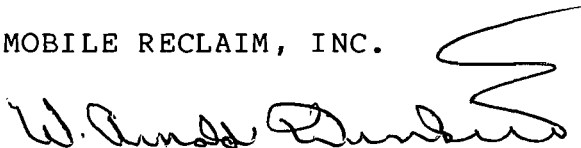
A SOCK WAS PLACED ON THE BAGHOUSE CHUTE TO ALSO CONTROL ANY DUST EMISSIONS. WHEN WORKING ON AN IMPERVIOUS SURFACE, THE DUST IS DISCHARGED INTO A UTILITY CART WITH WATER IN IT. AS THE DUST IS COLLECTED THE WATER IS ABSORBED BY THE DUST THUS ELIMINATING ANY EMISSIONS. WHEN WORKING ON AN UNPAVED SURFACE A HOLE WILL BE EXCAVATED AND FILLED WITH WATER TO ACCOMPLISH THE SAME RESULTS.

THE ABOVE MODIFICATIONS WERE SUCCESSFULLY FIELD PROVEN AT A RECENT PROJECT IN TAMPA, FLORIDA. NO DUST EMISSIONS WERE NOTED. WE WOULD BE MORE THAN HAPPY TO PROVIDE LETTERS TO THAT EFFECT FROM OBSERVERS OF THE OPERATION IF YOU SO DESIRE.

THANK YOU FOR YOUR CONTINUED SUPPORT AND ADVISE. SHOULD YOU HAVE ANY QUESTIONS OR DESIRE ANY ADDITIONAL INFORMATION, PLEASE DO NOT HESITATE TO CONTACT US.

RESPECTFULLY SUBMITTED,

MOBILE RECLAIM, INC.



W. ARNOLD DINKINS
PRESIDENT

#2000 pd.
9-16-91
Receipt #151297



A001-202044

RECEIVED
DER - MAIL ROOM
1991 SEP -5 AM 10:26

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
AIR POLLUTION SOURCES
CERTIFICATE OF COMPLETION OF CONSTRUCTION*

PERMIT NO. AC 01-179694 DATE: December 20, 1990
Company Name: Mobile Reclaim, Inc. County: Statewide
Source Identification(s): 25 TPH Portable Rotary Kiln/Afterburner System
Actual costs of serving pollution control purpose: \$ ≈ \$140,000
Operating Rates: 20-25 TPH Design Capacity: 25 TPH
Expected Normal 20-25 TPH During Compliance Test 24.66
Date of Compliance Test: July 22, 1991 (Attach detailed test report)

Test Results:

Pollutant	Actual Discharge	Allowed Discharge
PM	<u>0.535 gr/SCF - 2.52 lbs/Hr</u>	<u>0.08 gr/SCF - 5.1 lbs/Hr</u>
VOC	<u>0.38 lbs/Hr</u>	<u>20 lbs/Hr - 6 lbs/Hr Benzene</u>
VE	<u>0%</u>	<u>< 5%</u>

Date plant placed in operation: July 18, 1991

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. AC01-179694 dated December 20, 1990.

A. Applicant:
Arnold Dinkins
Name of Person Signing (Type)

[Signature]
Signature of Owner or Authorized Representative and Title

Date: _____ Telephone: (904) 373-4614

B. Professional Engineer:
Stephen L. Neck, P.E.
Name of Person Signing (Type)

[Signature]
Signature of Professional Engineer

Air Consulting and Engineering, Inc.
Company Name

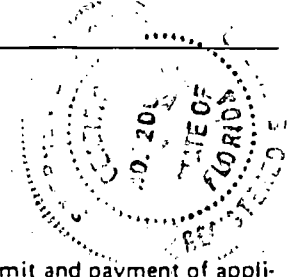
Florida Registration No. 20020

Date: 7/26/91

2106 NW 67th Place, Suite 4
Gainesville, Florida 32606
Mailing Address

(Seal)

(904) 335-1889
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.

$$\text{Retention Time: } \frac{8309 \text{ SCFMD}}{839 \text{ FDA}} \times \frac{1885^{\circ}\text{R}}{528^{\circ}\text{R}} = 35356 \text{ ACFM}$$

$$289.34 \text{ Ft}^3 \text{ chamber } \frac{35356 \text{ Ft}^3}{\text{min.}} \times 60 = 0.5 \text{ seconds}$$

$$\text{Destruction Efficiency} = \frac{6.31 - 0.10}{6.31} \times 100 = 98.4\% \text{ after}$$

001032

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

INCINERATOR OUTLET OF SRU 202
PERMIT NUMBER AC01-179694

JULY 27, 1991

Prepared for:

MOBILE RECLAIM, INC.
3120 NW 37TH STREET
GAINESVILLE, FLORIDA 32605

Prepared by:

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

273-91-01

Patty,

The print shop left
out page 2 of the
test report, it should
be added. Also, Company
sending a correct copy
of unit. Hold off on
distribution till we have
it. *had*

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5.1	CO2 AND O2 SAMPLING AND ANALYSIS--EPA METHOD 3.....	7
5.2	PARTICULATE MATTER SAMPLING AND ANALYSIS--EPA METHOD 5.....	8
5.3	VISIBLE EMISSIONS TESTING--EPA METHOD 9.....	11
5.4	DETERMINATION OF TOTAL GASEOUS ORGANIC CONCENTRATION USING A FLAME IONIZATION ANALYZER--EPA METHOD 25A.....	12

APPENDICES

APPENDIX A--FDER PERMIT NUMBER AC01-179694

APPENDIX B--COMPLETE EMISSION DATA
AND SAMPLE CALCULATIONS

APPENDIX C--FIELD DATA SHEETS

APPENDIX D--LABORATORY DATA

APPENDIX E--VOC EMISSION DATA
AND STRIP CHART COPIES

APPENDIX F--VISIBLE EMISSION DATA
AND OBSERVER'S CERTIFICATION

APPENDIX G--QUALITY ASSURANCE

APPENDIX H--PRODUCTION DATA

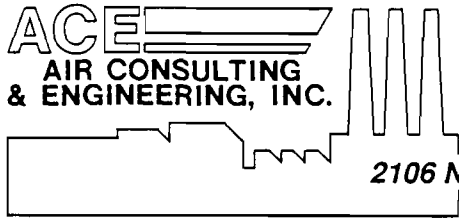
APPENDIX I--PROJECT PARTICIPANTS

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3	EPA 25A SAMPLING TRAIN.....	13



2106 N.W. 67th Place • Suite 4 • Gainesville, Florida • 32606
(904) 335-1889 FAX (904) 335-1891

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.

Dagmar Neck

Dagmar Neck

8/28/91

Date

1.0 INTRODUCTION

On July 22, 1991, Air Consulting and Engineering, Inc. (ACE), conducted particulate, volatile organic compounds and visible emissions on the outlet stack of the Soil Remediation Unit (SRU) 202 owned by Mobile Reclaim, Inc. of Gainesville, Florida.

Testing was performed to demonstrate compliance with the conditions of the Florida Department of Environmental Regulation (FDER) Permit Number AC01-179694.

United States Environmental Protection Agency (EPA) Method 5 for the determination of particulate matter, EPA Method 3 for oxygen and carbon dioxide content, EPA Method 25A for VOC and EPA Method 9 for visible emissions were used for the testing.

Mr. Craig Hedgecock of Mobile Reclaim, Inc. coordinated the testing.

Mr. Shannon Baruch of the FDER observed a portion of the testing.

2.0 SUMMARY AND DISCUSSION OF RESULTS

SRU 202 was found to be operating in compliance with permit conditions.

Table 1 summarizes the results of the emission testing. Particulate emissions averaged 0.05 grains per dry standard cubic foot (gr/DSCF) corrected to 50 percent excess air and 2.02 pounds per hour (lbs/Hr). This is within the permitted limit of 0.08 gr/SCF at 50% excess air and 5.1 lbs/Hr.

VOC emissions averaged 0.38 lbs/Hr as carbon which is also within the allowable limit of 20 lbs/Hr. Destruction efficiency reached a high of 98.4% after achieving proper volumetric flow through the system. 95% destruction efficiency is required.

Visible emissions averaged 0.0 percent opacity for the highest six minute period of the test which is within the permitted limit of 5 percent opacity. Appendix F contains VE data sheets and observer's certification.

Complete emission calculations, field data sheets, laboratory data and VOC emission data with strip chart copies are presented in Appendices B, C, D, and E, respectively. Soil analyses are provided in Appendix D.

Table 1 Emission Summary
 SRU 202
 Mobile Reclaim, Inc.
 Gainesville, Florida
 July 22-23, 1991

Run Number	Time	Flow Rate SCFMD	Stack Temp. °F	Moisture %	Oxygen %	Particulate Emissions			VOC Emissions		
						gr/SCF	gr/SCF at 50% excess air	lbs/Hr	ppm wet as propane	ppm dry as propane	lbs/Hr as carbon
1	1305-1412	9643.5	1244	15.6	13.3	0.0303	0.0535	2.52	11.5	13.6	0.74
2	1608-1826	8262.8	1249	15.4	13.1	0.0266	0.0458	1.89	5.3	6.3	0.29
3	0930-1038	7020.1	1248	17.4	13.3	0.0276	0.0488	1.65	2.1	2.5	0.10
AVERAGE	---	8308.8	1247	16.1	13.2	0.0282	0.0494	2.02	6.3	7.5	0.38

gr/SCF @ 50% excess air = $\text{gr/SCF} \frac{(100 + \text{excess air})}{150}$

lbs/Hr VOC = ppm $(2.595 \times 10^{-9})^3$ (MW)(SCFMD) 60

VOC ppm (dry) = ppm (wet)/(1-moisture fraction)

MW C = (12.011)

Allowable Emissions

PM = 0.08 gr/SCF @ 50% excess air and 5.1 lbs/Hr

VOC = 20 lbs/Hr

Benzene = 6.0 lbs/Hr

Destruction Efficiencies

Run 1 $\frac{6.31 - .74}{6.31} \times 100 = 88.3\%$

Run 2 $\frac{6.31 - .29}{6.31} \times 100 = 95.4\%$

Run 3 $\frac{6.31 - .10}{6.31} \times 100 = 98.4\%$

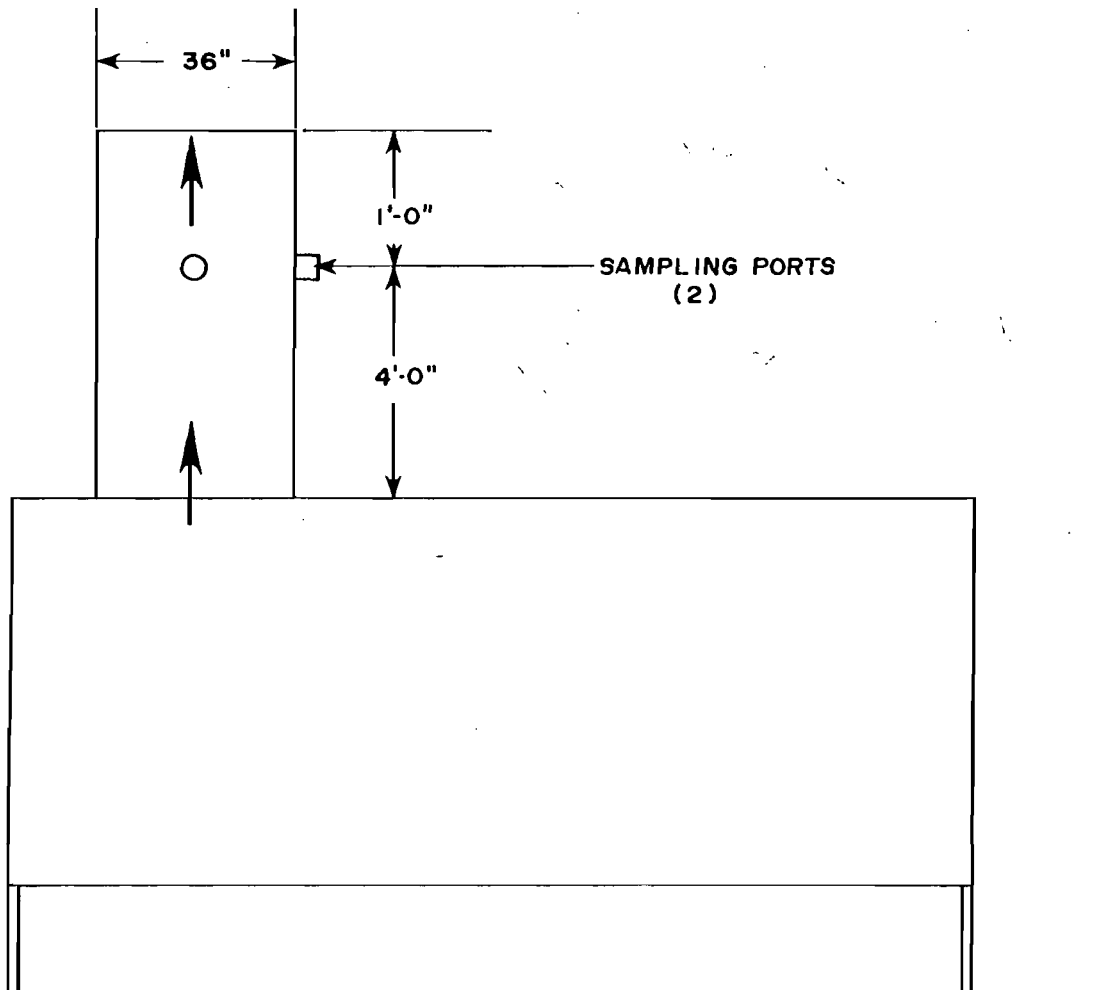
3.0 PROCESS DESCRIPTION AND OPERATION

Mobile Reclaim, Inc. owns and operates a Soil Remediation Unit (SRU) 202 with a portable rotary kiln/afterburner system. The unit consists of a contaminated soil hopper and feed system, a 25 TPH rotary dryer with a Number 2 fuel oil burner, a 99 percent efficient baghouse, a 95 percent efficient Number 2 fuel oil fired afterburner with a 0.5 second retention time at 1400°F and associated equipment.

Operation data is presented in Appendix H.

4.0 SAMPLING POINT LOCATION

The outlet stack schematic and sampling point locations are shown in Figure 1.



36"

2 3/4" NIPPLE

TRAVERSE POINT NUMBER	INCHES INSIDE STACK WALL
1	3.51
2	5.16
3	7.00
4	9.12
5	11.75
6	15.06
7	25.93
8	29.75
9	32.38
10	34.50
11	36.34
12	38.00

NOTE: NOT TO SCALE

FIGURE 1.
 SAMPLING POINT LOCATION
 POP-A-TOP NO.2 INCINERATOR AFTERBURNER OUTLET
 MOBILE RECLAMATION SERVICES, INC.
 GAINESVILLE, FLORIDA

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5.0 FIELD AND ANALYTICAL PROCEDURES

5.1 CO₂ and O₂ Sampling and Analysis--EPA Method 3

CO₂ and O₂ samples were collected by an integrated bag system. The orsat sampling system consisted of a stainless steel probe, sample line from probe to a condenser, a small vacuum pump with a rotometer, and a TEDLAR bag.

The orsat sampling procedure consists of the following leak-check and sampling techniques. Prior to sampling, the bag was leak-checked at 2 to 4 inches of water. The inlet to the condenser was plugged and a vacuum of 10 inches of Hg was pulled. The outlet of the pump was then plugged and the pump shut off. The vacuum held steady for at least 30 seconds. The sample line was then purged with stack gas and the bag was connected. Sampling was conducted at an appropriate constant rate at the same points and for the same length of time as the particulate sampling. At the conclusion of the run, the pump was shut off and the bag secured.

After leak checking the orsat gas analyzer, the average value for each gas was determined. The gas was measured until two values were obtained that fell within the specified variance of the gas tested.

Data were recorded on the field data sheet and the bag was evacuated for the next sample run.

5.2 Particulate Matter Sampling and Analysis--EPA Method 5 (Quartz Probe)

Particulate matter samples were collected by the particulate matter emission measurement method specified by the United States Environmental Protection Agency. A schematic diagram of the sampling train used is shown in Figure 2. All particulate matter captured from the nozzle to, and including, the filter was included in the calculation of the emission rate of particulate matter.

PREPARATION OF EQUIPMENT

1. **FILTERS** - Gelman type "A" filters were placed in a drying oven for two hours at 105 degrees C, removed and placed in a standard desiccator containing indicating silica gel, allowed to cool for two hours, and weighed to the nearest 0.1 mg. The filters were then re-desiccated for a minimum of six hours and weighed to a constant weight (less than 0.5 mg change from previous weighing). The average of the two constant weights was used as the tare weight.
2. **NOZZLE, FILTER HOLDER, AND SAMPLING PROBE** - The nozzle, filter holder, and sampling probe were washed vigorously with soapy water and brushes, rinsed with acetone and distilled water, and dried prior to the test program. All openings on the sampling equipment were sealed while in transit to the test site.
3. **IMPINGERS** - The Greenburg-Smith impingers were cleaned with a warm soapy water solution and brushes, rinsed with distilled water and acetone, and dried. The impingers were sealed tightly during transit.

TEST PROCEDURE

Prior to performing the actual particulate matter sample runs, certain stack and stack gas parameters were measured. These preliminary measurements included the average gas temperature, the stack gas velocity head, the stack gas moisture content, and the stack dimensions at the point where the tests were being performed. The stack gas temperature was determined by using a bi-metallic thermocouple and calibrated pyrometer. Velocity head measurements were made with calibrated type "S" pitot tube and an inclined manometer.

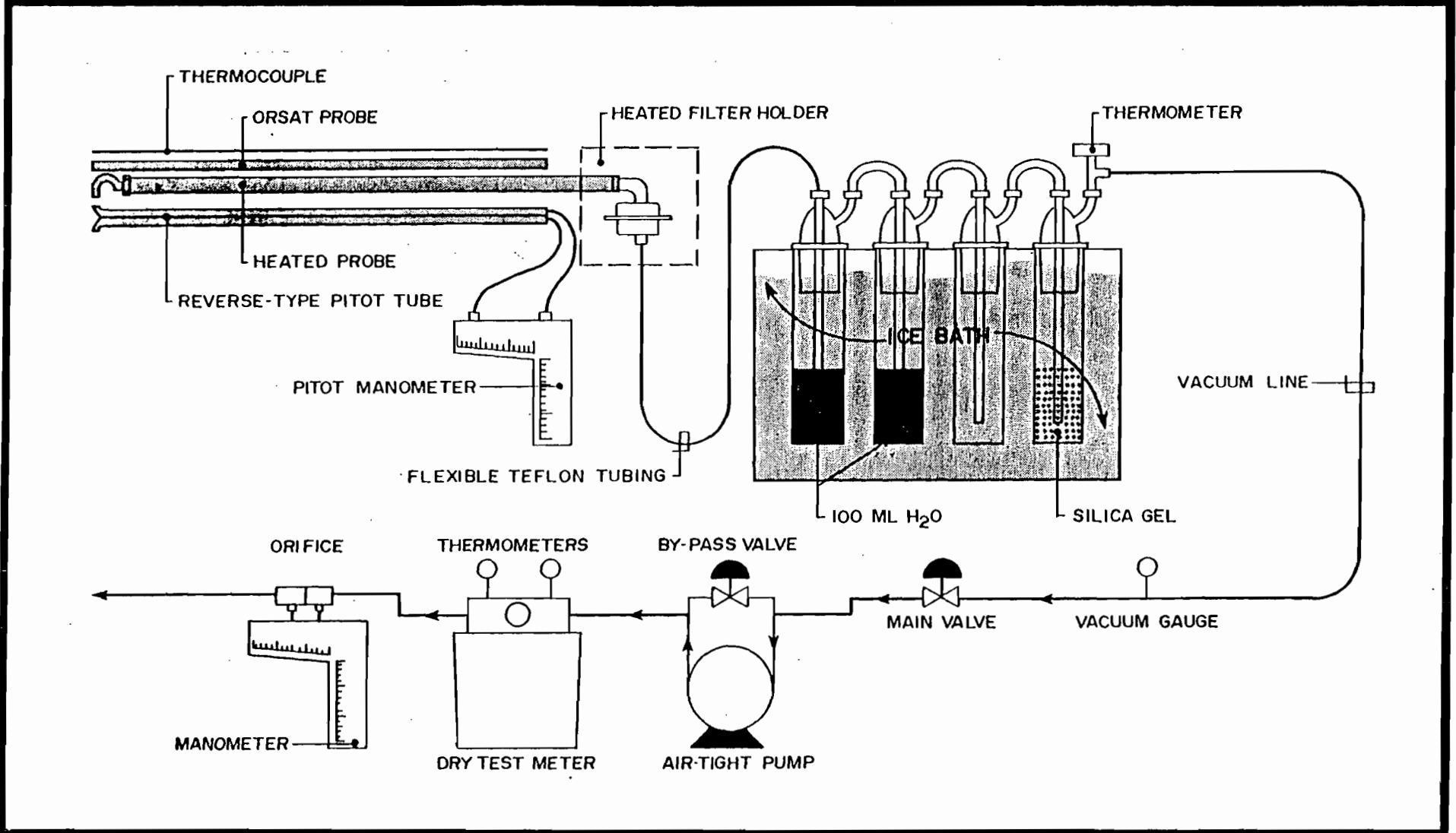


FIGURE 2
EPA METHOD 5 SAMPLING TRAIN

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and
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Velocity head measurements of 0.05 inches H₂O or less were measured utilizing a micromanometer.

The sampling traverse points were selected so that a representative sample could be extracted from the gas stream. The traverse points were located in the center of equal areas, the number of which were dependent upon the distance upstream and downstream from flow disturbances.

Each particulate matter test run consisted of sampling for a specific time at each traverse point. The type "S" pitot tube was connected to the sampling probe so that an instantaneous velocity head measurement could be made at each traverse point while making the test run. The stack gas temperature was also measured at each traverse point. Nomographs were used to calculate the isokinetic sampling rate at each traverse point during each test run.

The gases sampled passed through the following components: a stainless steel nozzle and quartz glass probe; a glass fiber filter, two impingers each with 100 ml of distilled water; one impinger dry; one impinger with 200 grams of silica gel; a flexible sample line; an air-tight pump; a dry test meter; and a calibrated orifice. The second impinger had a standard tip, while the first, third, and fourth impingers had modified tips with a 0.5 inch I.D. opening. Sample recovery was accomplished by the following procedures:

1. The pre-tared filter was removed from its holder and placed in Container 1 and sealed. (This is usually performed in the lab.)
2. All sample-exposed surfaces prior to the filter were washed with acetone and placed in Container 2, sealed and the liquid level marked.

3. The volume of water from the first three impingers was measured for the purpose of calculating the moisture in the stack gas and then discarded.
4. The used silica gel from the fourth impinger was transferred to the original tared container and sealed.

LABORATORY ANALYSIS

The three sample containers from each sample run were analyzed according to the following procedures:

1. The filter was dried at 105 degrees C for three hours, desiccated for a minimum of one hour, and weighed to the nearest 0.1 mg. A minimum of two such weighings six hours apart was made to determine constant weight.
2. The acetone from Container 2 was transferred to a tared beaker and evaporated to dryness at ambient temperature and pressure, desiccated for 24 hours, and weighed to the nearest 0.1 mg. A minimum of two such weighings six hours apart were made to determine constant weight.
3. The used silica gel in its tared container was weighed to the nearest 0.1 gram.

The total sample weight included the weight of material collected on the filter plus the weight of material collected in the nozzle, sampling probe, and front half of the filter holder.

DATA

The field data sheets, calculation sheets, and nomenclature definitions are included in the appendix of this report.

5.3 Visible Emissions Testing--EPA Method 9

The visible emission tests were performed in accordance with EPA Method 9. The observers maintain semi-annual FDER certification for the performance of visible emission tests.

All procedures listed in Method 9 were followed including observer's position relative to the sun, distance from the stack, and line of sight. These items are noted on the visible emission data sheet. Observations were made at 15-second intervals and recorded to the nearest five percent. The final opacity was determined by calculating the highest consecutive six minute average during the observation period.

5.4 Determination of Total Gaseous Organic Concentration using a Flame Ionization Analyzer--EPA Method 25A

A Byron Model 215 Total Hydrocarbon Analyzer with a Flame Ionization Detector (FID) was utilized for EPA Method 25A testing. This instrument is a semicontinuous dual source analyzer that draws continuous samples from incinerator inlet and outlet test locations. Heat traced sample lines are used to deliver gases at 275°F to the heated FID detector via two interval sample loops. Sample loop contents are delivered to the FID on alternating one minute intervals. Combustion and carrier air are supplied by a Byron 25 ultra pure air system.

The instrument was calibrated on NBS traceable EPA Protocol 1 propane in air cylinder gases injected at the sampling interface via a three-way valve (Figure 3). A record of accuracy demonstration as well as drift checks is provided in Appendix G. The inlet source integrator was calibrated to match propane calibration gas peak height response. Analyzer results are reported as ppm carbon by multiplying the response as propane by a factor of 3.0.

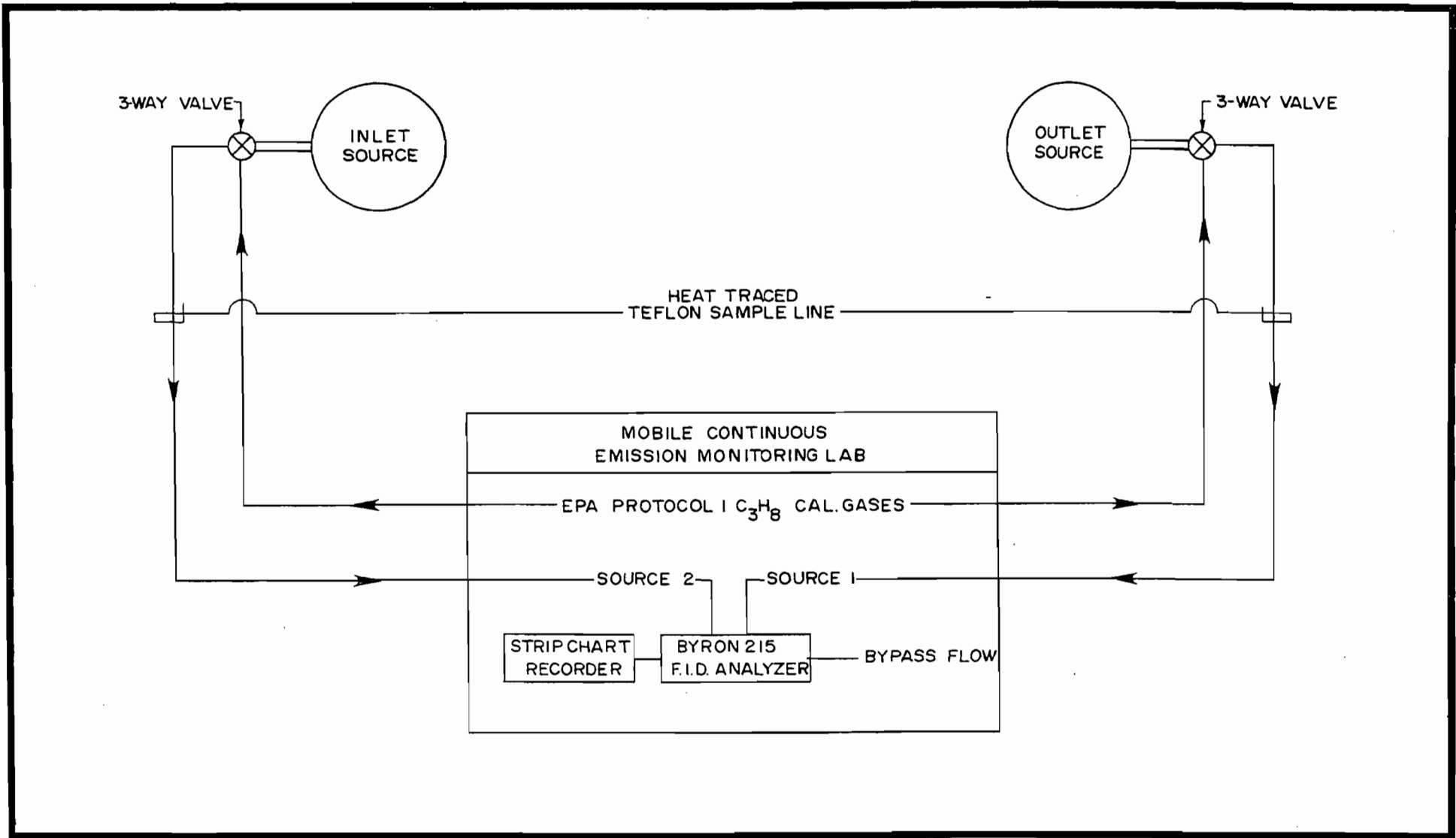
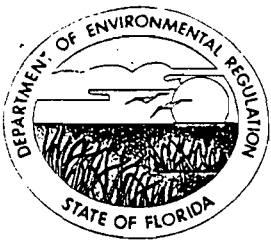


FIGURE 3
EPA 25A SAMPLING TRAIN

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APPENDIX A
PERMIT NUMBER AC 01-179694



Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

Craig ... 373-4214

PERMITTEE:
Mobile Reclaim, Inc.
3120 NW 37th Street
Gainesville, Florida 32605

P.O. 4189 32605-4189

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991
County: Statewide Operation
Project: 25 TPH Portable Rotary
Kiln/Afterburner Systems, Serial
Number SRU-202

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 construct a portable rotary kiln/afterburner system. The unit consists of a contaminated soil hopper and feed system, a 25 TPH rotary dryer with a No. 2 fuel oil burner, a 99% efficient baghouse, a 95% efficient No. 2 fuel oil fired afterburner (0.5 second retention time at 1400°F) and stack (3.0 ft. dia. by 20 ft. ht.) handling approximately 35,040 acfm (7,500 dscfm at 50% EA), and associated equipment, all of which is mounted on a truck.

The unit may be used throughout the state (all counties) after receiving Department authorization to operate at a new location.

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

Attachments are listed below:

1. Application received on April 26, 1990.
2. DER letter dated May 10, 1990
3. Air Consulting and Engineering, Inc. letter dated May 30, 1990.
4. Chandler, Gray, Lang & Haswell letter dated July 24, 1990.
5. Summary of Hearing Request by Mr. John Austin
6. Air Consulting and Engineering letter dated July 5, 1990.
7. DERM letter dated June 28, 1990.
8. Final Order in OGC Case No. 90-1130.

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

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.

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

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.

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

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.

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PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

GENERAL CONDITIONS:

- 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.

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:

Construction Requirements

1. The construction of this facility shall reasonably conform to the plans and schedule submitted in the application.
2. The stack sampling facilities must comply with F.A.C. Rule 17-2.700(4).
3. The ~~scrubber~~ shall be capable of operating ~~above 100%~~ with a ~~0.5 second retention time~~ and have a ~~minimum 95%~~ ~~destruction efficiency of 95%.~~

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PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

SPECIFIC CONDITIONS:

Emission Restrictions

4. ~~Particulate matter~~ emissions from this process shall neither exceed ~~0.08 grains/dscf corrected to 50% excess air nor 5.1 lbs/hr.~~ ~~Visible emissions~~ from any part of the process shall not exceed ~~5% opacity.~~

5. ~~Benzene emissions shall not exceed 6.0 lbs/hr. Total VOC emissions shall not exceed 20 lbs/hr.~~ Compliance shall be determined from soil analysis, production rate, and the afterburner destruction efficiency.

6. 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.

Operation Requirements

7. 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). Mobile shall perform its own maintenance upon the soil remediation unit and have quarterly inspections performed by a qualified representative of the manufacturer, complying with recommendations made by the manufacturer regarding any additional maintenance, if and when necessary.

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

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

10. Untreated soil removed from the ground shall be stored under waterproof covers and on an impermeable surface to minimize unconfined emissions.

11. This unit shall be allowed to operate continuously, 24 hours per day, 7 days per week, and 52 weeks per year. The permittee shall maintain a log that shows the location, time and dates the unit was operated.

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PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

SPECIFIC CONDITIONS:

12. Maximum soil charging rate to the unit shall not exceed 25 TPH. The permittee shall have means to determine the feed or production rate on site.

13. ~~Only No. 2 fuel oil~~ containing a maximum of ~~0.5% sulfur~~ shall be used as fuel for this unit. Maximum permitted fuel consumption is 27.8 MMBtu/hr (201 GPH No. 2 fuel oil).

14. Only soils contaminated with virgin (non-recycled) petroleum products and "on-spec" used oil (see Specific Condition No. 15) shall be treated in this unit unless otherwise approved by the Bureau of Air Regulation (BAR). The portable rotary kiln/afterburner system shall neither be used to thermally process materials that are listed in 40 CFR 261.31, 261.32, 261.33 (revised as of July 1, 1988) nor materials that have the hazardous characteristics of corrosivity, reactivity, EP toxicity, and ignitability. Prior to the acceptance of contaminated materials for processing, the permittee shall provide the Department with reasonable assurance that the soil is contaminated with only virgin and/or "on specification" petroleum products. Reasonable assurance may be obtained by the sampling of the soil, by certification from owners regarding the history of the site, or by any other documentation or submission approved by the DER in such regard; provided, however, that Mobile's standard of performance shall not exceed any objective standard utilized by the DER in the State of Florida for providing "reasonable assurance."

15. Only soils contaminated with petroleum products (fuels and lubricants) 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:

<u>Metals</u>	<u>Maximum Concentration</u>	
	<u>TCLP(mg/L)</u>	<u>Total(mg/Kg)</u>
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

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

SPECIFIC CONDITIONS:

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. 5 and 17).

To show compliance with this condition, the permittee shall analyze a composite sample of the contaminated soil (see Specific Condition No. 16) 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).

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 on a case-by-case basis.

16. 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:

<u>Soil Quantity (yards³)</u>	<u>No. of Composite Samples</u>
Less than 100	1
100 to 500	3
500 to 1000	5
Each additional 250 yds	1 additional sample

17. 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:

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PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

SPECIFIC CONDITIONS:

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

where,

AAC = acceptable ambient concentration

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

X = 40 or the hours/week or actual hours of 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 9.4×10^{-3} mg/m³ (8 hr. avg). If the
stack parameters are different than the values listed in
the application, the applicant must use the actual impact
factor as determined by the EPA Approved Screen - 1.1
Model.

$$\text{Maximum Allowable Emissions (g/sec)} = \frac{\text{AAC mg/m}^3}{9.4 \times 10^{-3}}$$

18. ~~Pressure drop across the baghouse 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. The baghouse and the afterburner must be fully
operational, as demonstrated by continuous monitoring
instrumentation upon the unit, whenever the soil remediation unit
is in service.

Compliance Requirements

19. This unit shall be ~~tested at the maximum process weight rate~~
at which the permittee intends to operate. 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~~.

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PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

SPECIFIC CONDITIONS:

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 Chapter 17-2, F.A.C., or in this permit is being violated, it may require the owner or operator of the source 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.

21. The exhaust stack for this unit shall be ~~tested concurrently for particulate matter and visible emissions by EPA Methods 5 and 9~~ pursuant to 40 CFR 60, Appendix A, revised as of July 1, 1988, ~~within 5 days after placing the unit in commercial operation under this permit and annually thereafter.~~ Operation at each subsequent site requires an EPA Method 9 test to be performed ~~within 3 days~~ of placing the unit in service.

22. The unit destruction efficiency, benzene, and VOC emissions shall be established by a material balance using process weight, soil analysis and Method 18, 25A (below 50 ppm) or 25 (at or above 50 ppm) test (40 CFR 60, Appendix A, revised as of July 1, 1988) or other methods as approved by the Department.

Administrative Requirements

23. The permittee shall furnish the available information listed in Specific Condition No. 24 prior to operating the portable rotary kiln/afterburner system at its initial site. This permit requires compliance with any applicable local (county) regulations. That can require obtaining a permit from the county prior to operating in the county.

24. This unit shall not be operated at any new site until the applicant has requested authorization for that site. Whenever it is feasible for the permittee, the request shall be at least 15 days prior to operation at the new site. The permittee shall notify the local government (city and county), district office, and the BAR by registered mail at least 3 days prior to the unit being relocated. The confirmation shall provide the permit number of the unit, a copy of the last stack test report, 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 conditions the unit must meet within 3 days of the receipt of the relocation notice. This may include requirements for county operation permits and additional restrictions on the operation of this unit.

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

SPECIFIC CONDITIONS:

25. The permittee shall maintain a log that shows the unit's operation time during the preceeding 12 months. 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.

26. The BAR shall be notified by phone (confirm in writing) at least 15 days in advance of any compliance test to be conducted on this source.

27. Any analysis required by Specific Condition No. 16 which indicates a potential violation of any condition in this permit shall be reported as soon as feasible to the BAR. An average concentration of benzene above 2,400 ppm in the soil or total hydrocarbons above 8,000 ppm indicate a potential 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 shall propose the method of compliance with this permit.

28. Records shall be kept on the location, date, time, and number of samples taken for each composite sample. Soil analysis results shall be kept at the clean up site and available for Department inspection as long as the unit is at the site. All soil samples taken at the remediation site and from the soil exiting the dryer shall be stored in a sealed clean glass container immediately upon sampling.

29. Stack test results from PM and VOC shall be submitted to the Department (BAR) within 45 days of the test.

30. Within five days of placing the unit in commercial operation in Florida, Mobile shall test samples of the dust captured by the baghouse in order to ascertain contaminant levels. Mobile shall collect samples of the dust captured by the baghouse at one-half hour intervals during the compliance testing. The incremental samples shall be composited and tested by TCLP method for toxic metal contaminants. The samples of the mixed soil and dust captured by the baghouse shall also be composited and tested in the manner above-described. The above test results shall be provided to DER and Mr. John N. Austin, 6365 Sundown Drive, Jacksonville, Florida 32244, within 5 days of receipt. If levels of TCLP contaminants exceed the levels listed in 40 CFR 261, the test materials shall be handled as required by law under RCRA, CERCLA, or other applicable programs. If either sample regime

PERMITTEE:
Mobile Reclaim, Inc.

Permit Numbers: AC 01-179694
Expiration Date: July 31, 1991

SPECIFIC CONDITIONS:

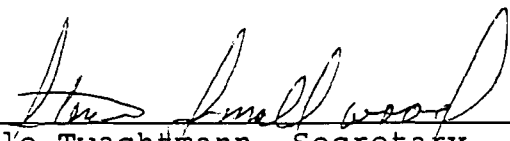
shall indicate levels of TCLP contaminants in excess of those listed in 40 CFR 261, then a panel of DER and Mobile representatives shall discuss and determine appropriate operating procedures for the unit. Austin shall be notified at least five days prior to the meeting of such panel. Recommendations and directives of the panel shall be added to Mobile's permit as a special condition, as required by DER.

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

32. An application for an operation permit must be submitted to the BAR at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this 20th day
of December, 1990

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


Dale Twachtmann, Secretary

APPENDIX B
COMPLETE EMISSION DATA
AND
SAMPLE CALCULATIONS

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

 Plant: Mobile Reclaim, Inc.
 Location: Gainesville, Florida
 Date: 07/22/91
 Stack: Incinerator A/B Outlet, SRU 202 Run: 1 From 1305 to 1412

Y Factor	1.004	Nozzle Diameter	0.375	In
Total Time	60 Min	Nozzle Area	0.000767	Ft ²
Stack Area	7.070 Ft ²	Barometric Pressure	30.00	In Hg
Stack Temperature	1244.0 °F	Meter Temperature	103.2	°F
Stack Pressure	30.00 In Hg	Meter Orifice Diff	3.765	In H ₂ O
Stack Avg √ Vel Head	0.843 In H ₂ O	Meter Volume	59.248	CF
		Condensate Volume	222.0	ml

- | | |
|---|----------------|
| 1. Volume Water Vapor Sampled | 10.450 SCF |
| 2. Volume Standard Dry Gas Sampled | 56.409 SCF |
| 3. Total Standard Sample Volume | 66.858 SCF |
| 4. Percent Moisture | 15.629 |
| 5. Percent Dry Air | 84.371 |
| 6. Molecular Weight of Dry Flue Gas | 29.460 |
| 7. Molecular Weight of Wet Flue Gas | 27.669 |
| 8. Specific Gravity Flue Gas | 0.96 |
| 9. Percent Oxygen [O ₂] | 13.30 |
| 10. Percent Carbon Dioxide [CO ₂] | 5.80 |
| 11. Percent Excess Air | 165.062 |
| 12. Velocity of Flue Gas | 86.725 FPS |
| 13. Actual Volumetric Flow Rate | 36788.8 ACFM |
| 14. Dry Volumetric Flow Rate | 31039.0 ACFMD |
| 15. Standard Volumetric Flow Rate | 9643.4 SCFMD |
| 16. Emission Concentration | 0.03031 gr/SCF |
| 17. Emission Concentration | 0.00794 gr/ACF |
| 18. Emission Rate | 2.505 lbs/Hr |
| 19. Percent Isokinetic | 89.9 |

 Probe/Nozzle Wash 35.60 mg
 Filter 75.20 mg
 Total 110.80 mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant: Mobile Reclaim, Inc.
 Location: Gainesville, Florida
 Date: 07/22/91
 Stack: Incinerator A/B Outlet, SRU 202 Run: 2 From 1608 to 1826

Y Factor	1.004	Nozzle Diameter	0.300	In
Total Time	60 Min	Nozzle Area	0.000491	Ft ²
Stack Area	7.070 Ft ²	Barometric Pressure	30.00	In Hg
Stack Temperature	1248.7 °F	Meter Temperature	100.5	°F
Stack Pressure	30.00 In Hg	Meter Orifice Diff	1.473	In H ₂ O
Stack Avg √ Vel Head	0.721 In H ₂ O	Meter Volume	37.137	CF
		Condensate Volume	136.2	ml

- | | |
|---|----------------|
| 1. Volume Water Vapor Sampled | 6.411 SCF |
| 2. Volume Standard Dry Gas Sampled | 35.328 SCF |
| 3. Total Standard Sample Volume | 41.739 SCF |
| 4. Percent Moisture | 15.360 |
| 5. Percent Dry Air | 84.640 |
| 6. Molecular Weight of Dry Flue Gas | 29.468 |
| 7. Molecular Weight of Wet Flue Gas | 27.707 |
| 8. Specific Gravity Flue Gas | 0.96 |
| 9. Percent Oxygen [O ₂] | 13.10 |
| 10. Percent Carbon Dioxide [CO ₂] | 5.90 |
| 11. Percent Excess Air | 158.136 |
| 12. Velocity of Flue Gas | 74.275 FPS |
| 13. Actual Volumetric Flow Rate | 31507.4 ACFM |
| 14. Dry Volumetric Flow Rate | 26668.0 ACFMD |
| 15. Standard Volumetric Flow Rate | 8262.8 SCFMD |
| 16. Emission Concentration | 0.02664 gr/SCF |
| 17. Emission Concentration | 0.00699 gr/ACF |
| 18. Emission Rate | 1.887 lbs/Hr |
| 19. Percent Isokinetic | 102.7 |

Probe/Nozzle Wash	32.20 mg
Filter	28.80 mg
Total	61.00 mg

AIR CONSULTING AND ENGINEERING, INC.

Complete Emission Results

Plant: Mobile Reclaim, Inc.
 Location: Gainesville, Florida
 Date: 07/23/91
 Stack: Incinerator A/B Outlet, SRU 202 Run: 3 From 0930 to 1038

Y Factor	1.004	Nozzle Diameter	0.300	In
Total Time	60 Min	Nozzle Area	0.000491	Ft ²
Stack Area	7.070 Ft ²	Barometric Pressure	29.94	In Hg
Stack Temperature	1248.2 °F	Meter Temperature	91.1	°F
Stack Pressure	29.94 In Hg	Meter Orifice Diff	1.081	In H ₂ O
Stack Avg √ Vel Head	0.623 In H ₂ O	Meter Volume	31.988	CF
		Condensate Volume	138.0	ml

- | | | |
|---|---------|--------|
| 1. Volume Water Vapor Sampled | 6.496 | SCF |
| 2. Volume Standard Dry Gas Sampled | 30.858 | SCF |
| 3. Total Standard Sample Volume | 37.354 | SCF |
| 4. Percent Moisture | 17.389 | |
| 5. Percent Dry Air | 82.611 | |
| 6. Molecular Weight of Dry Flue Gas | 29.460 | |
| 7. Molecular Weight of Wet Flue Gas | 27.467 | |
| 8. Specific Gravity Flue Gas | 0.95 | |
| 9. Percent Oxygen [O ₂] | 13.30 | |
| 10. Percent Carbon Dioxide [CO ₂] | 5.80 | |
| 11. Percent Excess Air | 165.062 | |
| 12. Velocity of Flue Gas | 64.520 | FPS |
| 13. Actual Volumetric Flow Rate | 27369.2 | ACFM |
| 14. Dry Volumetric Flow Rate | 22609.9 | ACFMD |
| 15. Standard Volumetric Flow Rate | 6993.5 | SCFMD |
| 16. Emission Concentration | 0.02755 | gr/SCF |
| 17. Emission Concentration | 0.00704 | gr/ACF |
| 18. Emission Rate | 1.652 | lbs/Hr |
| 19. Percent Isokinetic | 106.0 | |

Probe/Nozzle Wash	22.40 mg
Filter	32.70 mg
Total	55.10 mg

Plant: Mobile Reclaim, Inc.
Date: 07/22/91
Stack: Incinerator A/B Outlet, SRU 202
Run Number: 1

Average $\sqrt{\text{Velocity Head}}$ = 0.843

Velocity Head Inputs:

1.8000	1.7000	1.2000	1.0500	0.7100	0.4100
0.2300	0.2700	0.2700	0.3300	0.3600	0.3600
1.3500	1.2500	1.2000	0.8700	0.5600	0.5300
0.3800	0.3800	0.4600	0.8000	1.1000	1.1000

Average Orifice Pressure = 3.765

Orifice Pressure Inputs:

5.5000	5.2000	5.1000	5.0000	4.8500	4.8500
1.3500	1.6000	1.6000	1.9000	2.1000	2.1000
5.1000	5.1000	4.7000	4.6000	4.5000	4.4000
2.2000	2.2000	2.7000	4.7000	4.5000	4.5000

Average Stack Temperature = 1244.0

Stack Temperature Inputs:

1284.0	1286.0	1261.0	1248.0	1217.0	1209.0
1198.0	1198.0	1193.0	1198.0	1210.0	1214.0
1220.0	1224.0	1233.0	1244.0	1247.0	1240.0
1226.0	1310.0	1265.0	1284.0	1337.0	1310.0

Average Meter Temperature = 103.2

Meter Temperature Inputs:

99.0	99.0	99.0	99.0	99.0	99.0
100.0	101.0	101.0	102.0	103.0	103.0
105.0	105.0	105.0	105.0	106.0	106.0
106.0	106.0	107.0	107.0	107.0	108.0

Plant: Mobile Reclaim, Inc.
Date: 07/22/91
Stack: Incinerator A/B Outlet, SRU 202
Run Number: 2

Average $\sqrt{\text{Velocity Head}} = 0.721$

Velocity Head Inputs:

0.6500	0.8500	0.7900	0.6600	0.3400	0.2500
0.2500	0.4100	0.5000	0.8400	0.8100	0.7900
1.3000	1.1500	1.1500	0.6500	0.3200	0.3600
0.3600	0.2100	0.2000	0.2200	0.2200	0.3000

Average Orifice Pressure = 1.473

Orifice Pressure Inputs:

1.7000	2.2000	2.0500	1.7000	0.8800	0.6500
0.6500	1.0700	1.3000	2.2000	2.1000	2.0500
3.4000	3.0000	3.0000	1.7000	0.8300	0.9400
0.9400	0.5500	0.5200	0.5700	0.5700	0.7800

Average Stack Temperature = 1248.7

Stack Temperature Inputs:

1213.0	1289.0	1241.0	1209.0	1226.0	1203.0
1202.0	1298.0	1299.0	1319.0	1307.0	1332.0
1308.0	1264.0	1247.0	1213.0	1231.0	1226.0
1194.0	1229.0	1223.0	1233.0	1233.0	1229.0

Average Meter Temperature = 100.5

Meter Temperature Inputs:

105.0	105.0	105.0	105.0	100.0	100.0
99.0	99.0	99.0	99.0	99.0	99.0
99.0	100.0	100.0	100.0	100.0	100.0
100.0	100.0	100.0	100.0	100.0	100.0

Plant: Mobile Reclaim, Inc.
Date: 07/23/91
Stack: Incinerator A/B Outlet, SRU 202
Run Number: 3

Average $\sqrt{\text{Velocity Head}} = 0.623$

Velocity Head Inputs:

0.7800	0.7600	0.6400	0.5200	0.2300	0.2000
0.1800	0.1800	0.2400	0.2400	0.3000	0.3000
0.7200	0.5200	0.5200	0.2700	0.2700	0.2700
0.2300	0.2300	0.3600	0.5000	0.6800	0.8000

Average Orifice Pressure = 1.081

Orifice Pressure Inputs:

2.0000	2.0000	1.7000	1.3500	0.6000	0.5200
0.4700	0.4700	0.6200	0.6200	0.7800	0.7800
1.9000	1.3500	1.3500	0.7000	0.7000	0.7000
0.6000	0.6000	0.9400	1.3000	1.8000	2.1000

Average Stack Temperature = 1248.2

Stack Temperature Inputs:

1267.0	1284.0	1280.0	1279.0	1259.0	1251.0
1201.0	1211.0	1223.0	1232.0	1235.0	1235.0
1277.0	1269.0	1266.0	1261.0	1171.0	1181.0
1217.0	1261.0	1267.0	1274.0	1285.0	1270.0

Average Meter Temperature = 91.1

Meter Temperature Inputs:

88.0	88.0	88.0	88.0	88.0	88.0
89.0	90.0	90.0	90.0	90.0	91.0
92.0	92.0	92.0	92.0	93.0	93.0
93.0	94.0	94.0	94.0	95.0	95.0

Sample Calculations Run 1

Plant: Mobile Reclaim, Inc.
 Date: 07/22/91
 Stack: Incinerator A/B Outlet, SRU 202

Vwv Volume Water Vapor Sampled
 $Vwv = 0.04707 \times 222.000 = 10.450 \text{ SCF}$

VMstd Volume Standard Dry Gas Sampled
 $VMstd = 17.64 \times 59.248 \times 1.004 \times [30.00 + (3.765 / 13.6)] / (103.2 + 460) = 56.409 \text{ SCF}$

Vt Total Standard Sample Volume
 $Vt = 10.450 + 56.409 = 66.858 \text{ SCF}$

W Percent Water = $(10.450 / 66.858) \times 100 = 15.6 \%$

FDA Percent Dry Air = $(1 - 0.156) \times 100 = 84.4 \%$

Md Molecular Weight of Dry Stack Gas
 $Md = (0.44 \times 5.80 \%CO_2) + (0.32 \times 13.30 \%O_2) + [0.28 \times (80.90 \%N_2 + 0.00 \%CO)] = 29.46$

MS Molecular Weight of Wet Stack Gas
 $MS = (29.460 \times 0.844) + (18 \times 0.156) = 27.669$

SG Specific Gravity Stack Gas
 $SG = 27.669 / 28.84 = 0.96$

Ea Percent Excess Air
 $Ea = [(13.30 \%O_2) - (0.00 \%CO / 2)] \times 100$
 $EA = \frac{(.264 \times (80.90 \%N_2)) - ((13.30 \%O_2) + (0.00 \%CO / 2))}{100} = 165.062$

Vs Velocity of Stack
 $Vs = (85.49 \times 0.84 \times 0.843) \times [(1244.0 + 460) / (30.00 \times 27.67)]$
 $Vs = 86.725$

Qa Actual Volumetric Flow
 $Qa = (7.070 \times 86.725 \times 60) = 36788.8 \text{ ACFM}$

Qd = Dry Volumetric Flow
 $Qd = (36788.8 \times 0.844) = 31039.0 \text{ ACFMD}$

Qsd Standard Volumetric Flow
 $Qsd = 36788.8 \times 0.844 \times [528 / (1244.0 + 460)] \times (30.00 / 29.92) = 9643.4 \text{ SCFMD}$

1
ulate Matter Emissions

Run 1

U 02

] / (56.409)

6 = 2.51

222.0) + (59.248 X 1.004 /
/ (3.6))] /
00.67)

Particulate Matter

Stream	Stack Gas Moisture (%)	Conc. (gr/SCF)	Emission Rate (Lbs/Hr)
1	15.6	0.0303	2.51
2	15.4	0.0266	1.89
3	17.4	0.0276	1.66
4	16.1	0.0282	2.02

APPENDIX C
FIELD DATA SHEETS

Rudy 39A-0203
mic.

STACK SAMPLING FIELD DATA SHEET

PLANT MOBILE RECLAIM
 SOURCE INCINERATOR A/B OUTLET
 PLANT LOCATION GAINESVILLE, FLORIDA
 TYPE OF SAMPLING TRAIN EPA 5, 3A
 TYPE OF SAMPLES PM
 DATE 7-22-91 RUN NO. 1
 TIME START 1305 TIME END 1412
 SAMPLE TIME 2412.5 (min/pt) = 60 Total min
 ASSUMED MOISTURE 20% FDA .80
 NOMOGRAPH C_p 1.58 PITOT CORR. .84
 P_b 30.0 "Hg P_s 30.0 "Hg
 WEATHER CLEAR TEMP _____ °F
 METER BOX NO. 1 H 2.04 V 1.004
 NOZZLE CAL. 474 375 474 = 474 375
 STACK DIMENSIONS 375 36" Ø
 STACK AREA 7.07 ft² EFFECTIVE _____ ft²
 STACK HEIGHT _____ ft.
 STACK DIAMETER: UPSTRM. _____ DNSTRM. _____
 PORT SIZE _____ in. NIPPLE LENGTH 2 3/4 in.
 U CORD LENGTH _____
 REMARKS: _____

ACE
AIR CONSULTING
& ENGINEERING, INC.



2106 N. W. 67th PLACE · Suites 9&10
GAINESVILLE, FLORIDA · 32606

176 273 9101
 2.41
 4.25
 6.37
 9.0
 12.81
 23.18
 27.0
 29.63
 31.25
 33.59
 35.24

1.42
 80.7
 56.48 SCF
 FDA = .84

62
16/HR

1.04
 1241
 1711
 103

5183 ppm
36634 ppm
9617 SCF/MP

TEST ID 1
PAGE _____ OF _____

MAT'L PROCESSING RATE _____
 GAS METER READINGS: FINAL 665.476 ft.³
 INITIAL 606.228 ft.³
 NET 59.248 ft.³
 FILTER NO. 1235 IMP. VOL. GAIN 210 ml.
 SIL GEL NO. 3 WT. GAIN 12.0 ml.
 TOTAL CONDENSATE 222.0 ml.

ORSAT

	1	2	3	4	AVG.
% CO ₂	5.8				5.8
% O ₂	13.3				13.3
% CO					
% N ₂					

F₀ = _____ F₀ RANGE = _____

ORSAT ANALYZER _____

LEAK CHECKS

PRE 0.00 cfm 20 "Hg POST 0.00 cfm 20 "Hg

METER BOX/PUMP _____ GAS SAMPLE SYST. _____

ORSAT BAG _____

PITOT TUBE NO. _____ PRE-TEST OK

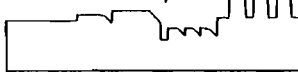
POST-TEST (+) 4.4 1 10 H₂O/Sec

POST-TEST (-) 4.1 1 0 H₂O/Sec

PYROMETER NO. ATKINS 2

BOX OPERATOR HECK PROBE HOLDER ET AL

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL / COMMENTS	CLOCK TIME	GAS METER READING (FT. ³)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H ₂ O)		STACK GAS TEMP (°F)	SAMPLE BOX TEMP (°F)	LAST IMPINGER TEMP (°F)	DRY GAS METER TEMP (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
					CALC.	ACTUAL					
	3.51 188		608.20	1.8	10.5	5.5	1284	230	71	99	17
	5.16 29.5	1310	612.03	1.7	9.95	5.2	1286	233	62	99	17
	7.0 32.8		617.94	1.2	7.0	5.1	1261	235	60	99	17
	9.12 34.5	1315	617.74	1.05	6.14	5.0	1248	235	59	99	17
	11.75 36.5		620.58	.71	4.15	4.85	1217	235	59	99	17
	15.06 38	1320	633.46	.41	2.4	4.85	1209	240	57	99	17



PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL /COMMENTS	CLOCK TIME	GAS METER READING (ft. ³)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H ₂ O)		STACK GAS TEMP (°F)	SAMPLE BOX TEMP (°F)	LAST IMPINGER TEMP (°F)	DRY GAS METER TEMP (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
					CALC.	ACTUAL					
1-7			625.4	.23	1.35	1.35	1198	240	60	100	6.5
8		1325	627.03	.27	1.6	1.6	1198	240	61	101	6.5
9			628.70	.27	1.6	1.6	1193	238	61	101	6.5
10		1330	630.48	.33	1.9	1.9	1198	240	61	102	7.5
11			632.33	.36	2.1	2.1	1210	240	61	103	7.5
12		1335	634.22	.36	2.1	2.1	1214	240	61	103	7.5
2-1			637.05	1.35	7.9	5.1	1220	238	66	105	17
2		1347	6399-	1.25	7.3	5.1	1224	240	60	105	17
3			642.64	1.2	7	4.7	1233	240	60	105	17
4		1352	645.40	.87	5.1	4.6	1244	238	60	105	17
5			648.14	.56	3.3	4.5	1247	248	60	106	17
6		1357	650.85	.53	3.1	4.4	1240	253	60	106	17
7			653.00	.38	2.2	2.2	1236	253	61	106	9.5
8		1402	655.0	.38	2.2	2.2	1252	250	61	106	9.0
9			657.27	.46	2.7	2.7	1265	249	61	107	11.0
10		1407	660.00	.80	4.7	4.7	1284	254	61	107	17
11			662.73	1.1	6.4	4.5	1337	254	61	107	17
12		1412	665.47	1.1	6.4	4.5	1310	253	61	108	17

STACK SAMPLING FIELD DATA SHEET

ACE
AIR CONSULTING
& ENGINEERING, INC.

TEST ID 2
PAGE OF

PLANT MOBILE RECLAIM
SOURCE INCINERATOR SRU 202
PLANT LOCATION GAINESVILLE FL. - POP-2 - TOP 2
TYPE OF SAMPLING TRAIN EPA-5, 3A
TYPE OF SAMPLES PM-02
DATE 7-22-91 RUN NO. 2
TIME START 1608 TIME END 1826
SAMPLE TIME 24125 (min/pi) = 60 Total min
ASSUMED MOISTURE 16 % FDA .84
NOMOGRAPH C₁ 2.6 PITOT CORR. .84
P_b 30.00 "Hg P_s 30.00 "Hg
WEATHER CLEAR TEMP °F
METER BOX NO. 1 H 1.004
NOZZLE CAL. 300 300 300 = 300
STACK DIMENSIONS 36"Ø
STACK AREA 7.07 ft² EFFECTIVE ft²
STACK HEIGHT ft.
STACK DIAMETER: UPSTRM. DNSTRM.
PORT SIZE in. NIPPLE LENGTH in.
U CORD LENGTH
REMARKS:

2106 N. W. 67th PLACE - Suites 9 & 10
GAINESVILLE, FLORIDA 32606

35.24 SCF
.84 FDA
4436 FPM
31363 ACFM
8209 SCFD
4720
4208
3907
0301
518 =
172 = \sqrt{VAP}
1244 75
19635
871
228.8
0000031
0429
1.53 1/2 in

MAT'L PROCESSING RATE
GAS METER READINGS: FINAL 702.882 ft.³
INITIAL 665.745 ft.³
NET 37.137 ft.³
FILTER NO. 3335 IMP. VOL. GAIN 130 ml.
SIL GEL NO. 97 WT. GAIN 6.2 ml.
TOTAL CONDENSATE 136.2 ml.

ORSAT

	1	2	3	4	AVG.
% CO ₂					5.9
% O ₂					13.1
% CO					
% N ₂					

F₀ = F₀ RANGE =
ORSAT ANALYZER

LEAK CHECKS

PRE OK cfm "Hg POST 0.00 cfm 10.5 "Hg
METER BOX/PUMP GAS SAMPLE SYST.
ORSAT BAG
PITOT TUBE NO. PRE-TEST
POST-TEST (+) 3.3 1 0 H₂O/Sec
POST-TEST (-) 4.3 1 0 H₂O/Sec
PYROMETER NO. ATKUS 2
BOX OPERATOR NECK PROBE HOLDER General
CHUCK

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL / COMMENTS	CLOCK TIME	GAS METER READING (FT ³)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H ₂ O)		STACK GAS TEMP (°F)	SAMPLE BOX TEMP (°F)	LAST IMPINGER TEMP (°F)	DRY GAS METER TEMP (°F)	VACUUM ON SAMPLE TRAIN ("Hg)	
					CALC.	ACTUAL						
1-1			667.48	.65	1.7	1.7	1213	224	67	105	6	
2	STOP FOR FIELD 1734	1613	669.45	.85	2.2	2.2	1289	225	52	105	7.5	
3			691.33	.79	2.05	2.05	1241	243	47	105	7	
4			673.04	.66	1.7	1.7	1209	248	47	105	6	
5			674.33	.34	.88	.88	1226	250	65	100	4	
6			1739	675.43	.25	.65	.65	1203	254	57	100	4

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL /COMMENTS	CLOCK TIME	GAS METER READING (ft. ³)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H ₂ O)		STACK GAS TEMP (°F)	SAMPLE BOX TEMP (°F)	LAST IMPINGER TEMP (°F)	DRY GAS METER TEMP (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
					CALC.	ACTUAL					
1-7			676.5	.25	.65	.65	1202	252	52	99	3.5
8		1744	677.82	.41	1.07	1.07	1298	261	51	99	5.0
9			679.35	.50	1.3	1.3	1299	266	51	99	5.5
10		1749	681.26	.84	2.2	2.2	1319	264	51	99	8
11			683.20	.81	2.1	2.1	1307	272	51	99	8
12		1754	685.13	.79	2.05	2.05	1332	272	51	99	7.5
2-1			687	1.3	3.4	3.4	1308	230	53	99	10.5
2		1801	689.73	1.15	3.0	3.0	1264	228	53	100	10.5
3			692.03	1.15	3.0	3.0	1247	227	53	100	10.5
4		1806	693.86	.65	1.7	1.7	1213	220	53	100	6.5
5			695.15	.32	.83	.83	1231	223	53	100	4.5
6		1811	696.46	.36	.94	.94	1226	233	52	100	4.5
7			697.80	.36	.94	.94	1194	236	52	100	4.5
8		1816	698.78	.21	.55	.55	1209	256	52	100	3.5
9			699.75	.20	.52	.52	1210	261	53	100	3.5
10		1821	700.72	.22	.57	.57	1188	264	52	100	3.5
11			701.71	.22	.57	.57	1217	257	52	100	3.5
12		1826	702.88	.30	.78	.78	1229	25	52	100	4.5

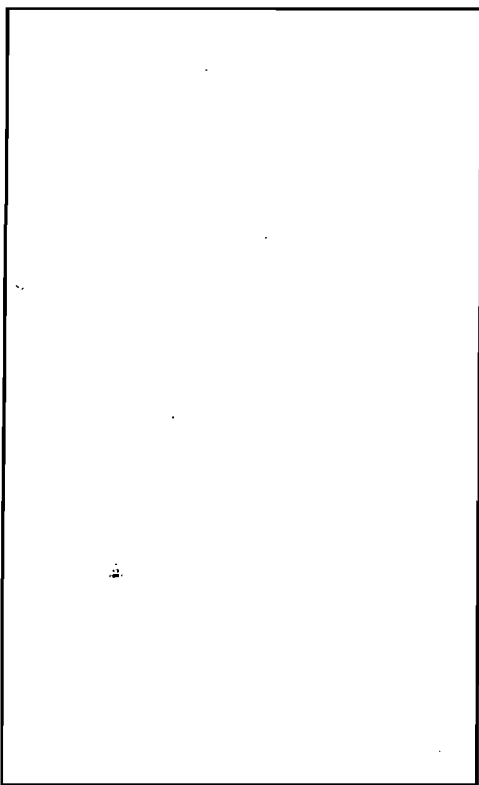
STACK SAMPLING FIELD DATA SHEET



2106 N. W. 67th PLACE - Suites 9 & 10
GAINESVILLE, FLORIDA 32606

TEST ID 3
PAGE OF

PLANT MOBILE RECLAIM -
SOURCE INCINERATOR AB SRU 202
PLANT LOCATION GAINESVILLE PL - PIC - 2 - Pak 2
TYPE OF SAMPLING TRAIN EPA - 5/3A
TYPE OF SAMPLES PM O2
DATE 7-23 RUN NO. 3
TIME START 0930 TIME END 1038
SAMPLE TIME 24 12.5 (min/pt) = 60 Total min
ASSUMED MOISTURE 16 % FDA .84
NOMOGRAPH C_p 2.6 PITOT CORR. .84
P_b 29.94 "Hg P_s 29.94 "Hg
WEATHER CLEAR TEMP °F
METER BOX NO. 1 H 2.04 Y 1.004
NOZZLE CAL. = .300
STACK DIMENSIONS 36"
STACK AREA 7.07 ft² EFFECTIVE ft²
STACK HEIGHT ft.
STACK DIAMETER: UPSTRM. DNSTRM.
PORT SIZE in. NIPPLE LENGTH in.
U CORD LENGTH 125'
REMARKS:



MAT'L PROCESSING RATE
GAS METER READINGS: FINAL 735.268 ft³
INITIAL 703.280 ft³
NET 31.988 ft³
FILTER NO. 3 IMP. VOL. GAIN 130 ml.
SIL GEL NO. 100 WT. GAIN 8.0 ml.
TOTAL CONDENSATE 138 ml.

ORSAT

	1	2	3	4	AVG.
% CO ₂					5.8
% O ₂					13.3
% CO					
% N ₂					

F₀ = F₀ RANGE =

ORSAT ANALYZER

LEAK CHECKS

PRE 0.00 cfm 15 "Hg POST 0.00 cfm 13 "Hg
METER BOX/PUMP GAS SAMPLE SYST.
ORSAT BAG
PITOT TUBE NO. PRE-TEST
POST-TEST(+) 3.0 / 0 H₂O/Sec
POST-TEST(-) 3.2 / 0 H₂O/Sec
PYROMETER NO. ATKINS 2 GERARD
BOX OPERATOR NECK PROBE HOLDER CHUCK

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL / COMMENTS	CLOCK TIME	GAS METER READING (FT. ³)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H ₂ O)		STACK GAS TEMP (°F)	SAMPLE BOX TEMP (°F)	LAST IMPINGER TEMP (°F)	DRY GAS METER TEMP (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
					CALC.	ACTUAL					
1-1			705.06	.78	2.0	2.0	1267	228	51	88	6.5
2		0935	706.91	.76	2.0	2.0	1284	225	51	88	7.0
3			708.62	.64	1.7	1.7	1280	229	51	88	6
4		0940	710.16	.52	1.35	1.35	1277	237	51	88	5
5			711.23	.23	.6	.6	1259	242	52	88	3.5
6		0945	712.16	.20	.52	.52	1251	261	52	88	3

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL /COMMENTS	CLOCK TIME	GAS METER READING (ft. ³)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H ₂ O)		STACK GAS TEMP (°F)	SAMPLE BOX TEMP (°F)	LAST IMPINGER TEMP (°F)	DRY GAS METER TEMP (°F)	VACUUM ON SAMPLE TRAIN ("Hg)	
					CALC.	ACTUAL						
1-7	1008		713.07	.18	.47	.47	1201	265	52	89	3.5	
8		0950	713.97	.18	.47	.47	1211	265	52	90	3.5	
9			715.0	.24	.62	.62	1223	267	52	90	3.5	
10		0955	716.05	.24	.62	.62	1232	265	52	90	3.5	
11			717.25	.30	.78	.78	1235	273	52	90	4.0	
12		1000	718.44	.30	.78	.78	1235	272	52	91	4.0	
2-1				720.18	.72	1.9	1.9	1277	222	52	92	6.5
2		1013		721.73	.52	1.35	1.35	1269	228	52	92	5.5
3				723.27	.52	1.35	1.35	1266	229	52	92	5.5
4		1018		724.41	.27	.70	.70	1261	225	52	92	4
5				725.54	.27	.70	.70	1171	231	52	93	4
6		1023		726.65	.27	.70	.70	1181	256	52	93	4
7			727.73	.23	.60	.60	1217	258	52	93	4	
8	1028		728.83	.23	.60	.60	1261	269	52	93	4	
9			730.10	.36	.94	.94	1267	271	53	94	5	
10	1033		731.62	.50	1.30	1.30	1274	270	53	94	6	
11			733.37	.68	1.8	1.8	1285	268	53	95	7.5	
12	1038		735.268	.80	2.1	2.1	1290	277	53	95	8	

APPENDIX D
LABORATORY DATA

Best Available Copy

ORLANDO LABORATORIES, INC.
 Received: 07/03/91

REPORT OF ANALYSIS
 Results by Sample

Work Order # 91-07-035

SAMPLE ID Comp-1
 DATE COLLECTED 07/02/91
 TEST NAME Purgeable Aromatics/Soil

SAMPLE# 01A
 MATRIX SOIL
 TEST CODE 80205

SAMPLE TYPE SOIL
 UNITS UG/KG ^{cc}
 ANALYST RC
 METHOD 8020

DATE EXTRACTED _____
 DATE RUN 07/09/91
 DILUTION FACTOR 10
 % MOISTURE 90.1

	RESULT/QUALIFIER
Benzene	<u>300</u>
Toluene	<u>100 U</u>
Chlorobenzene	<u>100 U</u>
Ethylbenzene	<u>1300</u>
Styrene	<u>100 U</u>
Total Xylenes	<u>5800</u>
1,2-Dichlorobenzene	<u>100 U</u>
1,3-Dichlorobenzene	<u>100 U</u>
1,4-Dichlorobenzene	<u>100 U</u>
MTBE	<u>100 U</u>

$$24.66 \text{ TPH} \times 2000 \times 7400 / 100,000,000 = 365 \text{ lb/HR}$$

Note:
 Elevated detection limits caused by dilution of sample.
 Dilution was necessary because compound concentrations
 were outside calibration range.

ORLANDO LABORATORIES, INC.
Received: 07/03/91

REPORT OF ANALYSIS
Results by Sample

Work Order # 91-07-03

SAMPLE ID	Comp-1					SAMPLE #	Q1A,B				
DATE COLLECTED	07/02/91					MATRIX	SOIL				
AG_FUR	<2.2	AS_FUR	<2.2	EA_ICP	<2.2	CD_ICP	<1.1	CR_ICP	3.8	FLASHP	>65
	ng/kg		ng/kg		ng/kg		ng/kg		mg/kg	Degrees Celcius	
HG_CV	<0.28	PB_FUR	7.5	SE_FUR	<1.1	TPH907	128				
	ng/kg		ng/kg		ng/kg		ng/kg				

$$24.66 \text{ TPH} \times 2000 \times \frac{128}{10000000} = 6.316/114$$

6.313

AIR CONSULTING & ENGINEERING, inc.

PARTICULATE LAB DATA

SOURCE Mobile Reclaim

PROBE RINSE	RUN <u>1</u>	RUN <u>2</u>	RUN <u>3</u>	BLANK	
CONTAINER NUMBER	27	28	29		
TOTAL VOLUME (ml)	150	175	150		LIQUID LEVEL <input checked="" type="checkbox"/>
1st GROSS WEIGHT (g)	104.1398	101.1076	99.3083		DATE & TIME: 7/26/91 12:05
2nd GROSS WEIGHT (g)	104.1397	101.1071	99.3078		DATE & TIME: 7/30/91 46:50
AVERAGE GROSS WEIGHT (g)	104.1398	101.1074	99.3081		
TARE WEIGHT (g)	104.1042	101.0752	99.2857		
SUB NET WEIGHT (g)	0.0356	0.0322	0.0224		
ACETONE BLANK (g)					
TOTAL NET WEIGHT (mg)	35.6	32.2	22.4		

NOTE: In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

FILTER	RUN <u>1</u>	RUN <u>2</u>	RUN <u>3</u>	BLANK	
FILTER NUMBER	3335	3336	3334		
1st GROSS WEIGHT (g)	0.4667	0.4197	0.4247		DATE & TIME: 7/25/91 10:50
2nd GROSS WEIGHT (g)	0.4662	0.4192	0.4247		DATE & TIME: 7/26/91 12:45
AVERAGE GROSS WEIGHT (g)	0.4665	0.4195	0.4247		
TARE WEIGHT (g)	0.3913	0.3907	0.3920		
SUB NET WEIGHT (g)	0.0752	0.0288	0.0327		
TOTAL NET WEIGHT (mg)	75.2	28.8	32.7		

TARE
BALANCE CHECK

SEE LAB BOOK

1st GROSS WEIGHT
BALANCE CHECK

0 10.0g
 0.5g 100.0g
 %RH 46 DATE 7/25/91
 Signature Charles P. Smeyers-Verbeke

2nd GROSS WEIGHT
BALANCE CHECK

0 100g
 0.5g 100.0g
 %RH 47 DATE 7/30/91
 Signature Charles P. Smeyers-Verbeke

APPENDIX E
VOC EMISSION DATA
AND STRIP CHART COPIES

100

Emission Data

```

*****
Run statistics N=00065
  Min  Avg  Max
1  47.430 69.042 92.320
2  020.78 020.80 020.93

```

```

09:38:55 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** RUN *****
09:39:10 07/22/91

```

```

***** STOP *****
09:40:27 07/22/91
Run statistics N=00015
  Min  Avg  Max
1  90.480 90.558 90.645
2  020.80 020.89 020.90

```

```

09:40:29 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** OFF *****

```

```

***** ON *****
***** RUN *****
09:43:50 07/22/91

```

```

***** STOP *****
09:45:30 07/22/91
Run statistics N=00020
  Min  Avg  Max
1  50.730 50.802 50.845
2  020.75 020.75 020.78

```

```

09:45:32 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** OFF *****

```

```

***** ON *****
***** RUN *****
09:49:40 07/22/91

```

```

***** STOP *****
09:50:00 07/22/91
Run statistics N=00004
  Min  Avg  Max
1  27.110 27.111 27.115
2  020.73 020.72 020.73

```

```

09:50:01 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** RUN *****
09:50:42 07/22/91

```

*)

```

1  25.655 25.736 25.935
2  020.68 020.71 020.73

```

```

09:54:20 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** OFF *****

```

```

***** ON *****
***** RUN *****
10:06:12 07/22/91

```

```

***** STOP *****
10:06:39 07/22/91
Run statistics N=00005
  Min  Avg  Max
1  25.275 25.320 25.355
2  021.18 021.18 021.18

```

```

10:06:41 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** OFF *****

```

```

***** ON *****
***** RUN *****
10:08:41 07/22/91

```

```

***** STOP *****
10:09:25 07/22/91
Run statistics N=00009
  Min  Avg  Max
1  87.750 87.979 88.210
2  020.88 020.88 020.90

```

```

10:09:27 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** OFF *****

```

```

***** ON *****
***** RUN *****
10:11:13 07/22/91

```

```

***** STOP *****
10:11:53 07/22/91
Run statistics N=00008
  Min  Avg  Max
1  49.160 49.252 49.320
2  020.85 020.86 020.88

```

```

10:11:55 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** OFF *****

```

```

***** ON *****

```

```

12:02:01 07/22/91
1  -00.825-00.769-00.710
2  021.73 021.76 021.80

```

```

12:02:38 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** RUN *****
12:03:07 07/22/91

```

```

***** STOP *****
12:07:03 07/22/91
Run statistics N=00047
  Min  Avg  Max
1  -00.830-00.660-00.425
2  021.93 022.07 022.18

```

```

12:07:04 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** OFF *****

```

```

***** ON *****
***** RUN *****
12:14:48 07/22/91

```

```

***** STOP *****
12:14:55 07/22/91
Run statistics N=00001
  Min  Avg  Max
1  07.165 07.165 07.165
2  022.40 022.40 022.40

```

```

12:14:56 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** OFF *****

```

```

***** ON *****
***** RUN *****
12:19:00 07/22/91

```

```

***** STOP *****
13:20:08 07/22/91
Run statistics N=00734
  Min  Avg  Max
1  02.110 11.511 45.745
2  009.40 011.37 016.05

```

```

13:20:10 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

```

***** OFF *****

```

```

***** ON *****
13:43:04 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

```

VOC Emission Results

```

Run statistics N=00331
  Min   Avg   Max
1 19.380 29.493 56.725
2 012.70 013.34 019.67

14:12:27 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

***** OFF *****

***** ON *****
***** RUN *****
17:37:13 07/22/91

***** STOP *****
17:55:38 07/22/91
Run statistics N=00221
  Min   Avg   Max
1 02.945 05.914 12.160
2 011.75 012.38 013.63

17:55:39 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

***** OFF *****

***** ON *****
***** RUN *****
18:04:07 07/22/91

***** STOP *****
18:29:22 07/22/91
Run statistics N=00303
  Min   Avg   Max
1 02.735 04.114 07.100
2 012.65 013.27 013.78

18:29:24 07/22/91
RUN starts logging
STOP stops logging
PROG starts programming

***** OFF *****

***** ON *****
***** RUN *****
07:33:29 07/23/91

***** STOP *****
07:34:02 07/23/91
Run statistics N=00007
  Min   Avg   Max
1 -01.850 -00.265 01.610
2 021.53 021.64 021.78

07:34:04 07/23/91
RUN starts logging
STOP stops logging
PROG starts programming
  
```

```

***** RUN *****
09:30:25 07/23/91

***** STOP *****
10:01:14 07/23/91
Run statistics N=00370
  Min   Avg   Max
1 -01.810 -01.026 00.065
2 011.20 012.01 012.75

10:01:16 07/23/91
RUN starts logging
STOP stops logging
PROG starts programming

***** OFF *****

***** ON *****
***** RUN *****
10:08:39 07/23/91

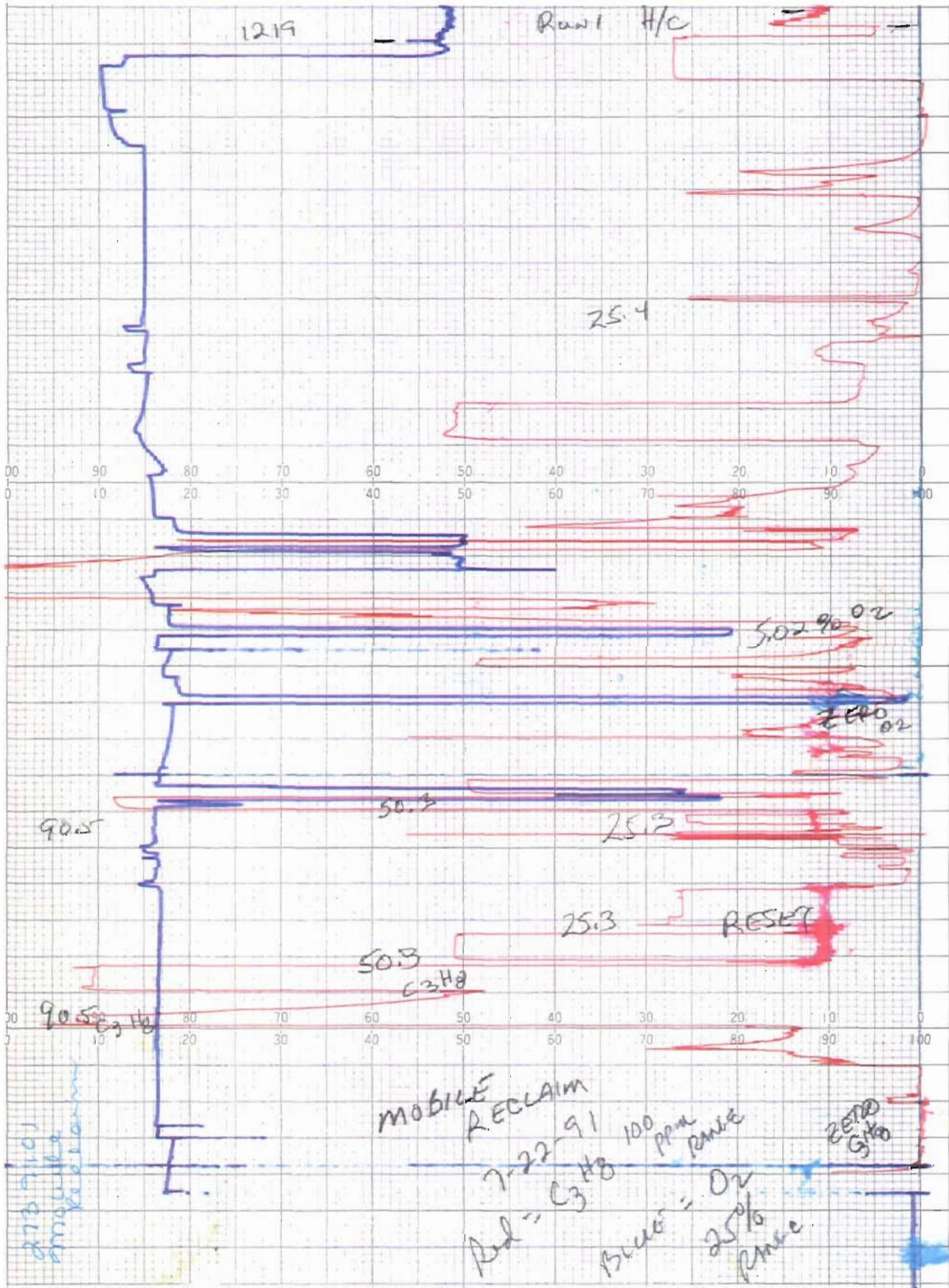
***** STOP *****
10:39:16 07/23/91
Run statistics N=00367
  Min   Avg   Max
1 -00.510 02.006 04.515
2 010.15 011.01 011.88

10:39:18 07/23/91
RUN starts logging
STOP stops logging
PROG starts programming
  
```

Quies

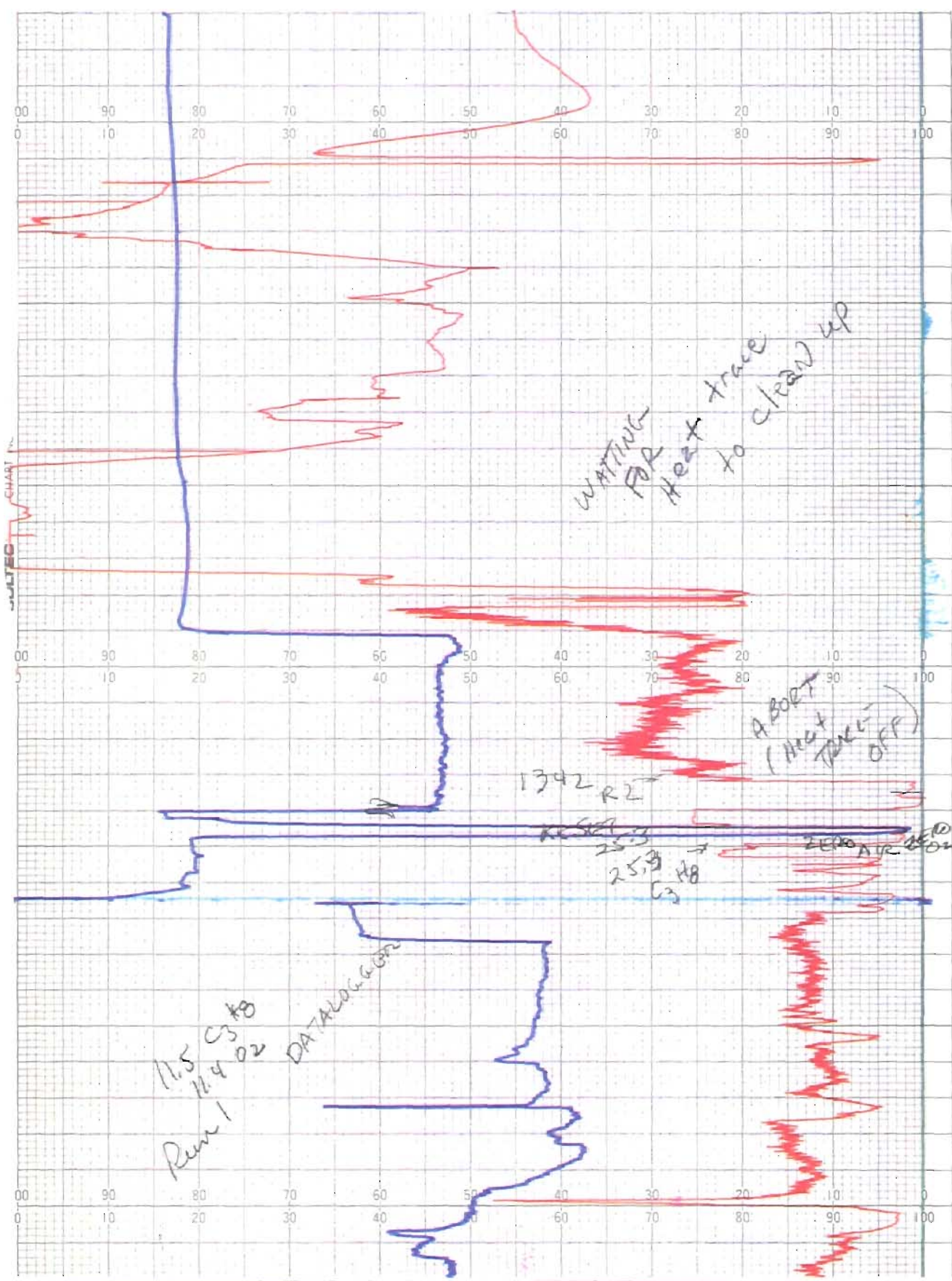
(A)

AIR CONSULTING & ENGINEERING, INC.



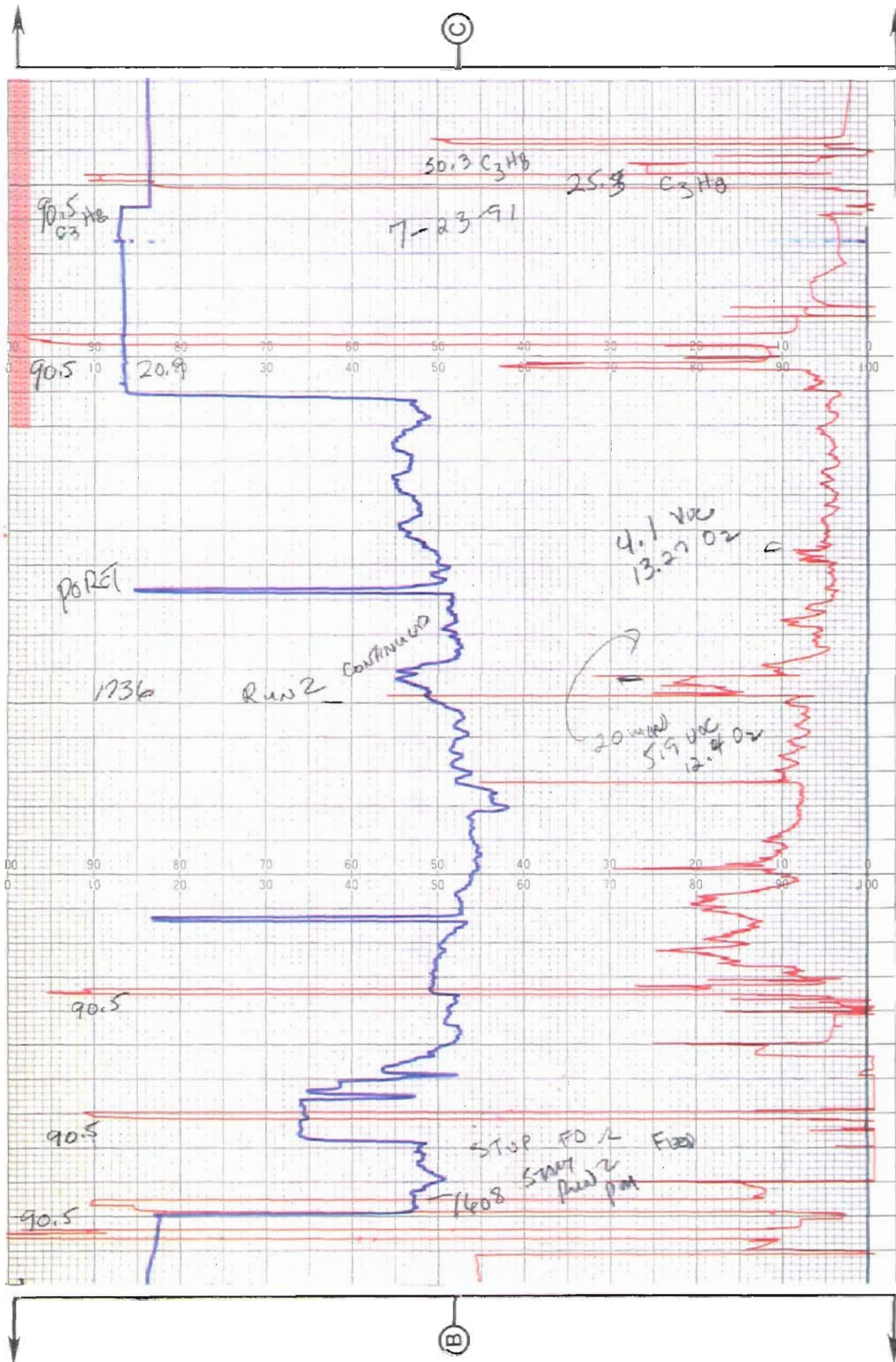
START

(B)



AIR CONSULTING & ENGINEERING, INC.

(A)



Date: _____

Name of User/Requisitioner: _____

Name of Organization: _____

Address: _____

City: _____ State: 253 VOC Zip: 25000

Phone Number with Area Code () : 209 022 END 1038

Purchase Order or Requisition #: _____

Signature of Requisitioner: _____

Complete Ship to Address if different from above (No P.O. Box Deliveries): _____

City: _____ State: _____ Zip: _____

Comments: _____

NOTE: THE ABOVE IS A PURCHASE ORDER OR REQUISITION FORM. PLEASE FILL IN AND SEND DIRECTLY TO SOLTEC CORPORATION OR YOUR PURCHASING DEPARTMENT. THIS FORM IS A FORMAT OF THE PAPER WITH MODEL #. THANK YOU FOR YOUR PAST PATRONAGE.

VOC 0
02 12.0
1ST MAR

0929 Run 3



APPENDIX F
VISIBLE EMISSION DATA
AND OBSERVER'S CERTIFICATION

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

VISIBLE EMISSION DATA SUMMARY

PLANT: MOBILE RECLAIM, INC.
 CITY/STATE: GAINESVILLE, FLORIDA
 SOURCE: INCINERATOR DRYER BAGHOUSE
 DATE: 07-22-1991
 START TIME: 1430 STOP TIME: 1530

MIN.	VISIBLE EMISSION DATA (SECONDS)				SIX-MIN AVG	MIN.	VISIBLE EMISSION DATA (SECONDS)				SIX-MIN AVG
	0	15	30	45			0	15	30	45	
1	0	0	0	0		31	0	0	0	0	0.00
2	0	0	0	0		32	0	0	0	0	0.00
3	0	0	0	0		33	0	0	0	0	0.00
4	0	0	0	0		34	0	0	0	0	0.00
5	0	0	0	0		35	0	0	0	0	0.00
6	0	0	0	0	0.00	36	0	0	0	0	0.00
7	0	0	0	0	0.00	37	0	0	0	0	0.00
8	0	0	0	0	0.00	38	0	0	0	0	0.00
9	0	0	0	0	0.00	39	0	0	0	0	0.00
10	0	0	0	0	0.00	40	0	0	0	0	0.00
11	0	0	0	0	0.00	41	0	0	0	0	0.00
12	0	0	0	0	0.00	42	0	0	0	0	0.00
13	0	0	0	0	0.00	43	0	0	0	0	0.00
14	0	0	0	0	0.00	44	0	0	0	0	0.00
15	0	0	0	0	0.00	45	0	0	0	0	0.00
16	0	0	0	0	0.00	46	0	0	0	0	0.00
17	0	0	0	0	0.00	47	0	0	0	0	0.00
18	0	0	0	0	0.00	48	0	0	0	0	0.00
19	0	0	0	0	0.00	49	0	0	0	0	0.00
20	0	0	0	0	0.00	50	0	0	0	0	0.00
21	0	0	0	0	0.00	51	0	0	0	0	0.00
22	0	0	0	0	0.00	52	0	0	0	0	0.00
23	0	0	0	0	0.00	53	0	0	0	0	0.00
24	0	0	0	0	0.00	54	0	0	0	0	0.00
25	0	0	0	0	0.00	55	0	0	0	0	0.00
26	0	0	0	0	0.00	56	0	0	0	0	0.00
27	0	0	0	0	0.00	57	0	0	0	0	0.00
28	0	0	0	0	0.00	58	0	0	0	0	0.00
29	0	0	0	0	0.00	59	0	0	0	0	0.00
30	0	0	0	0	0.00	60	0	0	0	0	0.00

AVERAGE OPACITY: 0.00

HIGHEST SIX MINUTE AVERAGE: 0.00

RANGE OF OPACITY READINGS
 MINIMUM: 0 MAXIMUM: 0

VISIBLE EMISSION
OBSERVATION FORM

OBSERVATION DATE		START TIME				STOP TIME			
7-22-91		1430				1530			
SEC MIN	0	15	30	45	SEC MIN	0	15	30	45
	1	0	0	0		0	31	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE NAME: Mobile Reclaim

ADDRESS: 4131 N.W. 13th ST Suite 105

CITY: Gainesville STATE: FL ZIP: _____

PHONE: _____ SOURCE I.D. NUMBER: _____

PROCESS EQUIPMENT: Incinerator OPERATING MODE: _____

CONTROL EQUIPMENT: Baghouse OPERATING MODE: _____

DESCRIBE EMISSION POINT: Round Metal Stack same

START: _____ HEIGHT ABOVE GROUND LEVEL: 20' STOP: 20'

HEIGHT REL. TO OBSERVER: 20' START: 20' STOP: 20'

DISTANCE FROM OBSERVER: 60' START: 60' STOP: 60'

DIRECTION FROM OBSERVER: EAST START: _____ STOP: _____

DESCRIBE EMISSIONS: CLEAR STOP: _____

EMISSION COLOR: Clear STOP: Clear

PLUME TYPE: CONT. FUGITIVE INTER.

WATER DROPLETS PRESENT: NO YES IF WATER DROPLET PLUME: ATTACHED DETACHED

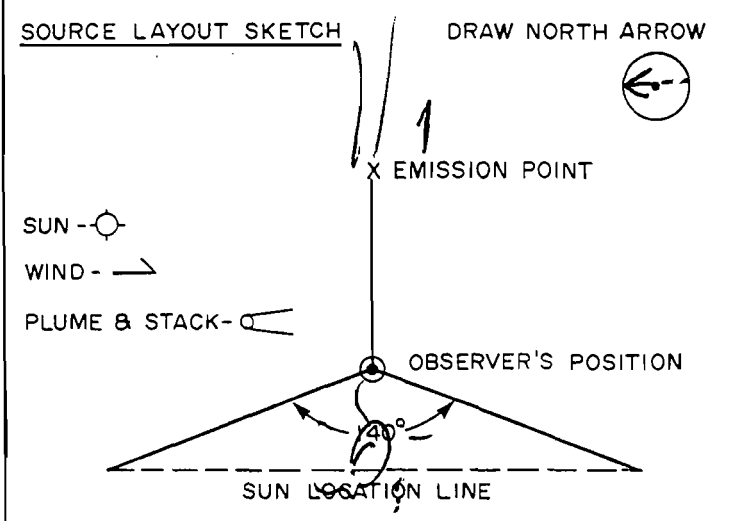
POINT IN PLUME AT WHICH OPACITY WAS DETERMINED: Opening STOP: Same

DESCRIBE BACKGROUND: Blue Sky STOP: Same

BACKGROUND COLOR: Blue STOP: Blue SKY CONDITIONS: P. Clouds STOP: same

WIND SPEED: 0-5 STOP: 0-5 WIND DIRECTION: EAST STOP: East

AMBIENT TEMP: 89 STOP: 89 WET BULB TEMP: _____ RH %: _____



COMMENTS: _____

I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS SIGNATURE: _____ DATE: _____

TITLE: _____ DATE: _____

AVERAGE OPACITY FOR HIGHEST PERIOD: 0 NUMBER OF READINGS ABOVE WERE: 0

RANGE OF OPACITY READINGS MINIMUM: 0 MAXIMUM: 0

OBSERVER'S NAME (PRINT): Sid Carter

OBSERVER'S SIGNATURE: S. D. Carter DATE: 7-22-91

ORGANIZATION: A.C.E.

CERTIFIED BY: F.T.A. DATE: _____

VERIFIED BY: _____ DATE: _____

BEST AVAILABLE COPY

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

THIS IS TO CERTIFY THAT

SIDNEY J. CARTER

has completed the
STATE OF FLORIDA visible emissions evaluation training and is a qualified
observer of visible emissions as specified by EPA reference method 9.

THIS CERTIFICATE EXPIRES Aug 28, 1991

Michael P. Clark
CERTIFICATE OFFICER

S. J. Carter
BEARER'S SIGNATURE

VISIBLE EMISSIONS EVALUATOR

This is to certify that

Sidney J. Carter

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

Thomas Hose
President

William J. ...
Vice President

David Savage
Program Manager

228558
Certificate Number

Oslando
Location

February 27, 1991
Date of Issue

APPENDIX G
QUALITY ASSURANCE

STANDARD METER CALIBRATION
Meter Number 1040616

Air Consulting and Engineering, Inc. (ACE) uses a dry gas meter for the calibration standard. This meter has been calibrated against a wet test meter in triplicate. This data was used to generate a standard meter calibration curve (see next page). Field meter calibrations are corrected to this curve using the following formula:

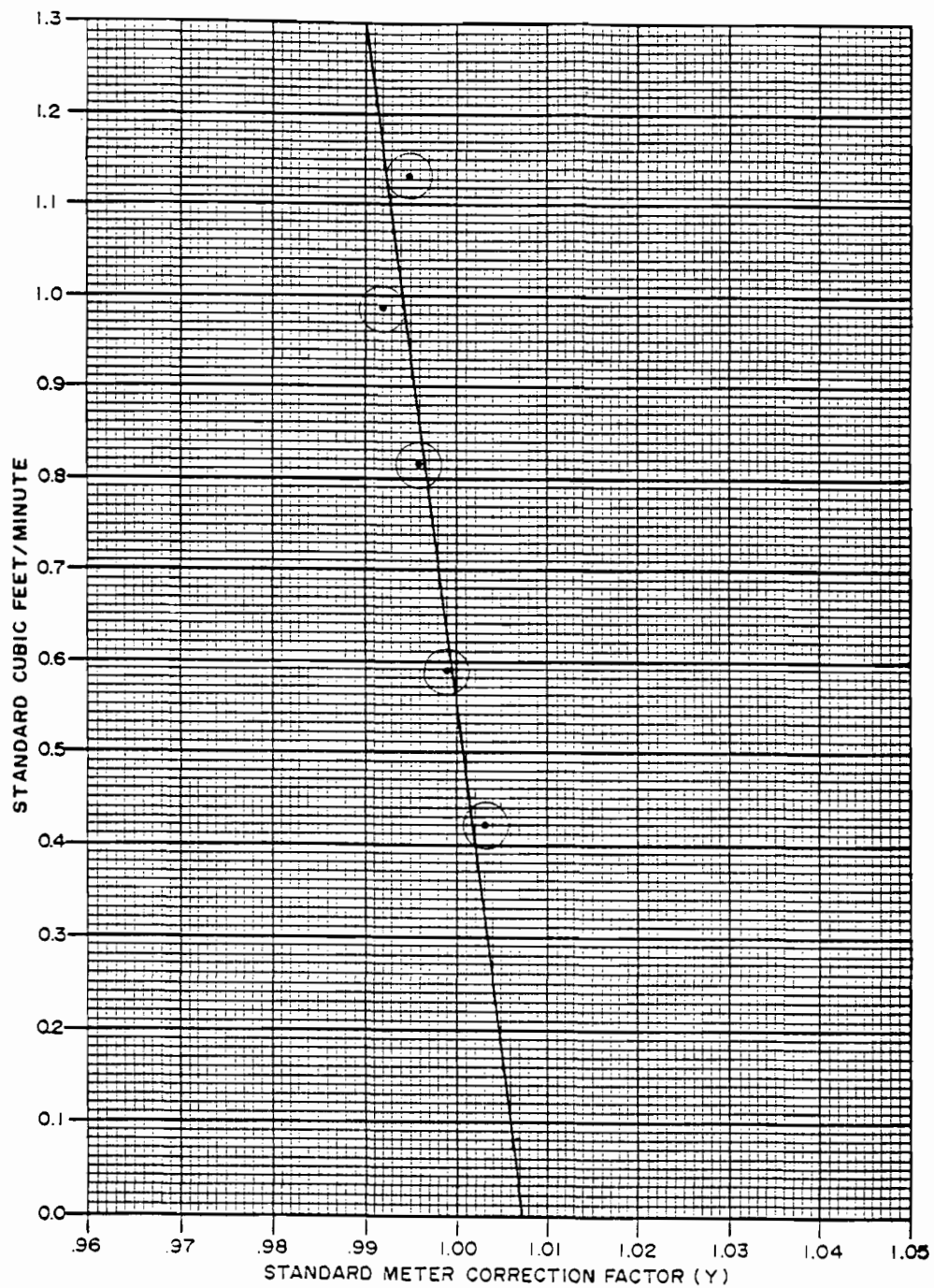
$$Y_a \times Y_s = Y$$

Y_a = actual ratio of field meter to standard meter

Y_s = ratio of standard meter to wet test meter at a given
flow rate (from Calibration Curve)

Y = corrected ratio of field meter

The dry standard meter was calibrated on June 11, 1991, and is checked and/or recalibrated at least annually.



STANDARD METER CALIBRATION
CURVE

JUNE 11, 1991

AIR CONSULTING
and
ENGINEERING

AIR CONSULTING & ENGINEERING

STANDARD METER CALIBRATION

DATE 6-13-91

LEAK CHECK 0.000 CFM at 10- in. Hg.

METER SERIAL NUMBER 1040616

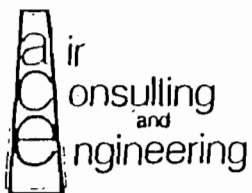
BAROMETRIC PRESSURE 30.12 in. Hg.

STD GAS METER TEMPERATURE 74 °F / ASTM GLASS THERMOMETER TEMPERATURE 74 °F

WET ΔH	STD ΔH	GAS VOLUME, WET TEST METER			GAS VOLUME, STD GAS METER			TEMP WET TEST METER (°F)	TEMP OF STD. METER (°F)	TIME (Minutes)
		INITIAL	FINAL	ACTUAL ft ³	INITIAL	FINAL	ACTUAL ft ³			
-0.3	-0.60	6.042	11.553	5.511	0.003	5.500	5.497	74	74	13
-0.3	-0.60	1.553	7.030	5.479	5.500	10.979	5.479	75	75	13
-0.3	-0.60	7.030	10.909	5.477	10.979	16.450	5.471	75	75	13
-0.35	-0.96	2.853	8.143	5.290	16.804	22.127	5.323	75	76	9
-0.35	-0.96	8.143	13.430	5.287	22.127	27.442	5.315	75	76	9
-0.35	-0.96	3.430	8.703	5.273	27.442	32.753	5.311	75	77	9
-0.4	-1.6	9.252	14.995	5.743	33.311	39.123	5.812	76	78	7
-0.4	-1.6	4.995	10.713	5.718	39.123	44.909	5.786	76	78	7
-0.4	-1.6	0.713	6.445	5.732	44.909	50.707	5.798	76	78	7
-0.55	-2.1	6.941	12.917	5.976	51.214	57.292	6.078	76	78	6
-0.55	-2.1	2.917	8.898	5.981	57.292	63.375	6.083	76	78	6
-0.55	-2.1	8.898	14.873	5.975	63.375	69.452	6.077	76	78	6
-0.7	-2.7	5.278	10.988	5.710	69.866	75.663	5.797	76	78	5
-0.7	-2.7	0.988	6.708	5.720	75.663	81.474	5.811	76	78	5
-0.7	-2.7	6.708	12.386	5.678	81.474	87.247	5.773	76	78	5

CALIBRATED BY: A. F. Habel

	Y	SCFM	Y	SCFM	Y	SCFM	Y	SCFM	Y	SCFM
Run 1	1.004	0.422	0.998	0.584	0.996	0.814	0.992	0.988	0.995	1.132
Run 2	1.001	0.419	0.999	0.584	0.996	0.810	0.992	0.989	0.995	1.134
Run 3	1.003	0.419	0.999	0.582	0.996	0.812	0.992	0.988	0.994	1.126
Average	1.003	0.420	0.999	0.583	0.996	0.812	0.992	0.988	0.995	1.131



AIR CONSULTING & ENGINEERING

ANNUAL METER CALIBRATION

DATE 6-14-91

LEAK CHECK 0.000 CFM at 14 In. Hg.

METER BOX NUMBER #1

BAROMETRIC PRESSURE 30.10 In. Hg.

DRY GAS METER TEMPERATURE 87 °F / ASTM GLASS THERMOMETER TEMPERATURE 88 °F

ΔHS	AVERAGE ΔHD	GAS VOLUME, STANDARD METER			GAS VOLUME, DRY GAS METER			TEMP STD METER	TEMP OF DRY METER	TIME (Minutes)	TIMER
		INITIAL	FINAL	ACTUAL ft ³	INITIAL	FINAL	ACTUAL ft ³				
-06	.5	977.651	983.301	5.650	884.756	890.239	5.483	87	88	15	15
-12	1.0	971.708	977.548	5.840	878.739	884.547	5.808	86	87	11	11
-16	1.5	985.835	993.630	7.795	892.764	900.523	7.759	88	89	12	12
-23	2.0	993.630	1000.397	6.767	900.523	907.262	6.739	88	89	9	9
-33	3.0	1000.397	1006.790	6.393	907.262	913.626	6.364	89	90	7	7
-47	4.0	1007.008	1012.339	5.331	913.950	919.144	5.194	89	91	5	5

DELTA H	Y _a	SCFM	Y _s	Y
2.026	1.031	0.366	1.000	1.031
2.036	1.005	0.516	0.998	1.003
2.048	1.003	0.630	0.996	0.999
2.038	1.001	0.729	0.994	0.995
2.076	0.999	0.884	0.991	0.990
2.027	1.020	1.032	0.991	0.990
			0.988	1.008
MEAN:	2.042	1.010	0.995	1.004

CALIBRATED BY:

Suey R. Brown

MEAN:

AIR CONSULTING & ENGINEERING, inc.

POST TEST CALIBRATION

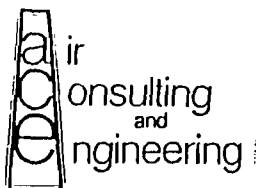
DATE 7-29-91 METER BOX NUMBER 1 LEAK CHECK 0.000 CFM at 12 In. Hg.
 CLIENT MOBILE RECLAIM SOURCE INCINERATOR THERMOCOUPLE NUMBER 59 PYROMETER NUMBER ATK-2
 FLIGHT SERVICE Pb 30.02 In. Hg. ACE BAROMETER Pb 30.02 In. Hg.
 ASTM GLASS THERMOMETER _____ °F / THERMOCOUPLE 1250 °F ASTM GLASS THERMOMETER 86 °F / METER TEMP 86 °F

ΔHS	AVERAGE ΔHD	GAS VOLUME, STANDARD METER			GAS VOLUME, DRY GAS METER			TEMP STANDARD METER	TEMP OF DRY METER	TIME (Minutes)	MAX. VACUUM In. Hg.
		INITIAL	FINAL	ACTUAL ft ³	INITIAL	FINAL	ACTUAL ft ³				
-11	1.1	910.244	915.247	5.003	849.345	854.438	5.093	86	90	9	8
-11	1.1	915.247	920.799	5.552	854.438	860.109	5.671	85	90	10	8
-11	1.1	920.799	926.314	5.515	860.109	865.751	5.642	84	91	10	8

CALIBRATED BY: Greg R. Brown

DELTA H	Ya	SCFM	Ys	Y
2.037	0.987	0.539	0.997	0.984
2.035	0.985	0.540	0.997	0.982
2.051	0.987	0.537	0.997	0.984

MEAN: 2.041 0.987 0.997 0.984



AIR CONSULTING & ENGINEERING, INC.

PYROMETER CALIBRATION

DATE 10-1-90

PYROMETER NUMBER Atkins #2

SOURCE (SPECIFY)	GLASS THERMOMETER WITH NBS MERCURY (°F)	PYROMETER (°F)	DEGREE DIFFERENCE	PERCENT DIFFERENCE
ICE BATH	<u>42</u>	<u>41</u>	<u>1</u>	<u>0.2</u>
AMBIENT	<u>88</u>	<u>88</u>	<u>0</u>	<u>0.0</u>
HOT OVEN	<u>345</u>	<u>344</u>	<u>1</u>	<u>0.2</u>

FDER - MAXIMUM 5° DIFFERENCE

EPA $\left[\frac{(\text{REF. TEMP. } ^\circ\text{F} + 460^\circ) - (\text{PYROMETER TEMP. } ^\circ\text{F} + 460^\circ)}{\text{REF. TEMP. } ^\circ\text{F} + 460^\circ} \right] 100 \leq 1.5\%$

CALIBRATED BY: Sil Carter

AIR CONSULTING & ENGINEERING, INC.

PITOT TUBE CALIBRATION

DATE CALIBRATED 2-22-91

PITOT TUBE 36

IS PITOT TUBE ASSEMBLY LEVEL YES

ARE PITOT TUBE OPENINGS DAMAGED NO

$\alpha_1 = \underline{2}^\circ (<10^\circ)$, $\alpha_2 = \underline{3}^\circ (<10^\circ)$, $\beta_1 = \underline{0}^\circ (<5^\circ)$, $\beta_2 = \underline{1}^\circ (<5^\circ)$

$\gamma = \underline{0}^\circ$ $\theta = \underline{3}^\circ$ $A = \underline{1.025}$ in. = (Pa + Pb)

$z = A \sin \gamma = \underline{.018}$ in.; $<0.32 / <1/8$ in.

$w = A \sin \theta = \underline{.054}$ in.; $<0.08 / <1/32$ in.

$P_a = \underline{.5125}$ in. $P_b = \underline{.5125}$ in. $D_t = \underline{.375}$

WAS CALIBRATION REQUIRED NO

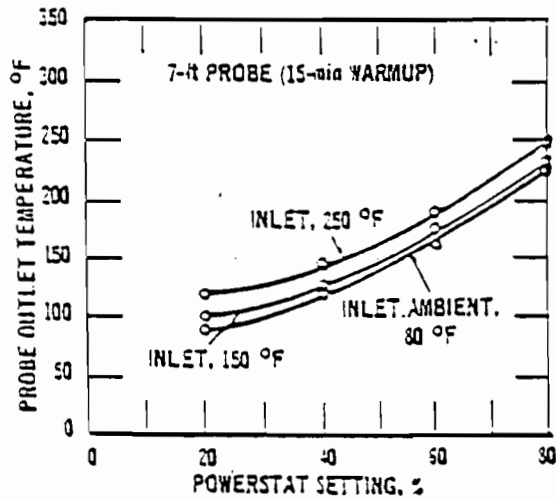
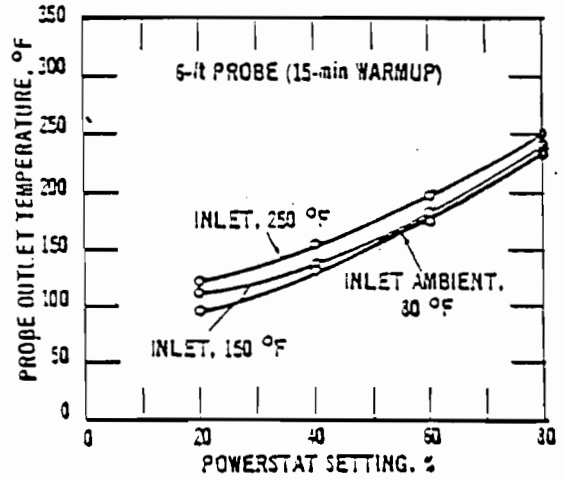
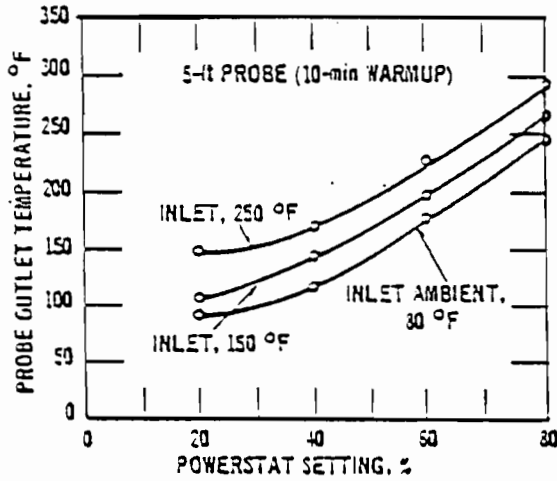
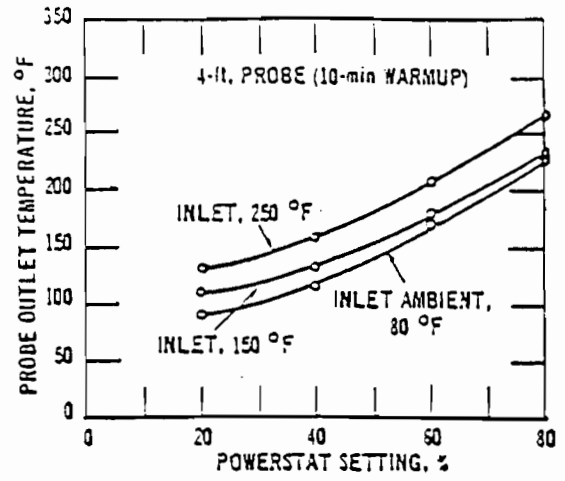
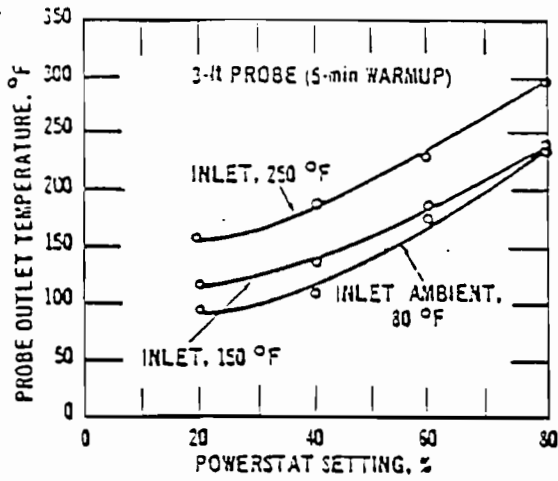
THERMOCOUPLE CALIBRATION

SOURCE (SPECIFY)	ASTM GLASS THERMOMETER WITH MERCURY (°F)	PYROMETER (°F)	DEGREE DIFFERENCE	PERCENT DIFFERENCE
ICE BATH	<u>37</u>	<u>37</u>	<u>0</u>	<u>0.00</u>
AMBIENT	<u>75</u>	<u>77</u>	<u>2</u>	<u>0.038</u>
HOT OVEN	<u>326</u>	<u>329</u>	<u>3</u>	<u>0.41</u>

CALIBRATED BY: J. Carter

FDER - MAXIMUM 5° DIFFERENCE

$$EPA \left[\frac{(\text{REF. TEMP. } ^\circ\text{F} + 460^\circ) - (\text{PYROMETER TEMP. } ^\circ\text{F} + 460^\circ)}{\text{REF. TEMP. } ^\circ\text{F} + 460^\circ} \right] 100 \leq 1.5\%$$

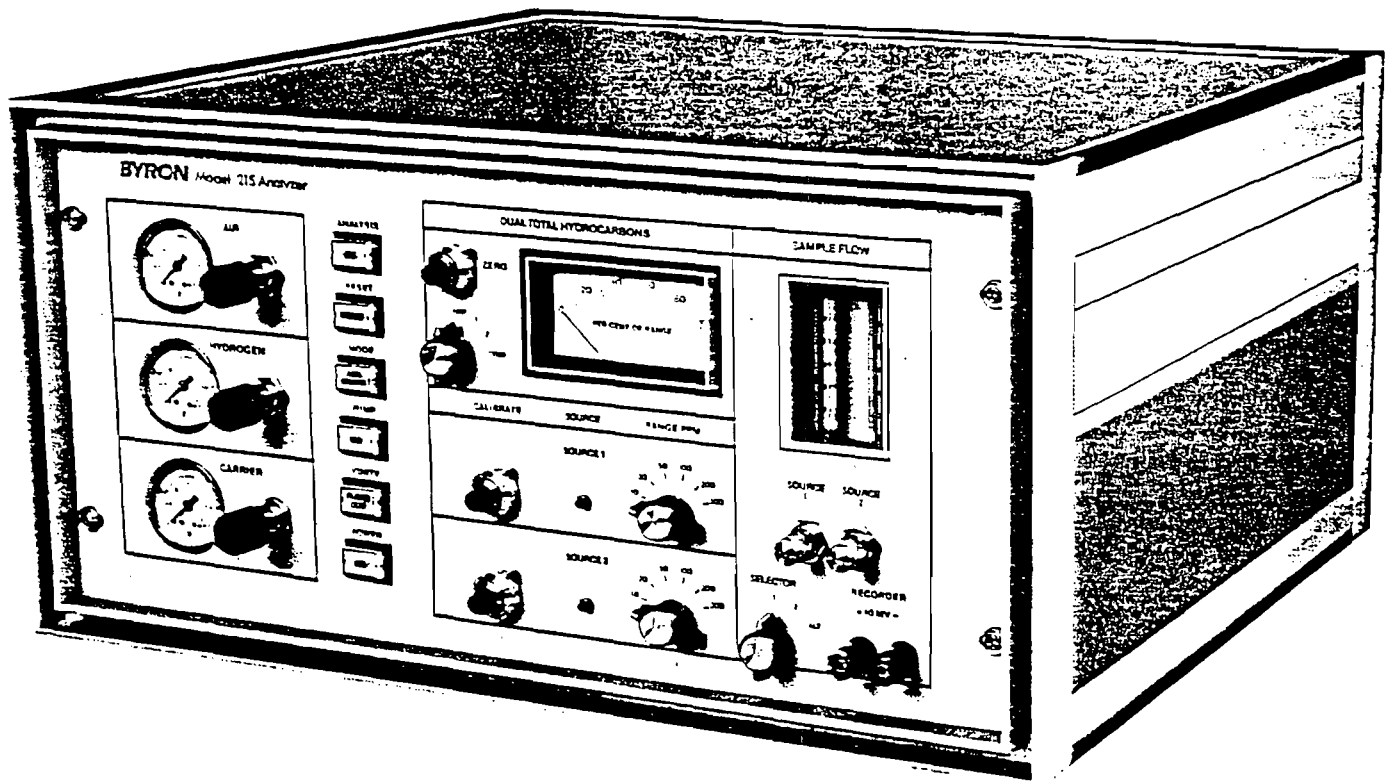


NOTE: Flow rate held constant at 0.75; 50% change in flow rate has little effect on probe temperature.

Probe temperatures.

Byron Model 215

DUAL TOTAL HYDROCARBON ANALYZER



Byron Model 215 is two complete total hydrocarbon analyzers built into a single cabinet. Whenever two separate sources need to be monitored for hydrocarbon levels, Model 215 Dual Total Hydrocarbon Analyzer solves the problem. While the analyzer was designed for accuracy, it is in fact a very convenient analyzer to use. All pressure regulators, sampling, calibrating and operating controls are located on the front panel. The function of the unit, from sampling to analysis, is fully automatic. An internal vacuum pump draws sample from the two sources. The operator can select either source exclusively or both sources alternately for analysis. The total hydrocarbon level is detected in a single hydrogen flame ionization detector. By using the same detector, the sources can be compared accurately, eliminating errors caused by individual FID characteristics. Peak heights for both sources are presented on the front panel output meter and recorder terminals. Each peak is electronically integrated to increase accuracy of the measurement. This integrated value is stored in memory and is updated as each peak is completed. The integrated value of the total hydrocarbon measurement for each source can be read on the front panel output meter and recorder terminals by selector switch. Both peak height and peak area data are available by rear panel connector.

Separate calibration, controls, range selectors, flowmeters and valves for each source allow two sources with varying characteristics to be measured accurately. Standard ranges are from 0-10 ppm full scale up to 0-500 ppm with optional X1 and X100 multipliers. Sample flow rates up to more than 1 LPM usually can be attained, depending upon the distance and impedance of the sample flow line.

APPLICATIONS:

1. Monitoring inlet and outlet on carbon bed absorbers and incinerators for efficiency calculations
2. Measuring one carbon bed absorber for breakthrough while measuring a second during steam cleaning
3. Analyzing two related sources for cause and effect
4. Analyzing two nearby but unrelated sources
5. Monitoring a single process at two different points for time changes
6. Meeting the requirements of Method 25A for certain applications of measuring volatile organics
7. Rapid measurement of a single ambient or stack source

SPECIFICATIONS:

MEASUREMENTS:

Source 1 total hydrocarbons, Source 2 total hydrocarbons

DETECTOR:

Hydrogen flame ionization

RANGES:

0-10, 0-20, 0-50, 0-100, 0-200, 0-500 ppm (standard); other ranges available

RANGE MULTIPLIERS:

X1, X100 (optional)

ANALYSIS TIME:

Either source exclusively, 1 minute; both sources alternately, 2 minutes

ACCURACY:

1% full scale all ranges when calibrated in accordance with operating manual

LINEARITY:

1% full scale all ranges

REPRODUCIBILITY:

1/2 of 1% full scale

RANDOM NOISE:

Less than 1/2 of 1% most sensitive range

ZERO DRIFT:

None in bargraph mode; zero is automatically adjusted before each peak

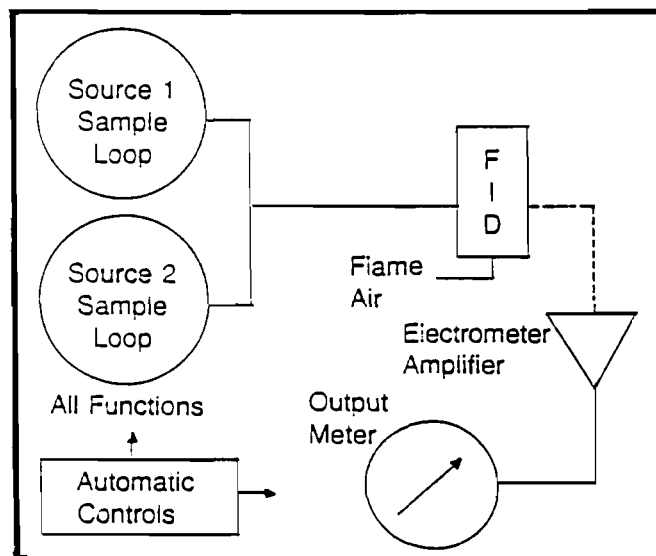
SPAN DRIFT:

Less than 1% in a 24 hour period on any range

CONTROLS:

All normal sampling, calibrating and operating controls are located on the front panel

MODEL 215 BLOCK DIAGRAM



AMBIENT OPERATING TEMPERATURE:

5°-40° C

OUTPUT:

0-10 mv front panel recorder terminals;
0-1 VDC rear panel connector (0-5VDC,
0-20ma and 4-20ma, optional)

OPERATING GASES REQUIRED:

Zero air, 400 cc/min; UHP Hydrogen, 40 cc/min

EXTERNAL GAS CONNECTIONS:

1/8" tube, Swagelok (stainless, optional)

HYDROGEN CUT-OFF:

Automatic upon flame-out or extended loss of power

CABINET DIMENSIONS:

20" wide X 10 1/2" high X 18 1/2" deep; 8 3/4" panel fits standard 19" rack. Analyzer is available with rack mounting slides without cabinet (optional)

WEIGHT INCLUDING CABINET:

60 pounds

POWER REQUIREMENTS:

105/125 VAC, 60 Hz, 200 W max., plus 0.8 amp pump motor; 210/250 VAC, 50/60 Hz (optional)

SAMPLING VACUUM:

Up to 22" HG depending upon flowrate

SAMPLING FLOW METERS:

0-1 LPM (other ranges optional)

WARRANTY:

Workmanship and parts are guaranteed for a period of one year from date of shipment

BYRON INSTRUMENTS

520 S. Harrington Street.

Raleigh, NC 27601,

919-832-7501

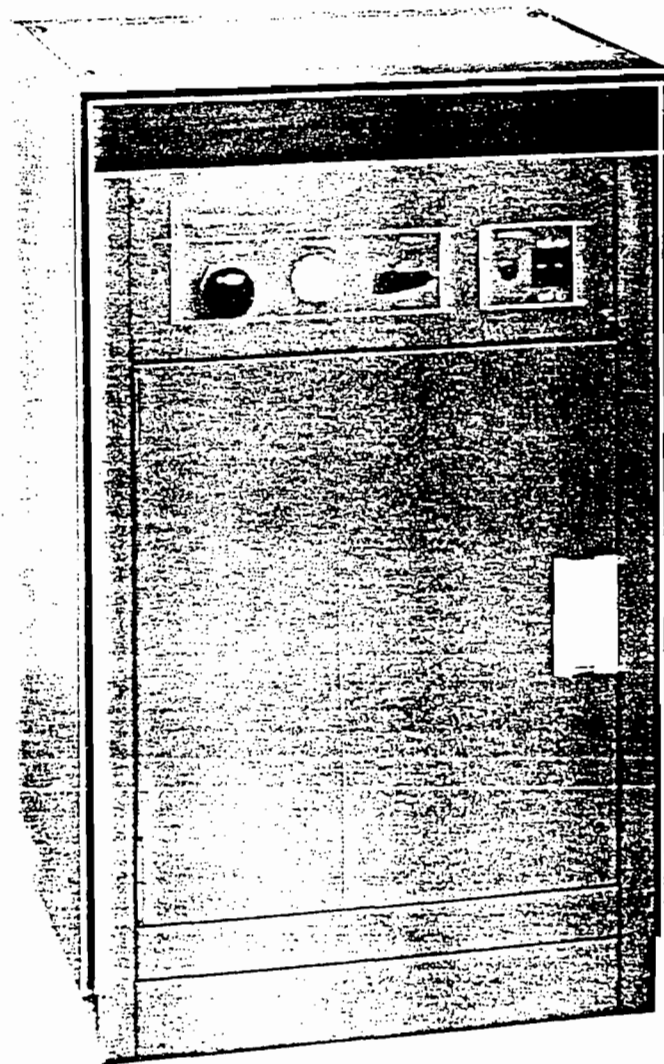
Byron Model 25 Ultra Pure Air Supply

The Byron Model 25 Ultra Pure Air Supply is a completely self-contained source of ultra pure air at standard flowrates of up to 3 liters per minute. An internal air compressor capable of producing up to 0.5 scfm at 80 psig compresses ambient air. The compressed air is demohsturized and then flows into a prescrubber. Organics, moisture, and other contaminants are partially removed. Prescrubbers alternate so that one is in use and the other is being cleaned every 30 minutes. The air then passes through a catalytic oxidizer where all hydrocarbons are oxidized into carbon dioxide, water, and other by-products. From the oxidizer, the air flows into one of two scrubbing columns where the remaining carbon dioxide, water, and other contaminants are removed. While one scrubber is in use supplying ultra pure output air, the other scrubber is itself being cleaned by heat and reversed flow. A solid state programmer controls operation of the columns to allow for a continuous output of pure air. Unlike typical air supplies with heatless dryers, the Model 25 will not-upset the baseline of sensitive analyzers, even during scrubber change-overs.

A pressure regulator and valve on the output permit any pressure from 0 to 50 psig. When used as an air supply for Byron analyzers, Model 25 can supply enough air for six analyzers. Air from the Model 25 Ultra Pure Air Supply is unsurpassed in its freedom from contaminants and may be used for any chromatograph requiring pure air. As long as there is a source of 120 VAC power, Model 25 may be used for laboratory, mobile van or remote applications.

After start-up, the Model 25 system is fully automatic and requires no operator assistance. Aside from periodically draining the compressor surge tank, the Model 25 requires little or no routine maintenance. Under most ambient atmospheres (free from heavily chlorinated solvents) the oxidizer catalyst will last several years and may be replaced when necessary.

Using Model 25 as a source of zero air eliminates problems of inconsistent quality, contaminants expense, and inconvenience of using cylinder air. In most areas of the country, the initial cost of the Model 25 may be amortized in less than a year when it is used to replace cylinder zero air for one Byron analyzer in continuous service.



MODEL 25 SPECIFICATIONS:

OUTPUT PRESSURE:

0-50 psig

FLOW RATE:

3 liters per minute, standard; up to 10 LPM, optional

HYDROCARBONS IN OUTPUT AIR:

Less than 0.1 PPM

CARBON MONOXIDE IN OUTPUT AIR:

Less than 0.1 PPM

CARBON DIOXIDE IN OUTPUT AIR:

Less than 0.1 PPM

OTHER CONTAMINANTS IN OUTPUT AIR:

Less than 0.1 PPM

DEW POINT:

Below -75° C

POWER REQUIREMENTS:

120 VAC 60 Hz 300 W plus

1/6 HP motor, standard;

240 VAC 60/60 Hz optional

DUAL SCRUBBING SYSTEM:

Alternate scrubbing columns provided for continuous pure air output in a self-cleaning configuration

CABINET DIMENSIONS:

24¼" wide x 36½" high x 20" deep

WEIGHT:

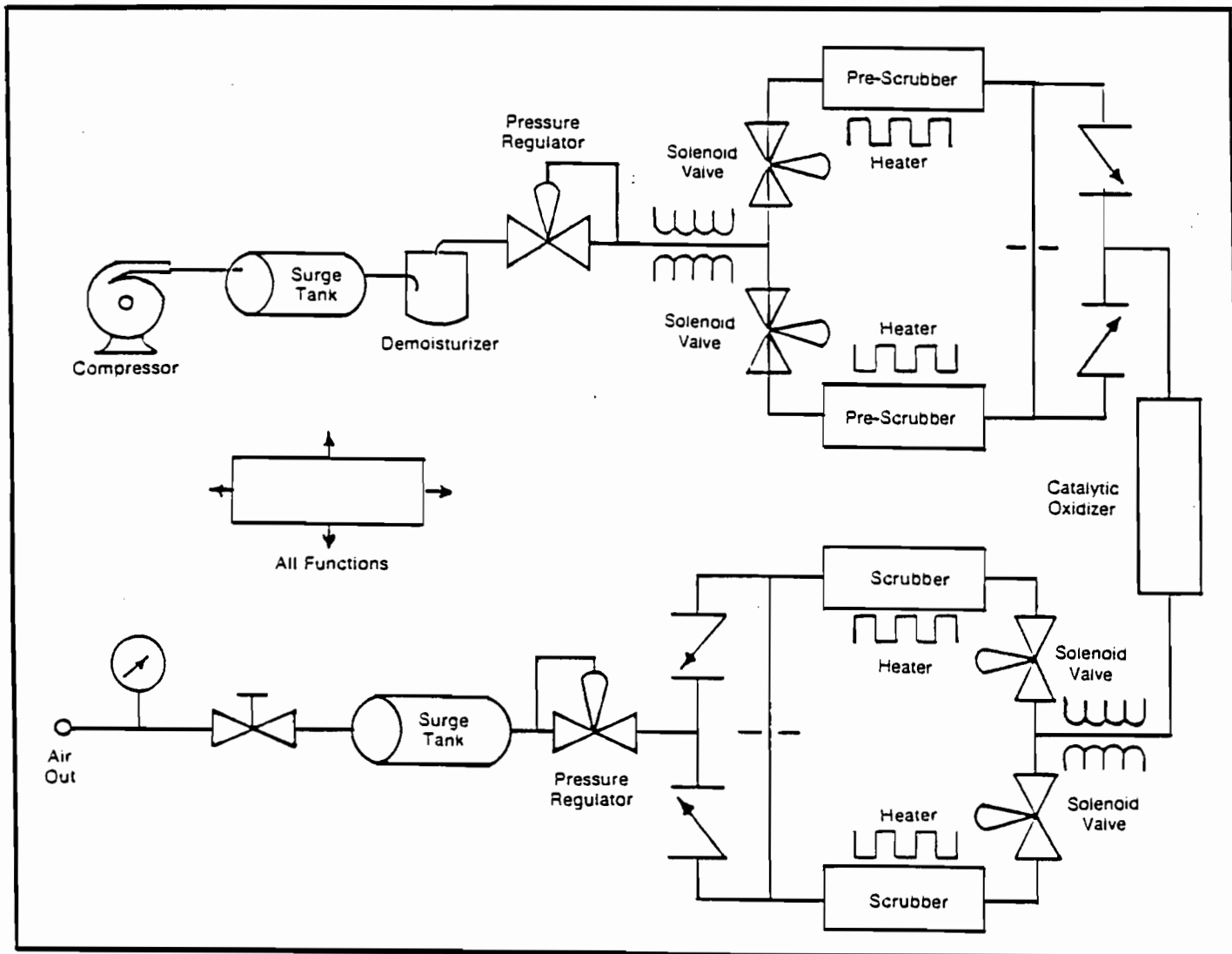
145 pounds

EXTERNAL GAS CONNECTION:

¼" tube, Swagelok

WARRANTY:

Workmanship and parts guaranteed for a period of one year from date of shipment



BYRON INSTRUMENTS

520 S. Harrington Street. Raleigh, NC 27601, 919-832-7501



P.O. Box 5548
Long Beach, CA 90805

Phone (213) 492-5340
FAX (213) 492-5349

20-Mar-91
GATOR OXYGEN

P.O. 6212
GAINESVILLE, FL.

CERTIFICATION OF CYLINDER # CC 97082

COMPONENT:	MEAN CONCENTRATION:
OXYGEN	5.21 +/- 0.18 %
NITROGEN	BALANCE

Cylinder pressure: @2000 psi
Expiration date: 19-Sep-92

This mixture was prepared and analyzed following EPA Revised Traceability Protocol No.1, Section 3.0.4, Procedure G1. The Oxygen concentration was determined by direct comparison with NBS SRM 2658, Sample No.72-41, S/N CAL-2681, 9.561 +/- 0.09 % Oxygen in Nitrogen, dated April 10, 1990. The analysis was done on a Varian 6500 TCD gas chromatograph, S/N 2619, using a 6' x 10' MESA column @140 deg.C, isothermal, @0.5&0.05 ranges, and 250ul sample loop. The last multipoint calibration was done on March 13, 1991.

Moses Elwin
Analyst



Scott Specialty Gases, Inc.

PLUMSTEADVILLE, PA 18949

PHONE: 215-766-8861

FAX: 215-766-0320

AIR CONSULTING & ENGR
SUITE # 4
2106 NW 67th PLACE
GAINSVILLE FL 32606

Date Shipped 9-14-90

Our Project No: 22078

Your P.O. No: 3724

Page 2 of 6

ATTN: LARRY WURTS

CERTIFICATE OF ANALYSIS - EPA PROTOCOL GASES*

(Concentrations are in mole % or ppm)

Cylinder Number AAL-9032 Certified Accuracy ±1 % NBS Traceable Analysis Dates: First 9-10-90 Last N.R.
CP=2000 psig

COMPONENTS	CERTIFIED CONC	EXPIRATION DATE	ANALYTICAL PRINCIPLE	PRIMARY STANDARD NBS/SRM's	REPLICATE CONCENTRATIONS	
					FIRST	SECOND
PROPANE	50.3 ppm	3-10-92	F.I.D.	2651	50.60 ppm	
					50.02 ppm	
					50.22 ppm	
AIR	BALANCE					

Cylinder Number _____ Certified Accuracy _____ % NBS Traceable Analysis Dates: First _____ Last _____

COMPONENTS	CERTIFIED CONC	EXPIRATION DATE	ANALYTICAL PRINCIPLE	PRIMARY STANDARD NBS/SRM's	REPLICATE CONCENTRATIONS	
					FIRST	SECOND

*We hereby certify the cylinder gas has been analyzed according to EPA Protocol No: 1 Procedure G1

Analyst [Signature]

Approved By [Signature]

Mark S. Sirinides

The only liability of this Company for gas which fails to comply with this analysis shall be replacement thereof by the Company without extra cost.

CERTIFIED REFERENCE MATERIALS ■ EPA PROTOCOL GASES ■ ACUBLENDTM ■ CALIBRATION & SPECIALTY GAS MIXTURES
PURE GASES ■ ACCESSORY PRODUCTS ■ CUSTOM ANALYTICAL SERVICES

TROY, MICHIGAN / SAN BERNARDINO, CALIFORNIA / HOUSTON, TEXAS
SOUTH PLAINFIELD, NEW JERSEY / FREMONT, CALIFORNIA / WAKEFIELD, MASSACHUSETTS / LONGMONT, COLORADO



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SUITE #4
2106 NW 67th PLACE
GAINSVILLE FL 32606

ATTN: LARRY WURTS

CERTIFICATE OF ANALYSIS – EPA PROTOCOL GASES*

(Concentrations are in mole % or ppm)

Cylinder Number AAL-17972 Certified Accuracy ±1 % NBS Traceable Analysis Dates: First 9-6-90 Last N.R.
CP = 2000 psig

COMPONENTS	CERTIFIED CONC	EXPIRATION DATE	ANALYTICAL PRINCIPLE	PRIMARY STANDARD NBS/SRM's	REPLICATE CONCENTRATIONS	
					FIRST	SECOND
PROPANE	90.9 ppm	3-6-92	F.I.D.	2651	90.95 ppm	
					90.86 ppm	
					90.74 ppm	
AIR	BALANCE					

Cylinder Number _____ Certified Accuracy _____ % NBS Traceable Analysis Dates: First _____ Last _____

COMPONENTS	CERTIFIED CONC	EXPIRATION DATE	ANALYTICAL PRINCIPLE	PRIMARY STANDARD NBS/SRM's	REPLICATE CONCENTRATIONS	
					FIRST	SECOND

*We hereby certify the cylinder gas has been analyzed according to EPA Protocol No:

1 Procedure G1

Analyst [Signature]

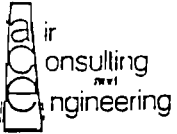
Approved By [Signature]

Mark S. Sirinides

The only liability of this Company for gas which fails to comply with this analysis shall be replacement thereof by the Company without extra cost.

CERTIFIED REFERENCE MATERIALS ■ EPA PROTOCOL GASES ■ ACUBLEND^(M) ■ CALIBRATION & SPECIALTY GAS MIXTURES
PURE GASES ■ ACCESSORY PRODUCTS ■ CUSTOM ANALYTICAL SERVICES

TROY, MICHIGAN / SAN BERNARDINO, CALIFORNIA / HOUSTON, TEXAS
SOUTH PLAINFIELD, NEW JERSEY / FREMONT, CALIFORNIA / WAKEFIELD, MASSACHUSETTS / LONGMONT, COLORADO



CONTINUOUS MONITOR ACCURACY CERTIFICATION

PLANT Mobile Reclaim
LOCATION Gainesville, FL
SOURCE ID SRU 202 outlet
DATE 7/22/91

NO.	CALIBRATION GAS	MONITOR VALUE ppm	DIFFERENCE ppm	%SPAN
VOC	90.5	88.5	2	2
	50.3	50.8	0.5	0.5
	25.3	25.6	0.3	0.3

O ₂	CALIBRATION GAS	MONITOR VALUE %	DIFFERENCE %	% SPAN
	20.9	21.0	0.1	0.4
	5.02	5.15	0.13	0.5

CO	CALIBRATION GAS	MONITOR VALUE	DIFFERENCE	% SPAN



CONTINUOUS MONITOR DRIFT CERTIFICATION

PLANT Mobile Reclaim
 LOCATION Gainesville, Florida
 SOURCE ID SRU 202 Outlet
 DATE 7/22/91 - 7/23/91
 GAS ID C₃H₈, O₂

RUN NUMBER	TIME	SPAN DRIFT			% SPAN	ZERO DRIFT			% SPAN
		INITIAL	FINAL	DRIFT		INITIAL	FINAL	DRIFT	
1-C ₃ H ₈		25.5	25.3	0.2	0.2	0	0	0	0
1-O ₂		20.9	20.3	0.6	2.4	1.3	1.3	0	0
2-C ₃ H ₈		90.5	89.5	1.0	1.0	0	0	0	0
2-O ₂		20.3	21.5	0.8	3.2	1.3			
3-C ₃ H ₈		25.7	26.0	0.3	0.3	0	0	0	0
3-O ₂		20.6	20.6	0	0	0	0	0	0

7/23

APPENDIX H
PRODUCTION DATA

AM

TEST TUBAN #3

START TIME	A/R Temp.	Prim Temp.	DISCHARGE Temp	EXH.DAMP	I AP	FIELD
9:20	1445°F	264°F	367°F	-1.5	/ 2	
9:25	1427	259	335	-1.5	/ 2	
→ 9:30	1425	274	355	-1.5	/ 2	1
9:35	1444	280	440	-1.5	/ 2.2	1
9:40	1445	279	349	-1.5	/ 2.2	1
9:45	1413	289	339	-1.5	/ 2.2	11
9:50	1420	290	400	-1.4	/ 2.2	1
9:55	1443	299	504	-1.4	/ 2.4	11
10:00	1451	320	320	-1.4	/ 2.4	1
10:05	1443	308	396	-1.3	/ 2.4	1
10:10	1447	303	462	-1.3	/ 2.4	11
10:15	1459	316	364	-1	/ 3.1	1
10:20	1411	312	382	-1.5	/ 4	11
10:25	1428	355	380	-1.5	/ 4.2	1
→ 10:30	1425	358	378	-1	/ 4	11
10:35	1404	298	362	-1.5	/ 4	18
10:40						

Certified
 Jeremy G. Novak
 7-23-91
 Mobile Reclaim

24.66
 Ton/hr

1.37 Ton/hr

APPENDIX I
PROJECT PARTICIPANTS

PROJECT PARTICIPANTS

AIR CONSULTING AND ENGINEERING, INC.

Stephen L. Neck, P.E.
Project Manager
Field Testing

Gerard Gauthreaux
Field Testing

Sidney J. Carter
Visible Emissions Observer

Charles P. Sneeringer
Field Testing
Laboratory Analysis

Dagmar Neck
Report Preparation

Candace V. Taylor
Computer Analysis
Document Production

MOBILE RECLAIM, INC.

Craig Hedgecock
Test Coordinator