

Check Sheet

Company Name: Envirotech Southeast
Permit Number: AD16-186377, Intervenor
PSD Number: _____
Permit Engineer: _____

Application:

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

Cross References:

- ☐
☐
☐

Intent:

- ☐ Intent to Issue
☐ Notice of Intent to Issue
☐ Technical Evaluation
☒ BACT or LAER Determination
☐ Unsigned Permit

Correspondence with:

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

Withdrawn

Final

Determination:

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

Post Permit Correspondence:

- ☐ Extensions/Amendments/Modifications
☐ Other

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pls handle



EnviroTech

6363 Woodway, Suite 300
Houston, Texas 77057
Telephone: (713) 789-0400 • Fax (713) 789-0468

RECEIVED

MAY 8 1995

April 27, 1995

Bureau of
Air Regulation

Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Attention: Mr. C. H. Fancy, P.E.

Dear Mr. Fancy:

In response to your letter of April 17, 1995, please withdraw the following applications:

AO 16-186377
AC 16-180823
AC 16-180824

Thank you,

Edward C. Stanton III
Chairman

ECS:nb

cc: W. Hanks - ✓



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

October 25, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John R. Blocker
Chairman of the Board
EnviroTech Systems, Inc.
6363 Woodway, Suite 300
Houston, Texas 77057

Dear Mr. Blocker:

The Department is in receipt of your October 14, 1991, letter asking for additional time to provide the information requested in our September 26, 1990, letter. The information is needed to complete the application for permit to operate the referenced unit. The additional time is needed because the unit has not been operated in Florida since the July, 1990, project in Marianna. The Department will grant partial approval of your request and allow 6 months of additional time (until May 1, 1992) for EnviroTech to obtain and provide the Department with the data requested in our September 26, 1990, letter. Also, please note that this unit must obtain a general permit pursuant to F.A.C. Rule 17-775 prior to resuming operation in Florida.

Sincerely,

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

CHF/WH/plm

c: Tom Conrardy, BWC



EnviroTech Systems, Inc.

6363 Woodway, Suite 300
Houston, Texas 77057
Telephone: (713) 789-0400 • Fax (713) 789-0468

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OCT 16 1991

BAR ASBESTOS

October 14, 1991

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

RE: File No. AO16-186377, 25 TPH SRU

Dear Mr. Hanks:

Our soil incineration unit permitted under our EnviroTech Southeast, Inc. subsidiary has been in Louisiana and Texas for the last year and we have not had an opportunity to operate in Florida to demonstrate compliance with our permit conditions in order to get our Permit to Operate in Florida.

Please extend our construction permit to December 31, 1992 to allow us ample time to locate an appropriate test site in Florida with soil which is contaminated with virgin or "on-spec" used oil. At that time we will be able to demonstrate compliance with the permit conditions and will apply for our operating permit.

Thank you.

Sincerely,

John R. Blocker
Chairman of the Board

JRB:cdp

P 617 884 182

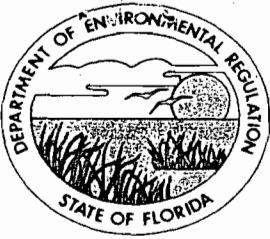


Certified Mail Receipt

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

PS Form 3800, June 1990

Sent to	
John Blocker	
Street & No.	
EnviroTech Sys. Inc.	
P.O., State & ZIP Code	
Houston, TX	
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	10/28/91



Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

September 26, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Glenn Newton, Operations Manager
Environmental Technology Southeast, Inc.
900 University Blvd. N., Suite 540
Jacksonville, Florida 32211

Dear Mr. Newton:

Re: File No. AO 16-186377, 25 TPH SRU

The Department has made a preliminary review of your application for permit to operate a 25 TPH soil remediation unit. Before this application is processed, we would like to obtain the following information or clarification.

1. Although the test data in the application shows the unit complies with the Department's regulation at 10 TPH production, we do not have assurance that the unit will comply with the permit restrictions at the permitted capacity of 25 TPH production. As soon as it is feasible, we request you do a complete compliance test for this unit while it is operating near 25 TPH production and submit the data and test report to this office. Data needed to show compliance is referenced in Specific Conditions Nos. 9, 15, 16, 19 and 22 of Permit No. AC 16-167033 for this unit.
2. Permit No. AC 16-167033 limits emissions from the unit to:

<u>Pollutant</u>	<u>Max Emission</u>
Particulate Matter	0.08 gr/dscf corrected 50% EA and 3.3 lbs/hr (7.2 TPY)
Benzene	0.48 lbs/hr
VOC (total)	37.5 lbs/hr
Visible Emissions	5% Opacity

In the application for permit to operate, you revised Section III C to show higher emissions than the permitted limits shown above.

Mr. Glenn Newton
September 26, 1990
Page 2

An increase in emissions or the emissions of another pollutant is a modification which requires a new permit to construct. We request you clarify EnviroTech Southeast's intentions and, if it is to increase allowable emissions, submit a new application for permit to construct (modify) this unit.

3. Why was the heat input to this unit increased? The higher heat input is acceptable to the Department provided the allowable emissions are not increased.
4. When and where will EnviroTech Southeast, Inc. do the compliance tests requested in this letter?

The Department will hold the processing of your application for permit to operate in abeyance until you respond to this letter. In the meantime, you may continue to operate the unit provided it is in compliance with all restrictions, except heat input, of construction permit No. AC 16-167033.

If you are unable to schedule the tests prior to the expiration of the construction permit for this unit (December 31, 1990) please call Willard Hanks at (904)488-1344.

Sincerely,



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

CHF/WH/plm

c: Ed Middleswart, NW Dist.

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

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

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

3. Article Addressed to: Mr. Glenn Newton, Ops. Mgr. Environmental Technology SE 900 University Blvd. N. Suite 540 Jacksonville, FL 32211	4. Article Number P 256 396 203
	Type of Service: <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
	Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Address X	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature Agent X	
7. Date of Delivery 10/1/90	

PS Form 3811, Mar. 1988

★ U.S.G.P.O. 1968-212-865

DOMESTIC RETURN RECEIPT

P 256 396 203
RECEIPT FOR CERTIFIED MAIL

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

★ U.S.G.P.O. 1989-234-555

Sent to	Mr. Glenn Newton, Env. Tech.
Street and No.	900 University Blvd. SE Ste 540
P.O., State and ZIP Code	Jacksonville, FL 32211
Postage	S
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	S
Postmark or Date	
Mailed:	9-28-90
Permit:	AC 16-186377

PS Form 3800, June 1985



CONTROLLED ENVIRONMENTS FOR INDUSTRY, INC.

Box 10429 • 4500 Phillips Highway • Jacksonville, FL 32207 • (904) 731-7760



Facsimile Cover Sheet

402-1344

Controlled Environments for Industry, Inc. • 4500 Phillips Highway • Jacksonville, FL 32207 • (904) 731-7760 • FAX (904) 731-7279

To: FL
Attn: Willard

Date: 11/12/99
FAX # 1-904-731-7279

This transmission consists of 10 sheets including this cover sheet.

For Your Approval: Review Information Comments File

Comments

Transmitted by

SECTION "C" (Revised 11-19-90)

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Petroleum contam-	Particulates	100%	50,000	A
inated soil	VOC	Varies		

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

1. Total Process Input Rate (lbs/hr): 50,000

2. Product Weight (lbs/hr): <50,000 depending on moisture content

Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	CONTROLLED Emission ESTIMATE		Allowed ² Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	UNCONTROLLED Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual I/yr			lbs/yr	I/yr	
Particulates	3.257	7.12	.08 gr/acf 5% opacity	3.3 lbs/hr	142.7	312	B
CO	2.034	4.45			2.034	4.45	B
NO _x	8.159	17.83			8.159	17.83	B
SO ₂	10.016	21.89			10.016	21.89	B
VOC	37.5	81.9			1000.227	2187	B

¹ See Section V, Item 2. Rule 17-2.600 (1) (C) 1

² Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2, Table II, E. (1) - 0.1 pounds per million BTU heat input)

³ Calculated from operating rate and applicable standard.

⁴ Emission, if source operated without control (See Section V, Item 3).



EnviroTech Southeast, Inc.

900 University Blvd. North, Suite 504
Jacksonville Florida 32211
Telephone: (904) 744-4404 • Fax (904) 746-1326

November 20, 1990

Mr. Willard Hanks
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Hanks:

In response to your letter of September 26, 1990, we offer the following:

1. We agree to do complete compliance testing at the permitted capacity of 25 TPH as soon as it is feasible and have requested an extension of time on our Permit to Construct to allow us time to locate a contaminated soil site that matches our permit conditions.
2. The changes in our calculated maximum emission levels came about due to the increase in heat input. Since the allowable emissions is based on 50% excess combustion air we should be allowed emissions at these higher levels if we are to be allowed the higher heat input. However it is a moot point since the original (before the heat input was increased) emission levels are easily achieved. Therefore we have revised our calculations to show controlled emissions of particulates at the levels shown in the Permit No. AC16-167033. The revised application pages and calculation pages are attached.
3. The heat input was increased to allow destruction of Toxaphene for an EPA clean up we were contracted to do. We do not anticipate burning at more than 70% of full burner capacity when cleaning soils contaminated with only virgin oil and "on-spec" used oil.
4. We are currently seeking an appropriate spill site to conduct compliance tests and will advise you of the time and place when it is found.

Thank you for your continued cooperation in helping us to clean-up our environment.

Sincerely,

Glenn Newton,
Operations Manager

CALCULATIONS REVISED 11-19-90

All calculations are based upon the expected worst case soil conditions and maximum expected operating hours per year.

I. Soil Conditions (for the purpose of this application we have set the soil conditions to be worse than those we encountered in previous work we've done)

- * Ambient temperature = 60
- * Moisture content = 12.0% by wt.
- * Hydrocarbon content = 2.0% by wt.
- * Bulk density = 100 Lb/cu ft

II. Plant Operating Hours

- * 12 Hr/Day
- * 52 Wk/Yr
- * 7 Days/Wk
- * 4,368 Hr/Yr

III. Fuel Consumption

- * Propane gas having 91,500 BTU's/gal, 2523 BTU/ft³
- * PTU Burner (Rotary Drier)
 - Maximum capacity = 51 MM BTU/HR
 - PTU rated capacity = 25 TPH heated to 700°F soil temperature
 - Energy req'd at rated cap = 20.0 MM BTU/HR
 - Fuel consumption = 20,000 cfh natural gas or 218.58 gal/hr propane
- * STU Burner (Afterburner)
 - Maximum rated capacity = 20.0 MM BTU/HR
 - Fuel consumption = 20,000 cfh natural gas or 218.58 gal/hr propane
- * Total Fuel Consumption
(PTU @ 25 TPH) + (STU @ MAX) = 40,000 cfh or 174.72 MM cfy natural gas
= 437.16 gal/hr or 1,909,514 gal/yr propane

IV. Emissions Factors

- A. Primary Treatment Unit (Rotary Drier)
 - * Contaminated soil = raw material
 - * Emissions factor = 40 LB oil/ton of soil based on 2.0% oil by wt.
 - * Emissions factor = 5.7 lbs particulate will emerge from the drier per ton of soil processed
- ref. AP-42 8.18-1

B. Soil Contaminate Is No. 2 Fuel Oil (Density 7.3 lbs per gallon which when burned has the following emissions)

- * Particulates uncontrolled = 2.0 lb/1,000 gal
- * Sulfur content of fuel = 0.5% by wt.
- * Sulfur dioxide = 2.0 lb per 1%/100 lbs oil
- * Nitrogen oxide = 20 lb/1,000 gal
- * Carbon monoxide = 5 lb/1,000 gal
- * Hydrocarbons = 0.2 lb/1,000 gal

C. Total Uncontrolled Emissions from Rotary Drier (PTU) Due to Soil and Oil Contaminate

Assumption: The raw material with 12% moisture and 2.0% HC's is processed at 25 tph. All HC's in the soil are treated like additional fuel in the STU.

1. Particulate emissions from Rotary Drier (PTU) from soil:
(AP-42 8.18-1 says approximately 5.7 lb/ton)
 $(5.7 \text{ lb/ton}) \times (25 \text{ TPH}) = 142.5 \text{ lb/hr}$
2. Hydrocarbon (VOC) emissions from oil in soil:
 - * $\text{VOC} = (2.0\%) \times (25 \text{ TPH}) \times (2,000 \text{ lb/ton}) = 1000 \text{ lb/hr}$
 - * VOC fuel conversion
 $= (1000 \text{ lb/hr}) / (7.3 \text{ lb/gal}) = 136.98 \text{ gal/hr}$
 - * Particulates due to fuel oil
 $= (2 \text{ lb/1000 gal}) \times (136.98 \text{ gal/hr}) = .2739 \text{ lb/hr}$
 - * Sulfur Dioxide
 $= 2.0 \times .5 \times 1000/100 = 10 \text{ lb/hr}$
 - * Nitrogen Oxide
 $= (136.98 \text{ gal/hr}) \times 20 \text{ lb/1000 gal} = 2.739 \text{ lb/hr}$
 - * Carbon Monoxide
 $= (136.98 \text{ gal/hr}) \times (5.0 \text{ lb/1000 gal}) = 0.684 \text{ lb/hr}$
3. Total Solid Uncontrolled Emissions (Particulates) from Rotary Drier (PTU)
(Soil Emissions) + (HC Emissions) = Total
 $142.5 \text{ lb/hr} + 0.2739 \text{ lb/hr} = 142.7739 \text{ lb/hr}$
4. Uncontrolled Emissions from combustion of Propane Gas (AP-42 Table 1.5-1)
Natural gas is considered the same except for SO_2 which is slightly lower (.0114 lbs/hr)
PTU = 218.58 gal/hr
STU = 218.58 gal/hr
TOTAL = 437.16 gal/hr

Particulate .09 to .44 lbs per 1000 gal	= .0393 lbs/hr to .1923 lbs/hr
SO_2 .0378 lbs per 1000 gal	= .0165 lbs/hr
NO_x 12.4 lbs per 1000 gal	= 5.4207 lbs/hr
CO 3.1 lbs per 1000 gal	= 1.3551 lbs/hr
VOC .52 lbs per 1000 gal	= .2273 lbs/hr

5. Total Uncontrolled Emissions (Non-Particulate) due to combustion of propane and soil contaminant oil.

$$\text{SO}_2 \quad 10.0 \text{ lbs/hr} + .0165 \text{ lbs/hr} = 10.0165 \text{ lbs/hr}$$

$$\text{NO}_x \quad 2.739 \text{ lbs/hr} + 5.4207 \text{ lbs/hr} = 8.1597 \text{ lbs/hr}$$

$$\text{CO} \quad 0.684 \text{ lbs/hr} + 1.3551 \text{ lbs/hr} = 2.0391 \text{ lbs/hr}$$

$$\text{VOC} \quad 1000 \text{ lbs/hr} + .2273 \text{ lbs/hr} = 1000.2273 \text{ lbs/hr}$$

D. Total Controlled Particulate Emissions

1. To determine the required efficiency of particulate removal we start with the permissible emission and calculate the efficiency necessary to achieve it.

CALCULATIONS

Air required for combustion is determined as follows:

Total Fuel Consumption (from III above) = 40,000 cfh natural gas.

9.52 ft³ air required to burn 1 ft³ natural gas

Air required with 50% excess air

$$150\% \times 9.52 \frac{\text{ft}^3 \text{ air}}{\text{ft}^3 \text{ nat gas}} \times 40,000 \frac{\text{ft}^3 \text{ natural gas}}{\text{hour}} = 571,200 \frac{\text{ft}^3 \text{ air}}{\text{hour}}$$

Maximum allowable particulate emissions for incinerators is given by the state as .08 grains per dscf corrected to 50% excess air.

$$571,200 \frac{\text{ft}^3 \text{ air}}{\text{hour}} \times .08 \frac{\text{grains}}{\text{ft}^3 \text{ air}} \times \frac{1 \text{ pound}}{7000 \text{ grs}} = 6.528 \text{ lbs/hr}$$

Venturi Scrubber Efficiency must be as shown below to achieve regulatory compliance 6.528 lbs/hr maximum particulate emission. (Inlet conditions at the venturi scrubber will be controlled by the twin cyclones which have approximately 70% efficiency).

Inlet conditions at the twin cyclones will be 142.773 lbs/hr (from C-3 above)

142.773 lbs/hr x 30% passes through = 42.83 lbs/hr escaping the twin cyclones

$$\% \text{ Efficiency} = \frac{(\text{Total Uncontrolled}) - (\text{Total Controlled})}{\text{Total Uncontrolled}}$$

$$\frac{(42.83 \text{ lb/hr}) - (6.528 \text{ lb/hr})}{42.83 \text{ lb/hr}}$$

$$\% \text{ efficiency} = 84.75\%$$

This is the efficiency required to meet .08 gr/dscf. Actual scrubber efficiency is estimated at 99%, so we should have no problem meeting this efficiency requirement.

*****11-19-90 REVISIONS FOLLOWS*****

What efficiency will we have to meet to keep emissions below the level shown on our original Application for a Permit to Construct. (This was based on our original heat input)

Instead of 6.528 lb/hr we will use 3.257 lbs/hr as the permissible particulate emission because that is what we used in our original Permit to Construct.

$$\% \text{ Efficiency} = \frac{(\text{Total Uncontrolled}) - (\text{Total Controlled})}{\text{Total Uncontrolled}}$$

$$\frac{(42.83 \text{ lb/hr}) - (3.257 \text{ lb/hr})}{42.83 \text{ lb/hr}}$$

$$\% \text{ Efficiency} = 92.4\%$$

Actual scrubber efficiency is estimated at 99% so we should have no problem meeting this efficiency.

*****END OF 11-19-90 REVISION*****

E. Exhaust Volume from Venturi scrubber

Assumption: Water is sprayed into the Venturi at a rate of 160 GPM, therefore the exhaust gasses will be lowered to approximately 180° F.

*Venturi is designed for 27,725 acfm @ 1600° F (7,125 scfm)

$$\text{Correction factor} = \frac{(180 + 460)}{(1600 + 460)} = 0.310$$

$$(0.310) \times (27,725 \text{ acfm @ } 1600^\circ \text{ F}) = 8,595 \text{ acfm @ } 180^\circ \text{ F}$$

- * Stack gas velocity
- Size of exhaust stack = 3.0 ft diameter
- Cross sectional area = 7.06 sq ft
- Exhaust gas velocity = $\frac{8595 \text{ acfm}}{7.06 \text{ sq ft}} \times \frac{1 \text{ min}}{60 \text{ sec}} = 20.29 \text{ fps}$
- * Stack height above grade = 50.0 ft

F. Total Controlled Emissions of VOC's

* Secondary Treatment Unit (afterburner) operates at 1,400 to 1600°F and field tests of similar units indicate it has a 99.00% destruction efficiency for all VOC's entering unit. However we will only claim a 95.43% efficiency since that will be good enough to keep controlled VOC effluent below 100 ton/year as shown.

* Uncontrolled VOC's = 1000.2273 lb/hr (from C-5 above)
 * Permissible VOC effluent = 100 ton/year x $\frac{2000 \text{ lbs}}{\text{ton}} + \frac{4368 \text{ hrs}}{\text{year}} = 45.78 \text{ lbs/hr}$

$$\text{Efficiency} = \frac{(\text{Total Uncontrolled}) - (\text{Total Controlled})}{\text{Total Uncontrolled}}$$

$$\frac{1000.2273 \text{ lbs/hr} - 45.78 \text{ lbs/hr}}{1000.2273 \text{ lbs/hr}} = \% \text{ eff} = 95.43 \%$$

*****11-19-90 REVISION FOLLOWS*****

REVISED F. Total Controlled Emissions of VOC's based on keeping emissions below the level shown in our original Application for a Permit to Construct. (This was based on our original heat input).

* Secondary Treatment Unit (afterburner) operates at 1,400 to 1,600 °F and field tests of similar units indicate it has a 99.00% destruction efficiency for all VOC's entering unit. However we will only claim a 96.25% efficiency since that will be good enough to keep controlled VOC effluent below 100 ton/year as shown below.

* Uncontrolled VOC's = 1000.2273 lb/hr (from C-5 above)
 * Permissible VOC effluent = 100 ton/year x $\frac{2000 \text{ lbs}}{\text{ton}} + \frac{4368 \text{ hrs}}{\text{year}} = 45.78 \frac{\text{lbs}}{\text{Hr}}$

Instead of 45.78 lbs/hr we will use 37.5 lb/hr as the permissible VOC emission because that is what we used in our original Permit to Constant

$$\text{Efficiency} = \frac{(\text{Total Uncontrolled}) - (\text{Total Controlled})}{\text{Total Uncontrolled}}$$

$$\frac{1000.2273 \text{ lbs/hr} - 37.5 \text{ lbs/hr}}{1000.2273 \text{ lbs/hr}} = \% \text{ eff} = 96.25$$

*****END OF 11-19-90 REVISION*****

- * Exhaust gases in the STU are calculated to be at or near 27,725 acfm @ 1600°F
- * STU I.D. = 4.5 ft.
- * Cross sectional area = 15.90 sq. ft.
- * STU air velocity = 30.00 fps
- * Required retention time of gases = 0.5 sec
- * Required length of STU = (0.5 sec) x (30.00 fps) = 15.00 ft
- * Actual length of STU = 25 ft
- * Actual retention time of gases = .833 sec

G. Controlled Emissions other than Particulates and VOC's

- * CO < 2.0391 lbs/hr or 8.91 tpy
- * NOx < 8.1597 lbs/hr or 35.64 tpy
- * SO2 < 10.0165 lbs/hr or 43.75 tpy



EnviroTech Systems, Inc.

6363 Woodway, Suite 300
Houston, Texas 77057
Telephone: (713) 789-0400 • Fax (713) 789-0468

RECEIVED

OCT 16 1991

BAR ASBESTOS

October 14, 1991

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

RE: File No. AO16-186377, 25 TPH SRU

Dear Mr. Hanks:

Our soil incineration unit permitted under our EnviroTech Southeast, Inc. subsidiary has been in Louisiana and Texas for the last year and we have not had an opportunity to operate in Florida to demonstrate compliance with our permit conditions in order to get our Permit to Operate in Florida.

Please extend our construction permit to December 31, 1992 to allow us ample time to locate an appropriate test site in Florida with soil which is contaminated with virgin or "on-spec" used oil. At that time we will be able to demonstrate compliance with the permit conditions and will apply for our operating permit.

Thank you.

Sincerely,

John R. Blocker
Chairman of the Board

JRB:cdp

BEST AVAILABLE COPY

SENDER:

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

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

- ☐ Addressee's Address
 - ☐ Restricted Delivery
- Consult postmaster for fee.

3. Article Addressed to:

Mr. Glenn Newton, Op. Mgr.
Env. Tech. Southeast, Inc.
900 University Blvd. N
Suite 540
Jacksonville, FL 32211

4a. Article Number

P 617 884 169

4b. Service Type

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

7. Date of Delivery

10-15-91

5. Signature (Addressee)

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

6. Signature (Agent)

Dina Edwards

PS Form 3811, October 1990

☆ U.S. GPO: 1990-273-861

DOMESTIC RETURN RECEIPT

P 617 884 169

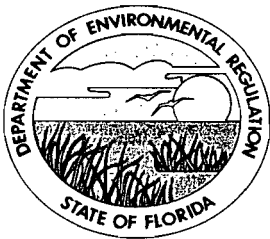


Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
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Sent to	
Glenn Newton	
Street & No.	
Env. Tech. SE	
P.O., State & ZIP Code	
Jax, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date	AD 16-186377 10-10-91

PS Form 3800, June 1990



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

October 10, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Glenn Newton, Operation Manager
Environmental Technology Southeast, Inc.
900 University Blvd. North, Suite 540
Jacksonville, Florida 32211

Dear Mr. Newton:

Re: File No. AO 16-186377, 25 TPH Soil Remediation Unit

On September 26, 1990, the Department requested additional information for the application for permit to operate the referenced source from you. As of this date, we have not received a response to this letter.

Please let us know the current status of this unit and if you plan to pursue obtaining a permit to operate. If you do not respond to this letter within 30 days of receipt of it, the Department will assume you have changed your plans to obtain a permit for this unit and will recommend denial of the permit.

If you have any questions on this matter, please write to me or call Willard Hanks, review engineer, at 904-488-1344.

Sincerely,

C. H. Fancy, P.E.
Chief

Bureau of Air Regulation

CHF/WH/t



EnviroTech Southeast, Inc.

900 University Blvd. North, Suite 504
Jacksonville, Florida 32211
Telephone: (904) 744-4404 • Fax (904) 745-1326

RECEIVED
DER - MAIL ROOM
1990 SEP -7 PM 4:32

September 4, 1990

C.H. Fancy, P.E.
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

*Send to P.S. for
dist & LP
9-19-90
Give all copies to
NW Dist work*

Dear Sir:

Enclosed is our Certificate of Completion of Construction which shall also serve as our application for a Permit to Operate. Our fee of \$1,500.00 is enclosed.

Also enclosed are revised pages for our application for a Permit to Construct. These revisions reflect "as built" information which differs from the way this plant was originally conceived and built.

Our only test data to date resulted from a Trial Burn for EPA to demonstrate effectiveness at destroying 1000 ppm soil concentrations of the hazardous material Toxaphene. This test data has been sent to you and shows the equipment to be able to achieve 99.99999% destruction efficiencies at reduced soil process rates of 10 TPH. In addition these tests show particulate emissions reduced to less than .02 grains per dry standard cubic foot corrected to 50% excess air.

Therefore we request that our Permit to Operate be based on this data and we accept a temporary restriction to 10 TPH until such time as we can demonstrate compliance at our requested process rate of 25 TPH.

This should be done automatically upon submission of a revised application for a Permit to Operate since our original application and public notice was based on 25 TPH.

Thank you for your cooperation.

Sincerely,

Glenn Newton,
Operations Manager

001031

Best Available Copy

FEDERAL EXPRESS		QUESTIONS? CALL 800-238-5355 TOLL FREE		AIRBILL PACKAGE TRACKING NUMBER		8112345076	
8112345076				RECIPIENT'S COPY			
From (Your Name) Please Print		Your Phone Number (Very Important)		To (Recipient's Name) Please Print		Recipient's Phone Number (Very Important)	
Company		Department/Floor No		Company		Department/Floor No	
Street Address		City		Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)		City	
State		ZIP Required		State		ZIP Required	
YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.)		IF HOLD FOR PICK-UP, Print FEDEX Address Here		City		State	
PAYMENT: 1 <input type="checkbox"/> Bill Sender 2 <input type="checkbox"/> Bill Recipient's FedEx Acct No 3 <input type="checkbox"/> Bill 3rd Party FedEx Acct No 4 <input type="checkbox"/> Bill Credit Card		5 <input type="checkbox"/> Cash		City		State	
SERVICES (Check only one box)		DELIVERY AND SPECIAL HANDLING		PACKAGES		WEIGHT In Pounds	
Priority Overnight Service (Delivery by next business morning)		1 <input type="checkbox"/> HOLD FOR PICK-UP (If in Box 1)		2 <input type="checkbox"/> DELIVER WEEKDAY		3 <input type="checkbox"/> DELIVER SATURDAY (Extra charge)	
Standard Overnight Service (Delivery by next business afternoon)		4 <input type="checkbox"/> DANGEROUS GOODS (Extra charge)		5 <input type="checkbox"/> CONSTANT SURVEILLANCE SVC. (CSS) (Extra charge)		6 <input type="checkbox"/> DRY ICE	
11 <input type="checkbox"/> YOUR PACKAGING		7 <input type="checkbox"/> OTHER SPECIAL SERVICE		8 <input type="checkbox"/> SATURDAY PICK-UP (Extra charge)		9 <input type="checkbox"/> HOLIDAY DELIVERY (Extra charge)	
12 <input type="checkbox"/> FEDEX LETTER		10 <input type="checkbox"/> DESCRIPTION		11 <input type="checkbox"/> DIM SHIPMENT (Heavyweight Services Only)		12 <input type="checkbox"/> RELEASE SIGNATURE	
13 <input type="checkbox"/> FEDEX PAK		11 <input type="checkbox"/> DIM SHIPMENT (Heavyweight Services Only)		12 <input type="checkbox"/> RELEASE SIGNATURE		13 <input type="checkbox"/> RELEASE SIGNATURE	
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15 <input type="checkbox"/> FEDEX TUBE		13 <input type="checkbox"/> DIM SHIPMENT (Heavyweight Services Only)		14 <input type="checkbox"/> RELEASE SIGNATURE		15 <input type="checkbox"/> RELEASE SIGNATURE	
Economy Service (formerly Standard Air) (Delivery by second business day)		14 <input type="checkbox"/> DIM SHIPMENT (Heavyweight Services Only)		15 <input type="checkbox"/> RELEASE SIGNATURE		16 <input type="checkbox"/> RELEASE SIGNATURE	
Heavyweight Service (for Extra Large or any package over 150 lbs.)		15 <input type="checkbox"/> DIM SHIPMENT (Heavyweight Services Only)		16 <input type="checkbox"/> RELEASE SIGNATURE		17 <input type="checkbox"/> RELEASE SIGNATURE	
30 <input type="checkbox"/> ECONOMY SERVICE		16 <input type="checkbox"/> DIM SHIPMENT (Heavyweight Services Only)		17 <input type="checkbox"/> RELEASE SIGNATURE		18 <input type="checkbox"/> RELEASE SIGNATURE	
Declared Value Limit \$100		17 <input type="checkbox"/> DIM SHIPMENT (Heavyweight Services Only)		18 <input type="checkbox"/> RELEASE SIGNATURE		19 <input type="checkbox"/> RELEASE SIGNATURE	
Call for delivery schedule		18 <input type="checkbox"/> DIM SHIPMENT (Heavyweight Services Only)		19 <input type="checkbox"/> RELEASE SIGNATURE		20 <input type="checkbox"/> RELEASE SIGNATURE	
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AD 16-186377

#1500 pd.
9-7-90
Recpt. #151167

RECEIVED

SEP 11 1990

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATIONAIR POLLUTION SOURCES
CERTIFICATE OF COMPLETION OF CONSTRUCTION*

DER-BAQM

PERMIT NO. AC-16-167033 DATE: September 5, 1990
Company Name: EnviroTech Southeast, Inc. County: Statewide
Source Identification(s): Portable Soil Decontamination Unit
Actual costs of serving pollution control purpose: \$ 152,000

Operating Rates: _____ Design Capacity: 25 TPH
Expected Normal _____ During Compliance Test 10 TPH

Date of Compliance Test: 6-13-90 and 6-15-90 (Attach detailed test report)

Test Results:	Pollutant	Actual Discharge	Allowed Discharge
	<u>Particulate</u>	<u>.014 gr/dscf</u>	<u>.08 gr/dscf</u>
	<u>VOC</u>	<u><.1 lbs/hr</u>	<u>37.5 lbs/hr</u>
	_____	_____	_____

Date plant placed in operation: _____

This is to certify that, with the exception of deviations noted**, the construction of the project has been completed in accordance with the application to construct and Construction Permit No. AC-16-167033 dated July 15, 1990.

A. Applicant:

Glenn Newton
Name of Person Signing (Type) _____
Signature of Owner or Authorized Representative and Title

Date: September 6, 1990 Telephone: (904) 744-4404

B. Professional Engineer:

Dole J. Kelley, P.E.
Name of Person Signing (Type) _____
Signature of Professional Engineer

Dole J. Kelley, Consulting Engineer
Company Name _____
Florida Registration No. 6519

Date: September 6, 1990

1646 Rogero Road Jacksonville, FL 32211
Mailing Address _____
(904) 743-4700
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.

A. TEST RESULTS

2. Particulate and Hydrogen Chloride

FIELD DATA AND RESULTS TABULATION

5

PLANT: Envirotech Southeast, Mariana, Florida

RUN #	DATE	SAMPLING LOCATION	OPERATOR		
M5&26-1	6/13/90	Incinerator Stack	Lee Marchman		
M5&26-2	6/15/90	Incinerator Stack	W. Todd Langdon		
M5&26-3	6/15/90	Incinerator Stack	W. Todd Langdon		
			M5&26-1	M5&26-2	M5&26-3
	Run Start Time		1955	1654	2229
	Run Finish Time		2248	1939	107
	Net Traversing Points		12	12	12
Theta	Net Run Time, Minutes		120.00	120.00	120.00
Dia	Nozzle Diameter, Inches		0.357	0.357	0.357
Cp	Pitot Tube Coefficient		0.840	0.840	0.840
Y	Dry Gas Meter Calibration Factor		0.9849	0.9849	0.9849
Pber	Barometric Pressure, Inches Hg		30.20	30.30	30.30
Delta-H	Avg. Pressure Differential of Orifice Meter, Inches H ₂ O		1.70	1.18	0.982
Vm	Volume Of Metered Gas Sample, Dry ACF		86.747	73.391	68.730
tm	Dry Gas Meter Temperature, Degrees F		115	122	110
Vmstd	Volume Of Metered Gas Sample, Dry SCF*		79.484	66.754	63.627
Vlc	Total Volume of Liquid Collected in Impingers & Silica Gel, ml		1777.5	1518.0	1485.0
Vwstd	Volume of Water Vapor, SCF*		83.667	71.452	69.899
XH ₂ O	Moisture Content, Percent by Volume		51.3	51.7	52.3
Xfd	Dry Mole Fraction		0.487	0.483	0.477
XCO ₂	Carbon Dioxide, Percent By Volume, Dry		7.3	5.4	7.4
XO ₂	Oxygen, Percent By Volume, Dry		8.0	11.1	7.5
Md	Gas Molecular Weight, lb/lb-Mole, Dry		29.49	29.31	29.48
Ms	Gas Molecular Weight, lb/lb-Mole, Wet		23.60	23.46	23.48
Pg	Flue Gas Static Pressure, Inches H ₂ O		-0.25	-0.31	-0.20
Ps	Absolute Flue Gas Pressure, Inches Hg		30.18	30.28	30.29
ts	Flue Gas Temperature, Degrees F		182	184	182
Delta-p	Average Velocity Head, Inches H ₂ O		0.3425	0.2810	0.2356
vs	Flue Gas Velocity, Feet/Second		39.90	36.25	33.12
A	Stack/Duct Area, Square Inches		1,018	1,018	1,018
Qsd	Volumetric Air Flow Rate, Dry SCFM*		6,837	6,162	5,379
Qsw	Volumetric Air Flow Rate, Wet ACFM		16,924	15,376	14,048
XI	Isokinetic Sampling Rate, Percent		98.5	91.8	96.6
XEA	Excess Air, Percent		56	101	50

* 68° F (20° C) -- 29.92 Inches of Mercury (Hg)

(Continued next page)

FIELD DATA AND RESULTS TABULATION
(Continued)

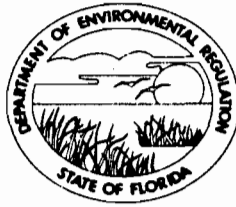
6

PLANT: Envirotech Southeast, Mariana, Florida

		M5&26-1	M5&26-2	M5&26-3
	<u>Front-half Particulate</u>			
mg	Catch Weight, Milligrams	35.8	42.9	12.2
gr/DSCF	Concentration, grains/DSCF *	0.00495	0.00992	0.00296
gr/7%	Concentration, gr/DSCF @ 7% O ₂	0.00748	0.0140	0.00307
lb/hr	Emission Rate, lb/hr	0.407	0.524	0.142
	<u>Hydrogen Chloride</u>			
wt	Formula Weight, lb/lb-Mole	36.46	36.46	36.46
	Front-half			
mg	Catch Weight, Milligrams	2.99	3.55	4.17
ppmvd	Concentration, ppmvd	0.876	1.24	1.53
lb/hr	Emission Rate, lb/hr	0.0340	0.0433	0.0484
	Back-half			
mg	Catch Weight, Milligrams	2.20	< 0.40	< 0.40
ppmvd	Concentration, ppmvd	0.645	< 0.140	< 0.146
lb/hr	Emission Rate, lb/hr	0.0230	< 0.00488	< 0.00464
	Total			
mg	Catch Weight, Milligrams	5.19	3.55	4.17
ppmvd	Concentration, ppmvd	0.876	1.24	1.53
lb/hr	Emission Rate, lb/hr	0.0591	0.0433	0.0484

* 68° F (20° C) -- 29.92 Inches of Mercury (Hg)

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION



NORTHEAST DISTRICT

3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

G. DOUG DUTTON
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: _____ ☒ New¹ [] Existing¹

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

COMPANY NAME: EnviroTech Southeast, Inc. COUNTY: Portable

Identify the specific emission point source(s) addressed in this application (i.e. Lime
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Rotary dryer with
Venturi Scrubber

SOURCE LOCATION: Street Portable City _____

UTM: East _____ North _____

Latitude _____ ° _____ ' _____ "N Longitude _____ ° _____ ' _____ "W

APPLICANT NAME AND TITLE: Glenn Newton

APPLICANT ADDRESS: 900 University Boulevard, Suite 504, Jacksonville, Florida 32211

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of EnviroTech Southeast, Inc.

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

*Attach letter of authorization

Signed: Glenn Newton

Glenn Newton
Name and Title (Please Type)

Revised Date: 9-5-90 Telephone No. (904) 744-4404

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

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

¹ See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed

Dole J. Kelley, P.E.

Name (Please Type)

Dole J. Kelley, Consulting Engineer

Company Name (Please Type)

1646 Rogero Road, Jacksonville, Florida 32211

Mailing Address (Please Type)

Florida Registration No. 6519 Date: Revised 9-5-90 Telephone No. (904) 743-4700

SECTION II: GENERAL PROJECT INFORMATION

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This project is for the decontamination of soil which contains virgin and non-virgin (used) oil which is within specifications. Treatment shall be in a rotary drier 400-500 F followed by a cyclone, an afterburner and a venturi scrubber to remove particulate fines. Water for scrubbing will be recirculated from on-site storage (44,000 gal) and none will be disposed of on-site. This portable system will normally operate 2-3 months at each site. Highly efficient pollution control equipment will result in total compliance with air pollution regulations.

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

Start of Construction July 15, 1989 Completion of Construction September 30, 1989

- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Cyclones \$29,000.00

Afterburner \$38,000 (Revised)

Venturi Scrubber \$85,000.00 (Revised)

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

NONE

E. Requested permitted equipment operating time: hrs/day 12 ; dsys/wk 7 ; wks/yr 52 ;
if power plant, hrs/yr 4,368 if seasonal, describe: _____

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

1. Is this source in a non-attainment area for a particular pollutant? Yes
 - a. If yes, has "offset" been applied? No
 - b. If yes, has "Lowest Achievable Emission Rate" been applied? No
 - c. If yes, list non-attainment pollutants. SO₂, ozone, particulates
 2. Does best available control technology (BACT) apply to this source?
If yes, see Section VI. NO
 3. Does the State "Prevention of Significant Deterioration" (PSD)
requirement apply to this source? If yes, see Sections VI and VII. No
 4. Do "Standards of Performance for New Stationary Sources" (NSPS)
apply to this source? No
 5. Do "National Emission Standards for Hazardous Air Pollutants"
(NESHAP) apply to this source? No
- H. Do "Reasonably Available Control Technology" (RACT) requirements apply
to this source? No
- a. If yes, for what pollutants? _____
 - b. If yes, in addition to the information required in this form,
any information requested in Rule 17-2.650 must be submitted.

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

This unit is classified as an incinerator (F.A.C. 17-2.600(1)(C)1)
No applicable VOC standards exist
No applicable RACT particulate standards exist

SECTION "C" (Revised 9-4-90)

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Petroleum contam-	Particulates	100%	50,000	A
inated soil	VOC	Varies		

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

1. Total Process Input Rate (lbs/hr): 50,000
2. Product Weight (lbs/hr): <50,000 depending on moisture content

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission ¹		Allowed ² Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Particulates	6.528	14.27	.08 gr/dscf 5% opacity	3 lbs/hr	142.7	312	B
CO	2.034	4.45			2.034	4.45	B
NO _x	8.159	17.83			8.159	17.83	B
SO ₂	10.016	21.89			10.016	21.89	B
VOC	45.78	99.83			1000.227	2187	B

¹See Section V, Item 2. Rule 17-2.600 (1)(C) 1

²Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard.

⁴Emission, if source operated without control (See Section V, Item 3).

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Astec HEC-44/2 Twin Cyclones	Particulate	70%	>10 microns	manufacturer
Astec STU-8.0 Afterburner	VOC	95%	N.A.	manufacturer
Astec SV-20 Venturi Scrubber	Particulate	95%	0-200 microns	manufacturer
* 27,725 CFM (inlet)	21.5" WC Δ P and 160 gpm			

E. Fuels

Type (Be Specific)	REVISID Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural gas (drier)	.02 MMBTU/hr	.051 MMBTU/hr	51. MMBTU/hr
Natural gas (afterburner)	.02 MMBTU/hr	.02 MMBTU/hr	20.0 MMBTU/hr
Propane or LPG may be substituted where natural gas is unavailable			

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

Fuel Analysis:

Percent Sulfur: < .5% Percent Ash: 0

Density: lbs/gal Typical Percent Nitrogen:

Heat Capacity: 1000 BTU/ft³ BTU/lb BTU/gal
propane: 2523 BTU/ft³

Other Fuel Contaminants (which may cause air pollution):

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

Annual Average N.A. Maximum

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

Dust from the cyclones is added to the finished product

Sludge from the scrubber is added to the raw material

Water for the scrubber is recirculated from storage tanks

On occasion of relocation water will be hauled to new site or evaporated through the drier

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

Stack Height: 50' Revised ft. Stack Diameter: 3'-0 DIA ft.

Gas Flow Rate: 8,595 ACFM 7,125 DSCFM Gas Exit Temperature: 180 °F.

Water Vapor Content: saturated % Velocity: 20.29 FPS

SECTION IV: INCINERATOR INFORMATION

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

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

Type of pollution control device: ☐ Cyclone ☐ Wet Scrubber ☐ Afterburner
☐ Other (specify) _____

Brief description of operating characteristics of control devices: _____

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

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

☐ Yes ☐ No

Contaminant

Rate or Concentration

- B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

☐ Yes ☐ No

Contaminant

Rate or Concentration

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

Contaminant

Rate or Concentration

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

1. Control Device/System:

2. Operating Principles:

3. Efficiency:*

4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant

Rate or Concentration

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F.

e. Velocity: FPS

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

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:¹

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:²

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

10. Reason for selection and description of systems:

¹Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no. sites _____ TSP _____ () SO₂* _____ Wind spd/dir

Period of Monitoring _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

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

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent? ☐ Yes ☐ No
- b. Was instrumentation calibrated in accordance with Department procedures?
☐ Yes ☐ No ☐ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____ / _____ / _____ to _____ / _____ / _____
month day year month day year
2. Surface data obtained from (location) _____
3. Upper air (mixing height) data obtained from (location) _____
4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

1. _____ Modified? If yes, attach description.
2. _____ Modified? If yes, attach description.
3. _____ Modified? If yes, attach description.
4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO ₂	_____ grams/sec

E. Emission Data Used in Modeling

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

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

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

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

EQUIPMENT SPECIFICATIONS

Portable Soil Remediation Plant

- I. Feed System
 - A. One hopper 8.0 ft x 8.0 ft with variable speed belt feeder
 - B. Drum feed belt is equipped with an electronic belt scale
- II. Primary Treatment Unit (PTU) - Rotary Drier
 - A. Rotary Drum 6.0 ft dia x 24.0 ft long
 - B. AC variable speed drum drive
 - C. Parallel flow
 - D. Burner
 - * 51.0 MM BTU/Hr maximum capacity
 - * 22.0 MM BTU/Hr @ 25 tph @ 700° F soil temperature
 - * Auto controls
 - * Natural gas or propane
- III. Primary Cyclones (PC)
 - A. High efficiency
 - B. 4.0 ft dia x 16.0 ft
- IV. Secondary Treatment Unit (STU) - Afterburner
 - A. 5.0 ft dia x 25.0 ft long
 - B. 20.0 MM BTU/Hr burner
 - C. Natural gas or propane
- V. Wet Venturi Scrubber (WV1)
 - A. High pressure venturi scrubber - 20" W.C. pressure drop
 - B. 180 GPM water injection
 - C. Auto modulating damper
 - D. Hydrocyclone sludge separator and water recycler
- VI. Miscellaneous Specifications
 - A. Milspec power cables
 - B. Control house with controls
 - C. Portability of main components

SOURCE CODE LEGEND

PTU - Primary Treatment Unit

PC - Primary Cyclones

STU - Secondary Treatment Unit

WV1 - Wet Venturi Scrubber

WV3 - Scrubber waste water
containment vessel

ES1 - Exhaust gas source for entire plant

FE1 - Contaminated soil stockpile

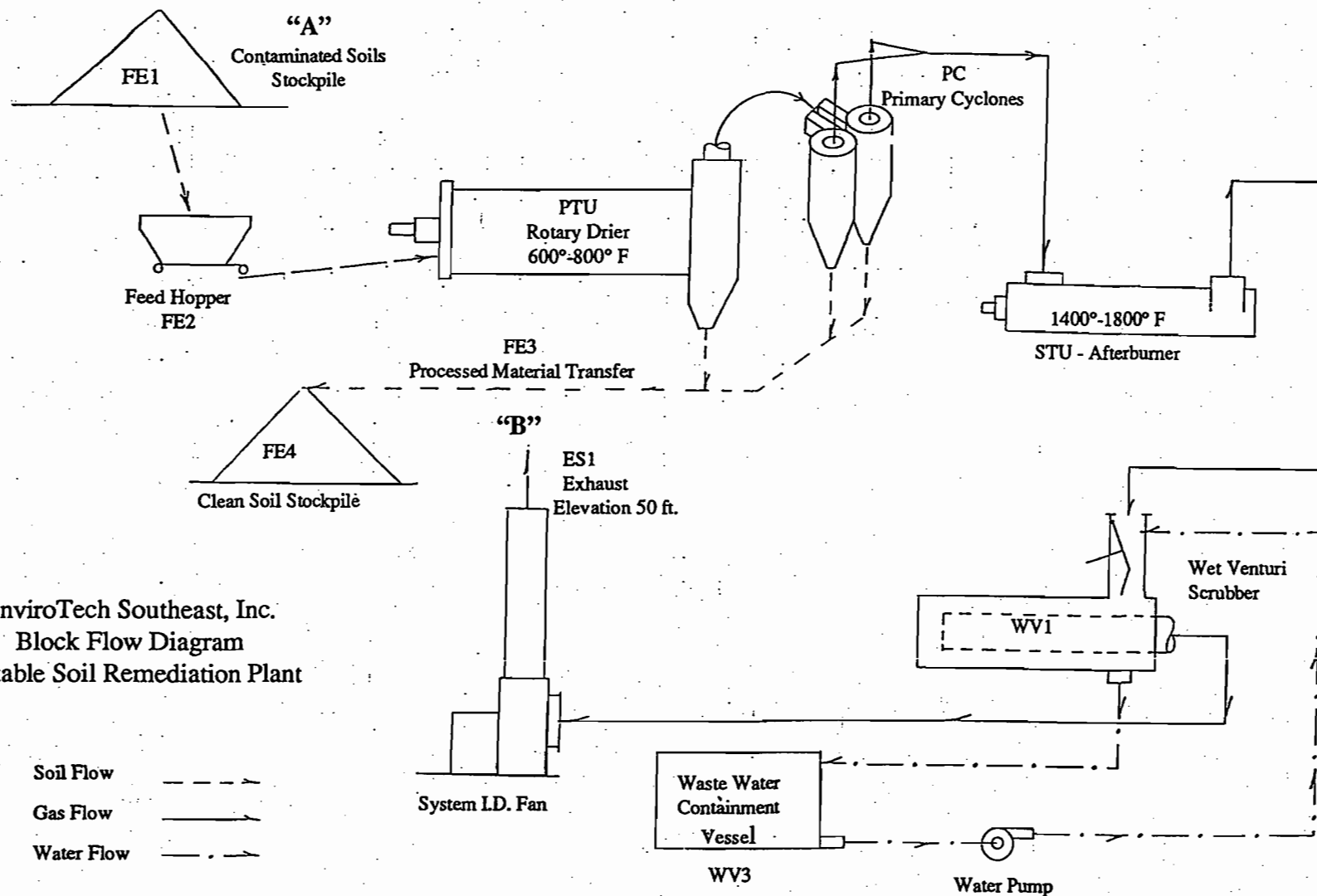
FE2 - Feed hopper to plant

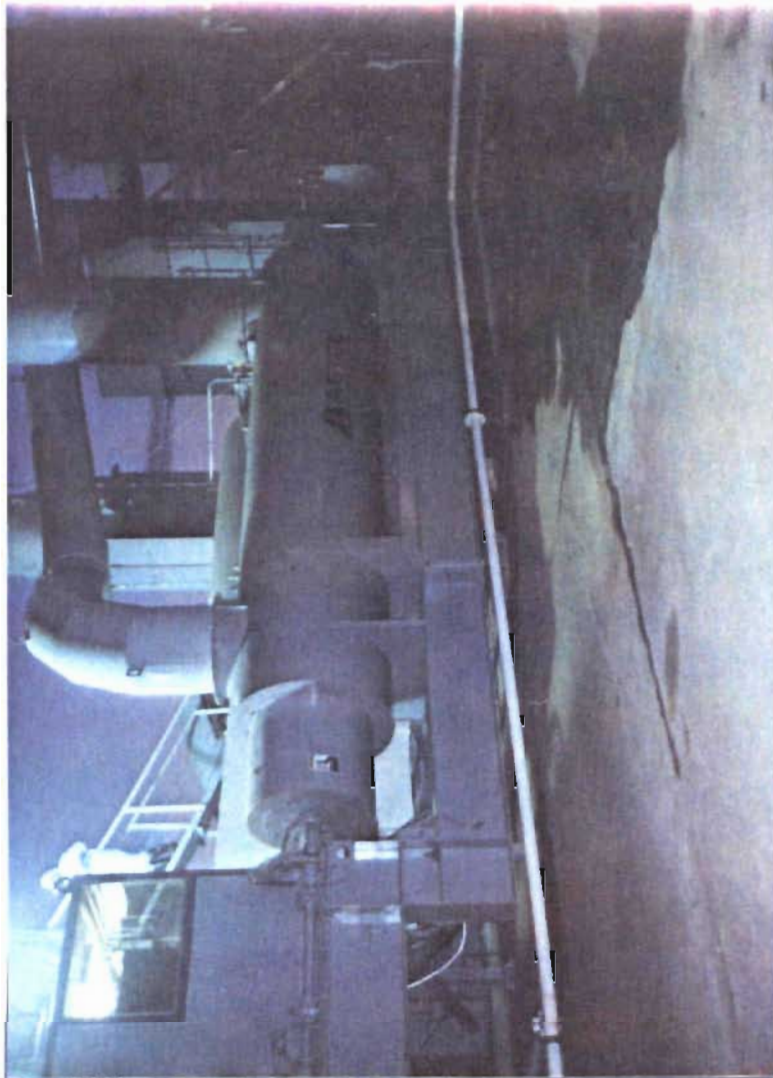
FE3 - Processed material transfer system

FE4 - Clean soil stockpile

EnviroTech Southeast, Inc.
Block Flow Diagram
Portable Soil Remediation Plant

Soil Flow - - - - -
Gas Flow - - - - -
Water Flow -





CALCULATIONS

All calculations are based upon the expected worst case soil conditions and maximum expected operating hours per year.

I. Soil Conditions (for the purpose of this application we have set the soil conditions to be worse than those we encountered in previous work we've done)

- * Ambient temperature = 60
- * Moisture content = 12.0% by wt.
- * Hydrocarbon content = 2.0% by wt.
- * Bulk density = 100 Lb/cu ft

II. Plant Operating Hours

- * 12 Hr/Day
- * 52 Wk/Yr
- * 7 Days/Wk
- * 4,368 Hr/Yr

III. Fuel Consumption

- * Propane gas having 91,500 BTU's/gal, 2523 BTU/ft³
- * PTU Burner (Rotary Drier)
 - Maximum capacity = 51 MM BTU/HR
 - PTU rated capacity = 25 TPH heated to 700°F soil temperature
 - Energy req'd at rated cap = 20.0 MM BTU/HR
 - Fuel consumption = 20,000 cfh natural gas or 218.58 gal/hr propane
- * STU Burner (Afterburner)
 - Maximum rated capacity = 20.0 MM BTU/HR
 - Fuel consumption = 20,000 cfh natural gas or 218.58 gal/hr propane
- * Total Fuel Consumption
 - (PTU @ 25 TPH) + (STU @ MAX) = 40,000 cfh or 174.72 MM cfy natural gas
 - = 437.16 gal/hr or 1,909,514 gal/yr propane

IV Emissions Factors

- A. Primary Treatment Unit (Rotary Drier)
- * Contaminated soil = raw material
 - * Emissions factor = 40 LB oil/ton of soil based on 2.0% oil by wt.
 - * Emissions factor = 5.7 lbs particulate will emerge from the drier per ton of soil processed
- ref. AP-42 8.18-1

- B. Soil Contaminate Is No. 2 Fuel Oil (Density 7.3 lbs per gallon which when burned has the following emissions)
- * Particulates uncontrolled = 2.0 lb/1,000 gal
 - * Sulfur content of fuel = 0.5% by wt.
 - * Sulfur dioxide = 2.0 lb per 1%/100 lbs oil
 - * Nitrogen oxide = 20 lb/1,000 gal
 - * Carbon monoxide = 5 lb/1,000 gal
 - * Hydrocarbons = 0.2 lb/1,000 gal

C. Total Uncontrolled Emissions from Rotary Drier (PTU) Due to Soil and Oil Contaminate

Assumption: The raw material with 12% moisture and 2.0% HC's is processed at 25 tph. All HC's in the soil are treated like additional fuel in the STU.

1. Particulate emissions from Rotary Drier (PTU) from soil:
(AP-42 8.18-1 says approximately 5.7 lb/ton)
 $(5.7 \text{ lb/ton}) \times (25 \text{ TPH}) = 142.5 \text{ lb/hr}$
2. Hydrocarbon (VOC) emissions from oil in soil:
 - * $\text{VOC} = (2.0\%) \times (25 \text{ TPH}) \times (2,000 \text{ lb/ton}) = 1000 \text{ lb/hr}$
 - * VOC fuel conversion
 $= (1000 \text{ lb/hr}) / (7.3 \text{ lb/gal}) = 136.98 \text{ gal/hr}$
 - * Particulates due to fuel oil
 $= (2 \text{ lb/1000 gal}) \times (136.98 \text{ gal/hr}) = .2739 \text{ lb/hr}$
 - * Sulfur Dioxide
 $= 2.0 \times .5 \times 1000 / 100 = 10 \text{ lb/hr}$
 - * Nitrogen Oxide
 $= (136.98 \text{ gal/hr}) \times 20 \text{ lb/1000 gal} = 2.739 \text{ lb/hr}$
 - * Carbon Monoxide
 $= (136.98 \text{ gal/hr}) \times (5.0 \text{ lb/1000 gal}) = 0.684 \text{ lb/hr}$
3. Total Solid Uncontrolled Emissions (Particulates) from Rotary Drier (PTU)
 (Soil Emissions) + (HC Emissions) = Total
 $142.5 \text{ lb/hr} + 0.2739 \text{ lb/hr} = 142.7739 \text{ lb/hr}$
4. Uncontrolled Emissions from combustion of Propane Gas (AP-42 Table 1.5-1)
 Natural gas is considered the same except for SO₂ which is slightly lower (.0114 lbs.hr)
 PTU = 218.58 gal/hr
 STU = 218.58 gal/hr
 TOTAL = 437.16 gal/hr

Particulate .09 to .44 lbs per 1000 gal	= .0393 lbs/hr to .1923 lbs/hr
SO ₂ .0378 lbs per 1000 gal	= .0165 lbs/hr
NO _x 12.4 lbs per 1000 gal	= 5.4207 lbs/hr
CO 3.1 lbs per 1000 gal	= 1.3551 lbs/hr
VOC .52 lbs per 1000 gal	= .2273 lbs/hr

5. Total Uncontrolled Emissions (Non-Particulate) due to combustion of propane and soil contaminant oil.

$$\begin{array}{llll} \text{SO}_2 & 10.0 \text{ lbs/hr} + .0165 \text{ lbs/hr} & = & 10.0165 \text{ lbs/hr} \\ \text{NO}_x & 2.739 \text{ lbs/hr} + 5.4207 \text{ lbs/hr} & = & 8.1597 \text{ lbs/hr} \\ \text{CO} & 0.684 \text{ lbs/hr} + 1.3551 \text{ lbs/hr} & = & 2.0391 \text{ lbs/hr} \\ \text{VOC} & 1000 \text{ lbs/hr} + .2273 \text{ lbs/hr} & = & 1000.2273 \text{ lbs/hr} \end{array}$$

D. Total Controlled Particulate Emissions

1. To determine the required efficiency of particulate removal we start with the permissible emission and calculate the efficiency necessary to achieve it.

CALCULATIONS

Air required for combustion is determined as follows:

Total Fuel Consumption (from III above) = 40,000 cfh natural gas.

9.52 ft³ air required to burn 1 ft³ natural gas

Air required with 50% excess air

$$150\% \times 9.52 \frac{\text{ft}^3 \text{ air}}{\text{ft}^3 \text{ nat gas}} \times 40,000 \frac{\text{ft}^3 \text{ natural gas}}{\text{hour}} = 571,200 \frac{\text{ft}^3 \text{ air}}{\text{hour}}$$

Maximum allowable particulate emissions for incinerators is given by the state as .08 grains per dscf corrected to 50% excess air.

$$571,200 \frac{\text{ft}^3 \text{ air}}{\text{hour}} \times .08 \frac{\text{grains}}{\text{ft air}} \times \frac{1 \text{ pound}}{7000 \text{ grs}} = 6.528 \text{ lbs/hr}$$

Venturi Scrubber Efficiency must be as shown below to achieve regulatory compliance 6.528 lbs/hr maximum particulate emission. (Inlet conditions at the venturi scrubber will be controlled by the twin cyclones which have approximately 70% efficiency).

Inlet conditions at the twin cyclones will be 142.773 lbs/hr (from C-3 above)

142.773 lbs/hr x 30% passes through = 42.83 lbs/hr escaping the twin cyclones

$$\% \text{ Efficiency} = \frac{(\text{Total Uncontrolled}) - (\text{Total Controlled})}{\text{Total Uncontrolled}}$$

$$\frac{(42.83 \text{ lb/hr}) - (6.528 \text{ lb/hr})}{42.83 \text{ lb/hr}}$$

$$\% \text{ efficiency} = 84.75\%$$

This is the efficiency required to meet .08 gr/dscf. Actual scrubber efficiency is estimated at 99%, so we should have no problem meeting this efficiency requirement.

E. Exhaust Volume from Venturi scrubber

Assumption: Water is sprayed into the Venturi at a rate of 160 GPM, therefore the exhaust gasses will be lowered to approximately 180° F.

*Venturi is designed for 27,725 acfm @ 1600° F (7,125 scfm)

$$\text{Correction factor} = \frac{(180 + 460)}{(1600 + 460)} = 0.310$$

$$(0.310) \times (27,725 \text{ acfm @ } 1600^\circ \text{ F}) = 8,595 \text{ acfm @ } 180^\circ \text{ F}$$

* Stack gas velocity
Size of exhaust stack = 3.0 ft diameter
Cross sectional area = 7.06 sq ft
Exhaust gas velocity = $\frac{8595 \text{ acfm}}{7.06 \text{ sq ft}} \times \frac{1 \text{ min}}{60 \text{ sec}} = 20.29 \text{ fps}$

* Stack height above grade = 50.0 ft

F. Total Controlled Emissions of VOC's

* Secondary Treatment Unit (afterburner) operates at 1,400 to 1,600° F and field tests of similar units indicate it has a 99.00% destruction efficiency for all VOC's entering unit. However we will only claim a 95.43% efficiency since that will be good enough to keep controlled VOC effluent below 100 ton/year as shown below

* Uncontrolled VOC's = 1000.2273 lb/hr (from C-5 above)

* Permissible VOC effluent = $100 \text{ ton/year} \times \frac{2000 \text{ lbs}}{\text{ton}} \div \frac{4368 \text{ hrs}}{\text{year}} = 45.78 \frac{\text{lbs}}{\text{Hr}}$

$$\text{Efficiency} = \frac{(\text{Total Uncontrolled}) - (\text{Total Controlled})}{\text{Total Uncontrolled}}$$

$$\frac{1000.2273 \text{ lbs/hr} - 45.78 \text{ lbs/hr}}{1000.2273 \text{ lbs/hr}} = \% \text{ eff} = 95.43\%$$

* Exhaust gases in the STU are calculated to be at or near 27,725 acfm @ 1600° F

* STU I.D. = 4.5 ft

* Cross sectional area = 15.90 sq. ft

* STU air velocity = 30.00 fps

* Required retention time of gases = 0.5 sec

* Required length of STU = (0.5 sec) x (30.00 fps) = 15.00 ft

* Actual length of STU = 25 ft

* Actual retention time of gases = .833 sec

- G. Controlled Emissions other than Particulates and VOC's
- * CO <.2.0391 lbs/hr or 8.91 tpy
 - * NOx < 8.1597 lbs/hr or 35.64 tpy
 - * SO2 < 10.0165 lbs/hr or 43.75 tpy