Perry Smith Co.

Mechanical Engineers
and Contractors

July 18, 1984

DER

JUL 20 1984

BAQM

Bureau of Air Quality Management, DER
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Attn: Mr. Bob King, Engineer

RE: Application to Construct
Air Pollution Source
Southeastern Wood Energy
Telogia, Florida

Gentlemen:

We appreciate the opportunity to talk with you this morning in an effort to clarify any discrepancies relative to the referenced Application filed with you earlier this year. In reviewing the items you mentioned, it was discovered that a number of calculations, etc. in the original application were incorrect. All of this has been thoroughly reviewed today, and we are enclosing five (5) copies of the following pages which have been revised:

(a) Section III - Air Pollution Sources and Control Devices

(b) Three (3) pages covering "Calculations for Application to Construct Air Pollution Source"

(c) Perry Smith Company Drawing No. SK-4020-1. This flow schematic replaces the earlier ones sent to you.

As regards the control of fugitive dusts at Removal Points No. 2 and No. 3 shown on our Drawing No. SK-4020-1 we wish to make the following comments:

A. Point No. 2, Stoker Sifting Hopper(s):

One or more hopper discharge points shall be provided underneath the existing Detroit stoker to dispose of siftings through the stoker grate bars. The best method to handle/convey this dry ash will be with screw conveyors dumping into a tote box or similar container for pick-up by trucks for delivery to landfill. The hopper discharge point(s) will have a dust tight connection onto covered screw conveyors. Some dust is generated at the conveyor discharge point; however, controlled water sprays will be utilized

2015 W. Polymer Drive • P. O. Box 21282 • Chattanooga, TN 37421 • Phone (615) 892-7130

to eliminate the dust. Water necessary only for dust control will be utilized without excessive amounts that would possibly cause a run-off problem.

B. Point No. 2, Front Ash Discharge Hopper

The boiler/stoker is provided with a refractory lined discharge hopper at the boiler front to collect ashes discharged from the stoker grate. This hopper is provided with dust tight doors which are opened only when accumulated ash is to be removed. One method of ash removal from the hoppers is to rake it into a wheelbarrow or similar conveyance. In this case the ash within the front hopper can be sprayed with water prior to removal. Another method of removal would be for the ash to discharge into a covered drag conveyor which would discharge into a tote box as described in Item A and dust controlled by a similar water spray. Since the boiler is under a negative pressure, much of the dust is also sucked back into the furnace when cleaning the hopper.

C. Point No. 3, Multiclone Ash Removal

Ash from the dry multiclone is discharged through a rotary valve and could be handled exactly as described in Item A. Another alternative would be to extend the rotary valve discharge pipe closer to grade level and discharge directly into a tote box without the use of a screw conveyor; however, water sprays would still be utilized.

Based upon our previous experience with wood fired boilers, there is no question as to our being able to control the fugitive dust. Opacity in these areas shall not exceed 5%.

We trust the revised Application pages, calculation sheets, flow schematic and our comments on fugitive dust control will satisfy the necessary requirements to allow your approval of the Permit Application. Please call me if there are further questions.

Very truly yours,

PERRY SMITH COMPANY, INC.

William E. McKown, Jr.
Chief Engineer

WEM/ss

DER

JUL 20 1984

BAQM

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		
	See Section III, E. Fuels			

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

1. Total Process Input Rate (lbs/hr): See Section III, E. Fuels

2. Product Weight (lbs/hr): See Section III, E. Fuels

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	19.2	80.64	0.2 pounds/MMBTU	25.78	962	4040	Point No. 4
(Fly Ash)			Input 17-2.600 (10)(b)				
Visible Emissions	N/A	N/A	Number 1.5 Ringelmann	N/A	N/A	N/A	Point No. 4
(opacity)			17-2.600 (10)(b)				

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Fly Ash Arrestor Corp.	Particulate	80%	N/A	See
MTSA-66-92YT-XD				Attached
(Modified) Dust Collector				Calculations
Perry Smith Co. Model	Particulate	90%		Sheets
80M Venturi Scrubber				
and vertical separator				

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard

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

[5]If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Bark and Waste Wood Mix	24,636	24,636	128.92

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: 0.00 Percent Ash: 0.36

Density: 20-25 Lb/C.F. lbs/gal Typical Percent Nitrogen: 0.04

Heat Capacity: 5,233 BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

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.

Dry solid wastes (ash) will be removed from the grates at the boiler front and from the "Dust Collector" thru rotary seal valves and disposed of in land fill. Semi-wet waste will be removed from scrubber circulating ponds and disposed of in land fill.

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

Stack Height: 88'-6" (Above Grade) ft. Stack Diameter: 5'-6" ft.

Gas Flow Rate: 46,324 ACFM Gas Exit Temperature: 151 °F.

Water Vapor Content: 21.5% (By Weight) % Velocity: 32.5 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

SOUTHEASTERN WOOD ENERGY
TELOGIA, FLORIDA

Calculations for Application to Construct
Air Pollution Source

Boiler: Bigelow Size KVS-2026
Capacity: 77,000 Lbs./Hr., 675 PSIG, 825° FTT

Fuel Analysis:	Percent by Weight
Ash	0.36
Sulfur	0.00
Hydrogen	3.55
Carbon	27.90
Nitrogen	0.04
Oxygen	18.15
Water	50.00

BTU Value/Pound (As Fired): 5,233
Pounds of Fuel Burned/Hour: 24,636
Heat Input Per Hour: 128.92 MM BTU's

Allowable Particulate Emissions per DER 17-2.600(10)(b) 2.b. or 17-2.650(2)(c)3.b(i) = 0.2 pounds/MM BTU Heat Input

0.2 x 128.92 = 25.78 Pounds/Hour

Mass Flue Gas Flow = 160,932 Lbs./Hr @ 50% x-cess air

Flue Gas Volume = 37,420 SCFM

Estimated Particulate Loading at boiler exit = 3 Grains/SCF

37,420 x 3 = 112,260 Grains/Minute

112,260 ÷ 7,000 = 16.04 Pounds/Minute

16.04 x 60 = 962 Pounds/Hour

PARTICULATE CONTROL EQUIPMENT

1. Fly Ash Arrestor Corporation MTSA-66-92YT-XD (Modified)

Performance Data:
57,190 ACFM @ 350°F with 2.50" w.g. ΔP

Collection efficiency based on manufacturer's calculations and data obtained from prior installations > 80%

Particulate Loading Entering "Dust Collector" = 962 Pounds/Hour

Particulate Loading at exit of collector @80% efficiency
= 20% x 962 = 192.4 Pounds/Hour

2. Perry Smith Company Model 80M wet venturi scrubber with vertical moisture separator.

Performance Data:

57,190 ACFM @ 350°F with 6" w.g. ΔP in venturi and 2" w.g. ΔP in separator.
Water scrubbing rate = 500 - 600 GPM
Water evaporation rate = ~15 GPM

Collection efficiency based on data obtained from prior installations >90%

Particulate Loading entering venturi scrubber
= 192.4 pounds/hour

Particulate emissions at stack exit @90% efficiency
=10% x 192.4 = 19.2 pounds/hour

19.2 Lbs./Hr < 25.78 Lbs./Hr. allowed

Tons emitted per year based on 8,400 hours operation = 80.64

Test method to prove conformance with Florida Air Pollution Control Requirements to be per EPA Test Method 5.

Allowable Visible Emissions per DER 17-2.600(10)(b) 2.a or 17-2.650(2)(c) 3.b(ii) to be no greater than number 1.5 on the Ringelmann Chart (30% Opacity).

The boiler is equipped with a complete combustion control system with fuel/air ratio control. The boiler will also have an overfire air system creating turbulence in the furnace and further complete combustion of hydrocarbons and small particles of suspended fuels. The combination of these items assures that the visible emissions will meet the Florida Air Pollution Control Requirements.

Test method to prove conformance with Florida Air Pollution Control Requirements to be per DER Method 9 or EPA Method 9 (with exceptions).

EMISSION STACK GEOMETRY & FLOW CHARACTERISTICS

Stack I.D. = 5'-6"
Stack Area = 23.76 Sq. Ft.
Height of Stack Above Grade = 88'-6"
Height of Test Ports above Grade = 77'-6"
Height of Test Platform above Grade = 72'-10"
Height of Separator Exit above Grade = 33'-2 5/8"

Test Ports: 2-4" IPS w/MPT Connections, 90° apart
Test Platform: 126°
Platform Access: Ladder w/Saf-T-Climb w/3-Belts
Electrical Power: 2 - 120V, 20A outlets at platform.

AC 39-090091

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER
JUL 16 1984
BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Carbonaceous Fuel Fired Boiler [X] New[1] [ ] Existing[1]

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

COMPANY NAME: Liberty Energy Resources, Inc. * COUNTY: Liberty

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Wood fuel fired boiler with dust collector and venturi scrubber

SOURCE LOCATION: Street Highway 65 South City Telogia, 32360

UTM: East _____ North _____

Latitude 30 ° 20 ' 17 "N Longitude 84 ° 49 ' 20 "W

APPLICANT NAME AND TITLE: Mitchell Larkins - President, General Manager Vice-

APPLICANT ADDRESS: P. O. Box 725 Highway 20 Bristol, Florida 32321

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Liberty Energy Resources, Inc. *

I certify that the statements made in this application for a Air Pollution Source 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: _____

Mitchell Larkins - President, Vice-
Name and Title (Please Type) General Manager

Date: _____ Telephone No. 904-643-2641

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

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: _____

William A. Tomb
Name (Please Type)

Perry Smith Company, Inc.
Company Name (Please Type)

P. O. Box 21282 Chattanooga, TN 37421
Mailing Address (Please Type)

(Affix Seal)

Florida Registration No. 33378 Date: 3/30/84 Telephone No. 615-892-7130

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

* A corporation to be formed under the laws of the State of Florida.

SECTION II: GENERAL PROJECT INFORMATION

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

See Attached Sheet

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

Start of Construction ~~April~~ Aug, 1984 Completion of Construction November, 1984

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.)

Existing Mechanical Dust Collector Modifications	$30,000.00
Wet Venturi Scrubber and Separator	$47,000.00
Overfire Air System	$10,000.00

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

Florida DER Operation Permit No. A039-24573 issued January 11, 1980 with expiration on March 19, 1984 to Reichhold Chemicals, Inc. for 410,000 #/Day Spentwood chips fired in boiler at this same site. DER Permit/Certification No. IT39-57356 for boiler fly-ash settling basins.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes __X__ No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 50 ; if power plant, hrs/yr 8,400;

if seasonal, describe:

G. 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?	No
a. If yes, has "offset" been applied?	-
b. If yes, has "Lowest Achievable Emission Rate" been applied?	-
c. If yes, list non-attainment pollutants.	
2. Does best availeble control technology (BACT) apply to this source? If yes, see Section VI.	No
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements 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

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

SECTION II: GENERAL PROJECT INFORMATION

A. The project consists of the installation of a new, waste carbonaceous (wood) fuel fired 77,000 pounds of steam per hour boiler within the building confines that previously housed an older, spentwood fuel fired 70,000 pounds of steam per hour boiler. The existing grates, wood feeder system, forced draft fans and overfire air fan will be retained. Particulate pollution control equipment will consist of a modified multiclone dust collector, new wet venturi scrubber and vertical separator. The new induced draft fan will produce the necessary static for the required pressure drop encountered in the flue gas train. Opacity will be controlled by the installation of an overfire air system on the boiler. The existing combustion control system will be reused. Design of the project, along with proper operation, will result in full compliance with the State of Florida, Department of Environmental Regulations as regards particulate emissions and visible emissions (opacity).

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		
	See Section III, E. Fuels			

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

1. Total Process Input Rate (lbs/hr): See Section III, E. Fuels

2. Product Weight (lbs/hr): See Section III, E. Fuels

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	23.4	98.28	0.2 pounds/MMBTU	38.68	1170	4914	Point No. 4
(Fly Ash)			Input 17-2.600 (10)(b)				
Visible Emissions	N/A	N/A	Number 1.5 Ringelmann	N/A	N/A	N/A	Point No. 4
(opacity)							

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Fly Ash Arrestor Corp.	Particulate	80%	N/A	See
MTSA-66-92YT-XD				Attached
(Modified) Dust Collector				Calculations
Perry Smith Co. Model	Particulate	90%		Sheets
80M Venturi Scrubber				
and vertical separator				

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

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

[5] If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Bark and Waste Wood Mix	24,636	24,636	128.92

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: 0.00 Percent Ash: 0.36

Density: 20-25 Lb/C.F. lbs/gal Typical Percent Nitrogen: 0.04

Heat Capacity: 5,233 BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

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.

Dry solid wastes (ash) will be removed from the grates at the boiler front and from the "Dust Collector" thru rotary seal valves and disposed of in land fill.

Semi-wet waste will be removed from scrubber circulating ponds and disposed of in land fill.

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

Stack Height: 70' (Above Grade) ft. Stack Diameter: 6'-0" ft.

Gas Flow Rate: 57,190 ACFM Gas Exit Temperature: 151 °F.

Water Vapor Content: 11.1% (By Weight) % Velocity: 33.2 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.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

SOUTHEASTERN WOOD ENERGY
TELOGIA, FLORIDA

Calculations for Application to Construct
Air Pollution Source

Boiler: Bigelow Size KVS-2026
Capacity: 77,000 Lbs./Hr., 675 PSIG, 825° FTT

Fuel Analysis:	Percent by Weight
Ash	0.36
Sulfur	0.00
Hydrogen	3.55
Carbon	27.90
Nitrogen	0.04
Oxygen	18.15
Water	50.00

BTU Value/Pound (As Fired): 5,233
Pounds of Fuel Burned/Hour: 24,636
Heat Input Per Hour: 128.92 MM BTU's

Allowable Particulate Emissions per DER 17-2.600(10)(b) 2.b. or 17-2.650(2)(c)3.b(i) = 0.3 pounds/MM BTU Heat Input

0.3 x 128.92 = 38.676 Pounds/Hour

Mass Flue Gas Flow = 160,932 Lbs./Hr @ 50% x-cess air

Flue Gas Volume = 55,490 SCFM

Estimated Particulate Loading at boiler exit = 3 Grains/SCF

45,490 x 3 = 136,470 Grains/Minute

136,470 ÷ 7,000 = 19.50 Pounds/Minute

19.50 x 60 = 1,170 Pounds/Hour

PARTICULATE CONTROL EQUIPMENT

1. Fly Ash Assestor Corporation MTSA-66-92YT-XD (Modified)

   Performance Data:
   69,522 ACFM @ 350°F with 2.50" w.g. ΔP

Collection efficiency based on manufacturer's calculations and data obtained from prior installations 80%

Particulate Loading Entering "Dust Collector" = 1,170 Pounds/Hour

Particulate Loading at exit of collector @80% efficiency
= 20% x 1,170 = 234.0 Pounds/Hour

2. Perry Smith Company Model 80M wet venturi scrubber with vertical moisture separator. (Dwg. No's. D-0760 & D-0761 and Performance Curve on Gorman - Rupp scrubber circulating pump enclosed)

Performance Data:

69,522 ACFM @ 350°F with 6" w.g. ΔP in venturi and 2" w.g. ΔP in separator.
Water scrubbing rate = 515 - 630 GPM
Water evaporation rate = ~17 GPM

Collection efficiency based on data obtained from prior installations 90%

Particulate Loading entering venturi scrubber
= 234.0 pounds/hour

Particulate emissions at stack exit @90% efficiency
=10% x 234.0 = 23.4 pounds/hour

23.4 Lbs./Hr 38,676 Lbs./Hr. allowed

Tons emitted per year based on 8,400 hours operation = 98.28

Test method to prove conformance with Florida Air Pollution Control Requirements to be per EPA Test Method 5.

Allowable Visible Emissions per DER 17-2.600(10)(b) 2.a or 17-2.650(2)(c) 3.b(ii) to be no greater than number 1.5 on the Ringelmann Chart (30% Opacity).

The boiler is equipped with a complete combustion control system with fuel/air ratio control. The boiler will also have an overfire air system creating turbulence in the furnace and further complete combustion of hydrocarbons and small particles of suspended fuels. The combination of these items assures that the visible emissions will meet the Florida Air Pollution Control Requirements.

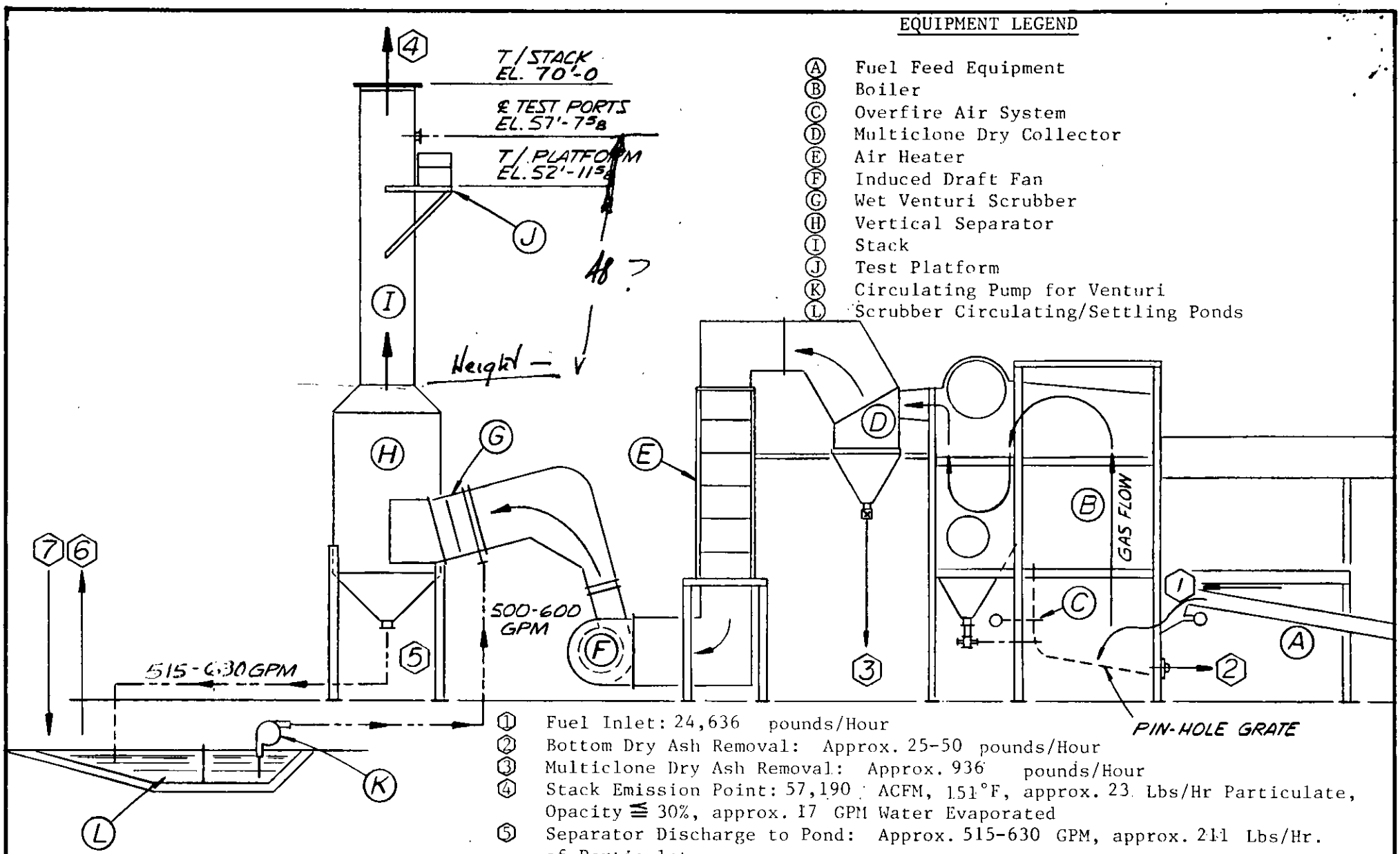
Test method to prove conformance with Florida Air Pollution Control Requirements to be per DER Method 9 or EPA Method 9 (with exceptions).

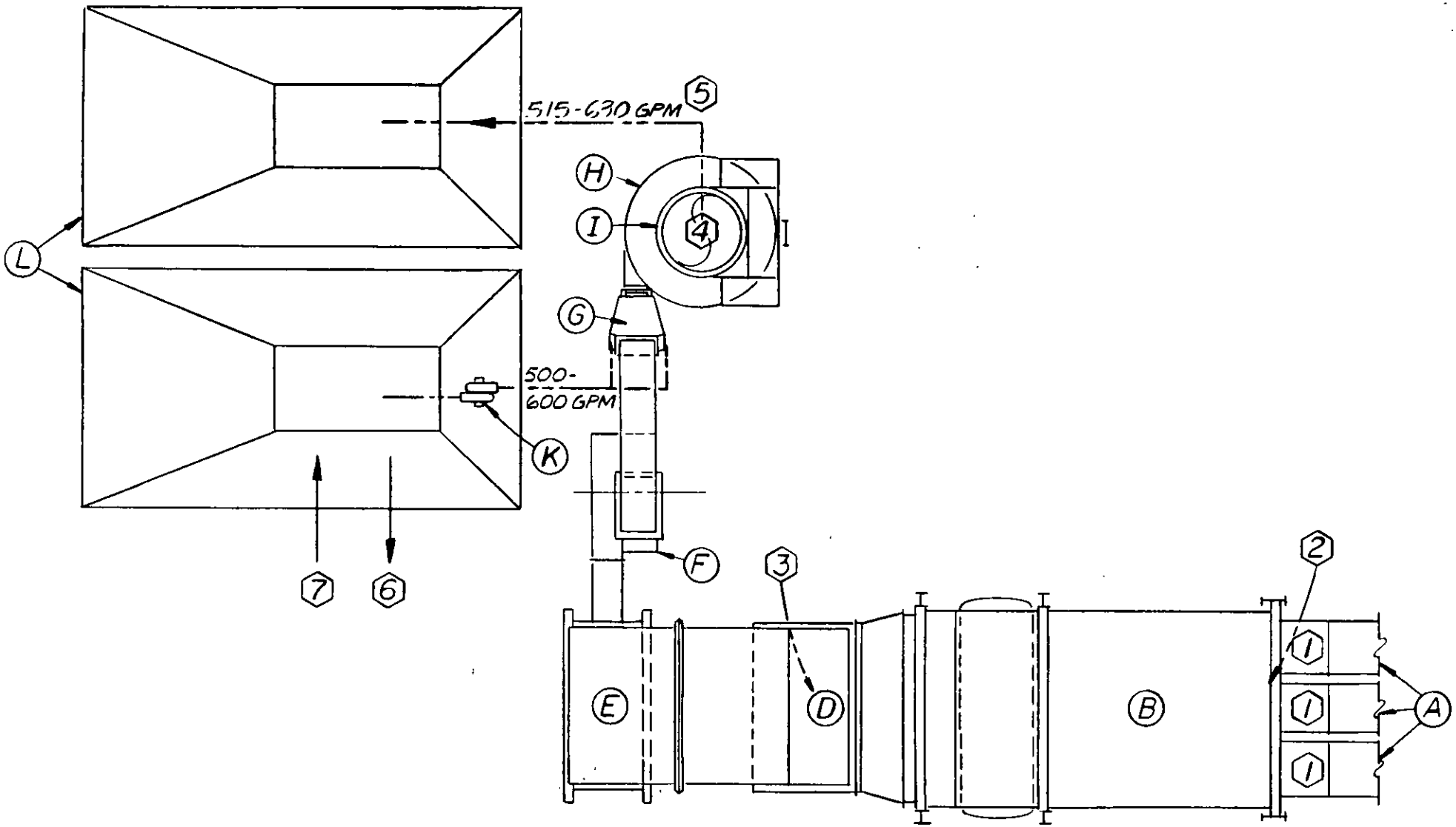
EMISSION STACK GEOMETRY & FLOW CHARACTERISTICS

Stack I.D. = 6'-6"
Stack Area = 44.16 Sq. Ft.
Height of Stack Above Grade = 70'-0"
Height of Test Parts above Grade = 57'-7 5/8"
Height of Test Platform above Grade = 52'-11 5/8"
Height of Separator Exit above Grade = 33'-2 5/8"

Test Ports: 2-4" IPS w/MPT Connections, 90° apart
Test Platform: 126°
Platform Access: Ladder w/Saf-T-Climb w/3-Belts
Electrical Power: 2 - 120V, 20A outlets at platform.

(Dwg. No. P-0348 Enclosed)


EQUIPMENT LEGEND
Ⓐ Fuel Feed Equipment
Ⓑ Boiler
Ⓒ Overfire Air System
Ⓓ Multiclone Dry Collector
Ⓔ Air Heater
Ⓕ Induced Draft Fan
Ⓖ Wet Venturi Scrubber
Ⓗ Vertical Separator
Ⓘ Stack
Ⓙ Test Platform
Ⓚ Circulating Pump for Venturi
Ⓛ Scrubber Circulating/Settling Ponds
T/STACK EL. 70'-0
℄ TEST PORTS EL. 57'-7⅝
T/PLATFORM EL. 52'-11⅝
48 ?
Height —
GAS FLOW
500-600 GPM
515-630 GPM
PIN-HOLE GRATE
① Fuel Inlet: 24,636 pounds/Hour
② Bottom Dry Ash Removal: Approx. 25-50 pounds/Hour
③ Multiclone Dry Ash Removal: Approx. 936 pounds/Hour
④ Stack Emission Point: 57,190 ACFM, 151°F, approx. 23 Lbs/Hr Particulate, Opacity ≦ 30%, approx. 17 GPM Water Evaporated
⑤ Separator Discharge to Pond: Approx. 515-630 GPM, approx. 211 Lbs/Hr. of Particulate
⑥ Semi-Dry Ash Removal from Pond: Approx. 886 Tons/Year
⑦ Make-up Water from C.T. Blowdown & Equipment Room Drains: Approx. 20 GPM
SOUTHEASTERN WOOD ENERGY
TELOGIA, FLA.
FLOW SCHEMATIC



NOTE:
FOR EQUIPMENT & FLOW LEGEND,
SEE FLOW SCHEMATIC.

SOUTHEASTERN WOOD ENERGY
TELOGIA, FLA.
PLOT PLAN

C. J. BAILEY, JR.
P. O. BOX 758 472-5691
BAYTOWN, TEXAS 77520

989

88-1992
1130

7-11 19 84

PAY TO THE ORDER OF Dept. of Environmental Regulators $ 1,000.00

One Thousand and no/100 DOLLARS

Citizens Bank and Trust Co.
F.D.I.C. P.O. BOX 150 BAYTOWN, TEXAS 77520

FOR Air permit Ellen Register

⑈000989⑈ ⑆113019920⑆ 533208⑈06

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

No 76034

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from C.J. Bailey, Jr. Date July 16, 1984

Address P.O. Box 758 Baytown Texas 77520 Dollars $ 1,000.00

Applicant Name & Address Liberty Energy Resources

Source of Revenue

Revenue Code 001031 Application Number

By Patricia G. Adams