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DEC 1 - 2010

Bureau of Air Monitoring & Mobile Sources

ANIMAL CREMATORY
AIR GENERAL PERMIT REGISTRATION FORM

Part II. Notification to Permitting Office

(Detach and submit to appropriate permitting office; keep copy onsite)

Instructions: To give notice to the Department of an eligible facility's intent to use this air general permit, the owner or operator of the facility must detach and complete this part of the Air General Permit Registration Form and submit it to the appropriate Department of Environmental Protection or local air pollution control program office which has permitting authority. Please type or print clearly all information, and enclose the appropriate air general permit registration processing fee pursuant to Rule 62-4.050, F.A.C. *($100 as of the effective date of this form)*

0150043-005

Registration Type

Check one:

INITIAL REGISTRATION - Notification of intent to:

☐ Construct and operate a proposed new facility.

☐ Operate an existing facility not currently using an air general permit (e.g., a facility proposing to go from an air operation permit to an air general permit).

RE-REGISTRATION (for facilities currently using an air general permit) - Notification of intent to:

☐ Continue operating the facility after expiration of the current term of air general permit use.

☐ Continue operating the facility after a change of ownership.

☒ Make an equipment change requiring re-registration pursuant to Rule 62-210.310(2)(e), F.A.C., or any other change not considered an administrative correction under Rule 62-210.310(2)(d), F.A.C.

Surrender of Existing Air Operation Permit(s) - For Initial Registrations Only

If the facility currently holds one or more air operation permits, such permit(s) must be surrendered by the owner or operator upon the effective date of this air general permit. In such case, check the first box, and indicate the operation permits being surrendered. If no air operation permits are held by the facility, check the second box.

☐ All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s): _____

☒ No air operation permits currently exist for this facility.

General Facility Information

Facility Owner/Company Name (Name of corporation, agency, or individual owner who or which owns, leases, operates, controls, or supervises the facility.)
Pet Haven Cemetery & Crematory

NOTE: STILL NORTHSTAR MEMORIAL GRP LLC verified via phone 12/17/10. D.

Site Name (Name, if any, of the facility site; e.g., Plant A, Metropolis Plant, etc. If more than one facility is owned, a registration form must be completed for each.)
Pet Haven Cemetery & Crematory

Facility Location (Provide the physical location of the facility, not necessarily the mailing address.)
Street Address: 27200 Jones Loop Rd
City: Punta Gorda County: Charlotte Zip Code: 33982 -2384

Facility Start-Up Date (Estimated start-up date of proposed **new** facility.) (N/A for existing facilities)
Jan 2011

Owner/Authorized Representative

Name and Position Title: (Person who, by signing this form below, certifies that the facility is eligible to use this air general permit.)
Print Name and Title: Karen Monnier GM

Owner/Authorized Representative Mailing Address
Organization/Firm: Pet Haven Cemetery & Crematory
Street Address: 27200 Jones Loop Rd
City: Punta Gorda County: Charlotte Zip Code: 33982

Owner/Authorized Representative Telephone Numbers
Telephone: 941-639-2381 Fax:
Cell phone (optional):

Facility Contact (If different from Owner/Authorized Representative)

Name and Position Title (Plant manager or person to be contacted regarding day-to-day operations at the facility.)
Print Name and Title: Karen Monnier GM

Facility Contact Mailing Address
Organization/Firm:
Street Address:
City: County: Zip Code:

Facility Contact Telephone Numbers
Telephone: Fax:
Cell phone (optional):

Owner/Authorized Representative Statement

This statement must be signed and dated by the person named above as owner or authorized representative

I, the undersigned, am the owner or authorized representative of the owner or operator of the facility addressed in this Air General Permit Registration Form. I hereby certify, based on information and belief formed after reasonable inquiry, that the facility addressed in this registration form is eligible for use of this air general permit and that the statements made in this registration form are true, accurate and complete. Further, I agree to operate and maintain the facility described in this registration form so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof.

I will promptly notify the Department of any changes to the information contained in this registration form.

Karen Monnier
Signature

DEC. 1, 2010
Date

Design Calculations

If this is an initial registration for a proposed new animal crematory unit, provide design calculations to confirm a sufficient volume in the secondary chamber combustion zone to provide for at least a 1.0 second gas residence time at 1800 degrees F.

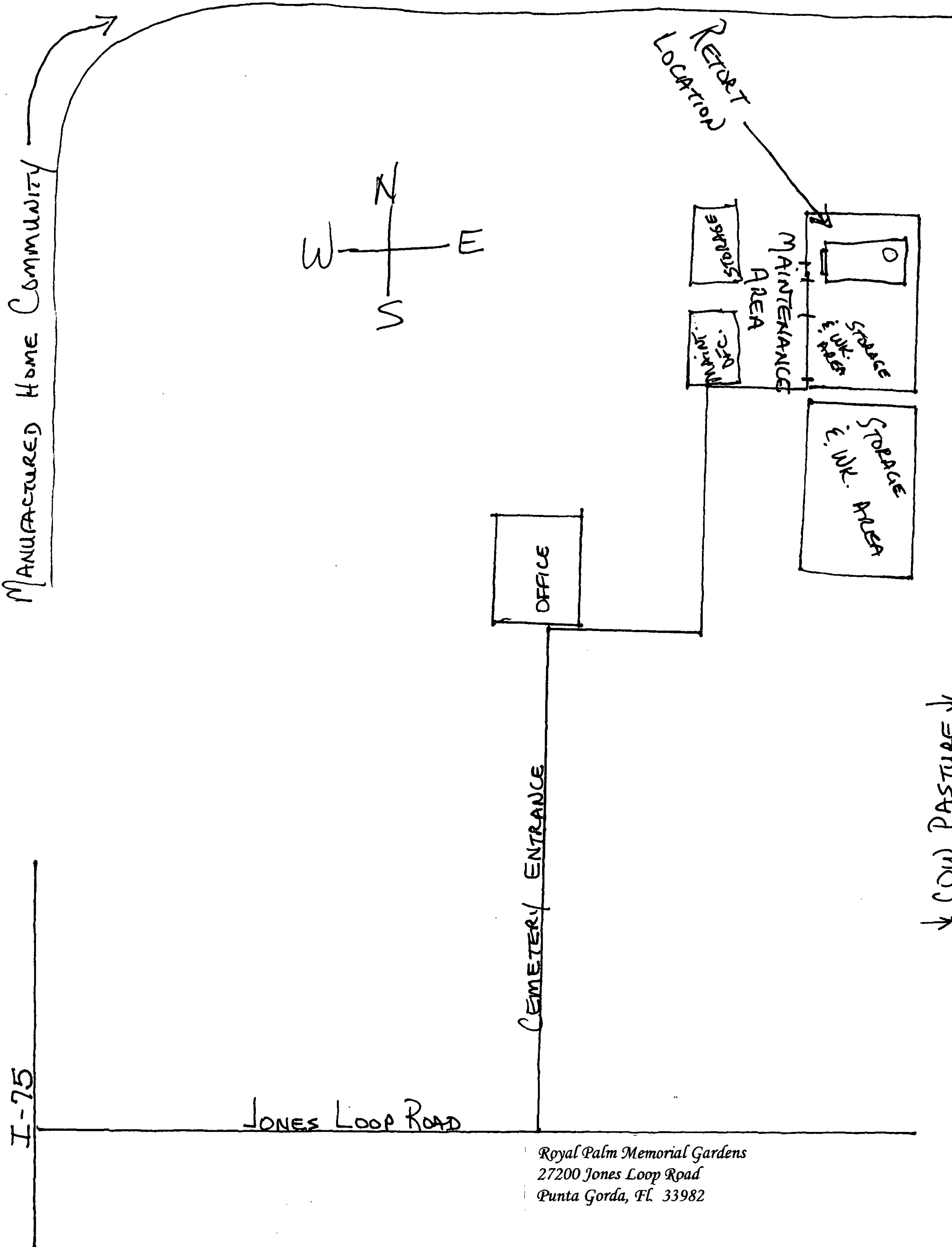
☒ Manufacturer's' design calculations attached.

☐ Registration is not for proposed new animal crematory unit(s).

Description of Facility

Below, or as an attachment to this form, provide a description of all crematory operations at the facility in sufficient detail to demonstrate the facility's eligibility for use of this air general permit and to provide a basis for tracking any future equipment or process changes at the facility. Describe all air pollutant-emitting processes and equipment at the facility, and identify any air pollution control measures or equipment used.

Removal of existing Crawford C-1000 Pet Crematory & installation of a B&L Cremation Systems Inc Pet Crematory Model BLP 500



Royal Palm Memorial Gardens
27200 Jones Loop Road
Punta Gorda, Fl. 33982

CALCULATIONS FOR PRODUCTS OF COMBUSTION
AND RESIDENCE TIME FOR 150 LB/hr
TYPE IV WASTE. B&L ANIMAL CREMATORY

PROPANE

A. BASIS: 1 LB WASTE

1. $\frac{\text{1 lb waste X 1000 Btu/lb waste X 15 lbs air}}{\text{10,000 Btu}}$ = 1.5 lbs air

2. $\frac{\text{1 lb waste X 0.10 lb combustible}}{\text{1 lb waste}}$ = 0.10 lbs of combustibles

3. $\frac{\text{1 lb waste X 0.85 lb H20 X 1.6*}}{\text{1 lb waste}}$ = 1.36 lbs of water

4. $\frac{\text{6,500 Btu aux fuel** X 23.8 cu ft air/cu ft fuel}}{\text{2500 Btu/cu ft fuel X 13.35 cu ft air/lb air @ 70f}}$ = 4.64 lbs of air for aux fuel

5. $\frac{\text{6,500 Btu aux fuel X 0.044 lb fuel/cu ft fuel}}{\text{2500 Btu/cu ft fuel}}$ = 0.11 lb of aux fuel

6. Sum = PRODUCTS OF COMBUSTION (POC) = 7.71 lbs POC per lb waste @ 70f

B. RESIDENCE TIME @ 1600 F

1. $\frac{\text{7.71 lbs POC/lbs waste X 51.89 cu ft / lb POC @ 1600f X 150 lbs waste / hr}}{\text{3600 sec/hr}}$

= 16.66 cu ft / sec @ 1600 f = 17.00 cu ft for 1 second residence time

RESIDENCE TIME @ 1800 F

2. $\frac{\text{7.71 lbs POC/lbs waste X 56.93 cu ft /lb POC @ 1800f X 150 lbs waste / hr}}{\text{3600 sec/hr}}$

= 18.28 cu ft / sec @ 1800f = 19.00 cu ft for 1 second residence time

* Correction multiplier for dry air and water vapor
** Fuel is propane

Referances: Incinerator institute of America.
North American Combustion Handbook
Eclipse Combustion Engineering guide

C. THERMOCOUPLE PLACEMENT.

Secondary chamber operating temperature at > or = to 1600f = 17.00 cu ft from flame tip.
1800f = 19.00 cu ft from flame tip.

Cremation
Systems, Inc.
7205 - 114th Avenue North • Largo, Florida 33773
1-800-622-5411 • 727-541-4666 • Facsimile 727-547-0669
e-mail: blcremsys@aol.com • www.blcremationsystems.com

PROCESS DESCRIPTION

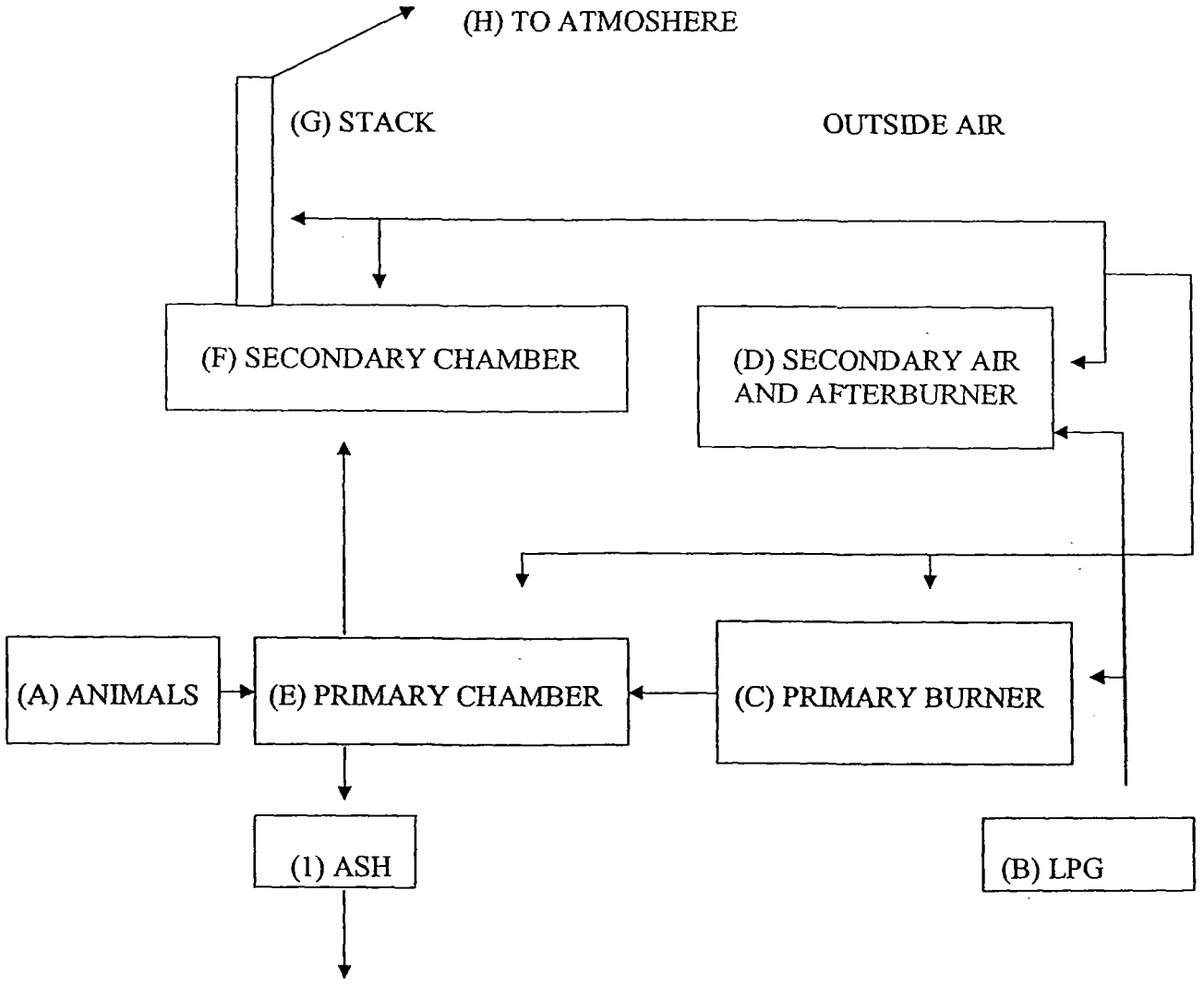
This project consists of the construction of one new cremation retort. This crematorium will consist of one B & L Systems Model BLP 500/150 Animal Cremator. The cremation unit will be fired on propane.

Deceased animal remains are manually placed into the primary chamber of the cremator. The door of the cremator is then closed. After a preheat of the afterburning chambers by the auxiliary burner, initial and supplementary combustion is provided by propane fired burner located in the primary chamber of the cremator. Once material combustion is initiated, the rate of the combustion is controlled by limiting both the combustion air and fuel supplied to the primary chamber through the primary burner. This process generates a highly combustible gas mixture that flows into a secondary chamber where more air is admitted to insure further oxidation of the gases. The auxiliary burner is installed in the secondary chamber of the cremator to facilitate complete combustion of all gaseous materials entering this chamber.

Once the cremation process is complete, the remains are removed from the primary chamber of the cremator. These remains are placed in urns and returned to the family for interment of disposal.

Cremation Systems, Inc.
7205 - 114th Avenue North • Largo, Florida 33773
1-800-622-5411 • 727-541-4666 • Facsimile 727-547-0669
e-mail: blcremsys@aol.com • www.blcremationsystems.com

PROCESS FLOW DIAGRAM



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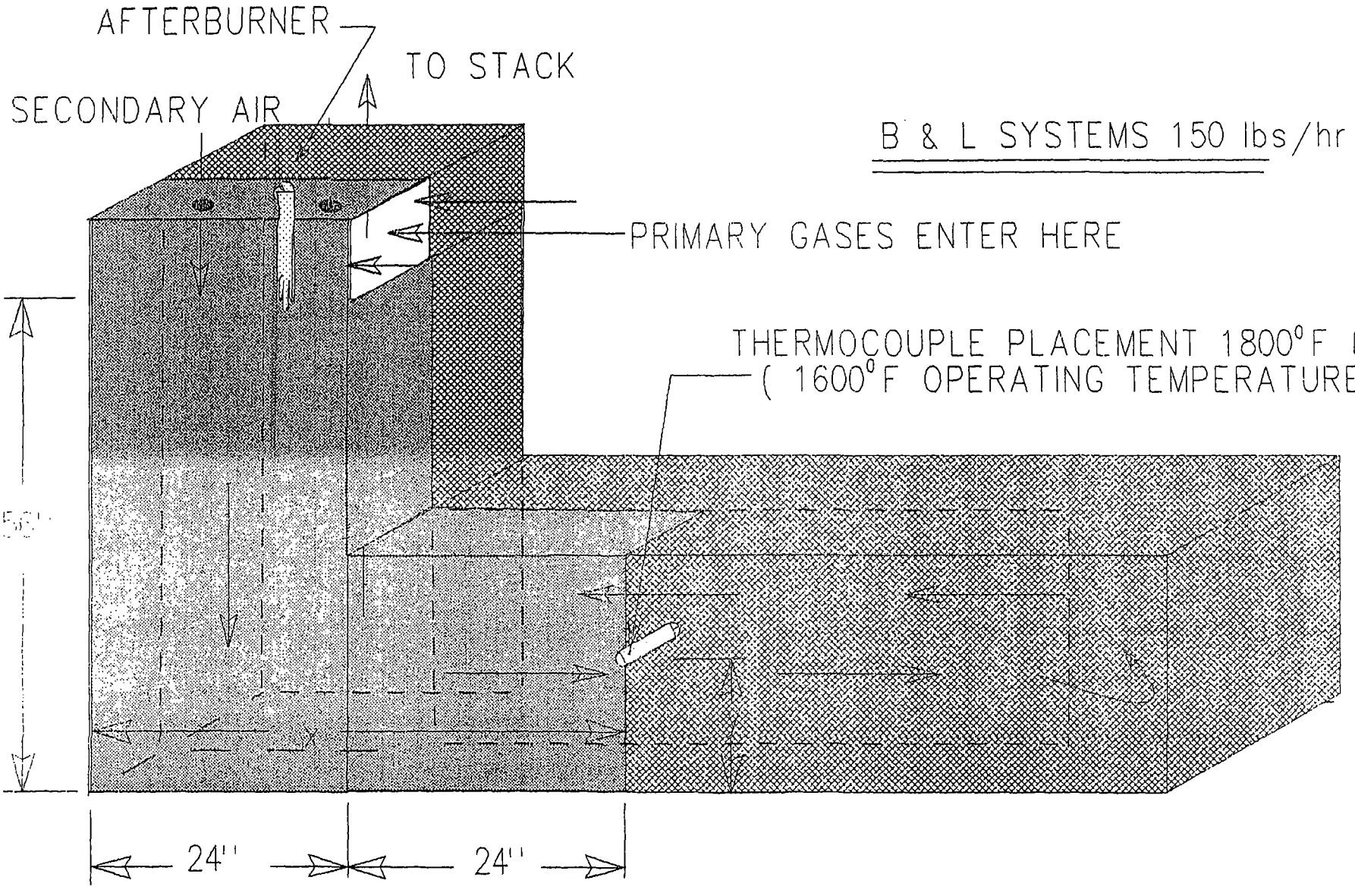
TEMPERATURE CONTROL SEQUENCE

A type "K" thermocouple is placed 19 ft. down stream of the flame tip to measure temperature, the signal is sent to the *main control panel* where it is received by a FUJI PYZ series temperature controller with digital readout and a DR4200 *temperature recorder.* The FUJI PYZ series temperature controller controls the temperature via a *motorized butterfly valve* located on the *afterburner inlet gas assembly.* Gas demand is controlled by temperature to maintain a steady temperature. The *ignition/cremation burner* is interlocked to the *afterburning temperature* by the FUJI PYZ series temperature controller set point. Combustion cannot start until *temperature set point* is reached. Alarm contacts in the FUJI PYZ series temperature controller are utilized for over (high) temperature conditions. 100° F over set point the *afterburner* will be in maximum low fire and the *ignition/cremation burner* will shut off. The *butterfly valve* located on the *secondary air inlet* is controlled by a separate temperature out put to add air to cool the system. At *set point* the unit will return to normal operation. An optimonitor smoke detector is placed on the stack and set at 10% opacity if emissions occur the alarm will sound; a visual *red warning lamp* located on the *control panel* will illuminate and the *primary burners* will shut off. The *excess air butterfly valve* will open to add air to the *secondary chamber* to oxidize the emissions. After a five (5) minute period the unit will revert to normal operation.



B & L SYSTEMS 150 lbs/hr SERIES

x=48'' (outside dim)

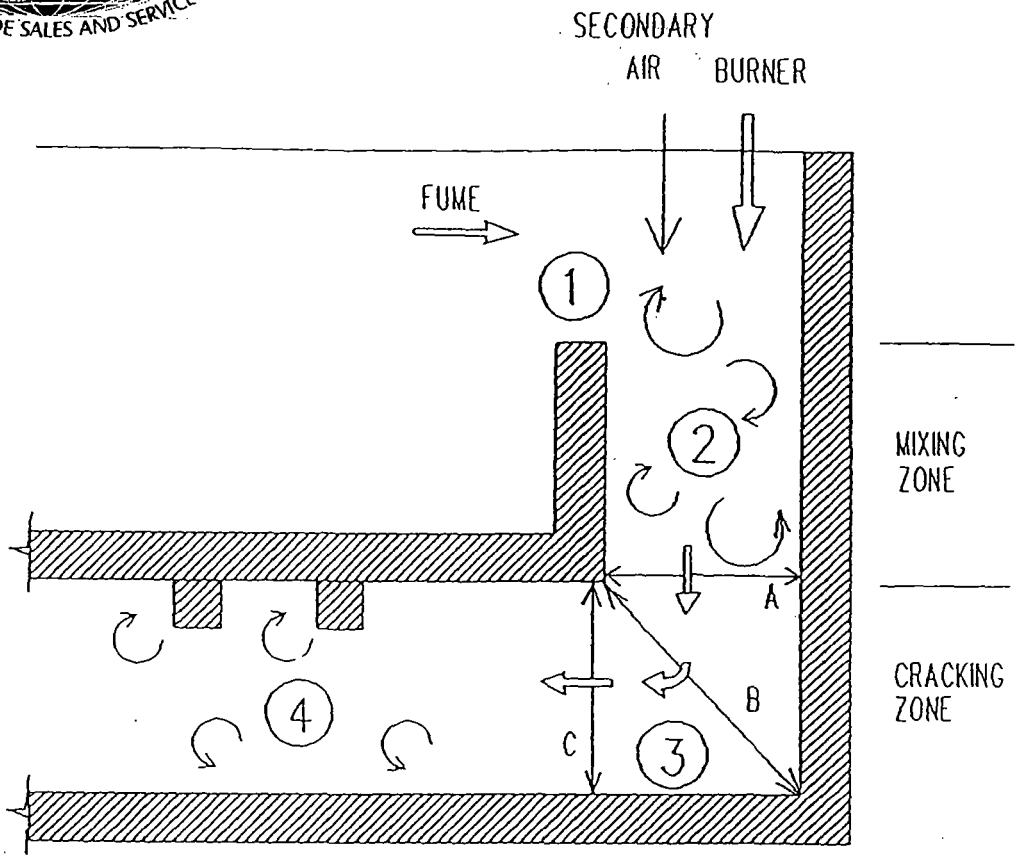
y=11.5''(outside dim)

CHAMBER SIZE VERTICAL 18''x24''x56'' = 14 FT^3

HORIZONTAL 18''x20''x24'' = 05 FT^3

19 FT^3

Cremation Systems, Inc.
WORLDWIDE SALES AND SERVICE
7205 - 114th Avenue North • Largo, Florida 33773
1-800-622-5411 • 727-541-4666 • Facsimile 727-547-0669

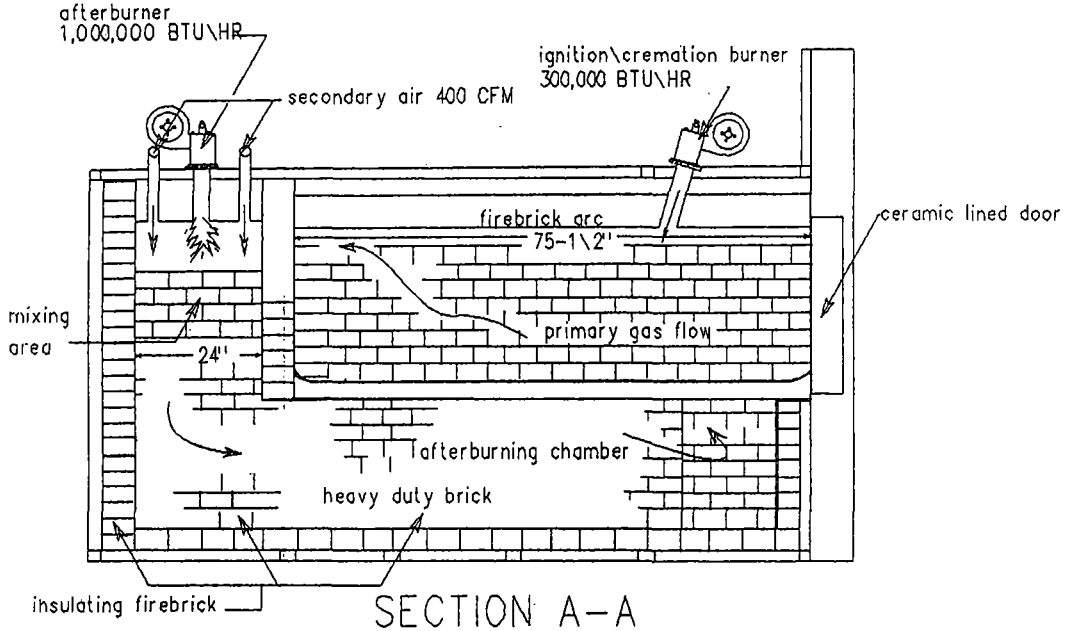


1. At the back of primary chamber, waste fume, air and burner flame all meet with different viscosities, volumes, velocities and flow directions which causes turbulence in the mixing zone of the secondary chamber.

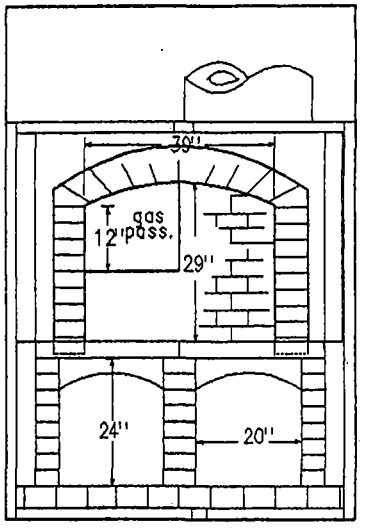
2. Turbulence continues in the mixing zone as flows are traversing the flame tip.

3. Changing velocity at flame front zone and cornering cause additional turbulence at the base of the unit. $V_A > V_B < V_C$.

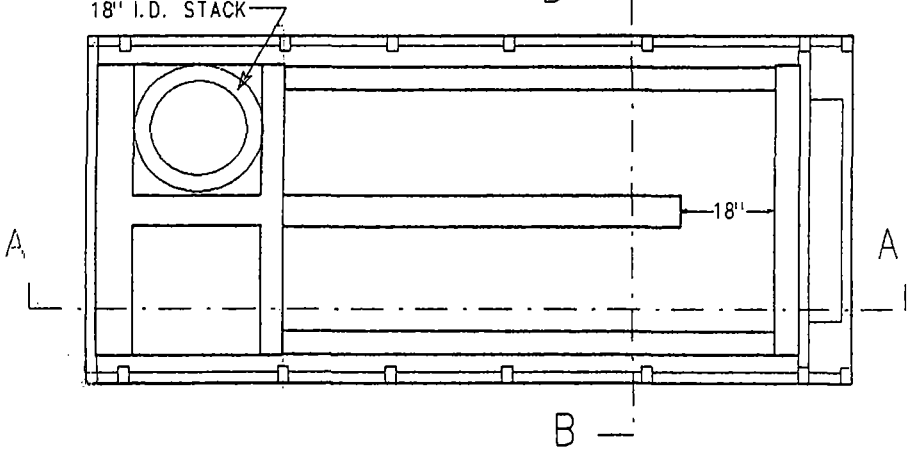
4. Uneven cross sectional area due to arches in the ceiling to support the primary chamber floor and additional changes in directional flow causes further turbulence downstream in the secondary chamber.



SECTION A-A



SECTION B-B



PLAN VIEW THRU CHAMBERS

BLP 500\150 ANIMAL CREMATOR

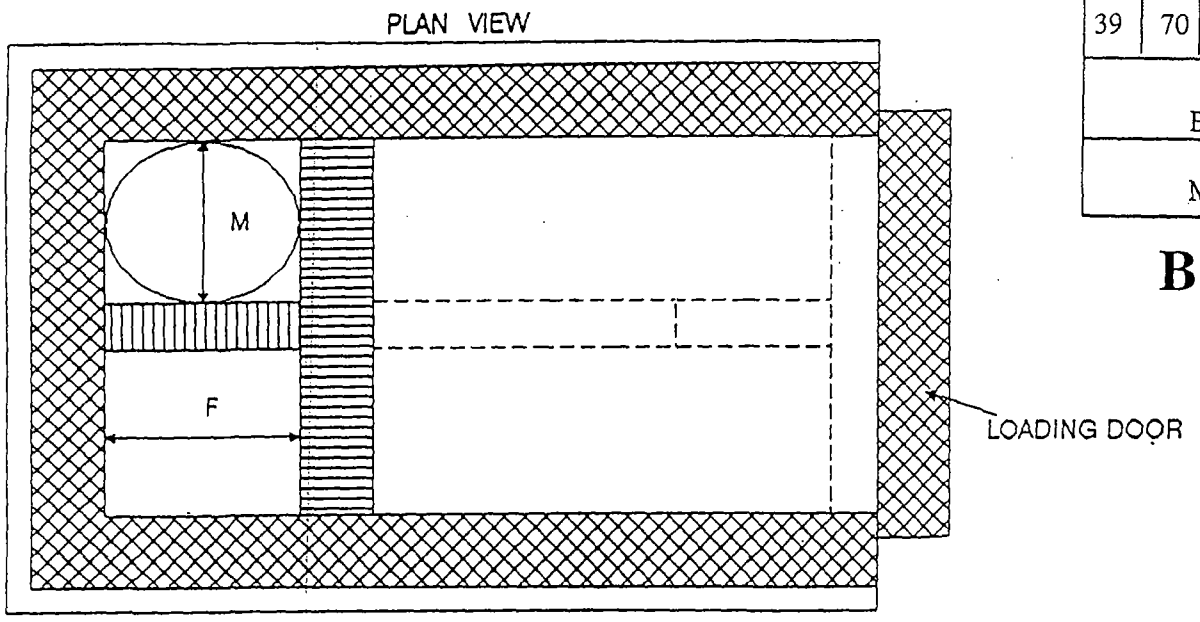
A	B	C	D	E	F	G	H	I	J	K	L	M	N
39	70	30	20	20	24	20	24	18	109	69	60	18	87

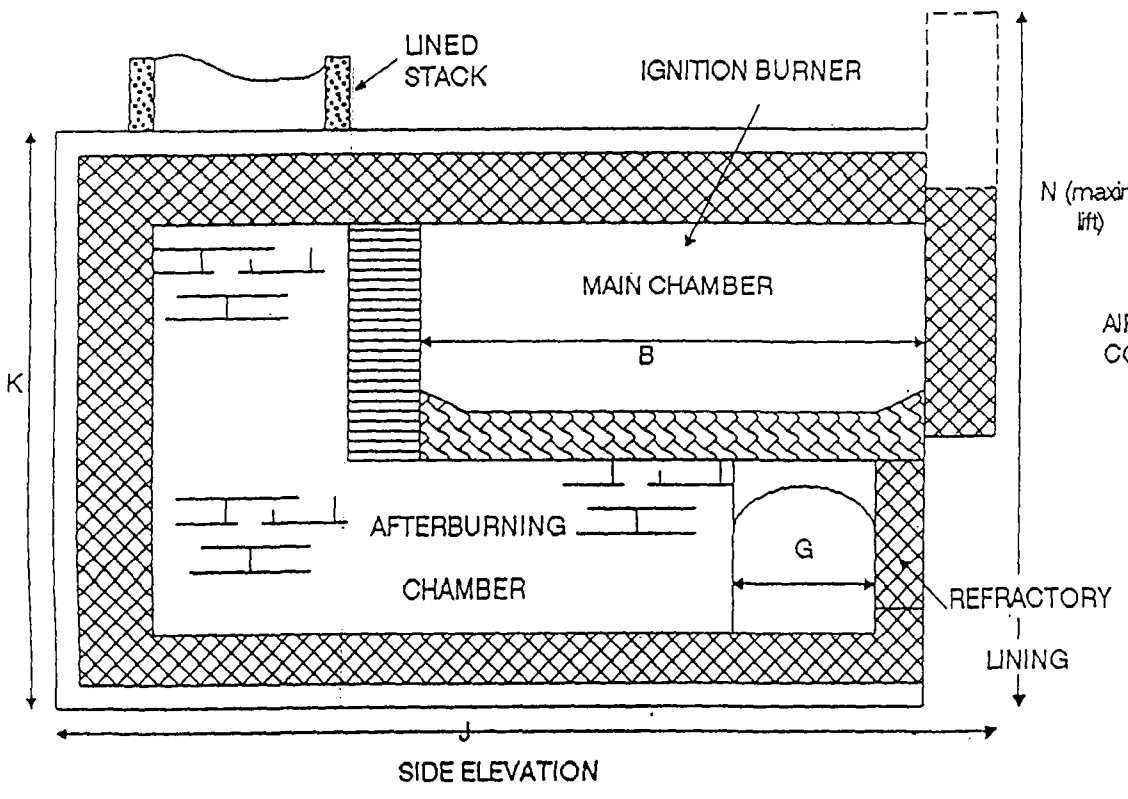
Burn Rate: 150 lbs/hr

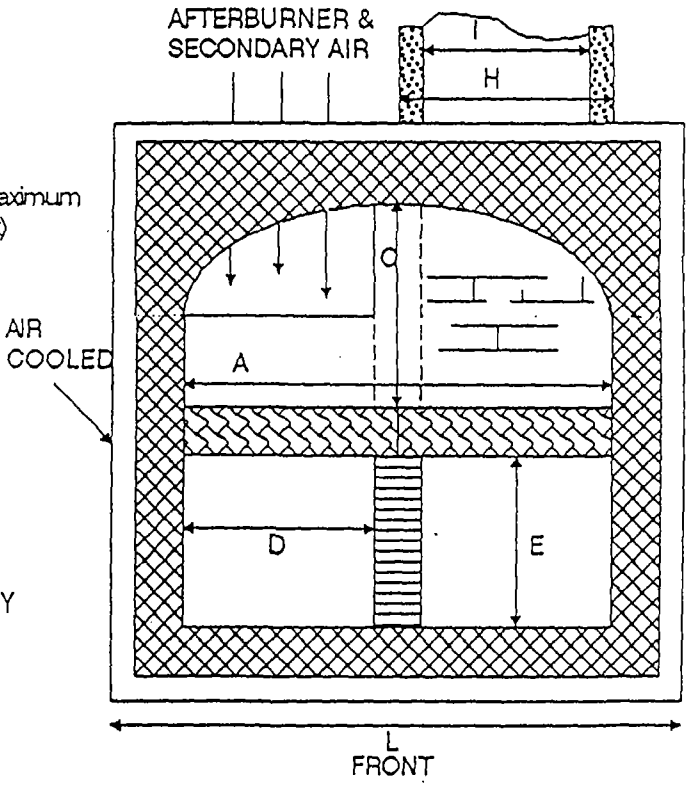
Model Number: BLP - 500/150

B & L Cremation Systems
Pet
Cremator
Specifications

1-800-622-5411





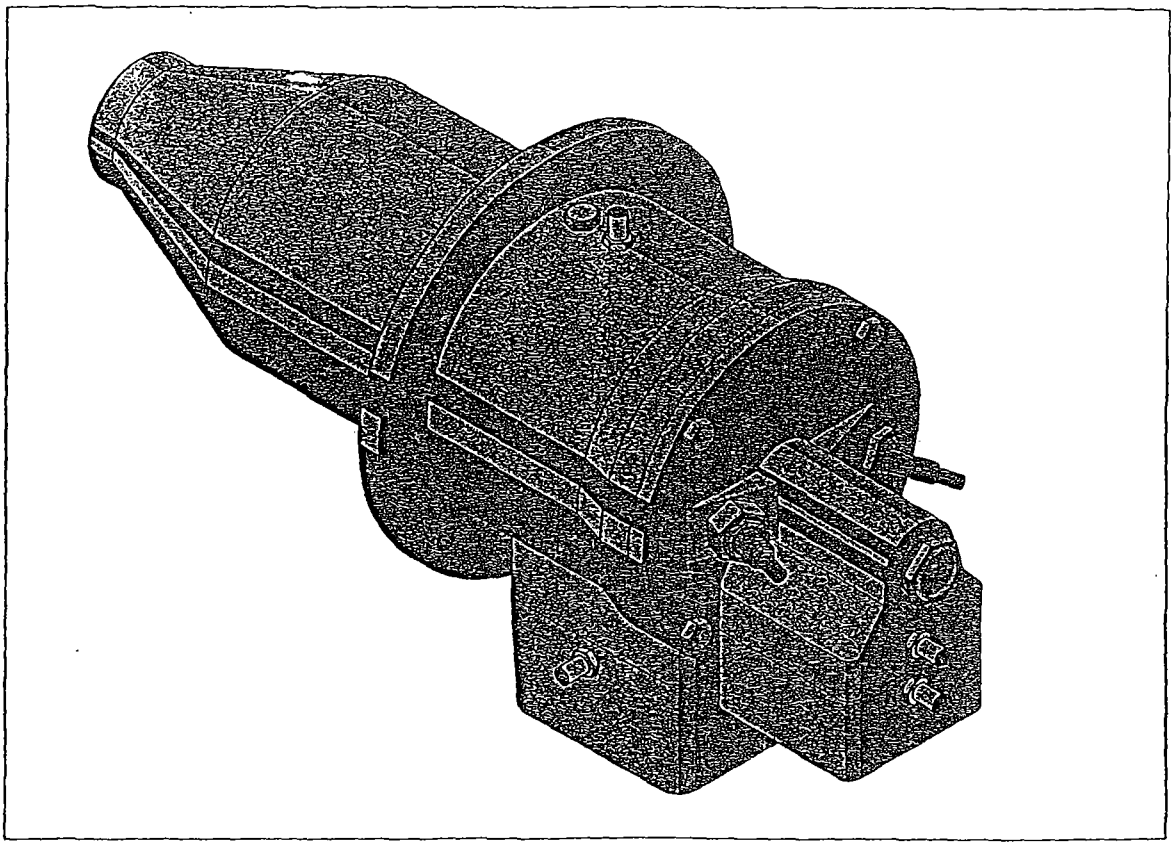


Instruction Manual

No. 205, 11/95

Eclipse Velocity Burners

ThermJet Series (version 1.0)



Eclipse Combustion

Specifications

3

INTRODUCTION

This section gives a detailed overview of the burner specifications. It also lists several options that are available for the ThermJet.

Figure 3.1 **The ThermJet burner**

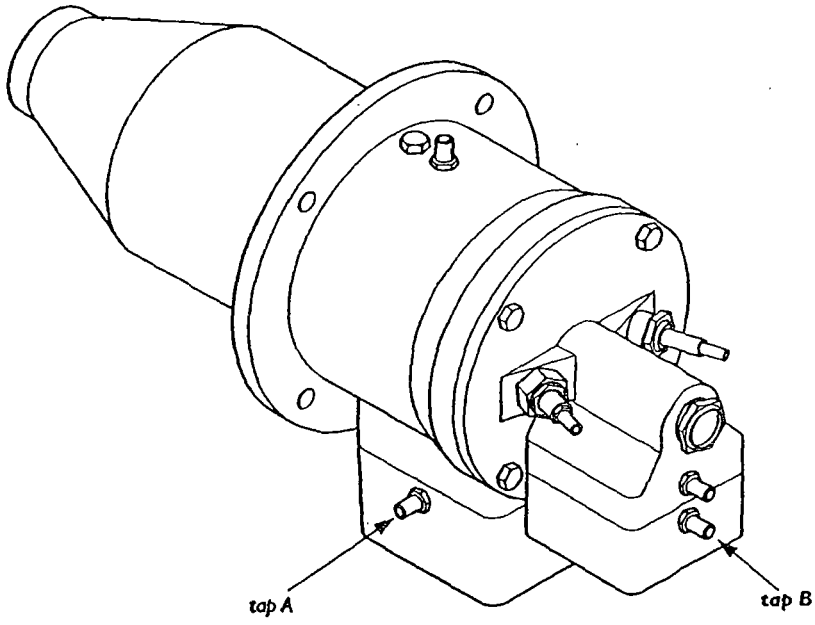


Table 3.1 **Options**

PARAMETER	OPTIONS	
Fuel	• natural gas • propane • butane.	*For any other mixed gas, contact Eclipse for orifice sizing.*
Flame detection	• U.V. scanner • flame rod, for use with alloy or silicon carbide firing tubes only.	
Ignition	• direct spark ignition (6 kV AC).	
Combustor	• alloy firing tube • silicon carbide firing tube • refractory block.	

SPECIFICATIONS

Main specifications

Table 3.2 **ThermJet performance data**

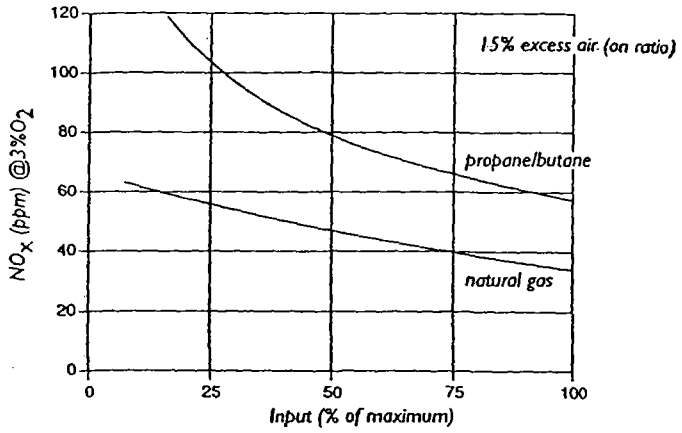
PARAMETER	BURNER TYPE (VELOCITY)		BURNER SIZE 50	75	100	150
High fire input (Btu/hr)	Medium & High velocity		500,000	750,000	1,000,000	1,500,000
Low firing rate, on-ratio (Btu/hr)	Medium & High velocity		50,000	75,000	100,000	150,000
Low firing rate, fixed air (Btu/hr)	Medium & High velocity		10,000	15,000	20,000	30,000
Static air pressure ("w.c.) • 15% excess air, at maximum input with standard orifice plate installed. measured at tap A (See Figure 3.1)	High velocity		12.0	16.0	14.5	18.5
	Medium velocity		7.5	8.0	7.5	9.5
Static gas pressure ("w.c.) • at maximum input with standard orifice plate installed. measured at tap B (See Figure 3.1)	High velocity		11.0	15.5	16.0	16.5
	Medium velocity		6.0	6.5	7.5	8.0
Flame length (In) (from end of firing tube)	High velocity	Nat. gas	25	30.4	33	38
		Propane	33	34	34	42
		Butane	30	30	35	43
	Medium velocity	Nat. gas	28	28	38	43
		Propane	36	38	37	42
		Butane	39	30	42	40
Maximum flame velocity (ft/s) • 15% excess air, at maximum input	High velocity		500	500	500	500
	Medium velocity		250	250	250	250

- all information is given for general sizing purposes only
- refer to data sheet for burner specific information
- all inputs based on gross calorific values

Performance graphs

The graphs that follow give you an approximate picture of the performance. Should you want more exact information, contact Eclipse Combustion.

Figure 3.2 **NO_x emissions**

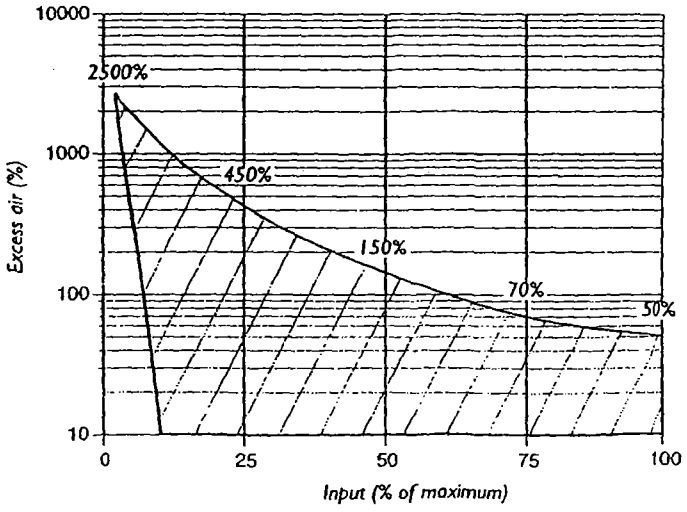


The emissions from the burner are influenced by:

- the fuel type
- the combustion air temperature
- the firing rate
- the chamber conditions
- the percent of excess air.

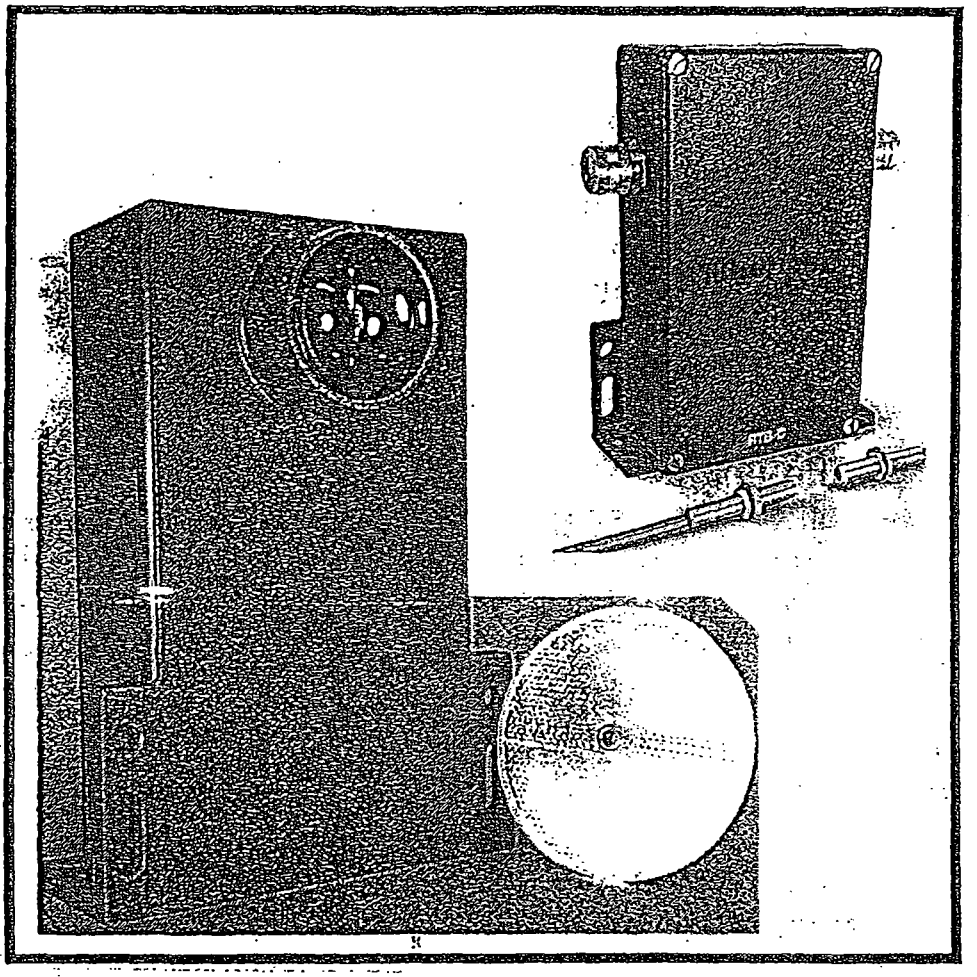
For estimates of other emissions, contact Eclipse Combustion.

Figure 3.3 **Operational zone**



OPTOMONITOR

VISIBLE EMISSIONS ALARM (VEA)



APPLICATION: Alarm and control for **Opacity** used on small and large sources for warning operators and shutting down systems based on opacity, haze or clarity.

- Proven Rugged Design
- Unaffected by Ambient Light
- Spans up to 6 Feet
- Visible LED Light Source
- Dual Beam or Single Beam
- Adjustable Delay up to 3 min.
- Easy to Install & Support
- External Adjustment

GENERAL PURPOSE OPACITY ALARMS

OPTOMONITOR

APPLICATION: These units are specifically designed to provide an operator with a reliable alarm system when Opacity or Smoke has exceeded a predefined limit. The alarm limit is easily set by using an opacity filter. The pulsed visible LED is unaffected by ambient light which makes for easy to install and calibrate.

FEATURES: The unit comes in either a single beam and dual beam design and an almost permanent LED light source. The electronics are housed in a rugged die-cast housing and powered by either 120 VAC or 230 VAC.

These designs meet all common installation requirements.

SPECIFICATIONS:

LIGHT SOURCE: Pulsed Visible LED.
SPECTRAL RESPONSE: Between 400nm & 500nm.
ANGLE OF VIEW: Less the 4 degrees from axis.
AMBIENT LIGHT: No measurable effect.

RANGE: 0 TO 100% Opacity.
ACCURACY: +/- 3% of full scale.
ALARMS: DPDT 5.0 A @ 120 VAC; 100% adj.
LED indicator for alarm setting.
OTHER OUTPUTS: ON-OFF operation (no time delay).
OFF time delay (reverse of normal).
Adjustable One-shot.

POWER: 100-130 Volts AC, 50/60 Hz, 10 VA.
TEMPERATURE: Ambient: -20 to +150 degrees F.
Storage: +20 to +90 degrees F.
ENCLOSURES: Meet NEMA 3,4,5,12.
PHYSICAL: ELECTRONICS 8.0" x 5.75" x 3.31" (HWD).
VEA-S SINGLE BEAM - 3/8"-24 inch. Straight Thread.
VEA-D DUAL BEAM SENSOR - 3" Diameter.

RESPONSE TIME: Selectable & Adjustable up to 3 minutes.

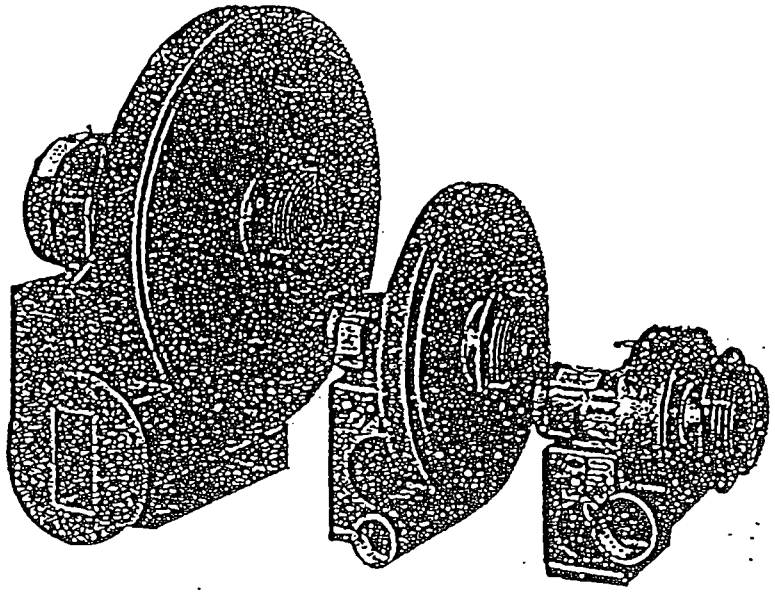
OPTOMONITOR, Inc.
270 Polaris Avenue
Mountain View, CA 94043
Phone: 415/967-8992
Fax: 415/967-0286

PLACE STAMP HERE

Bulletin 610
3/93
formerly K-55

ECLIPSE TURBO BLOWERS

SERIES "SMJ"



- High efficiency
- Heavy gauge steel base and housing
- Aluminum impellers balanced statically and dynamically
- Matching air filters available
- Changeable outlet positions

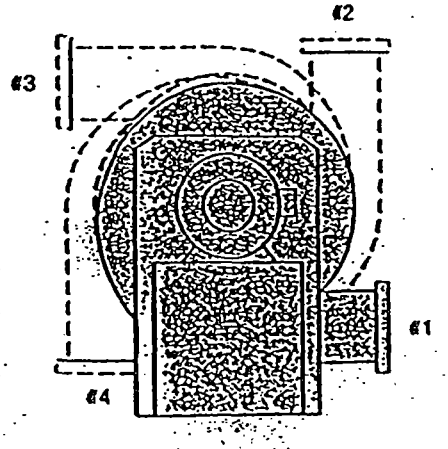
Eclipse "SMJ" Blowers are centrifugal blowers that provide low pressure air for industrial combustion systems. They are also used for cooling, conveying, drying, liquid agitation, smoke abatement, vacuum cleaning, fume and dust exhausting, and other plications where air temperatures are under 220°F.

All "SMJ" Blowers are constructed of continuous welded, heavy gauge steel. The impellers are made of lightweight, high strength, riveted aluminum. Outlets on 3" and 4" models are threaded, while all others are flanged for a standard 125# ANSI companion flange. Discharge ports are sized to keep pressure losses within reasonable limits.

Blower inlet flanges are equipped with a grill that complies with OSHA regulations. If desired, the grill may be removed and the inlet bolted to a standard ANSI companion flange. Eclipse-supplied motors are standard shaft and starting torque, ball bearing, 3600 rpm units. On any blower requiring 3/4 HP or more, Eclipse recommends that polyphase motors be used.

There are four possible outlet positions. Any existing position is easily changed by removing the housing from the blower base and remounting it in the desired position. Positions 1 through 3 can be specified for any blower. Position 4, however, requires factory approval before ordering. Position 1 is the standard assembly (bottom, horizontal) unless otherwise specified.

"SMJ" Blowers can be supplied with counterclockwise (CCW) or clockwise (CW) rotation as viewed from the motor side. CCW rotation is furnished standard unless otherwise specified.

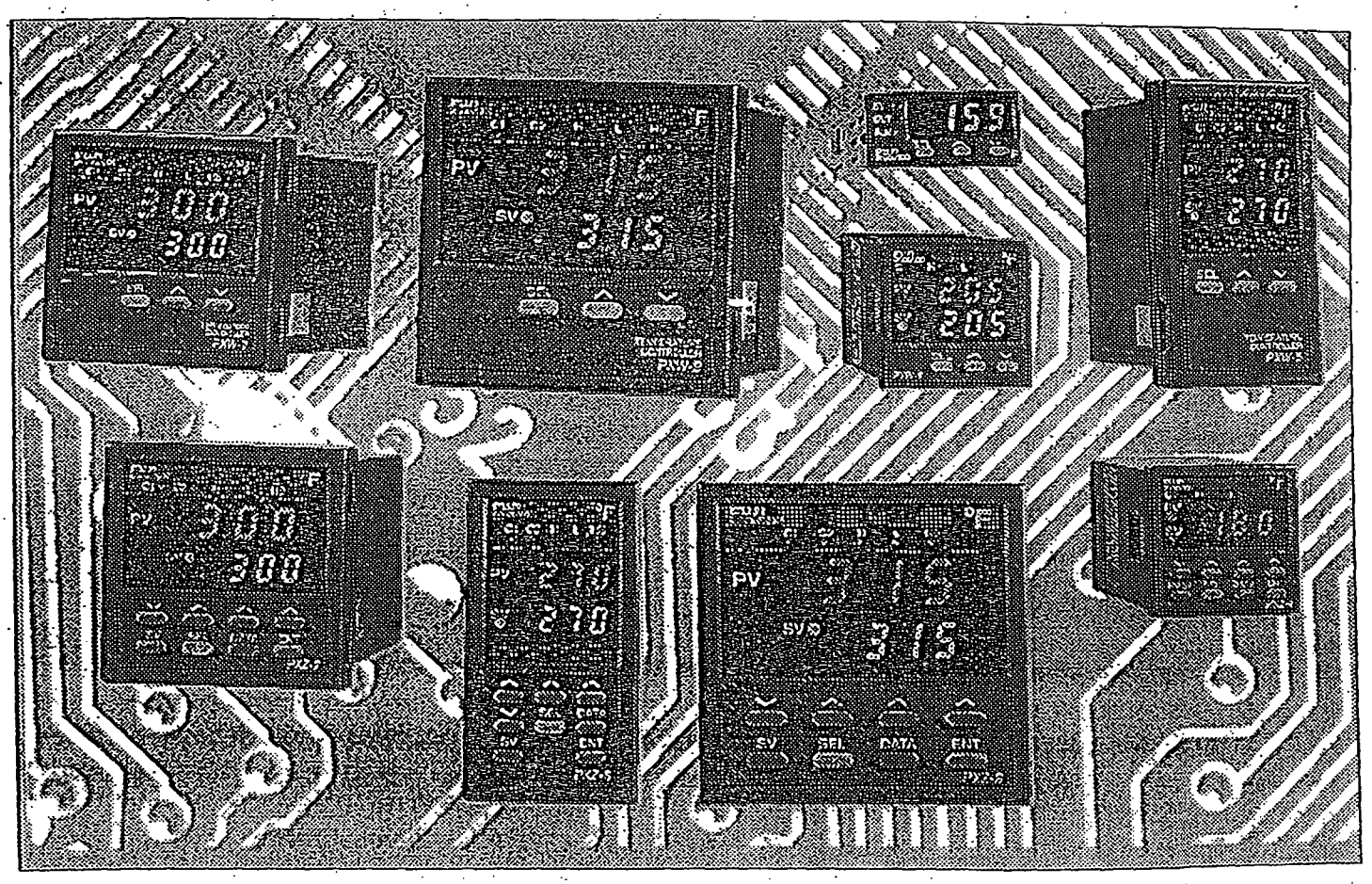


Outlet Positions

FUJI ELECTRIC

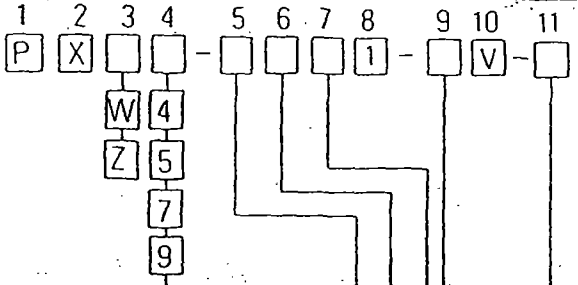
PX SERIES

PID Autotune
Controllers
Featuring Fuzzy Logic



Operation Manual

MODEL CONFIGURATION



Front panel size	Code
48 x 48 (1/16DIN)	4
48 X 96 (1/8 DIN)	5
72 x 72 (72mm)	7
96 x 96 (1/4 DIN)	9

Kinds of input	Code
Thermocouple (°C)	T
Thermocouple (°F)	R
RTD/Pt100 (°C)	N
RTD/Pt100 (°F)	S
4-20mA DC, 1-5V DC	B
0-20mA DC, 0-5V DC	A

Control output 1	Code
Relay contact (reverse action)	A
Relay contact (direct action)	B
SSR driver (reverse action)	C
SSR driver (direct action)	D
4 to 20mA DC (reverse action)	E
4 to 20mA DC (direct action)	F

Control output 2*	Code
None	Y
Relay contact (reverse action)	A
Relay contact (direct action)	B
SSR driver (reverse action)	C
SSR driver (direct action)	D
4 to 20mA DC (reverse action)	E
4 to 20mA DC (direct action)	F

*not available on 48 x 48mm type

Additional function	Code
Heater break alarm*	2
Process alarm & Heater break alarm*	3
None	4
Process alarm	5

*not available on 48 x 48mm type

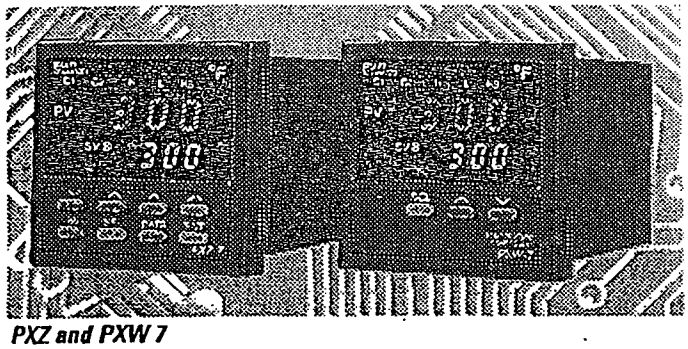
Power Supply Option	Code
24V AC/DC Supply	D

FEATURES:

- 1/4 DIN, 1/8 DIN, 72mm, 1/16 DIN and 1/32 DIN sizes available
- Choose between 3-button or 8-button operation
- Fuzzy logic control with PID Autotune
- Universal input-T/C, RTD, current, and voltage
- 24V DC/AC supply option available
- 8 segment ramp/soak programming
- Advanced security options to prevent unauthorized changes in parameters
- NEMA 4X faceplate

GENERAL SPECIFICATIONS

Rated voltage	85-264V AC or 24 AC/DC
Power consumption	10VA or less (100V AC, without option) 15VA or less (220V AC, without option)
Insulation resistance	50M Ω or more (500V DC)
Withstand voltage	Power source-Earth: 1500V AC, 1 min Power source-Other: 1500V AC, 1 min Earth-relay output: 1500V AC, 1 min Earth-Alarm output: 1500V AC, 1 min Other: 500V AC, 1 min
Input impedance	Thermocouple: 1M Ω or more Voltage: 450K Ω or more Current: 250 Ω (external resistor)
Allowable signal source resistance	Thermocouple: 100 Ω or more Voltage: 1K Ω or more
Allowable wiring resistance	RTD: 10 Ω or less per wire
Reference junction compensation accuracy	± 1 °C (at 23°C)
Process variable offset	(PV shift) ±10% FS
Set variable offset	± 50% FS
Input filter	0-120.0 sec. setting in 0.1 sec steps (primary lagging filter)
Noise reduction ratio	Normal mode noise (50/60Hz): 50dB or more Common mode noise (50/60Hz): 140dB or more



PXZ and PXW 7

POWER FAILURE PROCESSING

Memory protection:	Non-volatile memory hold After the recovery of power, control is started at the value before power failure

SELF-CHECK

Method:	Watchdog timer monitors program error.

OPERATION AND STORAGE CONDITIONS

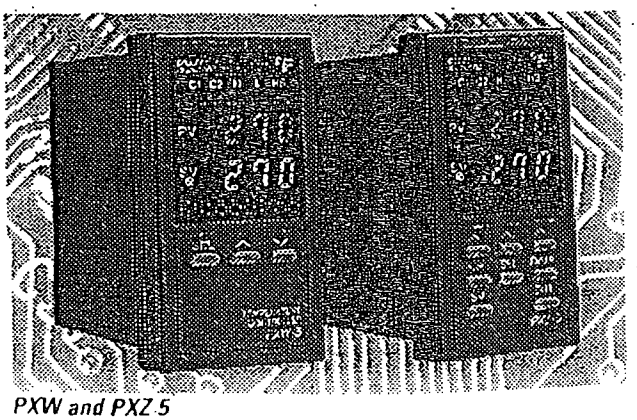
Operating temperature	-10 to 50°C
Operating humidity	90% RH or less (non-condensing)
Storage temperature	-20 to 60°C

CONTROL FUNCTION
(STANDARD TYPE)

Control action	PID control with auto-tuning Fuzzy control with auto-tuning
Proportional band (P)	0-999.9%, setting in 0.1% steps
Integral time (I)	0-3200 sec, setting in 1 sec steps
Differential time (D)	0-999.9 sec, setting in 1 sec steps
P,I,D= 2-Pt. Position action when P,I,D=0 Proportional action when I,D=0	
Proportional cycle	1-150 sec, setting in 1 sec steps, relay contact output, SSR/SSC drive output only
Hysteresis width	0-50%, setting in 1% steps, 2-position action only
Anti-reset wind up	0-100% FS, setting in 1% steps; auto-setting with auto-tuning
Input sampling cycle	0.5 sec
Control cycle	0.5 sec

CONTROL FUNCTION
(DUAL OUTPUT TYPE) (HEATING/COOLING TYPE)

Heating Proportional band	P x 1/2 (P= 0.999.9%)
Cooling Proportional band	Heating proportional band x cooling proportional band coefficient Cooling proportional band coefficient= 0-99.9 0:2- position action
Integral time	0-3200 sec for heating and cooling
Differential time	0-999.9 sec for heating and cooling
P,I,D= 0:2- position action (without dead band) for heating and cooling I,D= 0:Proportional action	
Proportional cycle	1-150 sec, relay contact output, SSR/SSC drive output only
Hysteresis width	2-position action for heating and cooling 0.5% FS 2-position action for cooling 0.5% FS
Anti-reset wind-up	0-100% FS, setting in 1% steps, auto setting with auto-tuning
Overlap/dead band	±50% of heating proportional band
Input sampling cycle	0.5 sec
Control cycle	0.5 sec



PXW and PXZ 5

EMISSIONS TESTING
of the
FOSTER'S PET CREMATION SERVICE
B & L SYSTEMS, INC. BLP 500/150
ANIMAL CREMATORY INCINERATOR
Spring Hill, Florida

March 9, 2004

FDEP Permit No.: 1010377-002-AO
EU No. 003
SES Reference No. 04S61

Conducted by:

SOUTHERN ENVIRONMENTAL SCIENCES, INC.
1204 North Wheeler Street
Plant City, Florida 33563
Phone (813) 752-5014, Fax (813) 752-2475

Project Participants

Mark S. Gierke
Dale A. Wingler
Travis B. Nelson

EMISSIONS TESTING
of the
FOSTER'S PET CREMATION SERVICE
B & L SYSTEMS, INC. BLP 500/150
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1.0 INTRODUCTION

Southern Environmental Sciences, Inc. conducted emissions testing of the Foster's Pet Cremation Service animal crematory on March 9, 2004. This facility is located at 15204 County Line Road, Spring Hill, Florida. Testing was conducted for particulates, carbon monoxide and visible emissions. Oxygen (O_2) concentrations were measured to correct emission rates to 7% O_2. Testing was performed to determine if the plant was operating in compliance with requirements of the Florida Department of Environmental Protection (FDEP).

2.0 SUMMARY OF RESULTS

The facility was found to be in compliance with all applicable emission limiting standards. Results of the particulate and carbon monoxide testing are summarized in Table 1. Particulate emissions from this source are limited to a maximum allowable concentration of 0.080 grains per dry standard cubic foot (corrected to 7% O_2), and 0.30 pounds per hour. The average measured particulate concentration was 0.009 grains per dry standard cubic foot (corrected to 7% O_2), and 0.031 pounds per hour, well within the limit. The maximum allowable carbon monoxide emissions concentration from this source is 100 parts per million, dry basis (corrected to 7% O_2), and 0.17 pounds per hour. The average measured carbon monoxide emission concentration was 4.3 parts per million, dry basis (corrected to 7% O_2), and 0.01 pounds per hour, well within the allowable limit.

A visible emissions evaluation was performed over a one hour period. The average

TABLE 1. EMISSIONS TEST SUMMARY

Company: FOSTER'S PET CREMATION SERVICE
Source: Animal Crematory Incinerator

	Run 1	Run 2	Run 3
Date of Run	3/9/04	3/9/04	3/9/04
Process Rate (lbs/hr)	124	124	124
Start Time (24-hr. clock)	1135	1302	1425
End Time (24-hr. clock)	1238	1403	1526
Vol. Dry Gas Sampled Meter Cond. (DCF)	35.293	36.308	37.298
Gas Meter Calibration Factor	0.986	0.986	0.986
Barometric Pressure at Barom. (in. Hg.)	30.14	30.14	30.14
Elev. Diff. Manom. to Barom. (ft.)	0	0	0
Vol. Gas Sampled Std. Cond. (DSCF)	34.324	34.476	35.476
Vol. Liquid Collected Std. Cond. (SCF)	8.020	6.794	5.913
Moisture in Stack Gas (% Vol.)	18.9	16.5	14.3
Molecular Weight Dry Stack Gas	29.04	29.12	29.30
Molecular Weight Wet Stack Gas	26.95	27.29	27.69
Stack Gas Static Press. (in. H2O gauge)	-0.01	-0.01	-0.01
Stack Gas Static Press. (in. Hg. abs.)	30.14	30.14	30.14
Average Square Root Velocity Head	0.164	0.175	0.178
Average Orifice Differential (in. H2O)	1.049	1.041	1.118
Average Gas Meter Temperature (°F)	80.6	93.7	92.9
Average Stack Gas Temperature (°F)	1240.3	1367.1	1359.6
Pitot Tube Coefficient	0.84	0.84	0.84
Stack Gas Vel. Stack Cond. (ft./sec.)	17.01	18.68	18.85
Effective Stack Area (sq. ft.)	1.77	1.77	1.77
Stack Gas Flow Rate Std. Cond. (DSCFM)	457	482	501
Stack Gas Flow Rate Stack Cond. (ACFM)	1,803	1,981	1,999
Net Time of Run (min.)	60	60	60
Nozzle Diameter (in.)	0.611	0.611	0.611
Percent Isokinetic	108.7	103.6	102.5

TABLE 1. EMISSIONS TEST SUMMARY (con't)

Company: FOSTER'S PET CREMATION SERVICE
Source: Animal Crematory Incinerator

	Run 1	Run 2	Run 3	
Date of Run	3/9/04	3/9/04	3/9/04	
Process Rate (lbs/hr)	124	124	124	
Start Time (24-hr. clock)	1135	1302	1425	
End Time (24-hr. clock)	1238	1403	1526	
Oxygen (%)	8.0	10.0	10.5	
				Average
Particulate Collected (mg.)	34.0	11.1	7.4	
Particulate Emissions (gr./DSCF)	**0.015**	**0.005**	**0.003**	**0.008**
Particulate Emissions (gr./DSCF @ 7% O2)	**0.016**	**0.006**	**0.004**	**0.009**
Allowable Part. Emissions (gr./DSCF @ 7% O2)				**0.080**
Particulate Emissions (lb./hr.)	**0.060**	**0.021**	**0.014**	**0.031**
Allowable Part. Emissions (lb./hr.)				**0.30**
CO Emissions (PPM)	3.08	2.25	5.00	4.3
CO Emissions (PPM @ 7% O2)	3.3	2.9	6.7	4.3
Allowable CO Emissions (PPM @ 7% O2)				100
CO Emissions (lb./hr.)	0.006	0.005	0.011	0.007
Allowable CO Emissions (lb./hr.)				0.12

Note: Standard conditions 68°F, 29.92 in. Hg

maximum six minute opacity was zero percent, well within the allowable limit of 5 percent.

3.0 PROCESS DESCRIPTION

The B & L Systems, Inc. Model BLP 500/150 Series crematory incinerator cremates animal remains in an environmentally acceptable manner. Emissions are controlled by an afterburner. The afterburner is preheated and maintained at a minimum operating temperature of 1600°F prior to ignition of the primary chamber. The unit is designed to be charged with a maximum of 500 pounds of animal remains and incinerate at a maximum rate of 150 pounds per hour with a maximum heat input of 1.35 MMBTU per hour (primary chamber 0.35 MMBTU per hour, secondary chamber 1.0 MMBTU/hr), each chamber fired exclusively on propane gas only. The time required for complete incineration depends upon the total weight of the waste. Process operational data was provided by facility personnel and is included in the appendix.

4.0 SAMPLING PROCEDURES

4.1 Methods

All sampling was performed using methods currently acceptable to the FDEP. Particulate sampling and analyses were conducted in accordance with EPA Method 5 - Determination of Particulate Emissions from Stationary Sources, 40 CFR 60, Appendix A-3. Carbon monoxide emissions were conducted in accordance with EPA Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources, 40 CFR 60, Appendix A-4. The oxygen content of the stack gas was determined in accordance with EPA Method 3B - Gas

Analysis for the Determination of Emission Rate Correction Factor or Excess Air, 40 CFR 60, Appendix A-2. The visible emissions evaluation was performed using procedures described in EPA Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources, 40 CFR 60, Appendix A-4.

4.2 Sampling Locations

Locations of the sample ports and stack dimensions are shown in Figure 1. Particulate sampling was accomplished by conducting horizontal traverses through each of two ports located on the stack at a ninety degree angle from one another. Twenty four sample points were chosen in accordance with EPA Method 1 - Sample and Velocity Traverses for Stationary Sources, 40 CFR 60, Appendix A-1. Carbon monoxide and oxygen sampling were performed from the same sampling ports as the particulate sampling.

4.3 Sampling Trains

The particulate sampling train consisted of a Nutech Corporation 3 foot quartz lined probe and nozzle, a heated glass fiber filter and four impingers arranged as shown in Figure 2. Flexible tubing was used between the heated filter and the impingers. The first two impingers were each charged with 100 milliliters of water, the third served as a dry trap and the fourth impinger was charged with indicating silica gel desiccant. The impingers were cooled in an ice and water bath during sampling. A Nutech Corporation control console was used to monitor the gas flow rates and stack conditions during sampling.

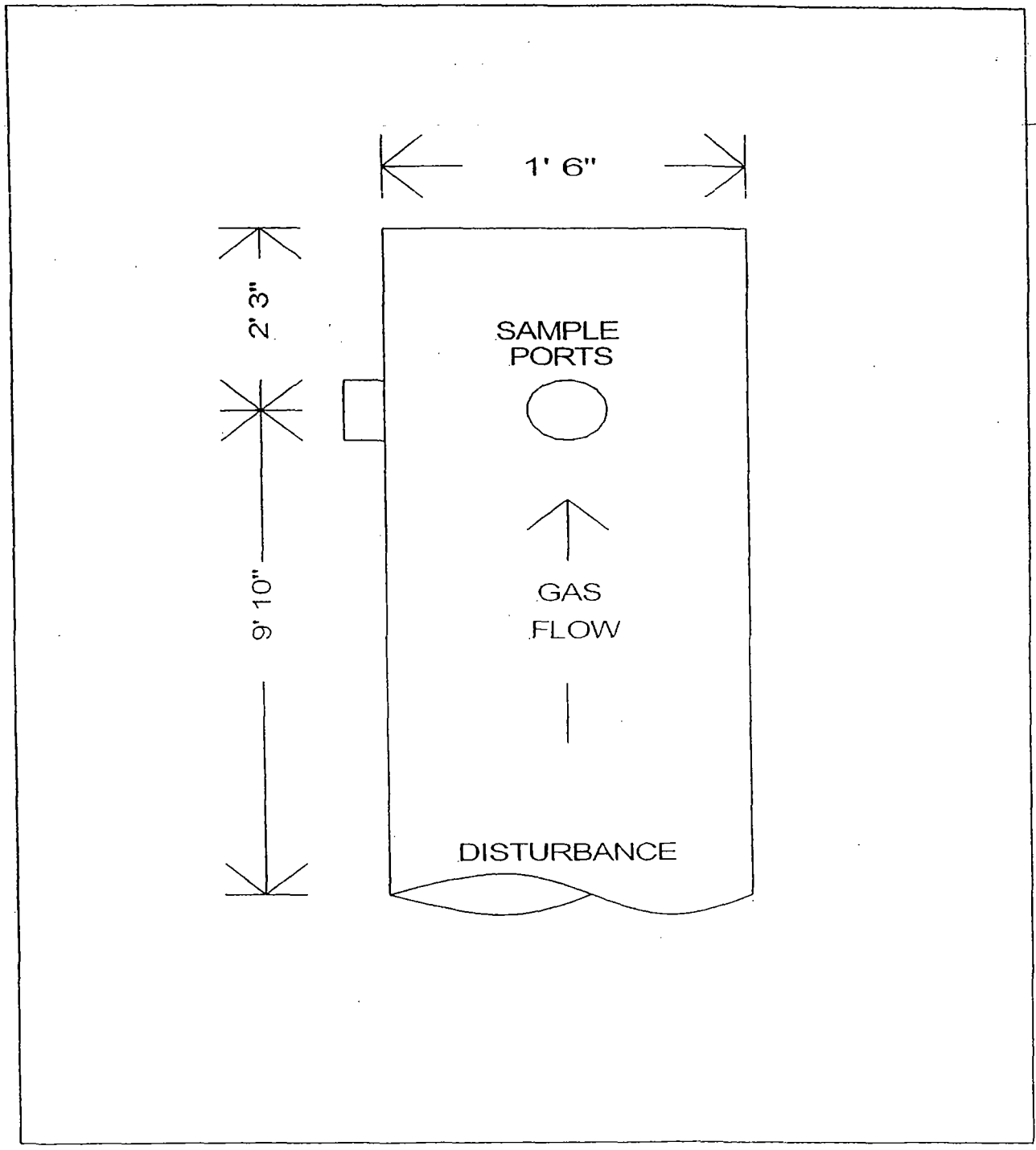


Figure 1. Stack Dimensions and Sample Port Locations, Foster's Pet Cremation Service, Animal Crematory Incinerator, Spring Hill, Florida.

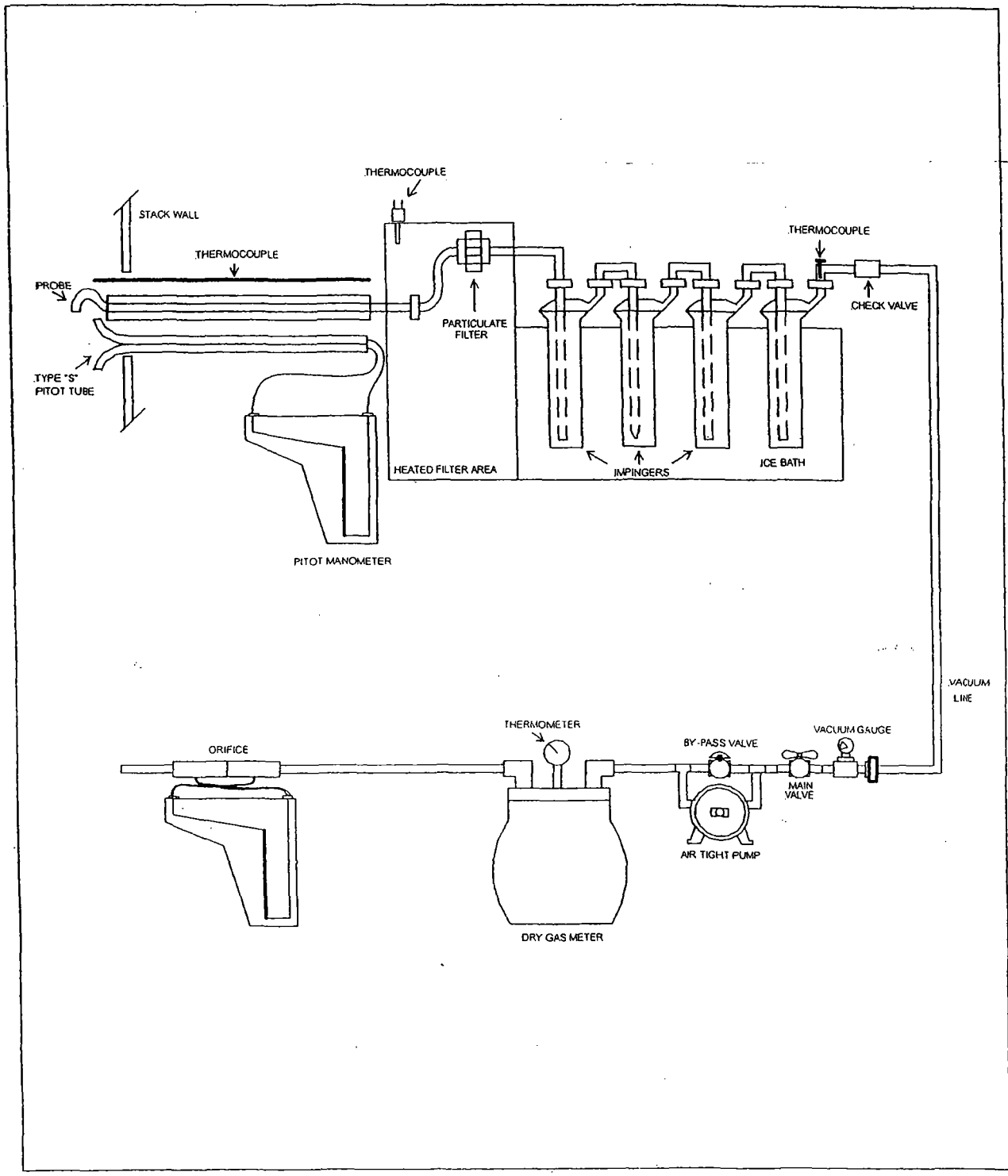


Figure 2. EPA Method 5 Sampling Train.

The carbon monoxide sampling train consisted of a stainless steel probe, teflon sample line, condenser, silica gel and carbon dioxide adsorbent tubes and a Thermo Environmental Instruments, Inc. Model 48 Gas Filter Correlation CO analyzer arranged as shown in Figure 3. The oxygen sampling train consisted of a probe, sample line, tedlar bag in a rigid container, valve, vacuum pump, and flow meter.

4.4 Sample Collection

Prior to particulate sampling, the pitot tubes were checked for leaks and the manometers were zeroed. A pretest leak check of the particulate sampling train was conducted by sealing the nozzle and applying a 15" Hg vacuum. A leak rate of less than 0.02 cubic feet per minute was considered acceptable. Particulate sample was collected isokinetically for two and one half minutes at each of the points sampled.

The carbon monoxide analyzer was calibrated immediately prior to the beginning of the test and checked after each run by introducing known gases into the instrument through the sampling train.

The tedlar bag used for obtaining an integrated oxygen sample was leak checked prior to the test by pressurizing it to 2 to 4 in. H_2O and allowing it to stand overnight. The bag was considered leak free if it remained inflated. A one hour integrated sample was obtained at a rate 0.5 liters per minute for each run.

Carbon monoxide and oxygen sampling were conducted simultaneously with particulate

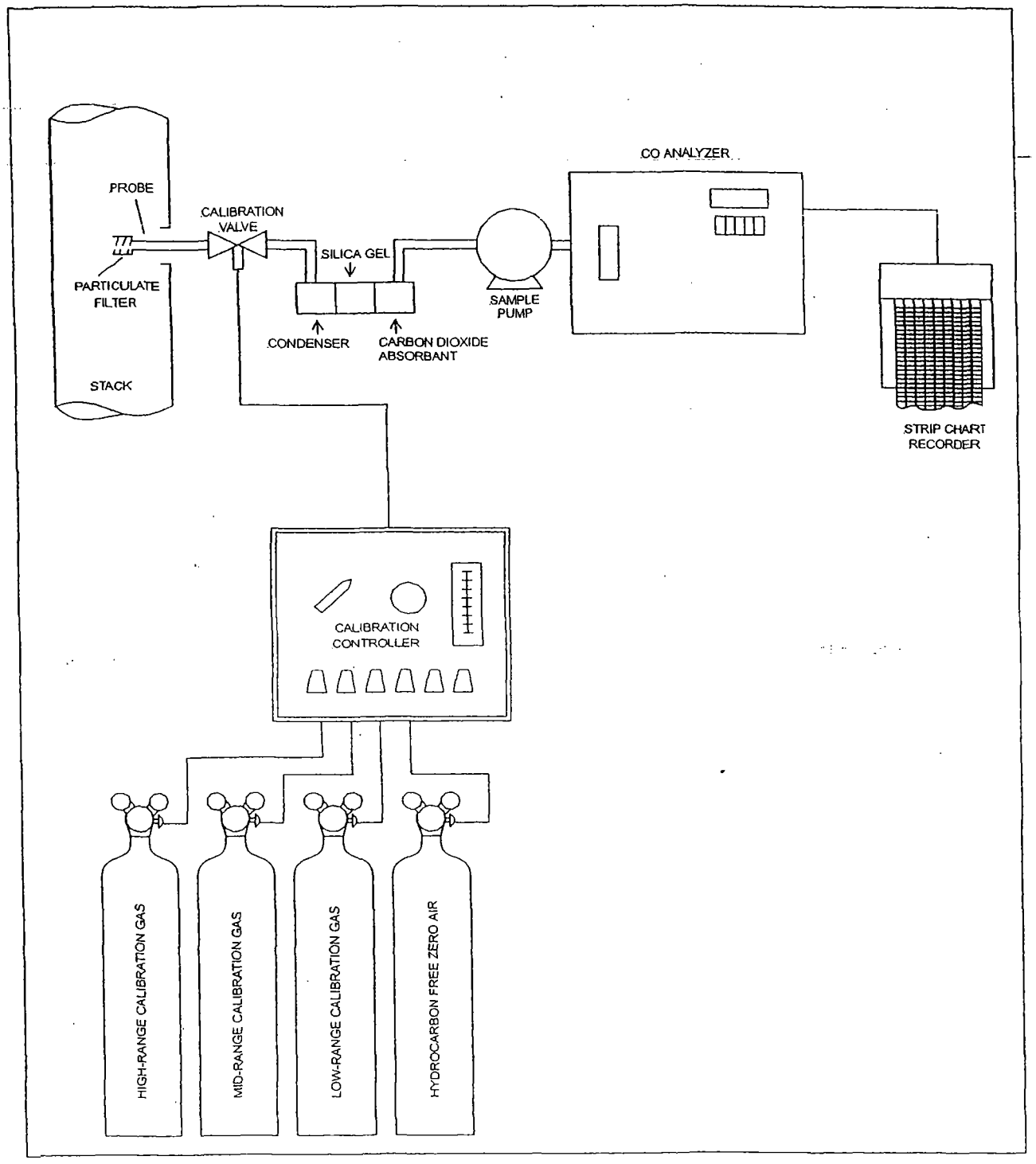


Figure 3. EPA Method 10 Sampling Train.

sampling.

4.5 Sample Recovery

A post test leak check of the particulate sampling train was performed at the completion of each run by sealing the nozzle and applying a vacuum equal to or greater than the maximum value reached during the sample period. A leak rate of less than 0.02 CFM or 4 percent of the average sampling rate (whichever was less) was considered acceptable. The nozzle and probe were then brushed and rinsed with reagent grade acetone and the washings were placed in clean polyethylene containers and sealed. The glass fiber filter was removed from the holder with forceps and placed in a covered petri dish for return to the laboratory. The front half of the filter holder was rinsed with acetone and the washings were added to the nozzle and probe wash. The contents of the first three impingers were measured volumetrically and the silica gel in the fourth impinger was weighed to the nearest 0.1 gram for determination of moisture content.

Two calculations of the moisture content of the stack gas were made for each run, one from the impinger analysis and one from the assumption of saturated conditions based upon the average stack gas temperature and a psychrometric chart as described in EPA Method 4, Determination of Moisture Content in Stack Gases, 40 CFR 60, Appendix A. The lower of the two values of moisture content was considered to be correct and was used in the emissions computations.

5.0 ANALYTICAL PROCEDURE

5.1 Pretest Preparation

The glass fiber filters for the particulate train were numbered, oven dried at 105°C for two to three hours, desiccated and weighed to a constant weight in preparation for the test. Results were recorded to the nearest 0.1 milligram. Filters were loaded into holders and a filter was set aside as a control blank. The impingers were charged as described in section 4.3 and the contents of the fourth impinger were weighed to the nearest 0.1 gram.

5.2 Analysis

Upon return to the laboratory, the particulate filters were removed from the containers with forceps, dried at 105°C for two to three hours, desiccated and weighed to a constant weight. Results were recorded to the nearest 0.1 milligram. The probe and nozzle washes and an acetone blank were measured volumetrically and transferred to clean, tared evaporating dishes and evaporated to dryness over low heat. The evaporating dishes were then oven dried at 105°C for two to three hours, desiccated and weighed to a constant weight. Results were recorded to the nearest 0.1 milligram. The total particulate reported is the sum of the filter weight gain and the weight gain of the evaporating dishes, corrected for the acetone blank.

APPENDIX

Project Participants

Certification

Visible Emissions Evaluation

Process Operational Data

Laboratory Data

Temperature Recording Chart

Field Data Sheets

CO Analyzer Strip Chart

Calibration Data

Calculations and Symbols

PROJECT PARTICIPANTS AND CERTIFICATION

FOSTER'S PET CREMATION SERVICE
B & L SYSTEMS, INC. BLP 500/150
ANIMAL CREMATORY INCINERATOR
Spring Hill, Florida

March 9, 2004

Project Participants:

Mark S. Gierke Dale A. Wingler Travis B. Nelson	Conducted the field testing.
Fred T. Smith II (Foster's Pet Cremation)	Provided process rates.
Mark S. Gierke	Performed visible emissions evaluation.
Kenneth M. Roberts	Performed laboratory analyses.
Dale A. Wingler	Prepared the final test report.

Certification:

I certify that to my knowledge all data submitted in this report is true and correct.

Mark S. Gierke

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

1204 North Wheeler Street, Plant City, Florida 33566 (813)752-5014

VISIBLE EMISSIONS EVALUATION

COMPANY: Foster's Pet Cremation Service

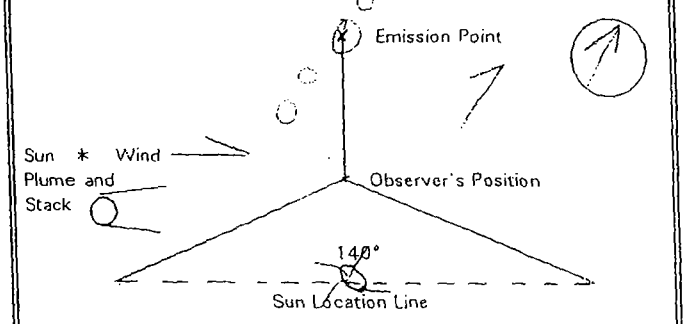
UNIT: Animal Crematory Incinerator

ADDRESS: 15204 County Line Rd

Spring Hill, FL

PERMIT NO. 1010377-002-AO	COMPLIANCE? YES [X] NO [ ]
AIRS NO. 1010377	EU NO. 003
PROCESS RATE 497 lb Batch 124 lbs/hr	PERMITTED RATE 500 lb Batch 150 lbs/hr
PROCESS EQUIPMENT: Bth 500/150 Crematory	
CONTROL EQUIPMENT: Afterburner	
OPERATING MODE: Nat. Gas Fired	AMBIENT TEMP. (°F) START 70 STOP 75
HEIGHT ABOVE GROUND LEVEL START ~20' STOP same	HEIGHT REL. TO OBSERVER START ~20' STOP same
DISTANCE FROM OBSERVER START ~80' STOP same	DIRECTION FROM OBSERVER START 350° STOP 350°
EMISSION COLOR: None	PLUME TYPE CONTIN. [ ] INTERMITTENT [ ] N/A
WATER DROPLETS PRESENT NO [X] YES [ ]	IS WATER DROPLET PLUME ATTACHED [ ] DETACHED [ ] N/A
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Stack Exit STOP same	
DESCRIBE BACKGROUND START Sky STOP same	
BACKGROUND COLOR START Blue/white STOP same	SKY CONDITIONS START Scatt. STOP same
WIND SPEED (MPH) START 3-10 STOP same	WIND DIRECTION START S STOP S
AVERAGE OPACITY FOR HIGHEST PERIOD 0%	RANGE OF OPAC. READINGS MIN. 0 MAX. 0

SOURCE LAYOUT SKETCH — DRAW NORTH ARROW



COMMENTS: Serial # 203-17-93

#3 Incinerator

OBSERVATION DATE: 3/9/04 START TIME: 1135 STOP TIME: 1235

SEC MIN	0	15	30	45	SEC MIN	0	15	30	45
0	0	0	0	0	30	0	0	0	0
1	0	0	0	0	31	0	0	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

Observer: Mark Gierke

Certified by: FDEP Certified at: Tampa

Date Certified: 2/04 Exp. Date: 8/04

I certify that all data provided to the person conducting the test was true and correct to the best of my knowledge:

Signature: See Process Wt. Statement

Title:

PROCESS WEIGHT STATEMENT

DATE 3/9/04 SAMPLING TIME : FROM 11:35 A.M. TO 3:25 P.M.

STATEMENT OF PROCESS WEIGHT

COMPANY:	Foster's Pet Cremation Service
MAILING ADDRESS	15204 County Line Rd.
	Spring Hill, FL 34610
SOURCE IDENTIFICATION	Animal Crematory Incinerator
SOURCE LOCATION	Spring Hill, FL

DATA ON OPERATING CYCLE TIME

START OF OPERATION, TIME		
END OF OPERATION, TIME		
ELAPSED TIME		
IDLE TIME DURING CYCLE		
DESIGN PROCESS RATING	PROCESS WEIGHT RATE (INPUT)	
	PRODUCT (OUTPUT)	

* 497 lbs/Batch

DATA ON ACTUAL PROCESS RATE DURING OPERATION CYCLE

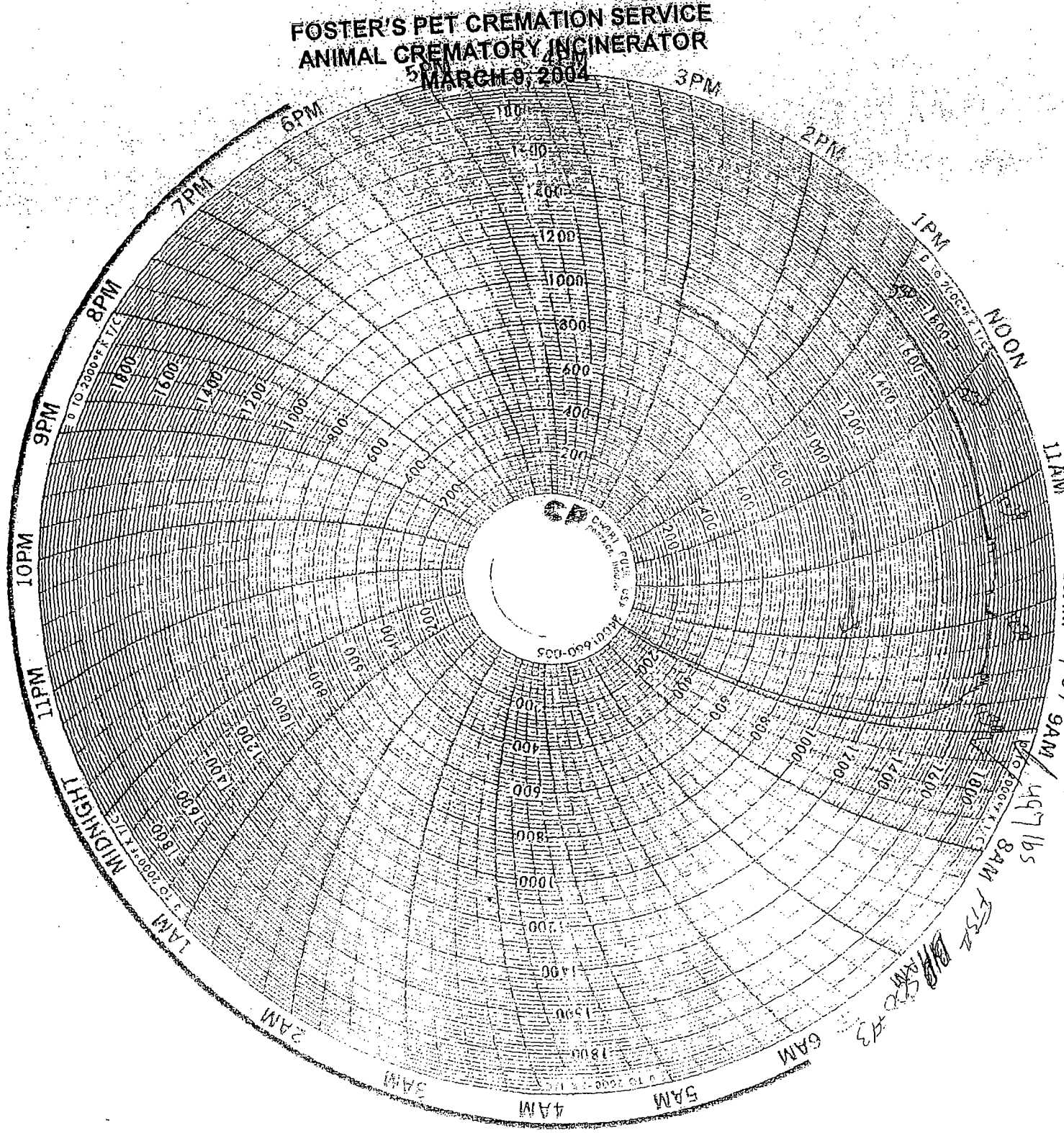
MATERIAL	Animal Bodies	RATE	R#1 124 lbs/hr
MATERIAL	" "	RATE	R#2 124 lbs/hr
MATERIAL	" "	RATE	R#3 124 lbs/hr
	AVERAGE PROCESS WEIGHT	RATE	
PRODUCT		RATE	
PRODUCT		RATE	
PRODUCT		RATE	

I certify that the above information is true and correct to the best of my knowledge.

Name (PLEASE PRINT) Fred T. Foster III

Signature Fred T. Foster III

Title Operator


FOSTER'S PET CREMATION SERVICE
ANIMAL CREMATORY INCINERATOR
MARCH 9, 2004
12PM
1PM
2PM
3PM
4PM
5PM
6PM
7PM
8PM
9PM
10PM
11PM
MIDNIGHT
1AM
2AM
3AM
4AM
5AM
6AM
7AM
8AM
9AM
10AM
11AM
NOON

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

PARTICULATE MATTER COLLECTED

Plant: FOSTER'S PET CREMATION SERVICE
Unit No. ANIMAL CREMATORY INCINERATOR
Test Date: 03/09/2004 Analyzed by: DW

Acetone blank container no.	106	Filter blank no.	7158
Acetone blank volume, ml.,(Va)	200	Filter blank tare weight, g.	0.3691
Acetone blank final weight, g.	104.2163	Filter blank final weight, g.	0.3692
Acetone blank tare weight, g.	104.2159	Filter weight diff., g.	0.0001
Acetone blank weight diff.,g.,(ma)	0.0004		

Run No.	1
Filter No.	7111
Liquid lost during transport, ml.	0
Acetone wash container no.	23
Acetone wash volume, ml. (Vaw)	100
Acetone wash residue, g. (Wa)	0.0002

Container Number	WEIGHT OF PARTICULATE COLLECTED		
	Final Weight	Tare Weight	Weight Gain
1 (Filter)	0.3935	0.367	0.0265
2 (Wash)	100.6231	100.6154	0.0077
		TOTAL	0.0342
		Less acetone blank, g. (Wa)	0.0002
		Weight of particulate matter, g.	0.0340

Run No.	2
Filter No.	7113
Liquid lost during transport, ml.	0
Acetone wash container no.	43
Acetone wash volume, ml. (Vaw)	95
Acetone wash residue, g. (Wa)	0.0002

Container Number	WEIGHT OF PARTICULATE COLLECTED		
	Final Weight	Tare Weight	Weight Gain
1 (Filter)	0.3686	0.3661	0.0025
2 (Wash)	108.7303	108.7215	0.0088
		TOTAL	0.0113
		Less acetone blank, g. (Wa)	0.0002
		Weight of particulate matter, g.	0.0111

Run No.	3
Filter No.	7117
Liquid lost during transport, ml.	0
Acetone wash container no.	4
Acetone wash volume, ml. (Vaw)	105
Acetone wash residue, g. (Wa)	0.0002

Container Number	WEIGHT OF PARTICULATE COLLECTED		
	Final Weight	Tare Weight	Weight Gain
1 (Filter)	0.3695	0.3692	0.0003
2 (Wash)	103.1044	103.0971	0.0073
		TOTAL	0.0076
		Less acetone blank, g. (Wa)	0.0002
		Weight of particulate matter, g.	0.0074

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

MOISTURE COLLECTED

Plant Foster's Cemetery

Unit Animal Incinerator
Date 3/9/04
Run No. 1

Impinger Number	1	2	3	4	Weighed by:
Final Weight (grams):	260.0	100.0	0	261.0	
Initial Weight (grams):	100.0	100.0	0	250.9	
Difference (grams):	160.0	0	0	10.1	
Total Condensate (grams):				170.1	

Unit Animal Incinerator
Date ~~3/9/04~~ 3/9/04
Run No. ~~3/9/04~~ 2

Impinger Number	1	2	3	4	Weighed by:
Final Weight (grams):	230.0	106.0	0	253.9	
Initial Weight (grams):	100.0	100.0	0	245.8	
Difference (grams):	130.0	6.0	0	8.1	
Total Condensate (grams):				144.1	

Unit Animal Incinerator
Date 3/9/04
Run No. 3

Impinger Number	1	2	3	4	Weighed by:
Final Weight (grams):	210.0	106.0	0	255.0	
Initial Weight (grams):	100.0	100.0	0	245.6	
Difference (grams):	110.0	6.0	0	9.4	
Total Condensate (grams):					

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

FIELD DATA SHEET

Company: Foster's Crematory
Source: Animal Crematory Incinerator
Operator(s): D. Wyler / T. Nelson

Dimensions Dia~~□~~: 18"
LxW□:
Static Press. ("H2O): -.01
Meter Box No.: 002
Meter ΔH@: 1.726
Meter Correction Factor: .986
Pitot Tube Cp: .84
Nozzle ID: Quartz
Nozzle Dia. (Inches): .611
Probe Length/Liner: 3' Quartz

Assumptions
% Moisture: 14
Stack Temp.: 1000/1200
Meter Temp.: 75
Md/Ms: 1.05
K Factor: 42.42/37.31

Run Number: 1
Date: 3/9/04
24 hr Time at Start: 1135
24 hr Time at End: 1238
Filter No(s).: 711
Barometric Pressure ("Hg): 30.14
Elev Diff. Mano. To Barom. (Ft): 0
Ambient Temperature (°F): 68

Sample Train Leak Check:
Initial 0.002 CFM @ 15 "Hg
Final 0.002 CFM @ 10 "Hg
Initial Pitot Tube (-) ✓ (+) ✓
Final Pitot Tube (-) ✓ (+) ✓
* 0-.25" Magnehlic used *

Moist. Collected:- Imp. No. 1 , Imp. No. 2 & 3 , Imp. No. 4 , Total Filter Tare Wt.

Point No.	Sample Time (min.)	Meter Vol. Vm (ft^3)	Vel. Head ΔP ("H_2O)	Orifice Diff. ΔH ("H_2O)	Stack Temp., Ts (°F)	Meter Temp., Tm (°F)	Hot Box Temp. (°F)	Exit Temp. (°F)	Pump Vacuum ("Hg)	Other
1	0	045.727	.02	.85	1350	66	269	63	2.0	
2	2.5	47.10	.04	1.7	1349	67	269	63	2.0	
3	5	48.67	.04	1.7	1358	68	267	62	3.0	
4	7.5	50.66	.02	.85	1323	70	265	62	1.5	
5	10	52.04	.02	.95	1299	71	265	61	1.5	
6	12.5	53.36	.02	.85	1280	72	269	62	1.5	
7	15	54.68	.025	.93	1194	73	265	61	2.0	
8	17.5	56.03	.025	.93	1170	74	264	61	1.5	
9	20	57.43	.02	.85	1113	76	256	60	1.5	
10	22.5	58.77	.025	.93	1119	77	249	60	2.0	
11	25	60.10	.025	.93	1152	78	257	60	2.0	
12	27.5	61.54	.025	.93	1180	80	257	59	2.0	
13	30	62.92	.03	1.12	1134	81	256	59	3.0	
14	32.5	64.42	.03	1.12	1142	83	255	59	3.0	
15 3	35	65.95	.03	1.12	1197	84	252	59	3.5	
16	37.5	67.16	.035	1.31	1235	85	260	58	4.0	
17	40	69.15	.035	1.31	1241	87	267	58	4.0	
18 4	42.5	70.83	.03	1.12	1254	89	268	59	4.0	
19	45	72.40	.025	.93	1275	90	262	58	3.5	
20	47.5	73.93	.025	.93	1288	91	268	58	3.5	
21 9	50	75.22	.025	.93	1274	92	263	59	3.5	
22	52.5	76.65	.025	.93	1280	93	258	58	3.5	
23	55	78.06	.03	1.12	1281	94	252	57	4.0	
24	57.5	79.58	.025	.93	1281	94	247	58	4.0	
	60	81.020								

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

FIELD DATA SHEET

Company: Foster's Pet Cremation Service
Source: Animal Crematory
Operator(s): D. Wingler / T. Nelson

Run Number: 2
Date: 3/4/04
24 hr Time at Start: 1382
24 hr Time at End: 1403
Filter No(s).: 7113
Barometric Pressure ("Hg): 30.14
Elev Diff. Mano. To Barom. (Ft): 0
Ambient Temperature (°F): 72

Dimensions Dia☒ LxW☐: 18"
Static Press. ("H2O): -.01
Meter Box No.: 002
Meter ΔH@: 1.726
Meter Correction Factor: .996
Pitot Tube Cp: .84
Nozzle ID: Quartz
Nozzle Dia. (Inches): .611
Probe Length/Liner: 3' Quartz

Assumptions
% Moisture: 18
Stack Temp.: 1350
Meter Temp.: 90
Md/Ms: 1.04
K Factor: 33.98

Sample Train Leak Check:
Initial 0.002 CFM @ 15 "Hg
Final 0.002 CFM @ 10 "Hg
Initial Pitot Tube (-) / (+) /
Final Pitot Tube (-) / (+) /

Moist. Collected:- Imp. No. 1 , Imp. No. 2 & 3 , Imp. No. 4 , Total Filter Tare Wt,

Point No.	Sample Time (min.)	Meter Vol. Vm (ft^3)	Vel. Head ΔP ("H_2O)	Orifice Diff. ΔH ("H_2O)	Stack Temp., Ts (°F)	Meter Temp., Tm (°F)	Hot Box Temp. (°F)	Exit Temp. (°F)	Pump Vacuum ("Hg)	Other
1	0	83.822	.03	1.02	1190	89	241	64	1.0	
2	2.5	85.35	.03	1.02	1382	89	242	64	1.0	
3	5	86.86	.035	1.19	1356	90	240	64	1.0	
4	7.5	88.43	.04	1.36	1374	91	241	63	1.0	
5	10	90.12	.04	1.36	1380	92	255	63	1.5	
6	12.5	91.84	.04	1.36	1395	93	263	63	1.5	
7	15	93.57	.03	1.02	1338	93	269	63	1.0	
8	17.5	95.07	.03	1.02	1398	94	267	62	1.0	
9	20	96.57	.03	1.02	1390	94	260	63	1.0	
10	22.5	98.07	.03	1.02	1380	94	263	62	1.0	
11	25	99.57	.03	1.02	1377	94	261	62	1.0	
12	27.5	101.07	.03	1.02	1387	94	257	62	1.0	
13	30	102.56	.03	1.02	1364	94	268	61	1.0	
14	32.5	104.09	.03	1.02	1377	94	270	61	1.0	
15 3	35	105.58	.035	1.19	1376	94	268	60	1.0	
16	37.5	107.18	.03	1.02	1382	94	263	60	1.0	
17	40	108.68	.03	1.02	1399	95	267	60	1.0	
18 6	42.5	110.2	.035	1.19	1407	95	270	58	2.0	
19	45	111.79	.025	.85	1382	96	257	58	1.0	
20	47.5	113.25	.025	.85	1369	96	248	58	1.0	
21 9	50	114.62	.025	.85	1368	96	246	58	1.0	
22	52.5	116.00	.025	.85	1369	96	243	58	1.0	
23	55	117.37	.025	.85	1377	96	241	57	1.0	
24	57.5	118.75	.025	.85	1368	96	244	57	1.0	
	60	120.130								

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

FIELD DATA SHEET

Company: Foster's Pet Cremation Service
Source: Animal Crematory
Operator(s): D Wright / T Nelson

Dimensions Dia ☒: 18"
LxW ☐:
Static Press. ("H20): -.01
Meter Box No.: 002
Meter ΔH@: 1.72
Meter Correction Factor: .98
Pitot Tube Cp: .84
Nozzle ID: Quartz
Nozzle Dia. (Inches): .611
Probe Length/Liner: 3' Quartz

Assumptions
% Moisture: 12
Stack Temp.: 1375
Meter Temp.: 95
Md/Ms: 1.05
K Factor: 35.17

Run Number: 3
Date: 3/9/04
24 hr Time at Start: 1425
24 hr Time at End: 1526
Filter No(s).: 2117
Barometric Pressure ("Hg): 30.14
Elev Diff. Mano. To Barom. (Ft): 0
Ambient Temperature (°F): 72

Sample Train Leak Check:
Initial 0.002 CFM @ 15 "Hg
Final 0.002 CFM @ 10 "Hg
Initial Pitot Tube (-) / (+)
Final Pitot Tube (-) / (+)

Moist. Collected:- Imp. No. 1 , Imp. No. 2 & 3 , Imp. No. 4 , Total Filter Tare Wt.

Point No.	Sample Time (min.)	Meter Vol. Vm (ft^3)	Vel. Head ΔP ("H_2O)	Orifice Diff. ΔH ("H_2O)	Stack Temp.,Ts (°F)	Meter Temp., Tm (°F)	Hot Box Temp. (°F)	Exit Temp. (°F)	Pump Vacuum ("Hg)	Other
1	0	121.280	.04	1.41	1345	90	239	65	1.0	
2	2.5	123.00	.035	1.23	1395	90	240	65	1.5	
3	5	124.65	.04	1.41	1395	90	245	65	1.0	
4	7.5	126.39	.035	1.23	1386	90	243	64	1.0	
5	10	128.04	.035	1.23	1328	91	236	64	1.0	
6	12.5	129.69	.03	1.06	1324	91	249	63	1.0	
7	15	131.21	.03	1.06	1329	91	257	63	1.0	
8	17.5	132.72	.03	1.06	1340	92	264	62	1.0	
9	20	134.24	.03	1.06	1350	92	269	62	1.5	
10	22.5	135.76	.035	1.23	1362	92	268	62	1.5	
11	25	137.40	.03	1.06	1371	93	269	61	1.5	
12	27.5	138.91	.03	1.06	1385	93	265	61	1.5	
13	30	140.43	.03	1.06	1391	93	260	61	1.5	
14	32.5	141.96	.03	1.06	1380	93	252	60	1.5	
15 3	35	143.46	.03	1.06	1370	93	248	61	1.0	
16	37.5	144.97	.03	1.06	1352	93	248	60	1.5	
17	40	146.49	.03	1.06	1344	94	252	60	1.5	
18 6	42.5	148.00	.03	1.06	1347	94	257	60	1.5	
19	45	149.51	.03	1.06	1345	95	266	60	1.5	
20	47.5	151.02	.03	1.06	1349	95	267	59	1.5	
21 9	50	152.52	.03	1.06	1360	96	264	59	1.5	
22	52.5	154.04	.03	1.06	1361	96	262	60	1.5	
23	55	155.55	.03	1.06	1363	96	261	60	1.5	
24	57.5	157.10	.03	1.06	1370	96	260	60	1.0	
	60	158.578								

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

GAS ANALYSIS DATA FORM

Plant Foster's Pet Cremation Service	
Unit Animal Crematory Incinerator	Test No. 1
Date 3/9/04	Sampling Location Stack
Sampling Time (24-hr Clock) 1135-1235	
Sample Type: Continuous ☐ Integrated Bag ☒	Grab ☐
Analytical Method ORSAT	Ambient Temperature 68°F
Operator MG	

RUN →	1		2		3		Average Net Volume	Multiplier	Molecular Weight of Stack Gas (Dry Basis) (Md)
GAS ↓	Actual Reading	Net	Actual Reading	Net	Actual Reading	Net			
CO_2	4.5	4.5	4.5	4.5	4.5	4.5	4.5	.44	
O_2 (NET IS ACTUAL O_2 READING MINUS ACTUAL CO_2 READING)	12.5	8.0	12.5	8.0	12.6	8.1	8.0	.32	
CO (NET IS ACTUAL CO READING MINUS ACTUAL O_2 READING)								.28	
N_2 (NET IS 100 MINUS ACTUAL CO READING)								.28	
								TOTAL	

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

GAS ANALYSIS DATA FORM

Plant Foster's Pet Cremation Service	
Unit Animal Crematory Incinerator	Test No. 2
Date 3/9/04	Sampling Location Stack
Sampling Time (24-hr Clock) 1302 - 1402	
Sample Type: Continuous ☐ Integrated Bag ☒	Grab ☐
Analytical Method ORSAT	Ambient Temperature 74°F
Operator MG	

RUN →	1		2		3		Average Net Volume	Multiplier	Molecular Weight of Stack Gas (Dry Basis) (Md)
GAS ↓	Actual Reading	Net	Actual Reading	Net	Actual Reading	Net			
CO_2	4.5	4.5	4.5	4.5	4.5	4.5	4.5	.44	
O_2 (NET IS ACTUAL O_2 READING MINUS ACTUAL CO_2 READING)	14.5	10.0	14.5	10.0	14.5	10.0	10.0	.32	
CO (NET IS ACTUAL CO READING MINUS ACTUAL O_2 READING)								.28	
N_2 (NET IS 100 MINUS ACTUAL CO READING)								.28	
								TOTAL	

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

GAS ANALYSIS DATA FORM

Plant	Foster's Pet Cremation Service		
Unit	Animal Crematory	Test No.	3
Date	3/9/04	Sampling Location	Stack
Sampling Time (24-hr Clock)	1425-1525		
Sample Type: Continuous ☐	Integrated Bag ☒	Grab ☐	
Analytical Method	ORSAT	Ambient Temperature	75°
Operator	MG		

RUN →	1		2		3		Average Net Volume	Multiplier	Molecular Weight of Stack Gas (Dry Basis) (Md)
GAS ↓	Actual Reading	Net	Actual Reading	Net	Actual Reading	Net			
CO_2	5.5	5.5	5.5	5.5	5.5	5.5	5.5	.44	
O_2 (NET IS ACTUAL O_2 READING MINUS ACTUAL CO_2 READING)	16.0	10.5	16.0	10.5	16.0	10.5	10.5	.32	
CO (NET IS ACTUAL CO READING MINUS ACTUAL O_2 READING)								.28	
N_2 (NET IS 100 MINUS ACTUAL CO READING)								.28	
								TOTAL	

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

NOZZLE CALIBRATION

Date: 3/9/04 by: [signature]

Nozzle ID	Run No.	D_1 (INCHES)	D_2 (INCHES)	D_3 (INCHES)	ΔD (INCHES)	D_{AVG} (INCHES)
Quartz	1-3	.611	.611	.611	.000	.611

where: D_1, D_2, D_3 = Nozzle diameter measured on a different diameter (inches). Tolerance = 0.001 inches

ΔD = Maximum difference in any two measurements (inches). Tolerance = 0.004 inches

D_{avg} = Average of D_1, D_2, D_3

****

SAMPLE POINT LOCATIONS

Company: Foster's Pet Cremation

Source: Animal Cremation Incinerator

Date: 3/9/04

Stack/Duct Dimensions: 18"

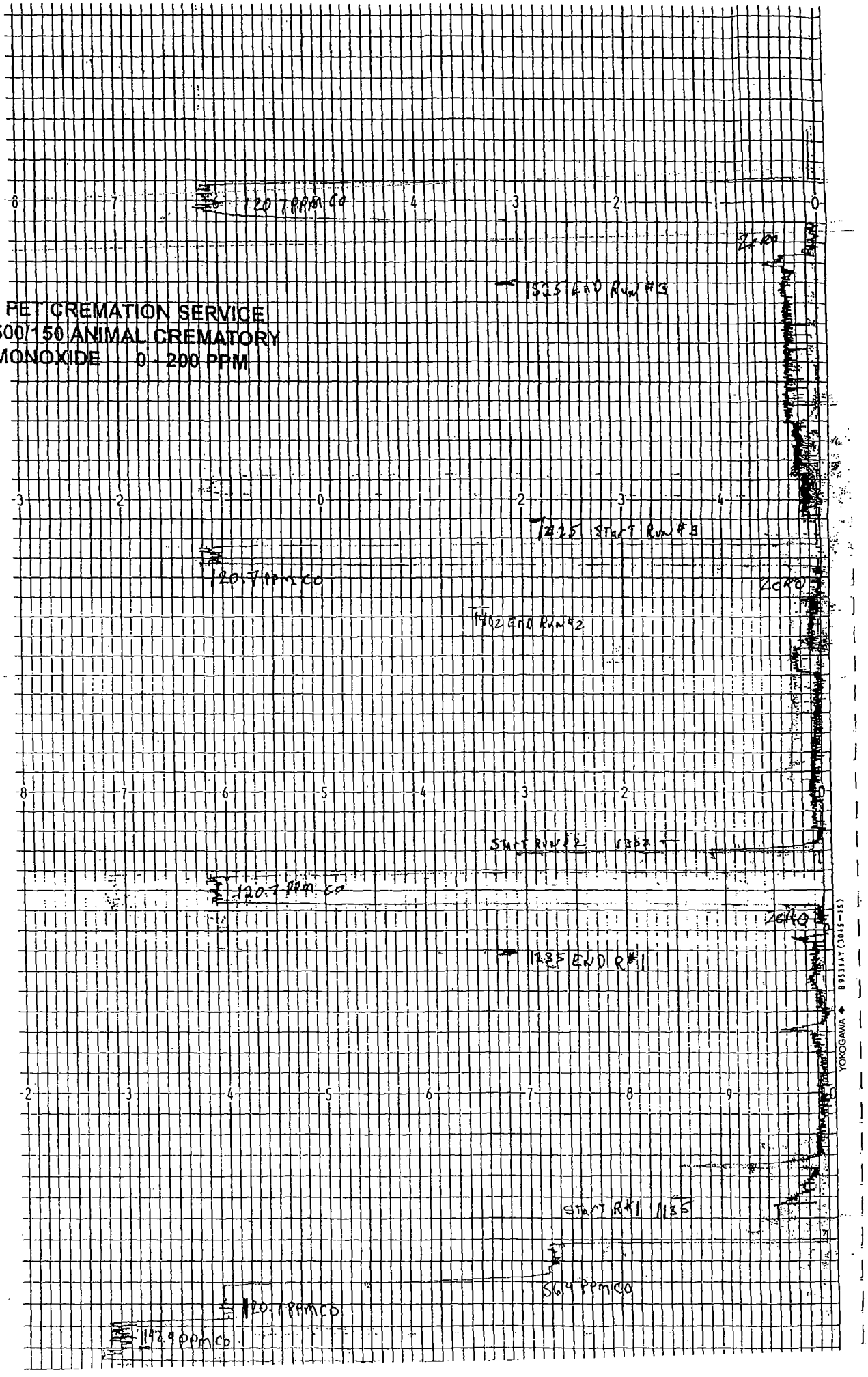
Port Length: 3"

Points corrected for port length?
Yes ☒ No ☐

Sketch of Stack/Duct

Point No.	Distance from Duct Wall (inches)
1	3.5
2	4.2
3	5.1
4	6.2
5	7.5
6	9.4
7	14.6
8	16.5
9	17.8
10	18.9
11	19.8
12	20.5

FOSTER'S PET CREMATION SERVICE
B&L BLP 500/150 ANIMAL CREMATORY
CARBON MONOXIDE 0 - 200 PPM
3/9/04
6 cm/hr



SOUTHERN ENVIRONMENTAL SCIENCES, INC.

DRY GAS METER CALIBRATION

Meter Box Number: 002 Barometric Pressure: 29.99
Date: 07/03/2003 Wet Test Meter No.: P-576

Orifice Manometer Setting (Delta H) In. H2O	Gas Volume		Temperature		Time	Yi	Delta H@ In. H2O
	Wet Test Meter (Vw) ft.^3	Dry Gas Meter (Vd) ft.^3	Wet Test Meter (Tw) Deg F	Dry Gas Meter (Td) Deg F	(THETA) Min		
0.50	5.000	5.155	76.0	86.5	12.15	0.988	1.641
1.00	5.000	5.196	76.0	91.0	8.88	0.987	1.738
1.50	10.000	10.428	76.0	93.0	14.28	0.986	1.680
2.00	10.000	10.470	75.5	95.0	12.50	0.985	1.707
3.00	10.000	10.489	75.0	97.0	10.43	0.985	1.773
4.00	10.000	10.485	75.0	98.0	9.15	0.985	1.816
						0.986	1.726

Delta H@ Acceptable Range 1.926 to 1.526
Yi Acceptable Range 1.006 to 0.966

$$Yi = \frac{Vw\ Pb\ (Td + 460)}{Vd\ (Pb + DeltaH/13.6)\ (Tw + 460)}$$

$$Delta\ H@ = \frac{.0317\ (DeltaH)}{Pb\ (Td + 460)} [(Tw + 460)\ (Theta)/Vw]^2$$

Where:

Vw = Gas Volume passing through the wet test meter, ft.^3.
Vd = Gas Volume passing through the dry gas meter, ft.^3.
Tw = Temperature of the gas in the wet test meter, deg F.
Tdi = Average temperature of the gas in the dry gas meter, deg F.
Delta H = Pressure differential across orifice. in. H20.
Yi = Ratio of accuracy of wet test meter to dry gas meter for each run.
Y = Average ratio of accuracy of wet test meter to dry gas meter for all three runs; tolerance = pretest Y +/- 0.05Y.
Pb = Barometric pressure, in. Hg
Theta = Time of calibration run, min.

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

POSTTEST DRY GAS METER CALIBRATION FORM

Meter Box Number:	002	Wet Test Meter No.:	P-576
Date:	03/24/2004	Pretest Y:	0.986
Barometric Pressure:	30.38	Calibrated by:	TW

Orifice Manometer Setting (Delta H) in. H2O	Gas Volume: Wet Test Meter (Vw) Cu Ft	Gas Volume: Dry Gas Meter (Vd) Cu Ft	Temperature: Wet Test Meter Deg F	Temperature: Dry Gas Meter Deg F	Time (Theta) Min	Vacuum Setting in. Hg	Yi
2.00	10.000	10.363	71.5	78.0	12.57	10.00	0.972
2.00	10.000	10.503	71.0	86.0	12.62	10.00	0.974
2.00	10.000	10.632	71.0	93.0	12.67	10.00	0.975
						Average	0.974

Acceptable Limits 0.937 to 1.035

$$Yi = \frac{Vw\ Pb\ (Td + 460)}{Vd\ (Pb + DeltaH/13.6)\ (Tw + 460)}$$

Where:

- Vw = Gas volume passing through the wet test meter, ft.^3.
- Vd = Gas volume passing through the dry gas meter, ft.^3.
- Tw = Temperature of the gas in the wet test meter, deg F.
- Tdi = Temperature of the inlet gas of the dry gas meter, deg F.
- Tdo = Temperature of the outlet gas of the dry gas meter, deg F.
- Delta H = Pressure differential across orifice. in. H20.
- Yi = Ratio of accuracy of wet test meter to dry gas meter for each run.
- Y = Average ratio of accuracy of wet test meter to dry gas meter for all three runs; tolerance = pretest Y =/- 0.05Y.
- Pb = Barometric pressure, in. Hg
- Theta = Time of calibration run, min.

THERMOMETER CALIBRATIONS

Ref	Wet Test Meter		Dry Gas Meter	
Deg F	Inlet Deg F	Outlet Deg F	Inlet Deg F	Outlet Deg F
75.0	n/a	73.0	n/a	73.0
Difference	n/a	2.0	n/a	2.0

Quality Control Limits = +/- 5 Deg F

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

TYPE S PITOT TUBE INSPECTION FORM

PITOT TUBE ID NUMBER	003INC	
INSPECTION DATE	03/31/03	
INSPECTED BY	T. Wilson	
PITOT TUBE ASSEMBLY LEVEL ?	YES	NO
PITOT TUBE OPENINGS DAMAGED ?	YES (explain please)	NO

ANGLE	MEASUREMENT	LIMITS
α1	2°	<10°
a2	3°	<10°
b1	3°	<5°
b2	2°	<5°
Y	2°	
θ	3°	
A	.290 inches	
z = A sin Y	.010 inches	< 1/8 inch
w = A sin θ	.015inches	< 1/32 inch
Pa	.145 inches	
Pb	.145 inches	
Dt	.190 inches	

COMMENTS:

CALIBRATION REQUIRED	YES	NO

SOUTHERN ENVIRONMENTAL SCIENCES, INC.
THERMOMETER CALIBRATIONS

Calibrated By/Date: T. Wilson 3/31/03

ALL TEMPERATURES ARE DEGREES RANKIN

ID No.	Type	Range	ICE BATH			TEPID WATER			BOILING WATER			HOT OIL		
			STD Therm	Temp	Deg or Diff	STD Therm	Temp	Deg or Diff	STD Therm	Temp	Deg or Diff	STD Therm	Temp	Deg or Diff
T1	PT	2000° F	495	496	0.2%	539	537	0.1%	672	670	0.2%	860	861	0.3%
T2	PT	2000° F	495	497	0.2%	539	537	0.1%	673	672	0.2%	870	872	0.3%
T3	PT	2000° F	495	497	0.2%	539	538	0.1%	673	671	0.3%	870	872	0.2%
T4	PT	2000° F	494	496	0.2%	539	538	0.1%	674	672	0.3%	863	864	0.2%
T5	PT	2000° F	494	496	0.2%	539	538	0.2%	672	670	0.2%	860	862	0.2%
T6	PT	2000° F	494	496	0.2%	539	537	0.3%	672	674	0.3%	852	854	0.2%
T7	PT	2000° F	495	497	0.2%	539	538	0.3%	673	671	0.2%	853	854	0.3%
T8	PT	2000° F	495	496	0.1%	539	537	0.2%	674	672	0.1%	864	865	0.2%
T9	PT	2000° F	495	497	0.1%	539	538	0.3%	673	671	0.1%	854	856	0.3%
Lab I4	BM	212° F	494	495	1°	536	535	1°	672	673	2°	-	-	
I5	BM	250° F	494	495	1°	536	535	1°	672	672	2°	-	-	
I6	BM	220° F	494	496	1°	536	536	2°	672	672	3°	-	-	
SS110	BM	220° F	494	496	1°	540	539	2°	670	672	2°	-	-	
SS300	PT	2000 °F	495	497	0.2%	540	538	0.1%	674	672	0.2%	850	852	0.2%
SS301	PT	2000° F	495	497	0.2%	540	538	0.2%	672	670	0.1%	856	858	0.2%
SS306	PT	2000° F	495	496	0.2%	540	538	0.2%	672	670	0.2%	856	858	0.2%
2.5'PA	PT	2000° F	495	496	0.2%	541	538	0.0%	673	672	0.2%	852	854	0.3%
2.5'PB	PT	2000° F	495	497	0.2%	541	538	0.0%	672	674	0.3%	856	858	0.3%
3'P	PT	2000° F	495	497	0.2%	541	539	0.1%	673	675	0.2%	858	860	0.3%
3'INC	PT	2000° F	494	496	0.1%	540	538	0.1%	676	678	0.2%	852	854	0.3%
5'PA	PT	2000° F	494	496	0.3%	540	539	0.0%	672	674	0.3%	856	858	0.2%
5'PB	PT	2000° F	495	497	0.3%	540	538	0.1%	674	672	0.3%	856	858	0.3%
5'PC	PT	2000° F	495	497	0.3%	540	538	0.2%	674	672	0.1%	856	858	0.3%
5'VP	PT	2000° F	495	497	0.2%	541	540	0.2%	676	678	0.2%	856	858	0.2%
5'INC	PT	2000° F	494	496	0.3%	542	540	0.1%	674	676	0.1%	850	852	0.3%
8'PA	PT	2000° F	494	496	0.3%	541	538	0.0%	676	678	0.2%	856	858	0.2%
8'PB	PT	2000° F	494	495	0.3%	541	539	0.1%	676	678	0.3%	856	858	0.2%
10'P	PT	2000° F	494	495	0.2%	541	539	0.0%	674	676	0.3%	854	856	0.2%

Quality Control Limits: Impinger Thermometers± 2°F, Bimetalic Thermometers(Bm)± 5°F,Pyrometers/Thermocouples(PT)± 1.5%

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

PRESSURE MEASUREMENT DEVICE CALIBRATION FORM

Device Type	**Magnehelic**	**Calibration Date**	**04/01/2003**
Range	0 - .25" H2O	**Calibrated by**	K. Roberts
Manufacturer	Dwyer	**Reference Device**	Manometer
Serial No.	R991014CA18	**Measurement Units**	" H2O

Device Reading	Reference Device Reading	% Difference*
0	0	0.00
0.059	0.06	-1.67
0.119	0.12	-0.83
0.18	0.18	0.00
0.249	0.25	-0.40

* % difference shall not exceed +/- 5%

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

1204 North Wheeler Street St. Plant City, Florida 33563 (813) 752-5014

INSTRUMENT CALIBRATION

TEST DATA	
DATE	03/09/2004
COMPANY	FOSTER'S PET CREMATION SERVICE
SOURCE	BLP 500/150 ANIMAL CREMATORY
PARAMETER	**CARBON MONOXIDE**
TECHNICIAN	*M. GIERKE*

INSTRUMENT DATA		
	MONITOR	RECORDER
MANUFACTURER	TECO	Yokogawa
MODEL NO.	48	
SERIAL NO.	48-27158-228	
RANGE (PPM)	200	6CM/HR

CALIBRATION GASES			
SUPPLIER	AIR PRODUCTS	AIR PRODUCTS	AIR PRODUCTS
CYLINDER #	SG9170323	SX32489	SG9162702
CONC. (PPM)	56.9	120.7	142.4
EXPIRATION DATE	04/25/2004	01/06/2006	09/30/2006

POINT	OBSERVED CONC	ACTUAL CONC	PERCENT DIFF
1	0	0	0.00
2	55.6	56.9	-0.65
3	122	120.7	0.65
4	142	142.4	-0.20

Regression Output:

Constant		1.6234
Std Err of Y Est		1.9109
R Squared		1.0000
No. of Observations		4
Degrees of Freedom		2
X Coefficient(s)	1.0058	
Std Err of Coef.	0.0029	

For Technical Information Call
1-800-752-1597

AIR PRODUCTS

ir Products and Chemicals, Inc. * 12722 S. Wentworth Avenue, Chicago, IL 60628

ISO CERTIFICATION: 9002

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS STANDARD

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1)

istomer: 851 -1
PCI-LARGO
900 118TH AVENUE NORTH
ARGO FL 33773-

Order No: CSS704108-01
Batch No: 86181785
PO:
Release:

Cylinder No: SG9170323BAL
Bar Code No: FHK790
Cylinder Pressure*: 2000 psig
Certification Date: 04/25/2001
Expiration Date: 04/25/2004

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENTATION			
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
CARBON MONOXIDE	56.9±.60 PPM	SG9161497BAL	NTRM 81679	99.90 PPM	HORIBA VIA-510	405079	04/01/01	NON DISPERSIVE INFRARED

NITROGEN Balance Gas

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

EPA PROTOCOL GAS MIXTURE : CARBON MONOXIDE IN NITROGEN
To reorder this mixture please use Mix ID: 27578

alyst: Suzanne Hauter
SUZANNE HAUTER

Approved By: James Laas
James Laas

5921j

Pub. No. 320-9702

Airgas

Airgas Specialty Gases
12722 South Wentworth Avenue
Chicago, IL 60628
773.785.3000 Fax: 773.785.1928
www.airgas.com

Certificate of Analysis: E.P.A. Protocol Gas Mixture

Certification performed in accordance with "EPA Traceability Protocol (Sept.1997)" using assay procedures listed.

Cylinder No:	SX32489	Order No:	157779-00
Certification Date:	01/6/2003	Expiration Date:	01/6/2006
Cylinder Pressure:	2000	Part No:	E02NI99E15A0700

*Do not use cylinder below 150 psig.

Component	Certified Concentration	Unit of Measure	Accuracy	Procedure	Analytical Principle
Carbon Monoxide	120.7	PPM	1%	G-1	NDIR
Nitrogen	Balance				

Nox
(Reference Value Only)

Reference Standard Information

Type	Component	Concentration	Unit	Cylinder Number
NTRM	Carbon Monoxide	244.7	PPM	SG9159519BAL

Analytical Data

Component 1: Carbon Monoxide

1st Analysis Date: 12/30/2002

Zero	0.000	Cand	120.700	Ref	244.800
Zero	0.000	Cand	120.700	Ref	244.800
Zero	0.000	Cand	120.700	Ref	244.800

2nd Analysis Date: 01/06/03

Zero	0.000	Cand	120.800	Ref	244.800
Zero	0.000	Cand	120.800	Ref	244.800
Zero	0.000	Cand	120.900	Ref	244.700

Analyzed by: _____ Approved by: _____

Airgas

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12722 South Wentworth Avenue
Chicago, IL 60628
773.785.3000 Fax: 773.785.1928
www.airgas.com

Certificate of Analysis EPA Protocol Gas Mixture

Cylinder No:	SG9162702BAL	Reference Number:	54-ST9736-000
Cylinder Pressure:	2,013 psig	Expiration Date:	09/30/2006
Certification Date:	09/30/2003	Laboratory:	ASG - Chicago - IL

Certified Concentrations

Component	Concentration	Accuracy	Analytical Principle	Procedure
Carbon Monoxide	142.4 PPM	+/- 1%	NDIR	G1
Nitrogen	Balance			

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.
Analytical Methodology does not require correction for analytical interferences.

Notes:

Do not use cylinder below 150 psig.

Approved for Release

Reference Standard Information

Type	Component	Cyl. Number	Concentration
NTRM	Carbon Monoxide	SG9159474BAL	244.7 PPM

Analytical Results

1st Component Carbon Monoxide

1st Analysis Date:			09/22/2003				
R	244.7	S	142.3	Z	0.0000	Conc	142.4 PPM
S	142.4	Z	0.0000	R	244.7	Conc	142.3 PPM
Z	0.0000	R	244.7	S	142.4	Conc	142.4 PPM
						AVG:	142.4 PPM
2nd Analysis Date:			09/30/2003				
R	244.7	S	142.5	Z	0.0000	Conc	142.4 PPM
S	142.4	Z	0.0000	R	244.7	Conc	142.5 PPM
Z	0.0000	R	244.7	S	142.5	Conc	142.5 PPM
						AVG:	142.5 PPM

CO EMISSION TEST CALCULATIONS

COMPANY: FOSTER'S PET CREMATION SERVICE
SOURCE: B&L BLP 500/150 ANIMAL CREMATORY
TEST DATE: 03/09/2004
Data analyst: MG

Run No.	Average CO (PPM)	Average O2 (%)	Average CO @ 7% O2 (PPM)	Stack Flowrate (dscfm)	Emissions mg/m3	Emissions lbs/ft3	Emissions lbs/hr
1	3.08	8.0	3.3	457	3.6	2.24E-007	0.006
2	2.25	10.0	2.9	482	2.6	1.64E-007	0.005
3	5.0	10.5	6.7	501	5.8	3.63E-007	0.011
Averages	3.44	9.5	4.3	480	4.0	2.50E-007	0.007

FORMULAS: CO @ 7% O2 = Actual CO x (14/(21-%02)

mg/m3 = ppm x .041573 x molecular wt.

$$lb/ft3 = \frac{mg/m3}{35.31\ ft^3/m^3 \times 1000 mg/g \times 453.59\ g/lb}$$

lb/hr = lb/ft3 x flowrate x 60 min/hr

where:
Pstd = 29.92 "Hg
Tstd = 528 deg R
Molecular Weight of CO = 28

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

EMISSIONS TEST CALCULATIONS

Plant: FOSTER'S PET CREMATION SERVICE
Unit: ANIMAL CREMATORY INCINERATOR
Run No: 2

Test Date: 03/09/2004
Data Input By: DW

Pbar = (Pbar at barom.) - (Elev. diff. barom. to manom., ft.) x (.1/100)
= 30.14 - 0 x (0.1/100) = **30.14**

$$Pm = \frac{Pbar + Delta\ H}{13.6} = \frac{30.14 + \frac{1.041}{13.6}}{} = \mathbf{30.22}$$

$$Vm(std) = (Vm) \times (Y) \times \frac{(Tstd,deg\ R) \times (Pm)}{(Tm,deg\ R) \times (Pstd)}$$

$$= 36.308 \times 0.986 \times \frac{528}{553.7} \times \frac{30.22}{29.92} = \mathbf{34.476}$$

Vw(std) = Vlc x (.04715) = 144.1 x 0.04715 = **6.794**

$$Bws = \frac{Vw(std)}{Vw(std) + Vm(std)} = \frac{6.794}{6.794 + 34.476} = \mathbf{0.165}$$

Bws @ saturation = **0.99**
1 - Bws = **0.835** USE LOWER BWS

Md = 0.44(%CO2) + .32(%O2) + .28(%N2+%CO)
= .44 x 4.5 + .32 x 10 + 0.28 78
= assume **29.12**

Ms = Md(1-Bws) + 18(Bws) = 29.12 * 0.835 + 18 * 0.165
= **27.29**

$$Ps = Pbar + \frac{(Pg,\ in.\ H2O)}{13.6} = 30.14 + \frac{-0.01}{13.6} = \mathbf{30.14}$$

Vs = 85.49 x (Cp) x (avg sqrt delta P) x sqrt[(Ts,~R)/(Ps)(Ms)]
= 85.49 x 0.84 x 0.175 x sqrt 1827.1 / 30.14 x 27.29
= **18.68**

$$An = \frac{[(Nozzle\ diam,\ in./12)^2 \times 3.14159]}{4} = \frac{[0.611/12)^2 \times 3.14159]}{4} = \mathbf{0.00204}$$

$$\%I = \frac{(.09450) \times (Ts,deg\ R) \times (Vm(std)}{(Ps) \times (Vs) \times (An) \times (Sample\ Time) \times (1-Bws)}$$

$$= \frac{0.0945 \times 1827.1 \times 34.476}{30.14 \times 18.68 \times 0.0020361 \times 60 \times 0.835}$$

= **103.6**

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

EMISSIONS TEST CALCULATIONS

Plant: FOSTER'S PET CREMATION SERVICE
Unit: ANIMAL CREMATORY INCINERATOR
Run No: 2

Test Date: 03/09/2004
Data Input By: DW

As = (Stack Diam., ft.)^2 x 3.14 / 4 = 1.5)^2 x 3.14 / 4 = **1.77**

As.eff = As x (total No. pts.-No. neg. pts.) / (Total No. pts.) = 1.767146 x (24) - (0) / (24) = **1.77**

Q = 60(As,eff)(Vs) = 60 x 1.77 x 18.68 = **1,981**

Qstd = (Q) x (Tstd) x (Ps) x (1-B / (Ts,degR) x (Pstd) = 1980.505 x 528 x 30.139265 x 0.83537 / 1827.125 x 29.92

= **482**

Cs = (.01543) x (mn, mg) / Vm(std) = 0.01543 x 11.1 / 34.4759 = **0.00497**

PMR = (Cs)(Qstd)(6 / 7000 = 0.0050 x 481.60559 x 60 / 7000 = **0.02**

Emissions calculations in emissions test summary may differ slightly from example calculations due to rounding of some numbers in example.

Southern Environmental Sciences, Inc.
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NOMENCLATURE USED IN STACK SAMPLING CALCULATIONS

A_n = Cross-sectional area of nozzle, ft^2

A_s = Cross-sectional area of stack, ft^2

B_{ws} = Water vapor in gas stream, proportion by volume

C_p = Pitot coefficient

C_s = Pollutant concentration, gr/DSCF

F_d = Ratio of gas generated to heat value of fuel, DSCF/mm BTU

ΔH = Average pressure differential across orifice, in. H_2O

%I = Isokinetic variation, %

M_d = Molecular weight of dry gas

M_n = Total amount of pollutant collected, mg

M_s = Molecular weight of stack gas

N = Normality of barium perchlorate titrant

$\sqrt{\Delta P_{avg}}$ = Average of the square roots of the velocity heads

P_{bar} = Barometric pressure at the sampling site, in. Hg

P_g = Stack gas static pressure, in. H_2O

P_m = Absolute pressure at the dry gas meter, in. Hg

P_s = Absolute stack pressure, in. Hg

PMR = Pollutant mass rate, lb/hr

P_{std} = Standard absolute pressure, 29.92 in. Hg

θ = Total sampling time, minutes

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NOMENCLATURE USED IN STACK SAMPLING CALCULATIONS (Continued)

Q = Stack gas flowrate, ACFM

Q_{std} = Stack gas flowrate, DSCFM

T_m = Absolute average meter temperature, °R

T_s = Absolute average stack gas temperature, °R

T_{std} = Standard absolute temperature, 528 °R

V_a = Volume of sample aliquot titrated, ml

V_{lc} = Liquid collected in impingers and silica gel, grams

V_m = Sample volume at meter conditions, DCF

$V_{m(std)}$ = Sample volume at standard conditions, DSCF

V_s = Stack gas velocity, ft/sec

V_{soln} = Total volume of solution, ml

V_t = Volume of barium perchlorate titrant used for the sample, ml

V_{tb} = Volume of barium perchlorate titrant used for the blank, ml

$V_{w(std)}$ = Volume of water vapor in sample corrected to standard conditions, SCF

Y = Dry gas meter calibration factor

13.6 = Specific gravity of mercury

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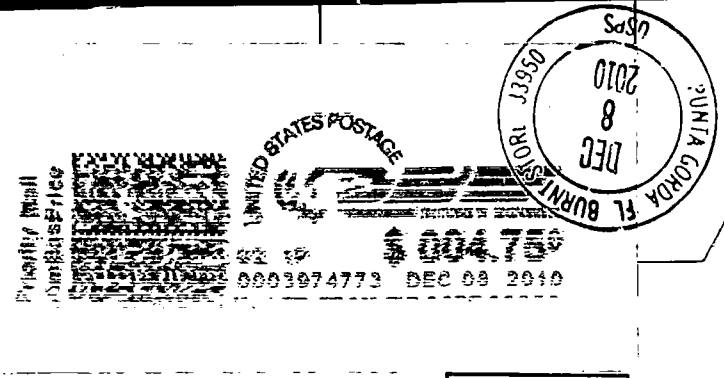

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