



**Missouri Department of Natural Resources
Missouri Air Conservation Commission
Air Pollution Control Program**

**PERMIT
TO
CONSTRUCT
PERMIT BY RULE**

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct and operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth here in.

Construction **Permit Number:** 122011-012
Project Number: 2011-08-055
Installation ID: 077-0246

Installation Name and Address

Springfield Mortuary Service, Inc.
520 S. Patterson
Springfield, MO 65802
Greene County

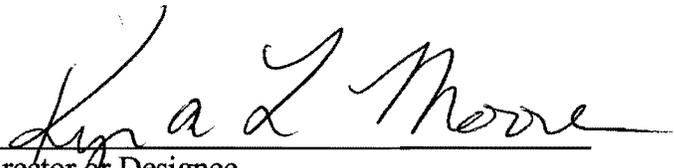
Parent Company's Name and Address

Mr. Brian Simmons, President
Springfield Mortuary Service, Inc.
520 S. Patterson
Springfield, MO 65802
Greene County

Installation Description:

Adding a new human crematory model "Classic", manufactured by U.S. Cremation Equipment.

Effective Date



Director or Designee
Department of Natural Resources

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 and 10 CSR 10-6.062 if you fail to adhere to the specifications and conditions listed in your permit by rule application and this permit. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department of Natural Resources Regional office responsible for the area within which the equipment is located within 15 days after the actual start up of this air contaminant source.

A copy of this permit and permit notification shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions as provided in RSMo 643.075. If you choose to appeal, the Air Pollution Control Program must receive your written declaration within 30 days of receipt of this permit.

If you choose not to appeal, this certificate, the project review, your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Department of Natural Resources has established the Outreach and Assistance Center to help in completing future applications or fielding complaints about the permitting process. You are invited to contact them at 1-800-361-4827 or (573) 526-6627, or you can write to the Outreach and Assistance Center, P.O. Box 176, Jefferson City, MO 65102-0176.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, Attention: Construction Permit Unit.



STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

www.dnr.mo.gov

Mr. Brian Simmons
President
Springfield Mortuary Service
520 S. Patterson
Springfield, MO 65802

RE: New Source Review Permit, Permit by Rule - Project Number: 2011-08-055
Facility ID Number: 077-0246

Dear Mr. Simmons:

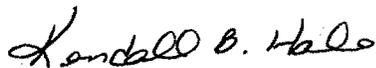
Enclosed with this letter is your permit to construct. Please review your permit carefully. You submitted a \$700.00 review fee and a completed Permit-By-Rule Notification, received on August 16, 2011.

Section A and Section B of your permit application "General Notification Information for Authority to Construct" and "Special Conditions for Crematories and Animal Incinerators" are part of your permit. The entire permit must be retained in your files. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri. Operation in accordance with these conditions is necessary for continued compliance.

In order to streamline the permitting process, the initial on-site compliance inspection requirement (which is mandatory prior to issuance of a permit) has been waived. However, an on-site compliance inspection will be performed at a later date, to validate your statements and conditions claimed on the permit by rule notification. If you have any questions regarding this permit, please contact James Broadfoot, at the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Kendall B. Hale
Permits Section Chief

KBH:jbl

Enclosures

c: Southwest Regional Office
PAMS File 2011-08-055
Permit Number:

RECEIVED
2011 AUG 16 PM 11:21
AIR POLLUTION
CONTROL SECTION



August 9, 2011

Department of Natural Resources
Air Pollution Control Program
Permit-By-Rule
P.O. Box 176
Jefferson City, Missouri 65102

Re: Springfield Mortuary Service, Inc.
520 S. Patterson
Springfield, MO 65802

To whom it may concern:

Attached is a copy for the application for the authority to construct for the above referenced source.

Application Summary

The scope of the application is to install a new U.S. Cremation Equipment Model "Classic" human crematory at the above referenced location. The maximum firing rate for this crematory is 2.0 MMBtu/hr. The potential to emit for this crematory is as follows:

CO	3.24 TPY
PM	5.12 TPY
SO₂	1.095 TPY
NO_x	1.314 TPY
TOC	1.314 TPY

Human crematories are not considered sources of hazardous air pollutants

Should you have any questions please call me at (407) 574-2021.

Respectfully submitted,
AI ENVIRONMENTAL CONSULTING SERVICES, INC.

A handwritten signature in black ink, appearing to read 'Luis Llorens', written over a horizontal line.

Luis Llorens
President/Project Manager

Air Permit Application - 2 Copies

cc: Brian Simmons— Springfield Mortuary Service, Inc.



RECEIVED
2011 AUG 16 PM 11:24
AIR QUALITY
CONTROL UNIT

Air Facility Registration

Prepared for:

***Springfield Mortuary Service, Inc.
520 S. Patterson
Springfield, MO 65802***

Human Cremation Facility

Prepared By:

***AI Environmental Consulting Services, Inc.
598 Northlake Boulevard, Suite 1016
Altamonte Springs, Florida 32701
(407) 574-2021***

Date: August 2011

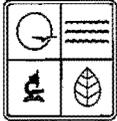
Application Contents

APPLICATION FOR AUTHORITY TO CONSTRUCT PERMIT BY RULE NOTIFICATION

Attachments

- Attachment 1 Additional Information for Registration Applications
- Attachment 2 Specifications & Engineering Drawings
- Attachment 3 Area Map
- Attachment 4 Emissions Calculation Spreadsheet based on AP-42 Table 2.1-12
- Attachment 5 Results From Identical Source Stack Test
- Attachment 6 Process Flow Diagram

077-0246



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 AIR POLLUTION CONTROL PROGRAM
 P.O. BOX 176, JEFFERSON CITY, MO 65102-0176
**APPLICATION FOR AUTHORITY TO CONSTRUCT
 PERMIT BY RULE NOTIFICATION
 CREMATORIES AND ANIMAL INCINERATORS**

APCP USE ONLY

CHECK NO. 1005	CHECK RECEIVED (MM/DD/YY) 8-16-11
CHECK AMOUNT \$ 700.00	CHECK DATE (MM/DD/YY) 8-12-11
PROJECT NO. 201108055	PERMIT NO.

SECTION A: GENERAL NOTIFICATION INFORMATION - ALL NOTIFICATIONS MUST BE ACCOMPANIED BY A \$700 FEE.**SECTION A-1: GENERAL INSTALLATION INFORMATION**

1. INSTALLATION NAME Springfield Mortuary Service, Inc.		2. FIPS	3. PLANT NO.
4. INSTALLATION STREET ADDRESS 520 S. Patterson			
5. INSTALLATION MAILING ADDRESS Same as Above			
6. CITY Springfield		STATE MO	ZIP CODE 65802
7. COUNTY NAME Greene - 077	8. 1/4, of 1/4, of	SECTION	TOWNSHIP RANGE
9. PARENT COMPANY Springfield Mortuary Service, Inc.			
10. PARENT COMPANY MAILING ADDRESS			
11. CITY Springfield		STATE MO	ZIP CODE 65802
12. INSTALLATION CONTACT PERSON Brian Simmons		13. CONTACT PERSON'S TITLE	
14. CONTACT PERSON'S MAILING ADDRESS Same as Above			
15. INSTALLATION CONTACT TELEPHONE NO. (417) 869-2826		16. INSTALLATION CONTACT FAX NO. (417) 869-9242	
17. INSTALLATION CONTACT E-MAIL ADDRESS spfdmortuariesrvc@sbcglobal.net			
18. PROJECTED DATE TO COMMENCE CONSTRUCTION October 2011		19. PROJECT DATE OF OPERATION STARTUP October 2011	

SECTION A-2: INSTALLATION DESCRIPTION

20.

Adding a new human crematory model "Classic", manufactured by U.S. Cremation Equipment

SECTION A-3: CERTIFICATION STATEMENT

I certify that I have personally examined and am familiar with the information in this application and believe that the information submitted is accurate and complete. I am aware that making a false statement or misrepresentation in this application is grounds for denying or revoking this permit.

21. SIGNATURE OF RESPONSIBLE OFFICIAL 		22. DATE 8/12/2011
23. TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL Brian Simmons		24. RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER (417) 869-2826
25. TITLE OF RESPONSIBLE OFFICIAL President		

SECTION B: SPECIAL CONDITIONS FOR CREMATORIES AND ANIMAL INCINERATORS

Construction and operation of this new air pollution source is subject to the special conditions listed below. These special conditions are based on the authority granted to the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically RSMo. 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.062 "Construction Permits by Rule").

Please indicate by marking the appropriate box as to whether or not the emission source complies with the rule listed in the applicable emission limit or standard. If any of the applicable emission source boxes are checked no, your source is not eligible for a crematories and animal incinerators permit by rule.

This Permit By Rule applies only to Crematories and Animal Incinerators constructed after October 31, 2003.

SPECIAL CONDITION	EMISSION SOURCE COMPLY?	APPLICABLE EMISSION LIMIT OR STANDARD	METHOD OF COMPLIANCE
10 CSR 10-6.062(3)(B)2.A.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The materials to be disposed of shall be limited to noninfectious human materials removed during surgery, labor and delivery, autopsy, or biopsy including body parts, tissues and fetuses, organs, bulk blood and body fluids, blood or tissue laboratory specimens, and other noninfectious anatomical remains or animal carcasses in whole or in part. The owner or operator shall minimize the amount of packaging fed to the incinerator, particularly plastic containing chlorine. The incinerators shall not be used to dispose of other non-biological medical wastes including, but not limited to, sharps, rubber gloves, intravenous bags, tubing, and metal parts.	Proper work practice.
10 CSR 10-6.062(3)(B)2.B.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The manufacturer's rated capacity (burn rate) shall be two hundred (200) pounds per hour or less.	Proper work practice.
10 CSR 10-6.062(3)(B)2.C.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The incinerator shall be a dual-chamber design.	Proper work practice.
10 CSR 10-6.062(3)(B)2.D.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Burners shall be located in each chamber, sized to manufacturer's specifications, and operated as necessary to maintain the minimum temperature requirements of subparagraph 10 CSR 10-6.062(3)(B)2.E. at all times when the unit is burning waste.	Proper work practice.
10 CSR 10-6.062(3)(B)2.E.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Excluding crematories, the second chamber must be designed to maintain a temperature of one thousand six hundred degrees Fahrenheit (1,600°F) or more with a gas residence time of one-half (1/2) second or more. The temperature shall be monitored with equipment that is accurate to plus or minus two percent ($\pm 2\%$) and continuously recorded. The thermocouples or radiation pyrometers shall be fitted to the incinerator and wired into a manual reset noise alarm such that if the temperature of either of the two (2) chambers falls below the minimum temperature above, the alarm will sound at which time plant personnel shall take immediate measures to either correct the problem or cease operation of the incinerator until the problem is corrected	Proper work practice and maintenance of proper alarm records. These records shall be maintained for not less than five (5) years, and they shall be immediately available to any Missouri Department of Natural Resources personnel upon request.
10 CSR 10-6.062(3)(B)2.F.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	There shall be no obstruction to stack flow, such as by rain caps, unless such devices are designed to automatically open when the incinerator is operated. Properly installed and maintained spark arresters are not considered obstructions.	Proper work practice.

SECTION B: SPECIAL CONDITIONS FOR CREMATORIES AND ANIMAL INCINERATORS (CONTINUED)

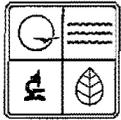
SPECIAL CONDITION	EMISSION SOURCE COMPLY?	APPLICABLE EMISSION LIMIT OR STANDARD	METHOD OF COMPLIANCE
10 CSR 10-6.062(3)(B)2.G.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Each incinerator operator shall be trained in the incinerator operating procedures as developed by the American Society of Mechanical Engineers (ASME), by the incinerator manufacturer, or by a trained individual with more than one (1) year experience in the operation of the incinerator that the trainee will be operating. Minimum training shall include basic combustion control parameters of the incinerator and all emergency procedures to be followed should the incinerator malfunction or exceed operating parameters. An operator who meets the training requirements of this condition shall be on duty and immediately accessible during all periods of operation. The manufacturer's operating instructions and guidelines shall be posted at the unit and the unit shall be operated in accordance with these instructions.	Proper work practice and maintenance of proper operator training records. These records shall be maintained for not less than five (5) years, and they shall be immediately available to any Missouri Department of Natural Resources personnel upon request.
10 CSR 10-6.062(3)(B)2.H.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The incinerator shall have an opacity of less than ten percent (10%) at all times.	Proper work practice such that no opacity violations are noted.
10 CSR 10-6.062(3)(B)2.I.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Heat shall be provided by the combustion of natural gas, liquid petroleum gas, or Number 2 fuel oil with less than three-tenths percent (0.3%) sulfur by weight, or by electric power.	Proper work practice.
10 CSR 10-6.062(3)(B)2.J.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The operator shall maintain a log of all alarm trips and the resulting action taken. A written certification of the appropriate training received by the operator, with the date of training, that includes a list of the instructor's qualifications or ASME certification school shall be maintained for each operator. The operator shall maintain an accurate record of the monthly amount and type of waste combusted.	Determined through proper alarm and operator training record keeping. These records shall be maintained for not less than five (5) years, and they shall be immediately available to any Missouri Department of Natural Resources personnel upon request.

SECTION C: OTHER POTENTIALLY APPLICABLE REQUIREMENTS

This section is intended to identify regulations that may apply to this installation. There may be others not listed that apply. To determine rule applicability and specific standards please consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements.

Please note: this permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources, and other applicable federal, state, and local laws and ordinances.

REGULATION OR CONSTRUCTION PERMIT REFERENCE	APPLICABLE EMISSION LIMIT OR STANDARD	METHOD OF COMPLIANCE
10 CSR 10-2.100, 10-3.030, or 10-4.090, 10-5.070 Open Burning Restrictions	Shall not conduct, cause, permit or allow a salvage operation, the disposal of trade wastes or burning of refuse by open burning.	Any person intending to engage in open burning shall submit a request to the Director.
10 CSR 10-2.070, 10-3.090 or 10-4.070, Restriction of Emission of Odors	No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when air is diluted to 1:7 volumes of odorous to odor-free air for 2 separate trails not less than 15 minutes apart within 1 hour.	No odor violations noted, if and when scintometer readings are taken.
10 CSR 10-5.160 Control of Odors in the Ambient Air	No person shall emit odorous matter as to cause an objectionable odors unless within the limits established by this rule.	No odor violations noted, if an when scintometer readings are taken.
10 CSR 10-5.170 Control of Odors From Processing Animal Matter	No person shall operate or use any device, machine, equipment, or other contrivance for the reduction of animal matter unless all gases, vapors, and gas-entrained effluents from the facility are incinerated at a temperature of not less than 1,200°F for a period of not less than 0.3 seconds and otherwise in compliance with this rule.	Proper work practice.
10 CSR 10-6.050, Start-up, Shutdown and Malfunction Conditions	Shall not commence construction or modification of any installation subject to this rule; begin operation after construction or modification; or begin operation of any installation which has been shut down longer than 5 years without first obtaining a permit.	In the event of a malfunction, which results in excess emissions that exceed 1 hour, the permittee shall implement corrective action and submit reports.
10 CSR 10-6.065, Operating Permits	The permittee shall comply with all applicable requirements identified in the operating permit (OP); file for timely renewal of this OP; and retain a copy of the OP on-site and make available to any MDNR personnel upon request.	The permittee shall submit an annual compliance certification in accordance with the regulation. The permittee shall maintain a current equipment list on-site with the date of installation of the equipment.
10 CSR 10-6.110, Submission of Emission Data, Emission Fees and Process Information	Submission of Emission Inventory Questionnaire (EIQ) and emission fees by frequency noted in 10 CSR 10-6.110.	The permittee shall complete and submit an EIQ in accordance with 10 CSR 10-6.110.
10 CSR 10-6.200 Hospital, Medical, Infectious Waste Incinerators	No owner or operator shall cause to be discharged into the atmosphere any gases that contain stack emissions in excess of those listed in 10 CSR 10-6.200(3)(A).	Proper work practice and maintenance of appropriate performance test results.
10 CSR 10-6.070 New Source Performance Regulations	The following federal NSPS standards may apply: (Ec) Medical Waste Incinerators. Standards of Performance for Incinerators.	As required by regulations.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
AIR POLLUTION CONTROL PROGRAM
**APPLICATION FOR AUTHORITY TO CONSTRUCT
PERMIT BY RULE NOTIFICATION
CREMATORIES AND ANIMAL INCINERATORS**

INSTRUCTIONS

By submitting your notification, you are accepting all conditions and terms stated in this form. If you find the special conditions listed in Section B unacceptable, you may choose to submit a construction permit application and undergo a case-by-case review.

Please refer to the following line-by-line instructions to complete the notification. The notification, along with the \$700.00 fee, should be mailed to:

Air Pollution Control Program
Permit-By-Rule
P.O. Box 176
Jefferson City, Missouri 65102

You must also retain a copy of the notification at the installation and make it immediately available to any inspector.

Once the fee and notifications have been mailed or hand-delivered, you are free to begin construction of your project under the special conditions that you have accepted.

The Air Pollution Control Program will send you a letter acknowledging receipt of your notification with a permit number and a project number for agency tracking purposes.

A copy of this electronic package may be obtained from the Department of Natural Resources Air and Land Protection Division's web site at: <http://www.dnr.mo.gov/alpd/apcp/PermitInfo.htm>.

If you have any questions about the notification form or the permit-by-rule notification procedure, please feel free to contact the Permit Section at (573) 751-4817.

NOTIFICATION FORM INSTRUCTIONS

- 1.) **Installation Name:** Enter the official company name and/or plant designation for the installation that is making the permit-by-rule notification.
- 2.) **FIPS Number:** Enter the official FIPS Number (3 digit code) which corresponds to the county name for the county in which the installation is located. Please refer to <http://www.itl.nist.gov/fipspubs/co-codes/mo.txt> for a listing. The FIPS number in combination with the Plant Number provides the identification/tracking information for the installation in the State/Federal databases.
- 3.) **Plant Number:** Enter the official Plant Number that has been assigned to the installation by the respective State or Local Agencies. If you do not know your plant number, please leave blank.
- 4.) **Installation Street Address:** Enter the street address of the physical location of installation.
- 5.) **Installation Mailing Address:** Enter the mailing address if that address is different from the street address.
- 6.) **City, State and Zip Code:** Enter the City, State and Zip Code of the physical location of the installation.
- 7.) **County:** Enter the county in which the installation is located.
- 8.) **Section, Township, Range:** Enter the appropriate information on the Section, Township and Range in which the installation is located.
- 9.) **Parent Company:** Complete this block if this installation is totally or partially owned by another company.
- 10.) **Parent Company Mailing Address:** Complete this block if this installation is totally or partially owned by another company.
- 11.) **Parent Company City, State and Zip Code:** Complete this block if this installation is totally or partially owned by another company.
- 12.) **Installation Contact Person:** Enter the name of the person who is most familiar with the operations of the installation and who can answer any questions regarding information about the installation.
- 13.) **Contact Person's Title:** Enter the title of the contact person.
- 14.) **Contact Person's Mailing Address:** Enter the mailing address for the Contact Person.
- 15.) **Installation Contact Person's Telephone Number:** Enter the Contact Person's telephone number.
- 16.) **Installation Contact Person's Fax Number:** Enter the Contact Person's fax number.

NOTIFICATION FORM INSTRUCTIONS (CONTINUED)

- 17.) **Installation Contact Person's E-Mail Address:** Enter the Contact Person's e-mail address.
- 18.) **Projected Date to Commence Construction:** Enter the date you intend to commence construction of your installation.
- 19.) **Projected Date of Operation Startup:** Enter the date you plan to begin operation with the installation.
- 20.) **Installation Description:** Enter the general product manufactured, the material handled by your installation and principal activity that is performed at this installation.
- 21.) **Signature of Responsible Official:** Enter the signature of the installation's official, certifying that the notification is accurate and complete. Notifications without a signed certification are not considered complete. A responsible official is:
 1. The president, secretary, treasurer or vice-president of a corporation in charge of a principal business function, or any other person who performs similar policy and decision-making functions for the corporation or a duly authorization representative of this person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either-
 - a) The facilities employ more than 250 person or have a gross annual sales or expenditures exceeding twenty-five million dollars (in second quarter 1980 dollars); or
 - b) The delegation of authority to his representative is approved in advance by the permitting authority.
 2. A general partner in a partnership or the proprietor in a sole proprietorship.
 3. Either a principal executive officer or a ranking elected official in a municipality, state, federal, or other public agency. For the purpose of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the operations of a principal geographic unit of the agency; or
 4. The designated representative of an affected source insofar as actions, standards, requirements or prohibitions under Title IV of the Clean Air Act or the regulations promulgated under the Act are concerned or the designated representative for any purposes under Part 70.
- 22.) **Date:** Enter the date that the Signature of the Responsible Official was obtained.
- 23.) **Type or Print Name of Responsible Official:** Type or print the name of the Responsible Official signing in item 21.
- 24.) **Responsible Official's Telephone Number:** Enter the telephone number where the Responsible Official may be contacted who signed in item 21.
- 25.) **Title of Responsible Official:** Enter the official title of the Responsible Official from item 21.

Attachment 1
Additional Information for Registration Applications

Additional Information for Registration Applications

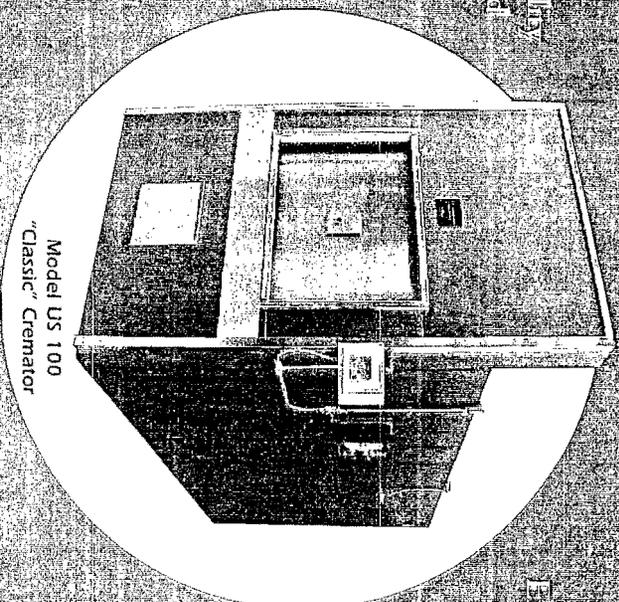
- A. Process Description – Springfield Mortuary Service, Inc. provides cremation services in their community. They propose to install a gas fired human crematory model “Classic” manufactured by U.S. Cremation Equipment.. Technical literature and engineering drawings for the “Classic” are included in Attachment 2 of this application and in Attachment 3 we have included an area map. The “Classic” is a multi-chamber unit having an average 200 lbs/hr human remains (approximately 1,000 Btu/lb) cremation rate. The primary chamber burner is rated at 500,000 Btu/hr, and the secondary chamber burner is rated at 1,500,000 Btu/hr, for a total of 2,000,000 Btu/hr. The equipment is fired with natural gas.
- B. Control of air pollution is achieved through the design of the “Classic” crematory, including its ability to operate the secondary chamber between 1600 - 1850 degrees Fahrenheit at a residence time in excess of 1.0 second. The design also includes fully automatic PLC based controls, independent fuel/air systems, preheated combustion air, secondary chamber temperature monitor an recorder, primary burner temperature interlock (prevents primary burner from firing prior to the secondary chamber reaching it’s set point temperature), UV continuous scanning flame detectors on burners, and an opacity sensor which can temporarily suspends operation of the primary chamber burner.
- Air pollution control is demonstrated through similar source stack testing results (please see Attachment 4 for emission calculations and Attachment 5 for identical source stack test).
- C. Regulatory Discussion - This source complies with the requirements of the permit by rule conditions of the application, Section C.
- D. Toxic and HAP emissions (concentrations) from human cremation are very small and are typically considered negligible.
- E. Emission Summary and Calculations –. See Attachment 4 for tabular summary of emissions. Criteria pollutant emissions values, except CO and PM, are based on emission factors from AP-42, Table 2.1-12, and “Uncontrolled Emission Factors for Refuse Combustors Other Than Municipal Waste”. CO and PM are based on 100 PPM CO and 0.08 gr/dscfm.

Attachment 2
Specifications and Engineering Drawings

The "Classic" Cremator

PERFORMANCE BEYOND EXPECTATIONS

BUILT to exciting quality and safety standards and backed by a two-year limited warranty, the fuel efficient Classic outperforms every other cremator in its price range. Take a look at some of the performance benefits the Classic offers!



Model US 100
"Classic" Cremator

Exceptional standard features combine with professional expertise to deliver the product and service you demand. Unsurpassed customer support: you can rely on U.S. Cremation Equipment's "Classic" to provide years of trouble-free operation.

CLASSIC PERFORMANCE

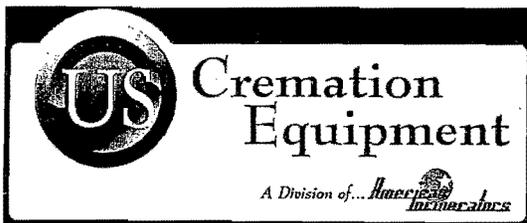
- Cremate up to six bodies in a 10-hour work day.
- Complete cremation every 60 - 90 minutes.
- No cool-down required between cremations.
- Designed for cremate obese cases up to 350 lbs.
- Fully automatic PLC operating system.

CLASSIC FEATURES

- Power charging door / dual hydraulic cylinders
- Primary chamber viewport
- Secondary chamber temperature recorder
- Color touch screen control — standard
- Powder coat finish with stainless steel trim



370 S. North Lake Boulevard, Suite 1004 • Altamonte Springs, FL 32701 • Ph: 321.282.7357 • Fax: 321.282.7358
www.uscremationequipment.com • Email: info@uscremationequipment.com



HUMAN CREMATION CHAMBER SPECIFICATION

EQUIPMENT:

US Cremation Equipment a division of American Incinerators Co. - Multiple Chambered human Crematory, Natural Gas, Propane (LP) or Oil fired.

MANUFACTURER:

US Cremation Equipment a division of American Incinerators Corp.

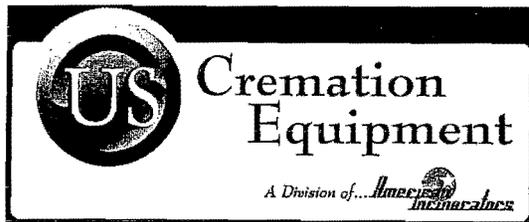
CONSTRUCTION STANDARDS:

The American Incinerators cremation chamber shall be constructed of U.L./CSA listed components and will meet or exceed nationally accepted incinerator construction standards per the Incinerator Institute of America (IIA) publication guidelines; i.e.:

- A. Primary chamber will not exceed 60% of total furnace volumes. Flue connection shall not be considered part of furnace volume.
- B. Flame supervision through continuous ultraviolet scanning flame detectors on all burners.
- C. High temperature refractory construction with air-cooled walls to prevent excessive heat radiation.
- D. Exhaust gas temperature reduction.

INCINERATION CHAMBER DIMENSIONS:

Chamber volumes:	Primary - 73 CF Secondary - 71 CF
Structural footprint:	12'0" (L) x 5'0" (W)
Over-all dimensions:	12'7" (L) x 6'0" (W) x 9'2" (H) w/std. hyd. door



OPERATING TEMPERATURE:

Temperatures are determined as a result of federal, state or local permitting authority operating standards.

Typical primary chamber setting: 1,000°F-1,200°F
Typical secondary chamber setting: 1,400°F-1,800°F

RETENTION TIME:

In excess of 1 second.

CAPACITY:

One body and associated container per cremation cycle. 200 pounds per hour or 750 pounds per batch.

DRAFT:

Induced via refractory lined draft inducer.

SHIPPING WEIGHT:

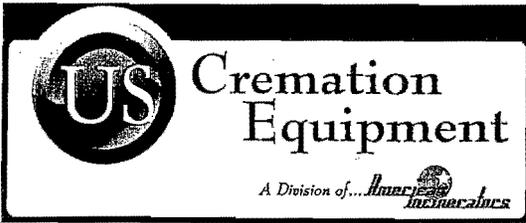
24,500 lbs.

EMISSIONS:

The American Incinerators cremation chamber shall meet or exceed federal, state and local environmental regulations.

EMISSION CONTROL:

Secondary chamber equipped with one, 1,500,000 BTU/HR burner. Also equipped with an electronic exhaust gas scanner system which temporarily suspends operation of the primary chamber burner.



STEEL CONSTRUCTION SPECIFICATIONS:

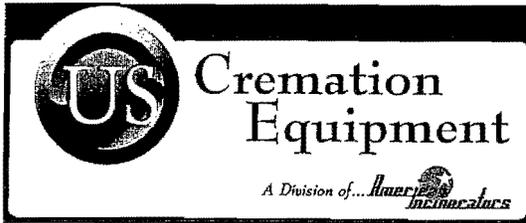
- A. The structure to be heavy 3" steel angle , square tube; 3/8" steel plate, seal welded construction.
- B. Subfloors to be 3/16" steel plate, seal welded construction.
- C. The exterior shell to be 12 gauge steel removable panels.
- D. Interior shell to be 10 gauge steel, seal welded construction.

INSULATION & REFRACTORY SPECIFICATIONS:

- A. Hot Hearth: 3000°F abrasion resistant castable refractory, monolithic cast 7" - 13" thick, 1 -1/2" recessed top and rounded, stressed arched bottom.
- B. Chamber Floors: 3000°F abrasion resistant castable refractory, 5" thick on top of 2" 2400°F light weight insulating castable.
- C. Chamber Ceilings: 3000°F castable refractory, monolithic cast, rounded, stressed arched, 5"-9" thick, topped by 2" 2400°F light weight insulating castable.
- D. Interior Walls: 2800°F. alumina-silicate firebrick, 2 1/2" x 4 1/2" x 9", all chambers are backed by 4" of 1900°F ceramic fiber insulation
- E. Stack: Lined with 2" of 2200°F insulating refractory.

SKIN TEMPERATURE CONTROL:

Integral dual casing, completely air-cooled design to prevent excessive heat radiation.



COMBUSTION EQUIPMENT:

- A. Combustion Air - One, 3 phase, 208-230/460V, 17-15.5/7.6 amp 7 hp air-blower motor (1,400 CFM)
- B. Primary Chamber - One 500,000 BTU/HR nozzle mix, gas-fired burner. Eclipse, North American, or equal.
- C. Secondary Chamber - One, 1,500,000 BTU/HR modulating, nozzle mix, gas-fired burner. Eclipse, North American, or equal.
- D. Burner Flame Safeguard - Control supervision on each burner via a flame safeguard relay and ultra-violet light detector.
- E. Low Air Pressure Safety Switch - Interlocked to all burners.

EXHAUST GAS TEMPERATURE REDUCTION:

Hot air duct operating exit temperature: 900°F

HOT AIR DUCT:

10 gauge carbon steel, high temperature 2" refractory lining, pre-drilled flanges, 24" Outside Diameter, 28" at flanges.

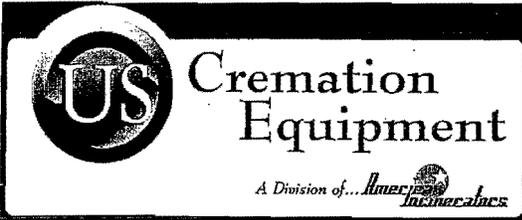
UTILITY REQUIREMENTS:

A. GAS:

- 1. Pressure:
 - a) Natural Gas: 7" to 9" W.C.
 - b) Propane: 11" W.C.
- 2. Flow Rate: 2,000,000 BTU/HR

B. ELECTRICAL:

- 1. One, three phase, 208-230/460V, 17-15/8 amp connection for 5hp blower.



CREMATION CHAMBER LOADING/CLEAN-OUT DOOR:

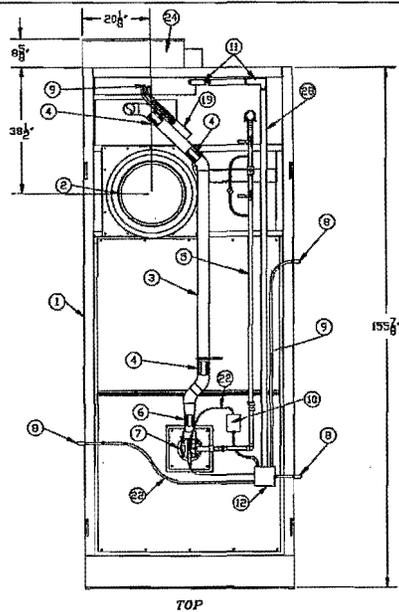
Hydraulically operated, refractory lined, upward movement guillotine style door with gate view port.

CREMATION PROCESS CONTROL:

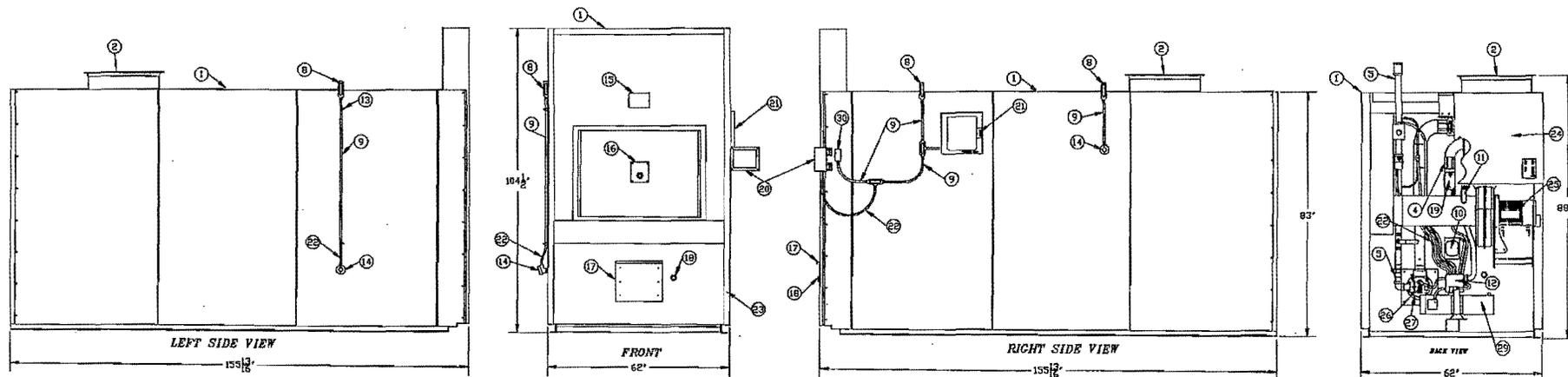
The cremation cycle is controlled by a programmable logic control (PLC) system. A visual confirmation of the system status is provided through control panel indicator lights and digital temperature display. Continuous fuel and air modulation is automatically controlled by a time/temperature actuated system. Operator interface is through two sets of simple push button controls and panel timer.

EXTERIOR FINISH:

The cremation chamber is finished with grey hi-resistance powder coating with stainless steel trim. Back of unit is coated with an epoxy type black coating.



ITEM	QTY	DESCRIPTION
1	1	113 - FRAME ASSEMBLY
2	1	141 - STACK LAYOUT SMOKE SENSOR LOCATION
3	1	146 - MACHINE AIR SUPPLY
4	7	3" FERRO COUPLING
5	1	287 - GAS TRAIN 3 PIPING SYSTEM
6	1	2 1/2" FERRO COUPLING
7	1	TOP BURNER ECLIPS T.J50
8	3	1/2" ELECTRICAL LB
9	A/R	1/2" CONDUIT
10	2	DODAN INTERCHANGEABLE IGNITOR TRANSFORMER A06-SAS
11	3	1 1/2" ELECTRICAL LB
12	2	HOFFMAN ENCLOSURE ASG 6 X 6 X 4
13	A/R	1/2" CADDY BRACKETS
14	2	THERMOCOUPLE THERMAL EQUIP SYSTEM K11-16-BH-10-31
15	1	NAME PLATE SUPPLIED BY US CREMATION
16	1	135 - PEP SITE ASSEMBLY
17	1	290 - ASH BIN ASSEMBLY
18	1	LIQUID LEVEL SIGHTS P/N 1210K26 NCMASER-CARR
19	3	BEHIND LF120 US
20	1	SIEMENS TOUCH SCREEN
21	1	PARTLOW CHART RECORDER MRC5000
22	A/R	1/2" ELECTRICAL FLEX CONDUIT
23	1	134 - TRIM SS LAYOUT
24	1	301 - ASSEMBLY ELECTRICAL 30 X 30 CONTROL PANEL
25	1	AMERICAN FAN COMPANY P/N/ 24133 FAIRFIELD 6HJD
26	2	UV SCANNER NOBEL 560090A ECLIPS
27	1	BOTTOM BURNER ECLIPS T.J150
28	A/R	1 1/2" ELECTRICAL CONDUIT
29	1	WORLD WIDE ELECTRICAL CROP INDUSTRIAL FRACTIONAL MOTOR AT 1.5-10-56CB
30	1	SQUARE D SENSOR P/N 9007C492



RELEASED TO SHOP DATE: _____

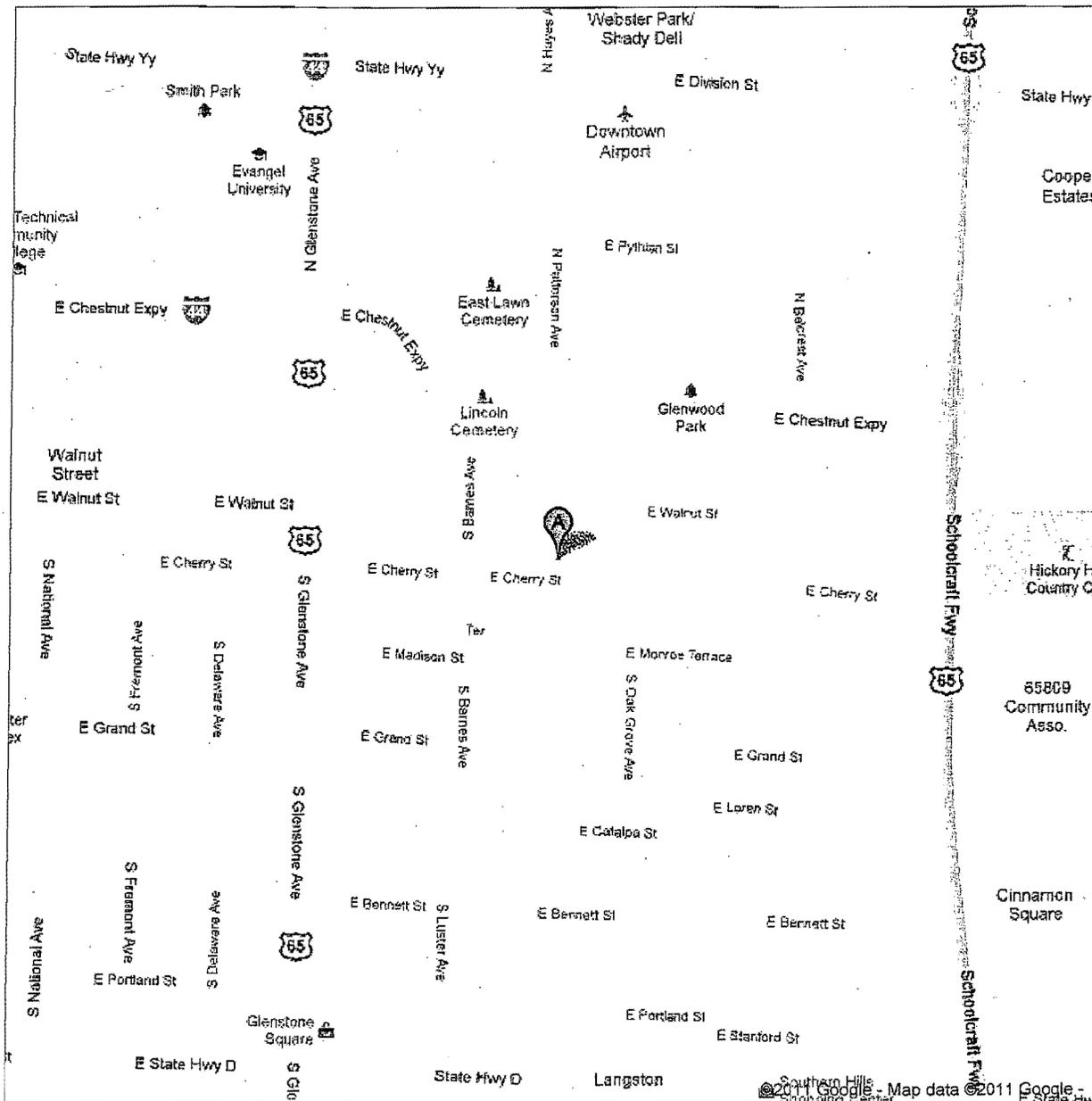
		DATE: _____ TIME: _____ BY: _____
US CREMATION EQUIPMENT A Division of...		US CREMATION EQUIPMENT MAIN ASSEMBLY W 30 X 30 ELECTRICAL CONTROL PANEL CLASSIC

Attachment 3
Area Map



Address 520 S Patterson Ave
Springfield, MO 65802

Notes Springfield Mortuary Service, Inc



Attachment 4
Emission Calculations Spreadsheet

US Cremation Equipment
Model "Classic"

Pounds Incinerated Per Hour (Average)	Hours Per Year	SO2 lb/ton	SO2 lb/hr	SO2 TPY	Nox lb/ton	Nox lb/hr	Nox TPY	TOC lb/ton	TOC lb/hr	TOC TPY
200	8760	2.5	0.25	1.095	3	0.3	1.314	3	0.3	1.314

CO=100 PPM @ 7% O2 MAX, Actual CO Emissions Measured at 3.49 PPM

CO = 100 PPM X 28 MW X 1700 DSCFM X 2.595E-09 X 60 min/hr = 0.74 lb/hr CO

0.74 lb/hr CO X 8760 hrs/yr X 1 ton/2000 lb = 3.24 TPY CO

Actual Emissions were measured at 0.04 gr/dscfm at 7% O2

PM = 0.08 gr/dscf X 1 pound/7000 gr X 1700 DSCFM X 60 min/hr = 1.17 lb/hr PM

1.17 lb/hr PM X 8760 hrs/yr X 1 ton/2000 lb = 5.12 TPY PM

Attachment 5
Results from Identical Source Stack Test



Arlington Environmental Services, Inc.

"Specializing in Visible Emission and Stack Testing"

April 7, 2010

ELECTRONIC CORRESPONDENCE

Broward County
Air Quality Division
1 North University Drive, Suite 203
Plantation, Florida 33324

Re: Guiding Light Cremations LLC, Unit 2
AIRS ID: 0112701

To Whom It May Concern:

On March 03 and 04, 2010, source tests for particulate, visible and carbon monoxide (EPA Methods 1-5, 9 and 10) were conducted on the exhaust stack servicing the crematory incinerator, Unit #2 at Guiding Light Cremations, LLC, ID 0112701 located at 2431 SW 56th Terrace in West Park, Florida.

The tests were performed in order to comply with the Broward County Department of Planning and Environmental Protection, Air Quality Division, Chapter 27 Article IV, Air Quality, Section 27-179(c)(2). The results comply with Florida's Human Crematory Rule 62-296.401(5), FAC.

The following emission point was tested:

- o EU002 Exhaust stack servicing the afterburner

To the best of my knowledge, this completes all of the required initial tests. If, for any reason, this is incorrect, please contact me as soon as possible.

Sincerely,

Debra Carter

/dc

Electronic Copy to: Geronimo Mena, Jr., Guiding Light Cremations LLC
David Krohn, Guiding Light Cremations, LLC

Post Office Box 657 ~ Okeechobee, Florida 34973
Telephone (863) 467-0555 ~ Facsimile (863) 357-0810
Email info@arlingtonenvironmental.com ~ Website www.arlingtonenvironmental.com

**Source Test Report
for
Particulate, Visible and CO Emissions**

EPA Methods 1-5, 9 and 10

Report 2985-S

March 03 and 04, 2010

prepared for

**Guiding Light Cremations, LLC
Unit #2
Facility ID 0112701**



Arlington Environmental Services, Inc.

Post Office Box 657 ~ Okeechobee, Florida 34973 ~ Telephone 863.467.0555

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1.0 Introduction

Guiding Light Cremations LLC operates a human crematory located at 2431 SW 56th Terrace in West Park, FL. On March 03 and 04, 2010, source tests for particulate, visible and carbon monoxide emissions (EPA Methods 1-5, 9 and 10) were conducted on Unit #2 exhaust stack servicing the crematory incinerator.

The tests were performed in order to comply with the Broward County Department of Planning and Environmental Protection, Air Quality Division, Chapter 27 Article IV, Air Quality, Section 27-179(c)(2). The results comply with Florida's Human Crematory Rule 62-296.401(5), FAC.

Courtney Pitters of the Broward County Division of Environmental Protection, Air Quality Division was present for a portion of the tests.

The retention time for this unit during the test was 1.75 seconds. The substantiating calculations are presented in Appendix D.

The average particulate emission rate, as determined by EPA Method 5, was 0.0159 gr/dscf . (corrected to 7% O₂). The allowable particulate emission rate is 0.080 gr./dscf . (corrected to 7% O₂).

The average carbon monoxide emission rate as determined by EPA Method 10, was 0.86 ppm . (corrected to 7% O₂). The allowable carbon monoxide emission rate is 100 ppm (corrected to 7% O₂).

The average visible emission rate as determined by EPA Method 9, was 0.0%. The allowable visible emission rate (highest six minute average) is 5% with up to 15% allowed in a one hour period.

The results of this test verify compliance with the Florida Department of Environmental Protection Human Crematory Rule 62-296.401(5), Florida Administrative Code.

2.0 Certification of Test Results

Facility Tested: Guiding Light Cremations LLC
2431 SW 56th Terrace
West Park, FL 33325

Type Process - Human Crematory

Abatement Device - Afterburner

Report 2985-S

March 03 and 04, 2010

Run Numbers 1, 2 and 3

Actual Particulate Emissions - 0.0159gr/dscf (corrected to 7% O₂)

Allowable Particulate Emissions - 0.0800 gr./dscf (corrected to 7% O₂)

Actual Carbon Monoxide Emissions - 0.86 ppm (corrected to 7% O₂)

Allowable Carbon Monoxide Emissions - 100 ppm (corrected to 7% O₂)

Actual Visible Emissions - 0.0%

Allowable Visible Emissions - 5% with up to 15% allowed in a one hour period

All testing and analysis were performed in accordance with the Florida Department of Environmental Protection Human Crematory Rule 62-296.401(5), Florida Administrative Code.

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



William D. Arlington
Project Director

3.0 Allowable Emission Determination

The allowable emissions were determined in accordance with 62.296.401(5) F.A.C. Substantiating data and calculations are presented in the Appendix D.

4.0 Cyclonic Flow Determination

Due to the configuration of the system, cyclonic flow was considered to be non-existent at the sampling site.

5.0 Summary of Results
 Guiding Light Cremations, LLC
 Unit #2
 Report 2985-S

	Run 1	Run 2	Run 3	Average
Date	3/3/2010	3/4/2010	3/4/2010	
Start Time	16:20	9:30	11:00	
Stop Time	17:23	10:33	12:05	
Process Rate (lbs.)	175	180	—	178
Particulate Emission Rate (gr./dscf @7% O ₂)	0.0188	0.0099	0.0189	0.0159
Allowable Particulate Emission Rate (gr./dscf @7% O ₂)	0.080	0.080	0.080	0.080
Visible Emission Rate (%) (highest six minute average)				0.00
Allowable Visible Emission Rate (%) (with up to 15% for 6 min. per hour)				5
Carbon Monoxide Emission Rate (ppm @7% O ₂)	0.79	1.04	0.74	0.86
Allowable Carbon Monoxide Emission Rate (ppm @7% O ₂)	100	100	100	100

6.0 Particulate Emission Results
 Guiding Light Cremations, LLC
 Unit #2
 Report 2985-S

	Run 1	Run 2	Run 3
Area (square feet)	3.08	3.08	3.08
Stack Pressure (inches Hg)	29.88	30.07	30.07
Meter Pressure (inches Hg)	30.06	30.26	30.29
Sample Volume (Std. Cu. Ft.)	52.965	54.952	57.861
Water Vapor (Cubic Feet)	5.52	5.85	6.03
Sample Moisture (percent)	9.44	9.62	9.43
Saturation Moisture (percent)	100.00	100.00	100.00
Molecular Weight (lbs/lb Mole wet)	28.29	28.18	28.27
Velocity (fpm)	887	879	985
Volumetric Flow Rate (acfm)	2734	2710	3036
Volumetric Flow Rate (scfm)	891	933	963
Concentration (gr/dscf)	0.0101	0.0051	0.0104
Concentration@7% O2 (gr/dscf)	0.0188	0.0099	0.0189
Mass Emission Rate (lbs./hr.)	0.08	0.04	0.09
Percent Isokinetic	99.51	98.54	100.56

7.0 Visible Emission Results
Guiding Light Cremations, LLC
Unit #2
Report 2985-S

Emission Point	Allowable Emission Rate (highest six minute average)	Emission Rate (highest six minute average)	Average Opacity
Exhaust Stack	0	0.00	0.00

8.0 Carbon Monoxide Emission Results
 Guiding Light Cremations, LLC
 Unit #2
 Report 2985-S

	Run 1	Run 2	Run 3	Average
Date	3/3/2010	3/4/2010	3/4/2010	
Start Time	16:20	9:30	11:00	
Stop Time	17:23	10:33	12:05	
Percent Oxygen	13.43	13.79	13.23	
Carbon Monoxide (PPM)	0.42	0.53	0.41	
Carbon Monoxide Emissions (PPM @ 7% O ₂)	0.79	1.04	0.74	0.86
Carbon Monoxide Allowable (PPM @ 7% O ₂)	100	100	100	100

9.0 Overview of Field and Analytical Procedures

9.1 EPA Method 1 - Sample and Velocity Traverses for Stationary Sources

Principle - To aid in the representative measurement of pollutant emissions and/or total volumetric flow rate from a stationary source, a measurement site where the effluent stream is flowing in a known direction is selected and the cross-section of the stack is divided into a number of equal areas. A traverse point is then located within each of these equal areas. See Sampling Point Determination.

Applicability - This method is applicable to flowing gas streams in ducts, stacks and flues. This method cannot be used when: 1) flow is cyclonic or swirling 2) a stack is smaller than about 12 inches in diameter, or 0.071 cross-sectional area or 3) the measurement site is less than two stack or duct diameters downstream or less than a half diameters upstream from a flow disturbance. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

9.2 EPA Method 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate

Principle - Type S Pitot Tube - The average gas velocity in a stack is determined from the gas density and from measurement of the average velocity head with a Type S pitot tube.

Applicability - This method is applicable for measurement of the average velocity of a gas stream and for quantifying gas flow.

This procedure is not applicable at measurement sites which fail to meet the criteria of Method 1. This method cannot be used for direct measurement in cyclonic or swirling gas streams. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

9.3 Method 3 - Gas Analysis for the EPA Determination of Dry Molecular Weight

Principle - A gas sample is extracted from a stack by one of the following methods 1) Single-point grab sampling 2) single-point, integrated sampling or 3) multi-point, integrated sampling, the gas sample is analyzed for percent CO₂, percent O₂ and if necessary for CO. For dry molecular weight determination, either an Orsat or a Fyrite analyzer may be used for the analysis.

Applicability - This method is applicable for determining carbon dioxide and oxygen concentrations and dry molecular weight of a sample from a gas stream of a fossil fuel combustion process. The method may also be applicable to other processes where it has been determined that compounds other than CO₂, O₂, CO, and nitrogen are not present in concentrations sufficient to affect the results. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

9.4 EPA Method 4 - Determination of Moisture Content in Stack Gases

Principle - A gas sample is extracted at a constant rate from the source; moisture is removed from the sample stream and determined either volumetrically or gravimetrically.

Applicability - This method is applicable for determining the moisture content of stack gas. There are two procedures given to determine the moisture. The procedure for the reference method to determine the moisture content was used to calculate the emission data. The reference method was conducted simultaneously with the pollutant emission measurement run, calculation of percent isokinetic, pollutant emission rate, etc. for the run is based upon the results of the reference method or its equivalent. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

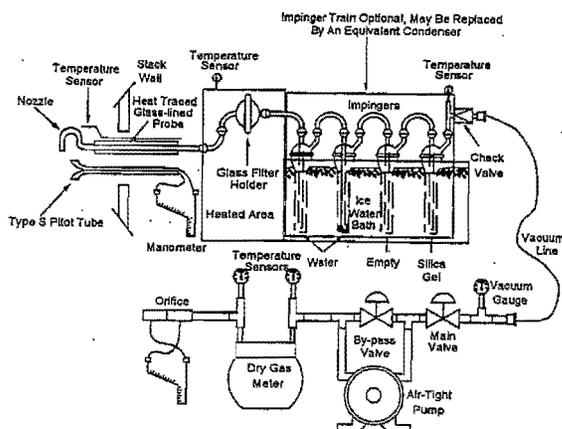
9.5 EPA Method 5 - Determination of Particulate Emissions from Stationary Sources

Principle - Particulate matter is withdrawn isokinetically from the source and collected on a glass fiber filter maintained at a temperature in the range of 120 - 248° For such other temperature as specified by an applicable subpart of the standards or approved by the Administrator, U.S. Environmental Protection Agency, for a particular application.

The particulate mass which includes any material that condenses at or above the filtration temperature, is determined gravimetrically after removal of uncombined water.

Applicability - This method is applicable for the determination of particulate emissions from stationary sources. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

Diagram of EPA Method 5 Sampling Train



9.6 EPA Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources

Principle - The opacity of emissions from stationary sources is determined visually by a qualified observer.

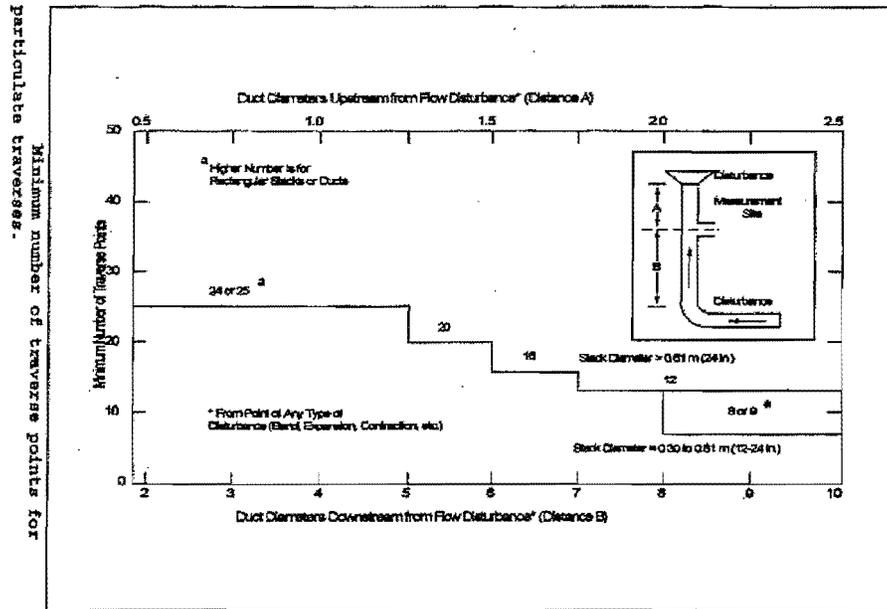
Applicability - This method is applicable for the determination of the opacity of emissions from stationary sources pursuant to 60.11(b) and for qualifying observers for visually determining the opacity of emissions.

9.7 EPA Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources

Principle - An integrated or continuous gas sample is extracted from a sampling point and analyzed for carbon monoxide (CO) content using a Luft-type nondispersive infrared analyzer or equivalent.

Applicability - This method is applicable for the determination of carbon monoxide emissions from stationary sources only when specified by the test procedures for determining compliance with new source performance standards. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

10.0 Sampling Point Determination Minimum Number of Sampling Points



Per Particulate Traverse

Circular Stacks

The number of sampling points is selected according to the above diagram, with the number of points equaling the next higher multiple of four.

Rectangular Stacks

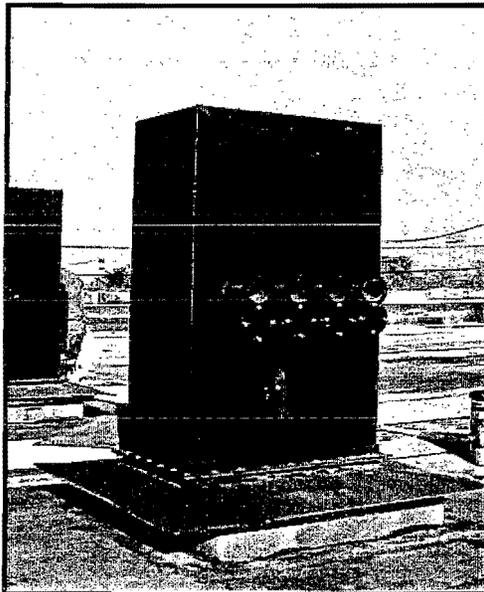
The number of sampling points is determined using the matrix below.

Number of Traverse Points	Subarea Layout Matrix
9	3 x 3
12	4 x 3
16	4 x 4
20	5 x 4
25	5 x 5
30	6 x 5
36	6 x 6
42	7 x 6
49	7 x 7

10.1 Sampling Point Determination
 Guiding Light Cremations, LLC
 Unit #2
 Report 2985-S

Stack Configuration	Rectangular
Side 1 - with ports (inches)	24
Side 2 - (inches)	18.5
Equivalent Diameter	20.89
Distance A - Ports to Downstream Disturbance (inches)	24
Distance A - Ports to Downstream Disturbance (diameters)	1.15
Distance B - Ports to Upstream Disturbance (inches)	48
Distance B - Ports to Upstream Disturbance (diameters)	2.30
Number of Test Ports	6
Number of Sampling points per Traverse	5
Number of Points Sampled	25

Photograph of Stack



Traverse Point Location	
Traverse Point No.	Inches to Stack Wall
1	1.9
2	5.6
3	9.3
4	13.0
5	16.7

11.0 Summary of Field and Laboratory Data
 Guiding Light Cremations, LLC
 Unit #2
 Report 2985-S

	Run 1	Run 2	Run 3
Date	3/3/2010	3/4/2010	3/4/2010
Start Time	16:20	9:30	11:00
Stop Time	17:23	10:33	12:05
CP	0.84	0.84	0.84
Y	0.9947	0.9947	0.9947
ΔH_a (inches H ₂ O)	1.7304	1.7304	1.7304
Diameter of Nozzle (inches)	0.7503	0.7503	0.7503
Stack Diameter or Equivlant (inches)	20.89	20.89	20.89
Static Pressure (inches H ₂ O)	-0.02	-0.02	-0.02
Barometric Pressure (inches Hg)	29.88	30.07	30.07
Test Time (minutes)	60	60	60
Meter Volume (cubic feet)	53.623	54.165	57.845
Square Root ΔP (inches H ₂ O)	0.156	0.159	0.171
Orifice Pressure ΔH (inches H ₂ O)	2.458	2.583	3.000
Average Meter Temperature (Deg. F)	74.0	63.4	71.4
Average Stack Temperature (Deg. F)	1004.4	931.5	1054.1
Particulate Sample Weight (grms)	0.0347	0.0181	0.0391
Water Collected (grms)	117.1	124.1	127.8
Percent CO ₂	5.1	4.5	5.0
Percent O ₂	13.4	13.8	13.2
Molecular Weight (lbs/lb Mole)	29.36	29.27	29.33
Nozzle Area (square feet)	0.00307	0.00307	0.00307

Attachment A - Field Data



Arlington Environmental Services, Inc.
(863) 467-0555

VISIBLE EMISSION TEST

Method Used (Circle One) Method <u>3</u>		203A	203B	Report # <u>2985-S</u>
Company Name <u>Everglades Crematorium</u>				
Facility Name <u>AIRS 0112701</u>				
Street Address <u>2431 SW 56 Terrace</u>				
City <u>West Park FL</u>			Zip <u>33023</u>	
Phone No. <u>(954) 381-8888</u>				
Process <u>Human Crematory</u>		Unit # <u>2</u>	Operating Mode <u>N 180 lbs</u>	
Control Equipment <u>After burner</u>		Operating Mode <u>N 1625 °F</u>		
Describe Emission Point <u>Rectangular Stack</u>				
Ht of Emiss. Point <u>~20'</u>		Ht Rel to Observer <u>~15'</u>		
Distance to Emiss. Pt. <u>~800'</u>		Direction to Emiss. Pt (Degrees) <u>~338°</u>		
Vehicle Angle to Obs. <u><18°</u>		Direction to Obs. Pt. (Degrees) <u>~338°</u>		
Distance and Direction to Obs. Pt from Emission Pt <u>~11' above</u>				
Describe Emissions <u>None</u>				
Emission Color <u>Clear</u>		Water Droplet Plume Attached Detached <u>None</u> <input checked="" type="checkbox"/> <input type="checkbox"/>		
Describe Plume Background <u>SKY</u>				
Background Color <u>Blue & White</u>		Sky Conditions <u>Clear Scattered</u>		
Wind Speed <u>~12-15 MPH</u>		Wind Direction <u>NW</u>		
Ambient Temp. <u>~58°F</u>		Wet Bulb Temp.		% RH
Source Layout Sketch				
				Draw North Arrow <input type="checkbox"/> IN <input type="checkbox"/> MN
Latitude		Longitude		Declination
Comments				

Observation Date <u>3-4-10</u>					Start Time <u>0930</u>					Stop Time <u>1030</u>				
Min Sec	0 15 30 45				Min Sec	0 15 30 45								
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					
30	0	0	0	0	60	0	0	0	0					
Number of Readings Above % were					Average Opacity for Highest 6 Min Period <u>0</u>									
Range of opacity Readings Min <u>0</u> Max <u>0</u>					Average Opacity for 2nd Highest 6 Min Period <u>0</u>									
Observers Name (Print) <u>Steve Webb</u>														
Observers Signature <u>Stephen L. Webb</u>					Date <u>3-4-10</u>									
Organization <u>Arlington Environmental Services, Inc.</u>														
Certified By <u>Whitlow Enterprises</u>					Date <u>1/15/10</u>									



Whitlow Enterprises, LLC

www.smokeschool.net

Certifies that

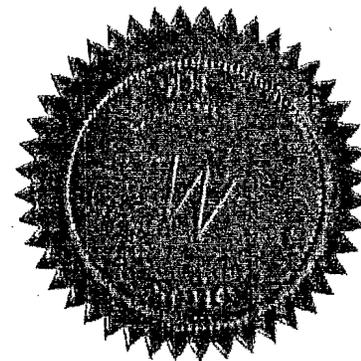
Stephen Webb of Coastal Air Consulting

**Has passed the certification test required by EPA Method 9
40 CFR 60 Appendix A and is qualified as a visible emissions evaluator.**

Certification Date: 1/15/2010 Location: Tampa/Mulberry, FL

George Whitlow

President



TMFLO11510-32

Attachment B - Laboratory Data

Particulate Laboratory Data
Guiding Light Cremations, LLC
Unit #2
Report 2985-S

Run 1

Filter Number	1484	
	Final Weight	0.3891 grams
	Tare Weight	0.3713 grams
	Difference	0.0178 grams
Beaker Number	1C	
	Final Weight	114.0708 grams
	Tare Weight	114.0533 grams
	Difference	0.0175 grams
Filter Blank Number	1483	
	Final Weight	0.3700 grams
	Tare Weight	0.3699 grams
	Difference	0.0001 grams
Wash Down Blank		
	Volume of Rinse	70 mls
	Solution of Residue	0.00000784 grams/mls
	Total Residue	0.0005488 grams/mls
Total Particulate Weight		0.0347 grams
Water Collected		
	Final Impinger Water	309 MLS
	Initial Impinger Water	200 MLS
	Final Silica Weight	208.3 GRAMS
	Silica Tare Weight	200.0 GRAMS
Total Water Collected		117.1 GRAMS

Analyst _____

Particulate Laboratory Data
Guiding Light Cremations, LLC
Unit #2
Report 2985-S

Run 2

Filter Number	1485	
	Final Weight	0.3827 grams
	Tare Weight	0.3704 grams
	Difference	0.0123 grams
Beaker Number	2C	
	Final Weight	117.5130 grams
	Tare Weight	117.5064 grams
	Difference	0.0066 grams
Filter Blank Number	1483	
	Final Weight	0.3700 grams
	Tare Weight	0.3699 grams
	Difference	0.0001 grams
Wash Down Blank		
	Volume of Rinse	95 mls
	Solution Residue	0.00000784 grams/ml
	Total Residue	0.0007448 grams/ml
Total Particulate Weight		0.0181 grams
Water Collected		
	Final Impinger Water	315 MLS
	Initial Impinger Water	200 MLS
	Final Silica Weight	209.3 GRAMS
	Silica Tare Weight	200.0 GRAMS
Total Water Collected		124.1 grams
Analyst	_____	

Particulate Laboratory Data
Guiding Light Cremations, LLC
Unit #2
Report 2985-S

Run 3

Filter Number	1486	
	Final Weight	0.4004 grams
	Tare Weight	0.3677 grams
	Difference	0.0327 grams
Beaker Number	3C	
	Final Weight	114.4563 grams
	Tare Weight	114.4492 grams
	Difference	0.0071 grams
Filter Blank Number	1483	
	Final Weight	0.3700 grams
	Tare Weight	0.3699 grams
	Difference	0.0001 grams
Wash Down Blank		
	Volume of Rinse	75 mls.
	Solution Residue	0.00000784 grams/ml.
	Total Residue	0.000588 grams
Total Particulate Weight		0.0391 grams
Water Collected		
	Final Impinger Water	317 mls.
	Initial Impinger Water	200 mls.
	Final Silica Weight	211.0 grams
	Silica Tare Weight	200.0 grams
Total Water Collected		127.8 grams

Analyst _____

Attachment C - Process Data

Emission Control Device and Process Data

Company Guiding Light Cremations

Installation Unit #2

Date 3-4-10 Report No. 2985-S

Type of Installation Crematory

Type of Material Processed Human Remains

Type(s) of Fuel Used Natural Gas

Type of Pollution Control System After burner

General Condition of Control Equipment Normal

Run No.	3-3-10	3-4-10	3-4-10
Start Time	16:20	9:30	11:00
Stop Time	17:23	10:33	12:05
Fuel Used	NG	NG	NG
Scrubber Water Flow Rate (GPM)	NA	NA	NA
Pressure Drop (in. H2O)	NA	NA	NA
Total Operating temp op	1680	1630	1720
Process Rate (lbs/Hr.)	175	- 180 -	
Percent Recycle	NA	NA	NA

Signature [Signature] Title _____

Name _____
(Please Print)



Attachment D - Calculations for Run 1

STACK AREA

(SIDE 1) X (SIDE 2) / 144

$$24.00 \quad \times \quad 18.50 \quad / 144$$

$$3.08 \quad \text{SQ.FT.}$$

STACK PRESSURE

BAROMETRIC PRESSURE + (STATIC PRESSURE/ 13.6)

$$29.88 \quad + \quad (\quad -0.02 \quad / 13.6)$$

$$29.88 \quad \text{IN.HG}$$

METER PRESSURE

BAROMETRIC PRESSURE + (ORIFICE PRESURE/13.6)

$$29.88 \quad + \quad (\quad 2.46 \quad / 13.6)$$

$$30.06 \quad \text{IN.Hg}$$

SAMPLE VOLUME

17.64 X (Y) X METER VOLUME X METER PRESSURE / (METER TEMP. + 460)

$$17.64 \times 0.9947 \times 53.623 \times 30.06 / (74.0 + 460)$$

$$52.965 \quad \text{STD.CU.FT.}$$

WATER VAPOR VOLUME

.04715 X WATER COLLECTED

$$0.04715 \quad \times \quad 117.1$$

$$5.52 \quad \text{STD.CU.FT.}$$

SAMPLE MOISTURE

100 X WATER VAPOR VOLUME / (WATER VAPOR VOLUME + SAMPLE VOLUME)

$$100 \times 5.52 / (5.52 + 52.965)$$

$$9.44 \quad \%$$

SATURATION MOISTURE

100 X (VAPOR PRESSURE @ STACK TEMP. / STACK PRESSURE)

$$100 \times (\quad \text{#####} \quad / \quad 29.88 \quad)$$

$$100.00 \quad \%$$

STACK MOISTURE FRACTION

(THE LESSER OF SAMPLE MOISTURE OR SATURATION MOISTURE) / 100

$$0.094$$

DRY MOLECULAR WEIGHT OF STACK GAS

(.28 X (100-%N2)) + (.44 X %CO2) + (.32 X %O2)

$$(.28 \times (100 - (5.14 + 13.43)) + (.44 \times 5.1 + (.32 \times 13.43)$$

$$29.36$$

MOLECULAR WEIGHT OF STACK GAS
 MOLECULAR WEIGHT X (1 - MOISTURE) + (18 X MOISTURE)
 29.36 X (1 - 0.094) + (18 X 0.094)
 28.29

STACK VELOCITY
 85.49 X CP X 60 X SQ.(^P) X SQ.(STACK TEMP + 460)/SQ.(STACK PRESSURE X MOLECULAR WT.)
 85.49 X 0.840 X 60 X 0.156 X SQ.(1004.4 + 460) / SQR(29.88 X 28.29)
 887 FPM

VOLUMETRIC FLOW RATE (ACFM)
 STACK AREA X STACK VELOCITY
 3.08 X 887
 2734 ACFM

VOLUMETRIC FLOW RATE (SCFM) DRY
 17.64 X (ACFM) X STACK PRESSURE X (1-MOISTURE) / (STACK TEMP. + 460)
 17.64 X 2734 X 29.88 X (1 - 0.094) / (1004.4 + 460)
 891 SCFM (DRY)

CONCENTRATION (gr/dscf)
 Total Particulate Weight X 15.43 / Sample Volume
 0.0347 X 15.43 / 52.96
 0.0101

CONCENTRATION@7% O2 (gr/dscf)
 Concentration X 13.9 / (20.9 - %O2)
 0.0101 X 13.9 / (20.9 - 13.43)
 0.0188

MASS EMISSION RATE (LBS./HR.)
 CONCENTRATION X (SCFM- DRY) X 60 / 7000
 0.0101 X 891 X 60 / 7000
 0.08 LBS/HR

PERCENT ISOKINETIC
 .0945 X (STACK TEMP. + 460) X SAMPLE VOLUME X 60
 . (STACK PRES. X VELOCITY X NOZZLE AREA X TEST TIME X (1-MOISTURE))
 0.0945 X (1004.38 + 460) X 52.96 X 60
 29.88 X 887 X 0.00307 X 60.00 X (1- 0.094)
 99.51 %

ResidenceTime Unit 2

CORRECTION FOR QUENCHED AIR AT OUTLET			
SCC DRY AIR			
$(M \times \text{ENTHALPY CHANGE})_{\text{scc}} = (M \times \text{ENTHALPY CHANGE})_{\text{amb}}$			
H(Mscc) =		152.5	BTU/lbm
H(Mamb) =		250.1	BTU/lbm
M(amb) =		0.610	x M(scc)
M(scc) + M(amb) =		69.660	lb/min
M(scc)AIR =		43.274	lb/min
SCC H2O			
$M(\text{scc})\text{H}_2\text{O} + M(\text{amb})\text{H}_2\text{O} = M(\text{outlet})\text{H}_2\text{O}$			
M(amb.) H2O =		0.02	lb/lb dry air
M(amb.) AIR =		26.39	lb/min
M(amb.) H2O =		0.53	lb/min
M(scc) H2O =		2.14	lb/min
SCC VOLUMETRIC FLOW			
V = MRT/PM	@	1624	F
		14.77	psi
AIR:	V =	2261.3	ACFM
H2O:	V =	179.9	ACFM
TOTAL SCC:	V =	2441.2	ACFM
SCC RESIDENCE TIME			
RESIDENCE TIME =		1.75	SECONDS

Attachment E - Calibration Data

ANNUAL METER CALIBRATION		METER NO. 002047		ORIFICE SET NO. JC40-73															
DATE	9/20/2009	Y=	0.9947	MAX % VARIATION	1.8562%	PASS													
BAROMETRIC PRESSURE	29.98	*Ha=	1.7304	MAX % VARIATION	1.2487%	PASS													
CRITICAL ORIFICE DATA																			
ORIFICE SERIAL NO.	ORIFICE K' FACTOR	ACTUAL VACUUM	ΔH (IN H2O)	TIME (MIN.)	AMBIENT TEMP INITIAL	AMBIENT TEMP. FINAL	METER TEMP. INITIAL	METER TEMP. FINAL	METER READING INITIAL	METER READING FINAL	VM (CU.FT.)	VM CORRECTE	Ver STD	Ver NOMINAL	Y	VARIATION	ΔH (IN. H2O)	VARIATION	
40	0.2435	24.0	0.31	10	83	83	82	83	719.500	722.767	3.2670	3.1872	3.1328	3.2166	0.9829	0.0015	1.7327	0.0037	
40	0.2435	24.0	0.31	10	83	83	83	84	722.767	726.050	3.2830	3.1969	3.1328	3.2166	0.9799	-0.0015	1.7295	0.0005	
40	0.2435	24.0	0.31	10	83	83	85	85	726.050	729.337	3.2870	3.1920	3.1328	3.2166	0.9814	0.0000	1.7247	-0.0042	
AVERAGE															0.9814	0.0186	1.7290	0.0008	
48	0.3557	22.5	0.66	10	84	84	86	86	730.400	735.138	4.7380	4.5966	4.5721	4.7031	0.9947	-0.0030	1.7208	0.0005	
48	0.3557	22.5	0.66	10	84	84	86	87	735.138	739.858	4.7200	4.5749	4.5721	4.7031	0.9994	0.0017	1.7193	-0.0011	
48	0.3557	22.0	0.66	10	85	85	87	87	739.858	744.580	4.7220	4.5727	4.5679	4.7074	0.9990	0.0013	1.7208	0.0005	
AVERAGE															0.9977	0.0023	1.7203	0.0058	
55	0.4616	19.5	1.15	10	86	86	88	89	745.400	751.583	6.1830	5.9783	5.9224	6.1145	0.9907	-0.0057	1.7788	0.0268	
55	0.4616	18.0	1.15	10	87	87	90	90	751.583	757.678	6.0950	5.8771	5.9170	6.1201	1.0068	0.0105	1.7772	0.0252	
55	0.4616	18.0	1.10	10	88	88	91	91	757.678	763.873	6.1950	5.9620	5.9116	6.1257	0.9916	-0.0048	1.7000	-0.0520	
AVERAGE															0.9963	0.0037	1.7520	0.0125	
63	0.5916	20.5	1.85	10	88	88	91	92	765.300	773.178	7.8780	7.5887	7.5765	7.8509	0.9984	0.0020	1.7390	0.0021	
63	0.5916	20.5	1.85	10	88	88	92	92	773.178	781.096	7.9180	7.6203	7.5765	7.8509	0.9943	-0.0021	1.7375	0.0005	
63	0.5916	20.5	1.85	10	88	88	93	93	781.096	789.010	7.9140	7.6027	7.5765	7.8509	0.9966	0.0002	1.7343	-0.0026	
AVERAGE															0.9964	0.0036	1.7369	0.0038	
73	0.8234	17.5	3.55	10	88	88	93	94	790.000	800.963	10.9630	10.5659	10.5451	10.9270	0.9980	-0.0039	1.7164	0.0026	
73	0.8234	17.5	3.55	10	88	88	94	95	800.963	811.885	10.9220	10.5074	10.5451	10.9270	1.0036	0.0017	1.7133	-0.0005	
73	0.8234	17.5	3.55	10	88	88	95	95	811.885	822.812	10.9270	10.5028	10.5451	10.9270	1.0040	0.0021	1.7118	-0.0021	
AVERAGE															1.0019	0.0019	1.7139	0.0096	
SEMI ANNUAL CALIBRATION																			
DATE		3/21/2009		BAROMETRIC PRESSURE														30.12	
ORIFICE SERIAL NO.	ORIFICE K' FACTOR	ACTUAL VACUUM	ΔH (IN H2O)	TIME (MIN.)	AMBIENT TEMP INITIAL	AMBIENT TEMP. FINAL	METER TEMP. INITIAL	METER TEMP. FINAL	METER READING INITIAL	METER READING FINAL	VM (CU.FT.)	VM CORRECTE	Ver STD	Ver NOMINAL	Y	VARIATION	ΔH (IN. H2O)	VARIATION	
55	0.4616	21.0	1.15	10	76	75	82	81	679.000	685.182	6.1820	6.0828	6.0082	6.0555	0.9877	-0.0086	1.7590	-0.0011	
55	0.4616	21.0	1.15	10	75	75	81	80	685.182	691.342	6.1600	6.0723	6.0110	6.0526	0.9899	-0.0064	1.7606	0.0005	
55	0.4616	21.0	1.15	10	75	74	80	80	691.342	697.478	6.1360	6.0543	6.0138	6.0498	0.9933	-0.0030	1.7606	0.0005	
AVERAGE															0.9903	-0.0060	1.7600	0.0171	
																PASS		PASS	
METER COMPARISON CHECK (Yqa)		Y _{qa} =		(O / Vm) X sqrt(3.19 x Tm X 29 / (*Ha x (Pb + (Havg / 13.6) x Md))) X sqq ΔH avg															
Y _{qa} =		Run 1	Run 2	Run 3	Average														
		0.9871	0.9884	1.0045	0.9934														
THERMOCOUPLE CALIBRATION																			
DATE		9/20/2009																	
		TC-1 (DEG F)		ASTM THERMOMETER (DEG F)															
ICE		31		32															
BOILING H2O		211		212															
OIL		354		352															
NOZZLE CALIBRATION																			
DATE		3/4/2010																	
READINGS IN (IN.)				AVERAGE															
#24		0.750		0.751															
				0.7503															
PITOT TUBE																			
CP=.84		ACCORDING TO DESIGN SPECIFICATIONS																	

Nozzle Calibration

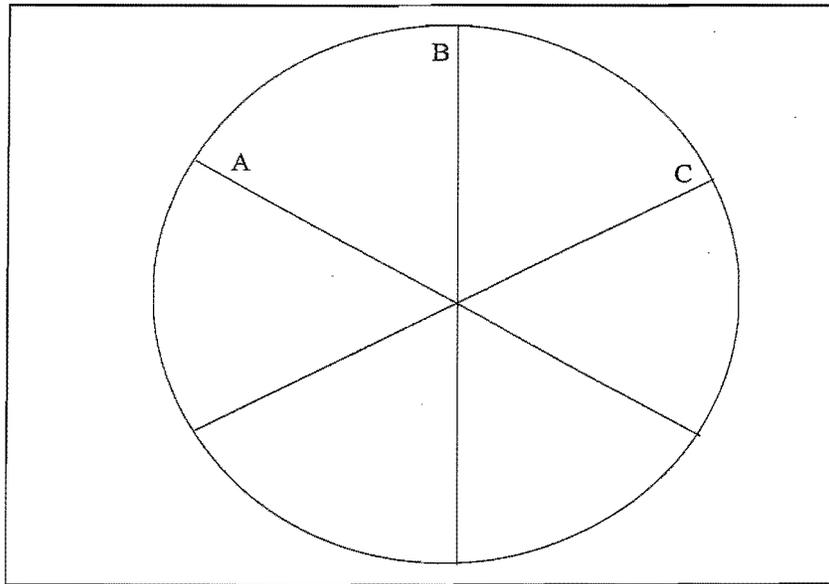
Nozzle ID #24

A = 0.750

B = 0.750

C = 0.751

Average 0.7503

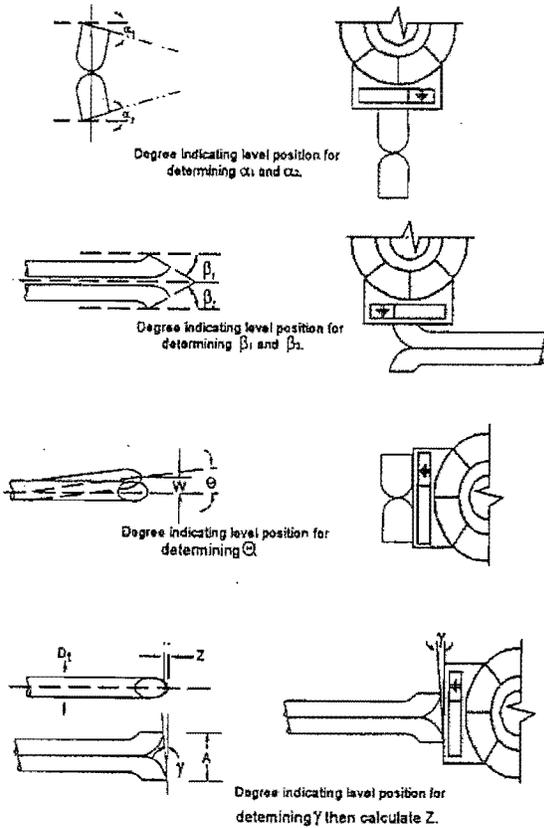


Calibration Date 3/4/2010

Calibrated by *NA*

PITOT CALIBRATION

(Type S Pitot Tube Inspection)



Level and Perpendicular?	Yes
Obstruction?	No
Damaged?	No
α_1 ($-10^\circ \leq \alpha_1 \leq +10^\circ$)	2
α_2 ($-10^\circ \leq \alpha_2 \leq +10^\circ$)	0
β_1 ($-5^\circ \leq \beta_1 \leq +5^\circ$)	1
β_2 ($-5^\circ \leq \beta_2 \leq +5^\circ$)	1
Y	1
θ	-2
$z = A \tan \gamma$ ($\leq 0.125^\circ$)	0.017
$w = A \tan \theta$ ($\leq 0.03125^\circ$)	-0.034
D_t ($3/16'' \leq D_t \leq +3/8''$)	0.375
A	0.961
$A/2 D_t$ ($1.05 \leq P_A / D_t \leq 1.51$)	1.281

Certification

I hereby certify that type S pitot tube ID# P-5AC meets or exceeds all specifications, criteria and applicable design features, and is hereby assigned a pitot tube calibration factor of 0.84.

Certified by: *W. [Signature]* Date: 9/20/09

Guiding Light Cremations, LLC

DATE: 3/3/2010
 RUN: 1
 UNIT: 2

AVG. ADJUSTED CO ppmvd @ 7% O2	0.79
CORRECTED O2 %	13.43
CORRECTED CO2 %	5.14
CORRECTED CO ppmvd	0.42

ANALYZER RESPONSE, SYSTEM BIAS AND SYSTEM DRIFT DATA

RANGE SETTING	CAL GASES	CERTIFIED GAS VALUE	ANALYZER VALUE	DIFFERENCE PPM	% SPAN	ANALYZER PRETEST VALUE	% SPAN	ANALYZER POSTTEST VALUE	% SPAN	% DRIFT	ANALYZER SERIAL #
25	% O2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01420B153
		12.04	12.00	-0.04	-0.18	12.00	0.00	12.00	0.00	0.00	
20	% CO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01410/B139
		9.62	9.60	-0.02	-0.12	9.60	0.00	9.60	0.00	0.00	
100	PPM CO	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.0	0.0	48C-68845-361
		48.5	48.4	-0.10	-0.1	48.30	-0.1	48.20	-0.2	-0.1	

UNCORRECTED RAW DATA

DATE & TIME	O2 %	CO2 %	CO PPM
16:20	12.78	6.17	0.70
16:21	12.53	5.92	0.60
16:22	13.07	5.18	0.60
16:23	13.48	5.00	0.65
16:24	13.45	5.04	0.50
16:25	13.34	5.10	0.60
16:26	13.28	5.12	0.45
16:27	13.28	5.05	0.55
16:28	13.39	4.93	0.50
16:29	13.61	4.76	0.45
16:30	13.86	4.65	0.45
16:31	13.96	4.67	0.30
16:32	13.78	4.82	0.35
16:33	13.51	4.95	0.30
16:34	13.43	4.95	0.55
16:35	13.63	4.84	0.85
16:36	13.91	4.72	0.80
16:37	13.96	4.80	0.50
16:38	13.68	5.00	0.45
16:39	13.46	5.04	0.50
16:40	13.52	4.94	0.60
16:41	13.82	4.78	0.60
16:42	13.91	4.84	0.75
16:43	13.66	4.93	0.75
16:44	13.63	4.91	0.90
16:45	13.78	4.77	1.00
16:46	13.97	4.73	0.90
16:47	13.92	4.88	0.55
16:48	13.23	5.44	0.60
16:49	12.81	5.31	0.65
16:50	13.48	4.94	0.70
16:51	13.68	5.10	0.75
16:52	13.10	5.17	1.00
16:53	13.49	5.07	0.80
16:54	13.46	4.97	0.20
16:55	13.78	4.89	0.10
16:56	13.49	5.19	0.10
16:57	12.91	5.39	0.15
16:58	13.13	5.02	0.20
16:59	13.91	4.69	0.05
17:00	13.82	5.05	0.15
17:01	13.01	5.39	0.15
17:02	12.96	5.31	0.20
17:03	13.01	5.49	0.20
17:04	13.25	5.39	0.25
17:05	13.14	5.61	0.20
17:06	12.69	5.69	0.30
17:07	12.75	5.51	0.30
17:08	13.31	5.19	0.20
17:09	13.48	5.32	0.15
17:10	12.92	5.57	0.25
17:11	12.84	5.42	0.25
17:12	13.41	5.06	0.05
17:13	13.63	5.18	0.00
17:14	13.03	5.52	0.05
17:15	12.77	5.48	0.25
17:16	13.20	5.13	0.15
17:17	13.73	4.95	0.00
17:18	13.40	5.34	0.05
17:19	12.73	5.55	0.15

MEAN ANALYZER VALUES

Avg. % O2	13.39
Avg. % CO2	5.13
Avg. CO ppmvd	0.42

Guiding Light Cremations, LLC

DATE: 3/4/2010
 RUN: 2
 UNIT: 2

AVG. ADJUSTED CO ppmvd @ 7% O2	1.04
CORRECTED O2 %	13.79
CORRECTED CO2 %	4.46
CORRECTED CO ppmvd	0.53

ANALYZER RESPONSE, SYSTEM BIAS AND SYSTEM DRIFT DATA

RANGE SETTING	CAL GASES	CERTIFIED GAS VALUE	ANALYZER VALUE	DIFFERENCE PPM	% SPAN	ANALYZER PRETEST VALUE	% SPAN	ANALYZER POSTTEST VALUE	% SPAN	% DRIFT	ANALYZER SERIAL #
25	% O2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01420B153
		12.04	12.00	-0.04	-0.18	12.00	0.00	11.90	-0.44	-0.44	
		22.62	22.50	-0.12	-0.53						
20	% CO2	0.00	0.00	0.00	0.00	0.10	0.58	0.00	0.00	-0.58	01410/B139
		9.62	9.60	-0.02	-0.12	9.60	0.00	9.60	0.00	0.00	
		17.27	17.30	0.03	0.17						
50	PPM CO	0.00	0.00	0.00	0.0	0.10	0.1	0.00	0.0	-0.1	48C-68845-381
		48.50	48.40	-0.10	-0.1	48.60	0.2	48.10	-0.3	-0.5	
		102.00	102.90	0.90	0.9						

UNCORRECTED RAW DATA

DATE & TIME	O2 %	CO2 %	CO PPM
9:30	11.82	7.41	0.60
9:31	10.44	7.54	1.15
9:32	11.59	5.91	1.25
9:33	13.23	4.97	1.20
9:34	13.35	5.06	0.90
9:35	13.06	5.06	0.65
9:36	13.03	5.04	0.50
9:37	13.14	4.89	0.45
9:38	13.28	4.78	0.45
9:39	13.40	4.67	0.45
9:40	13.50	4.60	0.45
9:41	13.56	4.54	0.40
9:42	13.63	4.49	0.40
9:43	13.71	4.41	0.40
9:44	13.79	4.36	0.40
9:45	13.78	4.38	0.45
9:46	13.77	4.36	0.40
9:47	13.90	4.34	0.45
9:48	13.83	4.32	0.30
9:49	13.83	4.29	0.30
9:50	13.85	4.27	0.30
9:51	13.88	4.23	0.25
9:52	13.93	4.18	0.25
9:53	13.99	4.13	0.25
9:54	14.00	4.12	0.25
9:55	14.04	4.09	0.30
9:56	14.04	4.09	0.30
9:57	14.07	4.06	0.25
9:58	14.09	4.06	0.20
9:59	13.85	4.49	0.15
10:00	13.06	4.88	0.25
10:01	12.97	4.55	0.35
10:02	14.02	4.17	1.25
10:03	14.04	4.13	0.85
10:04	14.08	4.14	0.70
10:05	14.01	4.19	0.75
10:06	13.98	4.20	0.80
10:07	13.94	4.26	0.80
10:08	13.93	4.23	0.80
10:09	13.94	4.22	0.70
10:10	13.98	4.19	0.80
10:11	14.03	4.14	0.75
10:12	14.06	4.12	0.70
10:13	14.09	4.10	0.70
10:14	14.13	4.10	0.70
10:15	14.16	4.07	0.75
10:16	14.19	4.07	0.70
10:17	14.17	4.08	0.70
10:18	14.15	4.09	0.65
10:19	14.18	4.11	0.65
10:20	14.11	4.14	0.65
10:21	14.09	4.16	0.60
10:22	14.06	4.18	0.60
10:23	14.05	4.19	0.65
10:24	14.02	4.24	0.65
10:25	13.92	4.35	0.70
10:26	13.79	4.44	0.70
10:27	13.89	4.53	0.65
10:28	13.56	4.64	0.65
10:29	13.39	4.80	0.65

MEAN ANALYZER VALUES

Avg. % O2	13.68
Avg. % CO2	4.48
Avg. CO ppmvd	0.58

Guiding Light Cremations, LLC

DATE: 3/4/2010
 RUN: 3
 UNIT: 2

AVG. ADJUSTED CO ppmvd @ 7% O2	0.74
CORRECTED O2 %	13.23
CORRECTED CO2 %	5.03
CORRECTED CO ppmvd	0.41

ANALYZER RESPONSE, SYSTEM BIAS AND SYSTEM DRIFT DATA

RANGE SETTING	CAL GASES	CERTIFIED GAS VALUE	ANALYZER VALUE	DIFFERENCE PPM	% SPAN	ANALYZER PRETEST VALUE	% SPAN	ANALYZER POSTTEST VALUE	% SPAN	% DRIFT	ANALYZER SERIAL #
25	% O2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01420B153
		12.04	12.00	-0.04	-0.18	11.90	-0.44	11.90	-0.44	0.00	
		22.62	22.50	-0.12	-0.53						
20	% CO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01410/B139
		9.62	9.60	-0.02	-0.12	9.60	0.00	9.60	0.00	0.00	
		17.27	17.30	0.03	0.17						
50	PPM CO	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.0	0.0	48C-68845-361
		48.50	48.40	-0.10	-0.1	48.10	-0.3	47.80	-0.6	-0.3	
		102.00	102.90	0.90	0.9						

UNCORRECTED RAW DATA

DATE & TIME	O2 %	CO2 %	CO PPM
11:00	16.14	3.07	1.30
11:01	15.99	3.06	0.60
11:02	16.01	3.16	0.50
11:03	15.08	3.89	0.35
11:04	14.37	4.14	0.40
11:05	14.06	4.44	0.46
11:06	13.64	4.76	0.45
11:07	13.22	5.12	0.55
11:08	12.91	5.26	0.65
11:09	12.80	5.34	0.75
11:10	12.73	5.37	0.80
11:11	12.68	5.41	0.75
11:12	12.64	5.40	0.85
11:13	12.64	5.41	0.85
11:14	12.59	5.44	0.95
11:15	12.68	5.44	0.95
11:16	12.68	5.33	1.00
11:17	12.91	5.13	0.90
11:18	13.41	4.83	0.75
11:19	13.66	4.86	0.65
11:20	13.33	5.10	0.75
11:21	13.09	5.13	0.70
11:22	13.13	5.03	0.65
11:23	13.24	4.98	0.65
11:24	13.26	4.99	0.60
11:25	13.28	4.94	0.85
11:26	13.36	4.89	0.60
11:27	13.41	4.88	0.65
11:28	13.41	4.84	1.30
11:29	13.71	4.84	0.85
11:30	12.43	5.69	0.15
11:31	12.17	5.66	0.05
11:32	12.19	5.57	0.05
11:33	12.20	5.52	0.05
11:34	12.26	5.48	0.05
11:35	12.29	5.47	0.05
11:36	12.30	5.44	0.10
11:37	12.35	5.41	0.05
11:38	12.38	5.38	0.05
11:39	12.42	5.36	0.05
11:40	12.43	5.36	0.20
11:41	12.46	5.31	0.10
11:42	12.54	5.28	0.10
11:43	12.54	5.28	0.10
11:44	12.58	5.24	0.10
11:45	12.58	5.28	0.10
11:46	12.59	5.23	0.10
11:47	12.63	5.22	0.10
11:48	12.65	5.17	0.15
11:49	12.74	5.13	0.15
11:50	12.78	5.10	0.05
11:51	12.83	5.08	0.05
11:52	12.85	5.06	0.05
11:53	12.90	5.03	0.05
11:54	12.96	4.98	0.05
11:55	13.02	4.93	0.05
11:56	13.08	4.92	0.10
11:57	13.09	4.90	0.10
11:58	13.12	4.88	0.05
11:59	13.21	4.77	0.00

MEAN ANALYZER VALUES

Avg. % O2	13.07
Avg. % CO2	5.02
Avg. CO ppmvd	0.40

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer Coastal Air Consulting (Deland, Florida)
Date December 08, 2009
Delivery Receipt DR-26962
Gas Standard 9.00-10.0% CO₂, 11.5-12.5% Oxygen/Nitrogen-EPA PROTOCOL
Final Analysis Date December 08, 2009
Expiration Date December 08, 2012

Component Carbon Dioxide, Oxygen
Balance Gas Nitrogen

Analytical Data: DO NOT USE BELOW 150 psig
EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Carbon Dioxide: 9.62% +/- 0.09%

Oxygen: 12.04% +/- 0.12%

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS/GMIS	GMIS/GMIS
Cylinder Number:	CC-159026/CC-165377	CC-231332/CC-85458
Concentration:	5.14% CO ₂ /N ₂ -10.05% CO ₂ /Nitrogen	10.1% O ₂ /N ₂ - 20.97% Oxygen/N ₂
Expiration Date:	03/31/11 - 04/06/11	03/04/11 - 04/15/11

Certification Instrumentation

Component:	Carbon Dioxide	Oxygen
Make/Model:	Agilent 7890A	Servomex 244a
Serial Number:	CN10736166	1847
Principal of Measurement:	GC-TCD	Paramagnetic
Last Calibration:	December 05, 2009	November 20, 2009

Cylinder Data

Cylinder Serial Number: EB-0020405 Cylinder Outlet: CGA 590
Cylinder Volume: 140 Cubic Feet Cylinder Pressure: 2000 psig, 70°F
Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:



Mike Durican

Unmatched Excellence

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Certificate of Analysis

- EPA PROTOCOL GAS -

Customer Coastal Air Consulting (Deland, Florida)
Date November 14, 2008
Delivery Receipt DR-23098
Gas Standard 17.0-18.0% CO₂; 22.0-23.0% Oxygen/Nitrogen-EPA PROTOCOL
Final Analysis Date November 14, 2008
Expiration Date November 14, 2011

Component Carbon Dioxide, Oxygen
Balance Gas Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**
EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Carbon Dioxide: 17.27% +/- 0.17%

Oxygen: 22.62% +/- 0.22%

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS/GMIS
Cylinder Number:	CC-79616	CC-125554/CC-85469
Concentration:	17.4% CO ₂ /Nitrogen	20.99% O ₂ /N ₂ - 25.30% Oxygen/N ₂
Expiration Date:	12/01/12	04/02/11 - 08/09/10

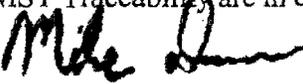
Certification Instrumentation

Component:	Carbon Dioxide	Oxygen
Make/Model:	Hewlett Packard 5890 II	Servomex 244a
Serial Number:	3336A59393	1847
Principal of Measurement:	TCD	Paramagnetic
Last Calibration:	November 05, 2008	November 10, 2008

Cylinder Data

Cylinder Serial Number:	CC-231467	Cylinder Outlet:	CGA 590
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70°F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: 
Date: November 14, 2008

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Certificate of Analysis

- EPA PROTOCOL GAS -

Customer Coastal Air Consulting (Deland, Florida)
Date July 22, 2009
Delivery Receipt DR-25422
Gas Standard 11-13 ppm Nitric Oxide, 23-27 ppm Carbon Monoxide/Nitrogen
Final Analysis Date July 22, 2009
Expiration Date July 22, 2011 **DO NOT USE BELOW 150 psig**

Analytical Data:

EPA Protocol, Section No. 2.2, Procedure G-1.

Reported Concentrations:

Nitric Oxide: 11.8 ppm +/- 0.11 ppm
Carbon Monoxide: 25.7 ppm +/- 0.25 ppm

Nitrogen: Balance

Total NOx: 11.8 ppm

**** Total NOx for Reference Use Only ****

Reference Standards

<u>SRM/GMIS</u>	<u>GMIS/GMIS</u>	<u>GMIS/GMIS</u>
Cylinder Number:	CC-165557/CC-117924	CC-184197/CC-158976
Concentration:	5.22 ppm NO/19.48 ppm NO	10.07 ppm CO/25.1 ppm CO
Expiration Date:	12/03/10 - 12/11/10	06/15/10 - 08/04/10

Certification Instrumentation

Component:	Nitric Oxide	Carbon Monoxide
Make/Model:	Nicolet NEXUS 470	Nicolet-NEXUS 470
Serial Number:	AEP99000154	AEP99000154
Principal of Measurement:	FTIR	FTIR
Last Calibration:	July 04, 2009	July 02, 2009

Cylinder Data

Cylinder Number:	EB-0016054	Cylinder Volume:	140 Cubic Feet
Cylinder Outlet:	CGA 660	Cylinder Pressure:	2000 psig, 70°F
Expiration Date:	July 22, 2011		

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:



Mike Duncan

Unmatched Excellence

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer Coastal Air Consulting (Deland, Florida)
Date October 27, 2009
Delivery Receipt DR-26491
Gas Standard 22-25 ppm NO, 45-50 ppm CO/Nitrogen - EPA PROTOCOL
Final Analysis Date October 20, 2009
Expiration Date October 20, 2011

Components Nitric Oxide, Carbon Monoxide
Balance Gas Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**
EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Nitric Oxide: 22.9 ppm +/- 0.22 ppm
Carbon Monoxide: 48.5 ppm +/- 0.48 ppm

Nitrogen: Balance

Total Oxides of Nitrogen: 23.5 ppm

**** Total NOX for Reference Use Only ****

Reference Standards:

SRM/GMIS:	GMIS	GMIS/GMIS
Cylinder Number:	CC-231538	CC-125604/CC-166617
Concentration:	24.41 ppm NO	25.5 ppm CO/51.0 ppm CO
Expiration Date:	06/24/11	02/27/10 - 09/18/10

Certification Instrumentation

Component:	Nitric Oxide	Carbon Monoxide
Make/Model:	Nicolet-NEXUS 470	Nicolet-NEXUS 470
Serial Number:	AEP99000154	AEP99000154
Principal of Measurement:	FTIR	FTIR
Last Calibration:	October 05, 2009	October 06, 2009

Cylinder Data

Cylinder Serial Number:	CC-233289	Cylinder Outlet:	CGA 660
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70°F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:



Mike Duncan

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Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer Coastal Air Consulting (Deland, Florida)
Date July 22, 2009
Delivery Receipt DR-25422
Gas Standard 100.0 ppm Carbon Monoxide/Nitrogen - EPA PROTOCOL
Final Analysis Date July 22, 2009
Expiration Date July 22, 2012

Component Carbon Monoxide
Balance Gas Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**
EPA Protocol, Section No. 2.2, Procedure G-1

Replicate Concentrations

Carbon Monoxide: 102.0 ppm +/- 1.0 ppm

Nitrogen: Balance

Reference Standards:

SRM/GMIS: ~~GMIS~~
Cylinder Number: CC-233156
Concentration: 104.91 ppm CO/Nitrogen
Expiration Date: April 16, 2011

Certification Instrumentation

Component: Carbon Monoxide
Make/Model: Nicolet - NEXUS 470
Serial Number: AEP99000154
Principal of Measurement: FTIR
Last Calibration: July 02, 2009

Cylinder Data

Cylinder Serial Number: CC-233184 Cylinder Outlet: CGA 350
Cylinder Volume: 140 Cubic Feet Cylinder Pressure: 2000 psig, 70°F
Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:



Mike Duncan

Unmatched Excellence

Attachment F - Project Participants

Project Participants

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Project Director

Rufus Rhoden
Field Technician

Kaye Arlington
Laboratory Analyst

Debra Carter
Computer Analysis

Coastal Air Consultants, Inc

Stephen Webb

Guiding Light Cremations, Unit 2

Geronimo Mena
Facility Manager

Broward County Environmental Management

Courtney Pitters
Inspector

Attachment 6
Process Flow Diagram

Process Flow Diagram

"Classic" Crematory

