



Air Permit Application

Prepared For:

***Brown Cremation Services, Inc.
287 Arden Nollville Road
Inwood, WV 25428***

Human Crematory and Animal Crematory

November, 2015

Prepared By:

***AI Environmental Consulting Services, Inc. for
US CREMATION EQUIPMENT
598 Northlake Boulevard, Suite 1016
Altamonte Springs, Florida 32701***

Brown Cremation
Services Inc
Inwood
003-00153
13-3283
Caraline

Application Contents

➤ Application for NSR Permit

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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
 601 57th Street, SE
 Charleston, WV 25304
 (304) 926-0475
www.dep.wv.gov/daq

**APPLICATION FOR NSR PERMIT
 AND
 TITLE V PERMIT REVISION
 (OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF KNOWN):

- CONSTRUCTION MODIFICATION RELOCATION
 CLASS I ADMINISTRATIVE UPDATE TEMPORARY
 CLASS II ADMINISTRATIVE UPDATE AFTER-THE-FACT

PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT MINOR MODIFICATION
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS ATTACHMENT S TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant (as registered with the WV Secretary of State's Office):
Brown Cremation Services, Inc.

2. Federal Employer ID No. (FEIN):
47-5491155

3. Name of facility (if different from above):
Brown Cremation Services, Inc.

4. The applicant is the:
 OWNER OPERATOR BOTH

5A. Applicant's mailing address:
P.O. Box 821
327 W King Street
Martinsburg, WV 25401

5B. Facility's present physical address:
287 Arden Nollville Road
Inwood, WV 25428

6. West Virginia Business Registration. Is the applicant a resident of the State of West Virginia? YES NO

- If YES, provide a copy of the Certificate of Incorporation/Organization/Limited Partnership (one page) including any name change amendments or other Business Registration Certificate as Attachment A.
- If NO, provide a copy of the Certificate of Authority/Authority of L.L.C./Registration (one page) including any name change amendments or other Business Certificate as Attachment A.

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the proposed site? YES NO

- If YES, please explain: Owner and operator of Property were the cremators are being located
- If NO, you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be constructed, modified, relocated, administratively updated or temporarily permitted (e.g., coal preparation plant, primary crusher, etc.): Human and Animal cremation facility.

10. North American Industry Classification System (NAICS) code for the facility:
812220

11A. DAQ Plant ID No. (for existing facilities only):
-

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
NA



All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits**, please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP as Attachment B**.

Rte. 30 Arden-Nollville Road, ¼ mile north of Rte. 51

This application is for a construction permit.

12.B. New site address (if applicable):

NA

12C. Nearest city or town:

NA

12D. County:

Berkeley

12.E. UTM Northing (KM): 4361609.2

Lat:39° 21' 58.15" N, Lon 78° 02' 94" W

12F. UTM Easting (KM): 755582.2

12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:

NA

14A. Provide the date of anticipated installation or change: / /

- If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: / /

14B. Date of anticipated Start-Up if a permit is granted:

Dec 2015 Feb 2016

14C. Provide a **Schedule** of the planned **Installation of/Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:

Hours Per Day 24 Days Per Week 7 Weeks Per Year 52 Note: Hours set at Potential-to-Emit

Actual hours are expected to be 12 hours/day, 5 to 7 Days Per Week

16. Is demolition or physical renovation at an existing facility involved? **YES** **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed - **NA** changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (*if known*). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (*if known*). Provide this information as **Attachment D**.

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to **Plot Plan Guidance**).

- Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F**.

23. Provide a **Process Description** as **Attachment G**.

- Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.
– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

- | | | |
|--|--|--|
| <input type="checkbox"/> Bulk Liquid Transfer Operations | <input type="checkbox"/> Haul Road Emissions | <input type="checkbox"/> Quarry |
| <input type="checkbox"/> Chemical Processes | <input type="checkbox"/> Hot Mix Asphalt Plant | <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities |
| <input type="checkbox"/> Concrete Batch Plant | <input checked="" type="checkbox"/> Incinerator-Attachment L | <input type="checkbox"/> Storage Tanks |
| <input type="checkbox"/> Grey Iron and Steel Foundry | <input type="checkbox"/> Indirect Heat Exchanger | |
| <input type="checkbox"/> General Emission Unit, specify | | |

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below: - NA

- | | | |
|---|---|--|
| <input type="checkbox"/> Absorption Systems | <input type="checkbox"/> Baghouse | <input type="checkbox"/> Flare |
| <input type="checkbox"/> Adsorption Systems | <input type="checkbox"/> Condenser | <input type="checkbox"/> Mechanical Collector |
| <input type="checkbox"/> Afterburner | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System |
| <input type="checkbox"/> Other Collectors, specify NA | | |

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

- Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

YES NO

- If YES, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "**Precautionary Notice – Claims of Confidentiality**" guidance found in the **General Instructions** as **Attachment Q**.

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

- | | |
|--|---|
| <input type="checkbox"/> Authority of Corporation or Other Business Entity | <input type="checkbox"/> Authority of Partnership |
| <input type="checkbox"/> Authority of Governmental Agency | <input type="checkbox"/> Authority of Limited Partnership |

Submit completed and signed **Authority Form** as **Attachment R**.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned **Responsible Official** / **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE

Robert C. Fields

(Please use blue ink)

DATE:

11-24-15

(Please use blue ink)

35B. Printed name of signee: Robert C. Fields

35C. Title: President

35D. E-mail:

info@BrownFuneralHomesWV.com

36E. Phone: (304) 263-8896

36F. FAX: (304) 229-4909

36A. Printed name of contact person (if different from above):

36B. Title:

36C. E-mail:

36D. Phone:

36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Attachment P: Business Certificate | <input checked="" type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet |
| <input checked="" type="checkbox"/> Attachment B: Map(s) | <input checked="" type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s) |
| <input checked="" type="checkbox"/> Attachment C: Installation and Start Up Schedule | <input type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s) |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion | <input checked="" type="checkbox"/> Attachment N: Supporting Emissions Calculations |
| <input checked="" type="checkbox"/> Attachment E: Plot Plan | <input type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s) | <input checked="" type="checkbox"/> Attachment P: Public Notice/Corporate Certificate |
| <input checked="" type="checkbox"/> Attachment G: Process Description | <input type="checkbox"/> Attachment Q: Business Confidential Claims |
| <input type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS) | <input type="checkbox"/> Attachment R: Authority Forms |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table | <input type="checkbox"/> Attachment S: Title V Permit Revision Information |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee |

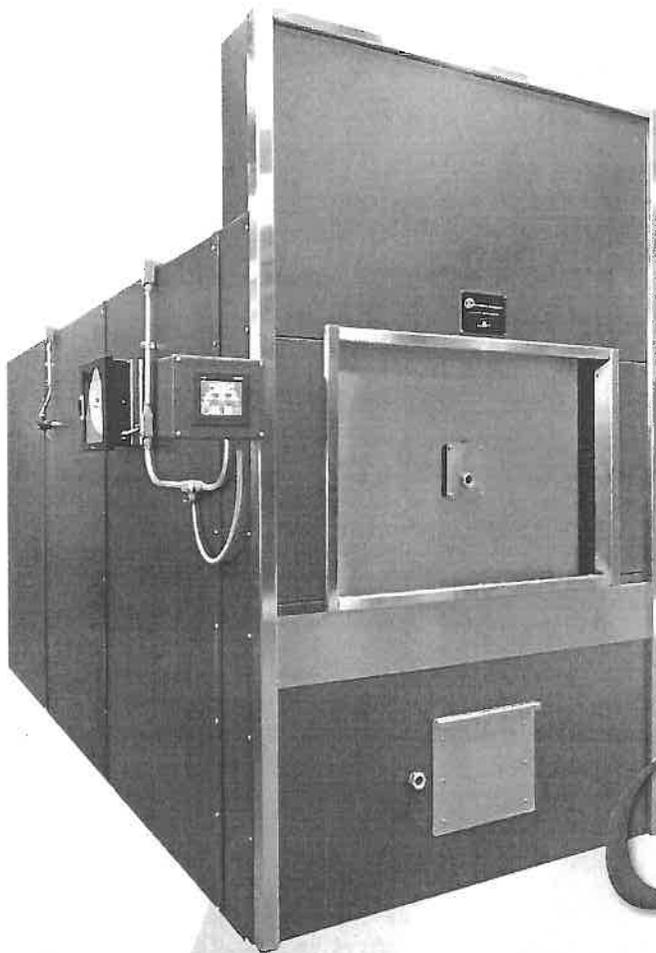
Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
- NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
- Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
- NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
- NSR permit writer should notify a Title V permit writer of draft permit,
- Public notice should reference both 45CSR13 and Title V permits,
- EPA has 45 day review period of a draft permit.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

Attachment A
Specifications and Engineering Drawings



THE
classic

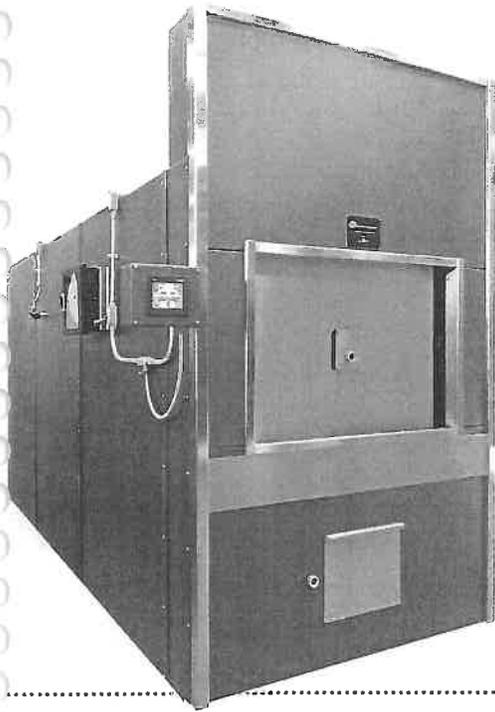
ISN'T WHAT YOU EXPECT.



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The standard-size cremator with more features than any unit in its price range



Since the Classic was introduced to the cremation industry, it's been turning heads. Cremation professionals have asked, "Does this machine have the technology and design to deliver notable fuel efficiency and significantly increased production - and be a cost-effective investment?" We, of course, answer with a hands-down "Yes." But we're not the ones to ask. It's our customers whose opinions matter.

"I have operated equipment for 15 years before buying your unit and I must say that nothing can cremate a sizable person better or give me a cheaper gas/electric bill"

G. David Keller • High Point Funeral Home, Memphis, TN

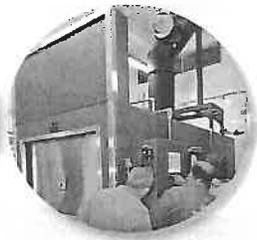
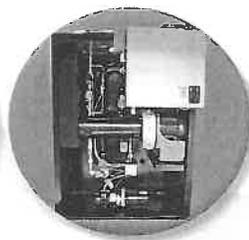
"They encouraged me to check the competition. I did, but no one came close in expertise, support and customer service."

Danny Losee, President • Perry Mount Park Cemetery, Pontiac, Michigan

"I shopped all the major manufacturers and was immediately impressed with U.S. Cremation Equipment's personnel and product."

David Krohn, CEO • Everglades Crematorium, Hollywood, Florida

STANDARD FEATURES OF THE CLASSIC



- **Continuous Operation:** Heavy-duty insulation and state-of-the-art drafting allows for continuous operation, no cool-downs between cremation cycles.
- **Increased Productivity:** The Classic can complete a cremation every 75 to 90 minutes, for up to six cremations in ten hours.
- **Complete Automation:** A PLC controls the entire cremation from start to finish.
- **Fuel Efficiency:** Faster cremation cycles and "Hot Hearth" design can save up to 50% in fuel usage when performing more than one cremation in a day.
- **Environmental Safety:** Complete combustion is achieved in the Pollution Control Chamber, eliminating smoke and odor.
- **Special Case Conditions:** A large primary chamber and an operating system that controls the rate of combustion enable safe cremation of obese cases up to 800 pounds.
- **User-Friendly System with One-Touch Screens:** Operating conditions are displayed on various screens for monitoring and control during each stage of the cremation cycle.
- **Safety Compliance:** The "Classic" complies with nationally recognized safety standards and has been tested and listed by Underwriters Laboratories, Inc. (UL) - file MH 47704.

The Classic is the standard-size cremator of choice. Give us a call and we'll put you in touch with the people who use our product every day. Contact the cremation professionals, 321.282.7357.

Assistance is always a phone call away.





HUMAN CREMATION CHAMBER SPECIFICATION

Model US 100 "Classic"

EQUIPMENT:

U.S. Cremation Equipment, a division of American Incinerators Corporation - Multiple Chambered Human Cremator; Natural Gas, Propane (LP) or Oil fired.

MANUFACTURER:

U.S. Cremation Equipment a division of American Incinerators Corporation.

CONSTRUCTION STANDARDS:

The cremator shall be constructed of U.L. /CSA listed components and will meet or exceed nationally accepted incinerator construction standards as originally established 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.

SAFETY CERTIFICATIONS

Underwriters Laboratories (UL) listed appliance File number MH47704.

CREMATOR DIMENSIONS:

Chamber volumes:	Primary - 73 CF (2.07 CM) Secondary - 71 CF (2.01 CM)
Primary Chamber:	94" L x 38" W x 31" H (2388 mm x 965 mm x 788 mm)
Structural footprint:	156" L x 62" W (3962 mm x 1575mm)
Over-all dimensions:	164½" L x 72" W (incl. Touch Screen Panel) x 104½" H (4178 mm L x 1829 mm W (W/Touch Screen Panel) x 2654 mm H)

POWER CHARGING DOOR:

Door Height:	34½" (876 mm)
Door Width:	40" (1016 mm)

PRIMARY CHAMBER OPENING:

Width: 38" (965 mm)
Roof Arch Height: 30" (762 mm) @ High Point – 27" (686 mm) @ Low point

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 (538°C - 648°C)
Typical secondary chamber setting: 1,600°F-1,800°F (871°C - 982°C)

RETENTION TIME:

In excess of 1 second.

CAPACITY:

Single load capacity of 800 lbs (363 kg) per cremation cycle. Burn Rate of 200 lbs/hr (91 kg)

DRAFT:

Induced via refractory lined draft inducer.

SHIPPING WEIGHT:

24,000 lbs. (10,886kg)

EMISSIONS:

The U. S. Cremation Equipment cremator shall meet or exceed federal, state/province 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 if the opacity of the exhaust gases reaches the maximum locally authorized level.

STEEL CONSTRUCTION SPECIFICATIONS:

- A. The structure to be heavy 3" steel angle, square tube; 3/8" steel plate, seal welded construction.
- B. Subfloor 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.

UTILITY REQUIREMENTS:

A. GAS:

1. Pressure:
 - a) Natural Gas: 7-9" W.C. (178-228 mm)
 - b) Propane: 11-14" W.C. (288-355 mm)
2. Flow Rate: 2,000,000 BTU/hr

B. ELECTRICAL:

- Voltage: 220 Volts
Phase: Single or 3 Phase
Frequency: 50/60Hz
Amperage: 70Amp for Single Phase - 40Amp for 3 Phase

CREMATION CHAMBER LOADING/CLEAN-OUT DOOR:

Hydraulically operated, refractory lined, upward movement guillotine style door with view port. It is a front loading-front cleanout design with cremated remains collection cooling hopper and removal system. The hydraulic system pump is a 1 HP with a capacity of 15 liters per minute or equivalent system.

CREMATION PROCESS CONTROL:

The cremation cycle is controlled by a programmable logic control (PLC) system. Visual confirmation of the system status is provided through a Color Touch Screen Panel which displays temperatures, elapsed time, burner operation and other functions. Continuous fuel and air modulation is automatically controlled by a time/temperature actuated system. Operator interface performed through the Color Touch Screen. The Temperature Chart Recorder (if applicable) is a single or dual pen.

EXTERIOR FINISH:

The top and rear compartments are finished with two coats of high-temperature, textured, black polyurethane. The front and side panels are powder coated in a dark grey color. The cremator is trimmed in stainless steel.

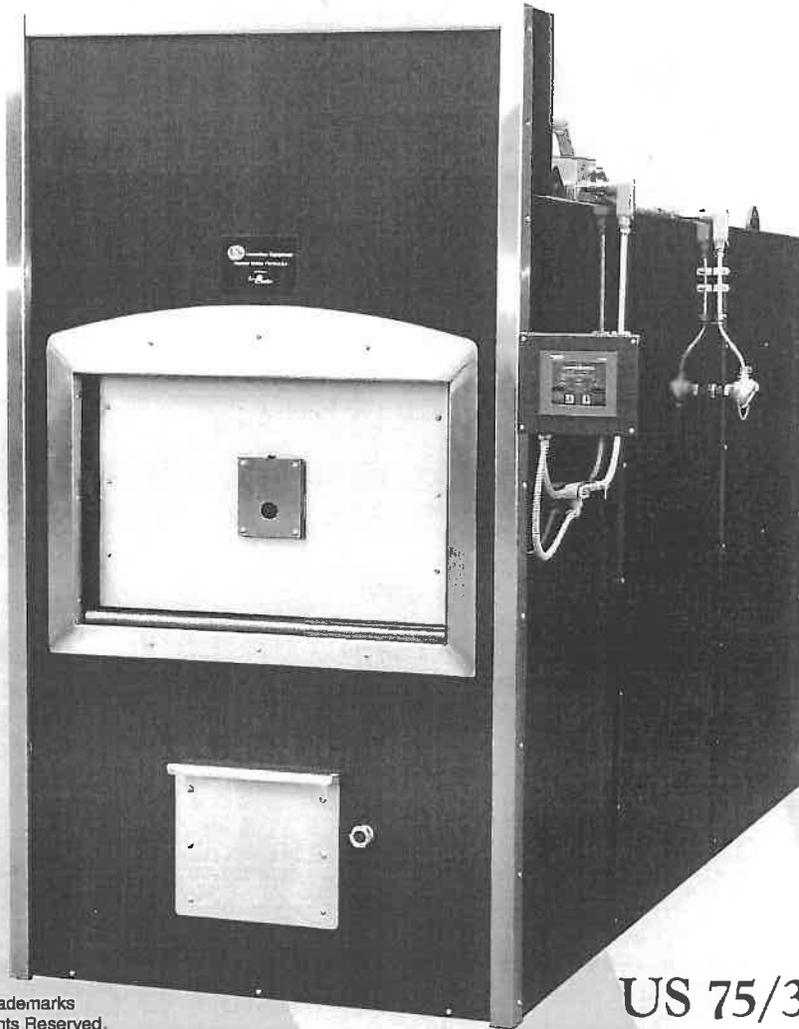
TOOLS:

The tools consist of a steel wire brush and rake with long handles, and a short handle rake. A trigger Hand Magnet for removal of metal is also included.



*Protecting you.
Protecting the environment.*

THE ENVIRONMENTALLY SAFE & EFFICIENT ANIMAL CREMATOR



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of UL LLC © 2013 All Rights Reserved.

US 75/300



Offering increased productivity, faster cremation cycles and lower fuel consumption



STANDARD FEATURES OF THE US75/300 ANIMAL CREMATOR

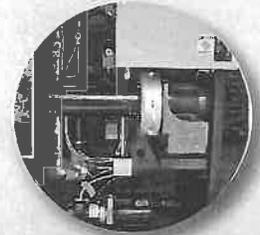
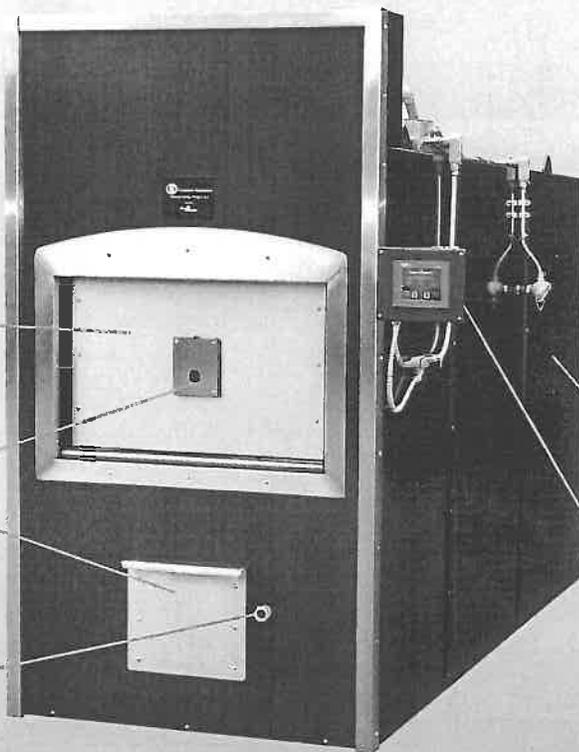
U.S. Cremation Equipment's compact and fuel efficient Model US 75/300 animal cremator is designed primarily for random-load individual pet cremations; however it can also function as a batch load incinerator for communal cremations. With a single load capacity of 300 lbs it is the ideal unit for animal clinics and hospital, veterinarians, pet cemeteries and humane societies. A unique no cool-down feature between cycles along with a fully automatic PLC Operating System allows for increased productivity and lower fuel consumption. The US 75/300 can be installed in a single day and complies with air quality and environmental standards world wide. And as with all U.S. Cremation Equipment models, the US 75/300 has been tested and listed by Underwriters Laboratories, Inc. (UL).



- Start-up & Training
- Power Charging Door

- Primary Chamber View Port
- Collection Drawer for cremated remains

- Secondary Chamber View Port



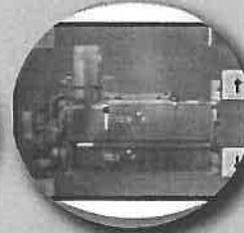
- Rear Compartment houses major components for easy access and maintenance

- Powder Coat Paint Exterior w/Stainless Steel Trim

- Touch Screen Control Panel

- Two Year Warranty

User-friendly operating system features touch screen monitoring and control throughout the cremation cycle.





ANIMAL CREMATION CHAMBER SPECIFICATION
Model US 75/300 (Gen 2)

EQUIPMENT:

U.S. Cremation Equipment, a division of American Incinerators Corporation - Multiple Chambered Animal Cremator; Natural Gas, Propane (LP) or Oil fired.

MANUFACTURER:

U.S. Cremation Equipment a division of American Incinerators Corporation.

CONSTRUCTION STANDARDS:

The cremator 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.

SAFETY CERTIFICATIONS

Underwriters Laboratories (UL) listed appliance File number MH47704.

CREMATOR DIMENSIONS:

Chamber volumes:	Primary - 38 CF	(1.08 CM)
	Secondary - 42.5 CF	(1.20 CM)
Primary Chamber:	76 "L x 38.75" W x 27 1/2 " H	
	(1,930 mm x 978 mm x 699 mm)	
Structural footprint:	112 1/8" L x 62" W (2868 mm x 1575 mm)	
Over-all dimensions:	120 7/8" L x 62" W (74" W/Touch Screen) x 104.5"H	
	(3070 mm L x 1575 mm W [2642 mm W/Touch Screen]	
	x 2677 mm H w/ door hood)	

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 (538 C - 648 C)
Typical secondary chamber setting: 1,400°F-1,800°F (760 C - 982 C)

POWER CHARGING DOOR:

Door Height: 36.5" (927 mm)
Door Width: 42" (1067 mm)

PRIMARY CHAMBER OPENING:

Width: 38" (965 mm)
Height: 31.75" (806.5 mm)

RETENTION TIME:

In excess of 1 second.

CAPACITY RATING:

75 lb/hr for type 4 waste. Single load capacity of 300 lbs per cremation cycle

DRAFT:

Induced via refractory lined draft inducer.

SHIPPING WEIGHT:

18,000 lbs. (8165 kg) Estimated

EMISSIONS:

The U. S. Cremation Equipment animal cremator shall meet or exceed federal, state/province and local environmental regulations.

EMISSION CONTROL:

Secondary chamber equipped with one, 1,000,000 BTU/HR burner. Also equipped with an electronic exhaust gas scanner system which temporarily suspends operation of the primary chamber burner if the opacity of the exhaust gases reach 20%.

STEEL CONSTRUCTION SPECIFICATIONS:

- A. The structure to be heavy 3" steel angle , square tube; 3/8" steel plate, seal welded construction.
- B. Subfloor 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 refractor 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. castable refractory, 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 (1) single phase, 208-230/460V, 17-15.5/7.6 amp, 5 hp air-blower motor (1200 CFM/34 CMM). Three Phase available.
- B. Primary Chamber - One 500,000 BTU/HR nozzle mix, gas-fired burner. Eclipse, North American, or equal.
- C. Secondary Chamber - One, 1,000,000 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 scanner.
- E. Low Air Pressure Safety Switch - Interlocked to all burners.

EXHAUST GAS TEMPERATURE REDUCTION:

Hot air duct operating exit temperature: 900° F to 1200 ° F (482 C - 649 C)

HOT AIR DUCT:

10 gauge carbon steel, high temperature 2-3" refractory lining (51 -76 mm), pre-drilled flanges, 24"
Outside Diameter, 28" (711 mm) at flanges.

UTILITY REQUIREMENTS:

A. **GAS:**

1. Pressure:
 - a) Natural Gas: 7" to 9" W.C. (178 mm to 228 mm)
 - b) Propane: 11" W.C. (288 mm)
2. Flow Rate: 1,500,000 BTU/hr

B. **ELECTRICAL:**

1. One (1) single phase or 3 Phase, 208-230 Volts, 50/60 Hz for 5 hp air blower.

CREMATION CHAMBER LOADING/CLEAN-OUT DOOR:

Hydraulically operated, refractory lined, upward movement guillotine style door
W/Primary Chamber 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.

The cremation chamber is finished with grey or brown hi-resistance powder coating. Back and top of unit is coated with epoxy type black paint. Loading door is trimmed in stainless steel.

Attachment B
Site Location Map



Google 287 Arden Nollville Rd



Attachment C
Installation and Start-up Schedule

Installation

Installation is going to be performed by a license general contractor in West Virginia. It consists of placing the unit on a slab, connecting the utilities and the stack.

Start-up and Training

The start-up and training at installation is going to be performed by the manufacturer and should take 2 to 3 days. It consists of a company technician that cures the refractory, calibrates the cremator and trains crematorium personnel in the operation. Preventive maintenance of the cremator is explained and the first cremation cycle is performed.

The above tasks are going to be performed during the months of November/December of the current year.

Attachment D
Supplemental Information/Regulatory Discussion

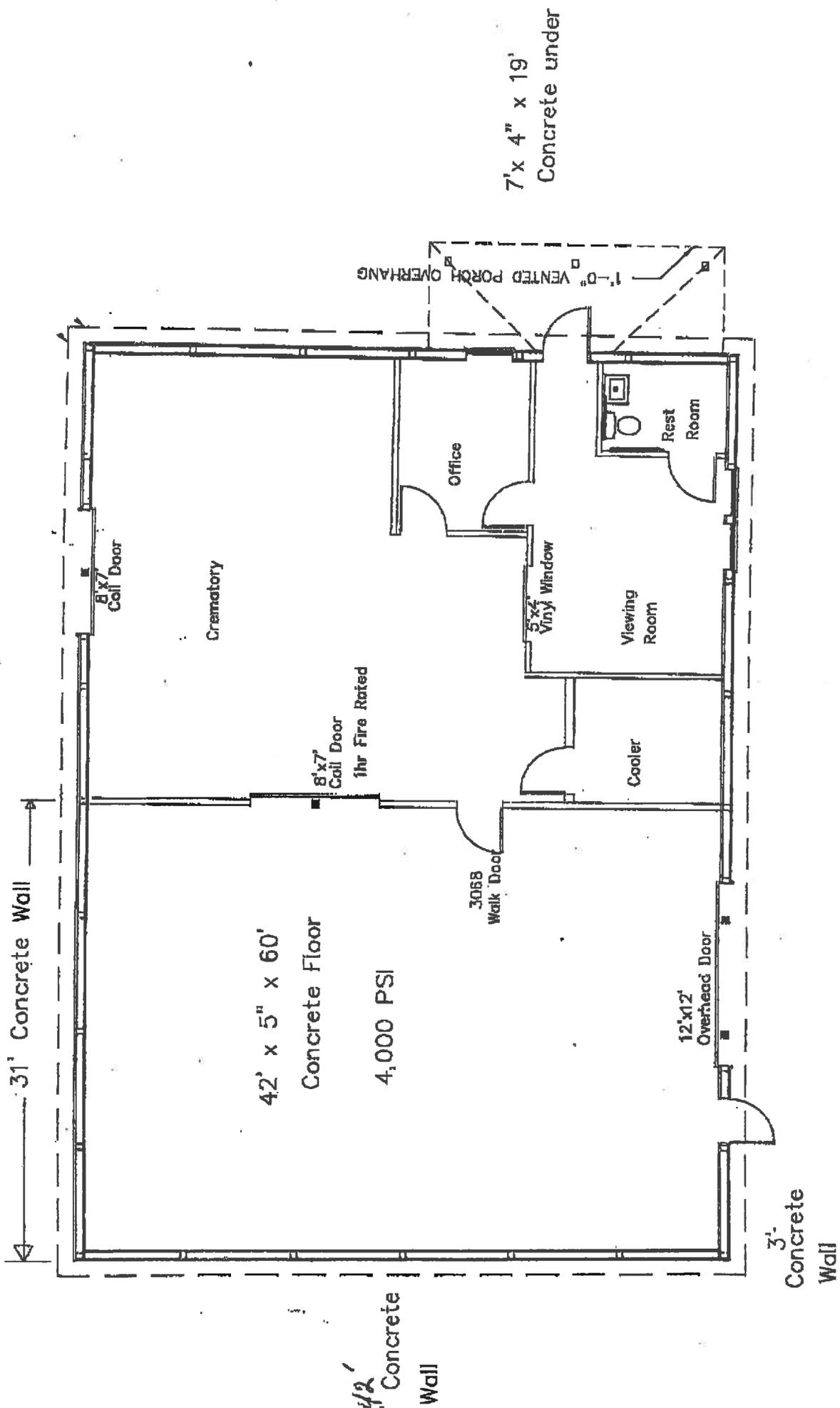
- A. Process Description – Brown Cremation Services, Inc. proposes to install a new natural gas fired US Cremation Equipment Model Classic human crematory for use at their facility. Technical literature and engineering drawings for the “CLASSIC” are included on this application. The “CLASSIC” is a multi-chamber unit having an average 200 lbs/hr or 750 lbs/maximum load (approximately 1,000 Btu/lb). The primary chamber burner is rated at 500,000 Btu/hr/burner and the secondary chamber burner is rated at 1,500,000 Btu/hr, for a total of 2,000,000 Btu/hr.

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 seconds. 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 identical source stack testing results (please see ATTACHMENT N).

The US 75/300 is a multi-chamber unit having an average 75 lbs/hr capacity. The primary chamber burner is rated at 500,000 Btu/hr, and the secondary chamber burner is rated at 1,000,000 Btu/hr, for a total of 1,500,000 Btu/hr. Control of air pollution is achieved through the design of the US 75/300 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 identical source stack testing results (please see ATTACHMENT N).

- B. Regulatory Discussion –The units/facility is not subject to NSPS, PSD or MACT regulations. This is a minor source at a minor facility.

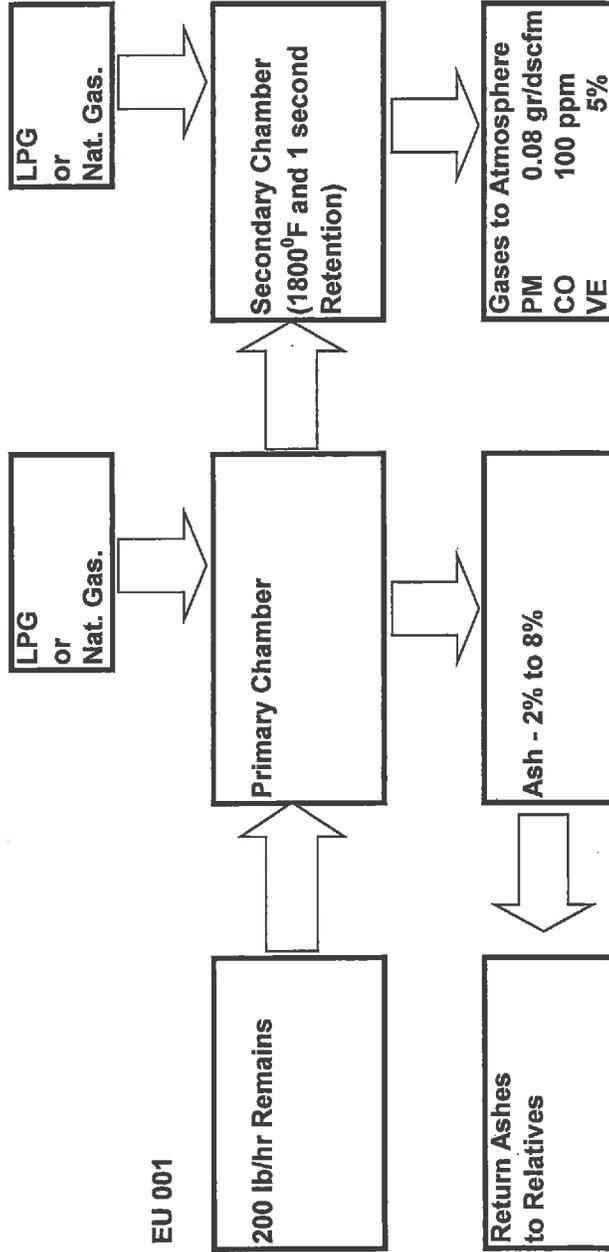
Attachment E
Plot Plan



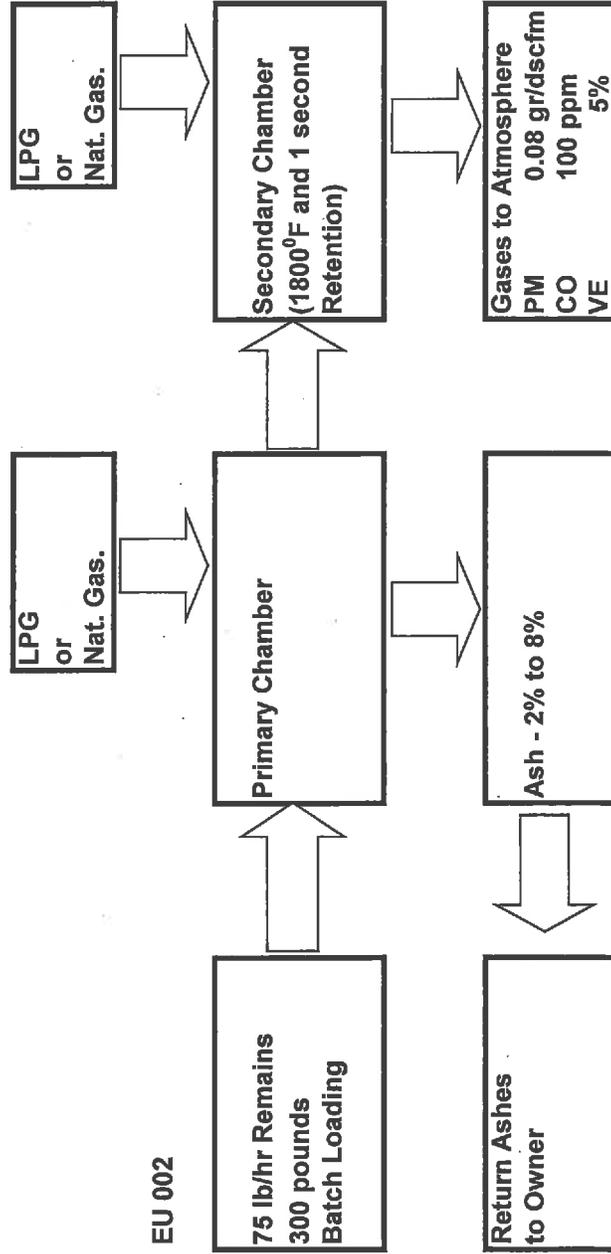
Attachment F
Process Flow Diagram

Process Flow Diagram

EU 001



Process Flow Diagram



EU 002

**Attachment I
Equipment List Form**

Attachment J
Emission Point Data Summary Sheet

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type ¹	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS ³ (Speciate VOCs & HAPs)	Maximum Potential Uncontrolled Emissions ⁴		Maximum Potential Controlled Emissions ⁵		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used ⁶	Emission Concentration ⁷ (ppmv or mg/m ⁴)
		ID No.	Source	ID No.	Device Type	Short Term ²	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
001	Vertical	001	Human crematory	001		NA	NA	See Attachment N for emissions calculations.					Gas	EE AP-42	See Attachment N for emissions calculations.
002	vertical	002	Animal crematory	001		NA	NA	See Attachment N for emissions calculations.					Gas	EE AP-42	See Attachment N for emissions calculations.

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO_x, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases.
- Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m³) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO₂, use units of ppmv (See 45CSR10).

Attachment K
Fugitive Emissions Data Summary Sheet

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS

1.) Will there be haul road activities?

Yes No

If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.

2.) Will there be Storage Piles?

Yes No

If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.

3.) Will there be Liquid Loading/Unloading Operations?

Yes No

If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.

4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation?

Yes No

If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.

5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)?

Yes No

If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.

6.) Will there be General Clean-up VOC Operations?

Yes No

If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.

7.) Will there be any other activities that generate fugitive emissions?

Yes No

If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.

If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS ¹	Maximum Potential Uncontrolled Emissions ²		Maximum Potential Controlled Emissions ³		Est. Method Used ⁴
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads						
Unpaved Haul Roads						
Storage Pile Emissions						
Loading/Unloading Operations						
Wastewater Treatment Evaporation & Operations						
Equipment Leaks		Does not apply		Does not apply		
General Clean-up VOC Emissions						
Other						

¹ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases.

² Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

³ Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁴ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

**Attachment L
Incinerator Data**

Attachment L
Emission Unit Data Sheet
(INCINERATOR)

Control Device ID No. (must match List Form):

Equipment Information

1. Manufacturer: U.S. Cremation Equipment	2. Model No. "Classic"
3. On a separate sheet sketch or draw the proposed incinerator showing the location and dimensions (inside and out) of (1) the primary combustion chamber, (2) the secondary combustion chamber, (3) the flame port, (4) auxiliary burners, and (5) dampers with special emphasis on dimensions of the flame port and secondary combustion chambers (inside) . Also, sketch in the minimum distance the gas travels through the secondary combustion chamber.	
4. Rated capacity of the incinerator for the type of waste to be burned: Maximum: 150 -200 lb/hr Typical: 150 lb/hr Annual: As needed tons/yr	
5. By what means is waste charged? <input type="checkbox"/> Batch <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Periodically	
6. Type: <input checked="" type="checkbox"/> Multiple Chamber <input type="checkbox"/> Single Chamber <input type="checkbox"/> Other, specify:	
7. Projected operating schedule: 8 - 12 hr/day 4-7 day/yr	

Primary Combustion Chamber

8. Volume: 73 ft ³	9. Effective grate area: 25 - Hot Hearth no grate ft ²
10. Maximum temperature: 1800 °F	11. Burning rate: 8904 btu/cf/hr lb/ft ² /hr
12. Heat release in primary chamber: 8904 @150 lb/hr BTU/hr/ft ³	13. Total heat release in incinerator: 14931 BTU/hr/ft ³

Secondary Combustion Chamber

14. Volume: 71 ft ³	15. Cross sectional area: ft ²
16. Volume of gas through secondary combustion chamber: 2827 ACFM @ 1800 °F	17. Gas velocity through secondary combustion chamber: 15.28 ft/sec
18. Minimum gas temperature: 1400 °F	19. Minimum retention time of gas: 1 sec
20. Minimum distance of gas travel through secondary combustion chamber: ft	21. Location of air admission:

Flame Port

22. Flame port area: ft ²	23. Velocity through flame port: ft/sec
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Dampers

24. Type: None	25. Number
26. Diameter: inches	27. Capacity: ACFM @ °F

Combustion Air

28. Type of draft: <input type="checkbox"/> Natural <input type="checkbox"/> Sliding damper <input type="checkbox"/> Forced <input type="checkbox"/> Barometric damper <input checked="" type="checkbox"/> Induced Windshielding? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	29. If draft is forced or induced, describe ID fans or blowers: <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Number</td> <td style="width: 30%;">1</td> <td style="width: 40%;"></td> </tr> <tr> <td>HP rating</td> <td>7.5</td> <td>HP</td> </tr> <tr> <td>Rated flow</td> <td>NA</td> <td>ft³/min</td> </tr> <tr> <td>Rated speed</td> <td>3500</td> <td>RPM</td> </tr> <tr> <td>Fan rated draft</td> <td>12</td> <td>in. H₂O</td> </tr> <tr> <td>Volume</td> <td>1700 cfm @</td> <td>°F</td> </tr> </table>	Number	1		HP rating	7.5	HP	Rated flow	NA	ft ³ /min	Rated speed	3500	RPM	Fan rated draft	12	in. H ₂ O	Volume	1700 cfm @	°F
Number	1																		
HP rating	7.5	HP																	
Rated flow	NA	ft ³ /min																	
Rated speed	3500	RPM																	
Fan rated draft	12	in. H ₂ O																	
Volume	1700 cfm @	°F																	
30. Theoretical air/refuse ratio: NA lb air/lb refuse																			
31. Percent of total air applied as: <div style="text-align: center;">NA</div> <div style="display: flex; justify-content: space-around;"> overfire air underfire air </div>																			

Auxiliary Burners

32. Proposed type and fuel:	
33. Primary Burner Capacity: 0.5 MMBTU/hr Number: 1 Manufacture: Eclipse Model: TJ050 Estimated capacity: 500,000 BTU/hr Fuel: Natural Gas How controlled? Temperature Is there a temperature indicator? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No How temperature recorded? No	34. Secondary Burner Capacity: 1.5 MMBTU/hr Number: 1 Manufacture: Eclipse Model: TJ150 Estimated capacity: 1,500,000 BTU/hr Fuel: Natural gas How controlled? Is there a temperature indicator? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No How temperature recorded? yes

Miscellaneous Devices and Controls

35. Automatic loading device. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe.	36. Self closing doors. <input type="checkbox"/> Yes <input type="checkbox"/> No
37. Sparks arrestor <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	38. Flame failure protection equipment <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
39. Method of creating turbulence for combustion gases. Describe. Baffle Chamber	40. Method of cleaning secondary or settling chamber. Describe. NA
41. Other interlocking devices or controls. If yes, describe. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temperature interlock that avoids the cremation from starting until secondary chamber reaches minimum temperature.	

Installation

42. Indoor Installation: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	43. Outdoor Installation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe method of supplying combustion air. Blower rated at 1700 CFM, facility must provide louvers or natural draft opening for the equipment per manufacturer spec.	

Stack or Vent Data

44. Inside diameter or dimensions: 1.75 ft	45. Gas exit temperature: 1200 Max °F
46. Height: 16.8 ft	47. Stack serves: <input checked="" type="checkbox"/> This equipment only <input type="checkbox"/> Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
48. Gas flow rate: 916.60 ft/min	
49. Estimated percent of moisture: 5.8 %	

Waste

50. Source of waste: <input type="checkbox"/> Hospital <input type="checkbox"/> Restaurant <input type="checkbox"/> Store <input type="checkbox"/> Industry <input type="checkbox"/> Apartment <input checked="" type="checkbox"/> Crematory <input type="checkbox"/> Warehouse <input type="checkbox"/> Public Institution <input type="checkbox"/> Other, specify:	
51. Describe fully, in detail, the composition of waste feed to the incinerator: Human crematory. Human remains are not considered waste.	
52. Expected BTU/lb as fired: 1000 BTU/lb	53. Daily amount: Unknown lb
54. Does incinerator have a charge hopper <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	55. What is the volume of the charge hopper? ft ³
56. Does the charge hopper have automatic control? <input type="checkbox"/> Yes <input type="checkbox"/> No	57. Is the waste charged to the incinerator weighed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
58. Is the secondary chamber preheated prior to charging waste? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	59. At what secondary temperature does waste charging begin? 1450 - 1600 °F
60. Is the ash waste quenched? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	61. Is all the waste burned generated on site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
62. For hospital waste, is the ash inspected for recognizable combustible components? <input type="checkbox"/> Yes <input type="checkbox"/> No	
63. For hospital waste, are recognizable combustible components of the ash reburned? <input type="checkbox"/> Yes <input type="checkbox"/> No	
64. Is any waste received from outside the local government boundary? <input type="checkbox"/> Yes <input type="checkbox"/> No	
65. Are hazardous or special waste burned? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please describe:	66. Are potential infectious waste burned? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
67. How will the waste material from process and control equipment be disposed of? Remains returned to families.	
68. Method of charging waste solids: <input checked="" type="checkbox"/> Manual <input type="checkbox"/> Manual charge hopper <input type="checkbox"/> Automatic charge hopper <input type="checkbox"/> Other, specify:	69. Method of feeding liquids: <input type="checkbox"/> Lab pack <input type="checkbox"/> Injection as a primary burner fuel <input type="checkbox"/> Injection as a secondary burner fuel <input type="checkbox"/> Other, specify:
70. Rated steam flow – heat recovery boiler: NA lbs/hr	71. Rated pressure – recovery boiler: NA PSIG

Emissions Stream

72. Emission rates:

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA	Tons per Year Tons/yr	Parts per Million ppm
CO	1	NA	NA	NA	4.38	100@7% O2 max
Hydrocarbons	0.3	NA	NA	NA	1.314	NA
NO _x	0.3	NA	NA	NA	1.314	NA
Pb	NA	NA	NA	NA	NA	NA
PM ₁₀	0.7	NA	NA	NA	3.06	0.08@7%O2 max
SO ₂	0.25	NA	NA	NA	1.095	NA
VOCs	0.3	NA	NA	NA	1.314	NA
Other (specify)						

73. If an *Air Pollution Control Device* is not submitted, the emission rates should be the same as those reported home "Maximum Potential and Maximum Actual Emissions" on the *Emission Points Data Summary Sheet*.

74. Emissions rates should be substantiated by submitting *stack test data* and/or *calculations*.

Fuel Usage Data

75. Estimated annual fuel cost: \$	
76. Firing rate: Maximum: 2.0 mmBTU/hr Typical: 1.5 mmBTU/hr Design: 1.5 mmBTU/hr	77. Fuel type: <input checked="" type="checkbox"/> Natural Gas <input type="checkbox"/> Coal <input type="checkbox"/> Fuel Oil, No. <input type="checkbox"/> Other, specify:
78. Typical heating content of fuel: 1052	79. Typical fuel sulfur content: Negligible wt. %
80. Typical fuel ash content: Negligible wt. %	81. Annual fuel usage: Unknown
82. Please complete an <i>Air Pollution Control Device Sheet(s)</i> for the control(s) used on this Emission Unit, if applicable.	
83. Have you included the <i>air pollution rates</i> on the Emissions Points Data Summary Sheet?	

84. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.

Primary and secondary chamber temperature are monitored. The temperature of the secondary chamber is going to be recorded.

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.

Testing was demonstrated with the attached stack test report See Attachment N.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring. The facility is going to record the amount of human remains cremated.

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.
NA

85. Please describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

The manufacturer recommends a once a year service and inspect of the crematory.

Attachment L
Emission Unit Data Sheet
(INCINERATOR)

Control Device ID No. (must match List Form):

Equipment Information

1. Manufacturer: U.S. Cremation Equipment	2. Model No. US 75/300
3. On a separate sheet sketch or draw the proposed incinerator showing the location and dimensions (inside and out) of (1) the primary combustion chamber, (2) the secondary combustion chamber, (3) the flame port, (4) auxiliary burners, and (5) dampers with special emphasis on dimensions of the flame port and secondary combustion chambers (inside) . Also, sketch in the minimum distance the gas travels through the secondary combustion chamber.	
4. Rated capacity of the incinerator for the type of waste to be burned: Maximum: 75 max lb/hr Typical: 75lb/hr, 300 lb/batch lb/hr Annual: As needed tons/yr	
5. By what means is waste charged? <input checked="" type="checkbox"/> Batch <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Periodically	
6. Type: <input checked="" type="checkbox"/> Multiple Chamber <input type="checkbox"/> Single Chamber <input type="checkbox"/> Other, specify:	
7. Projected operating schedule: 8 - 12 hr/day 4-7 day/yr	

Primary Combustion Chamber

8. Volume: 38 ft ³	9. Effective grate area: Hot Hearth no grate ft ²
10. Maximum temperature: 1800 °F	11. Burning rate: 15132 lb/ft ² /hr
12. Heat release in primary chamber: 15132 @75 lb/hr BTU/hr/ft ³	13. Total heat release in incinerator: 19565 BTU/hr/ft ³

Secondary Combustion Chamber

14. Volume: 42.5 ft ³	15. Cross sectional area: ft ²
16. Volume of gas through secondary combustion chamber: 1824 ACFM @ 1800 °F	17. Gas velocity through secondary combustion chamber: 19.9 ft/sec
18. Minimum gas temperature: 1400 °F	19. Minimum retention time of gas: 1 sec
20. Minimum distance of gas travel through secondary combustion chamber: ft	21. Location of air admission:

Flame Port

22. Flame port area: ft ²	23. Velocity through flame port: ft/sec
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Dampers

24. Type: None	25. Number
26. Diameter: inches	27. Capacity: ACFM @ °F

Combustion Air

28. Type of draft: <input type="checkbox"/> Natural <input type="checkbox"/> Sliding damper <input type="checkbox"/> Forced <input type="checkbox"/> Barometric damper <input checked="" type="checkbox"/> Induced Windshielding? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	29. If draft is forced or induced, describe ID fans or blowers: <table style="width: 100%; border: none;"> <tr> <td style="padding-right: 20px;">Number</td> <td style="text-align: center;">1</td> <td></td> </tr> <tr> <td>HP rating</td> <td style="text-align: center;">5</td> <td style="text-align: right;">HP</td> </tr> <tr> <td>Rated flow</td> <td style="text-align: center;">NA</td> <td style="text-align: right;">ft³/min</td> </tr> <tr> <td>Rated speed</td> <td></td> <td style="text-align: right;">RPM</td> </tr> <tr> <td>Fan rated draft</td> <td></td> <td style="text-align: right;">in. H₂O</td> </tr> <tr> <td>Volume</td> <td style="text-align: center;">1300 cfm @</td> <td style="text-align: right;">°F</td> </tr> </table>	Number	1		HP rating	5	HP	Rated flow	NA	ft ³ /min	Rated speed		RPM	Fan rated draft		in. H ₂ O	Volume	1300 cfm @	°F
Number	1																		
HP rating	5	HP																	
Rated flow	NA	ft ³ /min																	
Rated speed		RPM																	
Fan rated draft		in. H ₂ O																	
Volume	1300 cfm @	°F																	
30. Theoretical air/refuse ratio: NA lb air/lb refuse																			
31. Percent of total air applied as: <div style="text-align: center;">NA overfire air</div> <div style="text-align: center;">underfire air</div>																			

Auxiliary Burners

32. Proposed type and fuel:	
33. Primary Burner Capacity: 0.5 MMBTU/hr Number: 1 Manufacture: Eclipse Model: TJ050 Estimated capacity: 500,000 BTU/hr Fuel: Natural Gas How controlled? Temperature Is there a temperature indicator? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No How temperature recorded? No	34. Secondary Burner Capacity: 1.0 MMBTU/hr Number: 1 Manufacture: Eclipse Model: TJ100 Estimated capacity: 1,000,000 BTU/hr Fuel: Natural gas How controlled? Is there a temperature indicator? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No How temperature recorded? yes

Miscellaneous Devices and Controls

35. Automatic loading device. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe.	36. Self closing doors. <input type="checkbox"/> Yes <input type="checkbox"/> No
37. Sparks arrestor <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	38. Flame failure protection equipment <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
39. Method of creating turbulence for combustion gases. Describe. Baffle Chamber	40. Method of cleaning secondary or settling chamber. Describe. NA
41. Other interlocking devices or controls. If yes, describe. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temperature interlock that avoids the cremation from starting until secondary chamber reaches minimum temperature.	

Installation

42. Indoor Installation: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe method of supplying combustion air. Blower rated at 1700 CFM, facility must provide louvers or natural draft opening for the equipment per manufacturer spec.	43. Outdoor Installation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
---	---

Stack or Vent Data

44. Inside diameter or dimensions: 1.75 ft	45. Gas exit temperature: 1200 Max °F
46. Height: 16.8 ft	47. Stack serves: <input checked="" type="checkbox"/> This equipment only <input type="checkbox"/> Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
48. Gas flow rate: 1194 ft/min	
49. Estimated percent of moisture: 5.8 %	

Waste

50. Source of waste: <input type="checkbox"/> Hospital <input type="checkbox"/> Restaurant <input type="checkbox"/> Store <input type="checkbox"/> Industry <input type="checkbox"/> Apartment <input checked="" type="checkbox"/> Crematory <input type="checkbox"/> Warehouse <input type="checkbox"/> Public Institution <input type="checkbox"/> Other, specify:	
51. Describe fully, in detail, the composition of waste feed to the incinerator: Human crematory. Human remains are not considered waste.	
52. Expected BTU/lb as fired: 1000 BTU/lb	53. Daily amount: Unknown lb
54. Does incinerator have a charge hopper <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	55. What is the volume of the charge hopper? ft ³
56. Does the charge hopper have automatic control? <input type="checkbox"/> Yes <input type="checkbox"/> No	57. Is the waste charged to the incinerator weighed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
58. Is the secondary chamber preheated prior to charging waste? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	59. At what secondary temperature does waste charging begin? 1450 - 1600 °F
60. Is the ash waste quenched? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	61. Is all the waste burned generated on site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
62. For hospital waste, is the ash inspected for recognizable combustible components? <input type="checkbox"/> Yes <input type="checkbox"/> No	
63. For hospital waste, are recognizable combustible components of the ash reburned? <input type="checkbox"/> Yes <input type="checkbox"/> No	
64. Is any waste received from outside the local government boundary? <input type="checkbox"/> Yes <input type="checkbox"/> No	
65. Are hazardous or special waste burned? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please describe:	66. Are potential infectious waste burned? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
67. How will the waste material from process and control equipment be disposed of? Remains returned to families or disposed of in accordance with local regulations. Animal ash is not a regulated waste.	
68. Method of charging waste solids: <input checked="" type="checkbox"/> Manual <input type="checkbox"/> Manual charge hopper <input type="checkbox"/> Automatic charge hopper <input type="checkbox"/> Other, specify:	69. Method of feeding liquids: <input type="checkbox"/> Lab pack <input type="checkbox"/> Injection as a primary burner fuel <input type="checkbox"/> Injection as a secondary burner fuel <input type="checkbox"/> Other, specify:
70. Rated steam flow – heat recovery boiler: NA lbs/hr	71. Rated pressure – recovery boiler: NA PSIG

Emissions Stream

72. Emission rates:

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA	Tons per Year Tons/yr	Parts per Million ppm
CO	0.38	NA	NA	NA	1.66	100@7% O2 max
Hydrocarbons	0.11	NA	NA	NA	0.49	NA
NO _x	0.11	NA	NA	NA	0.49	NA
Pb	NA	NA	NA	NA	NA	NA
PM ₁₀	0.26	NA	NA	NA	1.14	0.08@7%O2 max
SO ₂	0.094	NA	NA	NA	0.41	NA
VOCs	0.11	NA	NA	NA	0.49	NA
Other (specify)						

73. If an *Air Pollution Control Device* is not submitted, the emission rates should be the same as those reported home "Maximum Potential and Maximum Actual Emissions" on the *Emission Points Data Summary Sheet*.

74. Emissions rates should be substantiated by submitting *stack test data* and/or *calculations*.

Fuel Usage Data

75. Estimated annual fuel cost: \$	
76. Firing rate: Maximum: 1.0 mmBTU/hr Typical: 1.0 mmBTU/hr Design: 1.0 mmBTU/hr	77. Fuel type: <input checked="" type="checkbox"/> Natural Gas <input type="checkbox"/> Coal <input type="checkbox"/> Fuel Oil, No. <input type="checkbox"/> Other, specify:
78. Typical heating content of fuel: 1052	79. Typical fuel sulfur content: Negligible wt. %
80. Typical fuel ash content: Negligible wt. %	81. Annual fuel usage: Unknown
82. Please complete an <i>Air Pollution Control Device Sheet(s)</i> for the control(s) used on this Emission Unit, if applicable.	
83. Have you included the <i>air pollution rates</i> on the Emissions Points Data Summary Sheet?	

84. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.

Primary and secondary chamber temperature are monitored. The temperature of the secondary chamber is going to be recorded.

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.

Testing was demonstrated with the attached stack test report See Attachment N.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.

The facility is going to record the amount of animal remains cremated.

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.

NA

85. Please describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

The manufacturer recommends a once a year service and inspect of the crematory.

Attachment N
Supportive Emissions Calculations/Similar Source Compliance Test
Report

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

EPA Methods 1-5, 9, 10 and 26A

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, carbon monoxide and HCl emissions (EPA Methods 1-5, 9, 10 and 26A) were conducted on Unit #2 exhaust stack servicing the U.S. Cremations Equipment Classic Crematory.

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 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

Particulate Emissions - 0.0159gr/dscf (corrected to 7% O₂)
Allowable Particulate Emissions - 0.0800 gr./dscf (corrected to 7% O₂)

Carbon Monoxide Emissions - 0.86 ppm (corrected to 7% O₂)
Allowable Carbon Monoxide Emissions - 100 ppm (corrected to 7% O₂)

Visible Emissions - 0.0%
Allowable Visible Emissions - 5% with up to 15% allowed in a one hour period

HCl Emissions - 27.42 ppm (corrected to 7% O₂)

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 20% for 3 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
Hydrogen Chloride Emission Rate (PPM)@7% O ₂	25.35	24.84	32.08	27.42

6.0 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

7.0 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

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

	Run1	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

9.0 HCl Emission Results
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
Sample Volume (Std. Cu. Ft.)	52.965	54.952	57.861
Percent O2	13.4	13.8	13.2
Volume of Solution (mls)	400	400	400
HCl (ug collected)	31000	30000	44000
HCl (ug/DSCF)	585.29	545.93	760.45
PPM (volume)	13.63	12.71	17.70
PPM (volume) @ 7% O2	25.35	24.84	32.08
Average Emission Rate PPM (volume) @ 7% O2	27.42		

10.0 Overview of Field and Analytical Procedures

10.1 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.

10.2 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.

10.3 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.

10.4 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.

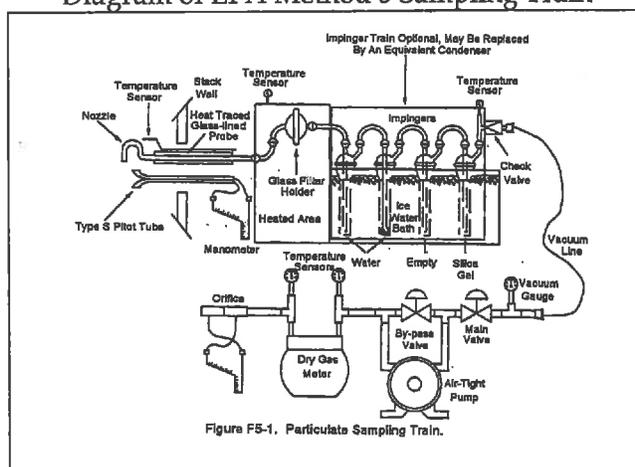
10.5 EPA Method 5 - Determination of Particulate Emissions from Stationary Sources

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



10.6 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.

10.7 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.

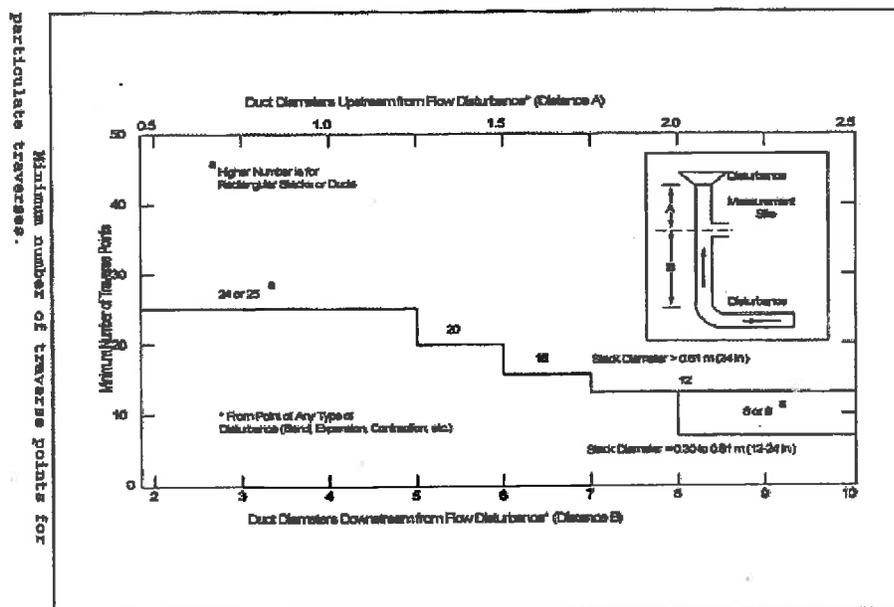
Applicability - This method is applicable for the determination of carbon monoxide emissions from stationary sources only when specified by the test procedures for determining compliance with new source performance standards. The procedures in this method were utilized in its entirety according to the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

10.8 EPA Method 26A - Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources - Isokinetic Method

Principle - Gaseous and particulate pollutants are withdrawn isokinetically from the source and collected in an optional cyclone, on a filter, and in absorbing solutions. The cyclone collects any liquid droplets and is not necessary if the source emissions do not contain them; however, it is preferable to include the cyclone in the sampling train to protect the filter from any liquid present. The filter collects particulate matter including halide salts but is not routinely recovered or analyzed. Acidic and alkaline absorbing solutions collect the gaseous hydrogen halides and halogens respectively. Following sampling of emissions containing liquid droplets, any halides/halogens dissolved in the liquid in the cyclone and on the filter are vaporized to gas and collected in the impingers by pulling conditioned ambient air through the sampling train. The hydrogen halides are solubilized in the acidic solution and form chloride (Cl⁻), bromide (Br⁻) and Fluoride (F⁻) ions. The halogens have a very low solubility in the acidic solution and pass through to the alkaline solution where they are hydrolyzed to form a proton (H⁺), the halide ion, and the hypohalous acid (HClO or HBrO). Sodium theosulfate is added to the alkaline solution to assure reaction with the hypohalous acid to form a second halide ion such that 2 halide ions are formed for each molecule of halogen gas. The halide ions in the separate solutions are measured by ion chromatography (IC). If desired, the particulate matter recovered from the filter and the probe is analyzed following the procedures in Method 5.

Note: During this test we were sampling for HCl so the fifth and sixth impingers, intended for the collection of halogen samples were not used.

11.0 Minimum Number of Sampling Points 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

11.1 Sampling Point Determination

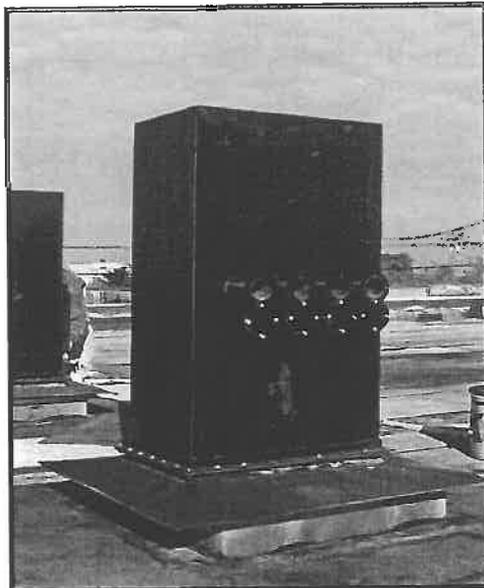
Guiding Light Cremations, LLC

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

12.0 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 Equivalent (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.

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605 SW Park Street, Suite 209 ~ Okeechobee, Florida 34974
Telephone (863) 467-0555 ~ Facsimile (863) 357-0810
www.arlingtonenvironmental.com

April 1, 2011

U.S. Cremation Equipment
598 South Northlake Boulevard, Suite 1016
Altamonte Springs, FL 32701

**RE: 115015AQB – Graceland Fairlawn Funeral Home
Emission Testing Report
Make: US Cremation Equipment
Model: 75/300**

To Whom It May Concern:

Emission testing for Particulate, Visible, and Carbon Monoxide, EPA Methods 1-5, 9, and 10, was conducted on February 25, 2011 on a surrogate unit as utilized at the above referenced facility. Upon request of the manufacturer the results from Methods 1-5, and 10 have been corrected to twelve percent (12%) Carbon Dioxide and fifty percent (50%) Excess Air. In addition the results were corrected to seven percent (7%) Oxygen. These results are presented in the attached Emissions Report.

Sincerely,

Noah A. Handley, P.E.
Vice President, Principal Engineer,
Arlington Environmental Services, Inc.

**Source Test Report for
Particulate, Visible, and
Carbon Monoxide Emissions**

EPA Methods 1-5, 9, and 10

Report 3494-S

Conducted:
February 25, 2011

Prepared for:
**US Cremation Equipment
Model 75/300
Illinois Identification No: 115015AQB**



Prepared by:
**Arlington Environmental Services, Inc.
Post Office Box 657
Okeechobee, FL 34973
(863) 467-0555**

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1.0 Introduction

Graceland Fairlawn Funeral Home operates an US Cremation Equipment Model 75/300 at their Animal Crematory located at 2091 North Oakland Avenue in Decatur, Illinois. On February 25, 2011, tests for particulate, visible, and carbon monoxide emissions were performed on the exhaust stack servicing the after burner system of a surrogate unit of the same make and model located at the US Cremation Equipment manufacturing facility in Lakeland, Florida.

The tests were performed in order to demonstrate compliance with Permit Number: 115015AQB issued by Illinois Environmental Protection Agency. During the compliance monitoring, only animal remains were processed to determine compliance with the standards for Particulate Matter, Visible Emissions, and Carbon Monoxide.

During the compliance monitoring period, records of the plant processing data were maintained by Luis Llorens, Project Manager, and are presented in Appendix C. In addition the EPA Method 9 testing was performed by Luis del Pino, a copy of their certification is included in Attachment F, Project Participants.

The results of these tests verify compliance with the above referenced permit and the Code of Federal Regulations for crematories.

2.0 Certification of Test Results

Permitted Facility: Graceland Fairlawn Funeral Home
US Cremation Equipment, Model 75/300
2091 North Oakland Avenue
Decatur, Illinois 62525

Testing Location: US Cremation Equipment
Model 75/300
Located at: 305 Winston Creek Parkway
Lakeland, FL 33810

Process Type: Animal Crematory

Rated Capacity: 75 lbs/hr

Report: 3494-S

Date: February 25, 2011

Allowable Particulate Emissions - 0.1 gr/dscf at 12% Carbon Dioxide (CO₂)
Actual Particulate Emissions - 0.0094 gr/dscf at 12% CO₂

Allowable Visible Emissions - 20%
Actual Visible Emissions - 0.0% (Highest Six Minute Average During All 3 Runs)

Allowable Carbon Monoxide Emissions - 500 ppm corrected to 50% Excess Air
Actual Carbon Monoxide Emissions - 28.93 ppm corrected to 50% Excess Air

All testing and analysis were performed in accordance with the Florida Department of Environmental Protection and the Code of Federal Regulations, 40, part 60.

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 the code of federal regulations 40, part 60.926.401.

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
 US Cremation Equipment
 Model 75/300
 Report 3494-S

	Run 1	Run 2	Run 3	Average
Date	2/25/2011	2/25/2011	2/25/2011	
Start Time	13:28	15:15	16:51	
Stop Time	14:33	16:18	17:54	
Process Rate (tons/hr.)	75	69	75	73
Particulate Emission Rate (gr./dscf @ 12% CO ₂)	0.0129	0.0070	0.0083	0.0094
Allowable Particulate Emission Rate (gr./dscf @ 12% CO ₂)	0.1	0.1	0.1	0.1
Visible Emission Rate (highest six minute average)	0.0%	0.0%	0.0%	0.0%
Allowable Visible Emission Rate (highest six minute average)	20%	20%	20%	20%
Carbon Monoxide Emission Rate (PPM @ 50% Excess Air)	22.93	30.12	33.83	28.96
Allowable Carbon Monoxide Emission Rate (ppm @ 50% Excess Air)	500	500	500	500

6.0 Particulate Emission Results
 US Cremation Equipment
 Model 75/300
 Report 3494-S

	Run 1	Run 2	Run 3
Area (square feet)	1.53	1.53	1.53
Stack Pressure (inches Hg)	30.00	30.00	30.00
Meter Pressure (inches Hg)	30.12	30.14	30.15
Sample Volume (Std. Cu. Ft.)	43.208	45.925	48.157
Water Vapor (Cubic Feet)	3.89	3.79	4.95
Sample Moisture (percent)	8.26	7.62	9.32
Saturation Moisture (percent)	100.00	100.00	100.00
Molecular Weight (lbs/lb Mole wet)	28.38	28.43	28.28
Velocity (fpm)	1164	1192	1226
Volumetric Flow Rate (acfm)	1781	1824	1877
Volumetric Flow Rate (scfm)	536	555	582
Concentration (gr/dscf)	0.0049	0.0026	0.0032
Concentration Corrected to 7% O ₂ (gr/dscf)	0.0106	0.0057	0.0069
Concentration Corrected to 12% CO ₂ (gr/dscf)	0.0129	0.0070	0.0083
Mass Emission Rate (lbs./hr.)	0.02	0.01	0.02
Percent Isokinetic	96.40	99.04	98.98

6.0 Visible Emission Results
US Cremation Equipment
Model 75/300
Report 3494-S

	Run 1	Run 2	Run 3
Allowable Emission Rate (highest six minute average)	20%	20%	20%
Emission Rate (highest six minute average)	0.0%	0.0%	0.0%

7.0 Carbon Monoxide Emission Results
 US Cremation Equipment
 Model 75/300
 Report 3494-S

	Run1	Run 2	Run 3	Average
Date	2/25/2011	2/25/2011	2/25/2011	
Start Time	13:28	15:15	16:51	
Stop Time	14:33	16:18	17:54	
Percent Oxygen	14.53	14.59	14.38	
Percent Carbon Dioxide	4.56	4.43	4.73	
Carbon Monoxide (PPM)	11.00	14.35	16.57	
Carbon Monoxide Emissions Concentration Corrected to 7% O ₂ (PPM)	24.00	31.60	35.34	30.32
Percent Excess Air	212.71	214.87	206.27	211.28
Carbon Monoxide Emissions Corrected to 50% Excess Air (PPM)	22.93	30.12	33.83	28.96
Carbon Monoxide Allowable Corrected to 50% Excess Air (PPM)	500	500	500	500

8.0. Overview of Field and Analytical Procedures

8.1. 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.

8.2. 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.

8.3. 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.

8.4. 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, 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.

8.5. 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

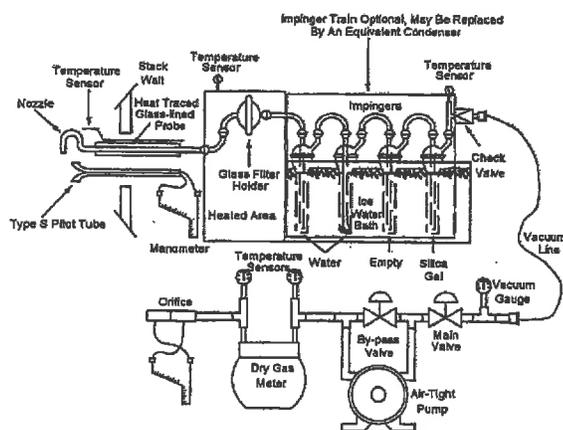


Figure F5-1. Particulate Sampling Train.

8.6. 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.

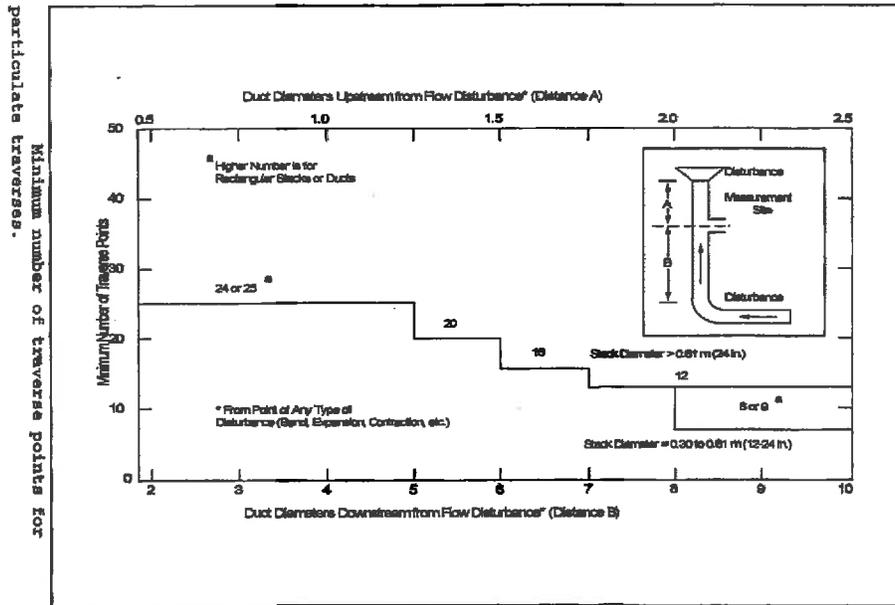
8.7. EPA Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources

Principle - An integrated or continuous gas sample is extracted from a sampling point and analyzed for carbon monoxide (CO) content using a Luft-type non-dispersive 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

9.0 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 Points per Traverse

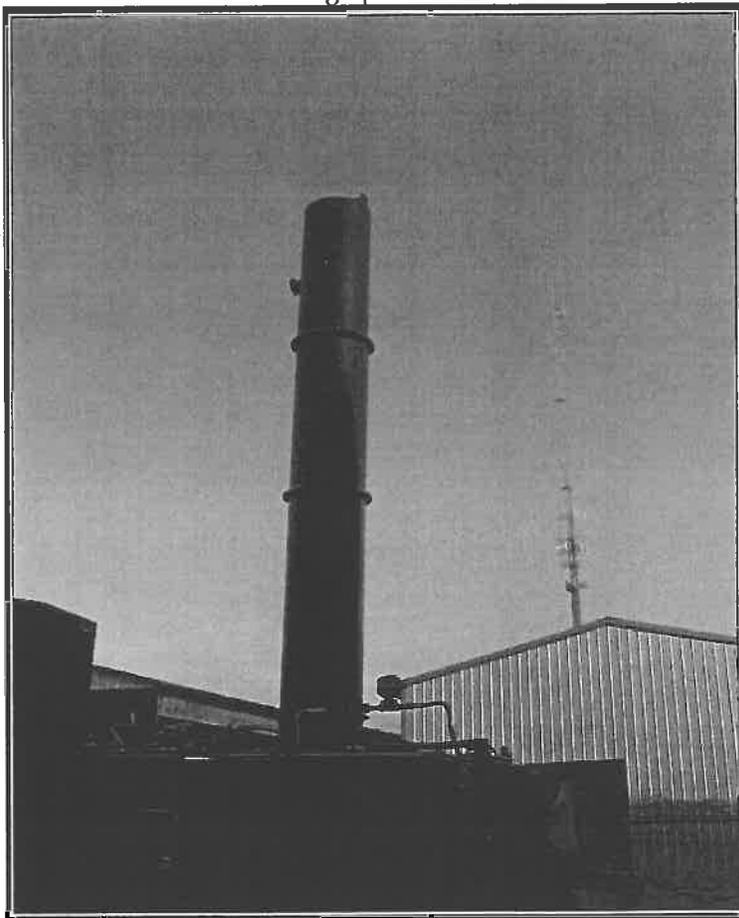
US Cremation Equipment

Model 75/300

Report 3494-S

Stack Configuration	Circular
Diameter (inches)	16.75
Distance A - Ports to Downstream Disturbance (inches)	24
Distance A - Ports to Downstream Disturbance (diameters)	1.4
Distance B - Ports to Upstream Disturbance (inches)	132
Distance B - Ports to Upstream Disturbance (diameters)	7.9
Number of Test Ports	2
Wall or Port length	5.5
Number of Sampling Points per Traverse	10
Number of Points Sampled	20

Photograph of Stack



Traverse Point Location	
Traverse Point No.	Inches to Stack Wall
1	5.9
2	6.9
3	8.0
4	9.3
5	11.2
6	16.5
7	18.5
8	19.8
9	20.9
10	22.0

Attachment P
Certificate of Incorporation/Legal Advertising

State of West Virginia



Certificate

*I, Natalie E. Tennant, Secretary of State of the
State of West Virginia, hereby certify that*

BROWN CREMATION SERVICES INC.

was incorporated under the laws of West Virginia and a Certificate of Incorporation was issued by the West Virginia Secretary of State's Office on November 04, 2015.

I further certify that the corporation has not been revoked by the State of West Virginia nor has the West Virginia Secretary of State issued a Certificate of Dissolution to the corporation.

Accordingly, I hereby issue this

CERTIFICATE OF EXISTENCE

Validation ID:7WV0D_WJ3WM



*Given under my hand and the
Great Seal of the State of
West Virginia on this day of
November 18, 2015*

Natalie E. Tennant

Secretary of State



000799.613027.142539.27188 1 MB 0.439 850
[Barcode]

Date of this notice: 11-09-2015

Employer Identification Number:
47-5491155

Form: SS-4

Number of this notice: CP 575 A

For assistance you may call us a
1-800-829-4933

BROWN CREMATION SERVICES INC
327 W KING ST
MARTINSBURG WV 25401

IF YOU WRITE, ATTACH THE
STUB OF THIS NOTICE.

WE ASSIGNED YOU AN EMPLOYER IDENTIFICATION NUMBER

Thank you for applying for an Employer Identification Number (EIN). We assigned you EIN 47-5491155. This EIN will identify you, your business accounts, tax returns, and documents, even if you have no employees. Please keep this notice in your permanent records.

When filing tax documents, payments, and related correspondence, it is very important that you use your EIN and complete name and address exactly as shown above. Any variation may cause a delay in processing, result in incorrect information in your account, or even cause you to be assigned more than one EIN. If the information is not correct as shown above, please make the correction using the attached tear-off stub and return it to us.

Based on the information received from you or your representative, you must file the following form(s) by the date(s) shown.

Form 941	01/31/2016
Form 1120	03/15/2016
Form 940	01/31/2016

If you have questions about the form(s) or the due dates(s) shown, you can call us at the phone number or write to us at the address shown at the top of this notice. If you need help in determining your annual accounting period (tax year), see Publication 538, Accounting Periods and Methods.

We assigned you a tax classification based on information obtained from you or your representative. It is not a legal determination of your tax classification and is not binding on the IRS. If you want a legal determination of your tax classification, you may request a private letter ruling from the IRS under the guidelines in Revenue Procedure 2004-1, 2004-1 I.R.B. 1 (or superseding Revenue Procedure for the year at issue). Note: Certain tax classification elections can be requested by filing Form 8832, Entity Classification Election. See Form 8832 and its instructions for additional information.

West Virginia Secretary of State — Online Data Services

Business and Licensing

Online Data Services Help

Business Organization Detail

NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.

BROWN CREMATION SERVICES INC.

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
C Corporation	11/4/2015		11/4/2015	Domestic	Profit			

Organization Information			
Business Purpose		Capital Stock	5000.0000
Charter County	Berkeley	Control Number	9AC35
Charter State	WV	Excess Acres	
At Will Term		Member Managed	
At Will Term Years		Par Value	1.0000
Authorized Shares	5000		

Addresses	
Type	Address
Notice of Process Address	ROBERT C. FIELDS 327 KING STREET MARTINSBURG, WV, 25401 USA
Principal Office Address	327 KING STREET MARTINSBURG, WV, 25401 USA
Type	Address

Officers	
Type	Name/Address
Director	ROBERT C. FIELDS + DONNA M. FIELDS + ROBERT M. FIELDS 220 HOLDEN DRIVE MARTINSBURG, WV, 25403 USA
Director	JORDAN M. FIELDS + BRANDON M. FIELDS 220 HOLDEN DRIVE MARTINSBURG, WV, 25403 USA
Incorporator	ROBERT C. FIELDS 327 W KING STREET MARTINSBURG, WV, 25401 USA
Type	Name/Address

For more information, please contact the Secretary of State's Office at 304-558-8000.

Tuesday, November 17, 2015 — 3:41 PM

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EXAMPLE LEGAL ADVERTISEMENT

Publication of a proper Class I legal advertisement is a requirement of the application process. In the event the applicant's legal advertisement fails to follow the requirements of 45CSR 13 (45-13-8) or the requirements of Chapter 59, Article 3, of the West Virginia Code, the application will be considered incomplete and no further review of the application will occur.

The applicant, utilizing the format for the Class I legal advertisement appearing below, shall cause such legal advertisement to appear a minimum of one (1) day in the newspaper most commonly read in the area where the facility exists or will be constructed. The notice must be published no earlier than five (5) working days of receipt by this office of your application. The original affidavit of publication must be received by this office no later than the last day of the public comment period.

The advertisement shall contain, at a minimum, the name of the applicant, the type and location of the source, the type and amount of air pollutants that will be discharged, the nature of the permit being sought, the proposed start-up date for the source and a contact telephone number for more information.

The location of the source should be as specific as possible starting with: 1.) the street address of the source; 2.) the nearest street or road; 3.) the nearest town or unincorporated area, 4.) the county, and 5.) latitude and longitude coordinates.

Types and amounts of pollutants discharged must include all regulated pollutants (PM, PM₁₀, VOC, SO₂, Xylene, etc.) and their potential to emit or the permit level being sought in units of tons per year (including fugitive emissions).

In the event the 30th day is a Saturday, Sunday, or legal holiday, the comment period will be extended until 5:00 p.m. on the following regularly scheduled business day.

AIR QUALITY PERMIT NOTICE Notice of Application

Notice is given that Brown Cremation Services, Inc. has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Construction Permit for one(1) human and one (1) animal crematory located on 287 Arden Nollville Road, Inwood, in Berkeley County, West Virginia. The latitude and longitude coordinates are: 39° 21'58.15" N, 78° 02' 0" W.

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be:

CO: 6.04 TPY
PM: 4.2 TPY
SOx: 1.51 TPY
NOx: 1.81 TPY
TOC: 1.81 TPY

Startup of operation is planned to begin on or about the middle of December/January day of 2015/2016. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.

Dated this the _____ day of _____

By: Site Location:

**Robert C. Fields, President
Brown Cremation Services, Inc., Inc.
287 Arden Nollville Road
Inwood, WVA 25428
Phone Number:**

Mailing Address:

**Robert C. Fields, President
Brown Cremation Services, Inc., Inc.
327 W King Street
Martinsburg WV 25401**

Phone Number: (304) 263-8896