



YAKIMA REGIONAL CLEAN AIR AGENCY

Order of Approval Permit Number NSRP-01-SCIWFS-25

Order of Approval for SCI Washington Funeral Services, LLC dba Keith & Keith Terrace Heights Memorial Center Crematory for an A-300 human crematory unit.

IN THE MATTER OF approving a project to install an air contaminant source at Keith & Keith Terrace Heights Memorial Center Crematory in Yakima, WA. THIS ORDER OF APPROVAL IS HEREBY ISSUED TO:

Applicant/Permittee: SCI Washington Funeral Services, LLC dba Keith & Keith Terrace Heights Memorial Center Crematory.
Human Cremation Service

Located at: 2807 Terrace Heights Dr.
Yakima, WA 98901

Responsible Official: Dan Williams
Keith & Keith
Area General Manager
(509) 453-9155
daniel.williams@dignitymemorial.com

IN COMPLIANCE WITH THE PROVISIONS OF THE REVISED CODE OF WASHINGTON (RCW), CHAPTER 70A.15 WASHINGTON CLEAN AIR ACT SECTION 2210, WASHINGTON ADMINISTRATIVE CODE (WAC) 173-400-110 and WAC 173-460-040:

ISSUE DATE: August 28, 2025.

THIS ORDER OF APPROVAL PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:

Installation and operation of the equipment must be conducted in compliance with all data and specifications, including any additional information submitted subsequent to the New Source Review (NSR) application under which this Order of Approval is issued unless otherwise specified herein. The conditions and limitations of this NSR Order of Approval are attached as follows:

1.0 DESCRIPTION OF THE SOURCE

- 1.1 SCI Washington Funeral Services, LLC dba Keith & Keith Terrace Heights Memorial Center Crematory, hereafter referred to as the Permittee, the Facility or the Source is a funeral home located at 2807 Terrace Heights Drive, Yakima, WA.
- 1.2 The Permittee submitted a New Source Review (NSR) application proposing to install a new crematory unit at the address mentioned above. This unit will be used for human cremations and memorial purposes, where ashes are returned to relatives. The proposed crematory unit is an American Crematory Model A-300, equipped with a secondary chamber burner (also referred to as afterburner) for emissions control. Natural gas will be used as the sole fuel source. The unit is expected to operate up to ten (10) hours per day, six (6) days per week, during daytime hours only.
- 1.3 The crematory unit operates as follows: A charge, consisting of one human corpse plus its container is loaded into the primary chamber, which is equipped with a primary burner that operates at a temperature of 1,550 degrees Fahrenheit (°F). After loading, the chamber door is closed and locked. The unit is then turned on, and the afterburner, located in the secondary chamber, is ignited. Once the afterburner reaches its required operating temperature, between 1,650 and 1,800 °F, the primary burner automatically ignites, initiating the burn cycle. The cremation process takes between one and three hours, depending on factors such as the weight and size of the charge. During cremation, gases generated in the primary chamber flow into the secondary chamber, where they are further combusted with a minimum retention time of 3.2 seconds. All gases generated throughout the process are vented through the crematory's exhaust system. Both the primary burner and afterburner are American Crematory AmeriJet burners designed for low nitrogen oxide (NO_x) emissions. Their combined maximum firing rate is 2.5 million British Thermal Units per hour (MMBtu/hr) per the A-300 Instant Access Model Specifications provided during the application process.
- 1.4 Air emissions from the crematory unit are listed as Criteria Air Pollutants (CAPs) and Volatile Organic Compounds (VOCs), some of which are known as Hazardous Air Pollutants (HAPs) and/or Toxic Air Pollutants (TAPs), pursuant to the Federal Clean Air Act (FCAA) and Washington Administrative Code (WAC) 173-460-150 and 160, respectively.
- 1.5 The Permittee submitted specifications and diagrams for the crematory unit, which are included as part of this NSR Order of Approval (Order/Permit). Figures 1 through 4 provide, respectively: a Google Earth view of the site location, a building section diagram, a diagram of the crematory unit, and an excerpt of the A-300 Instant Access & Trilogy Model Specifications showing the items relied upon in the calculations for this Order.
- 1.6 The City of Yakima exempted this project from the State Environmental Policy Act (SEPA) review process as signed by the Planning Manager on March 21, 2025.

- 1.7 A public notice for this NSR was published on May 20, 2025 pursuant to the Revised Code of Washington (RCW) 70A.15.2210 and WAC 173-400-171.

2.0 DETERMINATIONS

In relation to the installation and operation described herein, the Yakima Regional Clean Air Agency (YRCAA) determines that the Facility shall comply with all applicable federal, state and local regulations and laws including but not limited to the following determinations:

- 2.1 The installation and operation of the American Crematory A-300 crematory unit constitutes a new source of air contaminants requiring a NSR permit pursuant to RCW 70A.15.2210, WAC 173 400-110 and 173-460-040. This Order of Approval is issued in accordance with those requirements;
- 2.2 The Facility is located in an area designated as in attainment with all state and federal air quality standards for criteria pollutants;
- 2.3 The Facility is not a major stationary source as of the date of issuance of this Order nor is this installation subject to the Prevention of Significant Deterioration (PSD) permitting requirements pursuant to WAC 173-400-700 through 173-400-750;
- 2.4 The Facility is subject to the annual Registration Program per WAC 173-400-099 and YRCAA Regulation 1, Section 4.01. The Facility shall be classified and assessed fees according to the annual approved YRCAA registration classification;
- 2.5 Corresponding air emissions associated with the operation of the crematory unit are provided in Appendix A. Emission were calculated using the typical loading capacity, divided by the maximum cremation capacity, which resulted in an estimated average process time (burn cycle). This value was used to estimate the maximum number of charges per year, which served as the basis for the cremation-related emissions calculations. Emissions from natural gas combustion were calculated based on the combined maximum firing rate of both burners and the operating hours;
- 2.6 Except for particulate matter, emission factors for CAPs, HAPs and TAPs were obtained from the U.S. Environmental Protection Agency (EPA) AP-42 for natural gas combustion, and from EPA's WebFIRE database for the cremation process, as referenced in Appendix A;
- 2.7 Particulate matter emissions factors were adopted from the June 8, 2022 "PM Compliance Source Test Report for Eternal Hills Cemetery testing of an American Crematory Cremation Burner" provided by the Permittee;
- 2.8 Ambient air impacts were evaluated using the U.S. EPA-approved AERMOD dispersion model. The modeling demonstrates that the proposed operation will not cause or

contribute to exceedances of the NAAQS or the Acceptable Source Impact Levels (ASILs) as set forth in 40 CFR Part 50 and WAC 173-460-150, respectively, provided the unit is operated in accordance with the application materials and the conditions of this Order;

- 2.9 Best Available Control Technology (BACT) and Toxic Best Available Control Technology (t-BACT) shall be satisfied for any proposed new facility or modified air emission source to control air emissions pursuant to RCW 70A.15.2210, WAC 173 400-113 and WAC 173-460-060. YRCAA finds BACT and t-BACT to be satisfied as detailed in Section 3 of this Order; and
- 2.10 The Permittee proposed an exhaust stack height of 23 feet above ground level. YRCAA determined that the height is insufficient to ensure adequate dispersion of emissions and compliance with WAC 173-460-150. Therefore, this Order requires the crematory exhaust stack to be installed with a minimum height of 29 feet above ground level to ensure compliance with permitting requirements.

THEREFORE, it is hereby ordered the project as described above and in the NSR application, including any detailed plans, specifications, and other information submitted in reference thereto, is **APPROVED** for operation, based upon the specifications submitted and **PROVIDED** the following conditions are met:

3.0 OPERATIONAL APPROVAL CONDITIONS

3.1 Authorized Equipment

This Order authorizes the installation and operation of the equipment listed in Table 1 at the location specified herein this Order, in accordance with the specifications submitted with the NSR application to YRCAA:

Table 1: Authorized equipment list.

# of units	Unit type	Manufacturer, Model #, Serial #	Description
1	Crematory unit with control (afterburner).	American Crematory, A-300, TBD	<ul style="list-style-type: none">• Primary chamber with a low NOx burner (primary burner), operating at 1,550 °F.• Secondary chamber with a low NOx burner (afterburner), operating between 1,650-1800 °F, with minimum retention time of 3.2 seconds.• Combined maximum firing rate 2.5 MMBtu/hr.• Heat-Timer model MLS-A Smoke Alarm.• Fired on natural gas only.

All equipment listed in Table 1 shall be operated and maintained in accordance with manufacturer's specifications and the conditions of this Order.

3.2 **Best Available Control Technology (BACT) and Toxic BACT (t-BACT) Requirements**

The permittee shall implement and maintain the following operational and design controls identified as BACT and t-BACT to minimize emissions of CAPs, HAPs and TAPs. These controls are enforceable conditions of this Order.

- 3.2.1 The crematory unit shall be equipped with an afterburner designed to maintain a minimum operating temperature of 1,650 °F during the entire cremation process, and a minimum retention time of 3.2 seconds. The afterburner shall be ignited and operating at all times when the primary burner is in operation.
- 3.2.2 The primary chamber shall operate at a temperature of 1,550 °F.
- 3.2.3 The crematory unit shall be equipped with an automatic interlock or control mechanism that prevents ignition of the primary burner if the afterburner has not reached the minimum temperature of 1,650 °F. This mechanism shall be installed and functional at all times.
- 3.2.4 The crematory unit shall not operate below the minimum operating temperatures of 1,550 °F for the primary chamber and 1,650 °F for the secondary chamber. If the temperatures fall below these values during operation, the Permittee shall:
 - a. Log the date, time and temperature for both chambers;
 - b. Take corrective actions per manufacturer recommendations and the O&M plan immediately;
 - c. Report the incident as excess emissions under WAC 173-400-108, unless the Permittee determines the temperature deviation did not result in excess emissions or opacity and documents the basis for this determination.

If the deviation persists or results in visible emissions, the unit shall be shut down until corrective action is completed and compliance is verified.

- 3.2.5 The crematory unit shall be fired exclusively on natural gas.
- 3.2.6 Only human remains and standard combustible containers or caskets made of non-hazardous materials shall be cremated as a charge. The use of containers containing PVC, treated wood, plastics, or other chlorinated compounds is prohibited.
- 3.2.7 The crematory unit shall not be used for the incineration of medical waste, veterinary waste, other non-human biological materials, or as a solid waste reduction measure.

- 3.2.8 The crematory unit shall be installed, operated and maintained according to manufacturer's specifications, information submitted with the NSR application, the O&M plan, and the approval conditions of this Order.
- 3.2.9 The exhaust system stack shall discharge vertically, have a minimum height of 29 feet above ground level, and be free of flow obstructions that could impede exhaust flow.
- 3.2.10 A temperature monitoring system, capable of continuously measuring and recording the temperatures of both the primary and secondary combustion chambers, shall be installed and operated at all times when the crematory unit is in operation. Continuous means recording data at intervals no greater than 15 seconds and storing it as 1-minute averages. The system shall include a chart recorder or digital logging device. An audible alarm shall be installed and interlocked with the secondary chamber such that if the temperature falls below 1,650 °F during cremation, the alarm will activate and the Permittee shall take immediate corrective action as specified in the O&M plan.

3.3 General Operational Conditions

- 3.3.1 The Permittee shall not exceed 1,783 cremation charges per calendar year and 6 cremation charges per calendar day.
- 3.3.2 Each cremation charge shall be individually weighed prior to cremation using a calibrated scale. The input weight shall be recorded in the Facility's daily log.
- 3.3.3 The Permittee shall calculate the annual average weight per cremation charge, as the total input weight of all cremation charges divided by the number of cremations in a calendar year. This average shall not exceed 350 pounds per cremation.
- 3.3.4 The crematory unit shall operate only during daylight hours, and not exceed the operating schedule specified in Appendix A.
- 3.3.5 Opacity from the crematory unit exhaust stack shall not exceed zero percent (0%), as measured by 40 CFR Part 60, Appendix A, Method 9. Zero percent opacity means no visible emissions and applies at all times except during startup and shutdown, as defined in WAC 173-400-081.
- 3.3.6 The Permittee shall conduct an opacity evaluation in accordance with Method 9 within 30 days of initial startup of the crematory unit or issuance of this Permit, whichever is later. The evaluation shall be conducted during normal operating conditions, and shall demonstrate compliance with the opacity limit from the exhaust stack.

- 3.3.7 The Permittee shall conduct a visual emissions evaluation of the crematory exhaust stack at least once per calendar month, during normal operating conditions. If visible emissions (excluding uncombined water vapor) are observed during any inspection, routine operation, or complaint response, the Permittee shall:
- Implement corrective actions in accordance with the O&M plan;
 - If emissions persist, a Method 9 opacity evaluation must be completed within 24 hours of detection or before the next cremation cycle, whichever comes first;
 - If the Method 9 evaluation confirms excess opacity, the unit shall be shut down and remain offline until the issue is corrected and compliance is verified;
 - Report the incident to YRCAA as an excess emission pursuant to WAC 173-400-108.
- 3.3.8 Emissions from the primary chamber shall be vented to the secondary chamber at all times the crematory is in operation.
- 3.3.9 Residual ash shall be removed after each cremation and handled in such a way to minimize fugitive emissions.
- 3.3.10 The permittee shall notify YRCAA of any excess emissions from the crematory unit following the procedures established in WAC 173-400-108.
- 3.3.11 The crematory unit shall not operate if the afterburner is malfunctioning or not operating properly.

3.4 **Operation and Maintenance (O&M) Plan**

- 3.4.1 The permittee shall develop and implement an O&M plan for the equipment listed in Table 1. The O&M plan must be based on the manufacturer's specifications, and be developed within sixty (60) days after the issuance of this Permit. It must include at minimum:
- Startup, normal operation, and shutdown operational procedures and parameters;
 - Scheduled inspections, calibrations and routine, preventive and corrective maintenance procedures, including replacement of equipment or parts for wear and tear;

- c. Monitoring and inspection procedures for routine quality control checks;
- d. Emergency and malfunction contingency procedures, including description, immediate actions, trouble-shooting steps, incident reporting, and post-incident review; and
- e. Operator training and certification requirements with the equipment and conditions in this Order pertinent to operation.

4.0 GENERAL APPROVAL CONDITIONS

- 4.1 Establishment and operation of equipment listed in Table 1 must comply with all applicable federal, state and local air pollution laws and regulations, including but not limited to RCW 70A.15.2210, Chapter 173-400 WAC, Chapter 173-460 WAC, and YRCAA Regulation 1.
- 4.2 All plans, specifications, and other information submitted to YRCAA, and any further authorizations, approvals, or denials issued by it in relation to this project shall be incorporated herein and made a part of the YRCAA file and this Order.
- 4.3 Except as specified in this Order, any new construction, installation of equipment, change to the limits set forth in Appendix A, modifications to the operation or equipment not covered in this Order that results in air emissions from any equipment at this Facility are subject to a NSR before construction begins. These changes shall also comply with the BACT and t-BACT requirements, pursuant to RCW 70A.15.2210, WAC 173-400-110, WAC 173-460-040 and YRCAA Regulation 1.
- 4.4 The Permittee shall submit notification to YRCAA in writing indicating that the O&M plan has been completed and is in place, no later than 60 days after issuance of this Order.
- 4.5 The O&M plan shall be reviewed by the Facility at least annually and updated as needed to reflect any modification to the operating procedures, equipment or monitoring methods.
- 4.6 All air emissions from this Facility shall be in compliance with air emission standards at all times. It is the responsibility of the owner to make sure that air emissions are within all known rules and regulations.
- 4.7 There must be no fallout or any fugitive emissions from this Facility beyond the property boundary in a quantity that interferes unreasonably with the use and enjoyment of the property owner upon which the material is deposited, or is detrimental to the health, safety or welfare of any person, or causes damage to any property or business.

- 4.8 The Air Pollution Control Officer (APCO) of the YRCAA or authorized staff shall be allowed to enter the Facility at reasonable times, without notice, to inspect equipment and records specific to the control, recovery, or release of contaminants into the atmosphere for compliance with applicable laws, regulations and the conditions on this Order, pursuant to RCW 70A.15.2500 and YRCAA Regulation 1.
- 4.9 Nothing in this Order shall be construed as preventing or circumventing compliance with any other requirement(s) of law including those imposed pursuant to the Federal and State Clean Air Acts, and rules and regulations thereunder. Any violation(s) of such rules and regulations are subject to enforcement and penalty action in accordance with RCW 70A.15.3150 and 3160, WAC 173-400-230 and YRCAA Regulation 1, Article 5.
- 4.10 This Order may be modified, suspended or revoked in whole or part for cause including, but not limited to, the following:
- 4.10.1 Violation of any terms or conditions of this authorization; or
- 4.10.2 If this authorization has been obtained by misrepresentation or failure to disclose fully relevant facts.
- 4.11 The provisions of this authorization are severable and, if any provision or application of any provision of this authorization to any circumstance is held invalid, the application of such provision to their circumstances, and the remainder of this authorization, shall not be affected thereby.
- 4.12 Deviations from these conditions are violations subject to penalties pursuant to RCW 70A.15.3150 and 3160, WAC 173-400-230 and YRCAA Regulation 1, Article 5.
- 4.13 The requirements of this Order apply to the Facility owner and/or operator(s) and any contractor or subcontractor performing any activity authorized under this Permit. Any person(s), including contractor(s) and/or subcontractor(s), not in compliance with the applicable requirements in this Permit are in violation of state and local laws and subject to appropriate civil and criminal penalties. The Facility owner and/or operator, and all contractor(s) or subcontractor(s) are liable for the actions and violations of their employee(s). Any violation committed by a contractor or subcontractor shall be considered a violation by the Facility owner and/or operator, and is also a violation by the contractor and/or any subcontractor(s).
- 4.14 It is the Permittee's responsibility to stay current, and comply, with all applicable laws, rules and regulations governing their business.
- 4.15 This Order and its conditions shall remain in effect in the event of any change in control or ownership of the Facility. In the event of any such change in control or ownership of the subject Facility, the Permittee shall notify the succeeding owner of this Order and conditions and shall notify the YRCAA of the change in control or ownership by filing an

“Ownership or Name Change” form within thirty (30) days of that change. The form may be requested from the Agency or downloaded from its web site.

- 4.16 This Order is invalid without paying the complete appropriate and required fees to YRCAA, pursuant to RCW 70A.15.2210.

5.0 EMISSION LIMITS

- 5.1 Air emissions from the crematory unit shall not exceed the allowable emissions shown in Appendix A of this Order. The allowable emissions are based on limiting the crematory unit input to no more than 1,783 cremation charges per year, with the crematory unit firing exclusively on natural gas not to exceed the maximum rated capacity.
- 5.2 Opacity from the crematory exhaust stack shall not exceed 0% as specified herein.
- 5.3 In addition to the limits imposed by this Order, the Permittee shall comply with all other applicable general emission standards pursuant to WAC 173-400-040, 173-400-110, and Chapter 173-460 WAC.

6.0 MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

- 6.1 The Permittee shall maintain a copy of this Order and the most current O&M plan on site at all times. These documents must be readily accessible, organized, and available for review by the APCO of YRCAA or authorized staff during inspections or upon request, pursuant to RCW 70A.15.2500 and YRCAA Regulation 1.
- 6.2 The Permittee shall maintain all records required by this Order for a minimum of five (5) years from the date of generation. Records must be readily accessible and made available to YRCAA upon request. These records shall include, but are not limited to:
- a. Number of cremation charges per day, month and per calendar year;
 - b. Daily, monthly and annual total input weight of all cremation charges, measured using a calibrated scale and recorded at the time of each cremation;
 - c. Daily, monthly and annual hours of operation;
 - d. Monthly and annual natural gas consumption for the crematory unit;
 - e. Temperature monitoring data for the primary and secondary chambers;
 - f. Visual emissions inspections and any Method 9 opacity evaluations;
 - g. Corrective actions taken in response to deviations;

- h. Maintenance activities including repairs or replacements; and
 - i. Notifications submitted to YRCAA related to excess emissions or malfunction events.
- 6.3 Recordkeeping forms must be designed by the Permittee and include at a minimum: the date, time, and name of the person performing the activity or observation. The forms shall be designed to capture all applicable information required herein and may be electronic or hardcopy.
- 6.4 The manufacturer's operation and maintenance manual must be kept on site and made available to YRCAA upon request.
- 6.5 Maintenance logs shall include the date of service, description of the activity performed, and the name of the individual performing the work.
- 6.6 Training records for crematory operators shall be maintained on site and shall include the date(s) of training and the names of certified individuals.
- 6.7 Major repairs or replacements shall be logged and reported to YRCAA within 14 business days.
- 6.8 The Facility shall submit its annual registration report to YRCAA on or before the date specified in the annual registration form. The report shall include the total number of cremations performed, annual average case weight, hours of operation, annual natural gas consumption, estimated emissions for the previous calendar year, and any other information requested in the form. Registration fees must be paid in full as required.
- 6.9 Any application form, report, or compliance certification submitted to YRCAA pursuant to this Order must be signed by the responsible official.


The issuance of this Order of Approval may be appealed to the Pollution Control Hearings Board (PCHB) within thirty (30) days of the Date of Receipt of this Order. The appeal process and applicable requirements is governed by Chapter 43.21B RCW. "Date of Receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB, P.O. Box 40903, Olympia, WA, 98504-0903. Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on YRCAA in paper form - by mail or in person. E-mail is not accepted.

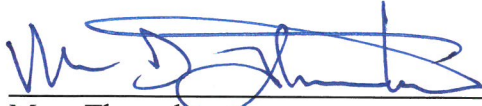
DATED this 28th day of August, 2025.

PREPARED BY:




Elizel Reynoso
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Yakima Regional Clean Air Agency

APPROVED BY:




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REVIEWED BY:



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Appendix A

NSRP-01-SCIWFS-25

SCI Washington Funeral Services, LLC.

dba Keith & Keith Terrace Heights Memorial Center Crematory

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Table A: Crematory Unit		
Manufacturer	America Crematory Equipment Company	
Model	A-300	
Fuel	Natural Gas	
Fuel heating value ^{1,2}	1020	Btu/scf
Maximum firing rate ³	2.5	MMBtu/hr
Maximum cremation capacity ⁴	200	lb/hr
Typical loading capacity ⁵	350	lb/charge
Estimated process time ⁶	1.75	hr/charge

Table C: Operating hours ⁸	
10	hr/day
6	days/week
52	weeks/year
3,120	hr/year

Table D: Maximum charges ⁹	
1783	charges/year
6	charges/day

Table B: Chambers ⁷		
	Primary	Secondary
Burner	Low NOx	Low NOx Afterburner
Operating temperature (°F)	1550	1650-1800
Retention time (seconds)	-	3.2

Table E: Maximum natural gas input based on maximum fire rate and heating value from Table A	
7.65	MMscf/year
0.025	MMscf/day
0.0025	MMscf/hr

Notes for Tables A to E:

¹ Fuel heating value is average gross heating value of natural gas listed in AP-42, Section 1.4, Subsection 1.4.1.

² Btu/scf = British thermal units per standard cubic foot.

³ Maximum firing rate is from item 5. of A-300 Instant Access & Trilogy Model Specifications provided during NSR application.

⁴ Maximum cremation capacity is from item 6. of A-300 Instant Access & Trilogy Model Specifications provided during NSR application.

⁵ Typical loading capacity is from item 7. of A-300 Instant Access & Trilogy Model Specifications provided during NSR application.

⁶ Calculated based on Typical Loading Capacity divided by Maximum cremation capacity

⁷ From item 18. and 19. of A-300 Instant Access & Trilogy Model Specifications provided during NSR application

⁸ Operating hours as provided in the application. Hr/year is calculated based on hr/day, day/week and week/yr operation

⁹ Charges/year are based on the hr/year operating hours multiplied by the hr/case process time. Charges per day uses same methodology, just with hr/day operating hours

Table 1: Emissions from natural gas combustion with low NOx burners

Pollutant	CAS No.	Classification ¹	Emission Factor (lb/MMscf) ²	Emissions (lb/hour)	Emissions (lb/day)	Emissions (lb/year)	Emissions (tons/year)
NOx	³ 10102-44-0	CAP/TAP	50	0.12	1.23	382.35	0.19
CO	630-08-0	CAP/TAP	84	0.21	2.06	642.35	0.32
Lead	7439-92-1	CAP/HAP/TAP	0.0005	0.00	0.00	0.00	0.00
PM	⁴ -	CAP	Source Testing Used ⁴				
SO ₂	7446-09-5	CAP/TAP	0.6	0.00	0.01	4.59	0.00
Volatile Organic Compounds (VOCs)	-	CAP (precursor)	5.5	0.01	0.13	42.06	0.02
TOC	-	-	11	0.03	0.27	84.12	0.04
CO ₂	124-38-9	-	120000	294.12	2941.18	917,647.06	458.82
N ₂ O	10024-97-2	-	0.64	0.00	0.02	4.89	0.00
Methane	74-82-8	-	2.3	0.01	0.06	17.59	0.01
2-Methylnaphthalene	91-57-6	-	2.40E-05	5.88E-08	5.88E-07	1.84E-04	9.18E-08
3-Methylcholanthrene	56-49-5	TAP	1.80E-06	4.41E-09	4.41E-08	1.38E-05	6.88E-09
7,12-Dimethylbenz(a)anthracene	57-97-6	TAP	1.60E-05	3.92E-08	3.92E-07	1.22E-04	6.12E-08
Acenaphthene	83-32-9	-	1.80E-06	4.41E-09	4.41E-08	1.38E-05	6.88E-09
Acenaphthylene	208-96-8	-	1.80E-06	4.41E-09	4.41E-08	1.38E-05	6.88E-09
Anthracene	120-12-7	-	2.40E-06	5.88E-09	5.88E-08	1.84E-05	9.18E-09
Benzo(a)anthracene	56-55-3	TAP	1.80E-06	4.41E-09	4.41E-08	1.38E-05	6.88E-09
Benzene	71-43-2	HAP/TAP	2.10E-03	5.15E-06	5.15E-05	1.61E-02	8.03E-06
Benzo(a)pyrene	50-32-8	TAP	1.20E-06	2.94E-09	2.94E-08	9.18E-06	4.59E-09
Benzo(b)fluoranthene	205-99-2	TAP	1.80E-06	4.41E-09	4.41E-08	1.38E-05	6.88E-09
Benzo(g,h,i)perylene	191-24-2	-	1.20E-06	2.94E-09	2.94E-08	9.18E-06	4.59E-09
Benzo(k)fluoranthene	207-08-9	TAP	1.80E-06	4.41E-09	4.41E-08	1.38E-05	6.88E-09
Butane	106-97-8	-	2.10E+00	5.15E-03	5.15E-02	1.61E+01	8.03E-03
Chrysene	218-01-9	TAP	1.80E-06	4.41E-09	4.41E-08	1.38E-05	6.88E-09
Dibenzo(a,h)anthracene	53-70-3	TAP	1.20E-06	2.94E-09	2.94E-08	9.18E-06	4.59E-09
Dichlorobenzene	⁵ 25321-22-6	TAP	1.20E-03	2.94E-06	2.94E-05	9.18E-03	4.59E-06
Ethane	74-84-0	-	3.10E+00	7.60E-03	7.60E-02	2.37E+01	1.19E-02
Fluoranthene	206-44-0	-	3.00E-06	7.35E-09	7.35E-08	2.29E-05	1.15E-08
Fluorene	86-73-7	-	2.80E-06	6.86E-09	6.86E-08	2.14E-05	1.07E-08
Formaldehyde	50-00-0	HAP/TAP	7.50E-02	1.84E-04	1.84E-03	5.74E-01	2.87E-04
Hexane	110-54-3	HAP/TAP	1.80E+00	4.41E-03	4.41E-02	1.38E+01	6.88E-03
Indeno(1,2,3-cd)pyrene	193-39-5	TAP	1.80E-06	4.41E-09	4.41E-08	1.38E-05	6.88E-09
Naphthalene	91-20-3	HAP/TAP	6.10E-04	1.50E-06	1.50E-05	4.66E-03	2.33E-06
Pentane	109-66-0	-	2.60E+00	6.37E-03	6.37E-02	1.99E+01	9.94E-03
Phenanthrene	85-01-8	-	1.70E-05	4.17E-08	4.17E-07	1.30E-04	6.50E-08
Propane	74-98-6	-	1.60E+00	3.92E-03	3.92E-02	1.22E+01	6.12E-03
Pyrene	129-00-0	-	5.00E-06	1.23E-08	1.23E-07	3.82E-05	1.91E-08
Toluene	108-88-3	HAP/TAP	3.40E-03	8.33E-06	8.33E-05	2.60E-02	1.30E-05
Arsenic	7440-38-2	HAP/TAP	2.00E-04	4.90E-07	4.90E-06	1.53E-03	7.65E-07
Barium	7440-39-3	-	4.40E-03	1.08E-05	1.08E-04	3.36E-02	1.68E-05
Beryllium	7440-41-7	HAP/TAP	1.20E-05	2.94E-08	2.94E-07	9.18E-05	4.59E-08
Cadmium	7440-43-9	HAP/TAP	1.10E-03	2.70E-06	2.70E-05	8.41E-03	4.21E-06
Chromium(III)	⁶ 7440-47-3	HAP/TAP	1.13E-03	2.78E-06	2.78E-05	8.67E-03	4.34E-06
Chromium(VI)	⁶ 18540-29-9	HAP/TAP	2.66E-04	6.52E-07	6.52E-06	2.03E-03	1.02E-06
Cobalt	7440-48-4	HAP/TAP	8.40E-05	2.06E-07	2.06E-06	6.42E-04	3.21E-07
Copper	7440-50-8	TAP	8.50E-04	2.08E-06	2.08E-05	6.50E-03	3.25E-06
Manganese	7439-96-5	HAP/TAP	3.80E-04	9.31E-07	9.31E-06	2.91E-03	1.45E-06
Mercury	7439-97-6	HAP/TAP	2.60E-04	6.37E-07	6.37E-06	1.99E-03	9.94E-07
Molybdenum	7439-98-7	-	1.10E-03	2.70E-06	2.70E-05	8.41E-03	4.21E-06
Nickel	7440-02-0	HAP/TAP	2.10E-03	5.15E-06	5.15E-05	1.61E-02	8.03E-06
Selenium	7782-49-2	HAP/TAP	2.40E-05	5.88E-08	5.88E-07	1.84E-04	9.18E-08
Vanadium	7440-62-2	TAP	2.30E-03	5.64E-06	5.64E-05	1.76E-02	8.79E-06
Zinc	7440-66-6	-	2.90E-02	7.11E-05	7.11E-04	2.22E-01	1.11E-04

¹ Criteria Air Pollutant (CAP), Hazardous Air Pollutant (HAP), Toxic Air Pollutant (TAP).

² Obtained from AP-42, Fifth Edition, Volume I Chapter 1: External Combustion Sources, Section 1.4: Natural Gas Combustion. Tables 1.4-1, 2, 3 and 4, unless otherwise noted.

³ Expressed as NO₂, which is a CAP and TAP.

⁴ Particulate Matter (PM) emissions were based on the June 8, 2022 "PM Compliance Source Test Report for Eternal Hills Cemetery testing of an American Crematory Cremation Burner" provided by the Permittee. These source test results for an A-300 crematory unit were used instead of AP-42 or other standard emission factors.

⁵ Dichlorobenzene with CAS No. 25321-22-6 represents a mixture of dichlorobenzene isomers, including 1,4-Dichlorobenzene with CAS No. 106-46-7 which is a TAP.

⁶ Emission factor listed in AP-42 includes Cr(III) and Cr(VI). EF was multiplied by 19% to obtain an EF for Cr(VI) and by 81% to obtain EF for Cr(III). Chromium Speciation obtained from "An Overview of Methods for EPA's National-Scale Air Toxics Assessment, January 31, 2011, OAQPS", Appendix D, for MACT Code 0107-2, SCC 10200603. See <https://www.epa.gov/sites/production/files/2015-10/documents/2005-nata-tmd.pdf>.

Appendix A
NSRP-01-SCIWFS-25

SCI Washington Funeral Services, LLC.
dba Keith & Keith Terrace Heights Memorial Center Crematory
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Table 2: Emissions from charge combustion (charge = human corpse + container)

Pollutant	CAS No.	Classification	Emission factor (lb/case) ¹	Emissions (lb/day)	Emissions (lb/day)	Emissions (lb/year)	Emissions (tons/year)
Lead	7439-92-1	CAP/HAP/TAP	6.62E-05	3.78E-05	3.78E-04	1.18E-01	5.90E-05
PM	-	CAP	Source Testing Used ²				
Acenaphthene	83-32-9	-	1.11E-07	6.34E-08	6.34E-07	1.98E-04	9.89E-08
Acenaphthylene	208-96-8	-	1.22E-07	6.97E-08	6.97E-07	2.18E-04	1.09E-07
Anthracene	120-12-7	-	3.24E-07	1.85E-07	1.85E-06	5.78E-04	2.89E-07
Antimony	7440-36-0	HAP	3.02E-05	1.73E-05	1.73E-04	5.38E-02	2.69E-05
Arsenic	7440-38-2	HAP/TAP	3.00E-05	1.71E-05	1.71E-04	5.35E-02	2.67E-05
Barium	7440-39-3	-	2.40E-05	1.37E-05	1.37E-04	4.28E-02	2.14E-05
Benzo(a)anthracene	56-55-3	TAP	9.76E-09	5.58E-09	5.58E-08	1.74E-05	8.70E-09
Benzo(a)pyrene	50-32-8	TAP	2.91E-08	1.66E-08	1.66E-07	5.19E-05	2.59E-08
Benzo(b)fluoranthene	205-99-2	TAP	1.59E-08	9.09E-09	9.09E-08	2.83E-05	1.42E-08
Benzo(g,h,i)perylene	191-24-2	-	2.91E-08	1.66E-08	1.66E-07	5.19E-05	2.59E-08
Benzo(k)fluoranthene	207-08-9	TAP	1.42E-08	8.11E-09	8.11E-08	2.53E-05	1.27E-08
Beryllium	7440-41-7	HAP/TAP	1.37E-06	7.83E-07	7.83E-06	2.44E-03	1.22E-06
Cadmium	7440-43-9	HAP/TAP	1.11E-05	6.34E-06	6.34E-05	1.98E-02	9.89E-06
Chromium(III)	7440-47-3	HAP/TAP	2.99E-05	1.71E-05	1.71E-04	5.33E-02	2.67E-05
Chromium(VI)	18540-29-9	HAP/TAP	1.35E-05	7.71E-06	7.71E-05	2.41E-02	1.20E-05
Chrysene	218-01-9	TAP	5.40E-08	3.09E-08	3.09E-07	9.63E-05	4.81E-08
Cobalt	7440-48-4	HAP/TAP	1.75E-06	1.00E-06	1.00E-05	3.12E-03	1.56E-06
Copper	7440-50-8	TAP	2.74E-05	1.57E-05	1.57E-04	4.89E-02	2.44E-05
Dibenzo(a,h)anthracene	53-70-3	TAP	1.27E-08	7.26E-09	7.26E-08	2.26E-05	1.13E-08
Fluoranthene	206-44-0	-	2.05E-07	1.17E-07	1.17E-06	3.65E-04	1.83E-07
Fluorene	86-73-7	-	4.17E-07	2.38E-07	2.38E-06	7.43E-04	3.72E-07
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	TAP	3.79E-09	2.17E-09	2.17E-08	6.76E-06	3.38E-09
Heptachlorodibenzo-p-dioxins, total	-	-	8.14E-09	4.65E-09	4.65E-08	1.45E-05	7.26E-09
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	TAP	4.57E-09	2.61E-09	2.61E-08	8.15E-06	4.07E-09
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	TAP	2.78E-10	1.59E-10	1.59E-09	4.96E-07	2.48E-10
Heptachlorodibenzofurans, total	-	-	5.41E-09	3.09E-09	3.09E-08	9.65E-06	4.82E-09
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	TAP	2.75E-10	1.57E-10	1.57E-09	4.90E-07	2.45E-10
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	TAP	3.97E-10	2.27E-10	2.27E-09	7.08E-07	3.54E-10
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	TAP	4.92E-10	2.81E-10	2.81E-09	8.77E-07	4.39E-10
Hexachlorodibenzo-p-dioxins, total	34465-46-8	TAP	5.66E-09	3.23E-09	3.23E-08	1.01E-05	5.05E-09
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	TAP	9.53E-10	5.45E-10	5.45E-09	1.70E-06	8.50E-10
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	TAP	8.52E-10	4.87E-10	4.87E-09	1.52E-06	7.59E-10
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	TAP	1.67E-09	9.54E-10	9.54E-09	2.98E-06	1.49E-09
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	TAP	3.44E-10	1.97E-10	1.97E-09	6.13E-07	3.07E-10
Hexachlorodibenzofurans, total	-	-	1.09E-08	6.23E-09	6.23E-08	1.94E-05	9.72E-09
Hydrogen chloride	7647-01-0	HAP/TAP	7.20E-02	4.11E-02	4.11E-01	1.28E+02	6.42E-02
Hydrogen fluoride	7664-39-3	HAP/TAP	6.55E-04	3.74E-04	3.74E-03	1.17E+00	5.84E-04
Indeno(1,2,3-cd)pyrene	193-39-5	TAP	1.54E-08	8.80E-09	8.80E-08	2.75E-05	1.37E-08
Mercury	7439-97-6	HAP/TAP	3.29E-03	1.88E-03	1.88E-02	5.87E+00	2.93E-03
Molybdenum	7439-98-7	-	1.67E-05	9.54E-06	9.54E-05	2.98E-02	1.49E-05
Nickel	7440-02-0	HAP/TAP	3.82E-05	2.18E-05	2.18E-04	6.81E-02	3.41E-05
Octachlorodibenzo-p-dioxins, total	3268-87-9	TAP	6.07E-09	3.47E-09	3.47E-08	1.08E-05	5.41E-09
Octachlorodibenzofurans, total	39001-02-0	TAP	1.62E-09	9.26E-10	9.26E-09	2.89E-06	1.44E-09
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	TAP	2.33E-10	1.33E-10	1.33E-09	4.15E-07	2.08E-10
Pentachlorodibenzo-p-dioxins, total	-	-	2.17E-09	1.24E-09	1.24E-08	3.87E-06	1.93E-09
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	TAP	2.94E-10	1.68E-10	1.68E-09	5.24E-07	2.62E-10
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	TAP	8.85E-10	5.06E-10	5.06E-09	1.58E-06	7.89E-10
Pentachlorodibenzofurans, total	-	-	6.44E-09	3.68E-09	3.68E-08	1.15E-05	5.74E-09
Phenanthrene	85-01-8	-	2.29E-06	1.31E-06	1.31E-05	4.08E-03	2.04E-06
Polychlorinated dibenzo-p-dioxins, total	-	-	2.35E-08	1.34E-08	1.34E-07	4.19E-05	2.09E-08
Polychlorinated dibenzofurans, total	-	-	3.53E-08	2.02E-08	2.02E-07	6.29E-05	3.15E-08
Polycyclic aromatic hydrocarbons (PAH)	-	-	3.76E-06	2.15E-06	2.15E-05	6.70E-03	3.35E-06
Pyrene	129-00-0	-	1.62E-07	9.26E-08	9.26E-07	2.89E-04	1.44E-07
Selenium	7782-49-2	HAP/TAP	4.36E-05	2.49E-05	2.49E-04	7.77E-02	3.89E-05
Silver	7440-22-4	-	7.30E-06	4.17E-06	4.17E-05	1.30E-02	6.51E-06
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	HAP/TAP	7.94E-11	4.54E-11	4.54E-10	1.42E-07	7.08E-11
Tetrachlorodibenzo-p-dioxins, total	-	-	1.41E-09	8.06E-10	8.06E-09	2.51E-06	1.26E-09
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	TAP	5.19E-10	2.97E-10	2.97E-09	9.25E-07	4.63E-10
Tetrachlorodibenzofurans, total	-	-	1.10E-08	6.29E-09	6.29E-08	1.96E-05	9.81E-09
Thallium	7440-28-0	-	8.52E-05	4.87E-05	4.87E-04	1.52E-01	7.59E-05
Vanadium	7440-62-2	TAP	5.79E-05	3.31E-05	3.31E-04	1.03E-01	5.16E-05
Zinc	7440-66-6	-	3.53E-04	2.02E-04	2.02E-03	6.29E-01	3.15E-04

¹ Obtained from WebFIRE for Source Classification Code (SCC) 31502101: Industrial Process; Photo Equip/Health Care/Labs/Air Condit/SwimPools; Health Care - Crematoriums; Crematory Stack, unless otherwise noted.

² Particulate Matter (PM) emissions were based on the June 8, 2022 "PM Compliance Source Test Report for Eternal Hills Cemetery testing of an American Crematory Cremation Burner" provided by the Permittee. These source test results for an A-300 crematory unit were used instead of AP-42 or other standard emission factors.

Table 3: Total emissions (natural gas combustion + charge combustion)

Pollutant	CAS No.	Classification	Emissions (lb/hour)	Emissions (lb/day)	Emissions (lb/year)	Averaging period (ave period) ¹	De Minimis (lb/ave period) ¹	SQER (lb/ave period) ²	ASIL (µg/m ³) ³	< De Minimis? ²	< SQER? ³
NOx	10102-44-0	CAP/TAP	0.12	1.23	382.35	1-hr	4.6E-01	8.7E-01	4.7E+02	Yes	Yes
CO	630-08-0	CAP/TAP	0.21	2.06	642.35	1-hr	1.1E+00	4.3E+01	2.3E+04	Yes	Yes
Lead	7439-92-1	CAP/HAP/TAP	0.00	0.00	0.12	year	1.0E+01	1.4E+01	8.3E-02	Yes	Yes
PM	-	CAP	0.099	0.99	308.88	-	-	-	-	-	-
SO ₂	7446-09-5	CAP/TAP	0.00	0.01	4.59	1-hr	4.6E-01	1.2E+00	6.6E+02	Yes	Yes
Volatile Organic Compounds (VOCs)	-	CAP (precursor)	0.01	0.13	42.06	-	-	-	-	-	-
TOC	-	-	0.03	0.27	84.12	-	-	-	-	-	-
CO ₂	124-38-9	-	294.12	2941.18	917647.06	-	-	-	-	-	-
N ₂ O	10024-97-2	-	1.57E-03	1.57E-02	4.89E+00	-	-	-	-	-	-
Methane	74-82-8	-	5.64E-03	5.64E-02	1.76E+01	-	-	-	-	-	-
2-Methylnaphthalene	91-57-6	-	5.88E-08	5.88E-07	1.84E-04	-	-	-	-	-	-
3-Methylcholanthrene	56-49-5	TAP	4.41E-09	4.41E-08	1.38E-05	year	7.8E-04	1.6E-02	9.6E-05	Yes	Yes
7,12-Dimethylbenzo(a)anthracene	57-97-6	TAP	3.92E-08	3.92E-07	1.22E-04	year	6.9E-05	1.4E-03	8.5E-06	No	Yes
Acenaphthene	83-32-9	-	6.78E-08	6.78E-07	2.12E-04	-	-	-	-	-	-
Acenaphthylene	208-96-8	-	7.41E-08	7.41E-07	2.31E-04	-	-	-	-	-	-
Anthracene	120-12-7	-	1.91E-07	1.91E-06	5.96E-04	-	-	-	-	-	-
Benzo(a)anthracene	56-55-3	TAP	9.99E-09	9.99E-08	3.12E-05	year	4.5E-02	8.9E-01	5.5E-03	Yes	Yes
Benzenes	71-43-2	HAP/TAP	5.15E-06	5.15E-05	1.61E-02	year	1.0E+00	2.1E+01	1.3E-01	Yes	Yes
Benzo(a)pyrene	50-32-8	TAP	1.96E-08	1.96E-07	6.11E-05	year	8.2E-03	1.6E-01	1.0E-03	Yes	Yes
Benzo(b)fluoranthene	205-99-2	TAP	1.35E-08	1.35E-07	4.21E-05	year	4.5E-02	8.9E-01	5.5E-03	Yes	Yes
Benzo(g,h,i)perylene	191-24-2	-	1.96E-08	1.96E-07	6.11E-05	-	-	-	-	-	-
Benzo(k)fluoranthene	207-08-9	TAP	1.25E-08	1.25E-07	3.91E-05	year	4.5E-02	8.9E-01	5.5E-03	Yes	Yes
Butane	106-97-8	-	5.15E-03	5.15E-02	1.61E+01	-	-	-	-	-	-
Chrysene	218-01-9	TAP	3.53E-08	3.53E-07	1.10E-04	year	4.5E-01	8.9E+00	5.5E-02	Yes	Yes
Dibenz(a,h)anthracene	53-70-3	TAP	1.02E-08	1.02E-07	3.18E-05	year	4.1E-03	8.2E-02	5.0E-04	Yes	Yes
Dichlorobenzene	25321-22-6	TAP	2.94E-06	2.94E-05	9.18E-03	year	7.4E-01	1.5E+01	9.1E-02	Yes	Yes
Ethane	74-84-0	-	7.60E-03	7.60E-02	2.37E+01	-	-	-	-	-	-
Fluoranthene	206-44-0	-	1.24E-07	1.24E-06	3.88E-04	-	-	-	-	-	-
Fluorene	86-73-7	-	2.45E-07	2.45E-06	7.65E-04	-	-	-	-	-	-
Formaldehyde	50-00-0	HAP/TAP	1.84E-04	1.84E-03	5.74E-01	year	1.4E+00	2.7E+01	1.7E-01	Yes	Yes
Hexane	110-54-3	HAP/TAP	4.41E-03	4.41E-02	1.38E+01	24-hr	2.6E+00	5.2E+01	7.0E+02	Yes	Yes
Indene(1,2,3-cd)pyrene	193-39-5	TAP	1.32E-08	1.32E-07	4.12E-05	year	4.5E-02	8.9E-01	5.5E-03	Yes	Yes
Naphthalene	91-20-3	HAP/TAP	1.50E-06	1.50E-05	4.66E-03	year	2.4E-01	4.8E+00	2.9E-02	Yes	Yes
Pentane	109-66-0	-	6.37E-03	6.37E-02	1.99E+01	-	-	-	-	-	-
Phenanthrene	85-01-8	-	1.35E-06	1.35E-05	4.21E-03	-	-	-	-	-	-
Propane	74-98-6	-	3.92E-03	3.92E-02	1.22E+01	-	-	-	-	-	-
Pyrene	129-00-0	-	1.05E-07	1.05E-06	3.27E-04	-	-	-	-	-	-
Toluene	108-88-3	HAP/TAP	8.33E-06	8.33E-05	2.60E-02	24-hr	1.9E+01	3.7E+02	5.0E+03	Yes	Yes
Arsenic	7440-38-2	HAP/TAP	1.76E-05	1.76E-04	5.50E-02	year	2.5E-03	4.9E-02	3.0E-04	No	No
Barium	7440-39-3	-	2.45E-05	2.45E-04	7.64E-02	-	-	-	-	-	-
Beryllium	7440-41-7	HAP/TAP	8.12E-07	8.12E-06	2.53E-03	year	3.4E-03	6.8E-02	4.2E-04	Yes	Yes
Cadmium	7440-43-9	HAP/TAP	9.04E-06	9.04E-05	2.82E-02	year	1.9E-03	3.9E-02	2.4E-04	No	Yes
Chromium(III)	7440-47-3	HAP/TAP	1.99E-05	1.99E-04	6.20E-02	24-hr	3.7E-04	7.4E-03	1.0E-01	Yes	Yes
Chromium(VI)	18340-29-9	HAP/TAP	8.37E-06	8.37E-05	2.61E-02	year	3.3E-05	6.5E-04	4.0E-06	No	No
Cobalt	7440-48-4	HAP/TAP	1.21E-06	1.21E-05	3.76E-03	24-hr	3.7E-04	7.4E-03	1.0E-01	Yes	Yes
Copper	7440-50-8	TAP	1.77E-05	1.77E-04	5.54E-02	1-hr	9.3E-03	1.9E-01	1.0E+02	Yes	Yes
Manganese	7439-96-5	HAP/TAP	9.31E-07	9.31E-06	2.91E-03	24-hr	1.1E-03	2.2E-02	3.0E-01	Yes	Yes
Mercury	7439-97-6	HAP/TAP	1.88E-03	1.88E-02	5.87E+00	24-hr	1.1E-04	2.2E-03	3.0E-02	No	No
Molybdenum	7439-98-7	-	1.22E-05	1.22E-04	3.82E-02	-	-	-	-	-	-
Nickel	7440-02-0	HAP/TAP	2.70E-05	2.70E-04	8.42E-02	year	3.1E-02	6.2E-01	3.8E-03	No	Yes
Selenium	7782-49-2	HAP/TAP	2.50E-05	2.50E-04	7.79E-02	24-hr	7.4E-02	1.5E+00	2.0E+01	Yes	Yes
Vanadium	7440-62-2	TAP	3.87E-05	3.87E-04	1.21E-01	24-hr	3.7E-04	7.4E-03	1.0E-01	No	Yes
Zinc	7440-66-6	-	2.73E-04	2.73E-03	8.51E-01	-	-	-	-	-	-
Antimony	7440-36-0	HAP	1.73E-05	1.73E-04	5.38E-02	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	TAP	2.17E-09	2.17E-08	6.76E-06	year	2.1E-05	4.3E-04	2.6E-06	Yes	Yes
Heptachlorodibenzo-p-dioxins, total	-	-	4.65E-09	4.65E-08	1.45E-05	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	TAP	2.61E-09	2.61E-08	8.15E-06	year	2.1E-05	4.3E-04	2.6E-06	Yes	Yes
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	TAP	1.59E-10	1.59E-09	4.96E-07	year	2.1E-05	4.3E-04	2.6E-06	Yes	Yes
Heptachlorodibenzofurans, total	-	-	3.09E-09	3.09E-08	9.65E-06	-	-	-	-	-	-
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	TAP	1.57E-10	1.57E-09	4.90E-07	year	2.1E-06	4.3E-05	2.6E-07	Yes	Yes
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	TAP	2.27E-10	2.27E-09	7.08E-07	year	2.1E-06	4.3E-05	2.6E-07	Yes	Yes
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	TAP	2.81E-10	2.81E-09	8.77E-07	year	2.1E-06	4.3E-05	2.6E-07	Yes	Yes
Hexachlorodibenzo-p-dioxins, total	34465-46-8	TAP	3.23E-09	3.23E-08	1.01E-05	year	2.1E-06	4.3E-05	2.6E-07	No	Yes
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	TAP	5.45E-10	5.45E-09	1.70E-06	year	2.1E-06	4.3E-05	2.6E-07	Yes	Yes
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	TAP	4.87E-10	4.87E-09	1.52E-06	year	2.1E-06	4.3E-05	2.6E-07	Yes	Yes
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	TAP	9.54E-10	9.54E-09	2.98E-06	year	2.1E-06	4.3E-05	2.6E-07	No	Yes
2,3,4,6,7,8-Hexachlorodibenzofuran	6951-34-5	TAP	1.97E-10	1.97E-09	6.13E-07	year	2.1E-06	4.3E-05	2.6E-07	Yes	Yes
Hexachlorodibenzofurans, total	-	-	6.23E-09	6.23E-08	1.94E-05	-	-	-	-	-	-
Hydrogen chloride	7647-01-0	HAP/TAP	4.11E-02	4.11E-01	1.28E+02	24-hr	3.3E-02	6.7E-01	9.0E+00	No	Yes
Hydrogen fluoride	7664-39-3	HAP/TAP	3.74E-04	3.74E-03	1.17E+00	24-hr	5.2E-02	1.0E+00	1.4E+01	Yes	Yes
Octachlorodibenzo-p-dioxins, total	3268-87-9	TAP	3.47E-09	3.47E-08	1.08E-05	year	7.4E-04	1.5E-02	9.1E-05	Yes	Yes
Octachlorodibenzofurans, total	39001-02-0	TAP	9.26E-10	9.26E-09	2.89E-06	year	7.4E-04	1.5E-02	9.1E-05	Yes	Yes
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	TAP	1.33E-10	1.33E-09	4.15E-07	year	2.1E-07	4.3E-06	2.6E-08	No	Yes
Pentachlorodibenzo-p-dioxins, total	-	-	1.24E-09	1.24E-08	3.87E-06	-	-	-	-	-	-
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	TAP	1.68E-10	1.68E-09	5.24E-07	year	7.4E-06	1.5E-04	9.1E-07	Yes	Yes
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	TAP	5.06E-10	5.06E-09	1.58E-06	year	7.4E-07	1.5E-05	9.1E-08	No	Yes
Pentachlorodibenzofurans, total	-	-	3.68E-09	3.68E-08	1.15E-05	-	-	-	-	-	-
Polychlorinated dibenzo-p-dioxins, total	-	-	1.34E-08	1.34E-07	4.19E-05	-	-	-	-	-	-
Polychlorinated dibenzofurans, total	-	-	2.02E-08	2.02E-07	6.29E-05	-	-	-	-	-	-
Polycyclic aromatic hydrocarbons (PAH)	-	-	2.15E-06	2.15E-05	6.70E-03	-	-	-	-	-	-
Silver	7440-22-4	-	4.17E-06	4.17E-05	1.30E-02	-	-	-	-	-	-
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	HAP/TAP	4.54E-11	4.54E-10	1.42E-07	year	2.1E-07	4.3E-06	2.6E-08	Yes	Yes
Tetrachlorodibenzo-p-dioxins, total	-	-	8.06E-10	8.06E-09	2.51E-06	-	-	-	-	-	-
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	TAP	2.97E-10	2.97E-09	9.25E-07	year	2.1E-06	4.3E-05	2.6E-07	Yes	Yes
Tetrachlorodibenzofurans, total	-	-	6.29E-09	6.29E-08	1.96E-05	-	-	-	-	-	-
Thallium	7440-28-0	-	4.87E-05	4.87E-04	1.52E-01	-	-	-	-	-	-
Total HAPs (ppb)					7.52E-02						

¹ Obtained from Washington Administrative Code 173-460-150. Last update effective 12/23/19.

² Permitting is required if the emissions exceed the De Minimis threshold.

³ Modeling is required if the emissions exceed the SQER threshold.

⁴ Expressed as NO₂, which is a CAP and TAP.

⁵ Particulate Matter (PM) emissions were based on the June 8, 2022 PPM Compliance Source Test Report for Eternal Hills Cemetery testing of an American Crematory Cremation Burner[®] provided by the Permittee. These source test results for an A-300 crematory unit were used instead of AP-42 or other standard emission factors. The reported PM emissions reflect contributions from both natural gas combustion and the cremation charge.

⁶ Dichlorobenzene with CAS No. 25321-22-6 represents a mixture of dichlorobenzene isomers, including 1,4-Dichlorobenzene with CAS No. 106-46-7 which is a TAP. DeMinimis, SQER and ASIL values taken for 1,4-Dichlorobenzene for conservative purposes.

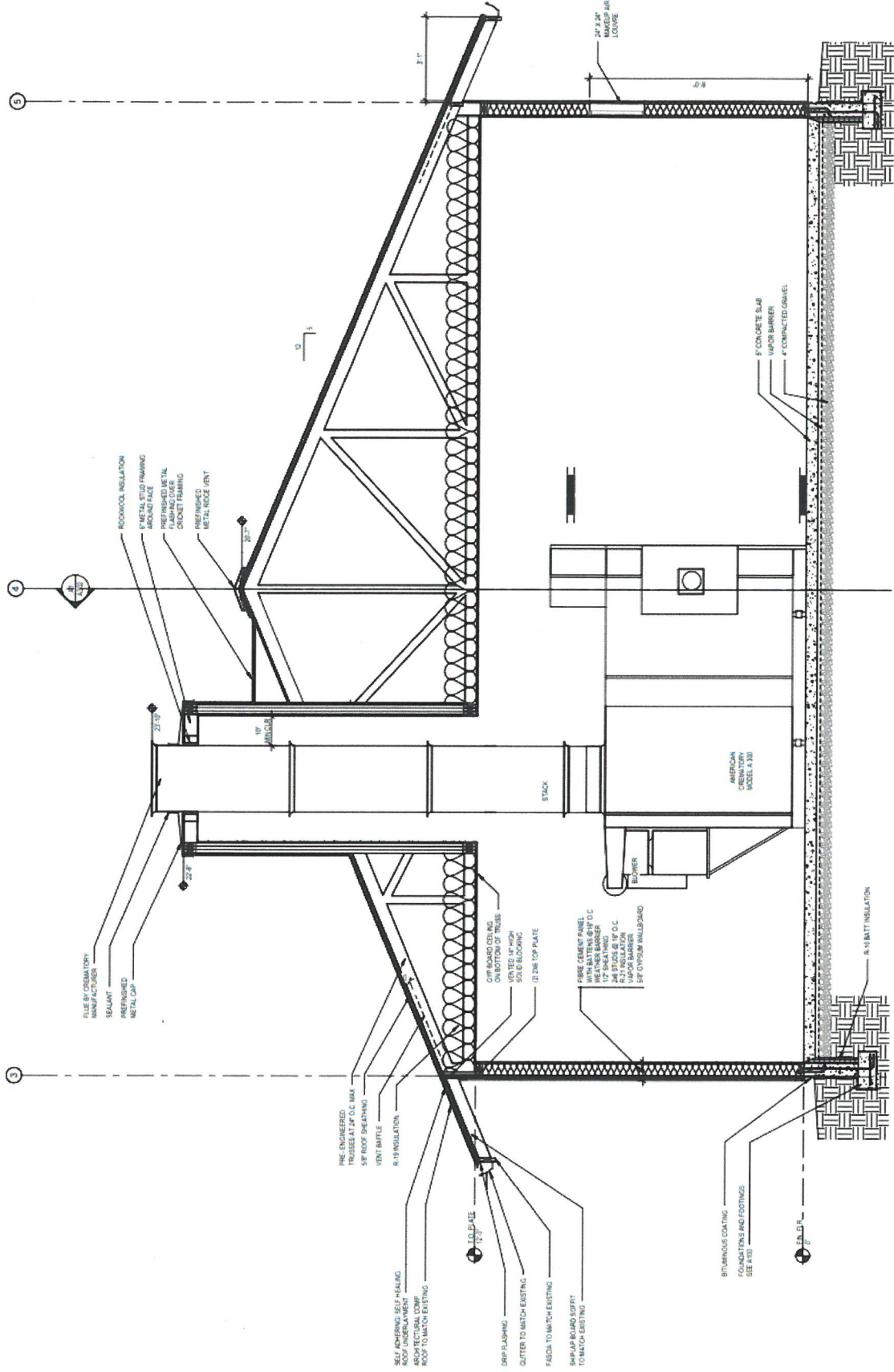
Table 4: AERMOD modeling results for a 29ft stack (point source) at 1 lb/hr

Averaging periods	Concentration (µg/m ³)
24-hr	10.1
annual	1.32

Pollutant	CAS No.	Classification	Emissions (lb/hour)	Emissions (lb/day)	Emissions (lb/year)	Averaging period (ave period)	lb/hr for modeling	Modeled concentration	ASIL (µg/m ³)	< ASIL?
Arsenic	7440-38-2	HAP/TAP	1.76E-05	1.76E-04	5.50E-02	year	6.28E-06	8.29E-06	3.00E-04	Yes
Chromium(VI)	18540-29-9	HAP/TAP	8.37E-06	8.37E-05	2.61E-02	year	2.98E-06	3.93E-06	4.00E-06	Yes
Mercury	7439-97-6	HAP/TAP	1.88E-03	1.88E-02	5.87E+00	24-hr	7.84E-04	7.91E-03	3.00E-02	Yes



Figure 1: Google Earth® view of the Facility, including approximate location of new crematory exhaust stack and property boundaries outlined in red.



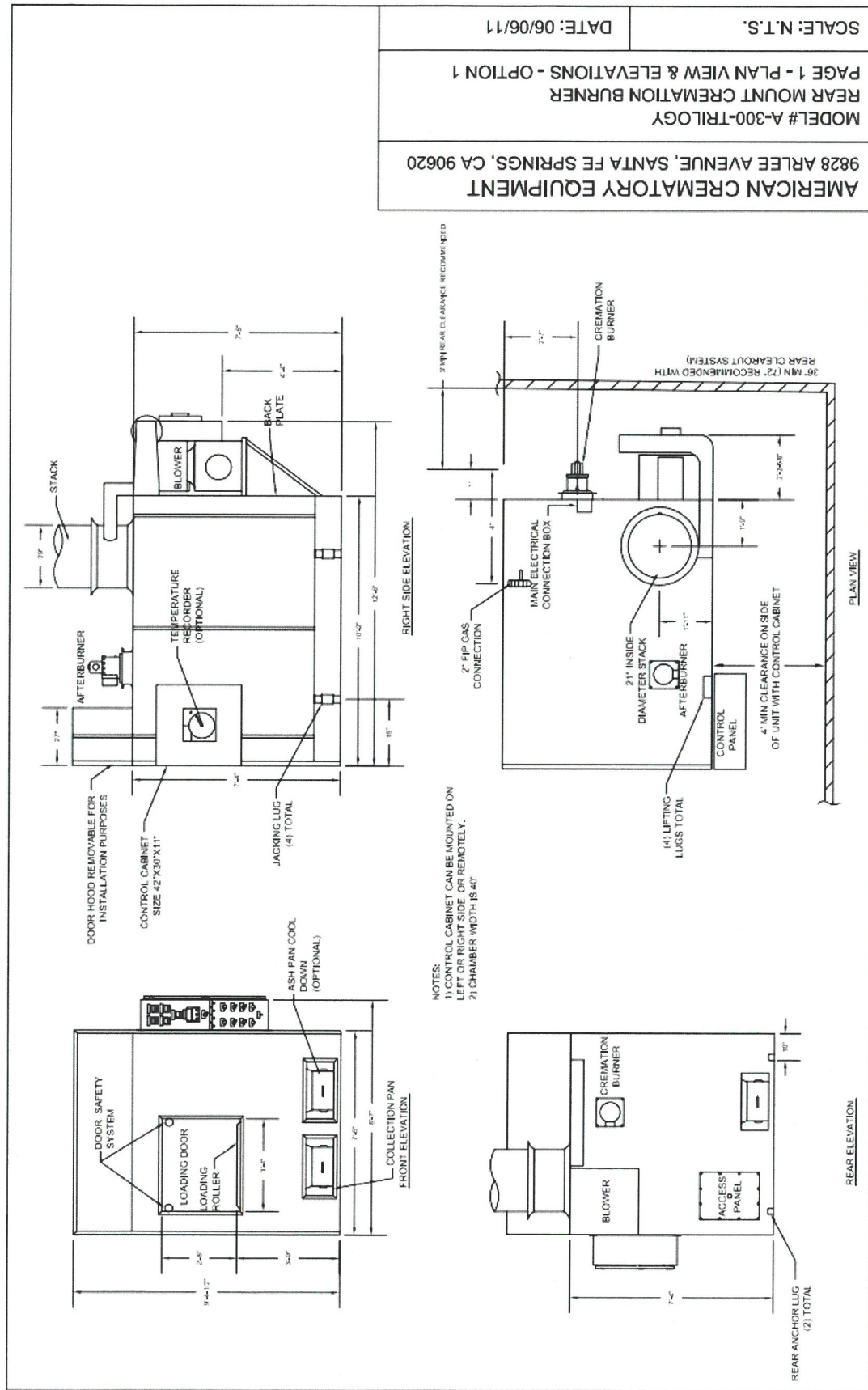


Figure 3: American Crematory Equipment A-300 unit.

American Crematory Equipment Company

A-300 Instant Access & Trilogy Model Specifications

1. Equipment
 - A-300-Instant Access
 - A-300-Trilogy
2. Options
 - Rear Mount Cremation Chamber Burner
 - Rear Clean Out System
 - Secondary Main Chamber Burner
 - Full Size Rear Hydraulic Witness Door
 - PLC & Touch Screen Control System
 - GUARDIAN DAS Control System
3. Dimensions
 - Footprint..... 10'2"x 7'5"
 - Length..... 12' 6"
 - Width W/Panel..... 8' 7"
 - Height W/ Door Hood..... 9' 4"
 - Chamber Loading Opening..... 28"x 40"
4. Weight = 30,000 Lbs.
5. Utility/Air Requirements
 - Gross Gas Input, Natural, or LP GAS..... 2.50 Million BTU/Hr. Max. Input
 - Running Gas Pressure, Natural Gas..... 12-14" W.C. or Greater
 - Running Gas Pressure, LP Gas..... 11" W.C. or Greater
 - Electrical Supply..... 230 Volt, 3 Phase or Single Phase, 60 HZ
 - Air Supply..... 2,500 cfm
6. Cremation Capacity..... 180-200 lbs./Hr.
7. Typical Loading Capacity of Waste Types
 - Type 4 Material..... 350 - 700 lbs.
8. Construction and Safety Standards
 - UL & NFPA 86
9. Steel Structure Construction
 - Frame..... 2"x 2" Square Tubing
 - Front/Rear Plates..... 3/8" Plate
 - Exterior Side Casing..... 12 Gauge Hot Rolled Sheet
 - Interior Casing..... 12 Gauge Hot Rolled Sheet
10. Stack Construction
 - Carbon Steel or Stainless Steel (Optional)..... 14 Gauge Seal Welded Seams
 - Refractory Lining..... 4.5" 2800 Degree Castable
 - Stack Weight..... 1000 Lbs.
18. Operating Temperatures
 - Primary Chamber..... 1,550°F
 - Secondary Chamber..... 1,650°F – 1,800°F
19. Secondary Chamber Retention Time
 - Type 4 material..... 180-200 lbs/hr
 - Retention time..... 3.2 Seconds

Figure 4: Excerpt of manufacturer specifications for the A-300 Instant Access & Trilogy Model crematory unit. Items 5, 6, 7, 18, and 19 were used in the calculations for this permit.