



DEPARTMENT ORDER

**Gracelawn Crematory LLC
Androscoggin County
Auburn, Maine
A-193-71-M-R/M**

**Departmental
Findings of Fact and Order
Air Emission License
Renewal and Minor Revision**

FINDINGS OF FACT

After review of the air emission license renewal and Minor Revision application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S. § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Gracelawn Crematory LLC (Gracelawn) has applied to renew their Air Emission License for the operation of three Class IV-A crematories. Crematory #4, which was addressed in air emission license in amendment A-193-71-K-A (issued July 19, 2022), was never installed and will be removed in this renewal.

The equipment addressed in this license is located at 980 Turner Street, Auburn, Maine.

B. Emission Equipment

Crematories #1 and #2 are both Millennium III models with Crematory #3 being a model A-350-Trilogy having the following specifications:

	Crematory #1	Crematory #2	Crematory #3	<i>Crematory #4 *</i>
Class Incinerator	IV-A	IV-A	IV-A	<i>IV-A</i>
No. of Chambers	2	2	2	<i>2</i>
Type of Waste	Type 4	Type 4	Type 4	<i>Type 4</i>
Max. Design Combustion Rate (lb/hr)	150	150	200	<i>225</i>
Auxiliary Fuel Input:				
Primary Chamber (MMBtu/hr)	0.75 Primary	0.75 Primary	1.0 Primary	<i>1.5 Primary</i>
Secondary Chamber (MMBtu/hr)	1.5 Secondary	1.5 Secondary	1.5 Secondary	<i>1.5 Secondary</i>
Emission Control	Afterburner	Afterburner	Afterburner	<i>Afterburner</i>

* This unit was never installed and will be removed from this license.

Each crematory combustion gases vent to its own 23 foot Above Ground Level (AGL) stack. This represents 60% of the formula Good Engineering Practice (GEP) stack height.

C. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

The application for Gracelawn does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of currently licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115.

D. Facility Classification

The facility is licensed as follows:

- As a natural minor source of criteria pollutants, because no license restrictions are necessary to keep facility emissions below major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

II. **BEST PRACTICAL TREATMENT**

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in 06-096 C.M.R. ch. 100.

BPT for existing equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Crematories #1, #2, and #3

Crematories #1 and #2 are both Millennium III model crematory incinerators with an incineration rate of 150 lb/hr each. Crematories #1 and #2 each consist of a primary and secondary chamber with a heat input rating of 0.75 and 1.5 MMBtu/hr each, respectively. Crematory #3 consists of a primary and secondary chamber with a heat input rating of 1.0 and 1.5 MMBtu/hr, respectively. Each secondary chamber is maintained at a

temperature of at least 1,600 °F with a retention time of greater than one second. Each crematory exhausts through its own stack.

BPT for the crematories is the following:

1. Emission Limits

Emissions information is based on a licensed allowed particulate matter emission limit of 0.12 gr/dscf corrected to 12% CO₂, the burning of natural gas as an auxiliary fuel, and the use of the following factors:

The BPT emission limits from the **natural gas** burner portion of the total exhaust were based on the following:

PM/PM ₁₀ /PM _{2.5}	0.05 lb/MMBtu, 06-096 C.M.R. ch. 115, BPT
SO ₂	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO _x	100 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
CO	84 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
VOC	5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98

The BPT emission limits from the **biomedical** portion of the total exhaust were based on the following:

PM/PM ₁₀ /PM _{2.5}	0.12 gr/dscf corrected to 12% CO ₂ , 06-096 C.M.R. ch. 104
SO ₂	2.17 lb/ton, AP-42 Table 2.3-1 dated 7/93
NO _x	3.56 lb/ton, AP-42 Table 2.3-1 dated 7/93
CO	2.95 lb/ton, AP-42 Table 2.3-1 dated 7/93
VOC	0.299 lb/ton, AP-42 Table 2.3-2 dated 7/93

The pound per hour BPT emission limits for the crematories are as follows:

Unit		PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Crematory #1	Fuel Combustion	0.12	0.12	0.12	0.01	0.22	0.19	0.02
	Biomedical Portion	0.49	0.49	0.49	0.17	0.27	0.23	0.03
	Total Emission Limit	0.61	0.61	0.61	0.18	0.49	0.42	0.05

Unit		PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Crematory #2	Fuel Combustion	0.12	0.12	0.12	0.01	0.22	0.19	0.02
	Biomedical Portion	0.49	0.49	0.49	0.17	0.27	0.23	0.03
	Total Emission Limit	0.61	0.61	0.61	0.18	0.49	0.42	0.05
Crematory #3	Fuel Combustion	0.13	0.13	0.13	0.01	0.25	0.21	0.02
	Biomedical Portion	0.60	0.60	0.60	0.22	0.36	0.30	0.03
	Total Emission Limit	0.73	0.73	0.73	0.23	0.61	0.51	0.05

Visible emissions from each crematory stack shall not exceed 10% opacity on a six-minute block average basis.

2. Operating Parameters

- a. Each crematory shall be used for the disposal of type 4 waste and shall not be used for the disposal of plastics, cytotoxic (antineoplastic) drugs or any radioactive wastes and shall not be used to dispose of any medical waste classified as type 7 waste, as defined in 06-096 C.M.R. ch. 100.
- b. Operating temperature in the secondary chamber shall be maintained at or above 1,600 °F for the duration of the burn cycle, with a stack gas retention time at or above 1,600 °F of at least 1.0 second.
- c. To ensure an efficient burn, and to prevent odors and visible emissions, the secondary chamber shall be preheated, as specified by the manufacturer, until the pyrometer temperature measures at least 1,600 °F.
- d. No remains shall be introduced into the primary chamber until the temperature in the secondary chamber has reached 1,600 °F.
- e. Once the burn cycle has commenced by introduction of primary chamber combustion, the crematory shall be operated in an efficient manner, and as specified by the manufacturer, for the period of time between preheat and reaching the set operational temperature to be a minimum of 1,600 °F in the secondary chamber.
- f. A pyrometer and ¼-inch test port shall be installed and maintained at that location of the crematory or refractory lined stack which provides sufficient volume to insure a flue gas retention time of not less than 1.0 second at a minimum of 1,600 °F.
- g. A log shall be maintained recording the weight of the remains, preheat time, charging time and the temperature of the secondary chamber every 60 minutes after

start-up until, and including, final shutdown time. For facilities operating a chart recorder, the start time, date, and weight charged shall be logged on the chart.

- h. The crematory operator(s) shall receive adequate training to operate the crematory in accordance with the manufacturer's specifications and shall be familiar with the terms of the Air Emission License.

C. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee and establishing the facility's potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations.

Annual emissions were calculated by assuming that each crematory operates for 8,760 hours/year at its maximum combustion and charge rate.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM₁₀	PM_{2.5}	SO₂	NO_x	CO	VOC
Crematory #1	2.7	2.7	2.7	0.8	2.2	1.9	0.3
Crematory #2	2.7	2.7	2.7	0.8	2.2	1.9	0.3
Crematory #3	3.2	3.2	3.2	1.1	2.7	2.3	0.3
Total TPY	8.6	8.6	8.6	2.7	7.1	6.1	0.9

III. AIR QUALITY ANALYSIS

According to 06-096 C.M.R. ch. 115, the level of air quality analysis and monitoring are determined on a case-by-case basis. Based on analysis for similar sources, the size of the source, the allowable emissions, the location, and the stack height, ambient air quality standards, including increments, are not expected to be violated. Therefore, an ambient air impact analysis will not be required for this source at this time.

This determination is based on information provided by the applicant regarding licensed emission units. If the Department determines that any parameter (e.g., stack size, configuration, flow rate, emission rates, nearby structures, etc.) deviates from what was included in the application, the Department may require Gracelawn to submit additional information and may require an ambient air quality impact analysis at that time.

ORDER

Based on the above Findings and subject to conditions listed below the Department concludes that the emissions from this above source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-193-71-M-R/M subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time which any emission units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions. [06-096 C.M.R. ch. 115]
- (2) The licensee shall acquire a new or amended air emission license prior to beginning actual construction of a modification, unless specifically provided for in Chapter 115. [06-096 C.M.R. ch. 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 C.M.R. ch. 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 C.M.R. ch. 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115]

- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 115]
- (7) The licensee shall maintain and operate all emission units and air pollution control systems required by the air emission license in a manner consistent with good air pollution control practices for minimizing emissions. [06-096 C.M.R. ch. 115]
- (8) The licensee shall maintain sufficient records, to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 C.M.R. ch. 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for the renewal of a license or amendment shall not stay any condition of the license. [06-096 C.M.R. ch. 115]
- (10) The licensee may not use as a defense is an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary to maintain compliance with the conditions of the air emission license. [06-096 C.M.R. ch. 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department, the licensee shall:
 - A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions;
or
 2. pursuant to any other requirement of this license to perform stack testing.
 - B. install or make provisions to install test ports that meet the criteria of 40 C.F.R. Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - C. submit a written report to the Department within thirty (30) days from the date of test completion.[06-096 C.M.R. ch. 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess and operating conditions indicate emissions in excess of the applicable standards, then:

- A. Within thirty (30) days following receipt of the written test report by the Department, or another alternative timeframe approved by the Department, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department; and
 - B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
 - C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.
- [06-096 C.M.R. ch. 115]
- (13) Notwithstanding any other provision in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or license requirement. [06-096 C.M.R. ch. 115]
 - (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions when such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitations. [06-096 C.M.R. ch. 115]
 - (15) Upon the written request of the Department, the licensee shall establish and maintain such records, make such reports, install, use, and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance data. [06-096 C.M.R. ch. 115]
 - (16) The licensee shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S. § 605). [06-096 C.M.R. ch. 115]

SPECIFIC CONDITIONS

(17) Crematories #1, #2, and #3

- A. Each crematory shall be used for the disposal of type 4 waste and shall not be used for the disposal of plastics, cytotoxic (antineoplastic) drugs or any radioactive wastes and shall not be used to dispose of any medical waste classified as type 7 waste, as defined in 06-096 C.M.R. ch. 100. [06-096 C.M.R. ch. 115, BPT]
- B. Auxiliary fuel inputs to the primary and secondary chambers shall be natural gas. Compliance shall be demonstrated through fuel receipts. [06-096 C.M.R. ch. 115, BPT]
- C. Each crematory shall not exceed a particulate matter emission limit of 0.12 gr/dscf, corrected to 12% CO₂. Licensed allowed emissions for the crematories shall not exceed the following:

**Crematory Emission Limits lb/hr
(per crematory)**

	Crem. #1	Crem. #2	Crem. #3
PM	0.61	0.61	0.73
PM₁₀	0.61	0.61	0.73
PM_{2.5}	0.61	0.61	0.73
SO₂	0.18	0.18	0.23
NO_x	0.49	0.49	0.61
CO	0.42	0.42	0.51
VOC	0.05	0.05	0.05

Compliance shall be demonstrated through stack testing by request of the Department, in accordance with the appropriate method found in 40 C.F.R. Part 60, Appendix A. [06-096 C.M.R. ch. 115, BPT]

- D. Visible emissions from each stack shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]
- E. Operating temperature in the secondary chamber shall be maintained at or above 1,600 °F with a stack gas retention time of at least 1.0 second. [06-096 C.M.R. ch. 115, BPT]
- F. To ensure an efficient burn and to prevent odors and visible emissions, each secondary chamber shall be preheated, as specified by the manufacturer, until the pyrometer temperature measures at least 1,600 °F. [06-096 C.M.R. ch. 115, BPT]

- G. No remains shall be introduced into the primary chamber until the temperature in the secondary chamber has reached 1,600 °F. [06-096 C.M.R. ch. 115 BPT]
- H. Once the burn cycle has commenced by introduction of primary chamber combustion, the crematory shall be operated in an efficient manner, and as specified by the manufacturer, for the period of time between preheat and reaching the set operational temperature to be a minimum of 1,600 °F in the secondary chamber. The temperature in the secondary chamber shall be maintained at a minimum of 1,600 °F for the duration of the burn cycle. [06-096 C.M.R. ch. 115, BPT]
- I. A pyrometer and ¼-inch test port shall be installed and maintained at that location of the crematory or refractory lined stack which provides sufficient volume to insure a flue gas retention time of not less than 1.0 second at a minimum of 1,600 °F. [06-096 C.M.R. ch. 115, BPT]
- J. Each crematory shall not exceed the unit's maximum design combustion rates. To ensure compliance, a log shall be maintained recording the weight of the remains, preheat time, charging time and the temperature of the secondary chamber every 60 minutes after start-up until, and including, final shutdown time. For facilities operating a chart recorder, the start time, date, and weight charged shall be logged on the chart. [06-096 C.M.R. ch. 115, BPT]
- K. The crematory operator(s) shall receive adequate training to operate the crematory in accordance with the manufacturer's specifications and shall be familiar with the terms of the Air Emission License. [06-096 C.M.R. ch. 115, BPT]

- (18) If the Department determines that any parameter value pertaining to construction and operation of the emissions units, including but not limited to stack size, configuration, flow rate, emission rates, nearby structures, etc., deviates from what was submitted in the application or ambient air quality impact analysis for this air emission license, Gracelawn may be required to submit additional information. Upon written request from the Department, Gracelawn shall provide information necessary to demonstrate AAQS will not be exceeded, potentially including submission of an ambient air quality impact analysis or an application to amend this air emission license to resolve any deficiencies and ensure compliance with AAQS. Submission of this information is due within 60 days of the Department's written request unless otherwise stated in the Department's letter.
[06-096 C.M.R. ch. 115, § 2(O)]

DONE AND DATED IN AUGUSTA, MAINE THIS 26th DAY OF MARCH, 2024.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for
MELANIE LOYZIM, COMMISSIONER

The term of this license shall be ten (10) years from the signature date above.

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 6/13/23

Date of application acceptance: 6/15/23

Date filed with the Board of Environmental Protection:

This Order prepared by Chris Ham, Bureau of Air Quality.

