

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

P074671375

FACILITY: LENOX CREMATION SERVICES OF MICHIGAN, INC		SRN / ID: P0746
LOCATION: 10918 Gratiot Avenue, CASCO		DISTRICT: Warren
CITY: CASCO		COUNTY: SAINT CLAIR
CONTACT: Craig Harms , Owner		ACTIVITY DATE: 03/28/2024
STAFF: Marie Reid	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: FY24 Inspection		
RESOLVED COMPLAINTS:		

On March 28, 2024, I (Marie Reid), Michigan Department of Environment of Great Lakes, and Energy – Air Quality Division (EGLE-AQD), conducted a scheduled inspection of Lenox Cremation Services of Michigan, INC (Lenox) located at 10918 Gratiot Avenue, Casco, MI. This facility is identified by the AQD with the State Registration Number (SRN) P0746. The purpose of this inspection was to determine the facility’s compliance with the requirements of the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Administrative Rules; and Permit to Install (PTI) No. 155-16B.

Facility Description

Lenox is a human crematory located in St. Clair County. St. Clair County is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/maintenance for all criteria pollutants except Sulfur Dioxide, which is designated as nonattainment in some areas. This facility is a true minor source for particulate matter (PM).

PTI No. 155-16B allows for the operation of three ATI Environmental UK Limited identical model ATI CR2000XL cremation units. PTI No. 155-16B was approved on July 18, 2023, to install and operate the third ATI Environmental cremation unit (EUCREMATORY03). This incinerator’s first cremation occurred in March 2024.

Inspection and Compliance Evaluation

I arrived at Lenox at 9:30 am and met with Craig Harms, Owner. I identified myself, showed ID, stated the purpose of my visit, had an opening meeting, and toured the facility.

Record Review

All of Lenox’s records are stored electronically. An excel sheet is kept for each cremation which includes personal information of the person being cremated, the weight, cremation start/stop time, and temperature in the secondary combustion chamber recorded in 2-minute intervals. Operating temperatures for each cremation are plotted on a graph for easy review. I reviewed some cremation records on-site and Craig emailed me 15 additional cremation records per unit.

Malfunction Abatement Plan (MAP)

Lenox is required to implement and maintain a MAP (SC III.3). The facility’s MAP specifies a complete preventative maintenance program fulfilling the requirements listed in R 336.1911.

According to Craig, Lenox has not had a malfunction since the implementation of the MAP. I reviewed the MAP with Craig, and the procedures taken if a malfunction were to occur. Craig explained that the cremation units detect and log when a malfunction occurs and what caused it.

While I was on site for the inspection, a technician from the manufacturer was commissioning EUCREMATORY03 and conducting full inspections on EUCREMATORY01 and EUCREMATORY02. Craig stated that they conduct daily pre-cremation inspections on the units and complete any necessary repairs or maintenance before operation. Craig stated that the cremation units have not had any repairs or maintenance since the implementation of the MAP. Craig has a log on each cremation unit where he records when thermocouples and oxygen tubes are replaced (SC VI.6). I was also shown where some of the spare parts are stored that are listed in the MAP.

EUCREMATORY01, EUCREMATORY02, & EUCREMATORY03 Emission Limits

The facility is limited to 0.20 lb /1000 lbs of gas of PM on an hourly basis (SC I.1). The incinerators should meet this emission limit based on proper operation of the secondary combustion chamber. An emissions test to verify compliance with the emission limit in SC I.1 has not been requested by the AQD (SC V.1).

EUCREMATORY03 was operating at the time of the inspection. The facility has a camera facing the stacks and the live video feed is displayed on a TV in the facility. I observed the stacks on this video feed and did not observe any visible emissions.

Material Limits

The facility is permitted to burn human pathological waste and associated materials (SC II.1). I reviewed cremation logs that showed only humans were burned. These records satisfy the requirement in SC VI.4, which requires the facility to record periods of time when pathological waste is burned in the incinerators.

Each cremation unit has a material limit of 1,100 lbs per charge, where charge is the total weight of the material placed in the incinerator to be combusted (SC II.2). I reviewed records of the weights charged to each incinerator as required by SC VI.3 and did not see any exceedances. Craig said the largest charge he has burned was an 890 lb female. Lenox has a scissor-lift table with a built-in scale to verify charge weight (SC IV.3).

The facility is required to use natural gas as fuel in the cremation units (SC II.3). Craig stated that only natural gas is used, and I did not see any evidence of other types of fuel being used in the cremation units.

Process/Operational Restrictions

Lenox is restricted from combusting waste in any cremation unit unless a minimum temperature of 1600°F and a minimum retention time of 1.0 second in the secondary combustion chamber are maintained (SC III.1). The newest incinerator, EUCREMATORY03 was operating at the time of the inspection. I observed that the temperature in the secondary combustion chamber was 1722°F, which satisfies the requirement in SC III.1. Craig stated that the incinerators have a set point temperature of 1620°F.

The cremation units digitally record the temperature in the secondary combustion chamber continuously (SC IV.2). The data is stored electronically and printed in two-minute intervals along with the primary combustion chamber temperature and the exhaust stack inlet temperature (SC VI.2 and SC VI.5). These three temperatures are plotted on a graph for

quick visual analysis. These records also include the start and stop time of each cremation (SC VI.3).

Craig stated that the first 6-minutes of the cremation process is when they are actively loading the charge into the cremation chamber, so the secondary combustion chamber temperature can fall below 1600°F. Since waste is not being combusted while actively loading the charge, the secondary combustion chamber temperature can be below 1600°F during the first 6-minutes. I reviewed these records and did not observe the secondary combustion chamber temperature drop below 1600°F during combustion. These records verify that each incinerator's secondary combustion chamber with afterburner operates in a satisfactory manner (SC IV.1).

Stack/Vent Restrictions

I did not verify stack height/diameter during this inspection. Based on the stacks I could see on the top of the facility; all stacks were exhausted vertically and unobstructed to the ambient air. I did not notice any opacity.

Appendix A

Each cremation unit is required to be installed, maintained, and operated in a manner satisfactory to the AQD to control emissions (SC III.2). I reviewed the list of recommended procedures in Appendix A with Craig.

1. There are three trained operators that are responsible for compliance with the air pollution control requirements.
2. Grates are cleaned after each burn and cremains are returned to the family.
3. Craig stated that they do not combust waste until the secondary combustion chamber is above 1600°F. The records I reviewed verify this statement.
4. Craig stated that they do not overload the incinerators. A scale is used to record charge weight. The records I reviewed verify this statement.
5. The manufacturer has instructed Lenox to keep the primary combustion chamber door closed throughout the cremation cycle. This procedure prevents a short-term temperature drop in the secondary combustion chamber and helps prevent intermittent visible emissions during the cremation. Craig showed me the viewing port on the primary chamber door, which the operator uses to determine if the cremation is complete. If the cremation is not complete, the operator can extend the cremation in 15-minutes intervals.
6. Only human pathological waste and associated materials are burned in the incinerators. The records I reviewed verify this statement.
7. Combustion air is adjusted as needed, according to the manufacturer's instructions. Craig stated that most maintenance is conducted by Lenox employees.
8. Stacks are viewed frequently during every cremation via a camera that streams the video feed to TVs in the facility.
9. A copy of the manufacturer's manual is located near the furnaces.

10. The facility regularly inspects and performs most maintenance of the incinerators themselves. Lenox logs when thermocouples and oxygen tubes are replaced. I observed this log posted on each incinerator. These incinerators have three thermocouples to monitor operating temperatures. One thermocouple is located in the primary combustion chamber, the second thermocouple (PC1) is located at the rear of the secondary combustion chamber and the third thermocouple (PC2) is located where the exhaust stack is connected to the body of the cremation unit.

11. Craig stated that the operators follow the manufacturer's instructions and maintenance guidelines.

Pre-Cremation Storage

Lenox has a walk-in refrigeration unit that can store around 24 charges prior to cremation. Craig stated the refrigerator is set at about 38 degrees F. I observed that there were around five charges currently being stored in the refrigerator awaiting cremation.

Secondary Processing

I viewed the secondary processing area with Craig during the inspection. Lenox uses a ball mill to process cremains and remove materials such as implants. The ball mill station uses a small baghouse that vents to the general in-plant environment.

Laser Etcher

The facility operates an AP Lazer model SN3024 to engrave wood and marble urns. Craig stated that they use this machine around once per week. This laser etcher is exempt from the AQD permitting requirements pursuant R 336.1291(2)(c). The Rule 291 calculations show that an annual potential to emit of toxic contaminants with screening levels less than 0.005 micrograms per cubic meter are 7.37 pounds per year, which is less than the R 291 emission limit of 12.0 pounds per year.

Conclusion

Based on my on-site inspection and review of the records, Lenox Cremation Services of Michigan, INC (SRN: P0746) is in compliance with the conditions of PTI No.155-16B, as well as all applicable air quality rules and regulations.

NAME *Mark Reid*

DATE 04/09/2024

SUPERVISOR *K. Kelly*