

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION**

MARCH 17, 2021

**PERMIT TO INSTALL
12-12E**

**ISSUED TO
LAKE MICHIGAN CREMATORY, INC.**

**LOCATED AT
166 5th AVENUE
HOLLAND, MICHIGAN 49424**

**IN THE COUNTY OF
OTTAWA**

**STATE REGISTRATION NUMBER
P0314**

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: February 18, 2021	
DATE PERMIT TO INSTALL APPROVED: March 17, 2021	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO ₂ e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H ₂ S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO _x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO ₂	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal condition or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUCREMATORY1	Matthew Cremation Division Power Pak II Plus (IE43-PPII Plus) Fuel Type: Natural Gas Maximum Charge: 750 Pounds Burn Rate: 175 Pounds/Hour Charge Type: HUMAN REMAINS	April 1, 2014	FGCREMATORY
EUCREMATORY2	Matthew Cremation Division Power Pak II Plus (IE43-PPII Plus) Fuel Type: Natural Gas Maximum Charge: 750 Pounds Burn Rate: 175 Pounds/Hour Charge Type: HUMAN REMAINS	April 12, 2013	FGCREMATORY
EUCREMATORY3	Keller Manufacturing, Inc. KMH 1125-400 Fuel Type: Natural Gas Maximum Charge: 1,200 Pounds Burn Rate: 200 Pounds/Hour Charge Type: HUMAN REMAINS	TBD	NA

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

**EUCREMATORY3
 EMISSION UNIT CONDITIONS**

DESCRIPTION

Keller Manufacturing, Inc.
 KMH 1125-400
 Fuel Type: Natural Gas
 Maximum Charge: 1,200 pounds
 Burn Rate: 200 Pounds/Hour
 Charge Type: HUMAN REMAINS

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Secondary combustion chamber with afterburner.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	0.20 lb/1000 lbs of gas ^a	Hourly	EUCREMATORY3	GC 13	R 336.1331
^a . Calculated to 50% excess air.					

II. MATERIAL LIMIT(S)

- The permittee shall not burn any waste in EUCREMATORY3 other than the following:
Pathological wastes - As defined in the federal Standards of Performance for New Stationary Sources, 40 CFR 60.51c, pathological waste means waste materials consisting of only human or animal remains, anatomical parts, and/or tissue; the bags/containers used to collect and transport the waste material; and animal bedding. **This emission unit shall burn only human pathological waste and associated materials. (40 CFR 60.51)**
- The permittee shall not charge more than 1,200 pounds per charge in EUCREMATORY3, where charge is the total weight of the material placed in the incinerator to be combusted. **(R 336.1301, R 336.1331)**
- The permittee shall not burn any fuel in EUCREMATORY3 other than natural gas. **(R 336.1224, R 336.1225, R 336.1702)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

- The permittee shall not combust waste in EUCREMATORY3 unless a minimum temperature of 1600°F and a minimum retention time of 1.0 second in the secondary combustion chamber are maintained. **(R 336.1301, R 336.1331, R 336.1910)**
- The incinerator shall be installed, maintained, and operated in a manner satisfactory to the AQD District Supervisor to control emissions from EUCREMATORY3. A list of recommended operating and maintenance procedures is specified in Appendix A. **(R 336.1301, R 336.1331, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EUCREMATORY3 unless the secondary combustion chamber with afterburner is installed, maintained, and operated in a manner satisfactory to the AQD District Supervisor. **(R 336.1301, R 336.1331, R 336.1910)**
2. The permittee shall install, calibrate, maintain, and operate in a manner satisfactory to the AQD District Supervisor, a device to monitor and record the temperature in the secondary combustion chamber of EUCREMATORY3 on a continuous basis. **(R 336.1301, R 336.1331)**
3. The permittee shall maintain a scale at the facility for the purpose of verifying the charge weight as required by SC II.2. **(R 336.1301, R 336.1331)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1301, R 336.1331, 40 CFR 60.50c(b))**
2. The permittee shall monitor and record, in a manner satisfactory to the AQD District Supervisor, the temperature in the secondary combustion chamber of EUCREMATORY3 on a continuous basis. **(R 336.1301, R 336.1331)**
3. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, daily records of the time (duration of burn), description and weight of the charge combusted in EUCREMATORY3, as required by SC II.2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1331)**
4. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, records on a calendar quarter basis of the periods of time when only pathological waste is burned in the incinerator, as required by 40 CFR 60.50c(b). The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.50c(b))**
5. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, secondary combustion chamber temperature records for EUCREMATORY3, as required by SC VI.2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1331)**
6. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, a record of all service, maintenance and equipment inspections for EUCREMATORY3. The record shall include the description, reason, date and time of the service, maintenance, or inspection. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1331, R 336.1910)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCREMATORY3	20	27	40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGCREMATORY	Two Matthews Cremation Power Pak II Plus crematories for cremating human remains	EUCREMATORY1 EUCREMATORY2

**FGCREMATORY
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Two Matthews Cremation Power Pak II Plus crematories for cremating human remains

Emission Unit: EUCREMATORY1, EUCREMATORY2

POLLUTION CONTROL EQUIPMENT

Secondary chamber with afterburner.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	0.20 lb / 1000 lbs of gas ^a	Hourly	EUCREMATORY1, EUCREMATORY2	GC 13	R 336.1331

^a. Calculated to 50% excess air.

II. MATERIAL LIMIT(S)

- The permittee shall not burn any waste in FGCREMATORY other than the following:
Pathological wastes - As defined in the federal Standards of Performance for New Stationary Sources, 40 CFR 60.51c, pathological waste means waste materials consisting of only human or animal remains, anatomical parts, and/or tissue; the bags/containers used to collect and transport the waste material; and animal bedding. **This emission unit shall burn only human pathological waste and associated materials. (40 CFR 60.51)**
- The permittee shall not charge more than 750 pounds per crematory, per charge, where charge is the total weight of the material placed in the incinerator to be combusted. **(R 336.1301, R 336.1331)**
- The permittee shall not burn any fuel in FGCREMATORY other than natural gas. **(R 336.1224, R 336.1225, R 336.1702)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

- The permittee shall not combust waste in any crematory in FGCREMATORY unless a minimum temperature of 1450°F and a minimum retention time of 1.0 second in the respective secondary combustion chamber are maintained. **(R 336.1301, R 336.1331, R 336.1910)**
- Each incinerator shall be installed, maintained, and operated in a manner satisfactory to the AQD District Supervisor to control emissions from FGCREMATORY. A list of recommended operating and maintenance procedures is specified in Appendix A. **(R 336.1301, R 336.1331, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

- The permittee shall not operate any crematory in FGCREMATORY unless the secondary combustion chamber with afterburner is installed, maintained, and operated in a manner satisfactory to the AQD District Supervisor. **(R 336.1301, R 336.1331, R 336.1910)**

2. The permittee shall install, calibrate, maintain, and operate in a manner satisfactory to the AQD District Supervisor a device to monitor and record the temperature in the secondary combustion chamber for each crematory in FGCREMATORY on a continuous basis. **(R 336.1301, R 336.1331)**
3. The permittee shall maintain a scale at the facility for the purpose of verifying the charge weight as required by SC II.2. **(R 336.1301, R 336.1331)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

N/A

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required records in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(40 CFR 60.50c(b))**
2. The permittee shall monitor and record the temperature in the secondary combustion chamber for each crematory in FGCREMATORY on a continuous basis. **(R 336.1301, R 336.1331)**
3. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, daily records of the time (duration of burn), description and weight of the charge combusted for each crematory in FGCREMATORY, as required by SC II.2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1331)**
4. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, records on a calendar quarter basis of the periods of time when only pathological waste is burned in each incinerator, as required by 40 CFR 60.50c(b). The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.50c(b))**
5. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, secondary combustion chamber temperature records for each crematory in FGCREMATORY, as required by SC VI.2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1331)**
6. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, a record of all service, maintenance and equipment inspections for each crematory in FGCREMATORY. The record shall include the description, reason, date and time of the service, maintenance, or inspection. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1331, R 336.1910)**

VII. REPORTING

N/A

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCREMATORY1	20	27	40 CFR 52.21 (c) & (d)
2. SVCREMATORY2	20	27	40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall label the equipment with permanent labels that correspond with the AQD permit. Labeling shall be completed within 60 days of permit issuance. **(R 336.1201(3))**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

APPENDIX A
Incinerator Operation and Maintenance Guidelines

1. Designate a trained operator for the unit and make that person responsible for compliance with the air pollution control requirements.
2. Clean grates before each day's operation (more often if necessary), and dispose of the ashes properly.
3. Do not combust waste until the secondary combustion chamber (afterburner) is at or above the minimum required temperature. This temperature must be maintained for the duration of the burn cycle.
4. Do not overload the incinerator. Stay within the given loading rates and follow the manufacturer's instructions.
5. Schedule charges to minimize opening the charging door as infrequently as possible. Opening the charging door lets cold air in and quenches the fire, causing smoke.
6. Burn only the type of wastes that the incinerator has been approved to burn. Follow the manufacturer's instructions to maximize the efficiency of the unit, and to properly burn the waste(s).
7. Keep the combustion air adjusted according to the manufacturer's instructions.
8. Observe the stack frequently and adjust the operation as necessary to eliminate smoke and flyash.
9. Post a copy of the manufacturer's manual and this Guideline near your incinerator.
10. Make quarterly inspections to check and service all of the equipment. If a qualified person is not available for proper inspections, a service contract with a reputable manufacturer is advisable.
11. Follow manufacturer's operation and maintenance guidelines.