

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

November 26, 2019

PERMIT TO INSTALL
179-19

ISSUED TO
Grand Rapids Crematory, Inc.

LOCATED AT
1649 Viewpond Drive, S. E.
Lowell, Michigan

IN THE COUNTY OF
Kent

STATE REGISTRATION NUMBER
P1090

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: November 1, 2019 | |
| DATE PERMIT TO INSTALL APPROVED: November 26, 2019 | 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 conditions 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 | Facultatieve Technologies FT-III Cremator Fuel Type: Pipeline quality 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.

EUCREMATORY1 EMISSION UNIT CONDITIONS

DESCRIPTION

Facultatieve Technologies
 FT-III Cremator
 Fuel Type: Pipeline quality 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 | EUCREMATORY1 | GC 13 | R 336.1331 |
| ^a Calculated to 50% excess air. | | | | | |

II. MATERIAL LIMIT(S)

1. The permittee shall not burn any waste in EUCREMATORY1 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)**
2. The permittee shall not charge more than 1,200 pounds per charge in EUCREMATORY1, where charge is the total weight of the material placed in the incinerator to be combusted. **(R 336.1301, R 336.1331)**
3. The permittee shall not burn any fuel in EUCREMATORY1 other than pipeline quality natural gas. **(R 336.1224, R 336.1225, R 336.1702)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not combust waste in EUCREMATORY1 unless a minimum temperature of 1600°F and a minimum retention time of 2.0 second in the secondary combustion chamber are maintained. **(R 336.1301, R 336.1331, R 336.1910)**
2. The incinerator shall be installed, maintained, and operated in a satisfactory manner to control emissions from EUCREMATORY1. 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 EUCREMATORY1 unless the secondary combustion chamber with afterburner is installed, maintained, and operated in a satisfactory manner. **(R 336.1301, R 336.1331, R 336.1910)**

- The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the temperature in the secondary combustion chamber of EUCREMATORY1 on a continuous basis. **(R 336.1301, R 336.1331)**
- 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

NA

VI. MONITORING/RECORDKEEPING

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

- 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))**
- The permittee shall monitor and record, in a satisfactory manner, the temperature in the secondary combustion chamber of EUCREMATORY1 on a continuous basis. **(R 336.1301, R 336.1331)**
- The permittee shall keep, in a satisfactory manner, daily records of the time (duration of burn), description and weight of the charge combusted in EUCREMATORY1, 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)**
- 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))**
- The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, secondary combustion chamber temperature records for EUCREMATORY1, 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)**
- The permittee shall keep, in a satisfactory manner, a record of all service, maintenance and equipment inspections for EUCREMATORY1. 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. SVCREMATORY1 | 18.0 | 20.5 | 40 CFR 52.21(c) & (d) |

IX. OTHER REQUIREMENT(S)

NA

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.