

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

April 19, 2023

PERMIT TO INSTALL
86-13B

ISSUED TO
General Motors LLC – Orion Assembly Plant

LOCATED AT
4555 Giddings Road
Lake Orion, Michigan 48359

IN THE COUNTY OF
Oakland

STATE REGISTRATION NUMBER
B7227

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: March 14, 2023	
DATE PERMIT TO INSTALL APPROVED: April 19, 2023	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
EUENGINE1	A 2,242 hp landfill gas fired reciprocating internal combustion engine	2014	FGENGINES, FGRICEMACT
EUENGINE2	A 2,242 hp landfill gas fired reciprocating internal combustion engine	2014	FGENGINES, FGRICEMACT
EUENGINE3	A 2,242 hp landfill gas fired reciprocating internal combustion engine	2014	FGENGINES, FGRICEMACT
EUENGINE4	A 2,242 hp landfill gas fired reciprocating internal combustion engine	2014	FGENGINES, FGRICEMACT
EUENGINE5	A 2,242 hp landfill gas fired reciprocating internal combustion engine	2014	FGENGINES, FGRICEMACT

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.

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
FGENGINES	Five landfill gas fired reciprocating internal combustion engines driving electric generators.	EUENGINE1, EUENGINE2, EUENGINE3, EUENGINE4, EUENGINE5
FGRICEMACT	New and reconstructed non-emergency engines greater than 500 hp firing landfill/digester gas, located at a major source of HAPs. Commenced construction or reconstruction on or after December 19, 2002.	EUENGINE1, EUENGINE2, EUENGINE3, EUENGINE4, EUENGINE5

FGENGINES FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Five landfill gas fired reciprocating internal combustion engines driving electric generators.

Emission Unit: EUENGINE1, EUENGINE2, EUENGINE3, EUENGINE4, EUENGINE5

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. VOC	1.0 g/hp-hr	Hourly	Each Engine in FGENGIENS	SC V.2	40 CFR 60 Subpart JJJJ
2. VOC	2.8 lb/hr	Hourly	Each Engine in FGENGINES	SC V.1	R 336.1205(1)(a), R 336.1702, R 336.2801(ee)
3. NO _x	2.0 g/hp-hr	Hourly	Each Engine in FGENGINES	SC V.2	40 CFR 60 Subpart JJJJ
4. NO _x	2.97 lb/hr	Hourly	Each Engine in FGENGINES	SC V.1	R 336.1205(1)(a), R 336.2801(ee), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
5. CO	3.5 g/hp-hr	Hourly	Each Engine in FGENGINES	SC V.1, SC V.2	R 336.2810(2), 40 CFR 60 Subpart JJJJ
6. CO	17.3 lb/hr	Hourly	Each Engine in FGENGINES	SC V.1	R 336.2804, 40 CFR 52.21(d)
7. PM10	0.64 lb/hr	Hourly	Each Engine in FGENGINES	SC V.1	R 336.1205(1)(a), R 336.2801(ee), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
8. PM2.5	0.64 lb/hr	Hourly	Each Engine in FGENGINES	SC V.1	R 336.1205(1)(a), R 336.2801(ee), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 52.21(b)(3)(i)
9. Formaldehyde	2.1 lb/hr	Hourly	Each Engine in FGENGINES	SC V.3	R 336.1225(1) & (2)
10. SO ₂	35.9 tpy	12-month rolling time period as determined at the end of each calendar month	FGENGINES (All five engines combined)	SC V.4, SC VI.3, SC VI.4	R 336.1205(1)(a) & (3)

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only burn landfill gas in FGEngines. **(R 336.1225)**
2. At least 60 days prior to startup of any engine in FGEngines, the permittee shall submit to the AQD District Supervisor, for review and approval, a malfunction abatement/preventative maintenance plan for FGEngines. After approval of the malfunction abatement/preventative maintenance plan by the AQD District Supervisor, the permittee shall not operate FGEngines unless the malfunction abatement/preventative maintenance plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. If the AQD does not notify the permittee within 60 days of submittal, the malfunction abatement/preventative maintenance plan shall be considered approved. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:
 - a) Identification of the equipment and, if applicable, air-cleaning device, and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.
 - b) Description of the items or conditions to be inspected and frequency of the inspections or repairs.
 - c) Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures.
 - d) Identification of the major replacement parts that shall be maintained in inventory for quick replacement.
 - e) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the malfunction abatement/preventative maintenance plan to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies. If the AQD does not notify the permittee within 60 days of submittal, the revised plan shall be considered approved. Until a revised plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 60.4243(b)(2))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate FGEngines unless the following are installed, maintained, and operated in a satisfactory manner:
 - a) Lean burn technology
 - b) Air to fuel ratio controller**(R 336.1702(a), R 336.2810(2))**
2. The design capacity of each engine in FGEngines shall not exceed 2,242 BHP, as specified by the equipment manufacturer. **(R 336.1205(1)(a) & (b), 40 CFR 60 Subpart JJJJ)**

V. TESTING/SAMPLING

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

1. At least once every five years or more frequently upon the request of the AQD District Supervisor consistent with the provisions of Rule 336.2001, the permittee shall verify and quantify VOC, NOx, CO, PM10 and PM2.5 emission factors from any one of the five identical engines in FGEngines by testing at owner's expense, in accordance with Department requirements. The permittee shall conduct the same tests once every five years thereafter or more frequently upon the request of the AQD District Supervisor consistent with the provisions of Rule 336.2001. No less than 30 days prior to any testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission factors includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test, as required by SC VII.1. **(R 336.1205, R 336.1224, R 336.1225,**

R 336.1702, R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810(2), 40 CFR 52.21(j), 40 CFR 52.21(c) & (d))

2. The permittee shall conduct a performance test every 8760 hours of operation or three years, whichever occurs first for each engine in FGEngines, to demonstrate compliance to NO_x, CO, and VOC emission rates. The performance tests shall be conducted according to 40 CFR 60.4244. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD Technical Programs Unit and District Office. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(40 CFR 60.8, 40 CFR 60.4243, 40 CFR 60.4244, 40 CFR 60 Subpart JJJJ)**
3. At least once every five years, unless otherwise demonstrated by the permittee and approved by the AQD District Supervisor that testing every five years or more frequently is not required, the permittee shall verify and quantify formaldehyde emission factors from any one of the five identical engines in FGEngines by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to any testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission factors includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004)**
4. Within 60 days after permit issuance, the permittee shall verify the hydrogen sulfide (H₂S) or total reduced sulfur (TRS) content of the landfill gas burned in FGEngines weekly by gas sampling (e.g. Draeger Tubes, Tedlar Sampling Bags, etc.) for 12 weeks and semi-annually by gas sampling using an EPA approved method and laboratory analysis, at the owner's expense, in accordance with Department requirements. Once the weekly sampling results remain less than 400 ppmvd for the 12-week period, the permittee may reduce to monthly monitoring and recordkeeping of the H₂S (TRS) concentration. Sampling is not required if FGEngines are not operating. Once FGEngines operation resumes, the permittee shall reconvene monthly sampling within 10 days. If the monthly H₂S (TRS equivalent) concentration exceeds 400 ppmvd, the permittee shall resume weekly sampling and recordkeeping until 12 weeks of the H₂S (TRS equivalent) concentration is less than 400 ppmvd. Sampling is not required if FGEngines are not operating. Once FGEngines operation resumes during weekly sampling, the permittee shall reconvene weekly sampling within 3 days. If at any time, the H₂S (TRS equivalent) concentration of the landfill gas sample exceeds 400 ppmvd, the permittee shall sample and record the H₂S (TRS equivalent) concentration of the landfill gas burned on a daily basis. Once the H₂S (TRS equivalent) concentration of the landfill gas determined from the daily samples are maintained below 400 ppmvd, for one week after an exceedance, the permittee may resume weekly monitoring and recordkeeping for 12 weeks as previously described. No less than 30 days prior to the initial test for each type of gas sampling, the permittee shall submit a complete test plan to the AQD District Office. The AQD must approve the final plan prior to the first test for each type of gas sampling. Thereafter, the permittee shall submit a test plan upon the request of the AQD District Supervisor or if any changes are made to the approved testing protocol. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep, in a satisfactory manner, records of all maintenance activities conducted according to the malfunction abatement/preventative maintenance plan (pursuant to SC III.2). The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1702(a), R 336.1911, R 336.1912, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**
2. The permittee shall keep records of the following information for each engine in FGEngines:

- a) All notifications submitted to comply with 40 CFR Part 60 Subpart JJJJ and all documentation supporting any notification. **(40 CFR 60.4245(a)(1))**
 - b) Maintenance conducted on each engine. **(40 CFR 60.4245(a)(2))**
 - c) If the engines in FGENGINEs are a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR Parts 90, 1048, 1054, and 1060, as applicable. **(40 CFR 60.4245(a)(3))**
 - d) If any engine in FGENGINEs is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a)(2), documentation that the engine(s) meets the emission standards. **(40 CFR 60.4245(a)(4))**
3. The permittee shall calculate and record the monthly and 12-month rolling SO₂ emissions from FGENGINEs as specified in Appendix 1, or other method as approved by the AQD District Supervisor. The calculations shall utilize the actual gas usage, actual hours of operation, and the sulfur concentration from the most recent gas sampling data unless otherwise requested by the AQD. All records shall be kept on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (3))**
 4. The permittee shall record all sampling data collected for the H₂S (TRS equivalent) concentration for FGENGINEs in the landfill gas. All records shall be kept on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.1225)**

VII. REPORTING

1. The permittee shall submit a complete report of the stack test results to the AQD District Supervisor in an acceptable format within 60 days after the performance test has been completed. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810(2), 40 CFR 52.21(j), 40 CFR 52.21(c) & (d))**
2. The permittee shall submit an initial notification as required by 40 CFR 60.7(a)(1) for each engine in FGENGINEs if the engines installed are not certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231. The notification shall include the information below, as specified in 40 CFR 60.4245 (c)(1) through (5):
 - a) Name and address of the owner or operator; **(40 CFR 60.4245(c)(1))**
 - b) The address of the affected source; **(40 CFR 60.4245(c)(2))**
 - c) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement; **(40 CFR 60.4245(c)(3))**
 - d) Emission control equipment; and **(40 CFR 60.4245(c)(4))**
 - e) Fuel used. **(40 CFR 60.4245(c)(5))**The permittee shall submit the initial notification to the AQD District Supervisor in an acceptable format within 30 days of commencing construction of any engine in FGENGINEs. **(40 CFR Part 60 Subpart JJJJ)**

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. SV001	120	250	R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ, as they apply to each engine in FGEngines. **(40 CFR Part 60, Subpart A & JJJJ)**

Footnotes:

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

FGRICEMACT FLEXIBLE GROUP CONDITIONS

DESCRIPTION

New and reconstructed non-emergency engines greater than 500 hp firing landfill/digester gas, located at a major source of HAPs. Commenced construction or reconstruction on or after December 19, 2002.

Emission Unit: EUENGINE1, EUENGINE2, EUENGINE3, EUENGINE4, EUENGINE5

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Each engine in FGRICEMACT shall operate in a manner which reasonably minimizes HAP emissions. **(40 CFR 63.6625(c))**
2. Each engine in FGRICEMACT shall operate in a manner which minimizes time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading of each engine, not to exceed 30 minutes. **(40 CFR 63.6625(h))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The engines in FGRICEMACT shall equip and maintain separate fuel meters to monitor and record the daily fuel usage and volumetric flow rate of each fuel used. **(40 CFR 63.6625(c))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

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

1. For the engines in FGRICEMACT which fire landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, the permittee shall monitor and record the daily fuel usage with separate fuel meters to measure the volumetric flow rate of each fuel. **(40 CFR 63.6625(c))**

VII. REPORTING

1. The permittee shall submit an annual report in accordance with Table 7 of 40 CFR Part 63, Subpart ZZZZ to the appropriate AQD district office by March 15th for the reporting period from January 1 to December 31. The following information shall be included in this annual report: **(40 CFR 63.6650(g), 40 CFR 63.6650(b)(5))**

- a) The fuel flow rate and the heating values that were used in the permittee's calculations to determine the gross heat input on an annual basis. Also, the permittee must demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis. **(40 CFR 63.6650(g)(1))**
- b) The operating limits provided in the permittee's federally enforceable permit, and any deviations from these limits. **(40 CFR 63.6650(g)(2))**
- c) Any problems or errors suspected from the fuel flow rate meters. **(40 CFR 63.6650(g)(3))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

- 1. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, as they apply to each engine in FGRICEMACT. **(40 CFR Part 63, Subparts A & ZZZZ)**

Footnotes:

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

APPENDIX 1

SO₂ Emission Calculations

Calculation for SO₂ Emissions

The following calculation for SO₂ emissions shall utilize the actual gas usage, actual hours of operation, and the sulfur concentration from the most recent laboratory test sample.

$$\text{SO}_2 = [(\text{scfm}) \times (60 \text{ min/hr}) \times (\text{H}) \times (\text{ppmv}_{\text{sulfur}} \times 1\text{E-}06) \times (\text{MW}_{\text{SO}_2})] \div [(R \times T)] = \text{pounds/month}$$

Where:

scfm = standard cubic feet per minute gas flow

ppmv_{sulfur} = parts per million by volume of Sulfur in the gas (based on the most recent test sample)

MW_{SO₂} = Molecular Weight of SO₂ = 64.066 lb/lb-mol

H = Actual Hours per month operated

R = Universal Gas Constant = 0.7302 atm-ft³/lb-mol-R

T = Standard Temperature (absolute) = 519 R