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

January 18, 2022

PERMIT TO INSTALL
71-03D

ISSUED TO
JBS USA

LOCATED AT
11 11th Street
Plainwell, Michigan 49080

IN THE COUNTY OF
Allegan

STATE REGISTRATION NUMBER
B7244

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: **August 17, 2021**	
DATE PERMIT TO INSTALL APPROVED: **January 18, 2022**	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_2e	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_2S	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
EUCLBOILER1	26.78 MMBTU per hour Cleaver-Brooks firetube boiler firing natural gas and fuel oil.	10/1/2016	FGBOILERS&FLARE
EUCLBOILER2	26.78 MMBTU per hour Cleaver-Brooks firetube boiler firing natural gas and fuel oil.	10/1/2016	FGBOILERS&FLARE
EUFLARE	Back up flare for burning biogas when the supply exceeds the demand from the heaters and boilers. (EU004)	1/1/1991	FGBOILERS&FLARE
EUHEATER1	Armstrong direct fired heater with a rated capacity of 10 MMBTU per hour. Heater is fired with natural gas and/or biogas. (EU005)	2/8/2008	FGHEATERS
EUHEATER2	Armstrong direct fired heater with a rated capacity of 10 MMBTU per hour. Heater is fired with natural gas and/or biogas. (EU006)	2/8/2008	FGHEATERS
EUHEATER3	Armstrong direct fired heater with a rated capacity of 10 MMBTU per hour. Heater is fired with natural gas and/or biogas. (EU007)	2/8/2008	FGHEATERS
EUBIOGEN1	2,788hp (15.98 MMBTU/hr) spark ignition reciprocating internal combustion engine (RICE) manufactured after 7/1/2010. The RICE combusts wastewater lagoon gas (biogas) with natural gas backup	TBD	FGBIOGENS
EUBIOGEN2	2,788hp (15.98 MMBTU/hr) spark ignition RICE manufactured after 7/1/2010. The RICE combusts wastewater lagoon gas (biogas) with natural gas backup	TBD	FGBIOGENS
EUBIOGEN3	2,788hp (15.98 MMBTU/hr) spark ignition RICE manufactured after 7/1/2010. The RICE combusts wastewater lagoon gas (biogas) with natural gas backup	TBD	FGBIOGENS
EUBIOGEN4	2,788hp (15.98 MMBTU/hr) spark ignition RICE manufactured after 7/1/2010. The RICE combusts wastewater lagoon gas (biogas) with natural gas backup	TBD	FGBIOGENS

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
FGBOILERS&FLARE	Grouping of all on-site boilers and the flare.	EUCLBOILER1, EUCLBOILER2, EUFLARE
FGHEATERS	Grouping of all the on-site heaters.	EUHEATER1, EUHEATER2, EUHEATER3
FGBIOGENS	Four (4) spark ignition RICE, each rated at 2,788 hp, manufactured after 7/1/2010. The RICE combusts wastewater lagoon gas (biogas) with natural gas backup. Engines are subject to requirements under 40 CFR 60 Subpart JJJJ.	EUBIOGEN1, EUBIOGEN2, EUBIOGEN3, EUBIOGEN4

FGBOILERS&FLARE
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Grouping of all on-site boilers and the flare

Emission Unit: EUCLBOILER1, EUCLBOILER2, EUFLARE

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. SO_2	85 tpy	12-month rolling time period as determined at the end of each calendar month	FGBOILERS&FLARE	SC VI.1, SC VI.2, SC VI.4, SC VI.5	R 336.1205(1)(a) & (3)
2. NO_x	60 tpy[A]	12-month rolling time period as determined at the end of each calendar month	FGBOILERS&FLARE	SC VI.1, SC VI.3	R 336.1205(1)(a) & (3)

[A]This limit is based on an emission factor of 100 pounds of NO_x per MMscf of natural gas or biogas. If emission testing is required, the results of the emission testing will be used to estimate NO_x emissions.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Natural Gas	570 MMcf	12-month rolling time period as determined at the end of each calendar month	FGBOILERS&FLARE	SC VI.1	R 336.1205(1)(a) & (3)
2. Biogas	389 MMcf	12-month rolling time period as determined at the end of each calendar month	EUFLARE	SC VI.1	R 336.1205(1)(a) & (3)
3. Fuel Oil #2	3,985,800 gallons	12-month rolling time period as determined at the end of each calendar month	EUCLBOILER1, EUCLBOILER2	SC VI.1	R 336.1205(1)(a) & (3)

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall burn only natural gas or fuel oil in EUCLBOILER1 and EUCLBOILER2. **(R 336.1205, R 336.1225, R 336.1401, 40 CFR 52.21(c) & (d))**

2. The sulfur content of the fuel oil shall not exceed 0.3 percent by weight used in FGBOILERS&FLARE. **(R 336.1205(1)(a) & (3))**

3. Liquid fuel shall only be burned in EUCLBOILER1 and EUCLBOILER2 during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year. **(40 CFR Part 63 Subpart JJJJJJ)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record each fuel used for each of the boilers and flare in FGBOILERS&FLARE per month and per 12-month rolling time period, as determined at the end of each calendar month. **(R 336.1205, R 336.1225, 40 CFR 52.21(c) & (d))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall monitor and record the amount of fuel used of natural gas and biogas fuel, in cubic feet; and fuel oil and biofuel, in gallons, on a monthly and 12-month rolling time period basis for FGBOILERS&FLARE. **(R 336.1205(1)(a) & (3), 40 CFR 60.48c(g))**

2. The permittee shall keep, in a satisfactory manner, fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil used in FGBOILERS&FLARE, demonstrating that the fuel sulfur content meets the requirement of SC III.2. The certification or test data shall include the name of the oil supplier or laboratory, and the sulfur content of the fuel oil. **(R 336.1401, 40 CFR 60.48c(f))**

3. The permittee shall calculate the NO_x emission rates from FGBOILERS&FLARE for each calendar month and 12-month rolling time period. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1205(1)(a) & (3))**

4. The permittee shall calculate the SO_2 emission rates from FGBOILERS&FLARE for each calendar month and 12-month rolling time period. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1205(1)(a) & (3))**

5. The permittee shall record in a satisfactory manner the hours of operation while burning fuel oil in EUCLBOILER1 and EUCLBOILER2 to demonstrate compliance with SC III.3. **(R 336.1205(1)(a) & (3), 40 CFR Part 63 Subpart JJJJJJ)**

VII. REPORTING

1. The permittee shall provide notification of the following for EUCLBOILER1 and EUCLBOILER2:
   a) The heat input capacity of the heaters and identification of fuels combusted in the heaters.
   b) If applicable, a copy of any federal enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under 40 CFR Section 60.42c or 40 CFR Section 60.43c.
   c) The annual capacity factor at which the permittee anticipates operating the heaters base on all fuels fired and based on each individual fuel fired.

   (40 CFR 60.48c)

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. SV0004	6	32	40 CFR 52.21(c) & (d)
2. SVEUCLBOILER1	24	34	40 CFR 52.21(c) & (d)
3. SVEUCLBOILER2	24	34	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 Dc, as they apply to EUCLBOILER1 and EUCLBOILER2. **(40 CFR Part 60 Subparts A & Dc)**

FGHEATERS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Natural gas and biogas fired heaters.

Emission Unit: EUHEATER1, EUHEATER2, EUHEATER3

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NO_x	18.75 tpy[A]	12-month rolling time period as determined at the end of each calendar month	FGHEATERS	SC VI.1, SC VI.2	R 336.1205(1)(a) & (3)
[A]This limit is based on an emission factor of 100 pounds of NO_x per MMscf of natural gas or biogas. If emission testing is required, the results of the emission testing will be used to estimate NO_x emissions.					

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Gaseous Fuel	375 MMcf	12-month rolling time period as determined at the end of each calendar month	FGHEATERS	SC VI.1	R 336.1205(1)(a) & (3)

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only burn natural gas and/or biogas in FGHEATERS. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1401, 40 CFR 52.21(c) & (d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas and biogas usage for FGHEATERS per month, and per 12-month rolling time period, as determined at the end of each calendar month. **(R 336.1205, R 336.1225, 40 CFR 52.21(c) & (d))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall monitor and record the amount of fuel used of natural gas and biogas fuel, in cubic feet; on a monthly and 12-month rolling time period basis for FGHEATERS. **(R 336.1205(1)(a) & (3), 40 CFR 60.48c(g))**

2. The permittee shall calculate the NOx emission rates from FGHEATERS for each calendar month and 12-month rolling time period. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1205(1)(a) & (3))**

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. SV00025	20	34	40 CFR 52.21(c) & (d)
2. SV00026	20	34	40 CFR 52.21(c) & (d)
3. SV00027	20	34	40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Dc, as they apply to FGHEATERS. **(40 CFR Part 60 Subparts A & Dc)**

FGBIOGENS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Four (4) spark ignition RICE, each rated at 2,788 hp, manufactured after 7/1/2010. The RICE combusts wastewater lagoon gas (biogas) with natural gas backup. Engines are subject to requirements under 40 CFR 60 Subpart JJJJ.

Emission Unit: EUBIOGEN1, EUBIOGEN2, EUBIOGEN3, EUBIOGEN4

POLLUTION CONTROL EQUIPMENT

Each engine has an oxidation catalyst.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NO_x	2.0 g/hp-hr[a] or 150 ppmvd at 15% O_2 [b]	Hourly	Each engine in FGBIOGENS	SC V.1, V.2	R 336.1205(1)(a), 40 CFR 52.21(c) & (d), 40 CFR 60.4233(e), Table 1 of 40 CFR 60 Subpart JJJJ
2. NO_x	3.12 pph	Hourly	Each engine in FGBIOGENS	SC V.1	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
3. CO	5.0 g/hp-hr[a] or 610 ppmvd at 15% O_2 [b]	Hourly	Each engine in FGBIOGENS	SC V.1, V.2	40 CFR 60.4233(e), Table 1 of 40 CFR 60 Subpart JJJJ
4. CO	7.83 pph	Hourly	Each engine in FGBIOGENS	SC V.1	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
5. CO	40.8 tpy	12-month rolling time period as determined at the end of each calendar month	FGBIOGENS	SC VI.2	R 336.1205(1)(a) & (3)
6. VOC	1.0 g/hp-hr[a] or 80 ppmvd at 15% O_2 [b,c]	Hourly	Each engine in FGBIOGENS	SC V.1, V.2	40 CFR 60.4233(e), Table 1 of 40 CFR 60 Subpart JJJJ
7. VOC	1.5 pph	Hourly	Each engine in FGBIOGENS	SC V.1	R 336.1702(a)
8. Formaldehyde (CAS No. 50-00-0)	0.0407 g/hp-hr[a, 1] or 0.25 pph[1]	Hourly	Each engine in FGBIOGENS	SC V.2	R 336.1225

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
[a] g/hp-hr = Gram/horsepower-hour [b] Owners and operators may choose to comply with the emission standards in units of either g/bhp-hr or ppmvd at 15% O_2. [c] For the purposes of 40 CFR Part 60 Subpart JJJJ, emissions of formaldehyde should not be included when calculating volatile organic compounds.					

II. MATERIAL LIMIT(S)

1. The permittee shall only burn wastewater lagoon digester gas (biogas) or natural gas in each engine within FGBIOGENS. **(R 336.1205(1)(a), R 336.1702(a))**

2. The maximum H_2S concentration in the biogas shall not exceed 300 ppmv. **(R 336.1225, 40 CFR 52.21(c)(& (d))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate and maintain each unit in FGBIOGENS such that it meets the emission limits in SC I.1, I.3, and I.6 over the entire life of the engine. **(40 CFR 60.4234)**

2. Within 180 days after trial operation, the permittee shall submit, implement, and maintain a malfunction abatement plan (MAP) as described in Rule 911(2) for FGBIOGENS (including gas treatment system). The MAP shall, at a minimum, specify the following:
   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) 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 at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 90 days after such an event occurs. The permittee shall also amend the MAP within 90 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1910, R 336.1911)**

3. The permittee shall keep a maintenance plan for FGBIOGENS and shall, to the extent practicable, maintain and operate each unit in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 60.4243(b)(2)(ii))**

4. The permittee shall not operate each engine within FGBIOGENS for more than 2,600 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1)(a) & (3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The nameplate capacity of each unit in FGBIOGENS shall not exceed 2,788 HP (15.98 MMBTU/hr). **(R 336.1205(1)(a))**

2. The permittee shall equip and maintain each unit in FGBIOGENS with a non-resettable hours meter to continuously monitor the operating hours of operation. **(R 336.1205(1)(a) & (3))**

3. The permittee shall not operate each engine within FGBIOGENS unless each respective oxidation catalyst is installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved MAP for each unit in FGBIOGENS as required in SC III.2. **(R 336.1205(1)(a), R 336.1702, R 336.1910)**

V. TESTING/SAMPLING

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

1. In order to demonstrate compliance for the emission limits for NO_x, CO and VOC (excluding formaldehyde) while burning biogas, natural gas, or a combination of biogas and natural gas in SC I.1, I.3, and I.6:
   a. Conduct an initial performance test within one year after startup of the engine.
   b. Conduct subsequent performance testing every 8,760 operating hours or 3 years, whichever comes first thereafter to demonstrate compliance.
   c. The performance tests shall be conducted according to 40 CFR 60.4244 and Table 2 of 40 CFR Part 60 Subpart JJJJ.

   No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The permittee must submit 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 60.4243(b)(2)(ii), 40 CFR 60.4244, 40 CFR 60.4245(d), Table 1 of 40 CFR Part 60 Subpart JJJJ)**

2. Within one year of initial startup, the permittee shall verify NO_x, CO, VOC, and formaldehyde emission rates from each engine within FGBIOGENS while burning biogas, natural gas, or a combination of biogas and natural gas by testing at owner's expense, in accordance with Department requirements. The hourly emission rates shall be determined by the average of acceptable runs. Testing shall be performed using an approved EPA Method listed below.

Pollutant	Test Method Reference
NO_x	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A
VOCs	40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A
Formaldehyde	40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A

   An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to 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, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit 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. **(R 336.1205, R 336.1702, R 336.1902, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

3. The permittee shall verify the hydrogen sulfide (H_2S) or total reduced sulfur (TRS) content of the treated biogas, at the outlet of the gas cleaning and conditioning system, that is burned in FGBIOGENS on a monthly basis by gas testing (e.g. Draeger Tubes, Tedlar Sampling Bags, etc) and annually by gas sampling using an EPA approved method and laboratory analysis, at the owner's expense, in accordance with Department requirements. If, after 6 consecutive months, each of the monthly concentrations of the hydrogen sulfide of the biogas are below 300 ppm (313 ppm TRS equivalent), the permittee may petition the AQD District Supervisor to reduce the frequency of gas sampling and recording the hydrogen sulfide / TRS concentration of the treated biogas to quarterly. If, after a year, each of the quarterly concentrations of the hydrogen sulfide of the biogas are below 300 ppm (313 ppm TRS equivalent), the permittee may petition the AQD District Supervisor to reduce the frequency of gas sampling and recording the hydrogen sulfide / TRS concentration of the treated biogas to annually. If at any time the H_2S concentration of the biogas sample exceeds 300 ppm (313 ppm TRS equivalent), the permittee shall conduct sampling and recording on a monthly basis and shall review all operating and maintenance activities for the biogas treatment system along with keeping records of corrective actions taken. Once the concentration determined from the monthly readings are maintained below 300 ppm of H_2S (313 ppm TRS equivalent) concentration in the biogas for three consecutive months after an exceedance, the permittee may resume quarterly monitoring and recordkeeping. No less than 30 days prior

to the initial testing, the permittee shall submit a complete test plan to the AQD District Office. The AQD must approve the final plan prior to the initial test. Thereafter, the permittee shall submit a test plan upon the request of the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.2001, R 336.2003, R 336.2004, R 336.1901)**

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 last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a))**

2. The permittee shall calculate and record in a satisfactory manner monthly and 12-month rolling time period CO mass emission records for FGBIOGENS, as required by SC I.5. 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))**

3. The permittee shall monitor and record in a satisfactory manner monthly and 12-month rolling time period hours of operation of each engine within FGBIOGENS, as required by SC III.4. 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))**

4. The permittee shall keep, in a satisfactory manner, records of testing required in SC V.1 and maintenance records documenting that each unit in FGBIOGENS meets the applicable emission limitations contained in the federal Standards of Performance for New Stationary Sources 40 CFR Part 60, Subpart JJJJ. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4245)**

5. The permittee shall maintain records of all information necessary for all notifications and reports for each engine in FGBIOGENS, as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit. This information shall include, but shall not be limited to the following: **(R 336.1205, R 336.1225, R 336.1702, R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**
   a) Compliance tests and any testing required under the special conditions of this permit.
   b) Hours of operation for each engine within FGBIOGENS on a monthly and 12-month rolling basis.
   c) Calculated amount of biogas and natural gas combusted in FGBIOGENS on a monthly and 12-month rolling basis.
   d) Records of the gas sampling and analysis for H_2S concentration in the biogas routed to FGBIOGENS
   e) Manufacturer's data, specifications, and operating and maintenance procedures.
   f) Maintenance activities conducted according to the PM/MAP.
   g) All calculations necessary to show compliance with the limits contained in this permit.

6. The permittee shall keep records of the following information for each engine within FGBIOGENS:
   a) All notifications submitted to comply with 40 CFR Part 60 Subpart JJJJ and all documentation supporting any notification.
   b) Maintenance conducted on each unit in FGBIOGENS.
   c) Documentation that each unit in FGBIOGENS meets the emission standards in 40 CFR 60.4233(e). **(40 CFR 60.4243(b)(1), 40 CFR 60.4245(a))**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of each engine within FGBIOGENS. **(R 336.1201(7)(a))**

2. The permittee must submit an initial notification within 30 days of commencement of construction as required in 40 CFR 60.7(a)(1), for each engine within FGBIOGENS that has not been certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231. The notification must include the following information:
   a) Name and address of the owner or operator;
   b) The address of the affected source;
   c) The engine make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
   d) The engine emission control equipment; and
   e) Fuel used in the engine.
   (40 CFR 60.4245(c))

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. SVBIOGEN-1	20	31.3	40 CFR 52.21(c) &(d)
2. SVBIOGEN-2	20	31.3	40 CFR 52.21(c) &(d)
3. SVBIOGEN-3	20	31.3	40 CFR 52.21(c) &(d)
4. SVBIOGEN-4	20	31.3	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 within FGBIOGENS. **(40 CFR Part 60 Subparts A and JJJJ)**

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

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